TOWN OF ERIE
BOARD OF TRUSTEES REGULAR MEETING [1]
Tuesday, August 11, 2015
STUDY SESSION START TIME 5:45 PM
REGULAR MEETING START TIME 6:30 PM
Erie Town Hall, 645 Holbrook Street, Erie, CO 80516

STUDY SESSION 5:45 PM IN THE COMMUNITY ROOM
AGENDA FOR THE STUDY SESSION IS A DISCUSSION OF THE REGULAR MEETING AGENDA BELOW

REGULAR MEETING 6:30 PM IN THE BOARD ROOM

I. CALL MEETING TO ORDER

II. PLEDGE OF ALLEGIANCE AND ROLL CALL

III. APPROVAL OF THE AGENDA

IV. CONSENT AGENDA (The consent agenda is intended to contain items that are prepared to be decided without discussion. Any Board member may request removal of any item they do not want to consider without discussion or wish to vote no on, without jeopardizing the approval of other items on the consent agenda. Items removed will be placed under IX. General Business, a. in the order they appear on the Agenda.) (This should be done prior to the motion to approve.)

Roll Call Vote

a. Approval of the July 28, 2015 Meeting Minutes

b. Resolution 15-105; A Resolution Adopting A Drought Mitigation Plan

c. Resolution 15-106; A Resolution Approving Storm Sewer Repair in Vista Ridge

Roll Call Vote

V. PUBLIC COMMENT (This agenda item provides the public an opportunity to discuss items other than ordinances on second reading, public hearings and consent agenda items that are not on the agenda. The Board of Trustees is not prepared to decide on matters brought up at this time, but if warranted, will place them on a future agenda.)

VI. PROCLAMATIONS AND PRESENTATIONS (This agenda item is intended to contain Presentations to the Board that do not require any Board action. Presentations are limited to fifteen (15) minutes.

a. Parks and Recreation Presentation - Leadership Camp Kids Video

b. Communicator Awards-Town of Erie Government Website-Award of Distinction
Inside Erie "Water" Edition – Award of Distinction

[1] FOR MORE INFORMATION ON THE AGENDA ITEMS LISTED OR FOR INDIVIDUALS WITH DISABILITIES NEEDING AUXILIARY AIDS OR TO REQUEST ASSISTANCE, PLEASE CONTACT THE TOWN CLERK'S OFFICE AT 645 HOLBROOK STREET, P.O. BOX 750, 303-926-2731.

VII. LAND DEVELOPMENT RESOLUTIONS AND ORDINANCES

PUBLIC HEARING
OPEN PUBLIC HEARING

a. Ordinance 20-2015; An Ordinance of the Town of Erie, Colorado, Approving Canyon Creek Planned Development Amendment No. 9; Making Findings Supporting Canyon Creek Planned Development Amend No. 9; and Setting Forth Details in Relation Thereto (FIRST READING)

CLOSE PUBLIC HEARING

b. Resolution 15-101; A Resolution by the Board of Trustees of the Town of Erie, Colorado Approving the 4 Corners Pre-Development Agreement (Staff is requesting continuation to August 25, 2015 meeting)

c. Review and Comment - Canyon Creek Filing No. 10 Sketch Plan Review

VIII. RESOLUTIONS (This agenda item is for all matters that should be decided by resolutions.)

PUBLIC HEARING
OPEN PUBLIC HEARING (continued from the July 28, 2015 Meeting)

a. Resolution 15-92; A Resolution by the Board of Trustees of the Town of Erie, Colorado Approving the Vista Ridge Filing No. 14 Minor Subdivision Plat with Conditions; Accepting Dedications as Shown on the Vista Ridge filing No. 14 Minor Subdivision Plat; Authorizing the Appropriate Town Office to Sign the Vista Ridge Filing No. 14 Avigation Easement Agreement; Adopting Certain Findings of Fact and Conclusions Favorable to the Approval, Acceptance of the Dedications Contained Therein, and Setting Forth Details in Relation Thereto.

CLOSE PUBLIC HEARING

PUBLIC HEARING
OPEN PUBLIC HEARING

b. Resolution 15-102; A Resolution Making Certain Findings of Fact and conclusions Favorable to the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat; Imposing Conditions of Approval; Approving Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat with Conditions

CLOSE PUBLIC HEARING

PUBLIC HEARING
OPEN PUBLIC HEARING

c. Resolution 15-103; A Resolution of the Board of Trustees of the Town of Erie, Colorado, Approving the Service Plan for the Sierra Vista Metropolitan District with a Condition; and Authorizing the Town of Erie Colorado to Enter into an Intergovernmental Agreement Between the Town of Erie and the Sierra Vista Metropolitan District, Ensuring Compliance with the Approved Service Plan and the Erie Municipal Code

CLOSE PUBLIC HEARING

RESOLUTIONS (continued)

d. Resolution 15-100; A Resolution Authorizing the Engagement of TischlerBise, Inc. for Completion of an Impact Fee Study

e. Resolution 15-107; A Resolution Approving an Intergovernmental Agreement with Boulder County Sheriff's Department Communications Center for Dispatch Services

f. Resolution 15-104; A Resolution Awarding a Contract for Street Maintenance Program

IV. ORDINANCES (To adopt an Ordinance of the First Reading, a Motion/Second/Approval is required to suspend Resolution 02-44 and adopt the Ordinance on the First Reading.

a. Ordinance 14-2015; An Ordinance of the Town of Erie, Colorado, Amending Title 9, 'Building and Development Regulations," Chapter 4, "Special Districts," of the Erie Municipal Code; and Setting Forth Detail in Relation Thereto (FIRST READING)

X. GENERAL BUSINESS (This agenda item is reserved for matters that are ready for Board action, and do not fit into other categories, i.e. resolutions, ordinances…)

NONE SCHEDULED

XI. STAFF REPORTS (This agenda item is reserved for specific items from Staff requiring Board direction or just relaying important information.)

NONE SCHEDULED

XII. BOARD OF TRUSTEES REPORTS & APPOINTMENTS (This agenda item is for all Board of Trustees reports, Board & Commission Appointment, and items of information as well as Board discussion items, not listed on the agenda.)

a. BOT Reports

XIII. ADJOURNMENT (The Board's Goal is that all meetings be adjourned by 10:30pm. An agenda check will be conducted at or about 10:00 p.m., and no later than at the end of the first item finished after 10:00 p.m. Items not completed prior to adjournment will generally be taken up at the next regular meeting.)

TOWN OF ERIE
BOARD OF TRUSTEES REGULAR MEETING 1
Tuesday, July 28, 2015
6:30 p.m.
Board Room, Erie Town Hall, 645 Holbrook, Erie, CO 80516

I. CALL MEETING TO ORDER

Mayor Harris called the July 28, 2015 Regular Meeting of the Board of Trustees to order at 6:30 p.m.

II. PLEDGE OF ALLEGIANCE AND ROLL CALL

Roll Call:	Trustee Carroll	Present
	Trustee Schutt	Present
	Mayor Pro Tem Gruber	Present
	Trustee Moore	Present
	Trustee Charles	Absent/Excused
	Trustee Woog	Absent/Excused
	Mayor Harris	Present

III. APPROVAL OF THE AGENDA

Action: Trustee Moore moved to approve the July 28, 2015 Town of Erie Board of Trustees Meeting Agenda with the amendment of moving item c. from IV. Consent to item d. VIII Resolutions; the motion was seconded by Trustee Schutt. The motion carried with all present voting in favor thereof.

IV. CONSENT AGENDA

a. Approval of the July 14, 2015 Meeting Minutes

b. Resolution 15-94; A Resolution Authorizing the Payment to Boulder County for Emergency Dispatch Services Provided to the Erie Police Department

c. Resolution 15-97; A Resolution Approving Access Easement and Additional Cost for Walkway Adjacent to Blue Sky Condominiums in Vista Ridge

d. Resolution 15-93; A Resolution Authorizing the Engagement of Summit Bank & Trust for Banking Services

Action: Mayor Pro Tem Gruber moved to approve the July 28, 2015 Consent Agenda as amended; the motion was seconded by Trustee Schutt. The motion carried with the following Roll Call vote:

Trustee Schutt	Yes
Trustee Carroll	Yes
Trustee Moore	Yes
Mayor Pro Tem Gruber	Yes
Mayor Harris	Yes

V. PUBLIC COMMENT

Doug Geiling, 864 Pope Drive, Erie, CO. expressed concerns about the Town of Erie Police policy on dogs at large.
Daniel Hoback, 826 Shuttleworth, Erie, CO. expressed concerns about the proposed North Water Reclamation Facility Capacity Upgrade Project.
Joe Carnival, 1656 Bain Dr., Erie, CO. also expressed concerns about the NWRF Capacity Upgrade Project.
Helene Jewett, 500 Briggs St., Erie, CO. provided the Board with an update from the Erie Economic Development Council.

VI. PROCLAMATIONS AND PRESENTATIONS

a. Town of Erie 2015 Citizen Survey Presentation: Damema Mann, Senior Survey Associate –

The results of the 2015 Town of Erie Community Survey were presented to the Board of Trustees. This scientific, statistically valid survey was conducted to provide residents an opportunity to rate their satisfaction with the quality of life in the Town, the community's amenities and satisfaction with local government. The survey was administered by the National Research Center (NRC) and mailed to 3,000 randomly selected households within the Town. A total of 1,191 completed surveys were obtained, giving a high response rate of 41%. The margin of error for this survey is no greater than plus or minus three percentage points around any given percent reported for the entire sample. With this margin of error, you may conclude that when 60% of survey respondents report that a particular service is "excellent" or "good," somewhere between 57%-63% of all Erie residents are likely to feel that way. The Citizen Survey reports that more than four in five residents rate their overall quality of life as excellent or good and that 90% rate Erie as an excellent or good place to live! Furthermore, almost all residents rate their neighborhoods as excellent or good. 93% rate Erie as an excellent or good place to raise children – a rating higher than in comparison to communities nationwide. At least three in five residents give excellent or good ratings to the overall image/reputation of Erie; Erie as a place to retire; the overall appearance of Erie; Erie's overall natural environment; Erie's air quality and the cleanliness of Erie – ratings for all of these characteristics increased from 2013 to 2015. Almost all residents feel safe in their neighborhoods and give high ratings to the overall feeling of safety throughout Erie – ratings higher than in comparison communities nationwide. All Safety services, including police, fire, ambulance and emergency preparedness are rated positively by a majority of respondents. Ratings for the availability of paths and walking trails, travel by bicycle, travel by car, public parking and traffic flow are all higher than the national benchmarks. Four in five residents are likely to recommend Erie as a place to live to someone who asks and plan to remain in Erie for the next five years. In terms of public trust, a majority of residents give positive ratings to the value of services for taxes paid; welcoming citizen involvement; being honest and treating all residents fairly. 80% rate the overall customer service provided by Town employees as excellent or good. Additionally, the Town remains a trusted source for information. The most popular source of information is the Town's website (93%) followed by Erie Edition newsletter and flyers mailed with utility bills (84%). With the current moratorium on retail marijuana businesses in Erie set to expire on December 31, 2015, the Board of Trustees wanted to know how much residents would support or oppose potential future types of retail marijuana businesses and potential locations. A majority of residents (62% to 67%) strongly oppose all types of retail marijuana businesses listed and a majority (60% to 74%) opposed all locations listed. Almost all residents (84%) opposed marijuana businesses in any residential neighborhood.

VII. LAND DEVELOPMENT RESOLUTIONS AND ORDINANCES

a. Ordinance 15-2015 An Ordinance of the Town of Erie, Colorado, Regarding the Rezoning of the Wise Farms Property, Adopting Certain Findings of Fact and Conclusions Unfavorable to the Planned Unit Development Overlay Rezoning; and, Setting Forth Details in Relation Thereto

LAND DEVELOPMENT RESOLUTIONS AND ORDINANCES (continued)

On Tuesday, May 26, 2015 and June 23, 2015 the Board of Trustees considered Ordinance 15-2015 for the Rezoning of the Wise Farms property. During the June 23, 2015 Board of Trustees meeting, staff was directed to draft an ordinance denying the Rezoning of the Wise Farms property. Staff has provided revised Ordinance 15-2015 denying the proposed the Rezoning of the Wise Farms property for not being in compliance with three of the Approval Criteria in Municipal Code Title 10, Section 7.5.B.9.

Action: Trustee Carroll was not present at the second reading of the Public Hearing for the approval of this item and recused herself from the vote to deny. Trustee Moore moved to approve Ordinance 15-2015 Regarding Rezoning and Adopting Certain Findings of Face and Conclusions Unfavorable to the Planned Unit Development Overlay Rezoning of the Wise Farms Property; the motion was seconded by Trustee Schutt. The motion carried with a three (3) for and one (1) against vote, with Mayor Pro Tem Gruber voting no.

b. Ordinance 16-2015 An Ordinance Of The Town Of Erie, Colorado, Regarding The Wise Farms PUD Zoning Map Overlay Rezoning, Adopting Certain Findings of Fact and Conclusions Unfavorable to the Planned Unit Development Overlay Rezoning; and, Setting Forth Details In Relation Thereto

On Tuesday, May 26, 2015 and June 23, 2015 the Board of Trustees considered Ordinance 16-2015 for the Wise Farms PUD Zoning Map Overlay Rezoning. During the June 23, 2015 Board of Trustees meeting, staff was directed to draft an ordinance denying the Rezoning of the Wise Farms property. Staff has provided revised Ordinance 16-2015 denying the proposed the Wise Farms PUD Zoning Map Overlay Rezoning for not being in compliance with four of the Approval Criteria in Municipal Code Title 10, Section 7.6.D.9.

Action: Trustee Carroll was not present at the second reading of the Public Hearing for the approval of this item and recused herself from the vote to deny. Trustee Moore moved to approve Ordinance 16-2015 Regarding PUD Zoning Map Overlay Rezoning Adopting Certain Findings of Fact and Conclusions Unfavorable to the Planned Unit Development Overlay Rezoning of the Wise Farms Property; the motion was seconded by Trustee Schutt. The motion carried with a three (3) for and one (1) against vote, with Mayor Pro Tem Gruber voting no.

c. Resolution 15-66 A Resolution Making Certain Findings of Fact And Conclusions Unfavorable To The Wise Farms Preliminary Plat; And Setting Forth Details In Relation Thereto.

On Tuesday, May 26, 2015 and June 23, 2015 the Board of Trustees considered Resolution No. 15-66 for the Wise Farms Preliminary Plat. During the June 23, 2015 Board of Trustees meeting, staff was directed to draft a resolution denying the Wise Farms Preliminary Plat. Staff has provided revised Resolution No. 15-66 denying the proposed the Wise Farms Preliminary Plat for not being in compliance with seven of the Approval Criteria in Municipal Code Title 10, Section 7.7 C.10

Action: Trustee Carroll was not present at the second reading of the Public Hearing for the approval of this item and recused herself from the vote to deny. Trustee Moore moved to approve Resolution 15-66 Making Certain Findings of Fact and Conclusions Unfavorable to the Preliminary Plat of the Wise Farms Property; the motion was seconded by Trustee Schutt. The motion carried with a three (3) for and one (1) against vote, with Mayor Pro Tem Gruber voting no.

VIII. RESOLUTIONS

PUBLIC HEARING

a. Resolution 15-92; A Resolution By The Board Of Trustees Of The Town Of Erie, Colorado Approving The Vista Ridge Filing No. 14 Minor Subdivision Plat With Conditions; Accepting Dedications As Shown On The Minor Subdivision Plat Filing No. 14 Minor Subdivision Plat; Authorizing The Appropriate Town Official To Sign The Vista Ridge Filing No. 14 Development and Incentive Agreement; Authorizing The Appropriate Town Official To Sign The Vista Ridge Filing No. 14 Avigation Easement Agreement; Adopting Certain Findings Of Fact And Conclusions Favorable To The Approval, Acceptance Of The Dedications and the Development Agreement

Staff is requesting continuance of the Public Hearing for the Vista Ridge Filing No. 14 Minor Subdivision Plat application until the August 11, 2015 Board of Trustees meeting.

Action: Mayor Harris opened the Public Hearing for Resolution 15-92 at 7:15 pm. Trustee Schutt moved to continue the Public Hearing for Resolution 15-92 to the August 11, 2015 regular meeting of the Board of Trustee; the motion was seconded by Trustee Carroll. The motion carried with all present voting in favor thereof.

b. Resolution 15-95; A Resolution Awarding a Design Build Contract for the North Water Reclamation Facility Capacity Improvement

The Wastewater Capital Improvement budget contains funds for capacity improvements to the hydraulic, organic, and biosolids handling equipment at the North Water Reclamation Facility (NWRF). The NWRF was completed in 2011. The Colorado Department of Health and Environment (CDPH&E) permitted the NWRF to receive 1.5 million gallons of water a day (hydraulic capacity), and 3,223 pounds of organic solids a day (organic capacity). The Biosolids handling equipment was sized to handle the permitted organic capacity. The NWRF has exceeded organic capacity in every month of 2015. The CDPH&E require wastewater facilities to increase capacity when they have exceeded 95% of either hydraulic or organic capacity. The Board of Trustees awarded a contract to Frachetti Engineering, Inc, at the November 11, 2013 Board meeting to study options for increasing wastewater capacity. The study was complete in November of 2014 and the results were presented to the Board of Trustees at the March 24, 2015 meeting. The study indicated that the most economically feasible option for the Town was to increase capacity at the NWRF. Town staff issued a Request for Qualifications for the NWRF Capacity Improvements Project on March 25, 2015. Six design/build teams submitted qualifications on April 15, 2015. Staff evaluated the qualifications and issued a Request for Proposal to three of the teams on May 19, 2015. Proposals were received on July 7, 2015. The request for proposal allowed the design/build teams to propose innovative design and construction approaches to the project. Staff evaluated the proposals by proposers experience, proposers innovative design approach, and by price. The improvements recommended in the Frachetti Engineering report were the basis of the Lump Sum Base Bid for the Design-Build Request for Proposal. Based on staff experience, in addition to the recommendations in the report, a further analysis is needed for biosolids capacity upgrades. The design/build teams were asked to provide an allowance for an alternative analysis to determine the system that would best fit the Town's needs and an allowance for several options for biosolids thickening. Staff is recommended awarding the design/build contract for the NWRF Capacity Improvements project to BMCI, a joint venture of Burns and McDonnell Engineering and Moltz Construction in the amount of $3,234,582.00 BMCI's proposal had the lowest base bid and the lowest alternative analysis bid for the biosolids capacity systems upgrades. The BMCI design and construction approach was innovative as it provided for short term needs while looking at the long term plans for the facility. They proposed keeping the existing process system. Their proposal will save the Town both operational and capital costs, without limiting the capacity of the

RESOLUTIONS (continued)

NWRF. It will also not require a reconfiguration of the process for loading beyond this expansion. Burns and McDonnell originally designed the NWRF. The Town has used Burns and McDonnell for many successful projects. Moltz Construction recently constructed the 4 MG potable water tank for the Town which was a successful project. The base bid lump sum amount will cover the hydraulic and organic capacity improvements.

Action: Trustee Moore moved to approve Resolution 15-95; the motion was seconded by Mayor Pro Tem Gruber. The motion carried with the following Roll Call vote:

Trustee Carroll	Yes
Mayor Pro Tem Gruber	Yes
Trustees Moore	Yes
Trustee Schutt	Yes
Mayor Harris	Yes

c. Resolution 15-99; A Resolution Authorizing The Town Of Erie, Colorado, To Enter Into An Intergovernmental Agreement Between The Town Of Erie And The Erie Farm Metropolitan District Ensuring Compliance With The Approved Service Plan And The Erie Municipal Code

The Town previously approved the Amended and Restated Service Plan (Plan) for the Erie Farm Metropolitan District (District) in March 2013. The District encompasses approximately 158 acres of land located at the northwest corner of Arapahoe Road and County Line Road. In accordance with the approved Plan and Title 9-4-6 of the Town of Erie Municipal Code, the Town requires the District to enter into an Intergovernmental Agreement (IGA) with the Town ensuring compliance with approved Plan and the Erie Municipal Code.

Action: Trustee Schutt moved to approve Resolution 15-99; the motion was seconded by Mayor Pro Tem Gruber. The motion carried with a four (4) for and one (1) against vote, with Trustee Carroll voting no.

d. Resolution 15-96; A Resolution Approving an Agreement with CDG for Re-Use Waterline Reimbursement

The Town recently completed an update to the Non-Potable Water Master Plan. This plan outlines improvements needed to provide non-potable water for irrigation use for future development. The Town has constructed a non-potable pump station at the North Water Reclamation Facility and a raw waterline that currently terminates at the old South Water Reclamation Facility. The Daybreak Metropolitan District Development Agreement No. 1 dated May 3, 2013, requires the Developer to construct an 8-inch raw waterline from the terminus of the existing 16-inch raw waterline near the South Water Reclamation Facility into the Colliers Hill Development to serve non-potable water for their use. The Town's current Non-Potable Water Master Plan identifies that the raw waterline should be 16-inch from the terminus of the existing line south along Coal Creek, and the raw waterline going east into Colliers Hill should be 12-inch. The upsizing from the 8-inch required to serve Colliers Hill to the 16-inch and 12-inch lines is desired to accommodate future growth. The funding for this upsizing is in the Town's Capital Improvement Project (CIP) Water fund. Town Staff and the Town Attorney have negotiated a Raw Water Line Agreement with Community Development Group of Erie to design and construct an upsized Raw Water Line to be consistent with the current Non-Potable Water Master Plan. This upsizing is eligible for reimbursement. This agreement before you tonight defines the roles and responsibilities of each party for funding this raw water line. Once the design is complete and the project is bid, the approval to award the construction contract will be brought back before the Board of Trustees for final approval. Staff is recommending approving Resolution 15-96 and authorizing the Mayor to sign the Raw Water Line Agreement.

RESOLUTIONS (continued)

Action: Trustee Moore moved to approve Resolution 15-96; the motion was seconded by Trustee Schutt. The motion carried with all present voting in favor thereof.

IX. GENERAL BUSINESS

a. School Traffic Safety Problem Solving Project Update

During the course of the school year, residents have noticed and voiced concerns regarding traffic flow and pedestrian safety at the multiple schools in Erie during the hours of student drop-off in the mornings and pick-up in the afternoon. Some of the issues that have been observed include parking violations, students crossing busy roads, traffic congestion for long periods of time while cars are unable to complete a turn at an intersection or into a school parking lot, and speeding. Both the Public Works Department and the Police Department have investigated traffic issues at the different schools in Erie. Previously, traffic concerns had been monitored at a few of the schools for any potential solutions. In 2012 Public Works performed a signal warrant analysis at the intersection of County Line Road and Austin Avenue near Aspen Ridge Preparatory School. Although a signal was not warranted at this intersection at that time, Public Works installed a crosswalk across County Line Road and added the appropriate signage and additional paving. A new signal warrant analysis is scheduled to occur later this year. County Line Road is currently being designed for expansion and will include the intersection of County Line Road and Austin Avenue. If a signal is warranted, the proposed 2016 budget will include the cost of a signal along with the above mention expansion. In November of 2013, the Public Works Department hired Fox Tuttle Group to perform an analysis of traffic congestion concerns around Black Rock Elementary School. At that time, it was found the school was not designed to accommodate the amount of vehicle traffic from parents driving their children to school rather than allowing them to walk or bike from the neighborhoods. Staff members from the Public Works Department and the Police Department met with representatives from St. Vrain School District and the Principal at Black Rock to discuss options that the school could perform on their site. In January 2014, Officer Turner with the Erie Police Department conducted a survey of traffic issues surrounding Erie Middle School. He submitted proposals to the school for improvements along Cheeseman Street and re-structuring of the drop-off lane at the school. Initially, Officer Turner did not receive a response from the school in regards to his suggestions. However, in the Fall of 2014, Officer Turner learned the Erie Middle School had their teachers quit parking in the "kiss and go lane" on the north end of the school, making it a bit easier for parents and guest to park as necessary or to proceed through the lane. In 2014, the Police Department began monitoring each of the school zones during the morning drop-off hours and during the afternoon pick-up hours. During these times, officers watched for any traffic violations as well as any other issues that might hinder the general flow of traffic in the area during these times. Their observations and any enforcement actions taken were documented. Additional research was conducted by the Police Department via two websites, IACP.net and POPCenter.org to obtain information regarding similar issues in other municipalities. Studies and action plans were assessed for relevance to this issue and a few common suggestions were found in those studies. The common suggested courses of action included the following:

1) Map out safe walk/bike routes and encourage more students to walk to school. Also, parents could implement a "walking school bus program" to help escort groups of kids to the school.
2) Educate parents regarding traffic laws and best practices with regards to parking and drop-off areas of the schools.
3) Establish/expand curbing or parking areas for drop-off and pick-up
4) Re-route traffic such as with one-way signs or no left turn signs

At the Board of Trustees Meeting on January 27, 2015, Staff presented a proposed plan to the Board of Trustees. Since that time, Staff has had numerous meetings with the St. Vrain School District and the Principals of each school. The plan presented to the Board of Trustees in January has been modified slightly with the involvement of the school district.

GENERAL BUSINESS (continued)

The following is a general description of the plan at each school site:

Erie High School
- Post School Zone on WCR 5 per the Manual of Uniform Traffic Control Devices (MUTCD)

Aspen Ridge Preparatory
- Add flashing crosswalk signs on County Line Road
- Allow Parking on east side of Lloyd Lane
- Add signage at school entrance to only allow right in and right out traffic during school hours

Red Hawk Elementary
- Restripe Jasper Road to allow parking on west side
- Add No Stopping Signs on east side of Jasper Road
- Add Crosswalk at Stanley Drive and Meller St.

Erie Elementary
- Add No Stopping Signs along east side of County Line Road
- Add additional No Left Turn Sign on west side of County Line Road
- Add Crosswalk across Jay Road at County Line Road

Erie Middle School
- Add two crosswalks across Main Street at Cheesman Street and Wells Street
- Add Striping for Turn Lane into school drop off area
- Add No Stopping Signs adjacent to proposed turn lane and between drop off entrances

Black Rock Elementary
- Continue to work with School District on Parent Education

Staff recommends that the improvements listed above be coordinated with the school district and installed before the beginning of school. The project will cost approximately $23,000 and will be paid for from savings within other transportation capital project budgets that having savings left in their accounts.

Action: Trustee Carroll moved to approve expenditures up to $23,000.00 to cover the project costs; the motion was seconded by Mayor Pro Tem Gruber. The motion carried with the following Roll Call vote:

Trustee Schutt	Yes
Trustee Moore	Yes
Mayor Pro Tem Gruber	Yes
Trustee Carroll	Yes
Mayor Harris	Yes

b. Motion to Request Party Status with North West Colorado Council of Governments for Colorado Oil & Gas Conservation Commission Rule Making Process Participation

At the July 14, 2014 Regular Meeting, General Board consensus was to place an item on General Business for a motion to allow the Town to request for party status with the Northwest Colorado Council of Governments (headwaters towns and counties). This would enable the Town to participate in the COGCC rulemaking process. NWCCOG regularly has other local governments outside the COG region who share a common interest in the rule at hand join in the request for party status and participate together in the rulemaking proceedings.

GENERAL BUSINESS (continued)

Action: Mayor Pro Tem Gruber moved to request party status with North West Colorado Council of Governments for Colorado Oil & Gas Conservation Commission Rule Making Process Participation; the motion was seconded by Trustee Carroll. The motion carried with all present voting in favor thereof.

X. BOARD OF TRUSTEES REPORTS

Mayor Pro Tem Gruber reported on recent meetings he attended held by COGCC and NISP.
Trustee Carroll reported that there were two applications being reviewed to fill the Tree Board vacancies.
Trustee Schutt announced the upcoming Air Fair on August 8th.
Trustee Moore thanked staff for completing an agreement with the Blue Sky Condominium HOA for the Highway 7 sidewalk extension.
Mayor Harris thanked Mayor Pro Tem Gruber and Trustee Harris for representing the Board in negotiations for an Operating Agreement with EnCana.

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XI. ADJOURNMENT

Action: Trustee Schutt moved to adjourn the July 28, 2015 Regular Meeting of the Town of Erie Board of Trustees; the motion was seconded by Mayor Pro Tem Gruber. The motion carried with all present voting in favor thereof.

Action: Mayor Harris adjourned the July 28, 2015 Regular Meeting of the Town of Erie Board of Trustees at 8:37 p.m.

Respectfully Submitted,

_____ _____

Nancy J. Parker, CMC, Town Clerk Tina Harris, Mayor

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**RESOLUTION** Consideration of Resolution 15-105: A Resolution Approving the Drought Management Plan; And, Setting Forth Details in Relation Thereto.
DEPARTMENT:	Public Works
PRESENTER/PREPARER:	**Russell Pennington, Deputy Director of Public Works** **Wendi Palmer, Civil Engineer**

FISCAL INFORMATION:	Cost as Recommended:	**$ 0**
	Balance Available:	$ 0
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☒ No

STAFF RECOMMENDATION:	**Approve Resolution 15-105, approving the Drought Management Plan.**

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

A grant from the Colorado Water Conservation Board for the Preparation of a Drought Management Plan was accepted at the June 25, 2013 Board of Trustee meeting. Also at that meeting AMEC Earth and Environmental was awarded the contract to assist in preparation of the Drought Management Plan.

A drought mitigation plan can be defined as a strategy or combination of strategies for temporary supply management and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. The main objective is to preserve essential public services and minimize the adverse effects of a water supply emergency on public health and safety, economic activity, environmental resources, and individual lifestyles. Most important in developing a drought plan is to determine the actions and procedures for responding to a drought related water supply emergency before an actual water shortage emergency occurs. As the Town of Erie grows, it is important to have plans and procedures in place, ensuring we are prepared for drought conditions.

One of the grant requirements was to publicly advertise the Draft Drought Management Plan. The Plan was advertise for 60 days beginning on June 3, 2015, and was posted on the Town website. Comments on the plan were due by August 2, 2015. The Town did not receive any comments on the plan.

After the Board of Trustees approval, the Plan and proof of advertising for public comment will be submitted to the Colorado Water Conservation Board for their final review. After receiving comments from the Colorado Water Conservation Board, the Drought Management Plan will be finalized.

Staff Review:

_____ **Town Attorney**
_____ **Town Clerk**
_____ **Community Development Director**
_____ **Finance Director**
_____ **Police Chief**
GWB **Director of Public Works**

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:
a. Resolution 15-105
b. Draft Drought Management Plan

RESOLUTION NO. 15-105

A RESOLUTION OF THE TOWN OF ERIE, COLORADO APPROVING A DROUGHT MANAGEMENT PLAN; AND SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, on June 25, 2013 the Town of Erie Board of Trustees accepted a grant from the Colorado Water conservation Board for the Preparation of a Drought Management Plan; and,

WHEREAS, on June 25, 2013 AMEC Earth Environmental was awarded the contract to assist in preparation of the Drought Management Plan and has completed a Draft Plan for review; and,

WHEREAS, the Board of Trustees has determined it to be in the best interest of the Town and for the benefit of the public health, safety and welfare of the residents of the Town of Erie for the Town of Erie to adopt the *Drought Management Plan*.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. The adoption of the *Town of Erie Drought Management Plan* will benefit the public health, safety and welfare of the residents of the Town of Erie. The *Town of Erie Drought Management Plan*:

a. Develops a drought plan to determine the actions and procedures for responding to a drought related water supply emergency before an actual water shortage emergency occurs.;

b. Defines a strategy for temporary supply management and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies.;

Section 2. Conclusions and Order Approving and Adopting the *Town of Erie Drought Management Plan*

1. The *Town of Erie Drought Management Plan* is hereby approved and adopted: See Exhibit "A," attached hereto and incorporated herein by this reference.

ADOPTED AND APPROVED THIS 11TH DAY OF AUGUST, 2015, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
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Draft Drought Management Plan

Town of Erie

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Prepared for:

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Executive Summary

The Town of Erie (Erie) is situated north of Denver in Weld and Boulder counties. Erie provides water and wastewater services to over 7,300 households and more than 130 commercial and municipal users. Erie's 2015 population of approximately 22,000 represents a 47% increase within the past ten years. The Town of Erie Comprehensive Plan, updated in 2005, includes a 2025 population forecast of 40,680. Erie has a water conservation program and implements a variety of mitigation practices to enhance the Town's ability to meet customer needs in periods of drought. The Town also historically implemented a three-tiered water restrictions program, which was initiated following the 2002 drought. This Drought Management Plan (Plan) better prepares Erie for drought by providing a more integrated and comprehensive approach to addressing drought as Erie continues to grow and the competition for water supplies on the Front Range increases.

Erie uses a combination of water sources to meet its potable and non-potable water needs including Colorado Big Thompson (CBT), Windy Gap, reservoirs and ditch water. Erie's non-potable supply is primarily comprised of untreated ditch water and reclaimed water. This results in a variety of water "types." For purposes of this plan, the following types of water are defined as follows:

- Ditch water – Erie's ditch water supplies that are untreated and used for irrigation of parks and other non-potable purposes.
- Treated water – Water that has been treated at Erie's water treatment plant and used for potable and non-potable purposes.
- Reuse water – Reclaimed water that has been treated at Erie's water reclamation facilities and used for non-potable purposes. This water may be reused multiple times and is limited to Erie's Windy Gap shares discussed in further detail below.
- Raw water – Erie's potable water supplies prior to treatment at the water treatment plant.
- First-use water – Erie's treated water and untreated ditch and reservoir water that is used for potable and non-potable purposes for the first time. This includes all of Erie's water supply sources with exception to reuse water.

Plan Objectives and Operating Principles

This Plan was developed through a stakeholder-driven process that included a Drought Committee comprised of representatives from Erie's Public Works Department and Administration. Two Drought Committee meetings were held during the Plan development and the public and Board of Trustees also had an opportunity to provide feedback prior to the Plan's formal adoption on X date.

The Plan objectives are:

- To enhance Erie's ability to plan for droughts before they occur
- To identify and properly determine the severity of a drought based on Erie's potential shortage of supply

The following operating principles were developed to assist with the development of the Plan and serve as a decision-making guidance tool when implementing the drought response program.

- Drought response actions should be implemented in a manner that reflects the water use priorities in Table ES-1, with the highest priority being health and safety.

- Economic development is important to Erie and providing adequate drought protection for current and future residents is needed to provide a healthy sustainable community for future generations.
- When possible, efforts should be taken to preserve the environmental and recreational value of the surrounding lands, which are important to the values and livelihood of Erie residents.
- Where possible, efforts should be made to allocate the costs and impacts associated with water use restrictions among all customers in an equitable manner.
- Effective coordination among Erie staff is vital to the success of this Plan. Exceptions to this Plan may be necessary but must be communicated clearly to all Erie staff.

Table ES-1 Water Use Priorities

Priority	Customer Use	Description
1	Health and safety	Indoor use for essential services (i.e. hospitals, schools, etc.); indoor residential, fire fighting
2	Indoor commercial and municipal buildings	Indoor commercial (businesses, schools) and indoor municipal buildings (Erie's recreation center)
3	Priority irrigation, municipal services and construction water	Mode 1 parks, outdoor commercial business, car washing, outdoor residential, construction water, hydrant flushing, outdoor municipal buildings
4	Less priority irrigation	Mode 2 and 3 parks; golf courses, Home Owners Association (HOA) open space (neighborhood tot lots), facilities

Mode 1 parks – Community parks (i.e. softball field) and parks irrigated with non-potable water
Mode 2 parks – Neighborhood parks
Mode 3 parks – Public facilities
Note: Colorado National Golf Course uses a combination of ditch water and reuse water which may be subject to water restrictions based on the availability of supplies.

Drought Mitigation

Erie currently implements the mitigation measures listed below. Erie also plans to evaluate the feasibility and benefits associated with a variety of additional measures described in Section 6.1.

- New supplies – Erie continues to acquire additional water supplies. These acquisitions are not only necessary to meet the growing demands of the community, but also to ensure that there are sufficient supplies during dry periods.
- Demand management (water conservation) – Erie implements a variety of water conservation activities that serve the dual purpose of conserving water in the long-term while also maintaining lower water demands in drought years.
- CBT carryover – Erie optimizes its annual 20% carryover of CBT water. This water may be used as a drought reserve in the following year.
- Reuse water – Erie plans to continue to expand its use of non-potable reuse water for irrigation, which increases the availability of Erie's first use water for other purposes.

Drought Stages and Declaration

Though the pace of development since the economic downturn (2008-2012) would suggest Erie will fall short of the 40,680 population forecasted in the Town's 2005 Comprehensive Plan, both residential and commercial development will continue. As a result, Erie will see an increase in customer water demand and consequently the Town is planning to acquire additional water supplies to meet its growing needs. Given this trend, a drought trigger index (drought index) was

developed to characterize the severity of a drought within the context of both projected water supplies and demands. The drought index represents the ratio of Erie's projected water supply to demand. A detailed description of this drought index is provided in Section 5.1.

Table ES-2 presents four stages of drought severity with the corresponding drought index and response target. These four stages in increasing order of drought intensity are: voluntary, watch, severe and emergency. The targeted water savings increase with each stage, with a targeted 5% water savings for the voluntary drought stage and a 60% water savings target under the emergency drought stage. In years when Erie is in a declared drought stage, the targeted amount of water savings to be achieved (in acre-feet or thousand gallons) should be determined by multiplying Erie's "baseline demand" by the designated percentage response target defined in Table 11. The baseline demand should be determined by multiplying Erie's current population by Erie's average per capita water use (gpcd) of first-use water for the previous five years.

Table ES-2 Drought Stages, Trigger Point Guidelines and Response Targets

Drought Stage	Drought Trigger Index	Response Target (Targeted Water Savings)
Voluntary	1.0 to 0.95	5%
Watch	0.94 to 0.8	20%
Severe	0.79 to 0.6	40%
Emergency	0.59 to 0.4	60%

It is important to note that the water saving targets focus primarily on first-use water. Erie's non-potable supply is based primarily on reuse water generated from indoor uses and ditch water. So long as indoor uses are not curtailed, the Town should have reuse water for irrigation of parks, golf courses and open space. However, reuse water will also be carefully monitored during droughts and if available, could be used to preserve key landscape features under more severe drought conditions. The Town will inform the public of irrigation using reuse water. This may be important under mandatory restrictions when the public is required to cease irrigation, yet reuse water may still be applied to key landscape features in Town parks.

Erie will monitor the Town's drought index on a regular basis. Monitoring will be most intense from late February until mid-May when the majority of mountain snowpack has accumulated and Northern Colorado Water Conservancy District (NCWCD) has made its final CBT quota announcement. However, during dry years monitoring will also extend into the irrigation season and, if conditions remain dry, will extend past the irrigation season to determine whether drought response is needed in the winter.

While the drought index will be one of the main drought indicators in determining the appropriate drought stage, Erie will also monitor the US Drought Monitor, precipitation and soil moisture in the service area, near-term projected customer water demands, long-term weather forecasts and actions that other water providers are taking in the regions. These drought indicators will provide additional insight into which specific drought stage and corresponding level of drought response is most appropriate for Erie.

Erie's Public Works Department is responsible for monitoring drought conditions and developing recommendations on whether a drought should be declared and at what stage. These recommendations will be presented to the Board of Trustees, which is responsible for making the final decision. The Board of Trustees will have an opportunity to discuss the recommendations, ask questions and ultimately decide whether the recommended drought stage should be officially declared. The Town Administrator's Office, through the Communications & Marketing Division is responsible for conveying the drought messages to Erie's customers.

Staged Drought Response Program

Erie's staged drought response program provides a list of measures to implement in accordance to each of the drought stages. The measures specifically focus on first-use supplies. The intensity of the response escalates with the increase in drought severity for each stage. The drought response program is summarized below.

- Volunteer drought stage – Drought index of 1.0 to 0.95. Occurs when the projected supplies are just sufficient to meet Erie's customer demands and to also store 20% of Erie's CBT allotment in the carryover program. A 5% water savings target is encouraged throughout Erie's service area to provide an additional buffer in case Erie's supplies are lower than projected or demands are higher than projected. This voluntary drought stage entails voluntary water use reductions and other actions to lower water demands.
- Watch drought stage – Drought index of 0.94 to 0.8. Requires mandatory water restrictions for first-use water and other actions to lower water use with a targeted water savings of 20% throughout Erie's service area. While customers will be required to lower outdoor water use and conserve, large-scale impacts to landscaping are not anticipated at this stage.
- Severe drought stage – Drought index of 0.79 to 0.6. Calls for a water savings goal of 40% and prohibits the irrigation of all turf irrigated with first-use water except for high priority community parks (i.e. sports fields) and golf course tees. This will result in some loss of turf and other landscaping; however, trees may be watered to ensure survival. Available reuse water may be used to support key landscape features.
- Emergency drought stage – Drought index of 0.59 to 0.4. Calls for a targeted water savings of 60%. All outdoor first-use water use is prohibited except for fire-fighting. If available, reuse water may be used to ensure the survival of trees in Town parks. The use of construction water will be reviewed by the Board of Trustees. All landscaping, including trees, will be negatively impacted. The main objective at this stage is to provide water for the essential indoor needs while indoor water conservation will be strongly encouraged.

The specific drought response measures for first-use water by each drought stage are outlined in Table ES-3.

Table ES-3 Summary of the Staged Drought Response Program

Response Measures	Voluntary Drought Index: 1 to 0.95 Water savings goal: 5%	Watch Drought Index: 0.94 to 0.8 Water savings goal: 20%	Severe Drought Index: 0.79 to 0.6 Water savings goal: 40%	Emergency Drought Index: 0.59 to 0.4 Water savings goal: 60%
Supply-Side Measures				
Technical and financial assistance		Identify technical and financial assistance opportunities	Identify technical and financial assistance opportunities	Identify technical and financial assistance opportunities
Acquire additional short-term water supplies during drought periods		Evaluate short-term water supply options	Lease water from farmers and/or other water providers	Lease water from farmers and/or other water providers
Additional supplies for the following year in preparation for a multi-year drought			Evaluate purchasing agricultural leasing options for the following year	Purchase agricultural leasing options for the following year
CBT carryover	Maximize 20% CBT carryover	Maximize 20% CBT carryover	Maximize 20% CBT carryover	Maximize 20% CBT carryover
Optimize local storage in preparation for a multi-year drought		Maximize storage in local reservoirs following the irrigation season. This may be accomplished through demand reductions.		
Reuse water			Consider using reuse water to preserve key landscape features	If available, consider using reuse water to preserve key landscape features
Demand-Side Measures				
TOWN: Mode 1 Parks*	Voluntary Target 5% savings	Mandatory Target 20% savings	Mandatory Target 50% savings	Watering prohibited Exception: may consider watering of trees to maintain survival with reuse water
TOWN: Modes 2 and 3 Parks*	Voluntary Target 10% savings	Mandatory Target 30% savings	Watering prohibited Exception: may consider watering of trees to maintain survival with reuse water	Watering prohibited Exception: may consider watering of trees to maintain survival with reuse water
TOWN: Hydrants			Reduce frequency of flushing	Prohibit flushing Only use for emergencies (i.e. put out fire)
TOWN: Washing of fleet vehicles	Voluntary Conservation encouraged	Mandatory Limit once per week	Prohibit washing of fleet vehicles	Prohibit washing of fleet vehicles

Response Measures	Voluntary Drought Index: 1 to 0.95 Water savings goal: 5%	Watch Drought Index: 0.94 to 0.8 Water savings goal: 20%	Severe Drought Index: 0.79 to 0.6 Water savings goal: 40%	Emergency Drought Index: 0.59 to 0.4 Water savings goal: 60%
TOWN: Ornamental fountains in parks and splash pad		Ornamental fountains in parks and splash pad are turned off between 10:00 am to 4:00 pm	Ornamental fountains in parks and splash pad are turned off	Ornamental fountains in parks and splash pad are turned off
TOWN: Street cleaning		Reduce frequency of street cleaning	Limit street cleaning to areas in severe need of cleaning	Eliminate street cleaning
TOWN & COMMERCIAL: Public pools & hot tubs	Voluntary Encourage use of covers & other best management practices	Mandatory Use of covers & other best management practices	Mandatory Use of covers & other best management practices	Filling of all public pools is prohibited
RESIDENTIAL & COMMERCIAL: Outdoor irrigation	Voluntary Conservation encouraged Limit twice per week	Mandatory Limit once per week	Watering prohibited Exception: trees may be hand watered to ensure survival	Watering prohibited All outdoor vegetation
RESIDENTIAL & COMMERCIAL: Street, sidewalk and driveway cleaning and misting devices	Voluntary Limit street & sidewalk cleaning, misting devices & driveway washing	Mandatory Street & sidewalk cleaning, misting devices & driveway washing are prohibited	Mandatory Street & sidewalk cleaning, misting devices & driveway washing are prohibited	Mandatory Street & sidewalk cleaning, misting devices & driveway washing are prohibited
RESIDENTIAL & COMMERCIAL: Rent AMR meters	Automatic Meter Reading (AMR) meters available at Town Hall for customer monitoring of water use	AMR meters available at Town Hall for customer monitoring of water use	AMR meters available at Town Hall for customer monitoring of water use	AMR meters available at Town Hall for customer monitoring of water use
RESIDENTIAL & COMMERCIAL: Increase number of free irrigation audits available	Voluntary Irrigation audits are strongly encouraged	Voluntary Irrigation audits are strongly encouraged	n/a	n/a
RESIDENTIAL: HOA open space	Voluntary Conservation encouraged Limit twice per week	Mandatory Limit once per week	Watering prohibited Exception: trees may be hand watered to ensure survival	Watering prohibited All outdoor vegetation
RESIDENTIAL: Private pools and hot tubs	Voluntary Encourage use of covers & other best management practices	Mandatory Use of covers & other best management practices	Filling of all private pools is prohibited	Filling of all private pools is prohibited

Response Measures	Voluntary Drought Index: 1 to 0.95 Water savings goal: 5%	Watch Drought Index: 0.94 to 0.8 Water savings goal: 20%	Severe Drought Index: 0.79 to 0.6 Water savings goal: 40%	Emergency Drought Index: 0.59 to 0.4 Water savings goal: 60%
COMMERCIAL: Golf courses	Voluntary Conservation encouraged Limit twice per week	Mandatory Limit once per week	Watering prohibited Exception: tees and greens. Trees may be hand watered	Watering prohibited All outdoor vegetation
COMMERCIAL: Car washes without recycling	Voluntary Best management practices encouraged to save water	Mandatory Must meet a standard of 40 gallons or less per vehicle	Mandatory Must meet a standard of 15 gallons or less per vehicle	Operations are prohibited
COMMERCIAL: Car washes with recycled water	Voluntary Best management practices encouraged to save water	Voluntary Best management practices encouraged to save water	Mandatory Town to review facilities to ensure water is being conserved at optimum levels. Modifications to operations may be required.	Operations are prohibited
CONSTRUCTION WATER			Conserve and prevent wasting of construction water	Prohibit/limit use of construction water
ALL CUSTOMERS: Drought surcharge			Consider drought surcharge	Implement drought surcharge
ALL INDOOR USE		Voluntary Public campaign encourages reductions	Voluntary Public campaign encourages reductions	Mandatory Fines/flow restrictors may be applied to abnormally high users

Note: The water saving targets for the Town Parks are higher than the community water savings goals shown in the heading of the table above. The Town of Erie plans to take a leadership role in conserving water during periods of drought, by achieving a higher degree of water savings in its Town Parks relative to the targeted community goal within Erie's service area. The targeted amount of first-use water savings to be achieved (i.e. thousand gallons) for Erie's Parks should be determined by multiplying the Parks' "baseline demand" by the specified targeted savings percentage. The Parks' baseline demand should be determined by multiplying the Parks' average application rate (gal/acre) for the previous five years by the current number of acres irrigated. This should only apply to first-use water for the voluntary, watch and severe drought stages. Reuse water for irrigation should be reduced and included in the Parks' water savings target in the emergency drought stage when reductions in residential indoor water use is required.

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Introduction

Overview of Erie's Water Supply System

The Town of Erie is situated north of Denver in Weld and Boulder counties. Erie provides water and wastewater services to over 7,300 households and more than 130 commercial and municipal users. The planned service area consists of 46 square miles bordered to the east by Interstate 25 and on the west by U.S. Highway 287. The service area extends north of Highway 52, with State Highway 7 serving as its southern boundary. Transbasin and local reservoir and ditch water supplies are treated at one Water Treatment Facility for potable use. Wastewater is treated at the North Water Reclamation Facility (NWRF) and is either stored for non-potable reuse or discharged into Boulder Creek.

Erie's 2015 population of approximately 22,000 represents a 47% increase within the past ten years. The Town of Erie Comprehensive Plan updated in 2005 includes a 2025 population forecast of 40,680. It is projected that Erie will serve over 49,600 people by 2030.[1] According to Erie's 2005 Comprehensive Master Plan,[2] approximately two thirds of Erie's planning area could ultimately be developed for residential and commercial uses with the remainder of the area consisting other regional facilities and open space.

Erie's water supply is comprised of a variety of surface water sources. Erie's original and locally-derived water supplies consist of direct flow and storage rights diverted from South Boulder Creek. Storage rights are diverted into Erie and Thomas reservoirs for potable and non-potable use.

Erie receives the majority of its supply from the Colorado Big Thompson and Windy Gap projects, which originate from the Colorado River Basin. The CBT project consists of 12 reservoirs on the west and east slopes with a total reservoir storage capacity of 720,000 acre-feet, 35 miles of tunnels, 95 miles of canals, 7 hydroelectric power plants and 700 miles of transmission facilities. This project delivers on average more than 200,000 acre-feet of supplemental water to Front Range municipal and agricultural contractors.

The Windy Gap Project includes a diversion dam on the Colorado River, a 445-acre-foot reservoir, a pumping plant, and a six-mile pipeline to Lake Granby. Windy Gap water supplies are pumped and stored in Lake Granby before delivery to municipal water users through CBT's East Slope distribution system.

Return flows derived from Erie's first use of its Windy Gap water are legally reusable and Erie reuses its Windy Gap return flows for outdoor irrigation purposes. First-use and reuse water is stored in a non-potable 1,000 acre-foot reservoir adjacent to the NWRF. Reuse and untreated ditch water may also be stored in a raw water pond adjacent to the Erie Commons development.

Erie also regularly utilizes NCWCD's CBT carryover program. As a standard operational practice, Erie stores the maximum allowable 20% of its annual CBT allotment in CBT project facilities.

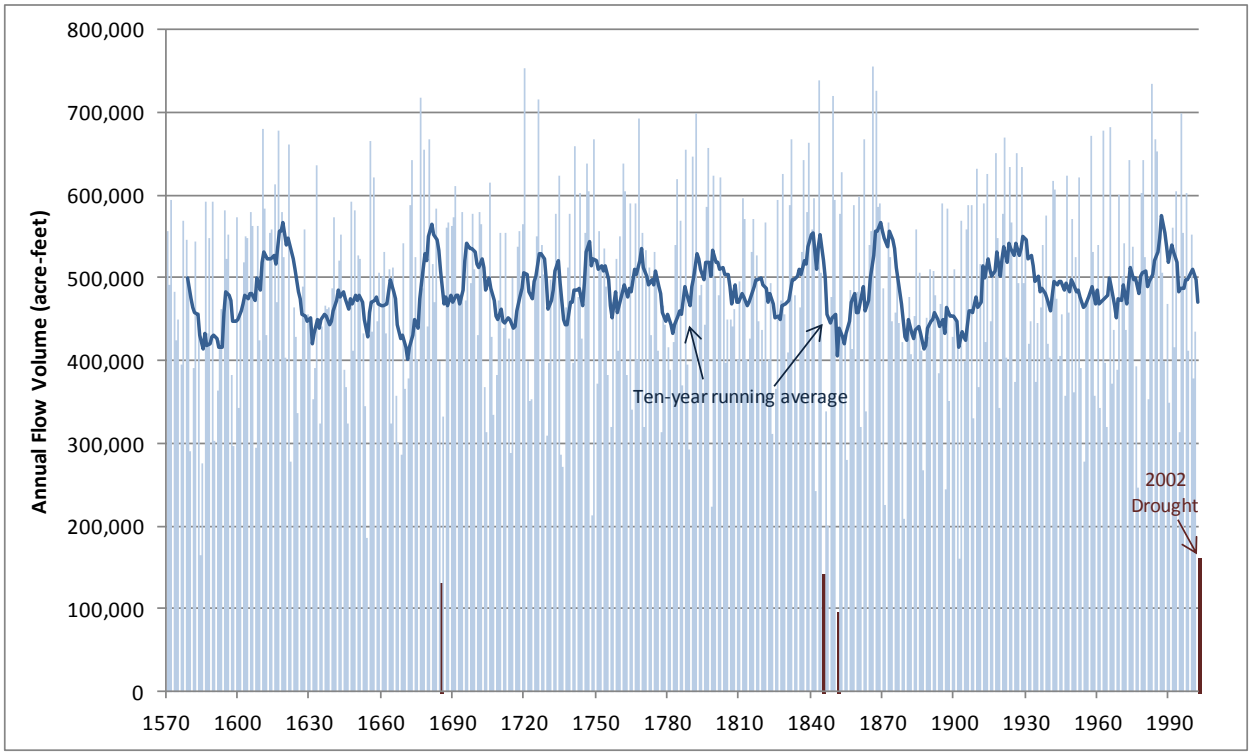
[1] Current and historical estimates are based on the number of Certificates of Occupancy issued by the Town of Erie while future population projections were recently developed in 2012 for Erie's 2013 Wastewater Utility Plan.
[2] The 2005 Comprehensive Master Plan provides goals, guiding principles and policies, and a proposed land use map addressing specific types of future land use development.

This carryover storage serves as a drought reserve if drought conditions occur in the following year.

Drought and Erie's Water Supplies

Drought is defined as "a period of abnormally dry weather sufficiently long enough to cause a serious hydrological imbalance."[3] This occurs when precipitation is below average based on historical weather records and there are not sufficient supplies to satisfy water demand. Drought is a natural phenomenon in Colorado. Figure 1 shows the paleo[4] and historical annual virgin flow volume of the Colorado River at Hot Sulphur Springs. These data indicate that there have been significant natural fluctuations in the Colorado River on an annual basis. Total annual flows have historically been lower than the 2002 drought levels, as denoted by the brown columns in Figure 1. This indicates within the past 440 years there have been droughts worse than the 2002 drought.

Figure 1 Virgin Annual Flow Volume at Hot Sulphur Springs



Erie defines drought within the context of its system as periods when there is a lack of precipitation and consequently there is an insufficiency in available water supplies to meet customer demand. The magnitude of water shortage depends on the severity and duration of the drought. Multi-year

[3] Source: Glossary of Meteorology, 2nd edition. 2000. American Meteorological Society

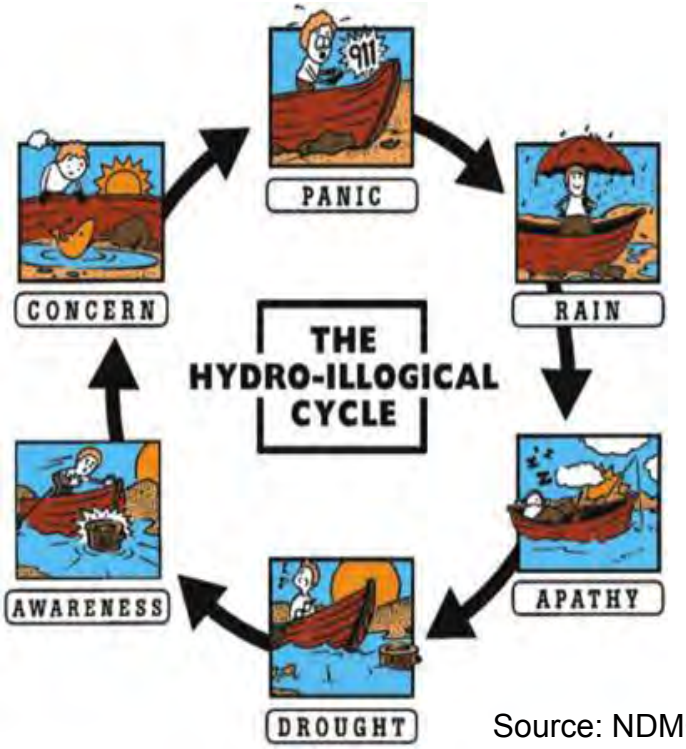
[4] Data prior to the historical records (prior to 1910), were developed by applying correlations of annual stream flow records with local tree rings width data. It has been found that the width of tree rings correlate with both annual precipitation and annual stream flow volumes: higher annual precipitation results in greater tree ring widths and higher stream flow volumes. The width of tree rings in prehistorical trees have been used to estimate annual stream flows prior to when stream flow data was collected.

droughts could have a significant impact on CBT storage and consequently impact the amount of project water available to Erie. Even single-year droughts could significantly reduce Erie's Windy Gap supplies, which would also reduce Erie's reuse supply.

In addition to CBT and Windy Gap supplies, drought can significantly reduce Erie's ditch and reservoir supplies which comprise 15% and 6%, respectively, of Erie's water supply portfolio in an average year.[5] In dry-years, the yield of Erie's junior storage rights are often significantly reduced or not available and the yield of Erie's ditch water rights yield can be reduced to 10% of its annual average yield.[6]

Mitigation and Response Planning

The main purpose of drought mitigation and response planning is to preserve essential public services and to minimize the adverse effects of drought on public health and safety, economic activity, environmental resources, and individual lifestyles during a drought event. Effective drought management plans remove the "crisis" from drought response efforts; reduce the hardship caused by water shortages, and raise public confidence in the actions taken to address the water supply shortage. Drought mitigation refers to actions taken in advance of a drought that reduce potential drought-related impacts when the event occurs, whereas drought response planning refers to the conditions under which a drought-induced water supply shortage occurs and specifies the actions that should be taken in response.[7]



Source: NDMC

Historically Erie's drought preparedness planning has consisted of a three-tiered water restrictions program and water supply management practices. Details of such practices are provided in Section 2.2. This Plan provides the Town a more integrated and comprehensive approach to addressing drought as Erie continues to grow and the competition for water supplies on the Front Range increases.

[5] These percentages assume Erie receives its full allotment of Windy Gap shares and a CBT quota of 70% in average years.
[6] This assumes Erie's ditch water rights yield 1,276 acre-feet and 124 acre-feet in average and dry years, respectively.
[7] This Plan includes both drought mitigation and response planning; however, it does not address emergency water shortages resulting from non-drought-related events such as an unexpected failure of a major raw water conveyance facility.

Drought Planning and Water Conservation

Water conservation and drought planning both entail a combination of strategies for reducing water demand. However, the main objective of a water conservation plan is to achieve continuing, long-term improvement in water use efficiency while reducing overall water demands. A drought management plan focuses on long-term drought mitigation and temporary response strategies that provide short-term responses to drought-related water supply shortages. Conservation activities that result in an ongoing reduction in water demand can provide long-term drought mitigation benefits and therefore can be considered a component of conservation as well as drought mitigation.

Erie's 2014 Water Conservation Plan targets a total per capita water use of 146 gpcd for first-use water and an indoor residential per capita water use of 42 gpcd by 2020. Table 1 provides a list of Erie's current water conservation activities that encourage long-term water savings while also providing drought mitigation benefits.

Table 1 Erie's Current Water Conservation Activities

Conservation Activities
Parks Activities - Implement best management practices to ensure efficient irrigation on parks, incorporate low water use landscapes where beneficial and continue to use the weather station, ET controllers and moisture sensors
Policy on water-wise landscape and efficient irrigation system design
Use of reuse water for non-potable irrigation
Use of treated reuse water for flushing/cleaning of NWRF's system
Volume billing and tiered block rate structure
Metering of source water, service connection and hydrant flushing
Leakage detection program and repair
Analysis of non-revenue water
Free Do-it-yourself Irrigation Audit Kits
Irrigation Audit Program (Partner with Center for Resource Conservation)
Remote readers available to residents to monitor water use
High efficiency washing machine rebate program and pre-rinse spray valve give-ways (until valves are gone)
Indoor water inspection program (Partner with Center for Resource Conservation)
Public education program on water conservation
Water wasting ordinance
Water conservation pamphlets, demonstration gardens, annual school fieldtrip to the NWRF
Annual xeriscape seminars (Partner with Center for Resource Conservation)
Garden-in-the-box (Partner with Center for Resource Conservation)

1.0 STAKEHOLDERS, OBJECTIVES AND PRINCIPLES

1.1 Drought Planning Committee and Plan Development

This Plan was developed through a stakeholder driven process that consisted of a Drought Committee and public outreach. The Drought Committee was comprised of representatives from a variety of Town services that could be impacted by drought. Members of the Committee are shown in Table 2. During the Plan development, two Committee workshops were held in October 2013 and December 2013. During these workshops, each committee member provided input on how drought could potentially affect Erie and how such impacts could be minimized through an effective mitigation and response program. The Committee members reviewed the Plan prior to a 60-day public review period in May and June of 2015 where Erie residents had the opportunity to provide input. This stakeholder process resulted in a robust plan representing a variety of perspectives and input.

Table 2 Drought Committee Members

Staff Member	Position
Gary Behlen	Public Works Director
Russell Pennington	Deputy Director of Public Works
Gary Hegner/Rob Crabb	Park Maintenance Division Manager
Jody Lambert	Operations & Maintenance Manager
Jon Mays	Water & Wastewater Operations Manager
Bruce Chameroy	Chief Water Plant Operator
Paul Reed	Park Crew Lead
Katie Jenkins	Communications and Marketing Coordinator

The first Drought Committee workshop focused on the plan objectives, operating principles and water use priorities; historical drought impacts and future vulnerability; drought mitigation and response strategies and introduced the concept of the drought trigger points and drought stages. The second workshop addressed the staged drought response program, public drought campaign and the drought declaration protocol.

In addition to these workshops, the Director and Deputy Director of Public Works met with NCWCD in November 2013 to discuss how the CBT and Windy Gap projects are managed during periods of drought. Information from this meeting was used to develop Erie's drought index discussed in Section 5.1.

1.2 Objectives and Operating Principles

This drought planning effort better prepares Erie for drought and provides an action-based guidance framework to respond to drought when it occurs. The objectives of this Plan are the following:

- Enhance Erie's ability to plan for droughts before they occur
- Identify and properly determine the severity of a drought based on Erie's potential shortage of supply
- Provide an effective drought response program

Erie manages its water supply system to ensure that its customer water needs are normally met throughout the year. However during droughts, Erie could experience a water shortage that requires customers to reduce their water use. Table 3 presents Erie's prioritization of customer use during periods of shortage. Customer uses of highest priority consist of services essential to public health and safety such as indoor residential use, hospitals, schools and firefighting. During periods of shortage, Erie will manage water service to ensure that all of these essential needs are met. Depending on the severity and duration of the water shortage, customer uses of lower priority may need to be reduced or in very severe situations, water use may be prohibited. Such low priority uses include Mode 2 and 3 parks (as defined in the table below), golf courses and HOA open space. However, irrigation of parks, golf courses and open space with reuse water will only be affected if there is an insufficient amount of reuse water for irrigation purposes and/or the reuse water is used to preserve key landscape features in severe and emergency droughts.

Table 3 Water Use Priorities

Priority	Customer Use	Description
1	Health and safety	Indoor use for essential services (i.e. hospitals, school, etc.); indoor residential, fire fighting
2	Indoor commercial and municipal buildings	Indoor commercial (businesses, schools) and indoor municipal buildings (Erie's recreation center)
3	Priority irrigation, municipal services and construction water	Mode 1 parks, outdoor commercial, car washing, outdoor residential, construction water, hydrant flushing, outdoor municipal buildings
4	Low-priority irrigation	Mode 2 and 3 parks; golf courses, HOA open space (includes neighborhood tot lots), facilities

Mode 1 parks – Community parks (i.e. softball field)
Mode 2 parks – Neighborhood parks
Mode 3 parks – Public facilities

The following operating principles were developed as means to assist with the development of this Plan and may also be used as a decision-making guidance tool when implementing the drought response program.

Drought response actions should be implemented in a manner that reflects the water use priorities in Table 3, with the highest priority being health and safety.

- Economic development is important to Erie and providing adequate drought protection for current and future residents is needed to provide a healthy sustainable community for future generations.
- When possible, efforts should be taken to preserve the environmental and recreational value of the surrounding lands which are important to the values and livelihood of Erie residents.
- Where possible, efforts should be made to allocate the costs and impacts associated with water use restrictions among all customers in an equitable manner.

- Effective coordination among Erie staff is vital to the success of this Plan. Exceptions to this Plan may be necessary but must be communicated clearly to all Erie staff.

2.0 HISTORIC DROUGHT AND IMPACT ASSESSMENT

2.1 Available Supplies and Demands during Historical Droughts

The majority of Erie's supplies consist of CBT water. The CBT project provides supplemental water supply to water users within the NCWCD boundaries. Erie owns 7,380 units out of a total of 310,000 units in the CBT system. The annual yield of each CBT unit is established by NCWCD's Board through an annual quota. The quota represents the annual water delivery volume per unit in acre-feet. The quota has historically ranged from 50% to 100% (i.e. a 100% quota delivers 1.0 acre-foot to each CBT unit). The NCWCD Board annually determines the quota through assessing snowpack, soil moisture conditions, the availability and amount of local native supplies and the amount of water stored in CBT reservoirs. The quota is initially set in November and is then normally revisited in April, after the majority of mountain snowpack has accumulated. Occasionally the NCWCD Board has increased the quota in the summer due to major unexpected reductions in supply or increases in demands.

Figure 2 shows the annual quota since the CBT project came online in the 1950s. Normally the quota is based upon the need for supplemental water: lower (as low as 50%) in wet years because the native supply is plentiful and higher (as high as 100%) in dry years, when the need for supplemental supply is greater. In an average hydrological year, the quota is typically set at 70%. Occasionally, the quota is based upon supply rather than demand.

Figure 2 also shows monthly recorded CBT storage and project reserves.[8] CBT storage was significantly impacted during drought in the 1960s and 1970s. The CBT storage was also significantly impacted during the 2000s drought. In 2002 (the lowest runoff year on record), the quota was set at only 70% as result of drought and low water storage. This was the first time in the project's history that a lower quota was set due to lack of storage in a drought.

[8] Project reserves consist of surplus unallocated CBT water in storage. These data did not start to be collected until the late 1980s.

Figure 2 Storage and Quota of the CBT System

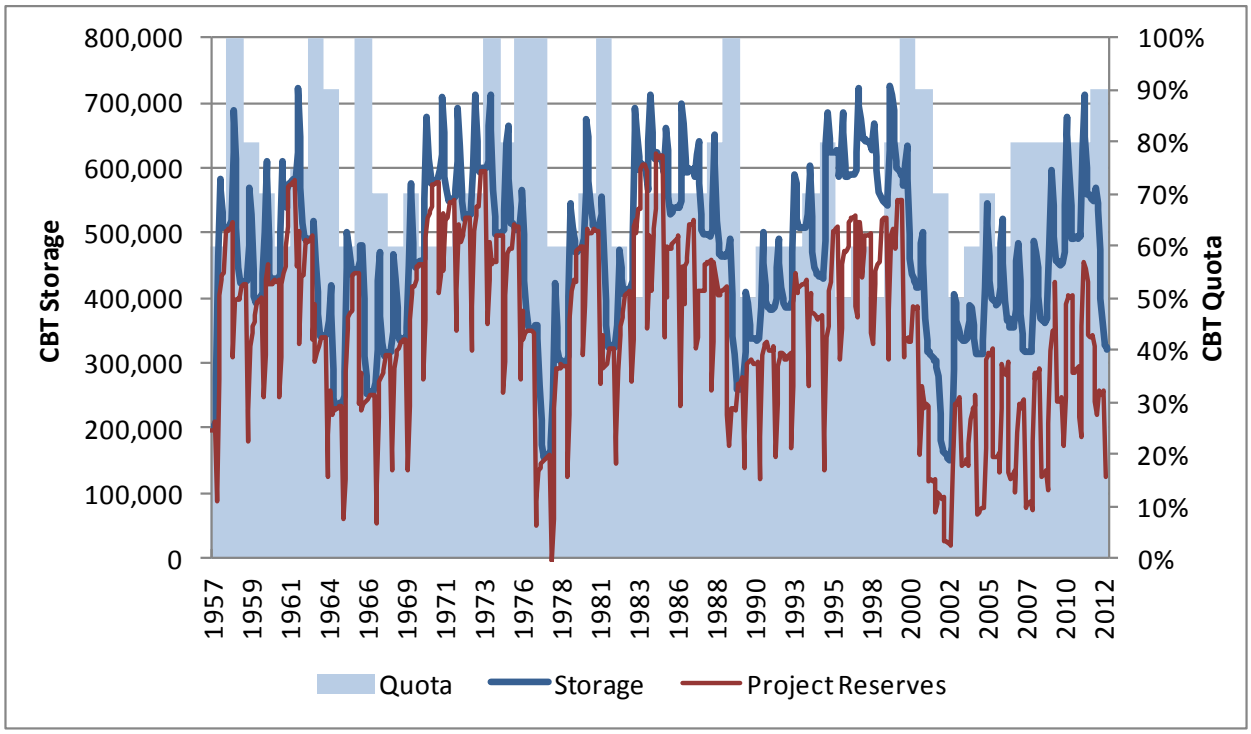
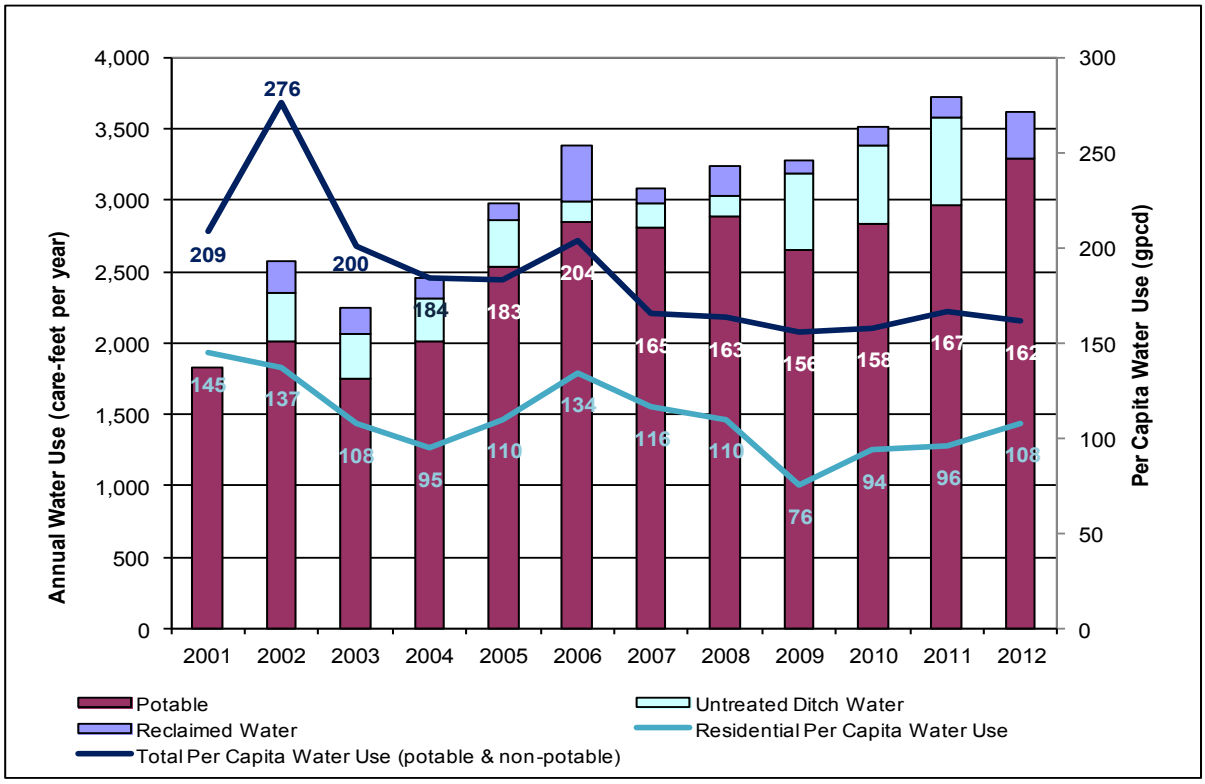


Figure 3 shows Erie's total annual and average daily per capita water use from 2001 through 2012. Per capita use for the service area was estimated by dividing total system water use by the residential population. Total system water use includes non-potable irrigation using reuse and raw ditch water (i.e. irrigation on the Vista Ridge Golf Course and on the community park in Erie Commons). Irrigation using reuse water and leased raw ditch water on Vista Ridge began in 2002, which coupled with the drought, significantly increased Erie's 2002 system-wide per capita water use, as shown in Figure 3.

Figure 3 Total and Per Capita Water Use



Note: Untreated ditch water was not available in 2012 due to dry conditions.

Erie's total annual water use has generally trended upward this decade reflecting the Town's increasing population. However, Erie's system-wide per capita water use and residential per capita water use has generally declined over the past eleven years and is lower than 2002 levels. Residential per capita water use during the 2012 drought was 37 gallons per capita per day (gpcd) less than the 2002. This is attributed to the following:

- Long-term community response to regional drought awareness campaigns and Erie's mandatory water restrictions during the 2002 drought
- Larger proportion of new homes being constructed within the service area which tend to be more water efficient than older homes (i.e. homes within the Old Town portion of Erie)
- Increased water efficiency among customers in response to Erie's water conservation outreach efforts

2.2 Historical Drought Impact, Mitigation and Response Assessment

Prior to the onset of new development in the mid-1990s, Erie was a small rural town. Erie is now rapidly changing into a prosperous northern Colorado municipality. Since the 2002 drought, Erie has grown by 150% and has acquired additional water supplies to meet the needs of its growing population. Given this dramatic change, impacts Erie experienced during the 2002 drought are not relevant to Erie's current or future water supply and customer demand conditions.

Consequently, this Plan focuses on the historical drought impacts of the more recent drought of 2011/2012. These impacts and level of severity are outlined in Table 4. Taste and odor complaints

were of greatest significance, occupying the most amount of staff time to address. The remaining impacts were moderate to minor in severity requiring some to very little staff time. Impacts of moderate severity included loss of trees, increased costs to parks and an increase in public complaints while minor impacts included loss of revenues, recreational use and fish impacts.

Table 4 Historical Impacts During the 2011/2012 Drought

Impacts	Severity
Taste and odor complaints	Significant
Loss of trees	Moderate
Loss of revenues	Minor
Increased costs to parks	Moderate
Increase in public complaints	Moderate
Recreational use	Minor
Fish impacts	Minor

Minor –very little impact, did not require much staff time
Moderate – some impact, required more staff time to address
Significant – key impact, occupied staff time

Erie has historically implemented the following drought mitigation practices to ensure the Town has sufficient supplies during periods of drought.

- Acquisition of water supplies to meet its growing demand
- Maximum use of the CBT carryover program as a drought reserve
- Water conservation program

These mitigation activities help ensure a reliable water supply for Erie customers in dry years. In addition, Erie has implemented a three-tiered water restrictions program since 2002. Generally the water restrictions have been on a voluntary basis. This has provided flexibility to customers by simply recommending an irrigation schedule, yet when the water supply system is stressed, Erie has had the option to implement mandatory restrictions to better regulate irrigation.

3.0 DROUGHT VULNERABILITY ASSESSMENT

3.1 Water Supply Reliability and Drought Management Planning

Water supply reliability planning is necessary to ensure there are sufficient supplies to meet growing demands as well as during drought and, to some extent, overlaps with this drought management planning process. Erie's drought planning and water supply reliability planning efforts are closely coordinated. Erie's water supply reliability depends on a multitude of factors including the seniority of its water rights, storage, rate of customer growth and ability to respond to emergencies. While the Town's current water supplies provide a sufficient amount of water to meet existing needs, additional water supplies will be needed to meet future demands. Erie regularly monitors its projected future water needs and acquires additional supplies necessary to meet its growing demands.

Erie's current policy requires new development within the service area to provide either new water supplies or equivalent cash-in-lieu. Erie plans to acquire more CBT units and is a participant in the Windy Gap Firming Project. This project would increase the reliability of Windy Gap supplies such that Erie would be able to receive a substantial portion of its Windy Gap allotment during dry years. Erie is also a participant in the Northern Integrated Water Supply Plan (NISP) and has requested an annual 6,500 acre-feet of firm yield. Erie also plans to purchase additional ditch water rights and expand its non-potable reuse supplies. Additional planning efforts that support a reliable water supply system include:

- 2005 Comprehensive Plan
- 2013 Wastewater Utility Master Plan
- 2013 Water Master Plan
- 2014 Non-Potable Master Plan
- 2014 Water Conservation Plan

Other factors that could impact Erie's water supply reliability in the long-term include climate change and the potential for Colorado River compact call. These factors are being addressed through a variety of regional and state sponsored studies including the Colorado River Water Availability Study, the Joint Front Range Climate Change Vulnerability Study and the Boulder County Climate Change Preparedness Plan. Erie tracks the latest studies on these topics.

Erie's water supply is also vulnerable to large-scale wildfires on the west slope that impact the water quality of CBT and Windy Gap supplies. In 2012 the CBT Headwater Partnership was formed between NCWCD, U.S. Bureau of Reclamation and the U.S. Forest Service to pursue and restore forest and watershed health before wildlife fires occur and to develop a plan to protect water supplies after fires occur. NCWCD is also working with a variety of other local and federal stakeholders to address algae blooms and other related concerns in Granby Reservoir, Shadow Mountain Reservoir and Grand Lake.

3.2 Drought Impact Assessment

Erie could experience a variety of future drought-related impacts. These impacts and corresponding level of severity are listed in Table 5. The potential severity of many of these

impacts could be significant depending on the magnitude and duration of the drought. Impacts with greatest anticipated severity include algae blooms (taste and odor complaints), loss of trees and increase in public complaints. Impacts of moderate severity include increased costs to parks, recreational use, changes to water supply operations and loss of vegetation including secondary effects (i.e. safety on ball parks). Impacts of less severity include loss of revenues and reduced firefighting capacity. Fish impacts may also be of concern depending on the severity of drought.

Table 5 Potential Future Drought Impacts

Impacts	Severity
Algae blooms - taste and odor complaints	Moderate/significant
Loss of trees	Moderate/significant
Loss of revenues	Minor/moderate
Increased costs to parks	Moderate
Increase in public complaints	Moderate/significant
Recreational use	Moderate
Fish impacts	Depend on drought severity
Reduced firefighting capacity	Minor/moderate
Changes in water supply operations	Moderate
Loss of vegetation and secondary effects (safety on ball parks)	Moderate

Notes:
Minor –very little impact, did not require much staff time
Moderate – some impact, required more staff time to address
Significant – key impact, occupied staff time

4.0 DROUGHT MITIGATION AND RESPONSE STRATEGIES

4.1 Drought Mitigation Measures

Erie is committed to drought preparedness by mitigating for drought before it occurs. The main components of this Plan are critical components of mitigation. The Plan provides a set of drought triggers and guidelines for declaring drought stages, addresses potential future impacts and includes a drought response plan. In addition to this Plan, Erie currently implements the following mitigation measures.[9]

- New supplies – Erie continues to acquire additional water supplies. These acquisitions are necessary to meet the growing demands of the community as well as to ensure that there are sufficient supplies during dry periods.
- Drought reserve - Erie maximizes its 20% CBT carryover as a standard water operations and drought mitigation practice. This practice will continue in periods of drought to ensure a drought storage reserve in the case the drought persists into the following year(s)
- Reuse water – Erie plans to continue to expand its use of non-potable reuse water. Depending on the yield of Windy Gap water, this reuse water may be available in dry years for irrigation, enabling Erie's first use water to be used for other purposes.
- Erie updated its Water Conservation Plan in 2014 which includes a variety of conservation activities that provide long-term water savings while also providing drought mitigation benefits. These activities are listed in Table 1.

In addition to the items above, Erie plans to evaluate the feasibility and benefits associated with the following infrastructure and operational improvements:

- Emergency interconnects – Erie has emergency interconnects with Lafayette and Left Hand Water District. Erie could work with these water providers in expanding the terms of use of these interconnects during dry periods.
- Bypass Erie Lake – Low reservoir levels during dry periods can result in algae blooms and taste and odor issues. Erie has installed a pipeline to bypass CBT and Windy Gap water around Erie Lake and thereby avoid water quality issues.
- Recycle backwash water at the Water Treatment Facility- Recycling backwash water at the Water Treatment Facility would provide long-term water savings and provide drought mitigation benefits.
- New local raw water storage for potable and non-potable use – Additional local storage would extend Erie's ability to provide reliable supplies during drought shortages. Erie is in the process of expanding its non-potable reuse which entails the need for additional water storage at strategic locations.
- Improve ditch efficiencies – Water savings may be achieved by lining ditches Erie uses to convey supplies within its service area.

[9] Worksheets B and C in CWCB's Municipal Drought Management Plan Guidance Document were used in selecting the drought mitigation measures.

4.2 Response Strategies

Tables 6 and 7 list the supply-side and demand-side response strategies, respectively. The supply-side strategies focus on actions Erie will take to extend water supplies during drought shortage periods. The demand-side response strategies provide activities that both Town staff and Erie customers will do during drought shortages. The response strategies were selected using the following criteria:

- Technical feasibility – Will the strategy work as intended in a timely manner? Is there staff available to implement the action?
- Perceived cost and benefits – Will the selected strategy provide an adequate amount of water savings/additional supplies relative to the cost?
- Enforceable – Is the strategy worth the cost/effort of enforcing it?
- Public acceptance – How will the public accept the selected strategy?

Table 6 Supply-Side Response Strategies

Category	Response Strategy
Seek technical and financial assistance	Identify state, federal, county and private financial assistance opportunities, which could include grant or loans for emergency drought related planning, drought relief, and/or water use efficiency improvements.
Develop short-term water supply options	Identify ways in which additional supplies may be acquired during the drought shortage including leasing arrangements from farmers, leasing excess CBT supplies (if available) and exchanging non-potable reuse for potable supplies.
	Purchase agricultural leasing options for the following year in preparation for a multi-year drought.
Maximize drought reserves	Ensure a 20% CBT carryover in storage during a drought in case of a multi-year drought
	Maintain maximum amount of storage in local reservoirs in preparation for a multi-year drought
Reuse water	Consider using reuse water to preserve key landscape features under severe and emergency droughts and/or be use reuse water to increase potable supplies through trade-arrangements with other water users.

Table 7 Demand-Side Response Strategies

Category	Response Strategy
Town operations (actions by Erie Town staff)	Prohibit use of splash pad
	Prevent washing of Town fleet vehicles
	Turn off ornamental fountains in building and parks
	Limit use of hydrants (except for public safety)
	Reduce Town's irrigation with first-use water via water restrictions (i.e. parks)
	Encourage staff to reduce indoor water use in municipal buildings
	Consider drought surcharge
	Prohibit/limit Town street cleaning
Residential, HOA, commercial and public services (i.e. schools)	Reduce outdoor use of first-use water via water restrictions
	Use of covers and other best management practices on hot tubs and pools
	Limit/prohibit outdoor misting devices
	Increase number of residential irrigation audits available for free
	Prohibit/limit street cleaning, sidewalk and driveway washing
	Rent AMR monitors
	Provide residences meters to monitor water use
	Car washing (limit or prohibit depending on whether use recycled water)
Golf courses	Reduce use of first-use water via water restrictions
	Limit/prohibit outdoor misting devices
	Prohibit/limit street cleaning, sidewalk and driveway washing
Construction water	Limit/prohibit construction water

4.3 Drought Public Information Campaign

The public drought campaign will be closely coordinated with Erie's water conservation education programs. While the water conservation education program focuses on long-term water savings, the public drought campaign focuses on information specific to drought and how to achieve additional short-term savings during a drought shortage. The objectives of the public drought campaign are:

- Provide concise effective drought information to Erie customers and the media.
- Adjust the intensity of the public outreach effort in accordance to the severity of the drought (drought stage).
- Coordinate campaign efforts with nearby entities when beneficial
- The public drought campaign will provide the basic foundational information shown in Table 8 during non-drought periods and continue with this messaging during droughts.

Table 8 Public Drought Campaign Messages When a Drought is Not Occurring

Actions and Messages
Status of current drought conditions and corresponding drought stages
How to access the Drought Management Plan
Actions that Erie is taking to mitigate drought and where customers may access the drought management plan
Actions Erie is taking to save water and acquire new water
Information on how to set up a water use plan for the home/business that tracks their water use
Convey messages through the public education program that promote conservation of water

Table 9 lists the actions and general message the drought public campaign will convey during a drought. The specific messages as well as the means and frequency in which the information is conveyed to the public will be customized to the drought and needs of the public.

Table 9 Public Drought Campaign Messages During a Drought

Actions and Messages
Status of current drought conditions and corresponding drought stages
How to access the Drought Management Plan
Actions that Erie is taking to mitigate drought and where customers may access the drought management plan
Convey messages through the public education program that promote conservation of water
Actions Erie is taking to save water and acquire new water
Information on how to set up a water use plan for the home/business that tracks their water use
Develop a communications plan in the spring (i.e. key messages, media for communication, etc.)
Increase public's awareness on drought, status of current drought stage & future restrictions/impacts if drought conditions continue
Elevate water conservation education program messages
Generate more public discussion & media involvement about ways to cut water use
Contact key customers (i.e. large water users) and inform them of drought conditions
Implement a drought response hotline for customers to file complaints and ask questions
Publicize efforts of individuals and businesses as examples of how to reduce water use
Hold public outreach meetings
Landscaping tips during a drought (i.e. which plants to convert to drip, which to save, which to let die)
Education on enforcement activities if applicable
Key messages related to the drought surcharge if applicable
Develop messages on how customers should respond to the drought if the drought is anticipated to persist through the winter
Provide customers post-drought landscape revival information

Coordination with other entities will also be an important component of the public drought campaign. Efforts will be made to take advantage of synergies associated with consistent drought-related messages shared among neighboring providers and collectively contributing to a regional drought outreach effort. During this period, Erie will also track other local water providers'

drought-related response activities, water use restrictions, and means of enforcement. This will enable Erie to explain to its customers any differences between Erie's drought response activities and its neighboring municipalities.

The Town Administrator's Office through the Communications and Marketing Division will work closely with the Public Works Department to ensure that the message delivered to the public is accurate. Table 10 lists the communication tools that will be used to convey the drought messages to specific targeted audiences. The drought campaign will mainly consist of website communications, social networking media, and informational emails during non-drought periods. During droughts, communication tools will likely be expanded to newspaper articles, bill inserts, emails targeted to specific water users, booths at special events, and school programs.

Table 10 Public Drought Campaign Communication Tools

Targeted Audience	Communications Tools
Town staff and Board of Trustees	Email Meetings
All water customers	Website Newsflash/email distribution list Social networking media Local newspaper/television Media articles/television Poster in public places (i.e. post office) Special events Public meetings
Large water users (i.e. HOAs, golf course, construction sites)	Items listed above in addition to direct phone calls
School children	Booths at special events for children School programs (if possible)

5.0 DROUGHT STAGES, TRIGGER POINTS AND RESPONSE TARGETS

5.1 Drought Stages, Trigger Points and Response Targets

Though the pace of development since the economic downturn (2008-2012) would suggest Erie will fall short of the 40,680 population forecasted in the Town's 2005 Comprehensive Plan, both residential and commercial development will continue. This new development will result in an increase in customer water demand and consequently the Town is planning to acquire additional water supplies to meet the growing needs. Given this trend, a drought trigger index was developed to characterize the severity of a drought within the context of both Erie's projected water supplies and demands. The drought index represents the ratio of Erie's projected water supply to demand.

Table 11 presents four stages of drought severity with the corresponding drought index and response target. These four stages in an increasing order of drought intensity are voluntary, watch, severe and emergency. The targeted water savings increases with each stage, with a targeted 5% water savings for the voluntary drought stage and a 60% water savings target under the emergency drought stage.

Table 11 Drought Stages, Trigger Point Guidelines and Response Targets

Drought Stage	Drought Trigger Index	Response Target (Targeted Water Savings)
Voluntary	1.0 to 0.95	5%
Watch	0.94 to 0.8	20%
Severe	0.79 to 0.6	40%
Emergency	0.59 to 0.4	60%

The drought index should be calculated and applied during the spring, normally in April after the spring update to the CBT quota has been announced, to project Erie's annual water supply for the upcoming irrigation season. The drought index includes all of Erie's first-use supplies (CBT, Windy Gap, ditch water rights and reservoir rights). The projected demands entails last year's per capita demand of Erie's first-use water (this does not include reuse water) multiplied by this year's population and safety factor of 10% plus an allowance for a maximum carry-over of Erie's CBT supplies (number of CBT units owned by Erie x 0.2 acre-feet) into the following year.

1)

$$\text{Index} = \frac{\text{Projected Supply}}{\text{Projected Demand}}$$

2)

$$\text{Index} = \frac{\text{CBT quota supply} + \text{CBT carryover from last year} + \text{Projected Windy Gap delivery} + \text{Projected yield of ditch rights} + \text{Projected yield of reservoir rights}}{\text{Last year's first use per capita demand} \times \text{This year's projected population} \times \text{10\% safety factor} + \text{Allowance for full CBT carryover}}$$

Details of the drought index terms and input data are provided below.

- CTB quota supply: this year's CBT quota times Erie's CBT units (acre-feet)
- CBT carryover from last : storage in CBT carryover program minus a 10% shrinkage (acre-feet)
- Projected Windy Gap delivery: estimated yield of Windy Gap water (acre-feet)
- Projected yield of ditch rights: estimated yield of ditch water rights (acre-feet)
- Projected yield of reservoir right: estimated yield of storage water rights minus 10% evaporation (acre-feet)
- Last year's first-use per capita demand: last year's annual water treatment plant production (acre-feet) plus raw water ditch deliveries for non-potable use divided by last's years population (acre-feet)
- This year's projected population
- Allowance for full CBT carryover (acre-feet): CBT units owned by Erie times 20%

In years when Erie is in a declared drought stage, the targeted amount of water savings to be achieved (in acre-feet or thousand gallons) should be determined by multiplying Erie's "baseline demand" by the designated percentage response target defined in Table 11. The baseline demand should be determined by multiplying Erie's current population by Erie's average per capita water use (gpcd) of first-use water for the previous five years.

It is important to note that the drought index reflects the level of shortage Erie may experience in times of drought as well as in wet years when NCWCD sets a lower quota. Erie could potentially experience shortages in wet years if NCWCD sets a lower quota (i.e. 50%). Historically this has happened in wet periods when the amount of supplemental supply needed for agricultural irrigation is low. If the drought index indicates a potential shortage in wet years, Erie may want to investigate options to acquire additional temporary supplies such as purchasing short-term agricultural leases and assessing whether demand reductions are necessary.

5.2 Drought Declaration and Predictability

Droughts in Colorado can appear quickly or slowly, last for a season or many years, and can occur locally, regionally, or statewide. Furthermore, a drought does not have a clearly defined beginning or end and is difficult to predict. For example, following the 2002 drought, snowpack accumulation in early 2003 was abnormally low and, if not for a large single snow storm event in late March 2003, many providers throughout Colorado would have been seriously stressed. Even though South Platte supplies in 2003 were slightly above average, water demands (including demands to fill empty reservoirs) were well above average, resulting in a drought condition even with above-average supplies.

Erie will monitor the Town's drought index on a regular basis. Monitoring will be most intense from late March until early May when the nearly all of the spring mountain snowpack has accumulated and NCWCD has made its final CBT quota announcement. However in dry years (or in wet years when the CBT quota is low), monitoring will extend into the irrigation season. If the summer continues to remain dry, monitoring will extend past the irrigation season in order to determine whether drought response is needed in the winter.

While the drought index will be one of the main drought indicators in determining the appropriate drought stage, Erie will also monitor the US Drought Monitor, precipitation and soil moisture in the service area, near-term projected customer water demands, long-term weather forecasts and actions that other water providers are taking in the regions. These drought indicators will provide additional insight into which specific drought stage and corresponding level of drought response is most appropriate for Erie. For example, if in early May Erie's drought index is 0.6 and the following conditions persist: the majority of water providers in the region are declaring severe drought stages, early spring precipitation is low with dry soil moisture conditions, and long-term weather forecasts predict very little relief; these data may collectively support the declaration of a severe drought stage.

The official drought declaration and corresponding drought stage designation should occur in a timely manner. If a drought is declared too late or actions are not taken early enough to reduce water use, supplies can be severely depleted and strict water restrictions and economic impacts may be required that could have been avoided. Conversely, premature drought declarations can result in unnecessary mandatory water restrictions and associated impacts, while customers can lose confidence in the declaration. The timing of such a declaration will be an important consideration by both Erie staff and Erie's Board of Trustees.

6.0 STAGED DROUGHT RESPONSE PROGRAM

This section outlines supply and demand-side response measures specific to each drought stage. These measures apply to first-use water unless otherwise noted.

6.1 Voluntary Drought Stage

Drought Trigger: Drought Index of 1.0 to 0.95

Drought Stage and Trigger Summary: This stage is triggered when the there is a drought index of 1 to 0.95. The projected supplies are just sufficient to meet Erie's customer demands and to also store 20% of Erie's CBT allotment in the carryover program. A 5% water savings target is encouraged throughout the Town's service area to provide an additional buffer in case Erie's actual supplies are lower than projected or demands are higher than projected. This voluntary drought stage entails voluntary water reductions and other actions to lower water demands.

Supply-Side Response Measures

Drought reserve - Erie maximizes its 20% CBT carryover as a standard water operations and drought mitigation practice. This practice will continue in periods of drought to ensure a drought storage reserve in the case the drought persists into the following year(s).

Demand-Side Response Measures

Town

- Mode 1 Parks – Voluntary best management practices are encouraged with a targeted savings of 5%.[10]
- Modes 2 and 3 Parks - Voluntary best management practices are encouraged with a targeted savings of 10%.[10]
- Washing of fleet vehicles – Voluntary conservation practices are encouraged when washing fleet vehicles.
- Public pools and hot tubs– Encourage use of covers and other best management practices to conserve water.

Residential

- Private pools and hot tubs – Encourage use of covers and other best management practices to conserve water.

[10] The targeted amount of first-use water savings to be achieved (i.e. thousand gallons) for Erie's Parks should be determined by multiplying the Parks' "baseline demand" by the specified targeted savings percentage. The Parks' baseline demand should be determined by multiplying the Parks' average application rate (gal/acre) for the previous five years by the current number of acres irrigated. This should only apply to first-use water for the voluntary, watch and severe drought stages. Reuse water for irrigation should be reduced and included in the Parks' water savings target in the emergency drought stage when reductions in residential indoor water use is required.

- Outdoor resident irrigation – Voluntary water restrictions limit outdoor irrigation to twice a week and encourage conservation.
- Street, sidewalk and driveway cleaning and misting devices – Discourage use of misting devices and use of water to clean the street, sidewalk and driveway (voluntary restrictions)
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- Irrigation audits – Erie's water conservation program includes outdoor irrigation audits. Additional audits are made available and encouraged through the public drought campaign.
- HOA open space - Voluntary water restrictions limit outdoor irrigation to twice a week and encourage conservation.

Commercial

- Public pools and hot tubs – Encourage use of covers and other best management practices to conserve water.
- Outdoor irrigation – Voluntary water restrictions limit outdoor irrigation to twice a week and encourage conservation.
- Street, sidewalk and driveway cleaning and misting devices – Discourage use of misting devices and use of water to clean the street, sidewalk and driveway (voluntary restrictions)
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- Irrigation audits – Erie's water conservation program includes outdoor irrigation audits. Additional audits are made available and encouraged through the public drought campaign.
- Golf courses - Voluntary water restrictions limit outdoor irrigation to twice a week and encourage conservation.
- Commercial car washes – Encourage voluntary best management practices to conserve water for both car washes that use recycled water and ones that do not use recycled water. (i.e. limit duration in which individual automobiles may be washed).

6.2 Watch Drought Stage

Drought Trigger: Drought Index of 0.94 to 0.8

Drought Stage and Trigger Summary: This stage is triggered when the drought index is 0.94 to 0.8. This stage requires mandatory water restrictions and other actions to lower water use with a targeted water savings of 20% throughout the Town's service area. While customers will be required to lower outdoor first-use water use through mandatory water restrictions, large-scale impacts to landscaping are not anticipated.

Supply-Side Response Measures

Drought reserve - Erie maximizes its 20% CBT carryover as a standard water operations and drought mitigation practice. This practice will continue in periods of drought to ensure a drought storage reserve in the case the drought persists into the following year(s).

- Seek technical and financial assistance opportunities – This may include assistance from the public sector at the federal, state, or county level or include assistance from private entities such as non-profit organizations promoting water conservation and drought awareness.
- Evaluate short-term water supply options – Erie will investigate potential short-term water supply options such as temporary agricultural leasing arrangements and consider whether it is beneficial to purchase such temporary supplies.
- Maximize storage in local reservoirs – Erie will manage water supplies in such a manner to maximize the amount of storage in Erie's local reservoirs at the end of the irrigation season for carrying into the following irrigation season if the winter continues to be dry.

Demand-Side Response Measures

Town

- Mode 1 Parks – Mandatory best management practices for first-use water use with a targeted savings of 20%.[11]
- Modes 2 and 3 Parks - Mandatory best management practices for first-use water use with a targeted savings of 30%.[11]
- Washing of fleet vehicles –Washing fleet vehicles is limited to once per week.
- Ornamental fountains and splash pad – Ornamental fountains in the parks and splash pad are turned off between 10:00 am to 4:00 pm.
- Street cleaning - Reduce frequency of Town street cleaning.
- Public pools and hot tubs – Require use of covers and other best management practices to conserve water.

[11] The targeted amount of first-use water savings to be achieved (i.e. thousand gallons) for Erie's Parks should be determined by multiplying the Parks' "baseline demand" by the specified targeted savings percentage. The Parks' baseline demand should be determined by multiplying the Parks' average application rate (gal/acre) for the previous five years by the current number of acres irrigated. This should only apply to first-use water for the voluntary, watch and severe drought stages. Reuse water for irrigation should be reduced and included in the Parks' water savings target in the emergency drought stage when reductions in residential indoor water use is required

Residential

- Private pools and hot tubs – Require use of covers and other best management practices to conserve water.
- Outdoor resident irrigation – Mandatory water restrictions limit outdoor irrigation to once a week and encourage conservation.
- Street, sidewalk and driveway cleaning and misting devices – Prohibit use misting devices and use of water to clean the street, sidewalk and driveway.
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- Irrigation audits – Erie's water conservation program includes outdoor irrigation audits. Additional audits are made available and encouraged through the public drought campaign.
- HOA open space - Mandatory water restrictions limit outdoor irrigation with first-use water to once a week and encourage conservation.

Commercial

- Public pools and hot tubs – Require use of covers and other best management practices to conserve water.
- Outdoor resident irrigation – Mandatory water restrictions limit outdoor irrigation with first-use water to once a week and encourage conservation.
- Street, sidewalk and driveway cleaning and misting devices – Prohibit use of water to clean the street, sidewalk and driveway as well as using misting devices.
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- Irrigation audits – Erie's water conservation program includes outdoor irrigation audits. Additional audits are made available and encouraged through the public drought campaign.
- Golf courses - Mandatory water restrictions limit outdoor irrigation with first-use water to once a week and encourage conservation.
- Commercial car washes without recycling – Must meet a standard of 40 gallons or less per vehicle washing.
- Commercial car washes with recycling – Encourage voluntary best management practices to conserve water (i.e. limit duration in which individual automobiles may be washed).

Indoor Water Use

- Public drought campaign encourages reductions in water use.

6.3 Severe Drought Stage

Drought Trigger: Drought Index of 0.79 to 0.6

Drought Stage and Trigger Summary: This stage is triggered when the drought index is 0.79 to 0.6. The stage calls for a water savings goal of 40% throughout the Town's service area and prohibits the irrigation of all turf using first-use water except for high priority community parks (i.e. baseball fields) and golf course tees and greens. This will result in some loss of turf and other landscaping; however, trees may be watered to ensure survival.

Supply-Side Response Measures

Drought reserve - Erie maximizes its 20% CBT carryover as a standard water operations and drought mitigation practice. This practice will continue in periods of drought to ensure a drought storage reserve in the case the drought persists into the following year(s).

- Seek technical and financial assistance opportunities – This may include assistance from the public sector at the federal, state, or county level or include assistance from private entities such as non-profit organizations promoting water conservation and drought awareness.
- Evaluate short-term water supply options – Erie will investigate and purchase available short-term water supply options such as temporary agricultural leasing arrangements if proven beneficial.
- Maximize storage in local reservoirs – Erie will manage water supplies in such a manner to maximize the amount of storage in Erie's local reservoirs at the end of the irrigation season for carrying into the following irrigation season if the winter continues to be dry.
- Evaluate purchasing available agricultural leasing options for the following year – Erie will consider purchasing agricultural leasing options that would provide the Town additional supplies in the following year.
- Reuse water – Erie will consider using reuse water to preserve key landscape features that are no longer irrigated with first-use water.

Demand-Side Response Measures

Town

- Mode 1 Parks – Mandatory irrigation restrictions reduce first-use water use by a targeted 50%.[12]
- Modes 2 and 3 Parks – Irrigation with first-use water is prohibited on all turf. Trees may be hand watered with reuse water to maintain survival.[12]
- Hydrants – The frequency of hydrant flushing is reduced.
- Washing of fleet vehicles – Washing of fleet vehicles is prohibited.

[12] The targeted amount of first-use water savings to be achieved (i.e. thousand gallons) for Erie's Parks should be determined by multiplying the Parks' "baseline demand" by the specified targeted savings percentage. The Parks' baseline demand should be determined by multiplying the Parks' average application rate (gal/acre) for the previous five years by the current number of acres irrigated. This should only apply to first-use water for the voluntary, watch and severe drought stages. Reuse water for irrigation should be reduced and included in the Parks' water savings target in the emergency drought stage when reductions in residential indoor water use is required

- Ornamental fountains and splash pad – Ornamental fountains in the parks and splash pad are turned off.
- Street cleaning - Limit Town street cleaning to priority streets in need of washing.
- Public pools and hot tubs – Use of covers and other best management practices to conserve water.

Residential

- Private pools and hot tubs – Filling of all private pools and hot tubs is prohibited.
- Outdoor resident irrigation – Irrigation with first-use water is prohibited on all turf. Trees may be hand watered to maintain survival.
- Street, sidewalk and driveway cleaning and misting devices – Prohibit use of misting devices and use of water to clean the street, sidewalk and driveway.
- Rent AMR monitors – AMR meters are made available at Town Hall for customers to rent and monitor their water use.
- HOA open space – Irrigation with first-use water is prohibited on all turf. Trees may be hand watered to maintain survival.

Commercial

- Public pools and hot tubs – Require use of pool covers and other best management practices to conserve water.
- Outdoor resident irrigation – Irrigation with first-use water is prohibited on all turf. Trees may be hand watered to maintain survival.
- Street, sidewalk and driveway cleaning and misting devices – Prohibit use of water to clean the street, sidewalk and driveway as well as using misting devices.
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- Golf courses – Irrigation with first-use e water is prohibited on all turf with exception to the tees and greens. Trees may be hand watered to maintain survival.
- Commercial car washes without recycling – Must meet a standard of 15 gallons or less per vehicle washing.
- Commercial car washes with recycling – Mandatory best management practices are required (i.e. limit duration in which individual automobiles may be washed). The Town will review facilities to ensure water is being conserved at optimum levels. Modifications to operations may be required.

Construction Water

- Conservation and best management practices of construction water are strongly encouraged to prevent wasting of construction water.

Drought Surcharge

- A drought surcharge on first-use water is considered that supports water use restrictions and helps customers reduce water use.

Indoor Water Use

- Public drought campaign encourages reductions in water use.

6.4 Emergency Drought Stage

Drought Trigger: Drought Index of 0.59 to 0.4

Drought Stage and Trigger Summary: This stage is triggered when the drought index is 0.59 to 0.4 and calls for a targeted water savings of 60% throughout the Town's service area. All outdoor use of first-use water is prohibited except for firefighting and if available, reuse water may be used to ensure the survival of trees in Town parks. The use of construction water will be reviewed by the Board. All landscaping, including trees will be negatively impacted. The main objective at this stage is to provide water for the essential indoor needs. Indoor water conservation will be strongly encouraged. Customers with abnormally high indoor water use may receive warnings and if necessary, other measures may be enforced to reduce indoor water use (i.e. fines and flow restrictors).

Supply-Side Response Measures

Drought reserve - Erie maximizes its 20% CBT carryover as a standard water operations and drought mitigation practice. This practice will continue in periods of drought to ensure a drought storage reserve in the case the drought persists into the following year(s).

- Seek technical and financial assistance opportunities – This may include assistance from the public sector at the federal, state, or county level or include assistance from private entities such as non-profit organizations promoting water conservation and drought awareness.
- Evaluate short-term water supply options – Erie will investigate and purchase available short-term water supply options such as temporary agricultural leasing arrangements if proven beneficial.
- Maximize storage in local reservoirs – Erie will manage water supplies in such a manner to maximize the amount of storage in Erie's local reservoirs at the end of the irrigation season for carrying into the following irrigation season if the winter continues to be dry.
- Purchase available agricultural leasing options for the following year – If available, Erie will purchase agricultural leasing options that provide the Town with additional supplies in the following year.
- Reuse water – Erie will consider using reuse water, if available, to preserve key landscape features that are no longer irrigated with first-use water and/or use reuse water to increase its potable supplies through trade-arrangements with other water users.

Demand-Side Response Measures

Town

- Mode 1 Parks – Irrigation with first-use water is prohibited on all turf. The hand watering of trees with reuse water may be considered to maintain survival.[13]
- Modes 2 and 3 Parks – Irrigation with first-use water is prohibited. Irrigation with first-use water is prohibited on all turf. The hand watering of trees with reuse water may be considered to maintain survival.[13]
- Hydrants – All hydrant flushing is prohibited unless necessary for public safety. Emergency use of hydrants is allowed.
- Washing of fleet vehicles – Washing of fleet vehicles is prohibited.
- Ornamental fountains and splash pad – Ornamental fountains in the parks and splash pad are turned off.
- Street cleaning - Eliminate Town street cleaning.
- Public pools and hot tubs – Filling of all public pools and hot tubs are prohibited.

Residential

- Private pools and hot tubs – Filling of all private pools and hot tubs are prohibited.
- Outdoor resident irrigation – Irrigation is prohibited on all landscaping.
- Street, sidewalk and driveway cleaning and misting devices – Use of misting devices and use of water to clean the street, sidewalk and driveway are prohibited.
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- HOA open space - Irrigation with first-use water is prohibited on all landscaping.

Commercial

- Public pools and hot tubs – Filling of all public pools and hot tubs is prohibited.
- Outdoor resident irrigation – Irrigation with first-use water is prohibited on all landscaping.
- Street, sidewalk and driveway cleaning and misting devices – Use of misting devices and use of water to clean the street, sidewalk and driveway are prohibited
- Rent AMR monitors – AMR meters are available at Town Hall for customers to rent and monitor their water use.
- Golf courses - Irrigation with first-use water is prohibited.
- Commercial car washes without recycling – Operations are prohibited.
- Commercial car washes with recycling – Operations are prohibited.

[13] The targeted amount of first-use water savings to be achieved (i.e. thousand gallons) for Erie's Parks should be determined by multiplying the Parks' "baseline demand" by the specified targeted savings percentage. The Parks' baseline demand should be determined by multiplying the Parks' average application rate (gal/acre) for the previous five years by the current number of acres irrigated. This should only apply to first-use water for the voluntary, watch and severe drought stages. Reuse water for irrigation should be reduced and included in the Parks' water savings target in the emergency drought stage when reductions in residential indoor water use is required

Construction Water

- Use of construction water is either limited or prohibited depending on the severity of drought conditions. The use of construction water will be reviewed by the Board of Trustees.

Drought Surcharge

- A drought surcharge on first-use water is implemented that supports water use restrictions and helps customers reduce water use.

Indoor Water Use

- Public drought campaign encourages reductions in water use. Customers with abnormally high indoor water use may receive warnings and if necessary, other measures may be enforced to reduce indoor water use (i.e. fines and flow restrictors).

7.0 IMPLEMENTATION AND MONITORING

7.1 Mitigation Action Plan

The mitigation action plan provided in Table 12 outlines the action items, milestone deadlines and Town's departments leading the implementation of mitigation measures discussed in Section 4.1. These measures include existing ongoing measures in addition to new measures that will be further evaluated.

Table 12 Mitigation Action Plan

Category	Mitigation Measures	Action Items	Milestones	Lead Department
Existing Ongoing Mitigation Measures				
Drought Planning	Drought Management Plan	Implement the Drought Management Plan	Ongoing	Public Works
New Supplies	Development of new water supplies	1) Continue to acquire new supplies 2) Continue to participate in NISP and the Windy Gap Firming projects	Ongoing	Public Works
Demand Management (water conservation)	Existing water conservation program	Update the Water Conservation Plan every 7 years	Ongoing	Public Works
Operations and Infrastructure	Existing operation and maintenance activities that improve water distribution efficiency	Ongoing	Ongoing	Public Works
	Expansion of non-potable reuse	Ongoing	Recently updated Non-potable Master Plan	Public Works
	Maximize CBT carryover on an annual basis	Ongoing	Ongoing	Public Works
Policy	Policy requires new developers to provide water supplies or comparable payment	Ongoing	Ongoing	Public Works
	Policy requires soil amendments for all new common areas	Ongoing	Ongoing	Public Works
Potential New Mitigation Measures For Further Evaluation				
Demand Management (water conservation)	Erie updated its Water Conservation Plan in 2014 which includes a variety of conservation activities that provide long-term water savings while also providing drought mitigation benefits. These activities are listed in Table 1.	n/a	Plan update was completed in December of 2014	Public Works

Category	Mitigation Measures	Action Items	Milestones	Lead Department
Operations and Infrastructure Changes	Emergency interconnects	Discuss potential of using interconnects with nearby water providers for drought related shortages	2016	Public Works
	Bypass local reservoirs	Conduct feasibility study	Start summer 2015	Public Works
	Recycle backwash water at the Water Treatment Facility	Test via adjusting operations	Summer 2014	Public Works
	New local raw water storage for potable and non-potable purposes	Incorporated in ongoing planning efforts	Summer 2014	Public Works

7.2 Monitoring of Drought Indicators

Erie's Public Works Department is responsible for calculating the Erie drought index and collecting the other drought indicator data including the US Drought Monitor, precipitation and soil moisture in the service area, near-term projected customer water demands, long-term weather forecasts and actions that other water providers are taking in the regions. The intensity of monitoring increases from February to early May when the majority of mountain snowpack has accumulated. The drought index coupled with the other drought indicator data is used by the Public Works Department to determine whether there is a drought related shortage for the Town and if so, to develop a recommendation to the Erie Board of Trustees on the specific drought stage for declaration. This recommendation may be modified conditions change that either intensify or reduce drought conditions.

During the irrigation season of a drought, Erie's Public Works Department will continue to monitor local storage, yield from their ditch water rights, precipitation/soil moisture and water demands within their service area. Erie may either increase of decrease the drought stage depending on the magnitude of drought shortage and regional drought conditions.

Erie will also monitor the drought-related actions of other water providers in the region and consider whether these actions are relevant to Erie's water supply situation. This enhances Erie's ability to provide a consistent message to their customer base on why the Town's level of drought response (i.e. water restrictions) either corresponds to or is different from other neighboring cities. In drought years following the irrigation season, Erie will continue to closely monitor their drought indicators to determine the level of drought most appropriate for the fall and winter.

7.3 Drought Declarations

Erie recognizes the importance of declaring a drought and corresponding drought stage in a timely manner. If a drought is declared too late and actions are not taken early enough to reduce water use, supplies can be severely depleted and strict water restrictions may be required, leading to economic impacts that could have been avoided. Conversely, premature drought declarations can result in unnecessary mandatory water restrictions and associated impacts while customers can lose confidence in the declaration.

As discussed in Section 7.2, Erie's Public Works Department is responsible for monitoring drought conditions and developing recommendations on whether a drought should be declared and at what stage. These recommendations are to be presented to the Board of Trustees whom is responsible for making the final decision considering the Public Works Department's recommendations. The Board of Trustees will have an opportunity to discuss the recommendations, ask questions and ultimately decide whether the drought stage should be officially declared. The Town Administrator's Office through the Communication and Marketing Division is responsible for conveying the drought messages to Erie's customers.

7.4 Implementation of the Staged Drought Response Program

The roles and responsibilities for administering the drought response plan include the following.

- Public Works Department – Calculate index, monitor drought indicators and provide recommendations to the Board of Trustees on whether to declare drought and at what stage. Administer, implement and enforce the staged drought response program.
- Administration/Communications and Marketing – Administer the public drought campaign and convey the drought declaration and key messages to the public. This includes consistent information on how drought restrictions will be enforced and the appropriate level of penalties for infractions.
- Finance Department – Monitor revenue changes and additional drought-related expenses and coordinate with the Public Works Department in developing a drought surcharge and issuing customer citation fines if necessary.
- All departments – Follow water use restrictions imposed by staged drought response program.

Weekly or bi-weekly staff meetings will be initiated by the Public Works Director at the onset of a drought among key departments and Town staff to ensure that the program is properly carried out. The initial staff meetings will focus on the staged drought response program and public drought campaign and will include:

- Review of funds available for implementation of the Plan.
- Actions necessary to initiate the designated staged drought response measures to achieve the appropriate response target.
- Specific drought messages to convey to the public and methods used for education using the framework provided in this Plan
- Actions necessary for enforcement (if applicable)
- Roles and responsibilities of each staff member.

7.5 Enforcement of the Staged Drought Response Program

The level of enforcement needed to implement the staged drought response program will be customized to the drought stage as well as to how responsive the public is to the mandatory drought response measures. During the volunteer drought stage, no enforcement will be necessary given that the majority of drought response is voluntary. However, for the remaining drought stages, enforcement will consist of a call-in service (hotline) where customers will have an opportunity to report infractions.

Enforcement will be managed by Erie's Public Works Department. This will include patrol of neighborhood and business districts to identify owners/residents that are in violation of mandatory restrictions/requirements and issuing citations and appropriate penalties based on the drought stage and number of violations.

At the onset of a drought, the Public Works Department will determine the level of enforcement necessary and penalties assigned to infractions. The severity of penalty will depend upon the drought stage and number of infractions incurred by a customer. Penalties could range from warning citations and monetary fines to the temporary shut-off of water services in severe cases.

Customers will have an opportunity to appeal citations. Written appeals may be mailed/emailed to the Town Clerk's office at Town Hall (PO Box 750, Erie CO 80516 or 645 Holbrook Street Erie, CO 80516) providing justification for why the citation should be appealed. Reasons for appeal may include:

- The citation mistakenly included the wrong address.
- A new resident has moved into a house that had received multiple previous citations through no fault of the new resident.
- Irrigation with independent well water.

7.6 Revenue Implications and a Financial Budgeting Plan

A reduction in customer water use during periods of drought reduces water sales and consequently could result in a revenue shortfall. Increased costs associated with implementation of the staged drought response program, public drought campaign, and enforcement could further intensify the shortfall. At the onset of a drought declaration, the Public Works Department will estimate the costs necessary to implement drought response and also work with the Finance Department to project potential revenue shortfalls. If necessary, the Public Works Department will request supplemental appropriations from the Board of Trustees for additional funding.

In addition, Erie plans to seek available financial drought-related assistance (i.e. public drought-related loans, grants, etc.) and in a severe or emergency drought stage, the drought response plan also calls for the consideration of a temporary drought surcharge that would be approved by the Board of Trustees. The main objective of the surcharge is to provide additional financial incentive to conserve water; however, as a secondary benefit, the drought surcharge could also be used to help compensate for reduced water sales and increased drought response costs. If drought conditions and corresponding water sale reductions are severe enough to warrant the increase of water rates, an intensive public outreach campaign would be implemented to convey the reasoning behind why the water rates are being raised and the status of the Town's financial condition.

7.7 Monitoring of Plan Effectiveness

The monitoring of Erie's drought mitigation and response actions is important to ensuring Erie's success in preparing and responding to drought. The following data will be collected by the Public Works Department and included in an annual report.

- Drought index and drought indicators – The drought index will be recorded on an annual basis (i.e. drought index calculated in November, March, April and May) and will include the

specific information needed to develop the drought index (i.e.: CBT quota). Information on the other drought indicators will also be recorded in addition to changes in CBT policy/operations, infrastructure repairs or modifications that affect supply delivery, etc.

- Customer water demands – These demands will include total annual and monthly water demands for the Town and by customer type, system-wide per capita water use, residential per capita water use and first-use and reuse irrigation on Town Parks. During drought periods, information will also be provided on whether demand reductions corresponded to the drought response and how the present year's demands compare to previous non-drought years.
- Drought mitigation measures – Status of the mitigation activities and other relevant factors (i.e. budget and staff time).
- Public perceptions and response to the drought (in drought years) – Documentation of public comments on the drought response and mitigation given at public/Town meetings and through phone calls and electronic correspondence. Formal public surveys may also be used to gather public input depending on the magnitude of the drought and Town budget available for the survey.
- Administrative data on the drought response – This includes citations delivered to customers, summary of drought-related calls received, specific response measures that were enacted and enforced, etc.
- Lessons learned – Any issues, challenges, and concerns that arose during implementation of the staged drought response program (if applicable), drought monitoring, mitigation activities, enforcement and the public drought campaign.

These monitoring data provide a means to assess the effectiveness of the Plan make necessary adjustments. During drought years, these monitoring data may be collected on a more frequent basis in order to more effectively respond to drought and customer needs.

8.0 Formal Plan Approval And Updates

8.1 Public Review Process

Erie conducted a 60–day public review period from June 3 to August 2 in order to obtain feedback from the public on the Plan. During this period, the Plan and a Fact Sheet summarizing the Plan was posted on Erie's Town website. Members of the public were able provide comments via email and by delivering hard copies of comments to the Town Clerk at Town Hall.

8.2 Adoption of Resolutions and Official Agreements

Resolution X was passed on X adopting the Town of Erie's Drought Management Plan. Town code was also modified giving the Town authority to enforce the Drought Plan.

Erie currently does not have any official agreements with other entities related to drought mitigation or response. Erie will consider entering future agreements if such agreement provide Erie with drought mitigation and/or response benefits.

8.3 Drought Management Plan Approval

Erie's Drought Management Plan was approved by the Board of Trustees on enter date. Each Board member had the opportunity to review the Plan and comment prior to finalization of the Plan and formal approval.

8.4 Periodic Review and Update

Erie's Drought Management Plan will be updated every five years. The next update is scheduled for 2020. The new plan will incorporate information from the annual monitoring reports discussed in Section 7.7.

REFERENCES

CWCB. 2010. Municipal Drought Management Plan Guidance Document.

CWCB. 2011. Sample Municipal Drought Management Plan.

Glossary of Meteorology, 2nd edition. 2000. American Meteorological Society

NCWCD website. 2014. Water Quality Studies. http://www.northernwater.org/WaterQuality/WaterQualityStudies.aspx Accessed January 21, 2014.

Town of Erie. 2007. Town of Erie Water Conservation Plan.

Town of Firestone. 2012. Drought Management Plan.

Town of Erie. 2013. Water Supply and Demand Data.

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**CONSENT AGENDA** Consideration of Resolution 15-106: A Resolution Authorizing Award Of Construction Contract To MSI Enterprises, Inc. For Pinon Drive Storm Repairs In The Amount Of $19,975.00; And Setting Forth Details In Relation Thereto.
DEPARTMENT:	Public Works
PRESENTER/PREPARER:	**Russell Pennington, Deputy Director of Public Works** **Jody Lambert, Operations and Maintenance Manager**
FISCAL INFORMATION:	Cost as Recommended: **$ 21,900** Balance Available: $ 62,200 Budget Line Item Number: 520 . 70 . 760 . 524000 . 000000 Fund: Storm Drainage – Operations New Appropriation Required: ☒Yes ☐ No
STAFF RECOMMENDATION:	Approving Resolution 15-106 awarding said contract, authorizing the Town Administrator to execute said contract, authorizing Staff to expend contracted funds and contingency funds.

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

On July 4, 2015, the Public Works Department received a callout for a sink hole on Pinon Drive in the Vista Ridge subdivision. On arrival, crews assessed the situation and filled the hole with approximately 5 tons of road base to temporarily mediate the situation. On Monday, July 6, 2015 the area had sunk again, added another yard of road base.

Staff contacted Quality Pipe Services to camera the line and found that the 30-inch storm line had separated from the inlet. This is causing water to go outside the preferred path. Staff contacted Contractors for a proposal to repair the storm line to the original design.

The 2015 Storm Operations budget has money budgeted for landfill fees, storm manhole adjustments, and storm video inspections. There is no money is budgeted for emergency repairs. Staff is requesting additional funds to complete this repair.

Contractor	Bid
MSI Enterprises, Inc.	$19,975.00
EZ Excavating	$21,875.00
Hirschfeld Backhoe	no bid
Quality Pipe Service	no bid

Staff recommends award of contract to MSI Enterprises, Inc. MSI is familiar with this type of work and has completed successful projects for the Town of Erie. Staff has reviewed the bids and found them to be competitive.

Project Budget Summary	
Contract	$19,975.00
Contingency	$1,925.00
Total	**$21,900.00**

Project Schedule

Notice of Award	August 12, 2015
Notice to Proceed	August 12, 2015
Estimated Project Completion	September, 2015

Staff Review:

_____ **Town Attorney**
_____ **Town Clerk**
_____ **Community Development Director**
_____ **Finance Director**
_____ **Police Chief**
_____ **Director of Public Works**

Approved by:

_____
A.J. Krieger
Town Administrator

ATTACHMENTS:

a. Resolution 15-106
b. Vicinity Map

RESOLUTION 15-106

A RESOLUTION OF THE TOWN OF ERIE, COLORADO AUTHORIZING AWARD OF A CONSTRUCTION CONTRACT TO MSI ENTERPRISES, INC. FOR PINON DRIVE STORM REPAIRS IN THE AMOUNT OF $19,975.00; AND SETTING FORTH DETAILS IN RELATION THERETO.

Whereas, on July 4, 2015, the Public Works Department was notified of a sink hole on Pinon Drive in the Vista Ridge Subdivision which was caused by the separation of a storm line; and

Whereas, the 2015 Storm Operations budget does not include monies for repairs, additional funds are needed to complete the repairs to return the line to its original design; and

WHEREAS, the Board of Trustees of the Town of Erie believes it is in the best interest of the Town to enter into such contract to repair the storm line.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. That the approval of the construction contract with MSI Enterprises, Inc. is found to be a reasonable and acceptable contract for the Pinon Drive Storm Repairs.

Section 2. That the Town of Erie be and is hereby authorized and directed to enter into the contract with MSI Enterprises, Inc. and the Appropriate Town Officers are hereby authorized and directed to sign and bind the Town of Erie to said contract in the amount of $19,975.00 with a contingency not to exceed $1,975.00.

Section 3. That this construction contract is found to be in the best interest of the Town of Erie, and necessary for the preservation of the public health and safety.

ADOPTED AND APPROVED THIS 11th DAY OF AUGUST, 2015, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy J. Parker, CMC, Town Clerk

Pinon Drive Storm Repair
Project Location
PINON DR
N

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**PROCLAMATIONS AND PRESENTATIONS**
DEPARTMENT:	Parks & Recreation
PRESENTER:	Farrell Buller, Parks & Recreation Director

FISCAL INFORMATION:	Cost as Recommended:	**N/A**
	Balance Available:	
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000 000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐Yes ☐ No
STAFF RECOMMENDATION:	**None**	

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

The Parks and Recreation Department would like to recognize the efforts of the Trailblazers Leadership Camp Director, Adrienne Barlow and the participants of this program offered at the Erie Community Center.

The Trailblazer's Leadership Camp is a program that strives to help participants meet their full potential as young leaders. The program is open to pre-teen's ages 12-14. Each week, the program focuses on a different concentration, including building confidence, problem solving, team building, goal setting and community involvement. Participants also get to take part in the best parts of summer camp - swimming and rock climbing at the ECC in addition to going on field trips on Thursdays.

Some of the projects this summer included:

- Assisting the Parks Division mulch trees in Town parks
- Serving as junior counselors on Camp Erie field trips
- Volunteering at Sister Carmen Community Gardens composting, harvesting and building
- Planning and organizing a food drive that collected 578 items weighing over 350 pounds

We hope you enjoy this video about the program: Erie Trailblazers

Staff Review:

____**Town Attorney**
____**Town Clerk**
____**Community Development Director**
____**Finance Director**
____**Police Chief**
____**Public Works Director**
FS **Park & Recreation Director**

Approved by:

A.J. Krieger
Town Administrator

Attachments:
a. N/A

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**PROCLAMATION & PRESENTATIONS: The Communicator Awards Honoring Excellence in Marketing and Communications:** • **Town of Erie Government Website - Award of Distinction** • **Inside Erie "Water" Edition - Award of Distinction**
DEPARTMENT:	**Administration**
PRESENTER:	Fred Diehl, Assistant to the Town Administrator

FISCAL INFORMATION:	Cost as Recommended:	NA
	Balance Available:	NA
	Budget Line Item Number:	NA
	New Appropriation Required:	☐ Yes ☒ No
STAFF RECOMMENDATION:	**NA**	

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Town of Erie Website: As the online gateway to the Town of Erie, the new www.erieco.gov is a more welcoming, informative and easier to navigate local government website – that doesn't look like a government website. Since its launch in June of last year, the site has enjoyed an approximately 24% increase in Unique Site Visits and a 34% decrease in Total Page Visits. The result? Our customers our getting to where they want to go in fewer clicks.

Inside Erie "Water" Edition: Nationwide, many utilities are grappling with the problem of aging infrastructure. Fortunately, as Erie is a younger community, our water customers enjoy the benefits of our newer – state of the art infrastructure. And at the heart of that infrastructure is the Lynn R. Morgan Water Treatment Facility. The "Water" edition of Inside Erie shows where Erie's water comes from and what it takes to deliver it to our community.

The Communicator Awards is an international awards program recognizing marketing and communications. Founded two decades ago, The Communicator Awards is sanctioned and judged by the Academy of Interactive & Visual Arts (AIVA), an invitation-only group consisting of professionals from media, communications, advertising, creative and marketing firms. The Communicator Awards receives over 6,000 entries from companies and agencies of all sizes, making it one of the largest awards of its kind in the world. To learn more about the AIVA please visit www.aiva.org .

Staff Review:

_____ **Assistant to the Town Administrator**
_____ **Town Clerk**
_____ **Community Development Director**
_____ **Finance Director**
_____ **Police Chief**
_____ **Public Works Director**

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:
1. Town of Erie Government Website - Award of Distinction
2. Inside Erie "Water" Edition - Award of Distinction

The Communicator Awards

THE COMMUNICATOR AWARDS

HONORING EXCELLENCE IN MARKETING AND COMMUNICATIONS

2015
Award of Distinction

Town of Erie, Colorado
Government Website

Presented by:

AIVA
Academy of Interactive & Visual Arts

The Communicator Awards

THE COMMUNICATOR AWARDS

HONORING EXCELLENCE IN MARKETING AND COMMUNICATIONS

2015
Award of Distinction

Town of Erie, Colorado
Public Service Video
Inside Erie: Water

AWARD OF DISTINCTION

Presented by:

AIVA
Academy of Interactive & Visual Arts

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**LAND DEVELOPMENT RESOLUTIONS AND ORDINANCES** **CONSIDERATION OF ORDINANCE 20-2015 (FIRST READING):** An Ordinance Of The Town Of Erie, Colorado, Approving Canyon Creek PD Amendment No. 9; Making Findings Supporting Canyon Creek PD Amendment No. 9; And, Setting Forth Details In Relation Thereto.
PURPOSE:	Canyon Creek PD Amendment No. 9 proposes to amend the Canyon Creek Filing No. 10 area of the subdivision to: 1. Change land use designations from CBR – Community / Business / Residential to CC – Community Commercial, HR – High Density Residential, and MR – Medium Density Residential. 2. Modify lot dimensional standards. 3. Modify architectural standards for single family patio homes.
CODE REVIEW:	Erie Municipal Code, Title 10
DEPARTMENT:	Community Development
PRESENTER:	Deborah Bachelder AICP, Senior Planner

FISCAL INFORMATION:	Cost as Recommended:	na
	Balance Available:	na
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☐ No

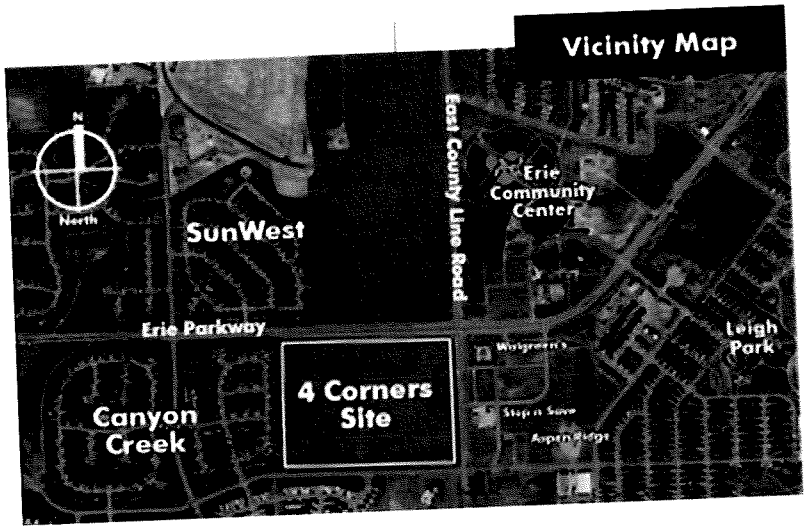
STAFF RECOMMENDATION:	Staff finds the application consistent with the PD Amendment approval criteria in Municipal Code Section 10.7.23 C.9 and recommends approval of the Canyon Creek PD Amendment No. 9 application, on a second reading of the Ordinance. Staff has provided draft Ordinance 20-2015 approving the application for the Board of Trustees to consider.
PLANNING COMMISSION RECOMMENDATION:	The Planning Commission held a public hearing for the PD Amendment request on July 15, 2015. The Planning Commission recommended approval of the PD Amendment in Resolution P15-23.

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Applicant:	RMCS, LLC 21 South Sunset Street Longmont, Colorado, 80501
Owners:	Erie Commercial Venture, LLC 7720 East Belleview Avenue, Suite 350 Greenwood Village, Colorado, 80111

Property Location:

The portion of Canyon Creek PD Amendment No. 9 that is being modified is located in the Canyon Creek Subdivision Filing No. 10 (4 Corners Site) which is located on the southwest corner of Erie Parkway and County Line Road.



Current Land Use and Zoning – Canyon Creek Filing No. 10:

Zoning: Canyon Creek PD – Planned Development

Project Size: 46.6 Acres

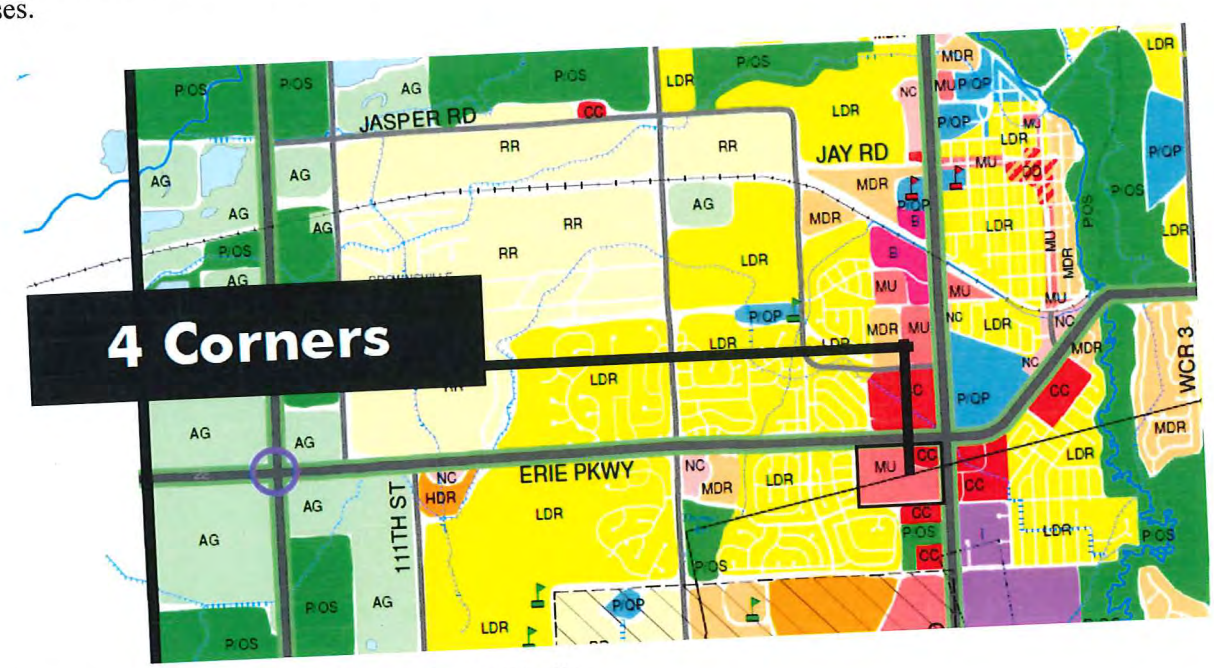
Existing Use: Vacant Lot

Adjacent Land Use and Zoning:

	ZONING	LAND USE
NORTH	CC – Community Commercial CMU – Community Mixed Use LR – Low Density Residential	Ranchwood – Vacant Commercial Ranchwood – Vacant Mixed Use Sunwest – Single Family Residential
EAST	CC – Community Commercial	Commercial Uses / Charter School
SOUTH	PD – Planned Development	Canyon Creek Filing 6: Church Canyon Creek Filing 6 – Single Family Residential
WEST	PD – Planned Development	Canyon Creek Filing 5 – Single Family Residential

Compliance with Town of Erie Comprehensive Plan:

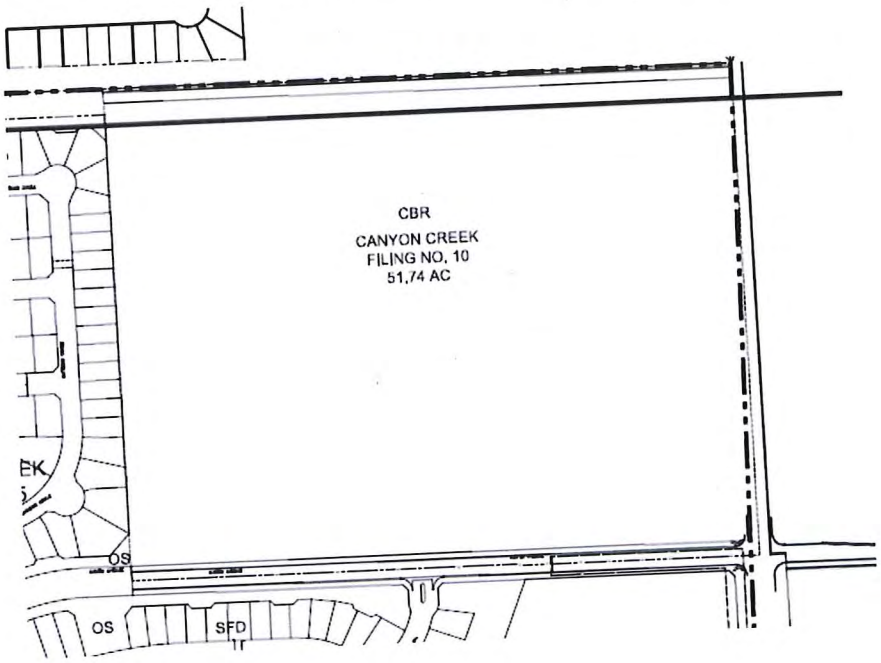
The application is in general Compliance with the Land Use designations on the Comprehensive Plan, Land Use Plan Map. This property allows for MU – Mixed Use and CC – Community Commercial land uses.



Current Canyon Creek PD Amendment No. 8:

As illustrated on the PD map below, the Canyon Creek Filing No. 10 area of the PD is currently designated on the PD zoning map as 51.74 acres of CBR – Commercial / Business / Retail.

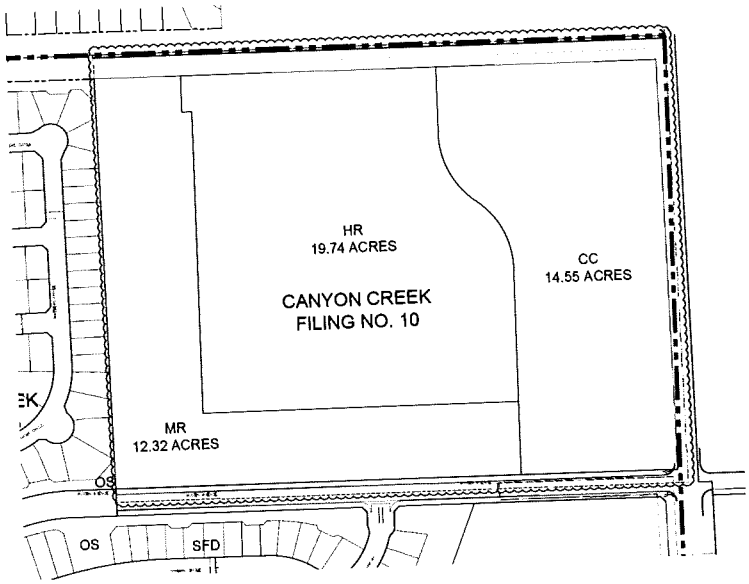
Existing Canyon Creeks PD Amendment No. 8 Map



Proposed Canyon Creek PD Amendment No. 9:

Canyon Creek PD Amendment No. 9 proposes amendments to create a mixed use neighborhood with a variety of commercial and residential dwelling types.

Proposed Canyon Creeks PD Amendment No. 9 Map



Proposed Land Uses

As illustrated on the PD Amendment No. 9 map above, the proposal for the Canyon Creek Filing No. 10 portion of the Canyon Creek PD is to designate three Principal Land Uses: 14.55 acres of CC-Community Commercial; 19.74 acres of HR-High Density Residential; and, 12.32 acres of MR-Medium Density Residential.

The Canyon Creek PD Amendment No. 9 CC-Community Commercial Land Use, HR-High Density Residential Land Use, and MR-Medium Density Residential Land Use will follow the Unified Development Code Table of Permitted Uses in CC-Community Commercial, HR-High Density Residential, and MR-Medium Density Residential zone districts.

Minor modifications to the Permitted Uses are found in Table II on Sheet 2 of the PD Amendment document. PD Amendment No. 9 will allow Single Family Detached – Patio homes as a use by right, with the same architectural design guidelines as were adopted in Canyon Creek Filing No. 9 for the Boulder Creek Neighborhoods patio home development, within the HR-High Density Residential Land Use and MR-Medium Density Residential Land Use. Additionally, within 200 feet of the existing single family homes in Canyon Creek Filing 5, the applicant has proposed that the housing be restricted to alley loaded single family patio homes or duplexes. This will ensure an appropriate housing transition from the existing single family homes to the new development in Filing 10.

Number of Dwelling Units:

PD Amendment No. 9 sets the maximum number of dwelling units in Canyon Creek Filing 10 as:

Land Use	Maximum Units	Minimum Density	Maximum Density
MR-Medium Density Residential:	107	5	10
High Density Residential:	393	10	20
Total:	500		

The proposed density range for the MR Land Use is the same as the Unified Development Code. The proposed density range for the HR Land Use is the same as the Unified Development Code with the density bonus option the UDC offers as an incentive to encourage a mix of dwelling unit types.

Lot Sizes:

Canyon Creek PD Amendment No. 9 also proposes minimum lot sizes and minimum lot widths based on residential use types. Adjacent is the proposed table of new minimum lot sizes and widths for Canyon Creek Filing No. 10 (modification occurring in bubbled portion of the table):

III. MINIMUM LOT SIZES (per Planning Area)

PLANNING AREA (Filing No.)	PRINCIPAL LAND USE	MIN. RES. LOT AREA (sq. feet)	MIN. INTERIOR RES. LOT WIDTH (feet)	MIN. CORNER RES. LOT WIDTH (feet)
Filing No.1		5,000	50'	60'
Filing No.2		5,000	50'	60'
Filing No.3		5,000	50'	60'
Filing No.4		5,000	50'	60'
Filing No.5		5,000	50'	60'
Filing No.6		5,000	50'	60'
Filing No.7		5,000	50'	60'
Filing No.8		N/A	N/A	N/A
Filing No.9 SFD		9,500	80'	90'
Filing No.9 SFD-P		5,500	35'	40'
Filing No.9 TH		1,450	20'	35'
Filing No.10 MR & HR	SFD - Alley Loaded	3,150	30'	35'
Filing No.10 MR & HR	SFD - Patio Alley Loaded	3,800	30'	35'
Filing No.10 MR & HR	Duplex	2,250 per DU	25'	30'
Filing No.10 MR & HR	Town Home - Alley Loaded	1,450 per DU	NA	NA
Filing No.10 MR & HR	Multifamily	1,250 per DU	NA	NA

As reference for comparison; the table below is the Town's Municipal Code standard minimum lot sizes for our HR – High Density Residential and MR – Medium Density Residential Land Use areas.

Zone District	Minimum Lot Area	Minimum Lot Width
HR – High Density Residential	5,000 Single Family 2,500 Multifamily	50 feet Single Family 60 feet Single Family corner lot No minimum lot width for Multifamily
MR – Medium Density Residential	5,000 Single Family 2,500 Multifamily	50 feet Single Family 60 feet Single Family corner lot No minimum lot width for Multifamily

Setbacks:

Below is the proposed table of minimum setbacks for the proposed land uses in Canyon Creek Filing No. 10 (modification occurring in bubbled portion of the table):

IV. MINIMUM SET BACK TO *PRINCIPAL* BUILDINGS
All setbacks measured from the Property Line (PL) to the structure as noted.

Multiple principal buildings on a single lot shall be separated a distance equal to the distance that would be required if they were separated by a lot line.

PLANNING AREA (Filing No.)	FRONT YARD (feet)		SIDE YARD (feet)		REAR YARD (feet)
	To garage	To bldg.	Interior lot	Along street	
Filing No.1 - SFD	20'	20'	5'	15'	15'
Filing No.2 - SFD	20'	20'	5'	15'	15'
Filing No.3 - SFD	20'	20'	5'	15'	15'
Filing No.4 - SFD	20'	20'	5'	15'	15'
Filing No.5 - SFD	20'	20'	5'	15'	15'
- DC	20'	20'	10'	20'	20'
- MDR	20'	10'	5/0'*/***	5'	5'
Filing No.6 - SFD	20'	20'	5'**	15'*	15'
- RA	20'	20'	10'	20'	20'
- CBR	N/A	20'	5/0'*	20'	20'
Filing No.7 - SFD	20'	20'	5'	15'	15'
Filing No.8 - MDR	20'	15'	5/0'*	10'	15'
Filing No.9 - SFD	25'	25'	10'	20'	20'
- TH****	20'	5'	5/0'/*	5'	5'
- SFD-P****	20'	15'*****	5'	10'	10'
Filing No. 10 - CBR	N/A	20'	10/0'	20'	20'

As reference for comparison; the table below is the Town's Municipal Code standard setbacks.

Zone District	Front Yard to Garage	Front Yard to Building	Side Yard Interior Lot Line	Side Yard to Street	Rear Yard
MR – Low Density Residential	20'	20'	5'/0' for attached dwelling unit	20''	20''
HR – High Density Residential	20'	20'	10'/0' for attached dwelling unit	20'	20'
CC – Community Commercial		20'	10'/0' for attached units	20'	20'

The PD Amendment proposes to use the same setback encroachment language approved for the SFD-P and TH in Canyon Creek Filing No. 9 for the HR – High Density Residential and MR – Medium Density Residential Land Use areas. The encroachment language proposed for the CC – Community Commercial Land Use area states:

****** Awnings, blade signs, incidental architectural features such as cornices, eaves, canopies, chimneys, bay windows, ornamental features and other similar architectural features may project not more than five (5) feet into any required setback.

Maximum Building Height:

Adjacent is the proposed table of maximum building heights for the proposed land uses in Canyon Creek Filing No. 10 (modification occurring in bubbled portion of the table):

The HR – High Density Residential Land Use area includes a requirement that the proposed 45 foot building height maximum be limited to a three story building with the allowance of a mezzanine/entresol (mid-story level) within the building.

VI. ADDITIONAL STANDARDS

PLANNING AREA (Filing No.)	MIN. SETBACK BETWEEN BUILDINGS (feet)	MAX. LOT COVERAGE (percent %)		MAX BLDG. HEIGHT (feet)	
		Principal	Accessory *	Principal	Accessory
Filing No. 1 - SFD	10'	30%	30%	35'	25'
Filing No. 2 - SFD	10'	30%	30%	35'	25'
Filing No. 3 - SFD	10'	30%	30%	35'	25'
Filing No. 4 - SFD	10'	30%	30%	35'	25'
Filing No. 5 - SFD	10'	30%	30%	35'	25'
- DC	10'	30%	30%	35'	25'
- MDR	10'	*NA*	*NA*	25'	25'
Filing No. 6 - SFD	10'	*NA*	*NA*	35'	25'
- RA	10'	30%	30%	45'**	25'
- CBR	10'	30%	30%	35'	25'
Filing No. 7 - SFD	10'	*NA*	*NA*	35'	25'
Filing No. 8 - MDR	10'	*NA*	*NA*	35'	25'
Filing No. 9 - SFD	10'	30%	30%	35'	25'
-TH	0'	*NA*	*NA*	35'	NOT PERMITTED
-SFD-P	0'	*NA*	*NA*	35'	NOT PERMITTED
Filing No. 10 - MR	NA	*NA*	*NA*	35'	25'
-HR***	NA	*NA*	*NA*	45'	25'
-CC	NA	*NA*	*NA*	45'	25'

*** Maximum coverage of required yard**

**** - 55' permitted for the domed portion of the church structure only.**

- A cross may be placed on top of the domed portion, however the dome may not exceed 55 feet and the total height of the dome and cross may not exceed 60

- A bell tower is permitted but shall not be considered an appurtenance and shall not exceed 45 feet in height.

***** A maximum of three (3) stories is allowed: however, a mezzanine or entresol space is permitted if it has an interior entrance connection to the third floor unit, does not provide a separate, primary exterior entrance to the building, and the building height remains at or under 45 feet.**

As reference for comparison; the table below is the Town's Municipal Code standard maximum building height for our CC – Community Commercial, HR – High Density Residential and MR – Medium Density Residential Land Use areas.

Zone District	Maximum Height
CC – Community Commercial	45 feet/3 stories max.
HR – High Density Residential	Principal: 35 feet Accessory: 25 feet
MR – Medium Density Residential	Principal: 35 feet Accessory: 25 feet

STAFF ANALYSIS:

Canyon Creek PD Amendment No. 9 was reviewed for conformance with Municipal Code, Title 10, UDC Section 10.7.23 C.9. Approval Criteria. Staff finds the Canyon Creek PD Amendment No. 9 application in compliance with the Approval Criteria as listed below.

a. The PD district zoning is generally consistent with the purpose of the PD zone district as set forth in UDC Sections 2.5 and 7.6.
   Staff: It is generally consistent.

b. The modification to the UDC regulations is based on creative and innovative design and amenities incorporated in the PD zone district that could not otherwise be achieved through other standard zoning districts or through another modification processes such as Alternative Equivalent Compliance in UDC Subsection 6.1.C or the PUD Overlay District in UDC Subsection 2.7.D.
   Staff: The modification allows for the construction of a mixed use neighborhood at the crossroads of the Towns primary principal arterial streets (Erie Parkway and County Line Road).

c. The PD zoning district will promote the public health, safety, and general welfare.
   Staff: The PD Amendment promotes the public health, safety and general welfare.

d. The PD zoning district is generally consistent with the Town of Erie Comprehensive Master Plan; Transportation Master Plan; Parks, Recreation, Open Space, and Trails Master Plan, and other pertinent Town plan and policy documents.
   Staff: The PD Amendment is generally consistent with the Town of Erie master plans.

e. Adequate and sufficient public safety, utility facilities and services, recreation facilities, parks, open space, and schools are available to serve the property, while maintaining sufficient levels of service to existing development.
   Staff: Adequate facilities are available to serve the property and existing development.

f. The PD zone district provides adequate vehicular circulation and parking facilities in terms of traffic volumes, convenience, safety, access, screening and noise.
   Staff: All proposed vehicular facilities will meet the Town requirements at the time of plat application.

g. A pedestrian and bicycle circulation system that provides connections to adjacent properties, existing and future trails, parks, open space, recreational facilities, schools, and other places of public gathering.
   Staff: Adequate pedestrian and bicycle circulation are proposed in the supporting Sketch Plan application.

h. The PD zone district is not likely to result in significant adverse impacts to the natural environment, and significant scenic and historic features.
   Staff: Significant adverse impacts are not anticipated.

i. The PD zone district will not result in significant adverse impacts on properties in the vicinity of the PD zone district, or such impacts will be substantially mitigated.
   Staff: Adequate access onto the adjacent principal arterial streets to help mitigate any vehicular impacts on the adjacent properties and the supporting Sketch Plan application has indicated that an emphasis will be made to provide safe pedestrian access through the site. Significant adverse impacts are not anticipated.

j. Proposed uses will be compatible in scale with uses on properties in the vicinity of the PD zone district.
   Staff: The proposed development will provide a transition of residential uses from the proposed commercial to the existing land uses that is compatible in scale.

k. The residential areas of a PD zone district allocate a variety of housing types and densities appropriate to the size of the residential development area.
Staff: The PD Amendment allows for diversification of the housing within Canyon Creek.

l. Visual relief is provided through building placement, shortened or interrupted street vistas, visual access to open space, parks, and other design methods.
Staff: The Sketch Plan that supports the PD Amendment provides visual relief through the use of alleys and common open spaces.

m. The modifications permitted in the PD zone district have been made in exchange for greater public benefits that would not have otherwise be achieved through development under another zone district.
Staff: The PD Amendment will allow for a wider diversity of housing and commercial options within the Canyon Creek Subdivision.

Staff Recommendation:

Staff finds the application consistent with the PD Amendment approval criteria in Municipal Code Section 10.7.23 C.9 and recommends approval of the Canyon Creek PD Amendment No. 9 application, on a second reading of the Ordinance. Staff has provided draft Ordinance 20-2015 approving the application for the Board of Trustees to consider.

Public Notice

Colorado Hometown Weekly Newspaper Publication:	July 22, 2015
Notice Posted on Public Notice Boards and on Property; and,	
Letters to adjacent property owners mailed:	July 24, 2015

The documentation required for the PD Amendment application is complete. The Community Development file for the Canyon Creek PD Amendment No. 9 application is entered into the public record.

Neighborhood Meeting:

As required by the Municipal Code a Neighborhood Meeting was held on June 26th at 6:00 p.m. in the Erie Community Center. The required notice for the Neighborhood Meeting was provided.

Staff Review:

____**Town Attorney**
____**Town Clerk**
DW **Community Development Director**
____**Finance Director**
____**Police Chief**
____**Public Works Director**

Approved by:

A. J. Krieger
Town Administrator

ATTACHMENTS:

A. Ordinance 20-2015
B. Planning Commission Resolution P15-23 and Minutes
C. Neighborhood Meeting Materials
D. Application Materials

EXHIBIT A

ORDINANCE NO. 20-2015

AN ORDINANCE OF THE TOWN OF ERIE, COLORADO, APPROVING CANYON CREEK PD AMENDMENT NO. 9; MAKING FINDINGS SUPPORTING CANYON CREEK PD AMENDMENT NO. 9; AND, SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, Erie Commercial Venture, LLLP, 6950 East Belleview Avenue, Suite 202, Greenwood Village, Colorado, hereinafter known as the "Developer," has submitted a "PD" Planned Development Amendment ("Canyon Creek PD Amendment No. 9") for those certain lands within the Town of Erie, Colorado, known as "Canyon Creek", under the authority provided by the Municipal Code of the Town of Erie, Colorado; and,

WHEREAS, the Planning Commission of the Town of Erie, Colorado, conducted a public hearing on July 15, 2015, pursuant to the published notice for consideration of the Canyon Creek Planned Development "PD" Amendment No. 9, on the application of Erie Commercial Venture, LLLP, 6950 East Belleview Avenue, Suite 202, Greenwood Village, Colorado, and;

WHEREAS, the Board of Trustees of the Town of Erie, Colorado, considered the Canyon Creek PD Amendment No. 9 at a public hearing held on August 11, 2015 for which meeting public notice was legally given, on the application of the Developer, being the amendment of the PD for the following real property; to wit:

> A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North, Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado,

and,

WHEREAS, the Developer's application and supporting documents are in substantial compliance with the "*Town of Erie, 2005 Comprehensive Plan*" and the "*Town of Erie Municipal Code, Title 10*"; and,

WHEREAS, Canyon Creek PD Amendment No. 9 as proposed will preserve the health, safety, welfare and interest of the citizens of the Town of Erie, Colorado; and,

WHEREAS, the notice has been given and the public hearings have been held, all as required by the Municipal Code of the Town of Erie.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. That following a legally noticed and duly conducted public hearing, the Board of Trustees of the Town of Erie has determined that the Canyon Creek PD Amendment No. 9 application meets the approval criteria in Municipal Code Title 10, Section 7.23 C.9., as applied to an existing PD, specifically making the following findings:

a. The PD district zoning is generally consistent with the purpose of the PD zone district as set forth in UDC Sections 2.5 and 7.6.

   Finding: It is generally consistent.

b. The modification to the UDC regulations is based on creative and innovative design and amenities incorporated in the PD zone district that could not otherwise be achieved through other standard zoning districts or through another modification processes such as Alternative Equivalent Compliance in UDC Subsection 6.1.C or the PUD Overlay District in UDC Subsection 2.7.D.

   Finding: The modification allows for the construction of a mixed use neighborhood at the crossroads of the Towns primary principal arterial streets (Erie Parkway and County Line Road).

c. The PD zoning district will promote the public health, safety, and general welfare.

   Finding: The PD Amendment promotes the public health, safety and general welfare.

d. The PD zoning district is generally consistent with the Town of Erie Comprehensive Master Plan; Transportation Master Plan; Parks, Recreation, Open Space, and Trails Master Plan, and other pertinent Town plan and policy documents.

   Finding: The PD Amendment is generally consistent with the Town of Erie master plans.

e. Adequate and sufficient public safety, utility facilities and services, recreation facilities, parks, open space, and schools are available to serve the property, while maintaining sufficient levels of service to existing development.

   Finding: Adequate facilities are available to serve the property and existing development.

f. The PD zone district provides adequate vehicular circulation and parking facilities in terms of traffic volumes, convenience, safety, access, screening and noise.

   Finding: All proposed vehicular facilities meet the Town Municipal Code requirements at the time of plat application.

g. A pedestrian and bicycle circulation system that provides connections to adjacent properties, existing and future trails, parks, open space, recreational facilities, schools, and other places of public gathering.

   Finding: Adequate pedestrian and bicycle circulation are proposed in the supporting Sketch Plan application.

h. The PD zone district is not likely to result in significant adverse impacts to the natural environment, and significant scenic and historic features.

   Finding: Significant adverse impacts are not anticipated.

i. The PD zone district will not result in significant adverse impacts on properties in the vicinity of the PD zone district, or such impacts will be substantially mitigated.

   Finding: Adequate access onto the adjacent principal arterial streets will help mitigate any vehicular impacts on the adjacent properties and the supporting Sketch Plan application has indicated that an emphasis will be made to provide safe pedestrian access through the site. Significant adverse impacts are not anticipated.

j. Proposed uses will be compatible in scale with uses on properties in the vicinity of the PD zone district.

   Finding: The proposed development will provide a transition of residential uses from the proposed commercial to the existing land uses that is compatible in scale.

k. The residential areas of a PD zone district allocate a variety of housing types and densities appropriate to the size of the residential development area.

Finding: The PD Amendment allows for diversification of the housing within Canyon Creek.

l. Visual relief is provided through building placement, shortened or interrupted street vistas, visual access to open space, parks, and other design methods.

Finding: The Sketch Plan that supports the PD Amendment provides visual relief through the use of alleys and common open spaces.

m. The modifications permitted in the PD zone district have been made in exchange for greater public benefits that would not have otherwise be achieved through development under another zone district.

Finding: The PD Amendment will allow for a wider diversity of housing and commercial options within the Canyon Creek Subdivision.

That the proposed Canyon Creek Planned Development Amendment No. 9 will preserve the health, safety, welfare, and interest of the citizens of Erie, Colorado.

Section 2. That Canyon Creek PD Amendment No. 9, as specifically set forth in the Town of Erie, Canyon Creek PD Amendment No. 9 application, for the Property owned by the Developer, described herein above, is hereby approved, in accordance with the provisions of Municipal Code, Title 10 of the Town of Erie, Colorado.

Section 3. The Canyon Creek PD Amendment No. 9 shall not affect the Developer's commitments made in the Annexation Agreement, Development Agreements, and the Site Plan Agreements, except as may be specifically amended herein.

Section 4. **Severance Clause**. If an article, section, paragraph, sentence, clause or phrase of this Ordinance is held to be unconstitutional or invalid for any reason, such decision shall not affect the validity or constitutionality of the remaining portions of this Ordinance. The Board of Trustees of the Town of Erie, Colorado hereby declares that it would have passed this Ordinance and each part or parts thereof, irrespective of the fact that any one part or parts may be declared invalid or unconstitutional.

Section 5. **Repeal**. All other ordinances or parts of any ordinances or other Code provisions in conflict herewith are hereby repealed.

Section 6. **Effective Date**. This Ordinance shall take effect thirty (30) days after publication following final passage or upon the full execution of the Canyon Creek PD Amendment No. 9 and the recording of the same with the Boulder County Clerk and Recorder, whichever occurs later.

INTRODUCED, PASSED, ADOPTED AND ORDERED PUBLISHED IN FULL BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE THIS 25TH DAY OF AUGUST 2015.

PUBLISHED IN FULL ON THE _____ DAY OF _____, 2015.

TOWN OF ERIE, a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy Parker, Town Clerk

Town of Erie
Planning Commission Regular Meeting
Wednesday, July 15, 2015
6:30 p.m.
Board Room, Erie Town Hall, 645 Holbrook, Erie, Co 80516

I. CALL MEETING TO ORDER & PLEDGE OF ALLEGIANCE

Chairman Bottenhorn called the Regular Meeting of the Erie Planning Commission to order at 6:30 p.m.

II. ROLL CALL

Commissioner Bottenhorn - Present
Commissioner Burgard – Arrived 6:32
Commissioner Campbell - Present
Commissioner Fraser -
Commissioner Gippe - Excused
Commissioner Harrison - Present
Commissioner Kemp - Present

Staff Present: R. Martin Ostholthoff, Community Development Director;
Deborah Bachelder, Senior Planner;
Todd Bjerkaas, Senior Planner;
A.J. Krieger, Town Administrator;
Paula Mehle, Economic Development; and
Hallie Sawyer, Secretary to the Commission

III. APPROVAL OF THE AGENDA

Commissioner Campbell moved to amend the agenda by moving item VI.6. Public Hearing – Comprehensive Plan Amendment to the first business item, and approve the July 15, 2015, Regular Meeting Agenda as amended. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

IV. APPROVAL OF MINUTES

a. Minutes from the May 20, 2015, Regular Meeting.

Commissioner Harrison moved to approve the May 20, 2015, Minutes as submitted. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

V. PUBLIC COMMENTS (This agenda item provides the public an opportunity to discuss items other than items that are on the agenda. The Planning Commission is not prepared to decide on matters brought up at this time, but it warranted, will place them on a future agenda.)

Comment was taken from Ken Martin, Chairman of the Town of Erie Open Space and Trails Advisory Board, regarding OSTAB's concerns about the proposed Sketch Plan for Canyon Creek Filing 10 Four Corners development that will be considered later in the meeting.

VI. RESOLUTIONS (This agenda item is for all matters that should be decided by resolutions.)

1. Public Hearing – Comprehensive Plan Amendment - TO BE CONTINUED TO AUGUST 19TH, 2015

Purpose: Consideration of a Comprehensive Plan Amendment
Project File #: CPA-000195-2015
Request: Consideration of Resolution P15-__,
Location: N/A
Applicants: N/A
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 6:35 p.m., and continued the hearing to August 19, 2015.

2. Public Hearing – Vista Ridge F-14 Minor Subdivision Plat

Purpose: Consideration of Minor Subdivision Plat
Project File #: MS-14-00049
Request: Consideration of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Chairman Bottenhorn opened the public hearing at 6:35 p.m. Mr. Bjerkaas presented the applications for the Vista Ridge Filing 14 Minor Subdivision Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions. Chairman Bottenhorn swore in the audience.

Drew Warot and Brandon McClary, 65 Tejon Street, Denver, represented Kings Soopers, the project anchor, and were present to address questions and concerns.

Public Comment was taken from Betty Jo Booth, Chairman of the Board for the Vista Ridge Academy; Monica Wernick of Vista Ridge; and Stephen Weddig, 1265 Graham Circle. Comments covered Vista Academy's concerns about the rear of the King Soopers Store being so close to the school; store deliveries impacting school drop offs; loosing fields and open space; impact on area homes and traffic; with Erie's Safeway being in Lafayette and King Soopers in Broomfield, folks in the middle had nowhere close to shop.

Commissioner questions and concerns covered store deliveries vs. school drop-offs; blending of architectural detail with the surrounding community; entryway coverings to provide protection from weather; Highway 7/Sheridan expansion time frames; estimated completion time; why 3' shorter parking spaces; parking lot safety; location of existing cottonwood trees; what determined size of fueling bay; why no drive-thru like for Starbucks; how will current topography be changed; will perimeter walks be extended to existing walks; are the sign size changes unique to Erie; is the property to the west future multifamily; explain process of evaluating future store sites; and will three pad sites be sold or leased to future users.

Chairman Bottenhorn closed the public hearings at 7:51 p.m.

Commissioner comments covered general excitement to welcome King Soopers to Erie, citing the huge need that will be filled; appreciation for delivery times occurring during evening hours; thanks for well written reports and submittal and for answering all of the questions and concerns; good presentation; and all commissioners noted agreement with all of the proposed Alternative Compliance requests.

Commissioner Campbell moved approval of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

3. Public Hearing – Vista Ridge F-14 Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-14-00050
Request: Consideration of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Commissioner Harrison moved approval of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

Chairman Bottenhorn called for a short recess at 8:00 p.m. The meeting was called back to order at 8:03p.m.

4. Public Hearing – Vista Ridge F-2, 1st Amendment Preliminary Plat

Purpose: Consideration of Preliminary Plat
Project File #: PP-000055-2014
Request: Consideration of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 8:04 p.m. Mr. Ostholthoff presented the applications for the Vista Ridge Filing 2, 1st Amendment Preliminary Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions.
Chairman Bottenhorn swore in the audience.
Ward Ritter, Chartered Homes, 3160 Village Vista Drive, Erie, was present to address any questions and concerns.
There was no public comment.
Commissioner questions and concerns covered will this be more upscale than Latitude; will the homes backing to the golf course have walkouts; soils/foundation issues – are there guarantees in place; street tops; and estimated HOA costs.
Chairman Bottenhorn closed the public hearing at 8:27p.m.
The Commission had no further comments.
Commissioner Kemp moved approval of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

5. Public Hearing – Vista Ridge F-2, 1st Amendment Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-000054-2014
Request: Consideration of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Commissioner Kemp moved approval of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

6. Public Hearing – Canyon Creek Planned Development Amendment No. 9

Purpose: Consideration of Planned Development Amendment No. 9 for Canyon Creek
Project File #: PDA-000544-2015

Request: Consideration of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment.
Location: SW Corner of Erie Parkway & County Line Road
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Chairman Bottenhorn opened the public hearing at 8:29 p.m. Mrs. Bachelder presented the applications for the Canyon Creek PD Amendment No. 9 and Sketch Plan for Canyon Creek Filing 10, entered the documents into evidence and presented the staff recommendations for approval of the resolution. Chairman Bottenhorn swore in the audience, and disclosed that the architect for this project had been a client of his firm in the past. They were no longer doing business, and his judgment would not be swayed by the acquaintance.

Justin McClure, RMCS, LLC, 21 S. Sunset Street, would present details of the Sketch Plan and was available to address questions and concerns.

Public Comment was taken from Douglas Luers, 600 Mathews Circle; and Vladimir Dixy, 409 Graham Way. Concerns covered view from back yards; need for a view corridor and or open space between developments; construction noise and dirt; light pollution; home values; traffic signal at Austin Avenue & County Line; need for a small grocer like Sprouts; and will the Town be financing infrastructure.

Commissioner question and concerns included traffic; impact of this added density on existing Town facilities; plug for splash parks; strategy for leasing/owning retail pad sites; how has McStain done with their alley loaded Single Family; market study; will they partner with preferred builders; and will the multifamily be serviced by elevators of walkups.

Commissioner Bottenhorn closed the public hearing at 9:21 p.m.

Commissioner Comments covered excitement to see this plan; nice to see plans for a desperately needed grocery store in this specific area; this is a better compromise then big box development; likes linear park idea; tonight has been mind-blowing, seeing this type of growth presented after 16 years; excitement about the possibilities; appreciation for park alternatives; fascinating concept that looks neat; appreciation for an appropriate plan that should be in this location; and the 45' height will be appropriate.

Commissioner Campbell moved approval of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

VII. GENERAL BUSINESS (This agenda item is reserved for matters that are ready for Commission action, and do not fit into other categories, i.e. resolutions)

1. Canyon Creek F-10 Sketch Plan

Purpose: Consider proposed sketch plan
Project File #: SK-000206-2015
Request: Consider and comment on proposed sketch plan
Location: SW Corner of Erie Parkway & County Line Road
Zoning: Canyon Creek Planned Development
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Comments were made during the public hearing portion of the meeting.

VIII. STAFF REPORTS (This agenda items is reserved for specific items from Staff requiring Commission direction or just relaying important information.)

The Stakeholders meeting next Tuesday, July 21st will begin at 6 p.m.

IX. COMMISSIONER REPORTS AND DISCUSSION ITEMS (This agenda item is for all Planning Commission reports and items of information as well as Commission discussion items, not listed on the agenda)

None.

X. **ADJOURNMENT**

There being no further business to come before the Commission, Chairman Bottenhorn adjourned the July 15, 2015, Regular Meeting of the Planning Commission at 9:33 p.m.

Respectfully Submitted,

By: _____
Hallie S. Sawyer, Secretary

Town of Erie Planning Commission

By: _____
J. Eric Bottenhorn, Chair

EXHIBIT B

RESOLUTION NO. P15-23

A RESOLUTION REGARDING THE HEARING ON CANYON CREEK PD AMENDMENT NO. 9, ADOPTING CERTAIN FINDINGS OF FACT AND CONCLUSIONS FAVORABLE TO THE PD AMENDMENT.

WHEREAS, the Planning Commission of the Town of Erie, Colorado, considered Canyon Creek PD Amendment No. 9 at a public hearing on Wednesday, July 15, 2015, on the application of Erie Commercial Venture, LLLP, 6950 East Belleview Avenue, Suite 202, Greenwood Village, Colorado, for the PD Amendment of the following real property; to wit:

A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North, Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado;

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. Findings of Fact.

1. The applicant's application and supporting documents are in substantial compliance with the Town of Erie Municipal Code, Title 10.

2. Following a duly noticed and conducted public hearing, the Planning Commission determined that the application meets the approval criteria in Municipal Code Title 10, Section 10.7.23 C.9. Approval Criteria:

   a The PD district zoning is generally consistent with the purpose of the PD zone district as set forth in UDC Sections 2.5 and 7.6.

   b The modification to the UDC regulations is based on creative and innovative design and amenities incorporated in the PD zone district that could not otherwise be achieved through other standard zoning districts or through another modification processes such as Alternative Equivalent Compliance in UDC Subsection 6.1.C or the PUD Overlay District in UDC Subsection 2.7.D.

   c The PD zoning district will promote the public health, safety, and general welfare.

   d The PD zoning district is generally consistent with the Town of Erie Comprehensive Master Plan; Transportation Master Plan; Parks, Recreation, Open Space, and Trails Master Plan, and other pertinent Town plan and policy documents.

   e Adequate and sufficient public safety, utility facilities and services, recreation facilities, parks, open space, and schools are available to serve the property, while maintaining sufficient levels of service to existing development.

   f The PD zone district provides adequate vehicular circulation and parking facilities in terms of traffic volumes, convenience, safety, access, screening and noise.

   g A pedestrian and bicycle circulation system that provides connections to adjacent properties, existing and future trails, parks, open space, recreational facilities, schools, and other places of public gathering.

h The PD zone district is not likely to result in significant adverse impacts to the natural environment, and significant scenic and historic features.

i The PD zone district will not result in significant adverse impacts on properties in the vicinity of the PD zone district, or such impacts will be substantially mitigated.

j Proposed uses will be compatible in scale with uses on properties in the vicinity of the PD zone district.

k The residential areas of a PD zone district allocate a variety of housing types and densities appropriate to the size of the residential development area.

l Visual relief is provided through building placement, shortened or interrupted street vistas, visual access to open space, parks, and other design methods.

m The modifications permitted in the PD zone district have been made in exchange for greater public benefits that would not have otherwise be achieved through development under another zone district.

3. That the proposed Canyon Creek Planned Development Amendment No. 9 will preserve the health, safety, welfare, and interest of the citizens of Erie, Colorado.

Section 2. Conclusions and Order Recommending Approval to the Board of Trustees for Canyon Creek PD Amendment No. 9.

1. The applicant's application and supporting documents are in substantial compliance with Municipal Code, Title 10.
2. Based on the above Findings of Fact, the Planning Commission hereby forwards the Canyon Creek PD Amendment No. 9 application to the Board of Trustees with the Planning Commission's recommendation for approval.

INTRODUCED, READ, SIGNED AND APPROVED this 15th day of July 2015.

TOWN OF ERIE, PLANNING COMMISSION

By: _____
J. Eric Bottenhorn, Chair

ATTEST:

By: _____
Hallie S. Sawyer, Secretary

EXHIBIT C

4Corners Neighborhood Meeting

The 4Corners Neighborhood meeting was held on June 26, 2015 at 6:00 pm at the Erie Community Center. Justin McClure from RMCS, Inc. led a discussion about the proposed development. A total of 12 Erie residents attended the meeting.

The meeting started with a power point presentation of other developments that RMCS has built or is in the process of building, including Steel Ranch and DeLo in Louisville. Images were shown of the different housing products, streetscapes, and parks that are part of these developments.

Next images of the proposed 4Corners development were shown. These included images of where single family detached, townhomes, duplexes and apartments would be located, with particular attention to transitioning from the existing neighborhoods. Also presented were images of the layout of the commercial area. Justin told the group he would like to see an organic grocer as the anchor for the commercial area. It will be a challenge to get a grocer at this location because the current traffic counts and residential density are still too low, but a concerted effort by the developer, the Town, and the residents could help make this happen.

Below is a summary of some of the comments and responses from the meeting:

-Some of the attendees were familiar with the Steel Ranch Development and commented that the ranch style homes there are of very high quality. Justin added that it is likely we will have the same homebuilder participate at 4Corners.

-It was asked if the multi-family will be apartments or condos. Justin responded that it will either be high quality apartments or condos. There was a question about whether multifamily built at 4Corners could affect the home values of adjacent existing neighborhoods. Justin used Steel Ranch as an example of how the homes adjacent to the apartment complex have sold quickly and at premium prices. It all comes down to the quality of the overall development.

-Attendees were pleased to hear that the single family detached homes will be located on the west side of 4Corners. This will make a good transition to the existing single family homes in the adjacent neighborhood.

-It was brought up that it would be good to have the HOA be included in any future mailing or notifications even if the HOA address is farther than the 300' mailing area.

-There was overall support for the proposed traffic lights, particularly on County Line Road. This will make a much safer crossing for bikes and pedestrians, and better traffic movement.

-There was support for the location of the commercial area on the eastern part of the development. There had been concern from the neighbors to the west that a big box could be located right behind their homes under the current zoning, the attendees much preferred the proposed 4Corners layout.

-It was asked if the green areas at 4Corners will be open to the outside public. Justin reviewed the proposed greenways and said they will be open for everyone to enjoy.

Justin informed the group that the development will be reviewed by Planning Commission in July and that everyone is welcome to attend that meeting or to send comments to the Commission by mail or email. The meeting ended at 7:15 after all the attendees' questions had been answered.

EXHIBIT D

CANYON CREEK
PD AMENDMENT NO. 9

PCS Group, Inc.
1001 16th Street
Denver, CO 80265

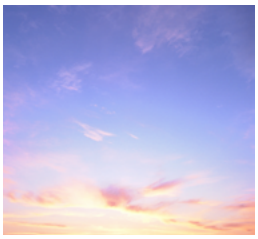
OZ Architecture
3003 Larimer Street
Denver, CO 80205

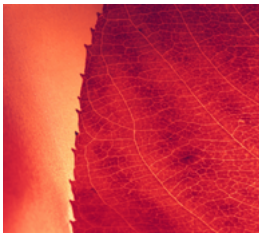
J3 Engineering
6505 S. Paris St., Suite B
Centennial, CO 80111

Contents:

1. Cover Letter, Project Team and Application Fee
2. ALTA land title survey
3. Copies of Special Agreements
4. Narrative and Comparative Chart
5. PD-DP Plan
6. Development Reports

Cover Letter, Project Team and Application Fee





February 20, 2015

Town of Erie
Martin Ostholthoff
Community Development Director
645 Holbrook Street
Erie, Colorado 80516

Re: Canyon Creek PD Amendment No. 9 (also known as Four Corners)

Dear Mr. Ostholthoff,

RMCS is pleased to submit the attached land use application requesting approval of Canyon Creek PD Amendment No.9 (also known as Four Corners). Moreover, it is our understanding, that we will work together in good faith with the Town of Erie, to generate a Service Plan (funding district only) for Four Corners in addition to exploring the possibility of incorporating Four Corners into an Urban Renewal Authority District. These proposed funding mechanisms will allow RMCS to compete within the market-place while providing a significantly higher level of both public and private infrastructure as envisioned in the submittal documents.

RMCS is a local privately owned company that has worked hard, throughout the front range of Colorado, to earn a reputation for fostering and developing high quality, distinct master planned neighborhoods. Through strong partnerships with municipalities, we strive to create finance mechanisms that allow for an expedited build out of innovative public infrastructure. Uniquely designed public and private improvements will set a standard of quality for Four Corners that the residents and visitors of Erie will enjoy for generations to come.

The Four Corners proposes a strong mix of uses, including but not limited to, anchored commercial space complimented by a new restaurant and shopping district, single family detached patio homes, paired ranch homes, ranch style town homes, multi-family homes, and generous public spaces and amenities. In conclusion, we feel that our proposal furthers the goals established in the Town of Erie's Comprehensive Plan and will generate one of Erie's most innovative neighborhoods.

Respectfully,

Justin McClure
RMCS, Inc.

Project Team

applicant:
RMCS, Inc.
21 South Sunset Street, Longmont CO 80503
tel. 303.475.2106 - contact: Justin McClure

planning consultant:
PCS Group, Inc.
#3 Independence Plaza B180,
1001 16th Street, Denver, Colorado 80265
tel. 720.259.8248 - contact: Paul Shoukas

engineering consultant:
J3 Engineering
6505 S. Paris St., Ste B Centennial, CO 80111
tel. 303.368.5601 - contact: Jason Margraf

transportation consultant:
LSC Transportation Consultants
1889 York Street, Denver, CO 80206
tel. 303.333.1105 - contact: Chris McGranahan

survey consultant:
Bell Surveying Company
500 Kalamath Street, Denver, CO 80204
tel. 303.629.0165 - contact: William Barnes

geologic & geotechnical consultant:
CTL Thompson, Inc.
1971 W. 12th Avenue, Denver, CO 80204
tel. 303.626.7645 - contact: Matt Monteith

mining engineer:
Mining-Geotechnical Consulting
11225 W. Coal Mine, Littleton, CO 80127
tel. 720.035.5842 - contact: Kanaan Hanna

architect:
OZ Architecture, Inc.
3003 Larimer Street, Denver, CO 80205
tel. 303.861.5704 - contact: Rob Rydel

Print Form

TOWN OF ERIE
Community Development Department – Planning Division
645 Holbrook Street – PO Box 750 – Erie, CO 80516
Tel: 303.926.2770 – Fax: 303.926.2706 – Web: www.erieco.gov

LAND USE APPLICATION

Please fill in this form completely. Incomplete applications will not be processed.

STAFF USE ONLY

FILE NAME:

FILE NO: DATE SUBMITTED: FEES PAID:

PROJECT/BUSINESS NAME: Four Corners

PROJECT ADDRESS: Vacant Land (southwest corner of Erie Parkway and County Line Road)

PROJECT DESCRIPTION: The Canyon Creek PD Amendment No. 9 is a proposal for a 47 acre mixed use community consisting of tenant anchored commercial space flanked by a local retail shopping district (including restaurants), alley loaded patio homes, paired ranch homes, multi-family homes, and generous public spaces and amenities.

LEGAL DESCRIPTION *(attach legal description if Metes & Bounds)*

Subdivision Name:

Filing #: Lot #: Block #: Section: 24 Township: 1 North Range: 69 West

OWNER *(attach separate sheets if multiple)*

Name/Company: Erie Commercial Venture , LLLP

Contact Person: A. L. (Sid) Overton

Address: 6950 East Belleview Ave. Suite 202

City/State/Zip: Greenwood Village, CO 80111

Phone: 303.779.5900 Fax: 303.779.6006

E-mail: sidoverton@oalaw.net

AUTHORIZED REPRESENTATIVE

Company/Firm: RMCS, Inc.

Contact Person: Justin McClure

Address: 21 South Sunset Street

City/State/Zip: Longmont, CO 80501

Phone: 720.524.3620 Fax:

E-mail: justinrmcs@gmail.com

MINERAL RIGHTS OWNER *(attach separate sheets if multiple)*

Name/Company: ECV Minerals, LLC

Address: 7720 East Belleview Ave. Suite 350

City/State/Zip: Greenwood Village, CO 80111

MINERAL LEASE HOLDER *(attach separate sheets if multiple)*

Name/Company: N/A

Address:

City/State/Zip:

LAND-USE & SUMMARY INFORMATION

Present Zoning: CBR

Proposed Zoning: CC, HR, MR

Gross Acreage: 46.613

Gross Site Density (du/ac): 11.4

Lots/Units Proposed: 530

Gross Floor Area: 170,688

SERVICE PROVIDERS

Electric: Xcel Energy

Metro District: Pending

Water *(if other than Town)*:

Gas: Xcel Energy

Fire District: Mountain View Fire Protection District

Sewer *(if other than Town)*:

PAGE TWO MUST BE SIGNED AND NOTARIZED

DEVELOPMENT REVIEW FEES			
ANNEXATION		**SUBDIVISION**	
☐ Major (10+ acres)	$ 4000.00	☐ Sketch Plan	$ 1000.00 + 10.00 per lot
☐ Minor (less than 10 acres)	$ 2000.00	☐ Preliminary Plat	$ 2000.00 + 40.00 per lot
☐ Deannexation	$ 1000.00	☐ Final Plat	$ 2000.00 + 20.00 per lot
COMPREHENSIVE PLAN AMENDMENT		☐ Minor Subdivision Plat	$ 2000.00
☐ Major	$ 3000.00	☐ Minor Amendment Plat	$ 1000.00 + 10.00 per lot
☐ Minor	$ 1200.00	☐ Road Vacation (constructed)	$ 1000.00
ZONING/REZONING		☐ Road Vacation (paper)	$ 100.00
☐ Rezoning	$ 1700.00 + 10.00 per acre	**SITE PLAN**	
☐ PUD Rezoning	$ 1700.00 + 10.00 per acre	☐ Residential	$ 1400.00 + 10.00 per unit
☐ PUD Amendment	$ 1700.00 + 10.00 per acre	☐ Non-Resi. (>10,000 sq. ft.)	$ 2200.00
☑ Major PD Amendment	$ 3700.00 + 10.00 per acre	☐ Non-Resi. (>2,000 sq. ft.)	$ 1000.00
☐ Minor PD Amendment	$ 500.00	☐ Non-Resi. (<2,000 sq. ft.)	$ 200.00
SPECIAL REVIEW USE		☐ Amendment (major)	$ 1100.00
☐ Major	$ 1000.00	☐ Amendment (minor)	$ 350.00
☐ Minor	$ 400.00	**VARIANCE**	**$ 600.00**
☐ Oil & Gas	$ 1200.00	**SERVICE PLAN**	**$ 10,000.00**

*All fees **include** both Town of Erie Planning & Engineering review. These fees **do not include** referral agency review fees, outside consultant review fees, or review fees incurred by consultants acting on behalf of staff. See Town of Erie Municipal Code, Title 2-10-5 for all COMMUNITY DEVELOPMENT FEES.*

The undersigned is fully aware of the request/proposal being made and the actions being initiated on the referenced property. The undersigned understand that the application must be found to be complete by the Town of Erie before the request can officially be accepted and the development review process initiated. The undersigned is aware that the applicant is fully responsible for all reasonable costs associated with the review of the application/request being made to the Town of Erie. Pursuant to Chapter 7 (Section 7.2.B.5) of the Unified Development Code (UDC) of the Town of Erie, applicants shall pay all costs billed by the Town for legal, engineering and planning costs incurred by staff, including consultants acting on behalf of staff, necessary for project review. By this acknowledgement, the undersigned hereby certify that the above information is true and correct.

Owner: ERIE COMMERCIAL VENTURE, LLLP Date: 2/10/2015
By: A. L. (Sid) Overton, General Partner

Owner: _____ Date: _____

Applicant: RMCS, Inc. Date: 2/10/2015
By: Justin McClure, Vice President

STATE OF COLORADO)
) ss.
County of Arapahoe)

The foregoing instrument was acknowledged before me this 10th day of February, 2015 by A. L. (Sid) Overton, General Partner of Erie Commercial Venture, LLLP

My commission expires: 8/7/2017.
Witness my hand and official seal.

SARAH J. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20094025068
MY COMMISSION EXPIRES AUGUST 7, 2017

Notary Public

TOWN OF ERIE
Land Use Application Form
RMCS, Inc., Applicant

ACKNOWLEDGMENT

STATE OF COLORADO)
)
COUNTY OF ARAPAHOE)

The foregoing instrument was acknowledged before my on this 10th day of February, 2015 by Justin McClure, Vice President of RMCS, Inc.

Witness my hand and official seal.

SARAH J. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20094025068
MY COMMISSION EXPIRES AUGUST 7, 2017

Notary Public

My commission expires: August 7, 2017

Erie Commercial Venture, LLLP

A.L. (Sid) Overton, General Partner
6950 E. Belleview Avenue, Suite 202
Greenwood Village, Colorado 80111
Tel. 303-779-5900

February 10, 2015

Martin Ostholthoff, Director
Department of Community Development
Town of Erie
645 Holbrook Street
Erie, Colorado 80516

RE: Letter of Authorization for the submittal of a PD Rezoning Application, Sketch Plan, Zoning Agreement, and Metropolitan District Service Plans (Entitlement Application) to amend the Canyon Creek PD Filing No. 10, approximately 46.613 acres in Erie, Colorado (Property)

Dear Marty:

As you are aware, Erie Commercial Venture, LLLP, is the owner of the above referenced Property, the subject of the Entitlement Application. Erie Commercial Venture, LLLP, as owner, hereby authorizes the applicant, RMCS, LLC, to process the Entitlement Application on behalf of the owner. Accordingly, any rezoning, land use or subdivision change, will be subject to further and final approval by Erie Commercial Venture, LLP, before any change is recorded against the property.

Sincerely,

A.L. (Sid) Overton, General Partner

State of Colorado)
) ss.
County of Arapahoe)

Subscribed and sworn to before me, a notary public, by A. L. (Sid) Overton, General Partner of Erie Commercial Venture, LLLP, a Colorado limited liability limited partnership, on this 10th day of February, 2015.

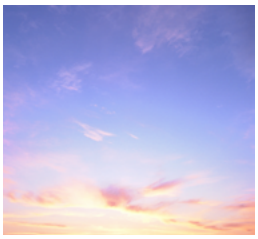
Witness my hand and official seal.

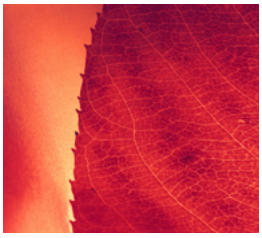
SARAH J. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20094025068
MY COMMISSION EXPIRES AUGUST 7, 2017

Notary Public

My commission expires: August 7, 2017

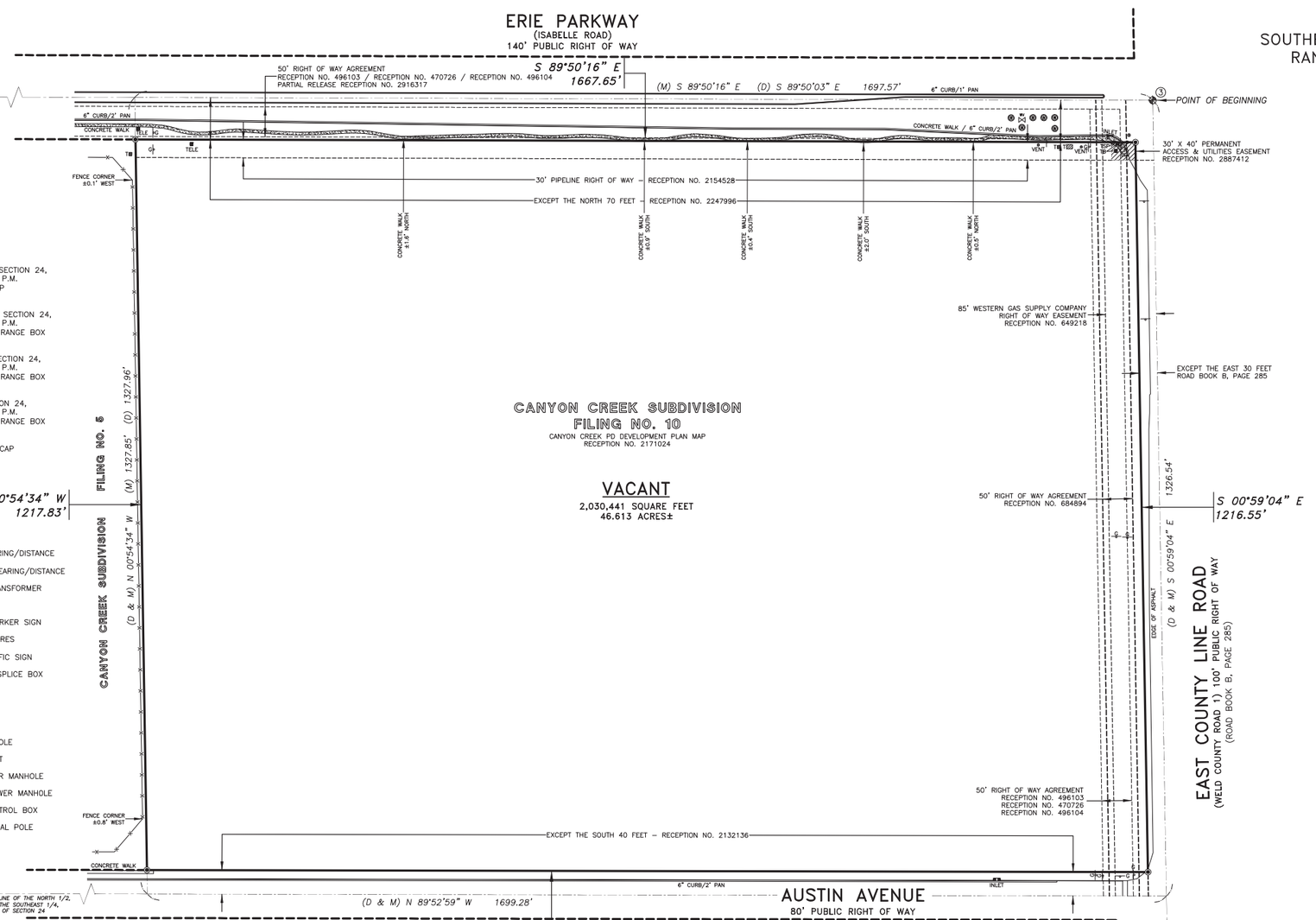
ALTA
land title
survey

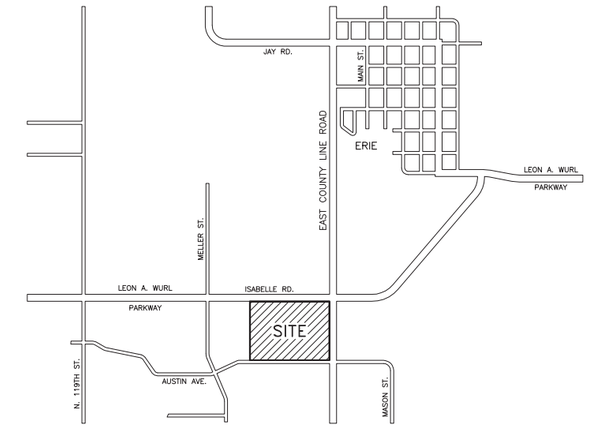




ALTA/ACSM LAND TITLE SURVEY

SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN COUNTY OF BOULDER, STATE OF COLORADO





VICINITY MAP – NOT TO SCALE

CORNER LEGEND

1. SOUTH QUARTER CORNER OF SECTION 24, T 1 N, R 69 W OF THE 6TH P.M. FOUND 3-1/4" ALUMINUM CAP "L.S. NO. 19874"
2. CENTER QUARTER CORNER OF SECTION 24, T 1 N, R 69 W OF THE 6TH P.M. FOUND 2" ALUMINUM CAP IN RANGE BOX "L.S. NO. 28286"
3. EAST QUARTER CORNER OF SECTION 24, T 1 N, R 69 W OF THE 6TH P.M. FOUND 2" ALUMINUM CAP IN RANGE BOX "ILLEGIBLE"
4. SOUTHEAST CORNER OF SECTION 24, T 1 N, R 69 W OF THE 6TH P.M. FOUND 2" ALUMINUM CAP IN RANGE BOX "L.S. NO. 14083"

◉ FOUND/SET NO. 5 REBAR & CAP P.L.S. NO. 16828

LEGEND

(D)	DEEDED BEARING/DISTANCE
(M)	MEASURED BEARING/DISTANCE
T	ELECTRIC TRANSFORMER
	FENCE LINE
G	GAS LINE MARKER SIGN
OHW	OVERHEAD WIRES
	STREET/TRAFFIC SIGN
TELE	TELEPHONE SPLICE BOX
	UTILITY POLE
VENT	VENT PIPE
WV	WATER VALVE
W	WATER MANHOLE
	FIRE HYDRANT
D	STORM SEWER MANHOLE
S	SANITARY SEWER MANHOLE
TB	TRAFFIC CONTROL BOX
TSP	TRAFFIC SIGNAL POLE

THE SUBJECT PROPERTY LIES WITHIN OR PARTIALLY WITHIN THE LEGAL DESCRIPTION OR EXHIBITS FOUND IN THE FOLLOWING RECORDED INSTRUMENTS AND IN ACCORDANCE WITH THE TITLE COMMITMENT MAY THEREFORE BE SUBJECT TO THE TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, OBLIGATIONS AND RESERVATIONS CONTAINED THEREIN.
(COMMONWEALTH LAND TITLE INSURANCE COMPANY COMMITMENT NO. 451–H0403418–036–CN3)

10. AN UNDIVIDED INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS CONVEYED TO WALLACE H. GRANT BY MINERAL DEED, RECORDED AUGUST 24, 1981 AT RECEPTION NO. 460729, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

11. AN UNDIVIDED INTEREST IN ALL OIL, GAS AND OTHER MINERALS CONVEYED TO DOUGLAS GRANT BY MINERAL DEED, RECORDED AUGUST 24, 1981 AT RECEPTION NO. 460730, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

12. AN UNDIVIDED 1/4 INTEREST IN ALL OIL, GAS AND OTHER MINERALS CONVEYED TO SUSAN J. TROIUDT, MARIAN J. BOTTINELLI AND CARLA JOHNSON HOBBS DBA JOHNSON FARMS BY MINERAL DEED, RECORDED SEPTEMBER 23, 1981 AT RECEPTION NO. 465242, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

13. A RIGHT OF WAY FOR PIPELINES AND APPURTENANCES GRANTED TO PANHANDLE EASTERN PIPELINE COMPANY BY THE INSTRUMENT RECORDED MAY 26, 1982 AT RECEPTION NO. 496103, AND RECORDED SEPTEMBER 21, 1981 AT RECEPTION NO. 470726, PARTIAL RELEASE OF RIGHT OF WAY RECORDED MARCH 13, 2008 AT RECEPTION NO. 2916317, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

14. A RIGHT OF WAY FOR PIPELINES AND APPURTENANCES GRANTED TO PANHANDLE EASTERN PIPELINE COMPANY BY THE INSTRUMENT RECORDED MAY 26, 1982 AT RECEPTION NO. 496104, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

15. A RIGHT OF WAY FOR PIPELINES GRANTED TO WESTERN GAS SUPPLY COMPANY BY THE INSTRUMENT RECORDED SEPTEMBER 28, 1984 AT RECEPTION NO. 649218, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

16. ANY ASSESSMENT OR LIEN OF THE ERIE WATER AND SANITATION DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED JANUARY 17, 1985 AT RECEPTION NO. 667325.
(NOT PLOTTABLE – REFER TO DOCUMENT)

17. ANY ASSESSMENT OR LIEN OF THE NORTHERN COLORADO WATER CONSERVANCY DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED SEPTEMBER 24, 1997 AT RECEPTION NO. 1733175.
(NOT PLOTTABLE – REFER TO DOCUMENT)

18. A RIGHT OF WAY FOR PIPELINES GRANTED TO VESSELS OIL AND GAS COMPANY BY THE INSTRUMENT RECORDED APRIL 25, 1985 AT RECEPTION NO. 684894, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

19. A RIGHT OF WAY FOR PIPELINES GRANTED TO HS GATHERING, L.L.C., BY THE INSTRUMENT RECORDED MAY 30, 2001 AT RECEPTION NO. 2154528, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

20. THE EFFECT OF CANYON CREEK PD DEVELOPMENT PLAN MAP RECORDED JULY 9, 2001 AT RECEPTION NO. 2171024.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

21. TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS SPECIFIED UNDER THE GRANT OF PERMANENT ACCESS AND UTILITIES EASEMENT BY AND BETWEEN ERIE COMMERCIAL VENTURES, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, AND TOWN OF ERIE, A COLORADO MUNICIPAL CORPORATION, RECORDED OCTOBER 3, 2007 AT RECEPTION NO. 2887412.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

22. ASSIGNMENTS AND CONVEYANCES OF MINERAL INTERESTS TO JOHNSON DEVELOPMENT COMPANY IN INSTRUMENTS RECORDED JULY 13, 2001 AT RECEPTION NO. 2173368 AND INSTRUMENTS RECORDED APRIL 3, 2001 AT RECEPTION NOS. 2134267 THROUGH 2134284 INCLUSIVE, INCLUSIVE, AND MINERAL DEED RECORDED MAY 1, 2008 AT RECEPTION NO. 2927263.
(NOT PLOTTABLE – REFER TO DOCUMENT)

23. QUIT CLAIM, ASSIGNMENT, BILL OF SALE AND CONVEYANCE OF INTERESTS AS RECORDED OCTOBER 17, 2002 AT RECEPTION NO. 2344511, AND ANY AND ALL ASSIGNMENTS OR LEASES THERETO.
(NOT PLOTTABLE – REFER TO DOCUMENT)

24. MINERAL RIGHTS AS CONVEYED TO ECV MINERALS, LLC IN MINERAL DEED RECORDED MAY 1, 2008 AT RECEPTION NO. 2927263.
(NOT PLOTTABLE – REFER TO DOCUMENT)

25. TERMS CONDITIONS PROVISIONS AS SET FORTH IN THE WELL ABANDONMENT AGREEMENT AS RECORDED MAY 1, 2008 AT RECEPTION NO. 2927262.
(NOT PLOTTABLE – REFER TO DOCUMENT)

26. TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS CONTAINED IN THE RESTRICTIVE COVENANT AND NON–DISTURBANCE AGREEMENT RECORDED MAY 29, 2008 AT RECEPTION NO. 2932960.
(NOT PLOTTABLE – REFER TO DOCUMENT)

27. OIL AND GAS LEASE FROM ECV MINERALS, LLC TO ENCANA OIL & GAS USA INC. AS RECORDED JULY 2, 2008 AT RECEPTION NO. 2941006.
(NOT PLOTTABLE – REFER TO DOCUMENT)

28. ALL OF THE FOLLOWING DOCUMENTS AS THEY RELATE TO MINERAL INTERESTS, WELLBORE SPECIFIC DECLARATION OF POOLING AS RECORDED SEPTEMBER 22, 2009 AT RECEPTION NO. 3031124, OPERATING AGREEMENT AND FINANCING STATEMENT AS RECORDED JUNE 16, 2010 AT RECEPTION NO. 03080637, QUITCLAIM DEED AS TO OIL GAS AND MINERAL INTERESTS AS RECORDED FEBRUARY 11, 2011 AT RECEPTION NO. 3132655, ASSIGNMENT, BILL OF SALE AND CONVEYANCE FROM ENCANA OIL & GAS TO KERR –MCGEE GATHERING LLC AS RECORDED APRIL 14, 2011 AT RECEPTION NO. 3143701.
(NOT PLOTTABLE – REFER TO DOCUMENT)

GENERAL NOTES:

1. VISIBLE SURFACE UTILITY APPURTENANCES HAVE BEEN LOCATED USING THE STANDARD OF CARE PREVAILING AMONG PROFESSIONAL LAND SURVEYORS PRACTICING IN THE METROPOLITAN AREA. NO OTHER REPRESENTATIONS OF UTILITY LOCATIONS ARE MADE OR IMPLIED. BEFORE COMMENCING ANY EXCAVATION THE UTILITIES SHOULD BE FIELD LOCATED BY CALLING UTILITY LOCATES AT 811.
2. THE SUBJECT PROPERTY LIES WITHIN THE FLOOD HAZARD AREA DESIGNATED AS "ZONE X" IN ACCORDANCE WITH F.E.M.A. PANEL 441 OF 615, MAP NUMBER 08013C0441J, DATED DECEMBER 18, 2012.

   ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
3. BEARINGS BASED ON THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN AS BEARING S 00°59'04" E (MONUMENTS DESCRIBED ON PLAT).
4. NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.
5. NO OBSERVABLE EVIDENCE OR KNOWLEDGE OF ANY CHANGES IN STREET RIGHT OF WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION. NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
6. NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
7. CANYON CREEK PD DEVELOPMENT PLAN – FILING NO. 10

   PRINCIPAL LAND USES:
   COMMERCIAL / BUSINESS / RETAIL (CBR)
   OPEN SPACE, PARKS & RECREATION FACILITIES (OS)

   MINIMUM SET BACK TO PRINCIPAL BUILDINGS:
   FRONT – 20 FEET
   SIDE (INTERIOR LOT) – 10 FEET
   SIDE (ALONG STREET) – 20 FEET
   REAR – 20 FEET
   BUILDING HEIGHT – 35 FEET

   MINIMUM SET BACK TO ACCESSORY BUILDINGS:
   FRONT – 30 FEET
   SIDE (INTERIOR LOT) – 5 FEET
   SIDE (ALONG STREET) – 20 FEET
   REAR – 5 FEET
   BUILDING HEIGHT – 25 FEET

   ZONING COMPLIANCE AND REQUIREMENTS NOT PROVIDED TO SURVEYOR.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PARCEL DESCRIPTION

A PARCEL OF LAND IN THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH P.M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE EAST 1/4 CORNER OF SECTION 24, WHICH IS ALSO THE TRUE POINT OF BEGINNING; THENCE SOUTH 0°59'04" EAST 1326.54 FEET; THENCE NORTH 89°52'59" WEST 1699.28 FEET; THENCE NORTH 0°54'34" WEST 1327.96 FEET; THENCE SOUTH 89°50'03" EAST 1697.57 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THAT PORTION CONVEYED TO THE TOWN OF ERIE IN DEED RECORDED JANUARY 29, 2002 AT RECEPTION NO. 2247996, COUNTY OF BOULDER, STATE OF COLORADO.

EXCEPT THE EAST 30 FEET IN ROAD BOOK B, PAGE 285, AND THE SOUTH 40 FEET AS CONVEYED TO THE TOWN OF ERIE BY SPECIAL WARRANTY DEED RECORDED MARCH 28, 2001 AT RECEPTION NO. 2132136, COUNTY OF BOULDER, STATE OF COLORADO.

CONTAINING 2,030,441 SQUARE FEET OR 46.613 ACRES MORE OR LESS.

CERTIFICATION

TO: RMCS, LLC, A COLORADO LIMITED LIABILITY COMPANY, ERIE COMMERCIAL VENTURE, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, COMMONWEALTH LAND TITLE INSURANCE COMPANY AND HERITAGE TITLE COMPANY.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 3, 4, 6(b), 8, 11(a), 16, 17 AND 18 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JUNE 11, 2014.

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
(C.R.S. 13–80–105)

NOTICE: THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY BELL SURVEYING COMPANY TO DETERMINE THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS, OWNERSHIP, OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS OF WAY, OR TITLE OF RECORD, BELL SURVEYING COMPANY RELIED UPON TITLE COMMITMENT NO. 451–H0403418–036–CN3, DATED MAY 29, 2014, ISSUED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY.

CERTIFICATION DEFINED

THE USE OF THE WORD "CERTIFY" OR "CERTIFICATION" BY A REGISTERED PROFESSIONAL SURVEYOR IN THE PRACTICE OF LAND SURVEYING, CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OF FINDINGS WHICH ARE THE SUBJECT OF THE CERTIFICATION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

COPIES OF THIS DOCUMENT MAY BE MADE AND DISTRIBUTED TO OTHER PARTIES FOR REFERENCE PURPOSES AND REVIEW, HOWEVER, ONLY PRINTS OF THIS SURVEY BEARING ORIGINAL SIGNATURE AND WET SEAL BY THE SURVEYOR NAMED HEREON SHALL BE CONSIDERED VALID CERTIFIED DOCUMENTS.

DEAN O. DANIELSON,
P.L.S. NO. 16828
DATE OF SURVEY: 6/11/2014

DEAN O. DANIELSON REGISTERED 16828 PROFESSIONAL LAND SURVEYOR STATE OF COLORADO

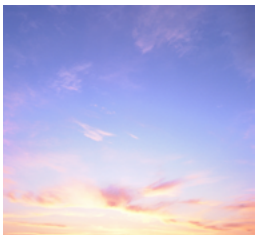
COUNTY SURVEYORS CERTIFICATE

DEPOSITED THIS____ DAY OF_____20___
AT____ M., IN BOOK_____ OF THE COUNTY SURVEYOR'S LAND SURVEY/RIGHT OF WAY SURVEYS AT PAGE_____, RECEPTION NUMBER _____

COUNTY SURVEYOR BY DEPUTY COUNTY SURVEYOR

ALTA/ACSM LAND TITLE SURVEY		
ORDERED BY: OVERTON & ASSOCIATES, LLC 6950 EAST BELLEVIEW AVENUE #202 GREENWOOD VILLAGE, COLORADO 80111	REVISION: PREV: 0710–113	DRAWN: WB
BELL SURVEYING COMPANY 500 KALAMATH STREET DENVER, COLORADO 80204 303–629–0165 FAX 303–629–0168 www.BELLSURVEYING.com	SCALE: 1"=100'	
	DATE: 6/11/2014	
	DRAWING NO.: 1406–102	

Special Agreements



oil and gas lease

restrictive covenant and non-disturbance agreement

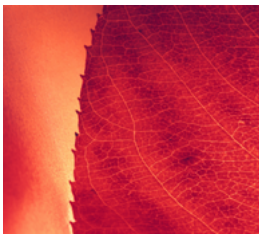
well abandonment agreement

well abandonment agreement

well abandonment agreement

license agreement for signage

license agreement for signage



custom farming agreement

sign lease advertising agreement

mineral estate waiver

OIL AND GAS LEASE

THIS AGREEMENT, Made and entered into this 30th day of May, 2008, by and between **ECV Minerals, LLC, a Colorado limited liability company**, whose post office address is 7720 East Belleview Avenue, Suite 350, Greenwood Village, Colorado 80111, hereinafter called Lessor, and **EnCana Oil & Gas (USA), Inc.**, whose post office address is 370 17th Street, Suite 1700, Denver, Colorado 80202, hereinafter called Lessee:

WITNESSETH, That the said Lessor, for and in consideration of **Ten and More ($10.00)** DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements hereinafter contained, has granted, demised, leased and let, and by these presents does grant, demise, lease and let exclusively unto the said Lessee, the land hereinafter described, with the exclusive right for the purpose of mining, exploring by geophysical and other methods, and operating for and producing therefrom oil and all gas of whatsoever nature or kind, with rights of way and easements for laying pipe lines, and erection of structures thereon to produce, save and take care of said products, all that certain tract of land situated in the County of Boulder, State of Colorado, described as follows, to-wit:

Township 1 North, Range 69 West, 6th PM
Section 24: A tract of land in the N/2SE/4 described as follows:
Beginning at the E¼ corner section of Section 24, which is also the True Point of Beginning; thence S0°59'04" E. 1326.54'; thence N89°52'59" W. 1699.28'; thence N0°54'34" W. 1327.96'; thence S89°50'03" E. 1697.57' to the True Point of Beginning;
Containing a total of **51.74** acres, more or less.

Said Lands are subject to NO SURFACE OCCUPANCY

1. It is agreed that this lease shall remain in force for a term of three (3) years from this date and as long thereafter as oil or gas of whatsoever nature or kind is produced from said leased premises or on acreage pooled therewith, or drilling operations are continued as hereinafter provided. If, at the expiration of the primary term of this lease, oil or gas is not being produced on the leased premises or on acreage pooled therewith but Lessee is then engaged in drilling or re-working operations thereon, then this lease shall continue in force so long as operations are being continuously prosecuted on the leased premises or on acreage pooled therewith; and operations shall be considered to be continuously prosecuted if not more than one hundred eighty (180) days shall elapse between the completion or abandonment of one well and the beginning of operations for the drilling of a subsequent well. If after discovery of oil or gas on said land or on acreage pooled therewith, the production thereof should cease from any cause after the primary term, this lease shall not terminate if Lessee commences additional drilling or re-working operations within one hundred eighty (180) days from date of cessation of production or from date of completion of dry hole. Drilling operations shall be deemed to be commenced when the first material is placed on the leased premises or when the first work, other than surveying or staking the location, is done thereon which is necessary for such operations. If oil or gas shall be discovered and produced as a result of such operations at or after the expiration of the primary term of this lease, this lease shall continue in force so long as oil or gas is produced from the lease premises or on acreage pooled therewith.
2. This is a **PAID-UP LEASE**. In consideration of the down cash payment, Lessor agrees that Lessee shall not be obligated, except as otherwise provided herein, to commence or continue any operations during the primary term. Lessee may at any time or times during or after the primary term surrender this lease as to all or any portion of said land and as to any strata or stratum by delivering to Lessor or by filing for record a release or releases, and be relieved of all obligation thereafter accruing as to the acreage surrendered.
3. In consideration of the premises the said Lessee covenants and agrees:

1st. To deliver to the credit of Lessor, free of cost in the pipe to which Lessee may connect his wells, the equal three-sixteenth (3/16th) part of all oil produced and saved from the leased premises, or at the Lessee's option, may pay to the Lessor for such three-sixteenth (3/16th) royalty, three-sixteenth (3/16th) of the then market value at the mouth of the well of all oil produced and saved hereunder by the Lessee from the leased premises.

2nd. To pay Lessor for gas of whatsoever nature or kind (with all of its constituents) produced and sold or used off the leased premises, or used in the manufacture of products therefrom, three-sixteenths (3/16th) of the gross proceeds received for the gas sold, used off the premises, or in the manufacture of products therefrom, but in no event more than three-sixteenth (3/16th) of the actual amount received by the Lessee, said payments to be made monthly. During any period (whether before or after expiration of the primary term hereof) when gas is not being so sold or used and the well or wells are shut in and there is no current production of oil or operations on said leased

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premises sufficient to keep this lease in force, Lessee shall pay or tender a royalty of One Dollar ($1.00) per year per net royalty acre retained hereunder, such payment or tender to be made, on or before the anniversary date of this lease next ensuing after the expiration of ninety (90) days from the date such well is shut in and thereafter on the anniversary date of this lease during the period such well is shut in, to the royalty owners or to the royalty owner's credit in the rental depository bank hereinafter designated. When such a payment or tender is made it will be considered that gas is being produced within the meaning of the entire lease.

3rd. To pay Lessor for gas produced from any oil well and used off the premises, or for the manufacture of casing-head gasoline or dry commercial gas, three-sixteenth (3/16th) of the gross proceeds, at the mouth of the well, received by Lessee for the gas during the time such gas shall be used, said payments to be made monthly.

4. If said Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties (including any shut-in gas royalty) herein provided for shall be paid the said Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

5. The rights of Lessor and Lessee hereunder may be assigned in whole or part. No change in ownership of Lessor's interest (by assignment or otherwise) shall be binding on Lessee until Lessee has been furnished with notice, consisting of certified copies of all recorded instruments or documents and other information necessary to establish a complete chain of record title from Lessor, and then only with respect to payments thereafter made. No other kind of notice, whether actual or constructive, shall be binding on Lessee. No present or future division of Lessor's ownership as to different portions or parcels of said land shall operate to enlarge the obligations or diminish the rights of Lessee, and all Lessee's operations may be conducted without regard to any such division. If all or any part of this lease is assigned, no leasehold owner shall be liable for any act or omission of any other leasehold owner.

6. Lessee is hereby granted the right at any time and from time to time to unitize, pool or combine the leased premises or any portion or portions thereof, as to all strata or any stratum or strata, with any other lands as to all strata or any stratum or strata, for the production primarily of oil or primarily of gas with or without distillate. However, no unit for the production primarily of oil shall embrace more than 160 acres, or for the production primarily of gas with or without distillate more than 160 acres; provided that if any governmental regulation shall prescribe a spacing pattern for the development of the field or allocate a producing allowable based on acreage per well, then any such unit may embrace as much additional acreage as may be so prescribed or as may be used in such allocation of allowable. Operations upon and production from the unit shall be treated as if such operations were upon or such production were from the leased premises whether or not the well or wells are located thereon. The entire acreage within a unit shall be treated for all purposes as if it were covered by and included in this lease except that the royalty on production from the unit shall be as below provided, and except that in calculating the amount of any rentals or shut in gas royalties, only that part of the acreage originally leased and then actually embraced by this lease shall be counted. In respect to production from the unit, Lessee shall pay Lessor, in lieu of other royalties thereon, only such proportion of the royalties stipulated herein as the amount of his acreage placed in the unit, or his royalty interest therein on an acreage basis bears to the total acreage in the unit.

7. All express or implied covenants of this lease shall be subject to all Federal and State Laws, Executive Orders, Rules or Regulations, and this lease shall not be terminated, in whole or in part, nor Lessee held liable in damages, for failure to comply therewith, if compliance is prevented by, or if such failure is the result of, any such Law, Order, Rule or Regulation.

8. Lessor hereby warrants and agrees to defend the title to the lands herein described.

9. Should any one or more of the parties hereinabove named as Lessor fail to execute this lease, it shall nevertheless be binding upon all such parties who do execute it as Lessor. The word "Lessor", as used in this lease, shall mean any one or more or all of the parties who execute this lease as Lessor. All the provisions of this lease shall be binding on the heirs, successors and assigns of Lessor and Lessee.

10. Additional Provisions. This Lease is being entered into by Lessor with the specific understanding that no right has been granted to Lessee under the terms of this Lease to enter onto the surface of the lands that are the subject to this Lease ("Surface Estate") for any purpose whatsoever. Notwithstanding any other provision herein contained, Lessee acknowledges and agrees that it shall have no right to enter onto the Surface Estate for any purpose whatsoever. In addition to the foregoing, Lessee hereby specifically agrees to the following:

a. This Lease is specifically made subject to, and Lessee agrees to be bound by, the provisions contained in the Restrictive Covenant and Non-Disturbance Agreement, recorded on May 29, 2008, recorded at Reception Number 2932960, in the real property records of Boulder County, Colorado, between Erie Commercial Venture, LLLP, the owner of the Surface Estate, and ECV Minerals, LLC, the owner of the mineral estate.

b. Lessee hereby specifically agrees not to interfere with, hinder or delay, in any manner whatsoever, the development of the Surface Estate.

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c. Lessee, for itself and its successors and/or assigns, (i) hereby waives any right to receive notice of the development of the Surface Estate pursuant C.R.S. §24-65.5-103(5), and (ii) hereby waives any right to object to the development of the Surface Estate pursuant to C.R.S. §24-65.5-103.3.

d. Lessee releases and holds harmless, and indemnifies, Lessor, its successors and assigns, of and from any and all liability for loss or damage of any kind or nature to persons or property, now or hereafter upon the Surface Estate, including without limitation environmental loss or damage, arising directly or indirectly from Lessee's acts, or the acts or failure to act of Lessee's officers, agents, employees, independent contractors or assigns.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written.

ECV Minerals, LLC,
a Colorado limited liability company

BY _____ BY _____
A.L. (Sid) Overton, Manager Stanley R. Medsker, Manager

ACKNOWLEDGMENT

STATE OF COLORADO)
COUNTY OF Arapahoe)) ss.

On this 30th day of May, 2008, before me personally appeared A. L. (Sid) Overton,, known to me to be the Manager of ECV Minerals, LLC, and that he executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said company, for the uses and purposes therein set forth.

My Commission Expires: 10/12/2010

(SEAL)

Lisa M. Morris
Notary Public

LISA M. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires Oct. 12, 2010

STATE OF COLORADO)
COUNTY OF Arapahoe)) ss.

On this 30th day of May, 2008, before me personally appeared Stanley R. Medsker,, known to me to be the Manager of ECV Minerals, LLC, and that he executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said company, for the uses and purposes therein set forth.

My Commission Expires: 10/12/2010

(SEAL)

Lisa M. Morris
Notary Public

LISA M. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires Oct. 12, 2010

2932960 05/29/2008 10:53:47 AM
COVENANT RF: $31.00 DF: $0.00 Page: 1 of 6
Electronically recorded in Boulder County Colorado.

RESTRICTIVE COVENANT AND NON-DISTURBANCE AGREEMENT

THIS RESTRICTIVE COVENANT AND NON-DISTURBANCE AGREEMENT ("Agreement") is made and entered into as of the 28 day of May, 2008 by and among Erie Commercial Venture, LLLP, a Colorado limited liability limited partnership, whose principal business address is 7720 East Belleview Avenue, Suite 350, Greenwood Village, Colorado 80111 (hereinafter "Erie Commercial"), and ECV Minerals, LLC, a Colorado limited liability company, whose principal business address is 7720 East Belleview Avenue, Suite 350, Greenwood Village, Colorado 80111 (hereinafter "ECV Minerals"). ECV Minerals and Erie Commercial may each be referred to herein, individually, as a "Party", or collectively, as "the Parties", each term shall include their respective successors and assigns.

RECITALS

WHEREAS, Erie Commercial is the owner of certain real property consisting of approximately 46.613 acres located in Boulder County, Colorado, as legally described in Exhibit A, attached hereto, and incorporated herein by reference ("Erie Commercial Property").

WHEREAS, Erie Commercial and/or its successors or assigns, desire to develop the Erie Commercial Property for commercial, retail or residential uses.

WHEREAS, Erie Commercial desires to obtain certain assurances by the mineral interest owner underlying the Erie Commercial Property that the surface of the Erie Commercial Property shall not be used for oil or gas production, which would significantly harm the ability of Erie Commercial to develop the Erie Commercial Property.

WHEREAS, ECV Minerals is the owner of all of the mineral interests, specifically including oil and gas, underlying the Erie Commercial Property ("ECV Mineral Estate").

WHEREAS, ECV Minerals and Erie Commercial desire to enter into this Agreement by virtue of which ECV Minerals shall covenant and agree that all future owners or lessee's of the ECV Mineral Estate shall be specifically restricted from any use of the surface of the Erie Commercial Property for any purpose except as specifically set forth herein.

WHEREAS, the Parties wish to memorialize their agreement in writing as hereinafter set forth.

AGREEMENT

NOW THEREFORE, in consideration of (1) the sum of Ten and no/100 ($10.00) Dollars, (2) for the promises and covenants herein contained, and (3) for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, the Parties hereby agree as follows:

1. Restrictive Covenant/Non-Disturbance Agreement. ECV Minerals shall not, nor shall ECV Minerals permit any future owner or lessee of the ECV Mineral Estate underlying the Erie Commercial Property, to use the surface of the Erie Commercial Property, or the area five hundred (500) feet immediately below the surface of the Erie Commercial Property for (i) the

SRM

purpose of surveying by geological, geophysical and all other methods; (ii) mining, drilling or operating for oil and gas; (iii) drilling any wells for oil and gas; (iv) laying pipelines; (v) building tanks, power stations or any other structures on the Erie Commercial Property; or (vi) in any way extracting or producing oil and gas from the mineral interests owned by ECV Minerals to the extent that the surface of the Erie Commercial Property, or the area five hundred (500) feet immediately below the surface of the Erie Commercial Property is used for such purposes.

2. Cooperation. In consideration of Paragraph 1, Erie Commercial, on behalf of itself and its successors and assigns, hereby agrees not to object to or hinder ECV Minerals, its successors, assigns and future lessees, in ECV Minerals's efforts, or the efforts of a future lessee of ECV Minerals, in obtaining all necessary permits, licenses and other approvals from state, county and municipal authorities to permit or authorize ECV Minerals, its successors and assigns, or a future lessee of ECV Minerals, to drill and/or recomplete well(s) under the Erie Commercial Property, provided such drilling is from surface location(s) other then the Erie Commercial Property, to include an exception location(s) under the Rules and Regulations of the Colorado Oil & Gas Conservation Commission for any such well(s).

3. Covenants of any Future Lease. For the consideration recited herein, ECV Minerals shall include an appropriate provision in any future mineral lease for the ECV Mineral Estate to effectuate the restrictive covenants contained in this Agreement.

4. Term of Restrictive Covenants. The term of this Agreement, and the restrictive covenants contained herein, shall be perpetual.

5. Reservation. ECV Minerals reserves unto itself such rights in the ECV Mineral Estate subject to this Agreement for any purpose which does not interfere with the restrictive covenants granted herein.

6. Recording. This Agreement, and any amendments hereto, shall be recorded in the real property records of the Clerk and Recorder of Boulder County, Colorado.

7. Notice of Development. Pursuant to C.R.S. §24-65.5-103(5), a mineral estate owner may waive the right to notice of the development of the surface estate under C.R.S. §24-65.5-103. This Agreement prevents the use of the surface estate of the Erie Commercial Property by the owner(s) of the mineral estate, and as such, ECV Minerals, for itself and its successors and/or assigns, (i) hereby waives any right to receive notice of the development of the surface estate pursuant C.R.S. §24-65.5-103(5), and (ii) hereby waives any right to object to the development of the surface estate pursuant to C.R.S. §24-65.5-103.3.

8. Agreement Binding. This Agreement, and the restrictive covenants contained herein, shall be binding upon and shall inure to the successors and assigns of the Parties hereto, and shall be a covenant running with the land for so long as ECV Minerals or its successors and/or assigns, are the oil, gas or mineral interest owner or lessee of the mineral interests under the Erie Commercial Property.

9. Miscellaneous Provisions.

A. No Third Party Beneficiaries. This Agreement is entered into between and for the

benefit of Erie Commercial and ECV Minerals and no other party. The Parties hereto disclaim and do not intend that any third party rely on or claim to benefit from this Agreement.

B. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado. The Parties hereto agree to submit to the jurisdiction of the federal and state courts of the State of Colorado with respect to the breach or interpretation of this Agreement or the enforcement of any and all rights, duties, liabilities, obligations, powers, and other relations between the Parties arising under this Agreement. The Parties hereby waive any right to trial by jury in any subsequent litigation between them where such litigation arises out of, is related to, or is in connection with any provision of this Agreement or any exhibit thereto, whether the Agreement is asserted as the basis for a claim, counterclaim or a crossclaim, or a defense to a claim, counterclaim or crossclaim.

C. Attorneys' Fees. The prevailing Party to any suit arising out of this Agreement shall be entitled to reasonable attorneys' fees, plus expenses and costs of court.

D. Entire Agreement. This Agreement, including Exhibit A (Legal Description), constitutes the sole and entire agreement between the Parties with respect to the subject matter hereof and supersedes any prior or contemporaneous letter of intent, agreement or understanding, whether written or oral, if any, between the parties with respect to such subject matter. THERE ARE NO ORAL AGREEMENTS CONCERNING THE SUBJECT MATTER OF THIS AGREEMENT.

E. Construction. This Agreement shall not be construed more strictly against one Party than against the other merely by virtue of the fact that it may have been prepared by counsel for one of the Parties, it being recognized that all of the Parties have contributed substantially and materially to the preparation of this Agreement, and as such, the language and all parts of this Agreement shall be in all cases construed in accordance with their fair meaning. The Recitals to this Agreement shall be deemed a substantive part of this Agreement. The subject headings of the paragraphs and subparagraphs of this Agreement are included for purposes of convenience only, and shall not affect the construction or interpretation of any of the provisions of this Agreement.

F. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

G. Further Agreements. The Parties agree to execute such other and further written agreements which may be necessary and required to fully implement and carry out the intent of the Parties to this Agreement so as to conclude a full and final settlement of all issues between the Parties, and which such written agreement(s) shall be consistent with, and not in conflict with this Agreement between the Parties.

H. Amendments. This Agreement may be modified only by a further written agreement signed by all of the Parties hereto.

I. Adequate Consideration. All Parties acknowledge and agree that the covenants and promises contained herein are good and sufficient consideration for their respective obligations required hereunder.

J. Severability. If any provision of this Agreement is deemed to be illegal, invalid or unenforceable for any reason, the remaining provisions of this Agreement shall be unaffected, and this Agreement shall continue in full force and effect.

IN WITNESS WHEREOF, the Parties hereto have executed this Restrictive Covenant and Non-Disturbance Agreement on the dates adjacent to each Parties signature below.

"Erie Commercial"

Erie Commerical Ventures, LLLP, a Colorado limited liability limited partnership

By: _____ May 28, 2008
A. L. (Sid) Overton, General Partner — Date

By: _____ May 28, 2008
Stanley R. Medsker, General Partner — Date

"ECV Minerals"

ECV Minerals, LLC, a Colorado limited liability company

By: _____ May 28, 2008
A. L. (Sid) Overton, Manager — Date

By: _____ May 28, 2008
Stanley R. Medsker, Manager — Date

STATE OF Colorado)

COUNTY OF Arapahoe)

The foregoing Restrictive Covenant and Non-Disturbance Agreement was voluntarily executed and acknowledged before me, a notary public, by A. L. (Sid) Overton, as General Partner of Erie Commercial Venture, LLLP, a Colorado limited liability limited partnership, and as Manager of ECV Minerals, LLC, a Colorado limited liability company, on this 28th day of May, 2008.

WITNESS MY HAND AND OFFICIAL SEAL

Lisa M. Morris
Notary Public

My commission expires: 10/12/2010

Address 12943 Lafayette St. #B
Thornton Co 80241

STATE OF Colorado)

COUNTY OF Arapahoe)

LISA M. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires Oct. 12, 2010

The foregoing Restrictive Covenant and Non-Disturbance Agreement was voluntarily executed and acknowledged before me, a notary public, by Stanley R. Medsker, as General Partner of Erie Commercial Venture, LLLP, a Colorado limited liability limited partnership, and as Manager of ECV Minerals, LLC, a Colorado limited liability company, on this 28th day of May, 2008.

WITNESS MY HAND AND OFFICIAL SEAL

Lisa M. Morris
Notary Public

My commission expires: 10/12/2010

Address 12943 Lafayette St. #B
Thornton Co 80241

LISA M. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires Oct. 12, 2010

EXHIBIT A

Erie Commercial Ventures, LLLP
Property Description

PARCEL DESCRIPTION

A PARCEL OF LAND IN THE N ½ OF THE SE ¼ OF SECTION 24, T1N, R69W OF THE 6TH P.M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE E ¼ CORNER OF SECTION 24, WHICH IS ALSO THE TRUE POINT OF BEGINNING; THENCE S 0°59'04" E, 1326.54 FEET; THENCE N 89°52'59" W, 1699.28 FEET; THENCE N 0°54'34" W, 1327.96 FEET, THENCE S 89°50'03" E, 1697.57 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THAT PORTION CONVEYED TO THE TOWN OF ERIE IN DEED RECORDED JANUARY 29, 2002 AT RECEPTION NO. 2247996, COUNTY OF BOULDER, STATE OF COLORADO.

CONTAINING 2,030,441 SQUARE FEET OR 46.613 ACRES MORE OR LESS.

EXCEPT THE EAST 30 FEET IN ROAD BOOK B, PAGE 285, AND THE SOUTH 40 FEET AS CONVEYED TO THE TOWN OF ERIE BY SPECIAL WARRANTY DEED RECORDED MARCH 28, 2001 AT RECEPTION NO. 2132136.

County of Boulder
State of Colorado

2927262 05/01/2008 12:32:43 PM
AG RF: $26.00 DF: $0.00 Page: 1 of 5
Electronically recorded in Boulder County Colorado.

WELL ABANDONMENT AGREEMENT

THIS AGREEMENT is made and entered into this 25th day of January, 2001, by and between North American Resources Company ("NARCO"), with offices at 1700 Broadway, Suite 2000, Denver, Colorado 80290 and Johnson Development Company ("Johnson"), with offices at 4380 South Syracuse Street, Denver, Colorado 80237.

RECITALS

1. Johnson either owns or has an option to purchase the entire S/2 of Section 24, Township 1 North, Range 69 West, Boulder County, Colorado ("Property").

2. The property is subject to the following oil and gas leases ("Leases"), to-wit:

a. Oil and gas lease dated August 20, 1981, from Maxine Johnson Haley Trust, James S. Haley, Trustee, as lessor, to J. Michael McGhee ("McGhee"), as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466152.

b. Oil and gas lease dated August 20, 1981, from Susan J. Troudt, Marian J. Bottinelli, Carla Johnson Hobbs, d/b/a Johnson Farms, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466151.

c. Oil and gas lease dated August 18, 1981, from Wallace H. Grant and Douglas Grant, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466154.

d. Oil and gas lease dated August 7, 1981, from The Longmont National Bank and Lorraine Miller as Co-Trustees of the Carl A. Miller Trust, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466153.

3. NARCO has succeeded to all of the working interests of McGhee under the Leases.

4. NARCO operates two oil and gas wells on the Property known as the Erie Eight E Unit #1 located in the SE/4SE/4 of Section 24 ("Erie #1") and the Erie Eight E Unit #2 located in the SW/4SW/4 of Section 24 ("Erie #2") in which NARCO presently owns all the working interest. The Erie #1 and Erie #2 may be hereinafter collectively referred to as the "Wells."

5. Johnson wishes to develop the property free of the Wells and subsequent drilling.

6. NARCO and Johnson enter into this Agreement to provide for NARCO to plug and abandon the Wells, among other things, in exchange for certain payments from Johnson to NARCO as provided herein.

TERMS AND PROVISIONS

NOW, THEREFORE, in consideration of the covenants and the mutual benefits set forth herein, including the representations set forth in the recitals, the parties agree as follows:

1. Plugging and Abandonment of Erie #2 Well and Reclamation

NARCO shall plug and abandon the Erie #2 well and remove all equipment and production facilities from the wellsite and also reclaim and remediate the surface of the wellsite and all associated production facilities and pits, access and gas flowlines from the Erie #2 wellhead to the gas transmission line in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission ("COGCC") on or before March 1, 2001. The completion of remediation at this site may be extended if unexpected complications are encountered, but NARCO will diligently pursue said remediation until it is completed. NARCO will provide Johnson notice of such extension as soon as it is practicable with an explanation of the cause of the delay.

APPL. RECORDING RETURN TO:
MARK OVERTON
7200 E. BELLEVIEW AVE #330
GREENWOOD VILLAGE, CO. 80111

FAXITO

HO 206316 / HO 135322

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2. Plugging and Abandonment of Erie #1 Well and Reclamation

NARCO shall plug and abandon the Erie #1 well and remove all equipment and production facilities from the wellsite and also reclaim and remediate the surface of the wellsite and all associated production facilities and pits, access and gas flowlines from the Erie #1 wellhead to the gas transmission line in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission ("COGCC"). This will be accomplished within fifty (50) days after receiving written notice from Johnson.

3. Wellhead Equipment and Production Facilities

NARCO shall continue to own the wellhead equipment and associated production facilities and equipment as to each respective well.

4. Purchase Price

As consideration for the terms and provisions contained herein, Johnson agrees to pay NARCO $500,000.00 as follows:

a. Johnson shall pay NARCO the sum of $250,000 in the form of a certified cashier's check contemporaneous with the execution of this agreement.

b. Johnson shall pay NARCO the sum of $125,000 ("Second Payment") in the form of a certified cashier's check to NARCO within five (5) business days of Johnson's receiving a copy of the successful final reclamation inspection of the Erie #2 wellsite and reclaimed areas in accordance with COGCC Rule 1004.c.

c. Johnson shall pay NARCO the sum of $125,000 ("Third Payment") in the form of a certified cashier's check to NARCO within five (5) business days of Johnson receiving a copy of the successful final reclamation inspection of the Erie #1 wellsite and reclaimed areas in accordance with COGCC Rule 1004.c.

d. Until such time as each well is plugged and abandoned, NARCO shall continue to receive all revenue attributable to the production as to each well, and shall continue to disburse those proceeds from each well attributable to the respective landowner and overriding royalty owner interests.

e. In the event that NARCO fails or refuses to plug and abandon the Erie #2 well and reclaim the surface of the wellsite and all associated production facilities and pits, access roads and pipelines as set forth above (hereinafter referred to as the "Work", whether referencing the Erie #2 well or the Erie #1 well) on or before February 15, 2001 (First Abandonment Date), the parties agree that, after the First Abandonment Date, Johnson may engage a contractor to perform the Work and that such contractor shall be the agent of NARCO and not of Johnson. In such event, the Second Payment shall be reduced by all of the costs incurred by the contractor to perform the work.

f. In the event that NARCO fails or refuses to plug and abandon and complete the Work for the Erie #1 well on or before March 15, 2001 (Second Abandonment Date), the parties agree that, after the Second Abandonment Date, Johnson will engage a contractor to perform the Work and that such contractor shall be the agent of NARCO and not of Johnson. In such event, the Third Payment shall be reduced by all of the costs incurred by the contractor to perform the work.

g. If NARCO is rendered unable to perform the plugging, abandoning and subsequent restoration of the property, wholly or in part, by force majeure preventing it from carrying out its obligations to do so, it shall be automatically granted such time as is necessary for the obligations to be completed over and above the times stated herein. "Force majeure" shall be defined herein as any act of God, strike, lockout or other industrial disturbance, act of the public enemy, war, public riot, lightning, storm, flood or other act of nature, explosion, governmental action, governmental delay, restraint or inaction, unavailability of equipment or qualified labor, whether specifically enumerated herein or otherwise, which is not reasonably in control of NARCO. NARCO will use all reasonable efforts to remedy the force majeure as quickly as is practicable.

h. Should the payments detailed in 4.a, 4.b, or 4.c above not be tendered in a timely manner, Johnson agrees to pay NARCO the sum so indicated plus interest at a rate of 8% per annum compounded weekly.

5. Use of the Surface of the Property

a. From and after the date of this agreement, NARCO shall not drill any other well on the property or extend its surface use of the property (with the exception of paragraph 5.b. below) beyond the current surface uses for the Wells. NARCO further agrees not to deepen or sidetrack either of the Wells.

b. Notwithstanding the foregoing, NARCO shall retain and have a continuing right of ingress and egress to both the surface and subsurface facilities currently located upon or under the Lands, including but not limited to, roads, flow lines and pipelines used in connection with the wells owned and operated by them and operations that are not located on the lands. The entire cost, risk and expense of rerouting any such roads, flowlines and pipelines shall be borne by Johnson exclusive of and in addition to those amounts set forth in Paragraphs 4a, 4b and 4c above, and shall be subject to the advance approval of NARCO as operator of such wells, which approval shall not be unreasonable withheld. The total cost of any installation and or relocation of any transmission line incurred by NARCO shall be paid by Johnson to NARCO upon completion for the relocation of said pipeline(s) and within thirty (30) days after Johnson receives from NARCO an invoice for such costs. In addition, immediately after the relocation of the line, all authorized parties agree to amend the Right-of-Way Agreements set forth below to correctly reflect the change in legal description of the relocated transmission line. Under no circumstances shall NARCO be prohibited from flowing gas through its transmission line at any time.

c. In addition to those rights listed above, NARCO excepts from this agreement and expressly reserves unto itself all right, title and interest for any Right-of-Way and/or Easement NARCO may have covering the above described lands which apply to its transmission line which lies approximately along the southern and eastern edge of the Property, including, but not limited to, the following Right-of-Way Agreements listed herewith:

1. Right-of-Way Agreement dated 3/22/88, filed 4/22/88 in folio 1525, reception #00914407, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

2. Right-of-Way Agreement dated 4/22/85, filed 4/25/85 in folio 1350, reception #00684984, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

3. Right-of-Way Agreement dated 4/22/85, filed 4/25/85 in folio 1350, reception #00684895, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

6. Indemnification

a. Johnson shall defend, indemnify and hold NARCO harmless from and against all claims, losses and liabilities, including court costs, expert witness fees and reasonable attorney's fees that arise from the non-payment of any portion of the purchase price for the landowners royalty and/or overriding royalty and Johnson, as future owner of any interest in the mineral estate for the Property, hereby waives its rights to any portion of the purchase price.

b. Notwithstanding the provisions of Article 4 above, Johnson shall have the right to seek injunctive relief against NARCO for violating the terms of this agreement by drilling any additional oil and gas wells or for not plugging and abandoning the wells in a timely manner.

c. Should either party hereto be in breach of the provisions of this agreement, the aggrieved party shall provide written notice to the party inbreach, and the party in breachwill have thirty (30) days after receipt of such notice to rectify the breach. This time period may be extended for reasons of force majeure as provided herein.

7. Surrender of Leases

a. NARCO shall surrender and release all of its oil and gas leasehold interests to the respective lessors or each lease at the time the Erie #1 well is plugged and abandoned, and no later than the time Johnson is required to make the Third Payment as described in article 4.c. above. NARCO shall not be obligated to surrender any of its interests hereunder if it has not received all sums due and owing to it by Johnson under this agreement or if Johnson is in default of a material term of this agreement.

b. The surrender and release of the leasehold interests described in Article 7.a. shall be evidenced in releases in the form attached to this agreement as Exhibit "A".

8. Restriction on Assignment

NARCO shall not assign any interest it owns in the Leases or in either the Erie #1 well or the Erie #2 well except pursuant to the terms of this agreement.

9. NARCO's Representations and Warranties

NARCO represents and warrants that, to the best of its knowledge, NARCO is owner of 100% of the working interest in the wells and all of the oil and gas leasehold interest in the Property.

10. Successors and Assigns

This Agreement shall be binding and inure to the heirs, successors and assigns of both Johnson and NARCO.

IN WITNESS WHEREOF, the undersigned parties have caused this Agreement to be executed by a duly authorized representative effective as of the date first written above.

JOHNSON DEVELOPMENT COMPANY
by its attorney-in-fact
Bruce L. Likoff
~~C. Howard Johnson, President~~
Bruce L. Likoff

NORTH AMERICAN RESOURCES COMPANY
T Schmidtke
Terry C. Schmidtke, Vice President

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ACKNOWLEDGMENTS

Province of Alberta)
) ss.
Country of Canada)

The foregoing instrument was acknowledged before me on this 25th day of January 2001 by Terry C. Schmidtke, in his capacity as Vice President of North American Resources Company.

Witness my hand and official seal.

My Commission Expires: 12/31/2003

Notary Public

STATE OF COLORADO)
CITY AND) ss.
COUNTY OF DENVER)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this 31st day of January, 2001, personally appeared Bruce L. Likoff in his capacity as attorney-in-fact for Johnson Development Company, and who executed the within and foregoing instrument of his own free and voluntary act and deed for the benefit of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal this 31st day of January, 2001.

My Commission Expires:
December 5, 2001

Notary Public

EXHIBIT "A"

Attached to and made a part of that certain Well Abandonment Agreement dated January 25, 2001 by and between Johnson Development Company and North American Resources Company.

RELEASE OF OIL AND GAS LEASE

STATE OF COLORADO
COUNTY OF BOULDER

WHEREAS, North American Resources Company, with offices at 1700 Broadway, Suite 2000, Denver, CO 80290, is the owner of a leasehold interest in the oil and gas leases described below covering the described lands situated in the County of Boulder, State of Colorado, to-wit:

Township 1 North, Range 69 West, 6th P.M.
Section 24: S/2

said leases being recorded in the records of the Boulder County Clerk and Recorder.

NOW, THEREFORE, North American Resources Company does hereby release, relinquish and surrender to the lessors, their respective heirs, assigns and legal representatives, all right, title and interest in and to the following oil and gas leases:

a. Oil and gas lease dated August 20, 1981, from Maxine Johnson Haley Trust, James S. Haley, Trustee, as lessor, to J. Michael McGhee ("McGhee"), as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466152.

b. Oil and gas lease dated August 20, 1981, from Susan J. Troudt, Marian J. Bottinelli, Carla Johnson Hobbs, d/b/a Johnson Farms, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466151.

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d. Oil and gas lease dated August 7, 1981, from The Longmont National Bank and Lorraine Miller as Co-Trustees of the Carl A. Miller Trust, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466153.

Executed this 25th day of January, 2001 and effective as of the same date.

ATTEST:

Rachel L. Desroches

NORTH AMERICAN RESOURCES COMPANY

T. Schmidtke

Terry C. Schmidtke
Vice President

END OF DOCUMENT

2927262 05/01/2008 12:32:43 PM
AG RF: $26.00 DF: $0.00 Page: 1 of 5
Electronically recorded in Boulder County Colorado.

WELL ABANDONMENT AGREEMENT

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RECITALS

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2. The property is subject to the following oil and gas leases ("Leases"), to-wit:

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3. NARCO has succeeded to all of the working interests of McGhee under the Leases.

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5. Johnson wishes to develop the property free of the Wells and subsequent drilling.

6. NARCO and Johnson enter into this Agreement to provide for NARCO to plug and abandon the Wells, among other things, in exchange for certain payments from Johnson to NARCO as provided herein.

TERMS AND PROVISIONS

NOW, THEREFORE, in consideration of the covenants and the mutual benefits set forth herein, including the representations set forth in the recitals, the parties agree as follows:

1. Plugging and Abandonment of Erie #2 Well and Reclamation

NARCO shall plug and abandon the Erie #2 well and remove all equipment and production facilities from the wellsite and also reclaim and remediate the surface of the wellsite and all associated production facilities and pits, access and gas flowlines from the Erie #2 wellhead to the gas transmission line in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission ("COGCC") on or before March 1, 2001. The completion of remediation at this site may be extended if unexpected complications are encountered, but NARCO will diligently pursue said remediation until it is completed. NARCO will provide Johnson notice of such extension as soon as it is practicable with an explanation of the cause of the delay.

AFTER RECORDING RETURN TO
MARK EVERTON
7700 E. BELLEVIEW AVE #330
GREENWOOD VILLAGE, CO. 80111

FATCO

HO 206316 / HO 135322

1

2. Plugging and Abandonment of Erie #1 Well and Reclamation

NARCO shall plug and abandon the Erie #1 well and remove all equipment and production facilities from the wellsite and also reclaim and remediate the surface of the wellsite and all associated production facilities and pits, access and gas flowlines from the Erie #1 wellhead to the gas transmission line in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission ("COGCC"). This will be accomplished within fifty (50) days after receiving written notice from Johnson.

3. Wellhead Equipment and Production Facilities

NARCO shall continue to own the wellhead equipment and associated production facilities and equipment as to each respective well.

4. Purchase Price

As consideration for the terms and provisions contained herein, Johnson agrees to pay NARCO $500,000.00 as follows:

a. Johnson shall pay NARCO the sum of $250,000 in the form of a certified cashier's check contemporaneous with the execution of this agreement.

b. Johnson shall pay NARCO the sum of $125,000 ("Second Payment") in the form of a certified cashier's check to NARCO within five (5) business days of Johnson's receiving a copy of the successful final reclamation inspection of the Erie #2 wellsite and reclaimed areas in accordance with COGCC Rule 1004.c.

c. Johnson shall pay NARCO the sum of $125,000 ("Third Payment") in the form of a certified cashier's check to NARCO within five (5) business days of Johnson receiving a copy of the successful final reclamation inspection of the Erie #1 wellsite and reclaimed areas in accordance with COGCC Rule 1004.c.

d. Until such time as each well is plugged and abandoned, NARCO shall continue to receive all revenue attributable to the production as to each well, and shall continue to disburse those proceeds from each well attributable to the respective landowner and overriding royalty owner interests.

e. In the event that NARCO fails or refuses to plug and abandon the Erie #2 well and reclaim the surface of the wellsite and all associated production facilities and pits, access roads and pipelines as set forth above (hereinafter referred to as the "Work", whether referencing the Erie #2 well or the Erie #1 well) on or before February 15, 2001 (First Abandonment Date), the parties agree that, after the First Abandonment Date, Johnson may engage a contractor to perform the Work and that such contractor shall be the agent of NARCO and not of Johnson. In such event, the Second Payment shall be reduced by all of the costs incurred by the contractor to perform the work.

f. In the event that NARCO fails or refuses to plug and abandon and complete the Work for the Erie #1 well on or before March 15, 2001 (Second Abandonment Date), the parties agree that, after the Second Abandonment Date, Johnson will engage a contractor to perform the Work and that such contractor shall be the agent of NARCO and not of Johnson. In such event, the Third Payment shall be reduced by all of the costs incurred by the contractor to perform the work.

g. If NARCO is rendered unable to perform the plugging, abandoning and subsequent restoration of the property, wholly or in part, by force majeure preventing it from carrying out its obligations to do so, it shall be automatically granted such time as is necessary for the obligations to be completed over and above the times stated herein. "Force majeure" shall be defined herein as any act of God, strike, lockout or other industrial disturbance, act of the public enemy, war, public riot, lightning, storm, flood or other act of nature, explosion, governmental action, governmental delay, restraint or inaction, unavailability of equipment or qualified labor, whether specifically enumerated herein or otherwise, which is not reasonably in control of NARCO. NARCO will use all reasonable efforts to remedy the force majeure as quickly as is practicable.

h. Should the payments detailed in 4.a, 4.b, or 4.c above not be tendered in a timely manner, Johnson agrees to pay NARCO the sum so indicated plus interest at a rate of 8% per annum compounded weekly.

5. Use of the Surface of the Property

a. From and after the date of this agreement, NARCO shall not drill any other well on the property or extend its surface use of the property (with the exception of paragraph 5.b. below) beyond the current surface uses for the Wells. NARCO further agrees not to deepen or sidetrack either of the Wells.

b. Notwithstanding the foregoing, NARCO shall retain and have a continuing right of ingress and egress to both the surface and subsurface facilities currently located upon or under the Lands, including but not limited to, roads, flow lines and pipelines used in connection with the wells owned and operated by them and operations that are not located on the lands. The entire cost, risk and expense of rerouting any such roads, flowlines and pipelines shall be borne by Johnson exclusive of and in addition to those amounts set forth in Paragraphs 4a, 4b and 4c above, and shall be subject to the advance approval of NARCO as operator of such wells, which approval shall not be unreasonable withheld. The total cost of any installation and or relocation of any transmission line incurred by NARCO shall be paid by Johnson to NARCO upon completion for the relocation of said pipeline(s) and within thirty (30) days after Johnson receives from NARCO an invoice for such costs. In addition, immediately after the relocation of the line, all authorized parties agree to amend the Right-of-Way Agreements set forth below to correctly reflect the change in legal description of the relocated transmission line. Under no circumstances shall NARCO be prohibited from flowing gas through its transmission line at any time.

c. In addition to those rights listed above, NARCO excepts from this agreement and expressly reserves unto itself all right, title and interest for any Right-of-Way and/or Easement NARCO may have covering the above described lands which apply to its transmission line which lies approximately along the southern and eastern edge of the Property, including, but not limited to, the following Right-of-Way Agreements listed herewith:

1. Right-of-Way Agreement dated 3/22/88, filed 4/22/88 in folio 1525, reception #00914407, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

2. Right-of-Way Agreement dated 4/22/85, filed 4/25/85 in folio 1350, reception #00684984, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

3. Right-of-Way Agreement dated 4/22/85, filed 4/25/85 in folio 1350, reception #00684895, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

6. Indemnification

a. Johnson shall defend, indemnify and hold NARCO harmless from and against all claims, losses and liabilities, including court costs, expert witness fees and reasonable attorney's fees that arise from the non-payment of any portion of the purchase price for the landowners royalty and/or overriding royalty and Johnson, as future owner of any interest in the mineral estate for the Property, hereby waives its rights to any portion of the purchase price.

b. Notwithstanding the provisions of Article 4 above, Johnson shall have the right to seek injunctive relief against NARCO for violating the terms of this agreement by drilling any additional oil and gas wells or for not plugging and abandoning the wells in a timely manner.

c. Should either party hereto be in breach of the provisions of this agreement, the aggrieved party shall provide written notice to the party inbreach, and the party in breachwill have thirty (30) days after receipt of such notice to rectify the breach. This time period may be extended for reasons of force majeure as provided herein.

7. Surrender of Leases

a. NARCO shall surrender and release all of its oil and gas leasehold interests to the respective lessors or each lease at the time the Erie #1 well is plugged and abandoned, and no later than the time Johnson is required to make the Third Payment as described in article 4.c. above. NARCO shall not be obligated to surrender any of its interests hereunder if it has not received all sums due and owing to it by Johnson under this agreement or if Johnson is in default of a material term of this agreement.

b. The surrender and release of the leasehold interests described in Article 7.a. shall be evidenced in releases in the form attached to this agreement as Exhibit "A".

8. Restriction on Assignment

NARCO shall not assign any interest it owns in the Leases or in either the Erie #1 well or the Erie #2 well except pursuant to the terms of this agreement.

9. NARCO's Representations and Warranties

NARCO represents and warrants that, to the best of its knowledge, NARCO is owner of 100% of the working interest in the wells and all of the oil and gas leasehold interest in the Property.

10. Successors and Assigns

This Agreement shall be binding and inure to the heirs, successors and assigns of both Johnson and NARCO.

IN WITNESS WHEREOF, the undersigned parties have caused this Agreement to be executed by a duly authorized representative effective as of the date first written above.

JOHNSON DEVELOPMENT COMPANY
by its attorney-in-fact:

Bruce L. Likoff

~~C. Howard Johnson, President~~
Bruce L. Likoff

NORTH AMERICAN RESOURCES COMPANY

T. Schmidtke

Terry C. Schmidtke, Vice President

JJ13

ACKNOWLEDGMENTS

Province of Alberta)
) ss.
Country of Canada)

The foregoing instrument was acknowledged before me on this 25th day of January 2001 by Terry C. Schmidtke, in his capacity as Vice President of North American Resources Company.

Witness my hand and official seal.

My Commission Expires: 12/31/2003

Notary Public

STATE OF COLORADO)
CITY AND) ss.
COUNTY OF DENVER)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this 31st day of January, 2001; personally appeared Bruce L. Likoff in his capacity as attorney-in-fact for Johnson Development Company, and who executed the within and foregoing instrument of his own free and voluntary act and deed for the benefit of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal this 31st day of January, 2001.

My Commission Expires:
December 5, 2001

Notary Public

EXHIBIT "A"

Attached to and made a part of that certain Well Abandonment Agreement dated January 25, 2001 by and between Johnson Development Company and North American Resources Company.

RELEASE OF OIL AND GAS LEASE

STATE OF COLORADO
COUNTY OF BOULDER

WHEREAS, North American Resources Company, with offices at 1700 Broadway, Suite 2000, Denver, CO 80290, is the owner of a leasehold interest in the oil and gas leases described below covering the described lands situated in the County of Boulder, State of Colorado, to-wit:

Township 1 North, Range 69 West, 6th P.M.
Section 24: S/2

said leases being recorded in the records of the Boulder County Clerk and Recorder.

NOW, THEREFORE, North American Resources Company does hereby release, relinquish and surrender to the lessors, their respective heirs, assigns and legal representatives, all right, title and interest in and to the following oil and gas leases:

a. Oil and gas lease dated August 20, 1981, from Maxine Johnson Haley Trust, James S. Haley, Trustee, as lessor, to J. Michael McGhee ("McGhee"), as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466152.

b. Oil and gas lease dated August 20, 1981, from Susan J. Troudt, Marian J. Bottinelli, Carla Johnson Hobbs, d/b/a Johnson Farms, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466151.

c. Oil and gas lease dated August 18, 1981, from Wallace H. Grant and Douglas Grant, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466154.

d. Oil and gas lease dated August 7, 1981, from The Longmont National Bank and Lorraine Miller as Co-Trustees of the Carl A. Miller Trust, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466153.

Executed this 25th day of January, 2001 and effective as of the same date.

ATTEST:

Rachel L. Desrochers

NORTH AMERICAN RESOURCES COMPANY

T. Schmidtke

Terry C. Schmidtke
Vice President

END OF DOCUMENT

2927263 05/01/2008 12:32:43 PM
WD RF: $16.00 DF: $0.00 Page: 1 of 3
Electronically recorded in Boulder County Colorado.

MINERAL DEED CONTAINING SPECIAL WARRANTY OF TITLE

THIS MINERAL DEED CONTAINING SPECIAL WARRANTY OF TITLE ("Deed"), is made this 30 day of April, 2008, between Johnson Development Company, a Colorado corporation, whose address is 4380 South Syracuse Street, Suite 510, Denver, Colorado 80237, hereinafter called Grantor, and ECV Minerals, LLC, a Colorado limited liability company, whose address is 7720 East Belleview Avenue, Suite 350, Greenwood Village, Colorado 80111, hereinafter called Grantee.

In consideration of ten dollars ($10.00) and other valuable consideration, the receipt of which is hereby acknowledged, Grantor grants, bargains, sells, conveys, transfers and assigns to Grantee all of Grantor's right, title, and interest in and to the mineral estate in the lands described on Exhibit 1 attached hereto (the "Lands"), including any and all of the oil, gas and other hydrocarbon minerals owned by Grantor in and under the Lands (the "Mineral Interests").

By this Deed, Grantee is also conveyed any and all of the rights of ingress and egress owned by the Grantor for the purposes of mining, drilling, exploring, operating and developing the Lands for oil, gas and other hydrocarbon minerals and storing, handling, transporting and marketing the same from the Lands.

THIS DEED IS MADE WITHOUT REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, except that Grantor, for itself and its successors and assigns, warrants to and agrees with Grantee, and its successors and assigns, that the Mineral Interests are free and clear of all mineral leases, claims, liens, security interests, burdens, and encumbrances, of any kind or nature, created by, through or under Grantor, and Grantor shall warrant and forever defend the title of Grantee, its successors and assigns, to the Mineral Interests against all persons now or hereafter claiming an interest therein by, through or under Grantor.

Grantor agrees to execute such further documents as may be reasonably necessary to more fully and effectively grant, convey and assign to Grantee the rights, interests and properties conveyed hereby.

TO HAVE AND TO HOLD, the Lands unto the Grantee, its successors and assigns forever.

IN WITNESS WHEREOF, Grantor has executed this Deed on the date set forth above.

JOHNSON DEVELOPMENT COMPANY, a Colorado corporation

By: M. Clementina Martins
M. Clementina Martins, Vice-President of Sales

AFTER RECORDING RETURN TO:
MALL OVERTON
7720 E. BELLEVIEW AVE #350
GREENWOOD VILLAGE, CO. 80111

FATCO

H0206316 / H0138322

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STATE OF COLORADO)
) ss.
COUNTY OF DENVER)

The foregoing Mineral Deed Containing Special Warranty of Title was voluntarily executed and acknowledged before me, a notary public, by M. Clementina Martins, as Vice-President of Sales of Johnson Development Company, a Colorado corporation, on this 30th day of April, 2008.

Witness my hand and official seal.

My commission expires: 6/10/11

Gillian P. Godfrey
Notary Public
NOTARY PUBLIC
STATE OF COLORADO

My commission expires 06/10/2011

EXHIBIT 1

Mineral Interests Legal Description

PARCEL DESCRIPTION

A PARCEL OF LAND IN THE N ½ OF THE SE ¼ OF SECTION 24, T1N, R69W OF THE 6TH P.M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE E ¼ CORNER OF SECTION 24, WHICH IS ALSO THE TRUE POINT OF BEGINNING; THENCE S 0°59'04" E, 1326.54 FEET; THENCE N 89°52'59" W, 1699.28 FEET; THENCE N 0°54'34" W, 1327.96 FEET, THENCE S 89°50'03" E, 1697.57 FEET TO THE TRUE POINT OF BEGINNING;

CONTAINING 51.74 ACRES MORE OR LESS.

County of Boulder
State of Colorado

WELL ABANDONMENT AGREEMENT

THIS AGREEMENT is made and entered into this 25th day of January, 2001, by and between North American Resources Company ("NARCO"), with offices at 1700 Broadway, Suite 2000, Denver, Colorado 80290 and Johnson Development Company ("Johnson"), with offices at 4380 South Syracuse Street, Denver, Colorado 80237.

RECITALS

1. Johnson either owns or has an option to purchase the entire S/2 of Section 24, Township 1 North, Range 69 West, Boulder County, Colorado ("Property").

2. The property is subject to the following oil and gas leases ("Leases"), to-wit:

a. Oil and gas lease dated August 20, 1981, from Maxine Johnson Haley Trust, James S. Haley, Trustee, as lessor, to J. Michael McGhee ("McGhee"), as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466152.

b. Oil and gas lease dated August 20, 1981, from Susan J: Troudt, Marian J. Bottinelli, Carla Johnson Hobbs, d/b/a Johnson Farms, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466151.

c. Oil and gas lease dated August 18, 1981, from Wallace H. Grant and Douglas Grant, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466154.

d. Oil and gas lease dated August 7, 1981, from The Longmont National Bank and Lorraine Miller as Co-Trustees of the Carl A. Miller Trust, as lessor, to J. Michael McGhee, as lessee, a copy of which was recorded on September 30, 1981, in the Clerk and Recorder's Office for Boulder County at Book 1182, Reception No. 466153.

3. NARCO has succeeded to all of the working interests of McGhee under the Leases.

4. NARCO operates two oil and gas wells on the Property known as the Erie Eight E Unit #1 located in the SE/4SE/4 of Section 24 ("Erie #1") and the Erie Eight E Unit #2 located in the SW/4SW/4 of Section 24 ("Erie #2") in which NARCO presently owns all the working interest. The Erie #1 and Erie #2 may be hereinafter collectively referred to as the "Wells."

5. Johnson wishes to develop the property free of the Wells and subsequent drilling.

6. NARCO and Johnson enter into this Agreement to provide for NARCO to plug and abandon the Wells, among other things, in exchange for certain payments from Johnson to NARCO as provided herein.

TERMS AND PROVISIONS

NOW, THEREFORE, in consideration of the covenants and the mutual benefits set forth herein, including the representations set forth in the recitals, the parties agree as follows:

1. Plugging and Abandonment of Erie #2 Well and Reclamation

NARCO shall plug and abandon the Erie #2 well and remove all equipment and production facilities from the wellsite and also reclaim and remediate the surface of the wellsite and all associated production facilities and pits, access and gas flowlines from the Erie #2 wellhead to the gas transmission line in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission ("COGCC") on or before March 1, 2001. The completion of remediation at this site may be extended if unexpected complications are encountered, but NARCO will diligently pursue said remediation until it is completed. NARCO will provide Johnson notice of such extension as soon as it is practicable with an explanation of the cause of the delay.

2. Plugging and Abandonment of Erie #1 Well and Reclamation

NARCO shall plug and abandon the Erie #1 well and remove all equipment and production facilities from the wellsite and also reclaim and remediate the surface of the wellsite and all associated production facilities and pits, access and gas flowlines from the Erie #1 wellhead to the gas transmission line in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission ("COGCC"). This will be accomplished within fifty (50) days after receiving written notice from Johnson.

3. Wellhead Equipment and Production Facilities

NARCO shall continue to own the wellhead equipment and associated production facilities and equipment as to each respective well.

4. Purchase Price

As consideration for the terms and provisions contained herein, Johnson agrees to pay NARCO $500,000.00 as follows:

a. Johnson shall pay NARCO the sum of $250,000 in the form of a certified cashier's check contemporaneous with the execution of this agreement.

b. Johnson shall pay NARCO the sum of $125,000 ("Second Payment") in the form of a certified cashier's check to NARCO within five (5) business days of Johnson's receiving a copy of the successful final reclamation inspection of the Erie #2 wellsite and reclaimed areas in accordance with COGCC Rule 1004.c.

c. Johnson shall pay NARCO the sum of $125,000 ("Third Payment") in the form of a certified cashier's check to NARCO within five (5) business days of Johnson receiving a copy of the successful final reclamation inspection of the Erie #1 wellsite and reclaimed areas in accordance with COGCC Rule 1004.c.

d. Until such time as each well is plugged and abandoned, NARCO shall continue to receive all revenue attributable to the production as to each well, and shall continue to disburse those proceeds from each well attributable to the respective landowner and overriding royalty owner interests.

e. In the event that NARCO fails or refuses to plug and abandon the Erie #2 well and reclaim the surface of the wellsite and all associated production facilities and pits, access roads and pipelines as set forth above (hereinafter referred to as the "Work", whether referencing the Erie #2 well or the Erie #1 well) on or before February 15, 2001 (First Abandonment Date), the parties agree that, after the First Abandonment Date, Johnson may engage a contractor to perform the Work and that such contractor shall be the agent of NARCO and not of Johnson. In such event, the Second Payment shall be reduced by all of the costs incurred by the contractor to perform the work.

f. In the event that NARCO fails or refuses to plug and abandon and complete the Work for the Erie #1 well on or before March 15, 2001 (Second Abandonment Date), the parties agree that, after the Second Abandonment Date, Johnson will engage a contractor to perform the Work and that such contractor shall be the agent of NARCO and not of Johnson. In such event, the Third Payment shall be reduced by all of the costs incurred by the contractor to perform the work.

g. If NARCO is rendered unable to perform the plugging, abandoning and subsequent restoration of the property, wholly or in part, by force majeure preventing it from carrying out its obligations to do so, it shall be automatically granted such time as is necessary for the obligations to be completed over and above the times stated herein. "Force majeure" shall be defined herein as any act of God, strike, lockout or other industrial disturbance, act of the public enemy, war, public riot, lightning, storm, flood or other act of nature, explosion, governmental action, governmental delay, restraint or inaction, unavailability of equipment or qualified labor, whether specifically enumerated herein or otherwise, which is not reasonably in control of NARCO. NARCO will use all reasonable efforts to remedy the force majeure as quickly as is practicable.

h. Should the payments detailed in 4.a, 4.b, or 4.c above not be tendered in a timely manner, Johnson agrees to pay NARCO the sum so indicated plus interest at a rate of 8% per annum compounded weekly.

5. Use of the Surface of the Property

a. From and after the date of this agreement, NARCO shall not drill any other well on the property or extend its surface use of the property (with the exception of paragraph 5.b. below) beyond the current surface uses for the Wells. NARCO further agrees not to deepen or sidetrack either of the Wells.

b. Notwithstanding the foregoing, NARCO shall retain and have a continuing right of ingress and egress to both the surface and subsurface facilities currently located upon or under the Lands, including but not limited to, roads, flow lines and pipelines used in connection with the wells owned and operated by them and operations that are not located on the lands. The entire cost, risk and expense of rerouting any such roads, flowlines and pipelines shall be borne by Johnson exclusive of and in addition to those amounts set forth in Paragraphs 4a, 4b and 4c above, and shall be subject to the advance approval of NARCO as operator of such wells, which approval shall not be unreasonable withheld. The total cost of any installation and or relocation of any transmission line incurred by NARCO shall be paid by Johnson to NARCO upon completion for the relocation of said pipeline(s) and within thirty (30) days after Johnson receives from NARCO an invoice for such costs. In addition, immediately after the relocation of the line, all authorized parties agree to amend the Right-of-Way Agreements set forth below to correctly reflect the change in legal description of the relocated transmission line. Under no circumstances shall NARCO be prohibited from flowing gas through its transmission line at any time.

c. In addition to those rights listed above, NARCO excepts from this agreement and expressly reserves unto itself all right, title and interest for any Right-of-Way and/or Easement NARCO may have covering the above described lands which apply to its transmission line which lies approximately along the southern and eastern edge of the Property, including, but not limited to, the following Right-of-Way Agreements listed herewith:

1. Right-of-Way Agreement dated 3/22/88, filed 4/22/88 in folio 1525, reception #00914407, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

2. Right-of-Way Agreement dated 4/22/85, filed 4/25/85 in folio 1350, reception #00684984, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

3. Right-of-Way Agreement dated 4/22/85, filed 4/25/85 in folio 1350, reception #00684895, Boulder County Clerk and Recorder, together with any applicable permits or licenses.

6. Indemnification

a. Johnson shall defend, indemnify and hold NARCO harmless from and against all claims, losses and liabilities, including court costs, expert witness fees and reasonable attorney's fees that arise from the non-payment of any portion of the purchase price for the landowners royalty and/or overriding royalty and Johnson, as future owner of any interest in the mineral estate for the Property, hereby waives its rights to any portion of the purchase price.

b. Notwithstanding the provisions of Article 4 above, Johnson shall have the right to seek injunctive relief against NARCO for violating the terms of this agreement by drilling any additional oil and gas wells or for not plugging and abandoning the wells in a timely manner.

c. Should either party hereto be in breach of the provisions of this agreement, the aggrieved party shall provide written notice to the party inbreach, and the party in breachwill have thirty (30) days after receipt of such notice to rectify the breach. This time period may be extended for reasons of force majeure as provided herein.

7. Surrender of Leases

a. NARCO shall surrender and release all of its oil and gas leasehold interests to the respective lessors or each lease at the time the Erie #1 well is plugged and abandoned, and no later than the time Johnson is required to make the Third Payment as described in article 4.c. above. NARCO shall not be obligated to surrender any of its interests hereunder if it has not received all sums due and owing to it by Johnson under this agreement or if Johnson is in default of a material term of this agreement.

b. The surrender and release of the leasehold interests described in Article 7.a. shall be evidenced in releases in the form attached to this agreement as Exhibit "A".

8. Restriction on Assignment

NARCO shall not assign any interest it owns in the Leases or in either the Erie #1 well or the Erie #2 well except pursuant to the terms of this agreement.

9. NARCO's Representations and Warranties

NARCO represents and warrants that, to the best of its knowledge, NARCO is owner of 100% of the working interest in the wells and all of the oil and gas leasehold interest in the Property.

10. Successors and Assigns

This Agreement shall be binding and inure to the heirs, successors and assigns of both Johnson and NARCO.

IN WITNESS WHEREOF, the undersigned parties have caused this Agreement to be executed by a duly authorized representative effective as of the date first written above.

JOHNSON DEVELOPMENT COMPANY
by its attorney-in-fact:
Bruce L. Likoff

~~C. Howard Johnson, President~~
Bruce L. Likoff

NORTH AMERICAN RESOURCES COMPANY
T Schmidtke

Terry C. Schmidtke, Vice President

ACKNOWLEDGMENTS

Province of Alberta)
) ss.
Country of Canada)

The foregoing instrument was acknowledged before me on this 25th 26th day of January 2001 by Terry C. Schmidtke, in his capacity as Vice President of North American Resources Company.

Witness my hand and official seal.

My Commission Expires: 12/31/2003

Rachel L. Democker
Notary Public

STATE OF COLORADO)
CITY AND) ss.
COUNTY OF DENVER)

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this 31st day of January, 2001, personally appeared Bruce L. Likoff in his capacity as attorney-in-fact for Johnson Development Company, and who executed the within and foregoing instrument of his own free and voluntary act and deed for the benefit of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal this 31st day of January, 2001.

My Commission Expires:
December 5, 2001

Robert J. Bre
Notary Public

DODGE SIGN COMPANY

LICENSE AGREEMENT FOR SIGNAGE

THIS LICENSE AGREEMENT is entered into this 1st **day of** May **, 2013, by and between** Erie Commercial Ventures LLP **and Dodge Sign Company**

A. Landowners own property at southwest corner of Erie Pkwy & County Line Rd, Erie **, Colorado**

B. Dodge Signs wishes to install a sign, advertising the community, on the property.

C. Landowners have agreed to allow Dodge Signs to install and leave the sign at the property under the terms and conditions below.

In consideration of the mutual covenants contained herein, Landowners and Dodge Sign Company hereby agree as follows:

1. Landowners hereby grant a license to Dodge Signs to use the portion of the Landowners' Property necessary for placement of the sign, beginning on the date this agreement is date and extending to the 31 day of December 2013.

2. Dodge Sign Company shall pay the Landowners the sum of $150.00 **and no/100s dollars per month for the license. If the license is extended, Dodge Signs shall pay on a monthly basis.**

3. Dodge Signs may opt out of Agreement at any time with 15-day written notice to Landowners. Landowners may opt out of Agreement at any time with 15-day written notice.

4. At the end of the term, as it may be extended, Dodge Signs shall cause the sign to be removed and any holes to be filled that may have been caused by the existence of the sign on the Property. Landowners hereby grant permission to Dodge Sign Company to enter upon the Property upon 24 hours notice by Dodge Signs to Landowners for the purpose of erecting, changing and removing the sign and filling any holes caused by the sign.

5. Dodge Sign Company shall be responsible for reasonable cost and expenses incurred by Landowners for any damage that may be caused to Landowners' Property due to tipping or falling of the sign by acts of nature, such as wind. Dodge Signs shall not be responsible for any damages cause by actions or inactions of Landowners or of Landowners licensees, invitees, agents, employees, contractors or the like.

6. Landowner shall be responsible for submitting an invoice to Dodge Signs each month for payment of the agreement.

7. Contract is void if sign is required to be taken down by order of city, county, or state

Landowners: Erie Commercial Venture, LLLP	**Dodge Sign Company:**
Signature: By: [signature]	**Signature:** Mike Adams
Name: A.L. Sid Overton, General Partner	**Name:** Mike Adams
Date: May 1, 2013	**Date:** May 1, 2013

Sid Overton

To: Peyton Forni
Subject: RE: D.R. Horton Sign Lease Agreement

Hi Peyton: I have signed and attached a copy of the LIcense Agreement For Signage which you sent to me yesterday, via email. We need to receive payment for the month of August, 2013 and each month thereafter that D.R. Horton continues to use the sign on our property. We believe that D.R. Horton first placed a sign on our property in late 2012 without our approval, and we are attempting to verify that information from the photographer. Therefore, this agreement shall not constitute a waiver. by Erie Commercial Venture, LLLP, of past signage use on our property by D.R. Horton. We are forwarding this attached copy of the signed agreement to you in reliance on immediate payment for the month commecing in August 1, 2013, and advance payment for each month of signage use thereafter. Thank you.
A. L. Sid Overton, General Partner, Erie Commercial Venture, LLLP

A. L. (Sid) Overton, Esq.
Overton, & Associates, LLC
6950 E. Belleview Avenue, Suite 202
Greenwood Village, Colorado 80111
Telephone: (303) 779-5900
Fax: (303) 779-6006
E-Mail: sidoverton@oalaw.net

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From: Peyton Forni [mailto:PForni@drhorton.com]
Sent: Monday, August 19, 2013 4:58 PM
To: SIDOVERTON@OALAW.NET
Subject: D.R. Horton Sign Lease Agreement

Hi Sid,

Thanks again for allowing us to put a sign on your property. We really appreciate it.

I have attached the document with my signature. Please sign it and return it to me and the process will be underway.

Have a great weekend!

D·R·HORTON® DHI Listed NYSE
America's Builder

LICENSE AGREEMENT FOR SIGNAGE

THIS LICENSE AGREEMENT ("Agreement") is entered into this 14th day of August, 2013, by and between Erie Commercial Ventures LLLP (together "Landowners") and D.R. Horton, Inc. ("DR Horton").

A. Landowners own property at southwest corner of Erie Pkwy & Cty Line Rd Erie, Colorado (the "Property")
B. D.R. Horton wishes to install a sign, advertising the community ("the sign"), on the property.
C. Landowners have agreed to allow D.R. Horton to install and leave the sign at the Property under the terms and conditions below.

In consideration of the mutual covenants contained herein, Landowners and DR Horton hereby agree as follows:

1. Landowners hereby grant a license to D.R. Horton to use the portion of the Landowners' Property necessary for placement of the Sign, beginning on the date this Agreement is dated and extending to the 31 day of December 2015.

2. D.R. Horton shall pay Landowners the sum of $150.00 and no/100s Dollars ($150.00) per month for the license. If the license is extended, D.R. Horton shall pay on a monthly basis.

3. D.R. Horton may opt out of Agreement at any time with 15-day written notice to Landowners. Landowners may opt out of Agreement at any time with 15-day written notice.

4. At the end of the term, as it may be extended, D.R. Horton shall cause the sign to be removed and any holes to be filled that may have been caused by the existence of the sign on the Property. Landowners hereby grant permission to D.R. Horton to enter upon the Property upon 24 hours notice by D.R. Horton to Landowners for the purpose of erecting, changing and removing the sign and filling any holes caused by the sign.

5. D.R. Horton shall be responsible for reasonable cost and expenses incurred by Landowners for any damage that may be caused to Landowners' Property due to tipping or falling of the sign by acts of nature, such as wind. D.R. Horton shall not be responsible for any damages caused by actions or inactions of Landowners or of Landowners licensees, invitees, agents, employees, contractors or the like.

6. This agreement shall commence as of August 1, 2013.

LANDOWNERS:
ERIE COMMERCIAL VENTURE, LLLP
By: _____
A. L. Overton, Gen. Partner
Date: Aug. 19, 2013

DR Horton, Inc.:
Signature: _____
Name: Brittany Forni
Date: 8.15.13

CUSTOM FARMING AGREEMENT

THIS **AGREEMENT**, is made and entered into by and between ERIE COMMERCIAL VENTURE, LLLP, a Colorado limited liability limited partnership, 6950 East Belleview Avenue, Suite 202, Greenwood Village, Colorado 80111 hereinafter referred to as "Owner"; and Virgil C. Harmon, 308 Westview Road, Erie, Colorado 80516 hereinafter referred to as "Farmer".

A. Owner is the owner of the following described premises (hereinafter referred to as "the Premises") as situated in the County of Boulder, and State of Colorado, to wit:

Approximately 46 acres of vacant farm land located at the southwest corner of Erie Commons Parkway and County Line Road, Erie Colorado, of which 40 acres will be farmed under the terms of this agreement.

B. Farmer owns and operates a farming operation at one or more farms located in Boulder/ Weld County, Colorado area; and

C. Owner and Farmer mutually desire to enter into an agreement whereby Owner shall engage Farmer to provide custom farming services to Owner on the Premises as more fully hereinafter described.

THEREFORE, in consideration of the fees to be paid to Farmer by Owner, as hereinafter described, the receipt and sufficiency of which is hereby acknowledged, and for other good and valuable consideration, Owner and Farmer hereby agree as follows:

1. Farmer agrees to provide the following custom farming services to Owner:
   A. to disc certain parts of the soil on the Premises, as mutually agreed between Owner and Farmer; and/or
   B. to cultivate certain parts of the soil on the Premises, as mutually agreed between Owner and Farmer; and /or
   C. to plant and seed certain parts of the soil on the Premises, as mutually agreed between Owner and Farmer; and/or
   D. to apply weed-control spray to the growing weeds on certain parts of the Premises, as mutually agreed between Owner and Farmer.
   ~~E. to cut and swath (or rake) the grass (hay) growing on certain parts of the soil on the Premises, as mutually agreed between Owner and Farmer; and/or~~ (illegible)
   ~~F. to bale and stack the baled grass (hay) which has been cut on certain parts of the Premises;~~ and (illegible)
   G. To remove all tractors, trucks, harvestors, cultivators and other farm equipment and machinery from the premises when not in use on the premises.
   I. To assist Owner in locating a market, or purchaser, to purchase the crops produced on the Premises each year.

J. To plant and seed the wheat, barley, oats or other small seed crops by the end of October of each year.

~~K. To Cut, bale and stack the grass (hay) by the end of _____ of each year; and~~

L. To contract for a custom harvester to harvest the wheat, barley, oats, and/or other small seed crops by the end of July of each year, at a price and on terms acceptable to Owner.

2. Owner agrees to following:

   A. To directly pay the supplier for the cost of seed, fertilizer and/or weed control spray , unless otherwise agreed to with Farmer.
   B. To pay Farmer for all reasonable fees and costs, based upon the agreed rates set forth below, billed by Farmer to Owner, for custom farming services and costs, within 30 days of receipt of a Billing Statement for said services and costs, from Farmer.
   C. To periodically confer with Farmer, to discuss and decide the custom farming services to be provided to Owner, by Farmer, and to verbally agree upon the following:
      (1) the number and location of the acres on the Premises to be affected;
      (2) the custom farming service to be performed; and
      (3) the estimated cost of said custom farming service.
   D. .To use said premises as a farm for growing wheat, barley, oats, hay and other small grains.

3. Agreed Rates for Custom Farming Services:
   A. Disc Plowing - $ 25 per acre
   B. Cultivating - $ 25 per acre
   C. Planting and seeding - $ 30 per acre
   ~~D. Cutting/swathing - $_____ per acre~~
   ~~E. Baling and stacking - $_____ bale~~
   F. Custom Harvesting – As negotiated with a third party harvester.

4. Assignment Prohibition
   A. Farmer understands and agrees that this agreement shall not be assigned by Farmer, without the prioer written consent of Owner.

5. Crop Production Bonus
   A. As a further incentive to Farmer, Owner shall pay Farmer a crop production bonuse equal to 10 percent of the net proceeds received by Farmer for the the sale of the crops produced each year. Said bonus payment shall be paid to Farmer not later than 30 day after Owner receives the final payment(s) for the crops for the production year.

6. Termination
   A. This agreement may be terminated by either party, upon the delivery of 90 days prior written notice of termination to the other party. In the event said notice of

termination is delivered by Owner to Farmer, Owner shall pay Farmer for all custom farming services rendered, and reasonable costs incurred, up to the date and time of receipt of said notice of termination by Farmer. Likewise, in the event said notice of termination is delivered by Farmer to Owner, Farmer shall assist, and fully cooperate with, Owner in the obtaining of a successor Farmer to provide said custom farming services to Owner.

This agreement is executed on the 20 day of October, 2010.

Owner:

Erie Commercial Venture, LLLP

By: _____
A. L. Sid Overton General Partner

Farmer:

_____

Sid Overton

From: Sid Overton
Sent: Monday, August 26, 2013 5:55 PM
To: 'Barry Goff'
Subject: RE: Fusion Advertising Agreement ERIE COMMERCIAL VENTURE LLLP
Attachments: Advertising Sign Lease from Richmond Amerian Homes 8-26-13.pdf

Hi Barry: I have revised and signed the attached proposed Advertising Sign lease agreement between Erie Commericial Venture, LLLP, Lessor, and Fusion Sign & Design, Lessee re Richmond American Homes, Advertiser. Please note that Paragraph 2, Line 3, of the lease agreement, as prepared by you, correctly stated the advance rent to be $200.00 per month. So we corrected the incorrrect amount shown in line 7. Upon receipt of the advance payment of $200.00, and a duplicate of the attached lease agreement, signed by an authorized agent or representative of the Lessee, you will be permitted to immediately place the sign on the property. We have also signed and attached a Form W-9 for income tax purposes. Thank you. Sid Overton

A. L. (Sid) Overton, Esq.
Overton, & Associates, LLC
6950 E. Belleview Avenue, Suite 202
Greenwood Village, Colorado 80111
Telephone: (303) 779-5900
Fax: (303) 779-6006
E-Mail: sidoverton@oalaw.net

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From: Barry Goff [mailto:barry@fusionsign.com]
Sent: Monday, August 19, 2013 2:56 PM
To: sidoverton@oalaw.net
Subject: Fusion Advertising Agreement ERIE COMMERCIAL VENTURE LLLP

Mr Overton, attached are the documents needed for the Richmond American sign. Please review and let me know if this is acceptable, thanks and call with any questions or concerns.

Barry Goff
Service Manager

Fusion Sign and Design
4109 Wagon Trail Ave.
Las Vegas, NV 89118
T: 702.949.0760
F: 702.991.0103
C: 702.622.0065

FUSION
Sign and Design

Sign Lease Advertising Agreement

Company Name: FUSION SIGN AND DESIGN

Advertiser: RICHMOND AMERICAN HOMES

Project: DAY BREAK AND ERIE COMMONS

Company requests the use of your property, as described below, to install and maintain an advertising sign.

Property Location: County Rd 1/Erie Pkwy

Parcel #: 146524000019

$200.00 for 1 sign month to month, payable to the following:

Name: ERIE COMMERCIAL VENTURE LLLP

Address:

Telephone: 303-779-5900 SSN or Federal Tax I.D. # 84-1474626

Terms & Conditions:

1. I / we hereby grant to Fusion Sign and Design the right to enter the Property for the purpose of placing or causing placement of a 3'x 3' directional sign in approximately the location shown on the attached drawing. The sign will be installed by Fusion Sign and Design or its contractors in conformance with any governmental ordinances, rules and regulations. Lessee and its contractors shall maintain the sign and keep it in good repair at no cost to Lessor. Lessor grants Fusion Sign and Design, its employees, agents, or representatives, the right to access the Property seven days per week, between the hours of 7:00 a.m. and 7:00 p.m. for the purpose of placing, replacing, maintaining and/or removing the signage.
2. This Lease Agreement becomes effective upon execution. The term of this Lease Agreement shall be one year from the date of execution, and may be extended from time to time for additional one year terms by a writing executed by both parties. The Lessee agrees to pay rent in the amount of $200.00 per month, payable in advance. In the event this Lease Agreement is terminated for any reason on any day other than the day of the month upon which the Lease Agreement payments are due, the amount due by Lessee will be pro-rated and any amounts paid by Lessee to Lessor which are unused shall be returned to Lessee by Lessor within 10 days of termination by either party.
3. Lessee or Lessor may terminate this Lease Agreement at any time, for any reason or no reason, upon delivery of written notice to the other party delivered to the address below by overnight courier service, US Mail, or facsimile with evidence of delivery. Lessee shall remove the sign within thirty (30) days of termination of this Lease Agreement. Lessee may, at Lessee's election, remove the sign from the Property at any time when Lessee no longer owns any lots in a community being advertised on the sign and this Lease Agreement shall automatically terminate upon such removal.

4. Lessee shall have no liability or responsibility for the maintenance, repair or condition of the Property upon which the signage is located, and shall further have no liability or responsibility for the actions or inactions of the Lessor with respect to the Property. Lessor agrees to hereby assume all liability for and agrees to indemnify and hold harmless Lessee from and against any and all claims, liabilities and causes of action arising out of or in any way related to (a) hazardous materials or conditions that are not placed on the Property or caused by Lessee or its agents, (b) latent defects, or (c) Lessor's actions or inactions.
5. Lessor hereby covenants and agrees that it is the current owner of the above-referenced property, there are no other owners of the property who need to execute this Lease Agreement, and the undersigned is/are fully authorized to enter into this Lease Agreement. In the event of sale or transfer of the property by Lessor, Lessor covenants and agrees to disclose the existence of this Lease Agreement and any conveyance shall be subject to this Lease Agreement.
6. Lessor shall be responsible for all taxes associated with the payments due hereunder, including but not limited to, sales taxes and taxes upon Lessor's income and property.
7. This lease shall commence on September 1, 2013, contingent upon advance payment of $200.00 rent by Lessee to Lessor.

Acceptance;

LESSEE: Fusion Sign & Design

By: _____

Date: _____

LESSOR: Erie Commercial Venture, LLLP

By: _____
A. L. Sid Overton, General Partner

Date: August 26, 2013

ECV Minerals, LLC

6950 E. Belleview Avenue, Suite 202
Greenwood Village, Colorado 80111
303-779-5900

February 10, 2015

Martin Ostholthoff, Director
Department of Community Development
Town of Erie
645 Holbrook Street
Erie, Colorado 80526

RE: Notice of Mineral Estate Waiver for the Property Located in the North ½ of the SE ¼ of Section 24, Township 1 North, Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.

Dear Marty,

ECV Minerals, LLC is the owner of the mineral estate of the property described above. This letter is to notify you that ECV Minerals, LLC waives its right to notice under 24-65.5-103 C.R.S. concerning the notice requirements for mineral estate owners, as it specifically relates to a land use application submitted, or to be submitted, by RMCS, LLC. Please feel free to use this letter to satisfy said land use application notice requirements for the Town of Erie Colorado.

Sincerely,

ECV Minerals, LLC

A.L. (Sid) Overton, Manager

State of Colorado)
) ss.
County of Arapahoe)

Subscribed and sworn to before me, a notary public, by A. L. (Sid) Overton, Manager of ECV Mineral, LLC, a Colorado limited liability company, on this 10 day of February, 2015.

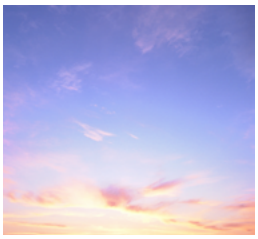
Witness my hand and official seal.

SARAH J. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20094025068
MY COMMISSION EXPIRES AUGUST 7, 2017

Notary Public

My commission expires: August 7, 2017

Written Statement (Narrative)



section a:

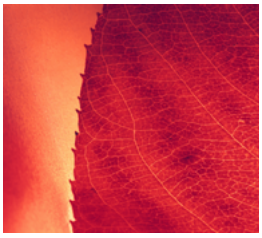
General project concept and purpose of the request.

section b:

Relationship to existing land use and adjacent properties.

section c:

Property Analysis.



section d:

Town’s Comprehensive Plan and Approval criteria.

section a:

GENERAL PROJECT CONCEPT AND PURPOSE OF THE REQUEST.

Project Concept

RMCS Inc., is pleased to present this introduction for Canyon Creek PD Amendment No. 9 (also known as Four Corners). The Four Corners application covers a portion of land located in the North One-Half of the Southeast One-Quarter of Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado. This document addresses the property's proposed rezoning and associated rationale for the application.

Four Corners is envisioned as a vibrant mixed use community with a very strong emphasis on public and private amenities, diverse housing options, and most importantly, uniquely designed commercial space supported by restaurants and a shopping district. Four Corners will cater to a balanced range of uses and activities where people live, shop, reside and build their families. The proposed project plans to provide its residents with a sense of community, while also giving the Four Corners intersection a sense of identity.

A great deal of attention has been paid to maintaining a human scale in everything from street widths and a pedestrian friendly environment, to the commercial and retail uses along East County Line Road. By mixing both residential and commercial uses with recreational opportunities, the intent of this PD Amendment is to create a social and economic balance not commonly found in typical new residential developments. This plan proposes to bring all of these ingredients together to create a scale

and style of living which encourages residents to greet their neighbors from their front porches, and walk their children to the nearby shops and parks that serve the surrounding residents. This plan hopes to foster in the community an unparalleled sense of pride in their neighborhood and the Town in which they live.

Purpose of the Request

The principal land uses and associated permitted uses found in the Canyon Creek PD Amendment No.8 are referred to as Business Commercial (BC) and Commercial/Business/Retail (CBR), which are not consistent with current zoning districts in the Town of Erie. This proposal re-defines the CBR portion of property to be more consistent with the Town's 2005 Comprehensive Plan, and the Town's Unified Development Code (UDC).

The property has been identified as Mixed Use & Community Commercial within the Town of Erie's 2005 Comprehensive Plan and is designated as Planned Development on the Town's zoning map. The principal land uses for the proposed Four Corners is a combination of principal land uses as defined in the Unified Development Code which include Community Commercial (CC), Medium Density Residential (MR) and High Density Residential (HR).

The proposed plan encourages a flexible approach to development that will promote a more balanced mix of residential and commercial uses for the community. An update to the Town's Unified Development Code was prepared concurrent with the last Comprehensive Plan, revising many of the key ideas and policies that have been codified within this site plan giving this project a solid foundation for implementation. The proposed site plan is aligned with the Town's Comprehensive Plan's goals and policies, and provides focused guidance as the community continues to grow.

The proposed development encourages smart, compact growth, and proposes a maximum number of 500 dwelling units on the property, for a maximum overall density of approximately 15.6 dwelling units per acre. The clustered design approach, the transition between different densities and uses, and diverse housing is consistent with the spirit and intent of the residential and commercial policies set

forth in the Town's Comprehensive Plan.

Proposed Variations from the Principal Land Uses

The site plan proposes Community Commercial, Medium and High Density Residential principal land uses with a PD Development Plan to accommodate diversified housing products, and to allow for a more creative approach to the clustering and the planning of parcels within the overall development of the property. The PD Overlay will limit the number of units allowed within the property to 500 Units. In order to ensure compatibility with our surrounding neighbors, the PD will establish development areas, and transitional densities. The PD Overlay will also be necessary to allow for dimensional standards that support the housing variations proposed to facilitate the Town of Erie Housing Diversity requirements.

Public Benefits

The site plan identifies a landscape area to serve both as an outdoor recreational amenity, and as a transition from the commercial retail and shopping district to the high and medium density residential uses within the development. As requested by the Town of Erie, the plan proposes to enhance areas with the associated trails along County Line Road and Erie Parkway. These trails serve as a major pedestrian corridor and connection to the Town of Erie's Community Center. The remainder of the property will be preserved as non-dedicated green space areas with an internal trail network.

Proposed Development Time line

The proposed development timeline and phasing is dependent on project approvals and market conditions. A proposed date of final zoning approval is requested by July of 2015.

Utilities and Public Services

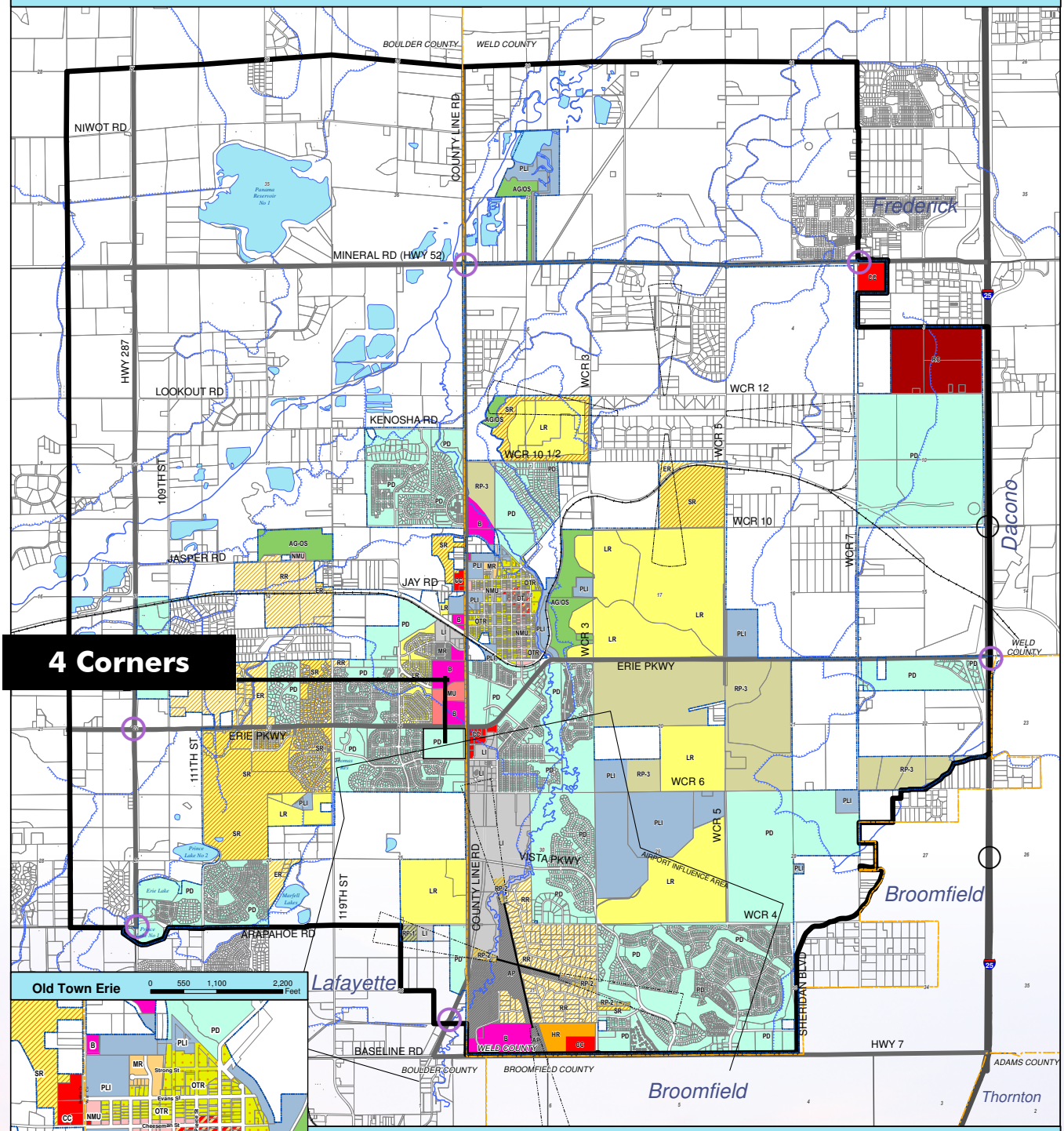
The property was originally part of the Homestake PUD, which was amended and approved by the Town in 2001 to the current Canyon Creek PD. Town services were anticipated for a commercial and retail zoned property. The public infrastructure that was anticipated for Four Corners area by the Canyon Creek PD includes schools within the St. Vrain Valley School District, Mountain View Fire Protection District, Police protection, water and sewer services provided by the Town of Erie and utilities provided by Excel.

As the existing zoning is being amended, the proposed land uses would anticipate public services as well as utilities to the site.

Status of Mineral Rights

A portion of the Four Corners property was part of the Marfel and Pinnacle Mine, which encompassed much of the surrounding area to the North beyond the site. The property was undermined for minerals mainly consisting of coal. For further information please reference the Geotechnical report conducted by CTL Thompson.

Town of Erie, Colorado
Zoning Map



Zoning Legend

- Rural Preservation 1 (RP-1)
- Rural Preservation 2 (RP-2)
- Rural Preservation 3 (RP-3)
- Rural Residential (RR)
- Estate Residential (ER)
- Suburban Residential (SR)
- Low Density Residential (LR)
- Medium Density Residential (MR)
- High Density Residential (HR)
- Old Town Residential (OTR)
- Planned Development (PD)
- Regional Commercial (RC)
- Community Commercial (CC)
- Business (B)
- Downtown District (DT)
- Neighborhood Mixed-Use (NMU)
- Community Mixed-Use (CMU)
- Light Industrial (LI)
- Public Lands & Institutions (PLI)
- Airport (AP)
- Agriculture/Open Space (AG/OS)

0 0.15 0.3 0.6 0.9 Miles

- Planning Area Boundary
- Town Boundary
- Community Gateways
- I-25 Interchange (Future)
- County Boundary

Sources: Boulder Co GIS, Weld Co GIS, CDOT, Town of Erie

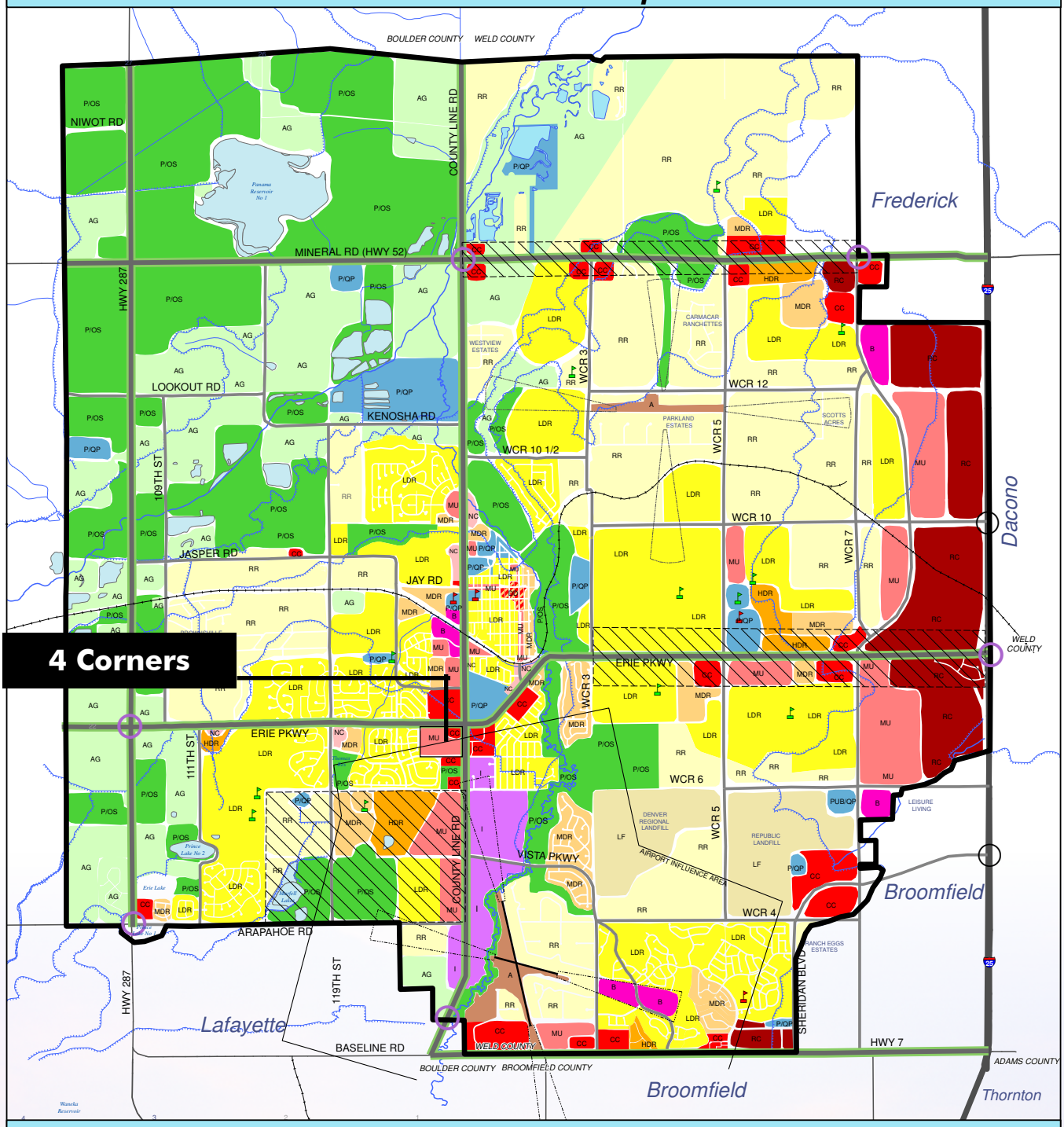
Note: This map is intended to serve as a guide for future land use patterns within the Town of Erie's Planning Area Boundary and is advisory in nature. Land Use patterns depicted on the map are generalized, recognizing that development proposals may contain a mixture of land uses and density levels which achieve the intent of the Town of Erie Comprehensive Plan. Adopted Date: Dec. 21, 2005.

The Comprehensive Plan contains guidelines for the refinement of the generalized areas depicted on the map. These guidelines should be referred to by applicants prior to the preparation of a development submittal and by Town staff, elected, and appointed officials as part of the development review process.

Map Revision Date: November 16, 2012

X:\GIS\MXD\Zoning map 11 16 2012.MXD

Town of Erie, Colorado
2005 Comprehensive Plan
Land Use Plan Map



Land Use Plan Legend

AG	Agriculture	MDR	Medium Density Residential (6-12 du/ac)	B	Business		Canal/Ditch
P/OS	Parks/Public Open Space	HDR	High Density Residential (12-20 du/ac)	I	Industrial		Railroad
P/QP	Public/Quasi Public	DD	Downtown District		Reservoirs		Community Gateways
LF	Landfill	NC	Neighborhood Commercial		County Boundary		I-25 Interchange (Future)
A	Airport	CC	Community Commercial		Planning Area Boundary		Elementary School
RR	Rural Residential (0-2 du/ac)	RC	Regional Commercial		Areas of Special Consideration		Middle School
LDR	Low Density Residential (2-6 du/ac)	MU	Mixed Use				High School

0 0.25 0.5 1 Miles

Sources: Boulder CO GIS, Weld CO GIS, CDOT, Town of Erie

Note: This map is intended to serve as a guide for future land use patterns within the Town of Erie's Planning Area Boundary and is advisory in nature. Land Use patterns depicted on the map are generalized, recognizing that development proposals may contain a mixture of land uses and density levels which achieve the intent of the Town of Erie Comprehensive Plan. Adopted Date: Dec. 21, 2005.

The Comprehensive Plan contains guidelines for the refinement of the generalized areas depicted on the map. These guidelines should be referred to by applicants prior to the preparation of a development submittal and by Town staff, elected, and appointed officials as part of the development review process.

Town Boundary Not Shown - Refer to Zoning Map for Town Boundary

Map Revision Date: JULY 20, 2011

section b:

RELATIONSHIP TO EXISTING LAND USE AND ADJACENT PROPERTIES

Site & Location

Four Corners is approximately 46 acres, located at the South West Corner of Erie Parkway and East County Line Road, (See the Vicinity Map in this section). As mentioned previously, the property was originally part of the Homestake PUD which was then amended to the Canyon Creek PD and approved by the town in 2000. Since this amendment was approved, town services such as schools, administration, police, water and sewer have either been provided or are anticipated for this in fill property.

The Western boundary is bordered by part of Canyon Creek Filing No. 5 and existing single family homes. To the East of the property along County Line Road are Commercial and Light Industrial uses, including an existing Walgreens and Stop & Save gas station. To the South across Austin Avenue are single family residential homes which are a part of Canyon Creek PD Filing No. 6 and St. Luke Orthodox Church. The Town of Erie's Community Center and its associated ball fields and other recreational amenities are located across the intersection at the North East corner of Erie Parkway and East County Line Road (catty-corner to the site). A pedestrian sidewalk/trail corridor running in the East/West direction along Erie Parkway has been preserved along this portion of the property.

The surrounding area has a diversity of uses, ranging from Mixed Use, to Low Density Residential, Medium Density Residential, Community Commercial and Open Space. The proposed site plan aligns with the Town of Erie Comprehensive Plan and provides many opportunities for a positive impact to the adjacent properties and residents including:

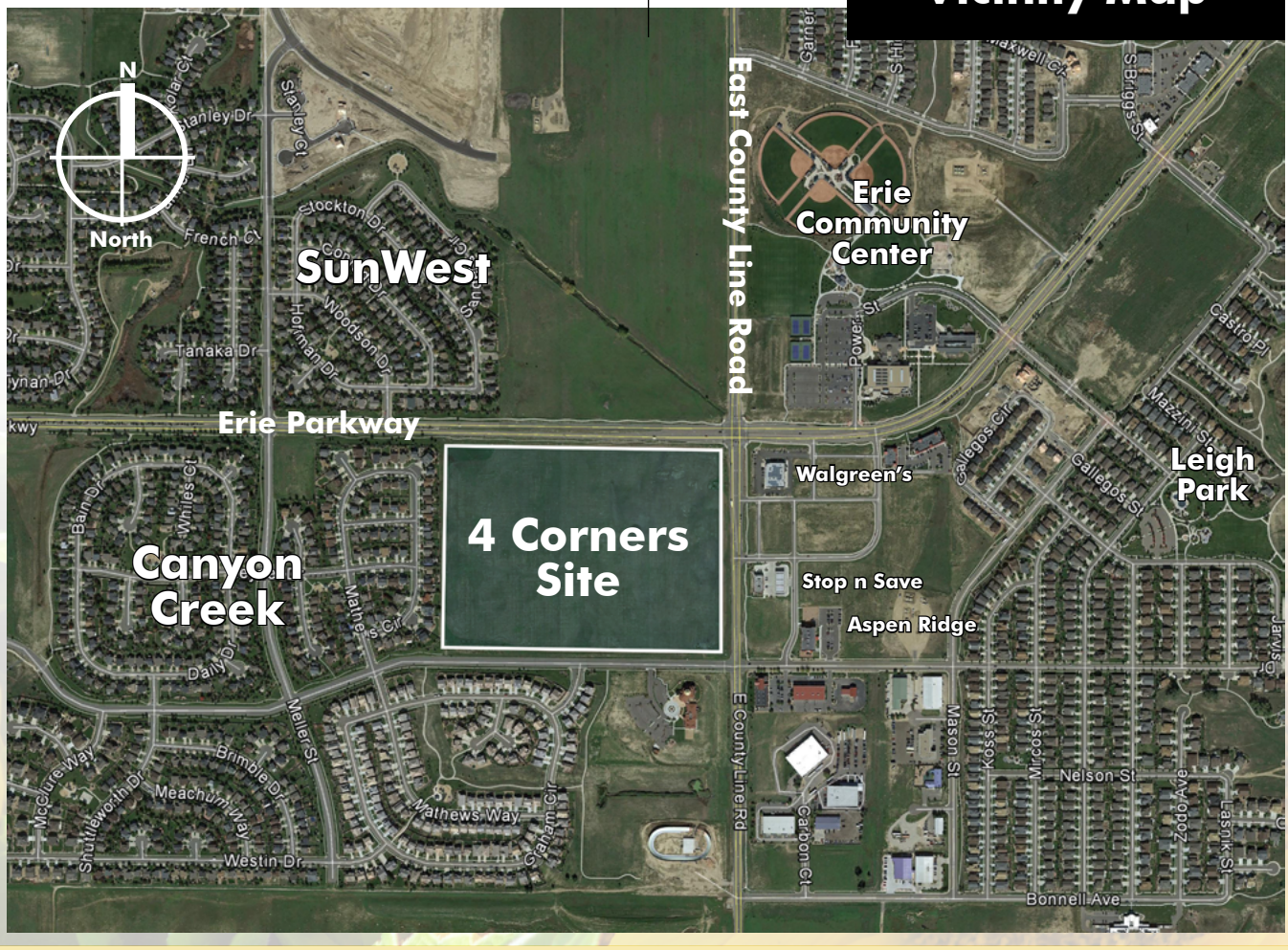
- Concentrating residential density within Four Corners aids in preserving more valuable land within the Town of Erie for other uses.

- As depicted in the PD Amendment No. 9, the proposed layout creates a transition of density and intensity of uses from the East to West and North to South that is compatible with the abutting existing neighbors.

- Internal mews and corridors will be provided to accommodate pedestrian connections that lead to a central green space.

- This proposal promotes a logical extension of Canyon Creek by creating additional neighborhoods containing diverse housing and commercial options to meet the varying needs of Erie's residents.

Vicinity Map



section c:

PROPERTY CONSTRAINTS ANALYSIS

While Four Corners is ideally located for mixed use development, the site has several limitations which helped shaped the site plan.

Existing mine shafts have been located on the property. These subsurface shafts have been inactive for decades, and are part of the Marfel and Pinnacle Mines. They have already been located by the applicant in the field and further physical property testing and depth of overburden has deemed them to be benign. Furthermore the site plan design acknowledges these areas by proposing more passive uses around them, such as green space and parking. The locations are depicted on the site analysis exhibit included in this document.

The existing ROW trail corridor and utility lines which run along East County Line Road have also been taken into account in the community design.

Setbacks are provided to avoid the existing utility

easements and the existing trail corridor running along Erie Parkway. The plan adds additional space for the proposed continuation of the walk along Austin Avenue which connects to the existing trail within Canyon Creek. These physical conditions and constraints of the site have helped shaped the plan. The clustering of the development into different zoning areas helps to maximize the potential use of the property while avoiding the physical constraints of the site.

Site Analysis

section d:

TOWN'S COMPREHENSIVE PLAN AND REZONING APPROVAL CRITERIA.

The Four Corners site plan identifies a mix of residential, commercial, and recreational uses. The location provides an opportunity to act as a great transitional property, proposing a logical change in uses and density from East to West.

"Erie is a community which recognizes the importance of conserving and enhancing its historic small town character, the roots from which it grew, preserving the natural environment in which it resides; a caring community which offers its residents an environment in which to seek a high quality of life; a balanced community with a diverse range of housing, employment, educational, shopping and recreational opportunities; and a vital community which provides financial and social support for quality of life programs." (vision statement from the 2005 Comprehensive Plan)

Four Corners used The Town of Erie's Comprehensive Plan as a guide. The Comprehensive Plan provides

a strong vision for the future of Erie, and has a set of principles that help to ensure that the Town's vision is carried forward as development progresses. The Canyon Creek PD Amendment No. 9 proposal is in compliance with the principles for the Town of Erie Comprehensive Plan. An analysis of the Canyon Creek PD Amendment No. 9 compliance with the comp plan is provided below:

1. A Coordinated and Efficient Pattern of Growth

The Town will have a compact pattern that encourages urban growth to locate within the Planning Area Boundary, fosters the efficient provision of infrastructure and services, and balances development and conservation of the natural environment.

Four Corners is already incorporated into the Town and is an excellent example of utilizing existing infrastructure.

This plan does not result in undue impacts or unnecessary burdens to the city's existing infrastructure and provides important linkages to other planned developments in the area. Detention has been designed in a compact and efficient way that allows for more commercial square footage, and in turn tax base that can be offered to the town.

An 8" Sanitary Sewer line runs within the ROW at the intersection of East County Line Road and Erie Parkway and is in place to service the Four Corners development. The level of development that is anticipated will not change this infrastructure in place nor will it change our existing road designations, as confirmed by our Traffic study. As mentioned previously, Town services are within close proximity to the property . Other services such as schools, administration, police, water and sewer have either been provided or anticipated since the previous zoning was approved, and this proposal will not negatively impact town services already anticipated for the area. The proposed application makes the property more compliant with the Comprehensive Plan's vision of Mixed Use while using existing services.

The proposed Sketch Plan anticipates a design which integrates an array of residential and commercial uses in a compact manner promoting pedestrian connectivity. With over 2,000 existing and proposed households within a mile radius of the property, the proposed application brings a maximum of 117,000 sf of commercial, business, and retail uses to the site. The mixed use application provides a variety of single and multi family housing choices within a pedestrian oriented site plan. The plan proposes logical transitions of uses to the adjacent neighbors while providing pedestrian connections to neighborhood amenities.

2. Quality Design and Development

Erie will promote a high standard of design for all new development, renovation, and rehabilitation to reinforce and enhance its unique nature for residential neighborhoods, public places, and commercial businesses.

This site plan promotes a high quality of urban design,

by providing logical and consistent landscaping, fencing, berming, and buffering throughout the site

3. Overall Economic Vitality

The Town will promote a healthy, thriving economy that provides opportunities for quality employment with livable wages for its residents.

The site plan proposes a mix of commercial and residential uses, promoting additional employment, more tax revenue, and new residents to Erie. This infill parcel is designed with compact, responsible growth, promoting a walkable neighborhood within minutes of existing and proposed recreation, retail and commercial amenities. A quality pedestrian oriented community like Four Corners provides the opportunity for future and existing residents to enjoy all the amenities of living in the Town of Erie.

4. Downtown Vitality

The Town considers the maintenance and enhancement and expansion as appropriate of Old Town's vitality to be important to the health and well-being of the community as a whole. The plan promotes development and continued enhancement of this core community area as the "center" of the community.

Four Corners is a mixed use development within the Canyon Creek PD and compliments the uses of the surrounding community. With the Erie recreation center across the street, and Old Town Erie less than one mile away (just North on County Line Road), the proposed site plan is a logical extension of the town and the amenities it offers. Residents from Four Corners are within walking distance to the existing downtown, and will inevitably support and use Old Town's existing services, furthering the vitality of downtown living in the Town of Erie.

5. A Comprehensive, Integrated Transportation System

Erie has a safe, efficient, and innovative transportation system that reduces neighborhood isolation and promotes a sense of community by connecting all areas of town, accommodates various modes of public and private transit, and facilitates travel to regional centers.

Four Corners is already located on a prominent intersection,

catty-corner from the Town's Community Center. The site is less than a quarter mile away from the RTD's Jump line, which extends service to the Erie Community Center, Erie Community Park and the Erie Community Library. The JUMP links Erie to Lafayette and downtown Boulder via Arapahoe Road, with opportunities to access additional bus service connecting throughout the region. The extension makes it easy for existing and future residents along the route to commute to work or take the bus to shopping and restaurants within Four Corners, and more.

Existing roads (Erie Parkway and County Line Road) are already constructed which supports the existing transportation system that the Town of Erie has in place. The proposal has made significant efforts to verify the

development will not adversely impact the existing transportation network.

6. Stewardship of the Natural Environment

The Town will identify and conserve its natural, scenic, and environmentally sensitive areas including important wildlife habitat, waterways, and visually sensitive areas. Erie will strive to be a clean, sustainable, environmentally-friendly town.

This application has no adverse impacts to significant scenic and historic features as identified in plans adopted by the Town; no significant features of historical importance have been identified on the site. The property has not been identified on as part of a Natural Area or has any commitments from PROST (Parks, Recreation Open Space and Tails Master Plan.) Furthermore, their are no significant views from the property as existing development exists on the west, south and east sides of the property.

7. Trails, Parks and Recreation Opportunities

The Town will provide a diverse range of recreational opportunities to include facilities and programming for all ages and varying interests, both passive and active. Trails, parks, and recreation opportunities will be connected with and integrate open space into and between neighborhoods and other areas of the community.

Four corners has proposed a linear green space within the property for residents to enjoy. Trail/ sidewalk connections have been proposed along Erie Parkway and County line road. Internal neighborhood pedestrian corridors are also anticipated which lead to the large central park, and to the commercial area within the property.

8. Open space will serve a variety of functions, including:

- Buffering Erie from other towns and cities and shaping growth;
- Creating view corridors to enable residents to see mountains, plains, and agricultural areas rather than uninterrupted housing and commercial development;
- Preserving agricultural lands, keeping them in agricultural production;
- Restoring riparian areas and other areas of natural habitat;
- Protecting significant archeological and cultural resources;
- Preserving native plant and animal habitat and travel corridors for wildlife;
- Providing areas for passive recreation that emphasizes enjoyment of nature;
- and Distinguishing and linking neighborhoods and other activity areas within Erie through a system of continuous, connected open lands and trails.

Four Corners furthers several of these guiding principles as the project proposes green space areas which will be a combination of passive and

active spaces. These areas will be linked with an existing trail system, and will enable trail users to connect to other open space areas, existing neighborhoods and amenities both within Erie and regionally.

9. Balanced Land Use Mix

The Town will work to diversify and balance the mix of land uses as the Town grows. Particular emphasis will be placed on enhancing the local economic base to provide employment opportunities for residents, seeking to achieve a better balance as a place to work as well as live. In so doing, the community will seek a balance between the enhancement of Old Town's vitality and other existing areas of the community and the identification of opportunities for commercial and employment in outlying areas.

As mentioned previously, Four Corners is a mixed use property as defined by the Town's Comprehensive Plan. The future residents will utilize the services within Old Town, as Four Corners is approximately one mile away, boosting the existing vitality of Old Town, Erie. The commercial area will bring employment and a future tax base to the Town, along with the potential for a variety of services that are not currently offered within the area such as a small grocer and office space.

10. Stable, Cohesive Neighborhoods Offering a Variety of Housing Types The Town will promote new neighborhoods that contain a mix of land uses and diversified housing options that meet the varying needs of its residents, including single family, attached homes (duplexes, townhomes), multifamily dwellings, and housing included as part of mixed-use developments. The Town will work to maintain the quality and character of established neighborhoods and ensure that infill and redevelopment is designed in a manner that minimizes impacts on existing neighborhoods, including rural neighborhoods in the Planning Area. New housing and neighborhoods should be appropriate in size, scale, design and use. New housing areas should be located where residents will have access to the full range of infrastructure, facilities and services that are needed for healthy, livable neighborhoods.

Four Corners is a mixed use property that proposes both single family detached, and attached homes as well as multi family living for different socioeconomic demographics within Erie.

11. Provide Infrastructure and Public Services

Efficiently and Equitably.

Erie will coordinate future development and/or provision of capital facility projects and infrastructure, including water, wastewater, fire protection, emergency management services, police protection, schools, parks, and other

utilities that affect the quality of life and economic stability of the community.

All of the services required for this project are already in place at this time. The proposed community utilizes surrounding existing infrastructure, including streets, utilities, water and sewer without undue impacts on the need to upgrade the existing infrastructure. The existing gas lines along the south side of Erie Parkway and East County Line Road are high pressure gas lines ranging from 3-10-inches in diameter. The existing water lines in Erie Parkway are transmission lines that are 30 and 20-inches in diameter. The water line in the East County Line Road is 12-inches and is nearby the north east corner of the site.

The detention pond proposed located near Erie Parkway has the capacity for approximately 5 Ac-ft of storage, which is adequate for the site conditions. The pond will outfall into the existing 42-inch storm line in Erie Parkway.

Planned Devlopment (PD) Zoning

Approval Criteria

The Planning Commission and Board of Trustees shall review the PD zone district application and will base their recommendation or decision based on thier findings related to the following criteria:

a. The PD District zoning is generally consistent with the purpose of the PD zone district set forth in UDC Section 2.5 and 7.6.

The Four Corners proposal PD Amendment is consistent with Section 2.5 and 7.6 of the Unified Development Code. An underlying land use of MR (Medium Density Residential), HR (High Density Residential), and CC (Community Commercial) is requested for the property. The plan utilizes the proposed PD to accommodate the required setbacks dictated within the application, and to allow for a more creative approach to the clustering and planning transitional residential uses for the overall development of the property. In addition the PD will limit the number of units allowed within the property to a maximum of 500 units and 117,000 Square feet of commercial space to ensure compatibility with the surrounding neighbors the PD also establishing setbacks areas, and transitional land uses.

b. The modification to the UDC regulations is based on creative and innovative design and amenities incorporated in the PD zone district that could not otherwise be achieved through other standard zoning districts or through another modification processes such as Alternative Equivalent Compliance in UDC Subsections 6.1.C or the PUD Overlay District in UDC Subsection 2.7.D

The site plan proposes Community Commercial, Medium and High Density Residential principal land uses with a PD Development Plan to accommodate diversified housing products, and to allow for a more creative approach to the clustering and the planning of parcels within the overall development of the property. In order to ensure compatibility with our surrounding neighbors, the PD will establish development areas, and transitional densities. The modifications to the UDC will also be necessary to allow for dimensional standards that support the housing variations proposed to facilitate current market conditions as well as the Town of Erie Housing Diversity requirements.

c. The PD zoning district will promote the public health, safety and general welfare.

The PD identifies better transitional uses from the adjacent residential neighborhoods, and further defines and amends the Commercial Business Retail land use that is currently approved in the Canyon Creek PD. It will help to concentrate development in order to preserve rural more scenic development. The property is in close proximity to existing amenities such as the proposed commercial services on the property, Erie's Community Center and Old Town (less than one mile away), promoting Four Corners as a pedestrianized, walkable community, meeting the PD rezoning criteria, promoting public health, safety, and general welfare.

d. The PD zoning district is generally consistent with the Town of Erie Comprehensive Master Plan; Transportation Master Plan; Parks, Recreation, Open Space, and Trails Master Plan, and other pertinent Town plan and policy documents.

This narrative includes a full section outlining the compliance with the Comprehensive Plan and Unified Development Code. In general the proposed Development Plan amends

the CBR Zone District and defines a mix of residential and commercial uses with a maximum of 500 units, and 117,000 Square feet of commercial space. This aligns with the 2005 Comprehensive Plan designation of MU (Mixed Use), and is consistent with both the Comprehensive Plan and Municipal Code.

e. Adequate and sufficient public safety, utility facilities and services, recreation facilities, parks, open space, and schools are available to serve the property, while maintaining sufficient levels of service to existing development.

As mentioned previously, Town services are within close proximity to the property. Services such as schools, administration, police, parks and recreation facilities have been provided or anticipated since the previous zoning was approved.

f. The PD zone district provides adequate vehicular circulation and parking facilities in terms of traffic volumes, convenience, safety, access, screening and noise.

The property was annexed in 1975 with the expectation of being developed as a commercial site, with existing infrastructure already available to accommodate the proposed development. As mentioned previously, all of the services required for this project are already in place at this time. As a part of the application materials, a significant amount of information shows how facilities and services will be provided for this proposal.

g. A pedestrian and bicycle circulation system the provides connections to adjacent properties, existing and future trails, parks, open space, recreation facilities, schools and other places of public gathering.

Trail/Sidewalk connections are proposed along Erie Parkway and County Line Road. Internal to Four Corners, pedestrian corridors will connect the residential areas and commercial area within the property.

h. The PD zone district is not likely to result in significant adverse impacts to the natural environment, and significant scenic and historic features.

Four Corners is an in-fill property at the corner of Erie Parkway and East County Line Road, and is not a significant wildlife habitat. A Cultural and Historical study was not required for the subject property, and no features were identified with any significance.

i. The PD zone district will not result in significant adverse impacts on properties in the vicinity of the PD zone district, or such impacts will be substantially mitigated.

The proposal is an infill parcel which functions as a buffer for adjacent residential neighborhoods. The Four Corners site promotes a range of commercial and residential uses and uses existing roads and infrastructure, and creates additional tax revenue for the Town. The residential and commercial uses are compatible in nature to their adjacent counterparts and will not result in adverse impacts upon other properties in within the vicinity of Four Corners.

j. Proposed uses will be compatible in scale with uses on properties in the vicinity of the PD zone district.

The mix of uses is in keeping with that of our adjacent neighbors. Proposed commercial uses face existing

commercial uses. The proposed residential areas will be consistent and compatible with other homes in the area. The size and price of homes in Four Corners will be comparable to the surrounding residential areas.

k. The residential areas of a PD zone district allocate a variety of housing types and densities appropriate to the size of the residential development area.

Four Corners proposes both single family detached and attached homes as well as multi family living for different socioeconomic demographics.

l. Visual relief is provided through building placement, shortened or interrupted street vistas, visual access to open space, parks, and other design methods.

A great deal of attention has been paid to maintaining a human scale in everything from street widths and a pedestrian friendly environment, to the commercial and retail uses along East County Line Road. The plan identifies a large landscape area to serve both as an outdoor recreational amenity, and as a transition from the commercial retail and shopping district to the high and medium density residential uses within the development. By mixing both residential and commercial uses with recreational opportunities, the intent of this PD Amendment is to create a social and economic balance not commonly found in typical new residential developments. This plan proposes to bring all of these ingredients together to create a scale and style of living which encourages residents to greet their neighbors from their front porches, and walk their children to the nearby shops and parks that serve the surrounding residents.

m. The modifications permitted in the PD zone district have been made in exchange for greater public benefits that would not have otherwise be achieved through development under another zone district.

The development of Four Corners yields public benefits generated by the planning, layout and innovation within its design. These benefits include, but are not limited, to the following:

1. The mixed use project will promote a healthy, thriving economy that provides opportunities for quality employment with livable wages for its residents.
2. Four Corners will promote a high standard of design for all new development, while creating a walkable community with unique amenities for residents along with, public places, and commercial businesses.
3. The project is an infill development that encourages mixed use growth and fosters the efficient provision of infrastructure and services, while balancing development and the conservation of Erie's natural environment.
4. The project will provide a diverse range of recreational opportunities to include both passive and active trails, parks, and green ways intended to be

connected with existing community paths and open areas.

5. Four Corners will promote a new housing mix that contains a diversity of choices of land uses and housing options meeting the varying needs of its residents, which may include single family, attached homes, multifamily dwellings, along with horizontal mix of uses.

6. Four Corners will promote, encourage and stimulate private development and investment that realizes public benefits through high quality commercial services that provide various retail opportunities included but not limited to upscale eating, drinking, clothing and office establishments.

7. Four Corners may promote a positive environment for empty nesters whose children have grown and are downsizing their home and moving to more centrally located, maintenance free living.

8. Four Corners provides appropriately located areas for residential development that are substantially consistent with the town's comprehensive master plan and with standards for public health, safety, morals, and general welfare.

9. The project ensures that the scale and character of existing residential neighborhoods and community character is protected through the allowed uses and bulk and dimension standards within this development plan

10. The development plan protects existing residential development from neighboring uses that are incompatible with a residential environment.

11. The development plan ensures that the appearance and effects of commercial and retail buildings and uses are of an appropriate high quality and are substantially consistent with the character of the area while providing areas for residential, public, and semi-public uses needed to complement commercial and retail development.

12. Mixed use design principals have been implemented within this development plan with appropriate compatibility of uses. In addition, buildings are typically oriented to maximize visibility to the landscape areas. The landscaping and architecture feature of the community are planned to enhance the project and create a sense of place within the town of erie.

13. The transportation system network has been laid out to provide residential areas with direct access to the adjacent non-residential portions of project.

14. The project generates a compact and pedestrian - oriented environment that encourages transit use and pedestrian access

15. The concentration of commercial and retail services proposed within this development plan are located to serve the surrounding community.

Canyon Creek PD Amendment No.9

A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter
of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North,
Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

553.43 ACRES

PDA - 000204-2015

General Provisions

Authority

This Development Plan is authorized by chapter 5 - Planned Development District of the Town of Erie Zoning Ordinance adopted pursuant to the Colorado Planned Unit Development Act of 1972.

Applicability

The provisions of this Development Plan shall run with the land. The landowners, their successors, heirs, or assigns shall be bound by this Development Plan, as amended and approved by the Director or Town Board of Trustees.

Adoption

The adoption of this Development Plan shall evidence the findings and decision of the Town of Erie Town Board of Trustees that this Development Plan for Canyon Creek is in general conformity with the Town of Erie Comprehensive Plan; is authorized by the provision of Chapter 5 of the Town of Erie Zoning Ordinance; and that such Chapter 5 and this Development Plan comply with the Colorado Planned Unit Development Act of 1972, as amended.

Relationship to Town Regulations

The provisions of this Development Plan shall prevail and govern the development of Canyon Creek provided, however, that where the provisions of this Development Plan do not address a particular subject, the relevant provisions of the Town of Erie Municipal Code, Title 10, as amended, or any other applicable ordinance or regulations of the Town of Erie, shall be applicable

Enforcement

To further the mutual interest of the residents, occupants, and owners of the Planned Development and of the public in the preservation of the integrity of the Plan, the provisions of this Plan relating to the use of lands and the location of common open space shall run in favor of the Town of Erie and shall be enforceable at law or in equity by the Town without limitation on any power or regulation.

Conflict

Where there is more than one provision within the Development Plan that covers the same subject matter, the provision which is most restrictive or composes higher standards or requirements shall govern unless determined otherwise by the Director.

Maximum Level of Development

The total number of dwellings or the total commercial, business, or industrial intensity approved for development within the Planning Areas is the maximum development requested for platting or construction (plus approved density transfers, if any). The actual number of dwellings or level of development for commercial, business, or industrial properties may be less due to subdivision or site improvement plan requirement plan requirements or other requirements of the Town Board of Trustees.

Project Tracking

At the time of subdivision final plat, the applicant shall provide a summary of the development, to date, along with the final plat submittal to ensure maximum development limits are not exceeded.

Planner
PCS Group, Inc.
1001 16th Street, 3B-180
Denver, CO 80265
303.531.4905

Applicant:
RMCS
21 South Sunset Street
Longmont, CO 80503

REVISION DATE:
AMENDMENT DATE:
ISSUE DATE:

Statement of Committments

1. Dedication

Filing	Tract	Area (AC)	Usage
Filing No. 1			
	A, B, K	1.13 AC	Landscape Tract
	C	18.15 AC	Open Space; Park; Drainage
	D, E	2.88 AC	Open Space; Park
	F, G, H	2.54 AC	Open Space; Drainage
	I	2.84 AC	Open Space; Detention
	J	0.08 AC	Pedestrian Access
	L	0.31AC	Park; Open Space
	M	0.02 AC	Landscape Entry Feature
Filing No. 2			
	A, E	1.37 AC	Open Space; Utilities; Landscape Buffer
	B	0.06 AC	Pedestrian Access
	C	2.10	Open Space; Drainage; Park
	D	11.26	Drainage; Utilities; Landscape Buffer; Park
	H, I	14.36 AC	School Site; Park
Filing No. 3			
	A	5.14 AC	Open Space; Drainage; Utilities; Landscape Buffer; Trail
	B	0.98	Open Space; Utilities; Landscape Buffer
	C	1.13 AC	Open Space; Park
	D	0.05 AC	Landscape Buffer
	G	1.66 AC	School Site
	H	0.08	EVA Access; Open Space; Drainage; Utilities; Trail
Filing No. 4			
	C	0.37 AC	Park
	A, B, D, E, F	2.56 AC	Open Space; Utilities; Drainage; Landscape Buffer
Filing No. 5			
	A, C, D, E	1.96 AC	Open Space; Utilities; Landscape Buffer
	B	1.84 AC	Medium Density Residential / Day Care
	F	0.50 AC	Park
Filing No. 6			
	A, B	2.37 AC	Open Space; Utilities; Landscape Buffer
	C	3.99 AC	Open Space; Drainage; Tot Lot
	E	12.19 AC	Open Space; Regional Detention; Landscape Buffer
	G	4.06 AC	Open Space; Pedestrian Access
Filing No. 7	NA	NA	NA
Filing No. 8	NA	NA	NA
Filing No. 9			
	C	5.53 AC	Drainage; Open Space
	D, G	19.23 AC	Park; Open Space
	E	11.60 AC	Reservoir
	F	0.10 AC	Landscape Buffer; Utilities

2. On-site or Off-site Improvements

Fees, development responsibilities and construction of all required on and off-site improvements shall be identified and enforced through the Development Agreement.

3. Wildlife Preservation Plan

Studies have determined that the areas to be developed do not impact the wildlife, and that a wildlife preservation plan is not necessary.

4. Wetlands / Riparian Preservation Plan

No wetland conditions exist in the Canyon Creek PD as stated by Western Ecological Resource, Inc.

5. Fire Protection

This site is located within the boundaries of the Mountain View Fire Protection District.

6. Payment of Taxes on Land to be Dedicated for Public

Tax pro-rations to be determined at a later date.

7. Other Commitments Imposed by the Board of Trustees

To be determined at a later date and documented in the Development Agreement.

8. PD Amendment No. 2

The amendment makes the following changes:

1. Removal of the Maximum Lot Coverage requirements for the Filing 6 and Filing 7 Single Family Detached Land Use Category on Sheet 2 Table VII.
2. All single-family home building permits for Canyon Creek Filing 6, applied for after approval of Resolution 07-10, will meet UDC Section 6.7 E. *Additional Standards for Single-Family Detached Dwellings*. As Canyon Creek Filing 6 is platted and has existing homes built within the Filing, UDC Section 6.7 E. *Additional Standards for Single-Family Detached Dwellings* shall not apply to existing homes and homes with building permits issued before the approval of Resolution 07-10.
3. Richmond Homes Plans 781, 783, 784, 1101, 1102, 1103 and 1104 that have been reviewed by the Town and found in substantial compliance with UDC Section 6.7 E. *Additional Standards for Single-Family Detached Dwellings* shall be allowed to be constructed in Canyon Creek Filing6.
4. Canyon Creek 7 single-family home designs will meet UDC Section 6.7 E. *Additional Standards for Single-Family Detached Dwellings*.

9. PD Amendment No. 3

Filing No. 6: Add a note to Table V that eaves, and fireplace cantilevers are permitted to encroach into the sideyard setback of SFD homes a maximum of two (2) feet. Window wells may encroach into the sideyard setback of SFD homes a maximum of three (3) feet.

10. PD Amendment No. 4

Filing No. 6:
- Add Religious Assembly as a Permitted Land Use to Tract D
- Add CBR district as a Permitted Land Use to Tract F.
- Modifications to Table II on Sheet 2
- Request maximum building height of 45 feet with 55 feet allowed for the domed portion of a Church only.
- A cross may be placed on top of the domed portion, however the dome may not exceed 55 feet and the total height of the dome and cross may not exceed 60 feet.
- A bell tower is permitted but shall not be considered an appurtenance and shall not exceed 45 feet in height.

11. Amendment #5

Filing No. 8:
-Change Land Use Designation: From Townhome to Medium Density Residential (MDR) with the following permitted housing types:
A. Duplex;
B. Townhouse;
C. Stacked Tri-plex / Quad-plex;
D. Manor Home
-Remove maximum lot coverage for MDR.

Filing No. 9:
-Realignment of planning areas in Filing 9 due to relocation of Brennan Street in Minor Amendment Plat.

12. Amendment #6

Filing No. 5 - TRACT B:
-Add Medium Density Residential (MDR) as a permitted land use, for a maximum of 13 dwelling units, with the following permitted housing types:
A. Duplex;
B. Town Home;
C. Stacked Tri-plex / Quad-plex;
D. Manor Home

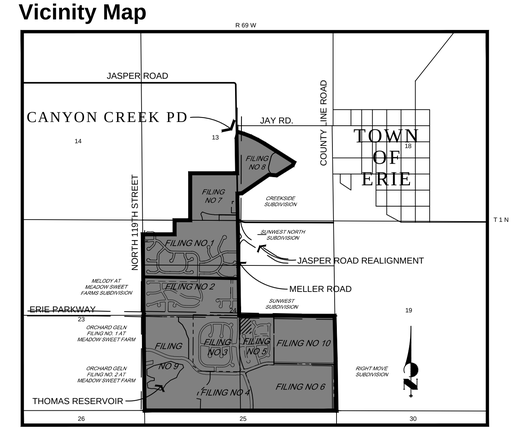
13. Amendment #7

Filing No. 5 - Tract B
Establish Setbacks

14. Amendment #8

Filing No. 9
- Changed land use categories and realigned planning area boundaries
- Added Single Family Detached - Patio Homes (SFD-P) as a Principal Land Use
- Added pocket parks as a use in the SFD-P and TH Categories
- Added minimum lot sizes
- Added setbacks
- Added permitted encroachments into building setbacks
- Added that Accessory Buildings are not permitted in the TH and SFD-P Land Use Categories
-Removed maximum lot coverage
-Added Sheet 3 of 7 addressing Architectural Standards

Vicinity Map



Scale: 1" - 2000'

Planning Commission Certificate

Approved by the Erie Planning Commission

on this ____ day of _____ A.D., 201___.

_____
Chairman

_____
Planning Commission Secretary

Board of Trustees Certificate

This PD Amendment was hereby approved by the Town of Erie Board of Trustees

on this ____ day of _____ A.D., 201___.

_____
Mayor

_____
Town Clerk

Clerk & Recorder's Certificate

State of Colorado)
) ss.
County of Boulder)

I hereby certify that this PD Amendment Plan was filed in my office on

this __ day of _____ , 201___ A.D. and was recorded at Reception Number _____.

_____
Boulder County
Clerk & Recorder

15. Amendment #9

Filing No. 10
- Changed zoning and associated land use categories and realigned planning area boundaries
- Added MR (Medium Density Residential), HR (High Density Residential) and CC (Community Commercial) as Principal Land Use
- Added minimum lot sizes
- Added setbacks
- Added Sheet 4 of 8 addressing Architectural Standards

Canyon Creek PD Amendment No.9

A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North, Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

553.43 ACRES

PDA - 000204-2015

I. PLANNING AREAS & PRINCIPAL LAND USE CATEGORIES

PLANNING AREAS (Filing No's)	PRINCIPAL LAND USES	LAND USE SYMBOL
Filing No.	1) Single Family Detached	**SFD**
	2) Open Space, Parks & Recreation	**OS**
Filing No.	1) Single Family Detached	**SFD**
	2) Open Space, Parks & Recreation	**OS**
	3) School Elementary	**ELE**
Filing No.	1) Single Family Detached	**SFD**
	2) Open Space, Parks & Recreation	**OS**
Filing No.	1) Single Family Detached	**SFD**
	2) Open Space, Parks & Recreation	**OS**
Filing No.	1) Single Family Detached	**SFD**
	2) Open Space, Parks & Recreation	**OS**
	3) Day Care Facility	**DC**
	4) Medium Density Residential	**MDR**
Filing No. 6	1) Single Family Detached	**SFD**
	2) Open Space, Parks & Recreation	**OS**
	3) Commercial / Business / Retail	**CBR**
	4) Religious Assembly	**RA**
Filing No. 7	1) Single Family Detached	**SFD**
Filing No. 8	1) Medium Density Residential	**MDR**
	2) Open Space, Parks & Recreation	**OS**
Filing No. 9	1) Single Family Detached	**SFD**
	2) Town Homes	**TH**
	3) Open Space, Parks & Recreation	**OS**
	4) Single Family Detached - Patio Homes	**SFD-P**
Filing No. 10	1) Medium Density Residential	**MR**
	2) High Density Residential	**HR**
	3) Community Commercial	**CC**

II. PRINCIPAL LAND USE CATEGORIES – Proposed With PD

LAND USE CATEGORY	WRITTEN SYMBOL	SYMBOL SHOWN ON PD	PERMITED USES* Use By Right (Y) Special Review (SR) Not Permitted (N)
RESIDENTIAL ZONES / USES	--	--	--
Single Family Detached	**SFD**	**SFD**	**Y**
Elementary School	ELE	ELE	Y
Neighborhood Park	N-PK	N-PK	Y
Tot Lot	T/L	T/L	Y
Detention/Drainage Facility	DET	DET	Y
Publicly Owned Facility - Town of Erie	ERIE	ERIE	Y
Single Family Detached - Patio	**SFD-P**	**SFD-P**	**Y**
Tot Lot	T/L	T/L	Y
Detention/Drainage Facility	DET	DET	Y
Medium Density Residential	**MDR**	**MDR**	**Y**
Duplex			Y
Townhouse			Y
Stacked Tri-plex / Quad-plex			Y
Manor Home			Y
Detention/Drainage Facility	DET	DET	Y
Publicly Owned Facility - Town of Erie	ERIE	ERIE	Y
Tot Lot	T/L	T/L	Y
Neighborhood Park	N-PK	N-PK	Y
Town Homes	**TH**	**TH**	**Y**
Detention/Drainage Facility	DET	DET	Y
Publicly Owned Facility - Town of Erie	ERIE	ERIE	Y
Tot Lot	T/L	T/L	Y
Neighborhood Park	N-PK	N-PK	Y
Medium-Density Residential[+,++]	**MR**	**MR**	**Y**
Single Family Detached-Patio			Y
Detention/Drainage Facility			Y
High-Density Residential[+]	**HR**	**HR**	**Y**
Single Family Detached-Patio			Y
Duplex			Y
Detention/Drainage Facility			Y
NON-RESIDENTIAL ZONES / USES	--	--	--
Open Space, Park, Recreational Facilities	**OS**	**OS**	**Y**
Detention/Drainage Facility	DET	DET	Y
Regional Park	R-PK	R-PK	Y
Neighborhood Park	N-PK	N-PK	Y
Tot Lot	T/L	T/L	Y
Mining and Mineral Extraction	MINE	MINE	SR
Publicly Owned Facility - Town of Erie	ERIE	ERIE	Y
Community Commercial[+]	**CC**	**CC**	**Y**
Parking Structure			Y
Farm Market			Y
Detention/Drainage Facility			Y
Day Care Center	**DC**	**DC**	**Y**
Religious Assembly	**RA**	**RA**	**Y**

NOTE:

+ Permitted Uses shall be those permitted in the Town of Erie Municipal Code Table 3-1: Table of Permitted Uses for the comparable zone district. Those uses listed above that differ from the Municipal Code shall apply to this PD.

++ Land Uses Categories, within 200 feet of the western boundary of the property, shall be limited to Duplex and Single Family Detached - Patio / Alley Loaded.

III. MINIMUM LOT SIZES (per Planning Area)

PLANNING AREA (Filing No.)	PRINCIPAL LAND USE	MIN. RES. LOT AREA (sq. feet)	MIN. INTERIOR RES. LOT WIDTH (feet)	MIN. CORNER RES. LOT WIDTH (feet)
Filing No.1		5,000	50′	60′
Filing No.2		5,000	50′	60′
Filing No.3		5,000	50′	60′
Filing No.4		5,000	50′	60′
Filing No.5		5,000	50′	60′
Filing No.6		5,000	50′	60′
Filing No.7		5,000	50′	60′
Filing No.8		N/A	N/A	N/A
Filing No.9 SFD		9,500	80′	90′
Filing No.9 SFD-P		5,500	35′	40′
Filing No.9 TH		1,450	20′	35′
Filing No.10 MR & HR	SFD - Alley Loaded	3,150	30′	35′
Filing No.10 MR & HR	SFD - Patio Alley Loaded	3,800	30′	35′
Filing No.10 MR & HR	Duplex	2,250 per DU	25′	30′
Filing No.10 MR & HR	Town Home - Alley Loaded	1,450 per DU	NA	NA
Filing No.10 MR & HR	Multifamily	1,250 per DU	NA	NA

IV. MINIMUM SET BACK TO *PRINCIPAL* BUILDINGS

All setbacks measured from the Property Line (PL) to the structure as noted.

Multiple principal buildings on a single lot shall be separated a distance equal to the distance that would be required if they were separated by a lot line.

PLANNING AREA (Filing No.)	FRONT YARD (feet)		SIDE YARD (feet)		REAR YARD (feet)
	To garage	To bldg.	Interior lot	Along street	
Filing No.1 **- SFD**	20′	20′	5′	15′	15′
Filing No.2 **- SFD**	20′	20′	5′	15′	15′
Filing No.3 **- SFD**	20′	20′	5′	15′	15′
Filing No.4 **- SFD**	20′	20′	5′	15′	15′
Filing No.5 **- SFD**	20′	20′	5′	15′	15′
- DC	20′	20′	10′	20′	20′
- MDR	20′	10′	5/0′*/***	5′	5′
Filing No.6 **- SFD**	20′	20′	5′**	15′*	15′
- RA	20′	20′	10′	20′	20′
- CBR	N/A	20′	5/0′*	20′	20′
Filing No.7 **- SFD**	20′	20′	5′	15′	15′
Filing No.8 **- MDR**	20′	15′	5/0′*	10′	15′
Filing No.9 **- SFD**	25′	25′	10′	20′	20′
- TH****		5'	5/0'/*	5'	5'
- SFD-P****	20'	15'*****	5'	10'	10'
Filing No. 10 **-MR * / ******	20'/ 15' *****	10'	5'/0'	10'	20' / 5' Alley Loaded Garage
- HR * / ****	20'/ 15' *****	10'	10'/0'	10'	20' / 5' Alley Loaded Garage
-CC * / ******	NA	20'	10'/0'	20'	20'

*Side Yard setbacks are 0-feet for attached buildings only.

**Eaves and fireplace cantilevers are permitted to encroach into the side yard setback of SFD homes a maximum of two (2) feet. Window wells may encroach into the side yard setback of SFD homes a maximum of three (3) feet.

*** Eaves are permitted to encroach into the side yard setback a maximum of two (2) feet. Window wells may encroach into the side yard setback a maximum of three (3) feet.

****Incidental Architectural Features such as Cornices, eaves, canopies, chimneys, bay windows, ornamental features and other similar architectural features may project not more than two (2) feet into any required setback provided these projections are at least three (3) feet from any lot line on the Townhomes and side lot lines on the SFD Patio Homes; and five (5) feet from the front and rear lot line on the SFD Patio Homes.

*****Side load garage.

****** Awnings, blade signs, incidental architectural features such as cornices, eaves, canopies, chimneys, bay windows, ornamental features and other similar architectural features may project not more than five (5) feet into any required setback.

V. MINIMUM SET BACK TO *ACCESSORY* BUILDINGS

All set backs measured from the Property Line (PL) to the structure as noted.

PLANNING AREA (Filing No.)	FRONT YARD (feet)	SIDE YARD (feet)		REAR YARD (feet)
		Interior lot	Along street	
Filing No.1 - **SFD**	**30′**	**5′**	**20′**	**5′**
Filing No.2 - **SFD**	**30′**	**5′**	**20′**	**5′**
Filing No.3 - **SFD**	**30′**	**5′**	**20′**	**5′**
Filing No.4 - **SFD**	**30′**	**5′**	**20′**	**5′**
Filing No.5 - **SFD**	**30′**	**5′**	**20′**	**5′**
- DC	**30′**	**5′**	**20′**	**5′**
- MDR	**30′**	**5′**	**20′**	**5′**
Filing No.6 - **SFD**	**30′**	**5′**	**20′**	**5′**
- RA	**30′**	**5′**	**20′**	**5′**
- CBR	**30′**	**5′**	**20′**	**5′**
Filing No.7 - **SFD**	**30′**	**5′**	**20′**	**5′**
Filing No.8 - **MDR**	**30′**	**5′**	**20′**	**5′**
Filing No.9 - **SFD-P**	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED
- TH	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED
- SFD	**30'**	**5'**	**20'**	**5'**
Filing No.10 - **MR**	**30'**	**5'**	**10'**	**5'**
- HR	**30'**	**5'**	**10'**	**5'**
- CC	**30'**	**5'**	**20'**	**5'**

VI. ADDITIONAL STANDARDS

PLANNING AREA (Filing No.)	MIN. SETBACK BETWEEN BUILDINGS (feet)	MAX. LOT COVERAGE (percent %)		MAX BLDG. HEIGHT (feet)	
		Principal	Accessory *	Principal	Accessory
Filing No. 1 **- SFD**	10′	30%	30%	35′	25′
Filing No. 2 **- SFD**	10′	30%	30%	35′	25′
Filing No. 3 **- SFD**	10′	30%	30%	35′	25′
Filing No. 4 **- SFD**	10′	30%	30%	35′	25′
Filing No. 5 **- SFD**	10′	30%	30%	35′	25′
- DC	10′	30%	30%	35′	25′
- MDR	10′	***NA***	***NA***	25′	25′
Filing No. 6 **- SFD**	10′	***NA***	***NA***	35′	25′
- RA	10′	30%	30%	45′**	25′
- CBR	10′	30%	30%	35′	25′
Filing No. 7 **- SFD**	10′	***NA***	***NA***	35′	25′
Filing No. 8 **- MDR**	10′	***NA***	***NA***	35′	25′
Filing No. 9 **- SFD**	10′	30%	30%	35′	25′
-TH	0′	***NA***	***NA***	35′	NOT PERMITTED
-SFD-P	0′	***NA***	***NA***	35′	NOT PERMITTED
Filing No. 10 **- MR**	NA	***NA***	***NA***	35′	25′
-HR***	NA	***NA***	***NA***	45′	25′
-CC	NA	***NA***	***NA***	45′	25′

*** Maximum coverage of required yard**

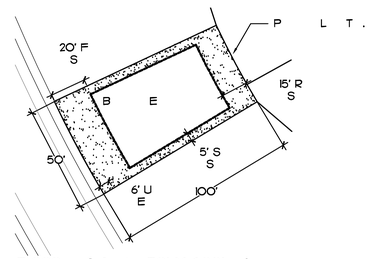
**** - 55′ permitted for the domed portion of the church structure only.**

- A cross may be placed on top of the domed portion, however the dome may not exceed 55 feet and the total height of the dome and cross may not exceed 60

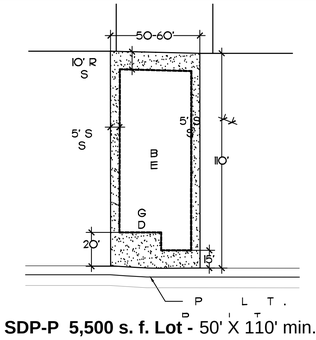
- A bell tower is permitted but shall not be considered an appurtenance and shall not exceed 45 feet in height.

***** A maximum of three (3) stories is allowed: however, a mezzanine or entresol space is permitted if it has an interior entrance connection to the third floor unit, does not provide a separate, primary exterior entrance to the building, and the building height remains at or under 45 feet.**

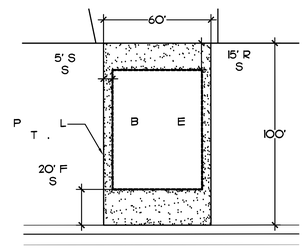
Lot Typicals



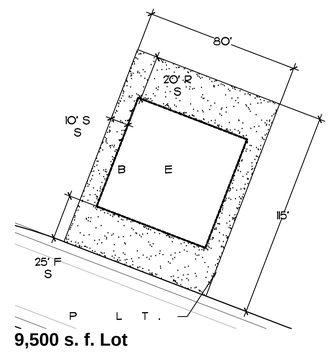
5,000 s. f. Lot - 50' X 100' min.



SDP-P 5,500 s. f. Lot - 50' X 110' min.



6,000 s. f. Lot - 60' x 100' min.



9,500 s. f. Lot

DEVELOPMENT PLAN
SHEET 2 OF 8

CANYON CREEK PD

Planner
PCS Group, Inc.
1001 16th Street, 3B-180
Denver, CO 80265
303.531.4905

Applicant:
RMCS
21 South Sunset Street
Longmont, CO 80503

REVISION DATE:
AMENDMENT DATE:
ISSUE DATE:

Canyon Creek PD Amendment No.9

A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North, Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

553.43 ACRES

PDA - 000204-2015

CANYON CREEK FILING 9

ARCHITECTURAL STANDARDS FOR SINGLE FAMILY DETACHED - PATIO DWELLING UNITS

(Standards to modify portions of MC10.6.7.E)

1. Architectural Variety and Character

A. Architectural Variety

Design Standards

a. No identical model plan elevation shall be repeated directly across any street from the same model plan and elevation.
b. No identical model plan elevation shall be repeated more than once within every four (4) lots on the same side of any street.
c. A minimum of three (3) alternate elevations for each model plan shall be submitted to the Town for review.

B. Architectural Character

Each single family detached model plan and elevation shall demonstrate the following design attributes:

Design Standards

a. Each elevation shall include a minimum of two (2) windows (or one (1) window and one (1) door) per floor.
b. Each front elevation and rear elevation shall include more than one (1) wall plane. Articulation shall add shadow and visual interest.
c. A variety of roof forms should be used. Single unbroken roof pitches should be avoided except where a single roof treatment is an essential element of the Architectural Style (e.g. Mansard).
d. The main roof should extend beyond the primary facade by a minimum of one (1) foot.
e. An elevation of the home that faces a street, park, trail corridor or open space area shall provide an "Enhanced Elevation". An "Enhanced Elevation" shall provide three (3) or more of the following design enhancements listed in (1) through (5) below. Application of the design enhancement shall be applied in a manner that is consistent with the style of the home. Side and rear elevation's design enhancements shall be consistent with the design elements of the front of the elevation.
   (1) The addition of one (1) window unit.
   (2) A change in wall plane by providing one (1) or more of the following options:
      - An additional wall plane change of a minimum of 6' wide with a minimum of one (1) foot projection.
      - A projecting or cantilevered living space.
      - A bay or boxed windows.
   (3) A covered porch or deck.
   (4) Architectural detail elements such as: shutters, eave brackets, exposed rafter tails, corbels, lintels, trellises, columns or pilasters.
   (5) The use of a minimum of two (2) exterior cladding materials that can include materials such as masonry, (cultured stone, stone, brick, stucco or tile), lap siding, shingles, board and batten, or other decorative siding treatment.
f. Columns and posts extending more than 36 inches above the ground which support structural elements such as porches, decks or roofs should appear to be of adequate mass to support the structure above. (No exposed 4 inch by 4 inch posts shall be allowed more than 36 inches above ground.) Columns supporting upper story decks should be 8 inches by 8 inches minimum finished.

C. Materials

a. All exterior materials shall be of high quality, used in applications and treated appropriately to provide an attractive and long lasting appearance.
b. When masonry cladding is used it should be used in locations where its mass is logical and appropriate. In instances where masonry wraps the exterior corner of the home the masonry should continue to a natural transition point such as an inside corner of a projecting wall, a column, a door or window, or other logical point. In cases where no such feature exists near the corner, the masonry wrap shall extend at least six (6) feet from the outside corner.

2. Orientation of Dwellings to the Street

Each residence shall have at least one (1) primary pedestrian doorway for access to the dwelling unit generally facing and visible from the front lot line of the property, and within 12 feet of the most forward plane of the ground level living space. On corner lots, the pedestrian doorway may face any adjacent street.

3. Garages

These regulations for garages shall apply to non-living space or storage areas within garages whether used for storage of automobiles or other items.

A. Diversity of Garage Orientation

a. All single family homes shall provide garages that meet one (1) of the requirements below, and, a variety in garage orientation by providing a minimum of two (2) of the following orientations on any single block:
   (1) Recessed garages: Where the primary garage door generally faces the front lot line and the garage is recessed a minimum of two (2) feet behind the most forward plane of main floor living space or a front porch.
   (2) Projecting garages: Where the primary garage door generally faces the front lot line and the garage projects no more than fifteen (15) feet from the front door.
   (3) Side-loaded garages.

B. Width/Façade Ratio

The width of a front loaded garage shall not exceed 65% of the width of the front elevation.

C. Three (3) or More Garage Orientation

The third or more bay of any three (3) or more car garage shall either:
(1) Have a different orientation from the first two (2); or
(2) Shall be recessed behind the first two (2) by at least two (2) feet when having the same orientation; or
(3) Shall be tandem to the first two (2).

4. Front Stoop

For model plans with a front stoop, the front stoop shall include the platform and stairs that are generally in front of a door that can be covered or uncovered. The maximum width of a covered front stoop shall be three (3) feet in width from the side of the front door. Covered platforms that exceed three (3) feet in width from the side of the front door shall be considered a front porch.

5. Front Porches

Home model plans with a front porch shall have a front porch that is a minimum size of 50 square feet, excluding the stoop, with a minimum depth of five (5) feet.

STANDARDS FOR PEDESTRIAN FACILITIES IN SFD-P SINGLE FAMILY

(Standards to modify portions of MC.10.6.5F)

1. Sidewalks

(MC.10.6.5F.1.b.)

Attached sidewalk shall be installed where SFD-P dwelling units front the street. Detached sidewalks shall be installed on all other street frontages with SFD-P.

STANDARDS FOR LOT LAYOUT & DESIGN IN SFD-P SINGLE FAMILY DETACHED - PATIO

(Standards to modify portions of MC.10.5.5 E.12.)

Double frontage residential through lots are permitted with a landscape buffer outside of the double frontage lot in a separate tract of not less than twenty-five (25) feet between the rear of a lot and the Austin Avenue street right-of-way.

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553.43 ACRES

PDA - 000204-2015

CANYON CREEK FILING 10

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c. A variety of roof forms should be used. Single unbroken roof pitches should be avoided except where a single roof treatment is an essential element of the Architectural Style (e.g. Mansard).
d. The main roof should extend beyond the primary facade by a minimum of one (1) foot.
e. An elevation of the home that faces a street, park, trail corridor or open space area shall provide an "Enhanced Elevation". An "Enhanced Elevation" shall provide three (3) or more of the following design enhancements listed in (1) through (5) below. Application of the design enhancement shall be applied in a manner that is consistent with the style of the home. Side and rear elevation's design enhancements shall be consistent with the design elements of the front of the elevation.
   (1) The addition of one (1) window unit.
   (2) A change in wall plane by providing one (1) or more of the following options:
      - An additional wall plane change of a minimum of 6' wide with a minimum of one (1) foot projection.
      - A projecting or cantilevered living space.
      - A bay or boxed windows.
   (3) A covered porch or deck.
   (4) Architectural detail elements such as: shutters, eave brackets, exposed rafter tails, corbels, lintels, trellises, columns or pilasters.
   (5) The use of a minimum of two (2) exterior cladding materials that can include materials such as masonry, (cultured stone, stone, brick, stucco or tile), lap siding, shingles, board and batten, or other decorative siding treatment.
f. Columns and posts extending more than 36 inches above the ground which support structural elements such as porches, decks or roofs should appear to be of adequate mass to support the structure above. (No exposed 4 inch by 4 inch posts shall be allowed more than 36 inches above ground.) Columns supporting upper story decks should be 8 inches by 8 inches minimum finished.

C. Materials

a. All exterior materials shall be of high quality, used in applications and treated appropriately to provide an attractive and long lasting appearance.
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   (1) Recessed garages: Where the primary garage door generally faces the front lot line and the garage is recessed a minimum of two (2) feet behind the most forward plane of main floor living space or a front porch.
   (2) Projecting garages: Where the primary garage door generally faces the front lot line and the garage projects no more than fifteen (15) feet from the front door.
   (3) Side-loaded garages.
   (4) Alley-loaded garages.

B. Width/Façade Ratio

The width of a front loaded garage shall not exceed 65% of the width of the front elevation.

C. Three (3) or More Garage Orientation

The third or more bay of any three (3) or more car garage shall either:
(1) Have a different orientation from the first two (2); or
(2) Shall be recessed behind the first two (2) by at least two (2) feet when having the same orientation; or
(3) Shall be tandem to the first two (2).

4. Front Stoop

For model plans with a front stoop, the front stoop shall include the platform and stairs that are generally in front of a door that can be covered or uncovered. The maximum width of a covered front stoop shall be three (3) feet in width from the side of the front door. Covered platforms that exceed three (3) feet in width from the side of the front door shall be considered a front porch.

5. Front Porches

Home model plans with a front porch shall have a front porch that is a minimum size of 50 square feet, excluding the stoop, with a minimum depth of five (5) feet.

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~~303-531-4905~~

Applicant:
RMCS
21 South Sunset Street
Longmont, CO 80503

REVISION DATE:
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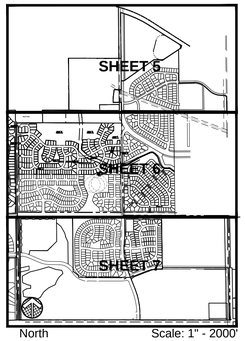
Canyon Creek PD Amendment No.9

A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter
of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North,
Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

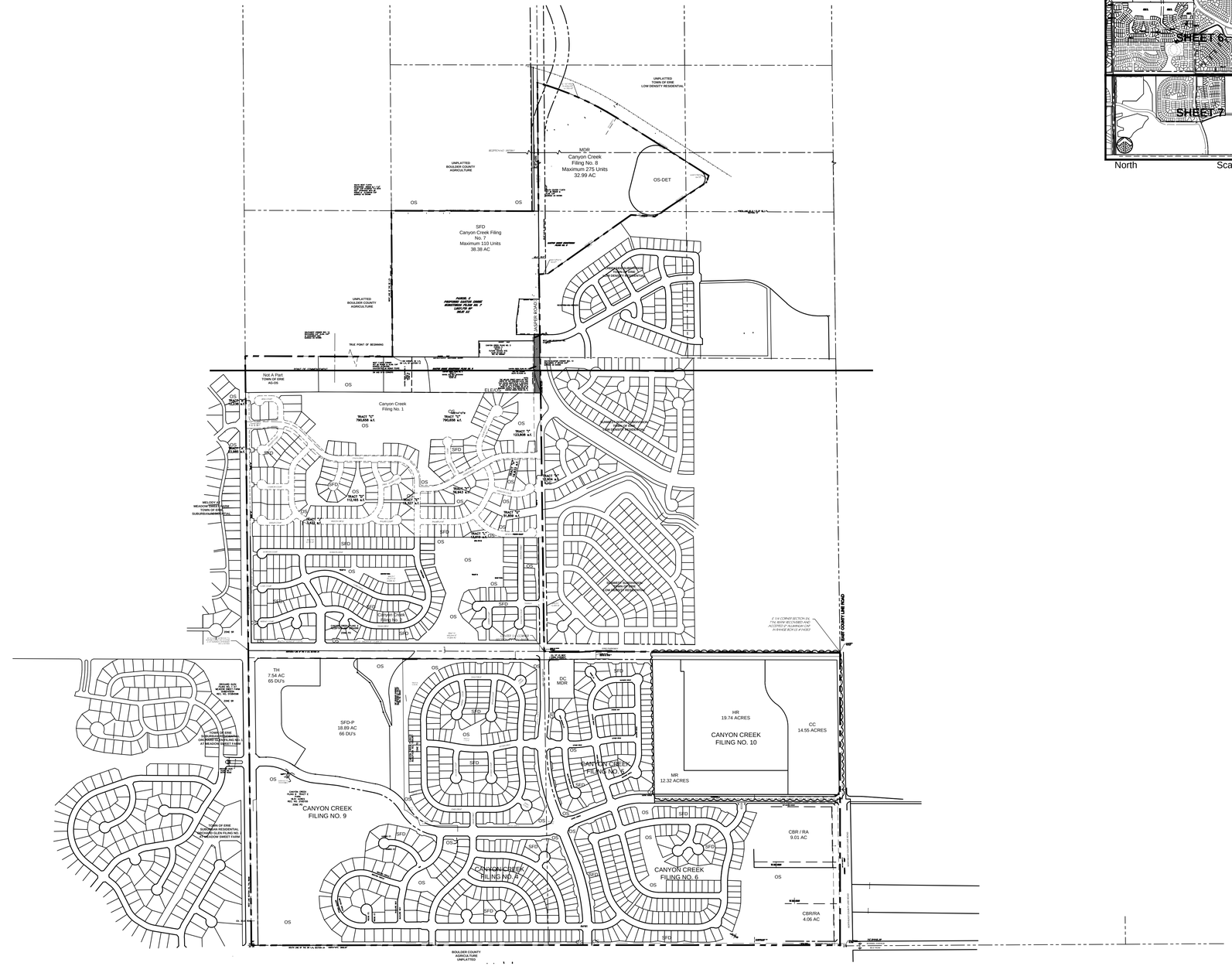
553.43 ACRES

PDA - 000204-2015

Key Map



North Scale: 1" - 2000'



500' 0 500' 1000'

N SCALE: 1" - 500'

Planner

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DEVELOPMENT PLAN
SHEET 5 OF 8

CANYON CREEK PD

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A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter
of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North,
Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

553.43 ACRES

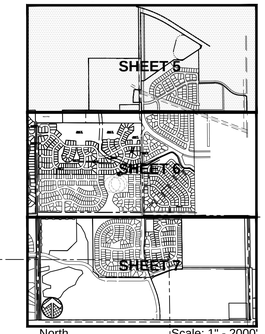
PDA - 000204-2015

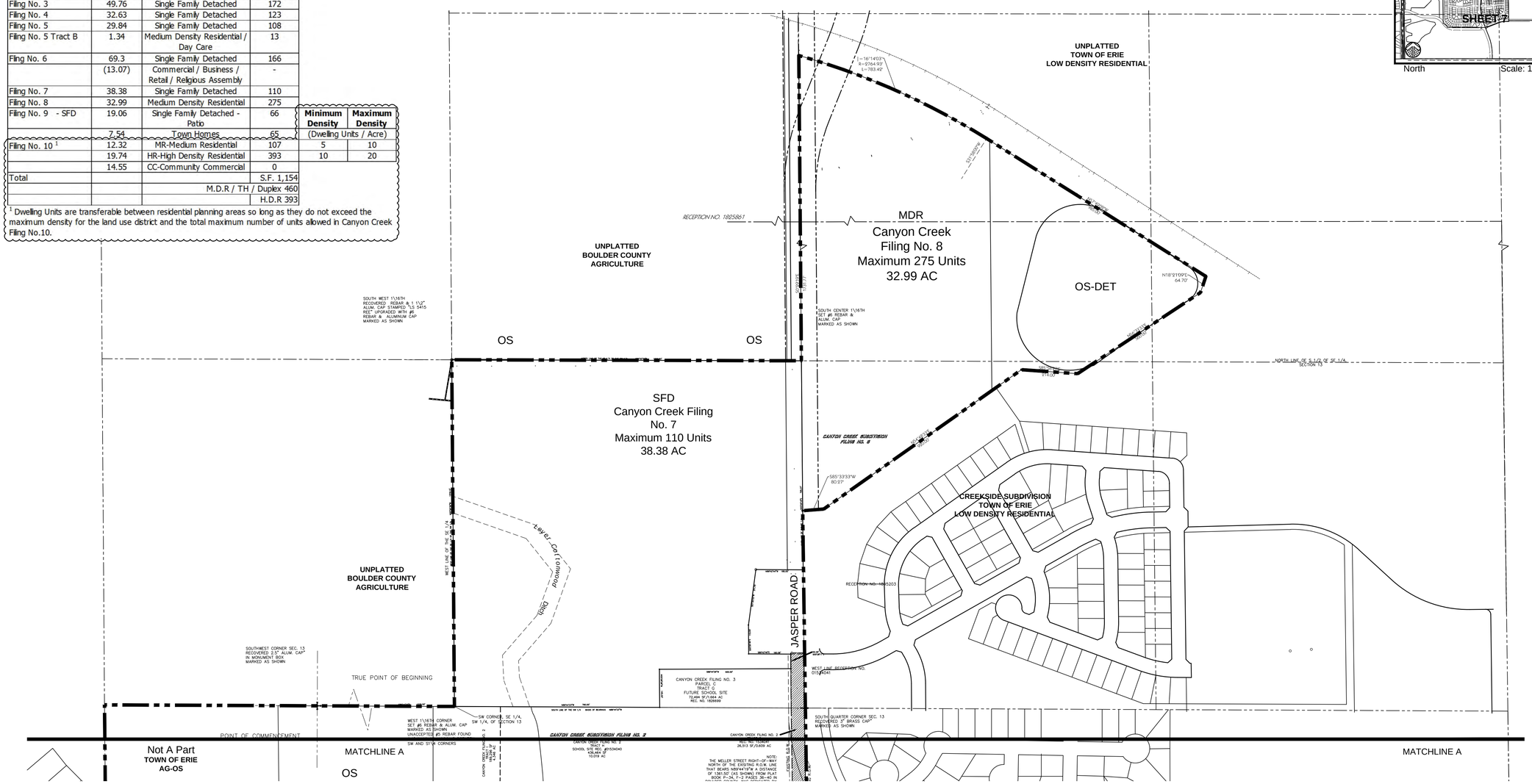
Land Use Summary - Filing No's 1-10

Filing	Total Gross Acres	Use	Max. Number of Dwelling Units	Minimum Density	Maximum Density
				(Dwelling Units / Acre)	
Filing No. 1	79.95	Single Family Detached	208		
Filing No. 2	80.02	Single Family Detached	201		
Filing No. 3	49.76	Single Family Detached	172		
Filing No. 4	32.63	Single Family Detached	123		
Filing No. 5	29.84	Single Family Detached	108		
Filing No. 5 Tract B	1.34	Medium Density Residential / Day Care	13		
Filing No. 6	69.3	Single Family Detached	166		
	(13.07)	Commercial / Business / Retail / Religious Assembly	-		
Filing No. 7	38.38	Single Family Detached	110		
Filing No. 8	32.99	Medium Density Residential	275		
Filing No. 9 - SFD	19.06	Single Family Detached - Patio	66		
	7.54	Town Homes	65		
Filing No. 10 [1]	12.32	MR-Medium Residential	107	5	10
	19.74	HR-High Density Residential	393	10	20
	14.55	CC-Community Commercial	0		
Total			S.F. 1,154		
		M.D.R / TH / Duplex	460		
			H.D.R 393		

[1] Dwelling Units are transferable between residential planning areas so long as they do not exceed the maximum density for the land use district and the total maximum number of units allowed in Canyon Creek Filing No.10.

Key Map





200' 0 200' 400'

N S 1" - 200'

Planner
PCS Group, Inc.
1001 16th Street, 3B-180
Denver, CO 80265
303.531.4905

Applicant:
RMCS
21 South Sunset Street
Longmont, CO 80503

REVISION DATE:
AMENDMENT DATE:
ISSUE DATE:

DEVELOPMENT PLAN
SHEET 6 OF 8

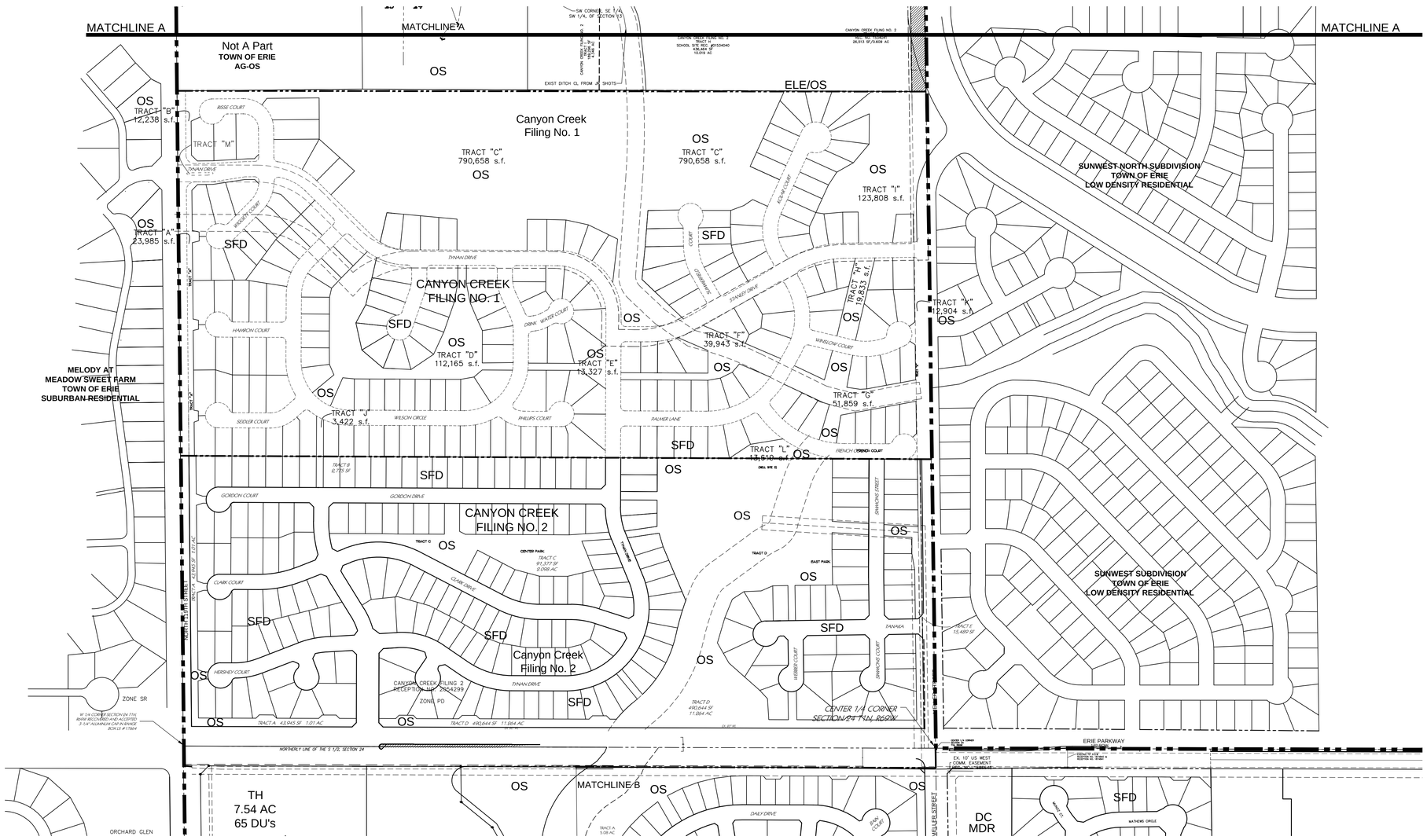
CANYON CREEK PD

Canyon Creek PD Amendment No.9

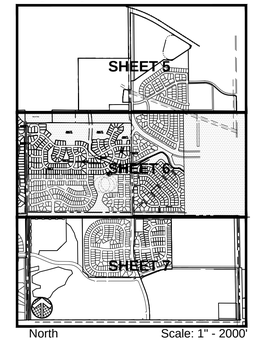
A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter
of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North,
Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

553.43 ACRES

PDA - 000204-2015



Key Map



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21 South Sunset Street
Longmont, CO 80503

REVISION DATE:
AMENDMENT DATE:
ISSUE DATE:

200' 0 200' 400'

N S 1" - 200'

DEVELOPMENT PLAN
SHEET 7 OF 8

CANYON CREEK PD

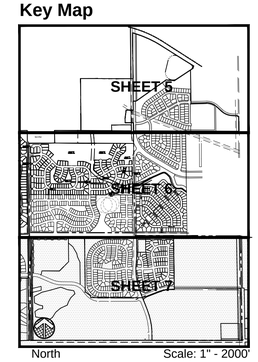
Canyon Creek PD Amendment No.9

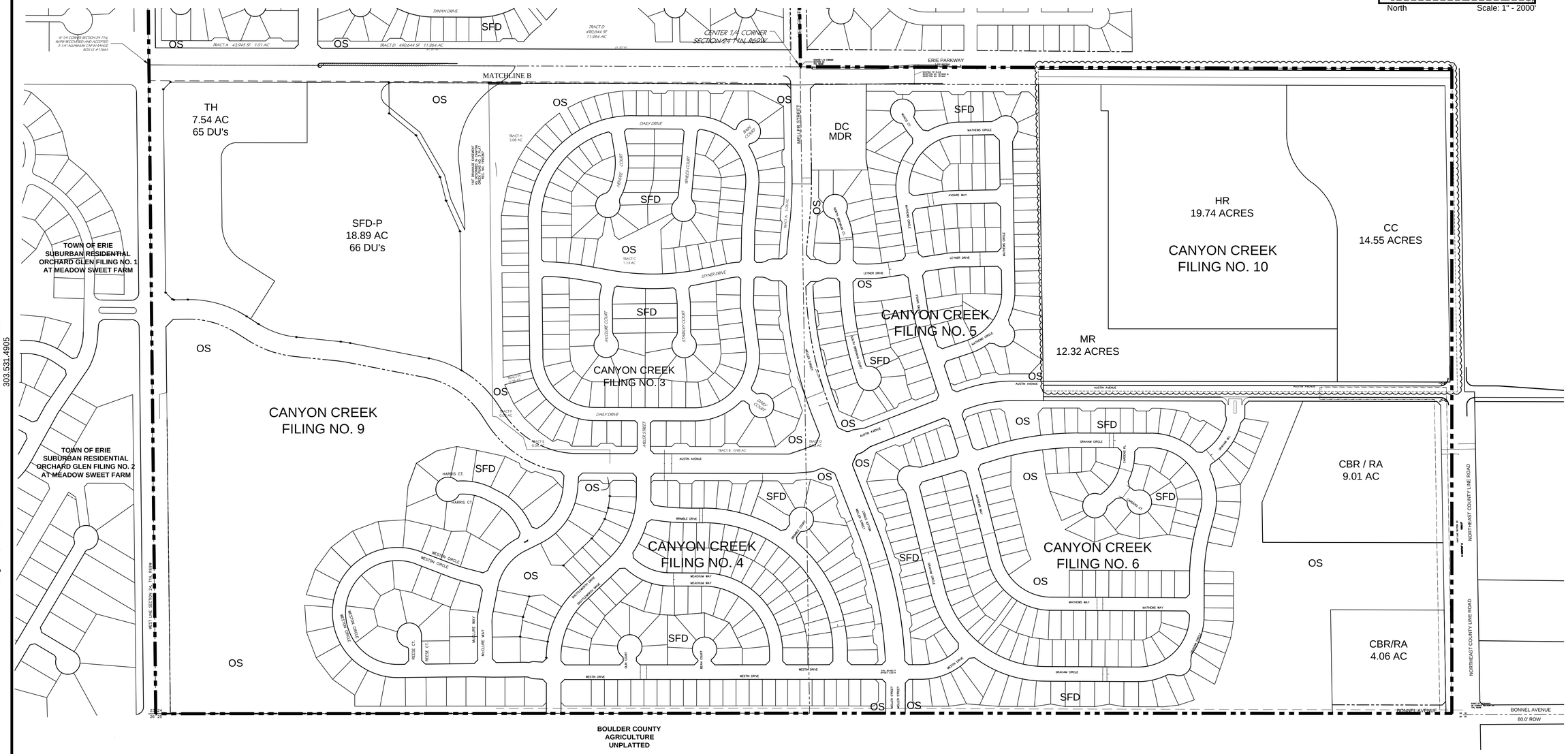
A Portion of the Southeast One-Quarter of Section 13, and A Portion of the Southeast One-Quarter
of the Southwest One-Quarter of Section 13, and A Portion of the South One-Half of Section 24, Township 1 North,
Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado

553.43 ACRES

PDA - 000204-2015

Key Map





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Longmont, CO 80503

REVISION DATE:
AMENDMENT DATE:
ISSUE DATE:

DEVELOPMENT PLAN
SHEET 8 OF 8

CANYON CREEK PD

COMPARATIVE CHART

DISTRICT	STANDARD	UDC SECTION	EXISTING UDC REGULATION	REQUEST	JUSTIFICATION
MR & HR	PRINCIPAL STRUCTURE FRONT/STREET SETBACK	TABLE 4-1	20'	10' PRINCIPAL STRUCTURE 20' FRONT LOADED GARAGE 15' SIDE LOADED GARAGE	TO CREATE A DISTINCT PRESENCE IN FRAMING THE STREETSCAPE WITH ARCHITECTURE THAT ADDRESSES THE STREETSCAPE FOR PEDESTRIANS AND VEHICLES
MR & HR	PRINCIPAL STRUCTURE REAR SETBACK	TABLE 4-1	20'	P:20' 5' ALLEY LOADED GARAGES	TO ALLOW FOR ALLEY LOADED HOMES
MR & HR	MIN. LOT SIZE	TABLE 4-1	SF: 5000 SF MF:2500 SF	SFD-ALLEY LOADED 3,150 SF SFD-PATIO ALLEY LOADED 3,800 SF DUPLEX 2,250 PER DU TOWN HOME-ALLEY LOADED 1,450 PER DU MULTIFAMILY 1,250 PER DU	TO ALLOW FOR AN ALLEY LOADED PRODUCT (SFD, SFD-PATIO, DUPLEX AND TOWN HOME) THAT IS CONSISTENT WITH THE REMAINDER OF THE PROPOSED SITE PLAN WHILE EMBRACING NEW URBANISM DESIGN PRACTICES
MR & HR	ACCESSORY STRUCTURE SIDE SETBACK TO STREET	TABLE 4-1	20'	10'	FOR CONSISTENCY TO MATCH THE PRINCIPAL BUILDING SETBACK
MR & HR	MIN. WIDTH	TABLE 4-1	50' / 60' CORNER	SFD 30'/35' DUPLEX 25'/30'	TO ALLOW FOR AN ALLEY LOADED PRODUCT THAT IS CONSISTENT WITH THE REMAINDER OF THE PROPOSED SITE PLAN WHILE EMBRACING NEW URBANISM DESIGN PRACTICES
HR	MAXIMUM BUILDING HEIGHT	TABLE 4-1	35'	45'	TO PROPOSE EFFICIENT BUILDING DESIGNS THAT ALLOW FOR MORE GREENSPACE WITHIN THE PROPERTY, WHILE CREATING OPPORTUNITY FOR ARCHITECTURAL DIVERSITY THAT ATTRACTS A WIDE RANGE OF DEMOGRAPHICS WHILE PROVIDING AFFORDABILITY WITH A SUPERIOR PRODUCT TYPE

PHASE 1 DRAINAGE REPORT
FOR
4 Corners

January 16, 2015
May 1, 2015

Prepared for:

RMCS, LLC
21 Sunset Street
Longmont CO 80501
Phone: 720-524-3620
Contact: Justin McClure

Prepared by:

ENGINEERING CONSULTANTS

11101 West 120th Avenue, Suite 240
Broomfield, Colorado 80021
Phone: 720.975.0177
Fax: 720.460.4906
Contact: Jason Margraf, P.E.
Alaina Kneebone Marler, P.E.

Job No. 030019

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Phase 1 Drainage Map ..... Back Pocket

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I. INTRODUCTION

The purpose of this report is to provide a guide for the Town of Erie and the developer to use for the planning and the future final design of the proposed drainage facilities for 4 CORNERS. The narrative provides a comprehensive description of the project, the hydrologic and hydraulic design methodologies utilized, and a summary of the preliminary design of drainage facilities.

II. GENERAL LOCATION AND DESCRIPTION

A. Location of Property

4 CORNERS is located in a portion of the southeast one-quarter of Section 13, and a portion of the Southeast One-Quarter of Section 13 and a portion of the south one-half Section 24, Township 1 North, Range 69 West of the 6th Principal Meridian, Town of Erie, Boulder County, Colorado. The property comprises of approximately 46.61 acres and is bounded on the south by Austin Avenue, on the north by Erie Parkway, on the west by existing Canyon Creek Subdivision Filing No.5, and to the east by the East County Line Road. The 4 CORNERS tributary area resides in the Erie Commons Reach 1 per the *Town of Erie, Outfall Systems Plan (West of Coal Creek), January 2014*. 4 CORNERS is tributary to Reach 1, and ultimately Coal Creek. 4 CORNERS will be referred to as the "Site" for the remainder of this report. A Vicinity Map is included within the Appendix for reference.

B. Description of the Proposed Project

The proposed development will provide different uses including a variety of residential and commercial uses with surrounding landscaping and gathering amenities. The Site contains 459 dwelling units, with a maximum of 500 dwelling units per the proposed Canyon Creek PD Amendment No. 9. The dwelling units are anticipated as both attached, detached single family and multifamily units, shown on the Sketch Plan as Medium Density Residential and High Density Residential. The Site will provide commercial retail space within the Community Commercial area. Green space amenities have been spaced throughout the development and the detention pond will be located within the Community Commercial area. A Phase 1 Drainage Area map is included in the Appendix.

The site plan depicted with Phase 1 Drainage is conceptual for this submittal. The full design of site connections, landscaping and final open space areas may be updated with future submittals. A detailed analysis of composite site imperviousness will be provided with the Final Drainage Report. The Site is contained within Basin 462 from the OSP (Reference 6) and has a proposed future imperviousness of 79% which correlates to Type B Soil runoff coefficients of 0.59 and 0.70, for the 5-year and 100-

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year events respectively. The final overall composite C-value for the 100-year event for the entire Site will be no greater than 0.70. Individual basins may be higher due to local basin characteristics. However, the overall composite C-value will be held at 0.70 or less. Based upon the road design and initial stages of the development, it is anticipated that all sub-basins within the Site will be captured and routed to a proposed detention pond located south of Erie Parkway in the Community Commercial area. The pond outfall will connect to the existing 42-inch RCP storm sewer that is the downhill connection at the intersection of Erie Parkway and East County Line Road. From there, flows will be conveyed to Reach 1 of Erie Commons 1 as outlined in the *Town of Erie, Outfall Systems Plan (West of Coal Creek)* (Reference 6).

On-Site soils consist primarily of sandy loams, as shown on the *Soil Conservation Service Soil Survey of Boulder County* maps (Reference 4) located in Appendix A of this report. Soil classifications with the Site include AcA and MdD. All of the Site soils lie within Hydrologic Soil Groups (HSG) B. Type 'B' soils are identified as having medium runoff, moderate infiltration rates and a moderate erosion hazard.

Per Flood Insurance Rate Map for Boulder County, Colorado, Panel 441 of 615 08013C0441J, the site is not within a floodway or floodplain.

There are no irrigation ditches or facilities on this property.

There are no wetlands areas on this property.

C. Adjacent Areas

The proposed development lies east of the Canyon Creek Subdivision Filing No. 5, which consists of existing, medium-density, residential development. To the east of the Site is the existing commercial property. To the south of the Site lies the existing residential development of Canyon Creek Subdivision Filing No. 5. Directly north of the Site are undeveloped empty residental/commercial lots.

III. DRAINAGE BASINS

A. Major Basins

The Site consists of approximately 46.61 acres and is a single property. The existing land is zoned planned development (PD) and is undeveloped. The Site's existing topography slopes from the southwest corner towards the northeast corner at approximately 2.5%.

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IV. DESIGN CRITERIA

A. Regulations

A drainage plan is presented for the 2-year (minor-residential) and 5-year (minor-commercial) and 100-year (major) storm events based on the *Town of Erie Storm Drainage Facilities* (Reference 1). The drainage plan for 4 CORNERS was based on the Town of Erie requirements (Reference 1), Urban Drainage and Flood Control District (UDFCD) UDSCM (Reference 2), and the *Town of Erie Outfall Systems Plan* (West of Coal Creek) (Reference 5).

B. Development Criteria Reference and Constraints

The undeveloped lot has historically drained to the northeast corner. There are no existing drainage or storage facilities on the site. There is an existing 10-Foot Type R inlet at the intersection of Erie Parkway and East County Line Road that is connected to the existing 42-inch RCP storm pipe that outfalls to the east. This outfall connection point has approximately 68-171 cfs of available capacity according to the *Town of Erie Outfall Systems Plan (West of Coal Creek)* by RESPEC (Reference 5). The report recommends limiting the outfall from the Site to approximately 67-68 cfs.

Local site constraints include the existing gas lines along the right-of-ways of Erie Parkway and East County Line Road. Pipes from the site will be required to cross these gas lines to connect to existing infrastructure. Coordination with the gas line owners is ongoing.

C. Hydrologic Criteria

Hydrologic analyses for subsequent reports will be calculated using the Rational Method. Rainfall intensities were taken from the Town's *Manuals (Table 800-2)* (Reference 1) IDF equation and are based upon the 1-hour point rainfall depths as identified in Table 1.

Table 1: 1-hr Point Rainfall Depths

Storm Event	1-hr Rainfall Depth (in)
2-yr	1.01
5-yr	1.43
100-yr	2.70

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The Rational Method procedures and methodology for the time of concentration and for the computation of peak flow rates follow the Town of Erie and Urban Drainage Criteria outlined in References 1 and 2, respectively.

D. Hydraulic Criteria

Street capacities, the sizing of inlets, and the size and layout of the storm sewer system will be analyzed using modeling software in the Final Drainage Report for the site. In this way, the locations and sizes of proposed storm inlets and pipes shall be considered preliminary and conceptual. All storm water capture and conveyance elements will be comprehensively analyzed and sized within the Final Drainage Report(s). Final Drainage Reports may be submitted consistent with Site phasing and shall analyze interim and final phases, if applicable.

V. DRAINAGE PLAN

A. General Concept

The majority of the Site was designed to generally follow historical drainage patterns. Drainage from the Site will generally flow north and east until it is captured by proposed infrastructure that is tied to the existing 42" storm sewer system which outfalls into Reach 1 as identified in the *Town of Erie Outfall Systems Plan* (Reference 5).

B. Specific Details

<u>General</u>

The western and southern portion of the Site, MR (Medium Density Residential), approximately 12.39 acres, will be collected by curb and gutter until it is captured by inlets that discharge into the detention pond located in CC (Community Commercial). The inlets are anticipated to be along the road in local low points that will be in conformance with guidelines established in the Town of Erie criteria (Reference 1).

The central portion of the Site, HR (High Density Residential), approximately 19.67 acres, will be collected by curb and gutter until it is captured by inlets that discharge into the detention pond located in CC. The inlets are anticipated to be within parking lots in local low points that will be in conformance with guidelines established in the Town of Erie criteria.

The eastern portion of the Site, CC (Community Commercial), approximately 14.55 acres, contains commercial buildings and parking areas. The detention pond will be located in Tract 22 on the northern side of the area. Runoff will drain to the north by

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sheet flow and curb and gutter until it is captured by the proposed inlets within the parking areas and outfall to the detention pond. The detention pond will outfall in a storm sewer network and connect to the existing 10-foot Type R inlet located at the southwest corner of intersection of Erie Parkway and East County Line Road in conformance with guidelines established in the Town of Erie criteria (Reference 1).

C. Detention / Water Quality / Regional Improvements

As a part of our drainage design J3 researched the Town's plans for drainage infrastructure in the area by studying the *Town of Erie Outfall System Plan* (OSP) (Reference 5). The OSP Land Use shows mixed-use zoning for the area west of East County Line Road from Austin Avenue to Telleen Avenue. The proposed development of commercial, multifamily, and single family residential, as outlined in the Canyon Creek PD Amendment No. 9., meets the intent of the comprehensive plan.

Upon review, OSP identifies that the basin containing the 4 CORNERS site will contain a change from agricultural to mixed uses in the existing and developed conditions, which has assigned the basin a composite imperviousness of 79% (Figure B-3 from the OSP in the appendix). The Conceptual Design Plan for Erie Commons 1- Reach 1 in the OSP denotes the storage node for the SWMM model as 1047. This node is estimated as having a storage volume of 6 ac-ft. The release rate estimated in the OSP is 67 cfs. Estimated detention volumes for this site plan generally conform to the OSP with volumes ranging from 6.4 ac-ft to 4.9 ac-ft depending the final imperviousness for the site. Water Quality Control Volume (WQCV) will be contained within the Excess Urban Runoff Volume (EURV) per the Town's Criteria. Water quality features will be provided per the Town's criteria.

The controlled release from the detention pond will connect to the existing 10-foot Type R inlet located at the intersection of Erie Parkway and East County Line Road. The downstream pipe size from the inlet is 42-inch RCP, as per the Town's GIS records. Improvements outside the Site's boundaries are not anticipated with this project.

VI. CONCLUSIONS

The drainage plan provided in this report complies with the *Town of Erie Storm Drainage Facilities Standards and Specifications* (Reference 1) and the *Urban Drainage and Flood Control District, Urban Storm Drainage Criteria Manuals* (Reference 2), and the *Town of Erie Outfall Systems Plan* (Reference 5).

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The drainage plan depicts the design for the Development Plan and will conform to the Town's criteria. The drainage plan attempts to provide protection from flooding to the Site for at least the 100-year storm. Emergency drainage overflows will be provided where necessary and will be detailed within the subsequent Final Drainage Report. The planned improvements will minimize adverse effects on the public and associated infrastructure for the proposed development.

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VII. REFERENCES

1. *Town of Erie Standards and Specifications for Design and Construction*, Town of Erie, January 2014.

2. *Urban Storm Drainage Criteria Manuals, Volumes 1-3*, Urban Drainage and Flood Control District; Revised August 2006.

3. *Flood Insurance Rate Map, Boulder County, Colorado and Incorporated Areas, Panel 441 of 6155, Map Number 08013C0551J*, Federal Emergency Management Agency (FEMA), Map Revised December 18, 2012.

4. *Soil Survey of Boulder County Area, Colorado*, Natural Resources Conservation Service (NRCS), 1975.

5. *Town of Erie, Outfall Systems Plan (West of Coal Creek),* RESPEC Consultants & Services, January 2014

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PHASE 1 DRAINAGE REPORT
FOR
4 CORNERS

TOWN OF ERIE CERTIFICATION STATEMENT

"I hereby certify that this Phase 1 Drainage Report (plan) for the design of 4 CORNERS was prepared by me (or under my direct supervision) in accordance with the provisions of *Town of Erie Standards and Specifications for Design and Construction* for the owners thereof. I understand that the Town of Erie does not and will not assume liability for drainage facilities designed by others, including the designs presented in this report."

SIGNATURE:

Alaina Kneebone Marler, P.E.
Registered Professional Engineer
State of Colorado No. 35781

TOWN ACCEPTANCE

"This report has been reviewed and found to be in general compliance with the *Town of Erie Standards and Specifications for Design and Construction* and other Town requirements. THE ACCURACY AND VALIDITY OF THE ENGINEERING DESIGN, DETAILS, DIMENSIONS, QUANTITIES AND CONCEPTS IN THIS REPORT REMAINS THE SOLE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON.

Accepted by: _____ _____
Deputy Public Works Director Date

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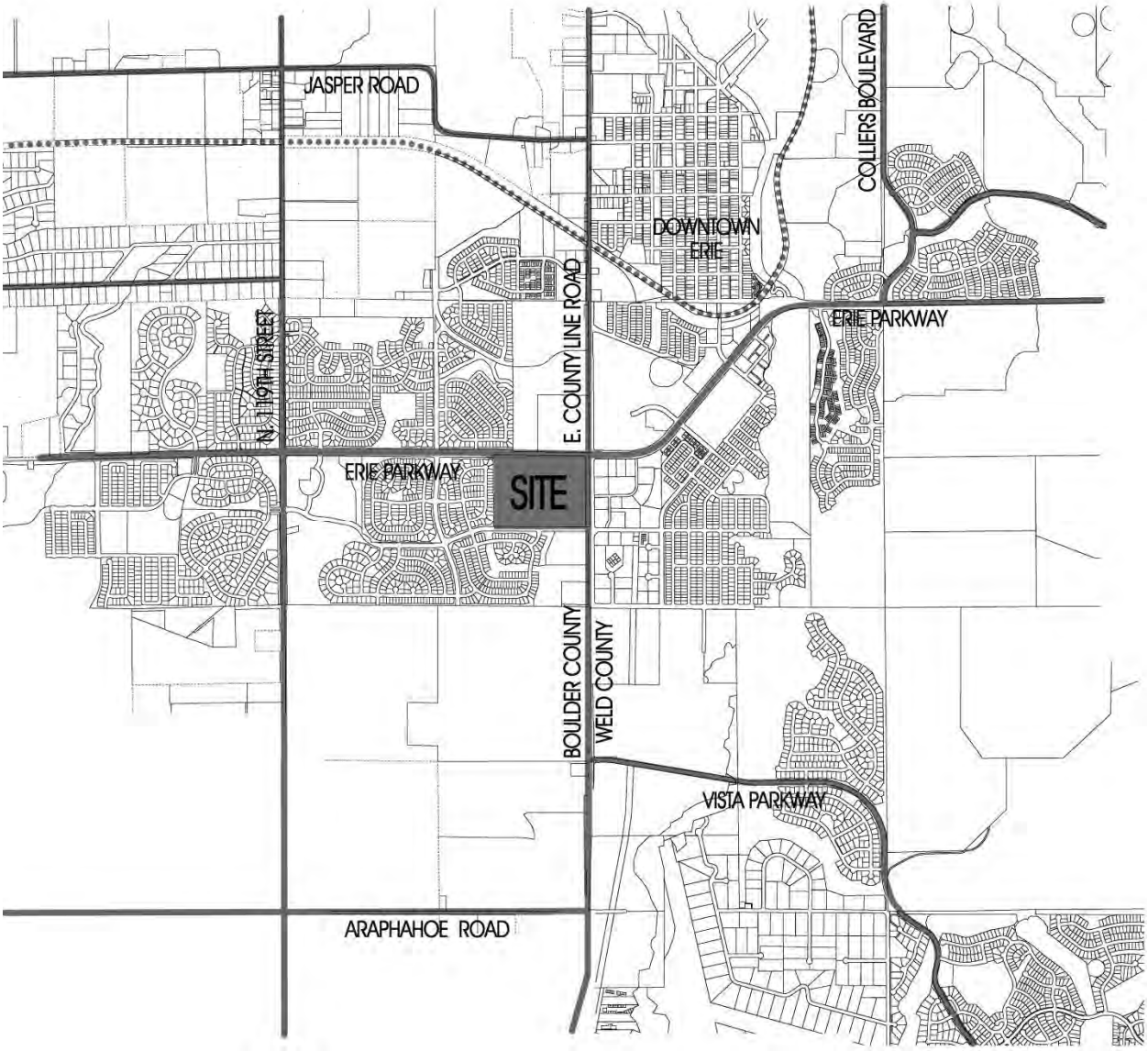
APPENDIX – A

Figures and Supporting Documents

VICNITY MAP


JASPER ROAD
COLLIERS BOULEVARD
DOWNTOWN ERIE
ERIE PARKWAY
N. 119TH STREET
E. COUNTY LINE ROAD
ERIE PARKWAY
SITE
BOULDER COUNTY
WELD COUNTY
VISTA PARKWAY
ARAPHAHOE ROAD

MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0441J

FIRM

FLOOD INSURANCE RATE MAP

BOULDER COUNTY, COLORADO

AND INCORPORATED AREAS

PANEL 441 OF 615

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOULDER COUNTY	080023	0441	J
ERIE, TOWN OF	080187	0441	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08013C0441J

MAP REVISED
DECEMBER 18, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Boulder County Area, Colorado; and Weld County, Colorado, Southern Part

4 Corners

A3

October 9, 2014

Custom Soil Resource Report
Soil Map

A4

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:20,000 to 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Boulder County Area, Colorado
Survey Area Data: Version 10, Dec 30, 2013

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 12, Jan 3, 2014

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 22, 2011—Apr 13, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting

Map Unit Legend

Boulder County Area, Colorado (CO643)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AcA	MLRA 67B - Ascalon sandy loam, 0 to 3 percent slopes	17.8	28.7%
AcC	Ascalon sandy loam, 3 to 5 percent slopes	3.6	5.7%
MdD	Manter sandy loam, 3 to 9 percent slopes	34.6	55.6%
Subtotals for Soil Survey Area		**56.0**	**90.0%**
Totals for Area of Interest		**62.2**	**100.0%**

Weld County, Colorado, Southern Part (CO618)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
5	MLRA 67B - Ascalon sandy loam, 0 to 3 percent slopes	6.2	10.0%
Subtotals for Soil Survey Area		**6.2**	**10.0%**
Totals for Area of Interest		**62.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the

contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Boulder County Area, Colorado

AcA—MLRA 67B - Ascalon sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2swl3
Elevation: 3,870 to 5,960 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ascalon and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Paleoterraces, plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Bt1 - 6 to 12 inches: sandy clay loam
Bt2 - 12 to 19 inches: sandy clay loam
Bk - 19 to 35 inches: sandy clay loam
C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.1 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: Sandy plains (R067BY024CO)

AcC—Ascalon sandy loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: jpr3
Elevation: 4,900 to 5,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 155 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ascalon and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Terraces
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed loamy alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 19 inches: sandy clay loam, sandy loam
H2 - 8 to 19 inches: fine sandy loam, loamy fine sand, sandy loam
H3 - 19 to 60 inches:
H3 - 19 to 60 inches:
H3 - 19 to 60 inches:

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 16.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Sandy (R067XB026CO)

MdD—Manter sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: jps4
Elevation: 4,900 to 5,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 155 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Manter and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manter

Setting

Landform: Terraces
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy eolian deposits and/or outwash

Typical profile

H1 - 0 to 5 inches: sandy loam
H2 - 5 to 14 inches: fine sandy loam, sandy loam
H2 - 5 to 14 inches: sandy loam, loamy sand, loamy fine sand
H3 - 14 to 60 inches:
H3 - 14 to 60 inches:
H3 - 14 to 60 inches:

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 18.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Sandy (R067XB026CO)

Weld County, Colorado, Southern Part

5—MLRA 67B - Ascalon sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2swl3
Elevation: 3,870 to 5,960 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Ascalon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Paleoterraces, plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Bt1 - 6 to 12 inches: sandy clay loam
Bt2 - 12 to 19 inches: sandy clay loam
Bk - 19 to 35 inches: sandy clay loam
C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.1 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: Sandy plains (R067BY024CO)

Minor Components

Olnest

Percent of map unit: 10 percent
Landform: Plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy plains (R067BY024CO)

Vona

Percent of map unit: 5 percent
Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy plains (R067BY024CO)

APPENDIX – B

Hydraulic Computations

Table RO-5— Runoff Coefficients, *C*

Percentage Imperviousness	Type C and D NRCS Hydrologic Soil Groups					
	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
0%	0.04	0.15	0.25	0.37	0.44	0.50
5%	0.08	0.18	0.28	0.39	0.46	0.52
10%	0.11	0.21	0.30	0.41	0.47	0.53
15%	0.14	0.24	0.32	0.43	0.49	0.54
20%	0.17	0.26	0.34	0.44	0.50	0.55
25%	0.20	0.28	0.36	0.46	0.51	0.56
30%	0.22	0.30	0.38	0.47	0.52	0.57
35%	0.25	0.33	0.40	0.48	0.53	0.57
40%	0.28	0.35	0.42	0.50	0.54	0.58
45%	0.31	0.37	0.44	0.51	0.55	0.59
50%	0.34	0.40	0.46	0.53	0.57	0.60
55%	0.37	0.43	0.48	0.55	0.58	0.62
60%	0.41	0.46	0.51	0.57	0.60	0.63
65%	0.45	0.49	0.54	0.59	0.62	0.65
70%	0.49	0.53	0.57	0.62	0.65	0.68
75%	0.54	0.58	0.62	0.66	0.68	0.71
80%	0.60	0.63	0.66	0.70	0.72	0.74
85%	0.66	0.68	0.71	0.75	0.77	0.79
90%	0.73	0.75	0.77	0.80	0.82	0.83
95%	0.80	0.82	0.84	0.87	0.88	0.89
100%	0.89	0.90	0.92	0.94	0.95	0.96
	TYPE B NRCS HYDROLOGIC SOILS GROUP					
0%	0.02	0.08	0.15	0.25	0.30	0.35
5%	0.04	0.10	0.19	0.28	0.33	0.38
10%	0.06	0.14	0.22	0.31	0.36	0.40
15%	0.08	0.17	0.25	0.33	0.38	0.42
20%	0.12	0.20	0.27	0.35	0.40	0.44
25%	0.15	0.22	0.30	0.37	0.41	0.46
30%	0.18	0.25	0.32	0.39	0.43	0.47
35%	0.20	0.27	0.34	0.41	0.44	0.48
40%	0.23	0.30	0.36	0.42	0.46	0.50
45%	0.26	0.32	0.38	0.44	0.48	0.51
50%	0.29	0.35	0.40	0.46	0.49	0.52
55%	0.33	0.38	0.43	0.48	0.51	0.54
60%	0.37	0.41	0.46	0.51	0.54	0.56
65%	0.41	0.45	0.49	0.54	0.57	0.59
70%	0.45	0.49	0.53	0.58	0.60	0.62
75%	0.51	0.54	0.58	0.62	0.64	0.66
80%	0.57	0.59	0.63	0.66	0.68	0.70
85%	0.63	0.66	0.69	0.72	0.73	0.75
90%	0.71	0.73	0.75	0.78	0.80	0.81
95%	0.79	0.81	0.83	0.85	0.87	0.88
100%	0.89	0.90	0.92	0.94	0.95	0.96

ENGINEERING CONSULTANTS

"Your Project, Our Pride" ™

Composite Imperviousness Calculations — 4 Corners

Developed Conditions — Town of Erie, Colorado

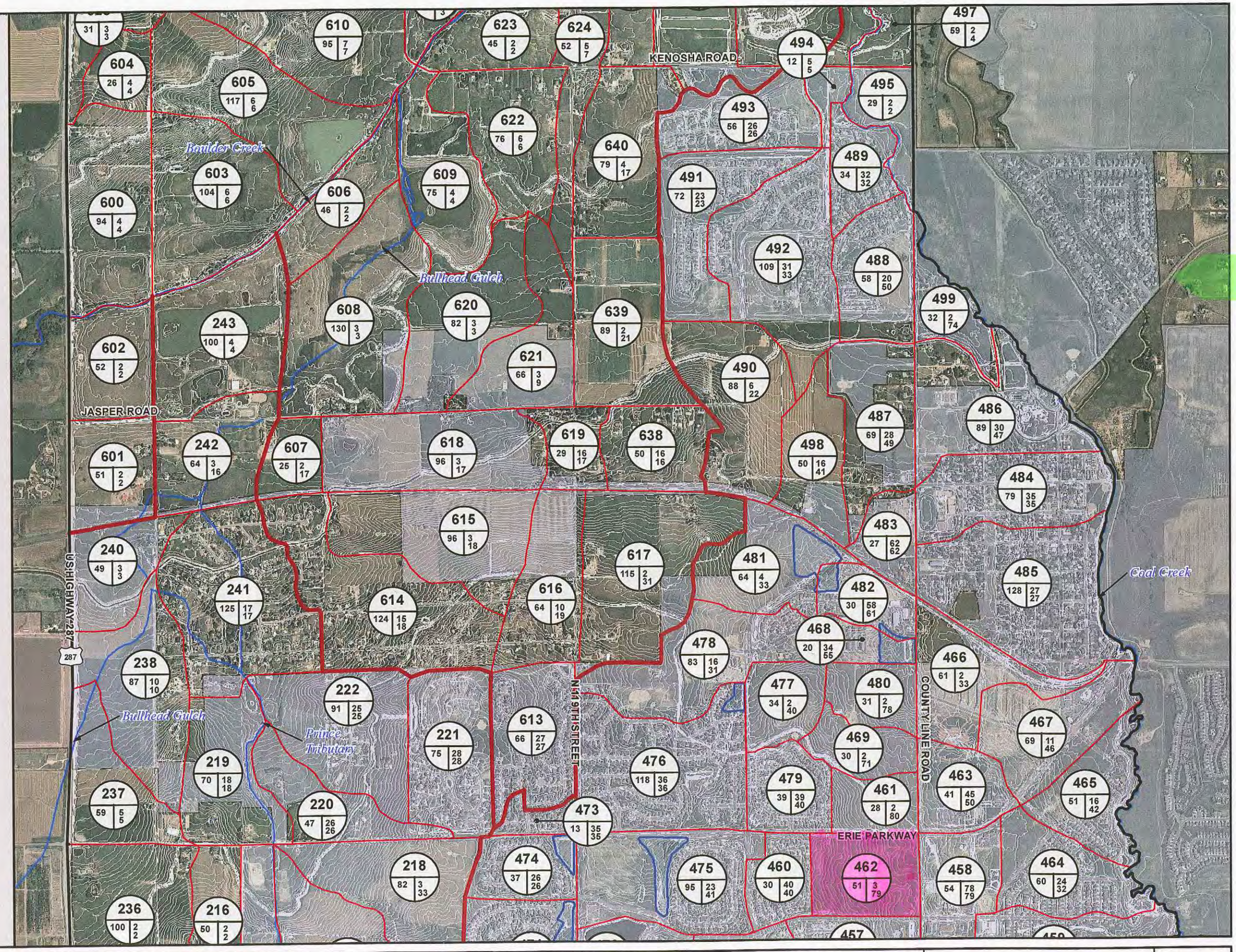
Job No. 030019
Date: 4/29/2015
By: AKM

Major Bas	Sub-Basin	Area	Parcel Imperviousness				
			Streets / Ponds	Sidewalk / Concrete	Roofs	Lawns / Sandy Soil	Com Imperv
		(acres)	100	90	90	2	(%)
Site	All	46.61	13.49	7.16	9.05	16.91	61.0
	Sum	46.61	13.49	7.16	9.05	16.91	61.0
On-Site Total		46.61	13.49	7.16	9.05	16.91	61.0
TOTAL	Sum	46.61	13.49	7.16	9.05	16.91	61.0

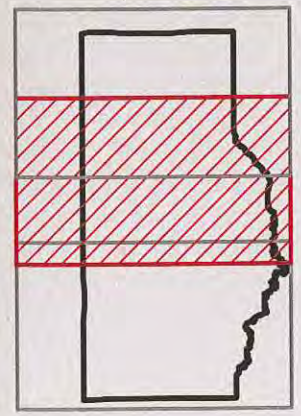
LEGEND

- Study Area Boundary
- Town of Erie
- City of Lafayette
- Subbasin Boundary
- Major Watershed Boundary
- Regional Detention Ponds

XXX — Subbain ID
XX | X — % Impervious (Existing Land Use) / % Impervious (Future Land Use)
Area (Acres)



KEY MAP



N W E S

0 750 1,500 3,000 Feet

1 " = 1,500 FT

M:\2234\GIS\2234.MXD - 12/12/12 - NRT

WRC ENGINEERING, INC.
950 SOUTH CHERRY STREET, SUITE 404
DENVER, COLORADO 80246
PHONE: 303-757-8513
FAX: 303-758-3208

TOWN OF ERIE
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

TOWN OF ERIE OUTFALL SYSTEMS PLAN
(WEST OF COAL CREEK)

SUBBASIN MAP

FIGURE B-3

DETENTION VOLUME BY THE FULL SPECTRUM METHOD

Project: CONCEPT LEVEL-ERIE WITH SITE PLAN SEPT 2014
Basin ID: FULL SITE

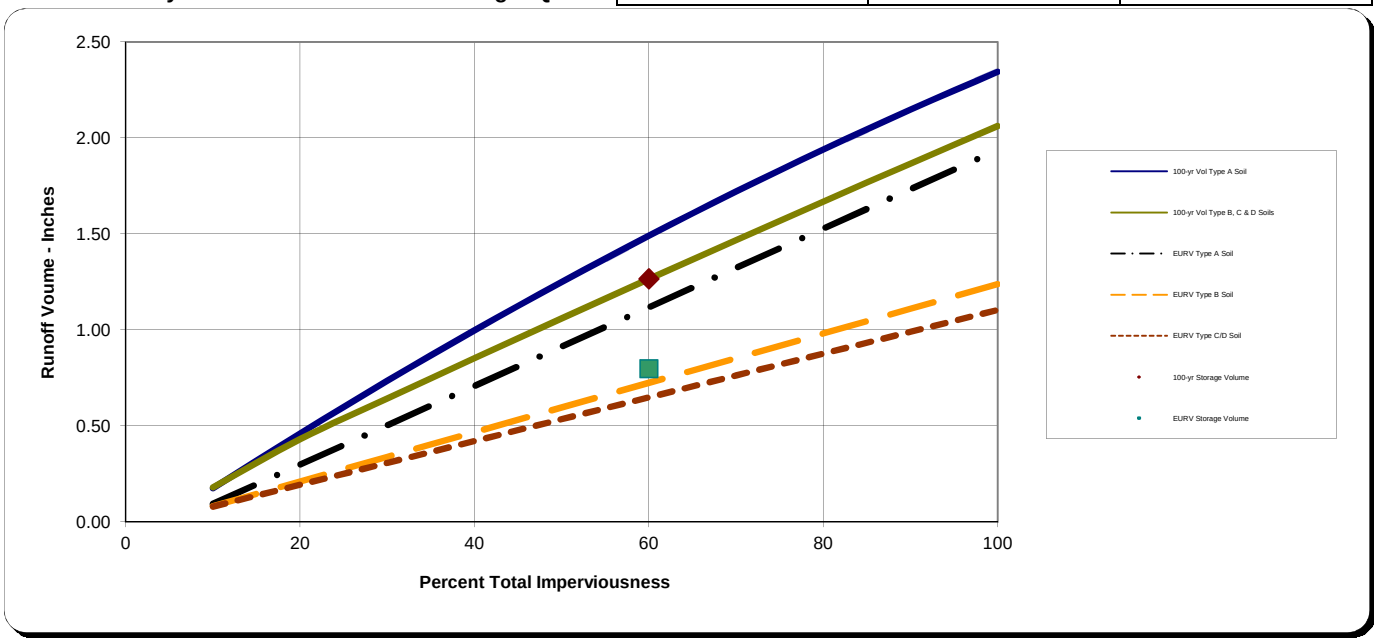
* User input data shown in blue.

Area of Watershed (acres)	46.61	
Subwatershed Imperviousness	60.0%	
Level of Minimizing Directly Connected Impervious Area (MDCIA)	0	0
Effective Imperviousness[1]	60.0%	

Hydrologic Soil Type	**Percentage of Area**	**Area (acres)**
Type A		0.0
Type B	100.0%	46.6
Type C or D		0.0

Recommended Horton's Equation Parameters for CUHP		
Infiltration (inches per hour)		**Decay Coefficient--α**
Initial--f_i	**Final--f_o**	
4.5	0.6	0.0018

	Detention Volumes [2,5]		**Maximum Allowable Release Rate, cfs[3]**
	(watershed inches)	**(acre-feet)**	
Excess Urban Runoff Volume[4]	0.80	3.10	Design Oulet to Empty EURV in 72 Hours
100-year Detention Volume Including WQCV [5]	1.27	4.92	39.62



Notes:

1) Effective imperviousness is based on Figure ND-1 of the Urban Storm Drainage Criteria Manual (USDCM).

2) Results shown reflect runoff reduction from Level 1 or 2 MDCIA and are plotted at the watershed's total imperviousness value; the impact of MDCIA is reflected by the results being below the curves.

3) Maximum allowable release rates for 100-year event are based on Table SO-1. Outlet for the Excess Urban Runoff Volume (EURV) to be designed to empty out the EURV in 72 hours. Outlet design is similar to one for the WQCV outlet of an extended detention basin (i.e., perforated plate with a micro-pool) and extends to top of EURV water surface elevation.

4) EURV approximates the difference between developed and pre-developed runoff volume.

5) 100-yr detention volume includes EURV. No need to add more volume for WQCV or EURV

DETENTION VOLUME BY THE FULL SPECTRUM METHOD

Project: CONCEPT LEVEL-ERIE WITH SITE PLAN SEPT 2014
Basin ID: FULL SITE

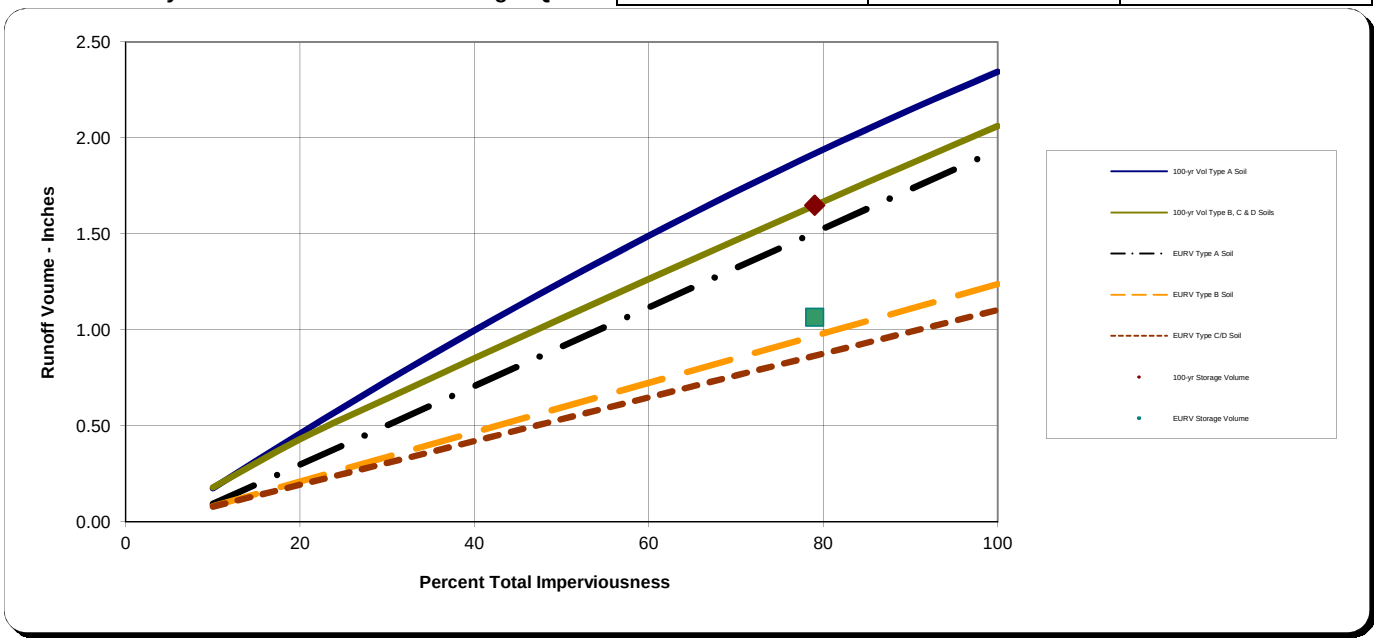
* User input data shown in blue.

Area of Watershed (acres)	46.61	
Subwatershed Imperviousness	79.0%	
Level of Minimizing Directly Connected Impervious Area (MDCIA)	0	0
Effective Imperviousness[1]	79.0%	

Hydrologic Soil Type	**Percentage of Area**	**Area (acres)**
Type A		0.0
Type B	100.0%	46.6
Type C or D		0.0

Recommended Horton's Equation Parameters for CUHP		
Infiltration (inches per hour)		**Decay Coefficient--α**
Initial--f_i	**Final--f_o**	
4.5	0.6	0.0018

	Detention Volumes [2,5]		**Maximum Allowable Release Rate, cfs[3]**
	(watershed inches)	**(acre-feet)**	
Excess Urban Runoff Volume[4]	1.07	4.14	Design Oulet to Empty EURV in 72 Hours
100-year Detention Volume Including WQCV [5]	1.65	6.40	39.62



Notes:

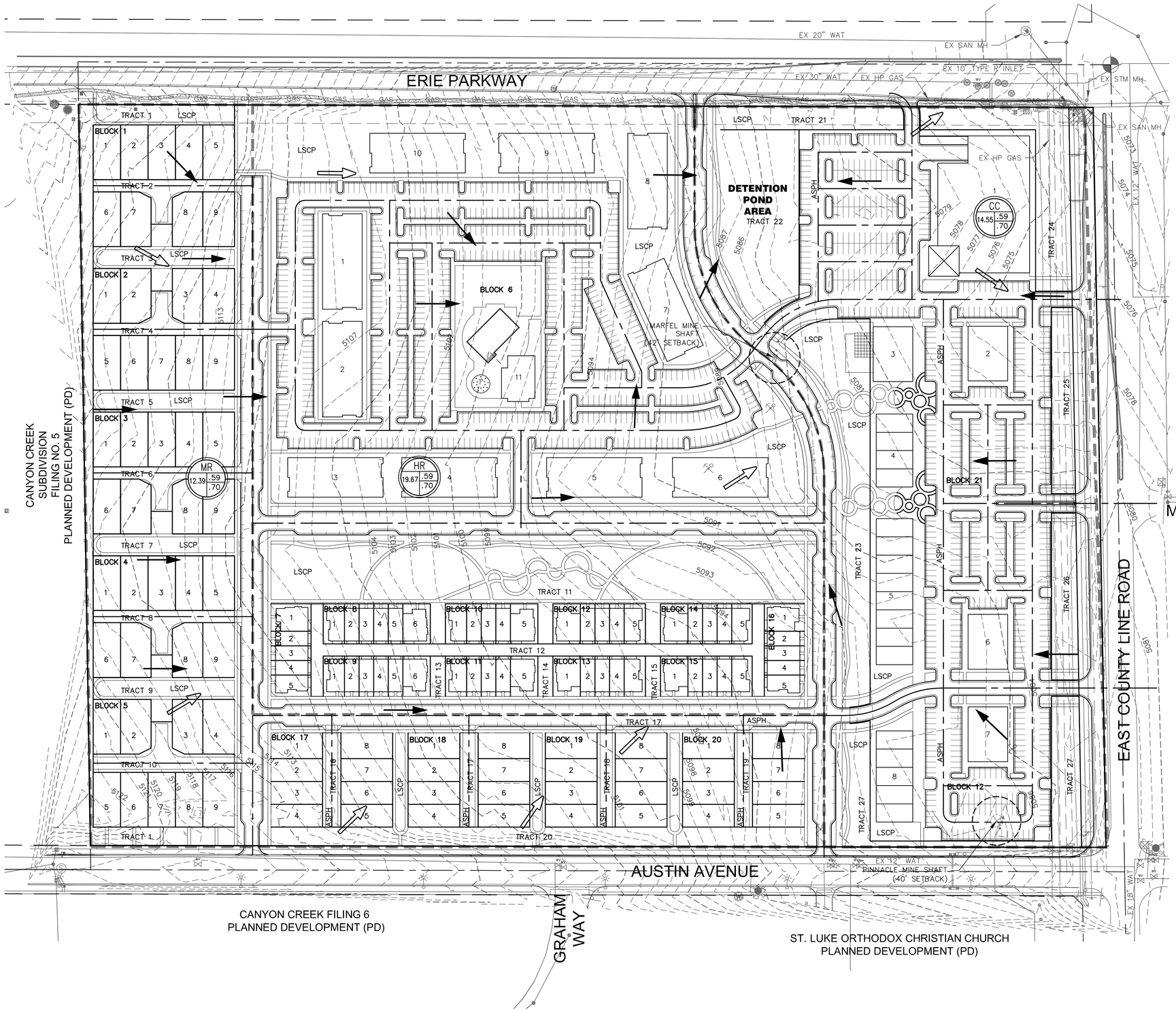
1) Effective imperviousness is based on Figure ND-1 of the Urban Storm Drainage Criteria Manual (USDCM).

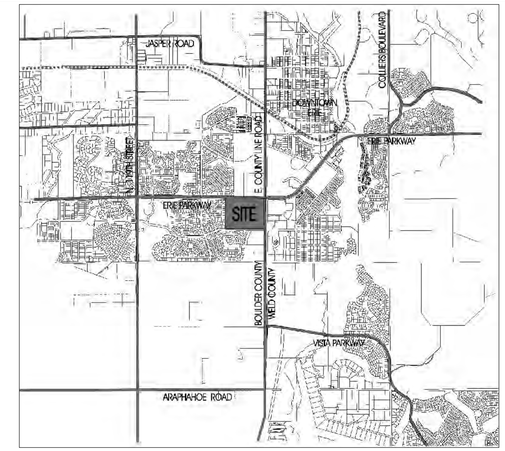
2) Results shown reflect runoff reduction from Level 1 or 2 MDCIA and are plotted at the watershed's total imperviousness value; the impact of MDCIA is reflected by the results being below the curves.

3) Maximum allowable release rates for 100-year event are based on Table SO-1. Outlet for the Excess Urban Runoff Volume (EURV) to be designed to empty out the EURV in 72 hours. Outlet design is similar to one for the WQCV outlet of an extended detention basin (i.e., perforated plate with a micro-pool) and extends to top of EURV water surface elevation.

4) EURV approximates the difference between developed and pre-developed runoff volume.

5) 100-yr detention volume includes EURV. No need to add more volume for WQCV or EURV





Vicinity Map

1"=3000' (approx)

(IN FEET)
1 inch = 80 ft.

LEGEND

DESIGN/JUNCTION POINT	B3
MINOR BASIN BASIN I.D.	B3
UTILITY AREA (ACRES)	3.29
RUNOFF COEFFICIENTS	.45 MINOR STORM C5 / .60 MAJOR STORM C100
BOUNDARY LINE	
PROPOSED MAJOR & MINOR CONTOURS	5180
EXISTING MAJOR & MINOR CONTOURS	5180
SWALE	
EASEMENT LINE	
BASIN BOUNDARY	
LOW POINT (LP) / HIGH POINT (HP)	xLP xHP
FLOW ARROW	
EXISTING FLOW ARROW	
STREET DESIGNATION : LOCAL TYPE EXAMPLE : L.T. II	L.T.

ENGINEERING CONSULTANTS
Contact: Jason D. Margraf, PE
950 Spruce Street, Suite 2C – Louisville, CO 80027-1977
(720) 975-0177 – FAX: (303) 366-5603
Email: Jmargraf@JSEngineering.net

4 CORNERS
PHASE 1 DRAINAGE MAP

RMCS, Inc.
21 South Sunset Street
Longmont, CO 80503
Tel: (720) 524-3620
Contact: Justin McClure

No.	Date	Description
2	5/12/2015	SECOND SUBMITTAL
1	1/8/2015	INITIAL SUBMITTAL

DOCUMENT AMENDMENTS

COLORADO LICENSED PROFESSIONAL ENGINEER MARLEE A. MARGRAF 35781 12/19/2014

Project Number: 030019	Drawn By: AKM
Designed By: AKM	Checked By: SOS
Sheet Number: SHEET 1	

LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
FAX (303) 333-1107
E-mail: lsc@lscdenver.com

February 12, 2015

Mr. Justin McClure
RMCS, Inc.
21 S. Sunset Street
Longmont, CO 80503

Re: Four Corners
Traffic Impact Analysis
Erie, CO
(LSC #141100)

Dear Mr. McClure:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Four Corners development. As shown on Figure 1, the site is located south of Erie Parkway, north of Austin Avenue, and west of County Line Road in Erie, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the site's traffic impacts.

LAND USE AND ACCESS

The site is proposed to include 45 single-family homes, up to 485 multi-family dwelling units, and up to 170,660 square feet of shopping center. Access is proposed from one right-in/right-out access to Erie Parkway, two right-in/right-out and one three-quarter movement access locations to County Line Road, and two full movement accesses and one alley access to Austin Avenue as shown in the conceptual site plan in Figure 2.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **Erie Parkway** is an east-west, four-lane minor arterial roadway north of the site. The intersection with County Line Road is signalized with auxiliary turn lanes. The posted speed limit in the vicinity of the site is 35 mph. The 2030 Roadway System Plan in the *Town of Erie Master Transportation Plan* shows Erie Parkway as a four-lane principal arterial. The *Buildout Roadway Network* shows a six-lane principal arterial.

- **County Line Road** is a north-south, two-lane minor arterial roadway east of the site. The intersection with Austin Avenue is two-way stop-sign controlled on Austin Avenue. The posted speed limit in the vicinity of the site is 45 mph. The 2030 Roadway Plan in the *Town of Erie Transportation Master Plan* shows County Line Road as a two-lane principal arterial. The *Buildout Roadway Network* shows a six-lane principal arterial.

- **Austin Avenue** is an east-west, two-lane collector roadway south of the site. The intersection with County Line Road is stop-sign controlled. The posted speed limit is 25 mph.

Existing Traffic Conditions

Figure 3 shows the existing lane geometries, traffic controls, posted speed limits, and traffic volumes in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes and daily traffic counts are from the attached traffic counts conducted by Counter Measures in December, 2014.

2020 and 2035 Background Traffic

Figure 4 shows the estimated 2020 background traffic and Figure 5 shows the estimated 2035 background traffic. The projected 2020 and 2035 background traffic volumes are based on an annual growth rate of three percent for the collector and arterial streets.

Existing, 2020, and 2035 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in Figures 3, 4, and 5 were analyzed as appropriate to determine the existing, 2020, and 2035 background levels of service using Synchro Version 8. The existing and 2020 scenarios assume the existing signal timings at the intersection of Erie Parkway/E. County Line Road. The timings for the 2035 scenario were adjusted to reflect the future traffic volumes. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **Erie Parkway/E. County Line Road:** This signalized intersection currently operates at an overall LOS "C" or better during both morning and afternoon peak-hours. By 2020, the shared southbound through movement is expected to operate at LOS "E" during the morning peak-hour. This will be mitigated once a dedicated southbound right-turn lane is provided. By 2035, it is expected to continue to operate at LOS "C during both morning and afternoon peak-hours.

- **County Line Road/Walgreens/North RIRO Access:** All approaches at this stop-sign controlled intersection currently operate at LOS "B" during both morning and afternoon peak-hours and are expected to do so through 2035.

- **County Line Road/Mitchell Way:** All approaches at this stop-sign controlled intersection currently operate at LOS "C" or better during both morning and afternoon peak-hours and are expected to do so through 2035. This intersection currently exists as a full movement intersection but is recommended to be limited to three-quarter movement in the future - most likely when a traffic signal is installed at the County Line Road/Austin Avenue intersection. This is based on the findings of the May, 2010 *Coal Creek Center TIA* by LSC and confirmed by this analysis.

- **E. County Line Road/Austin Avenue**: The westbound left-turn movement at this stop-sign controlled intersection currently operates at LOS "E" during the morning and afternoon peak-hours and is expected to increase to LOS "F" by 2020. By 2020, this intersection is expected to be signalized and is expected to operate at an overall LOS "C" during the morning peak-hour and LOS "B" during the afternoon peak-hour through 2035.

- **Austin Avenue/Graham Way:** All approaches at this stop-sign controlled intersection currently operate at LOS "A" during both morning and afternoon peak-hours and are expected to do so through 2035.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 9th Edition, 2012* by the Institute of Transportation Engineers (ITE) for the proposed land use. An internal capture reduction of ten percent was assumed for the development. A pass-by trip reduction of 25 percent was assumed for the shopping center land use only.

The proposed land use is projected to generate about 9,535 net external primary vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 145 primary trip vehicles would enter and about 247 primary trip vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 464 primary trip vehicles would enter and about 404 primary trip vehicles would exit.

The proposed land use is projected to generate about 2,403 pass-by vehicle-trips on the average weekday. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 27 pass-by trip vehicles would enter and about 27 pass-by trip vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 107 pass-by trip vehicles would enter and about 107 pass-by trip vehicles would exit.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the primary site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with

respect to the regional population, employment, and activity centers; and the site's proposed land use.

TRIP ASSIGNMENT

Figure 7a shows the estimated pass-by site-generated traffic volumes based on the trip generation estimate in Table 2. Figure 7b shows the estimated primary site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the trip generation estimate (from Table 2).

Figure 7c show the estimated total site-generated traffic volumes which is the sum of pass-by (Figure 7a) and primary (Figure 7b) site-generated trips.

2020 and 2035 TOTAL TRAFFIC

Figure 8 shows the 2020 total traffic which is the sum of the 2020 background traffic volumes (from Figure 4) and the total site-generated traffic volumes (from Figure 7c). Figure 8 also shows the recommended 2020 lane geometry and traffic control.

Figure 9 shows the 2035 total traffic which is the sum of 2035 background traffic volumes (from Figure 5) and the total site-generated traffic volumes (from Figure 7c). Figure 9 also shows the recommended 2035 lane geometry and traffic control.

Figure 10 details the conceptual improvements shown in Figure 8 to accommodate 2020 and 2035 total traffic.

PROJECTED LEVELS OF SERVICE

The intersections in Figures 8 and 9 were analyzed to determine the 2020 and 2035 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **Erie Parkway/E. County Line Road:** In 2020, this signalized intersection is expected to operate at LOS "C" during both morning and afternoon peak-hours. By 2035, the intersection is expected to operate at LOS "D" during the afternoon peak-hour.

- **Erie Parkway/RIRO Site Access:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2035.

- **County Line Road/Walgreens/North RIRO Access:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2035 with the addition of site traffic.

- **County Line Road/Mitchell Way:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2035 with or without the addition of site traffic assuming the intersection is converted from full movement to three-quarter movement when or after the County Line

Road/Austin Avenue intersection is signalized. This is consistent with the findings of the May 2010 *Coal Creek Center TIA* by LSC and verified by this analysis.

- **County Line Road/Austin Avenue**: As a signalized intersection it is expected to operate at an overall LOS "C" during both morning and afternoon peak-hours through 2035 with or without the addition of site traffic. Prior to signalization the side road approaches will have significant delay.

- **Austin Avenue/Graham Way:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "A" during both morning and afternoon peak-hours through 2035 with or without the addition of site traffic.

- **County Line Road/South RIRO Access:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2035.

- **Austin Avenue/East Full Movement Access:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "B" or better during both morning and afternoon peak-hours through 2035.

- **Austin Avenue/West Full Movement Access:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "B" or better during both morning and afternoon peak-hours through 2035.

- **Austin Avenue/Alley Access:** All approaches at this stop-sign controlled intersection are expected to operate at LOS "B" or better during both morning and afternoon peak-hours through 2035.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 9,535 net external primary vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 145 primary trip vehicles would enter and about 247 primary trip vehicles would exit the site. During the afternoon peak-hour, about 464 primary trip vehicles would enter and about 404 primary trip vehicles would exit.

2. The site use is projected to generate about 2,403 pass-by vehicle-trips on the average weekday. During the morning peak-hour, about 27 pass-by trip vehicles would enter and about 27 pass-by trip vehicles would exit the site. During the afternoon peak-hour, about 107 pass-by trip vehicles would enter and about 107 pass-by trip vehicles would exit.

Projected Levels of Service

3. All movements at the intersections analyzed are expected to operate at LOS "D" or better during both morning and afternoon peak-hours in 2035 assuming the recommended improvements are implemented.

Conclusions

The impact of the Four Corners development site can be accommodated by the existing and proposed roadway network with the recommended improvements below.

2020 Recommended Improvements

4. The conceptual lane geometry and traffic control improvements for the County Line Road site frontage is shown in Figure 10. These improvements will accommodate the projected traffic volumes through 2035. Beyond 2035 it is likely County Line Road will be widened to four and possibly six lanes per the *Erie Transportation Master Plan.*

5. An eastbound right-turn lane should be provided on Erie Parkway approaching the proposed right-in/right-out access. Based on the 35 mph posted speed this lane would be 190 feet plus a 120-foot transition taper.

6. A two-way left-turn lane is recommended on Austin Avenue along the site frontage consistent with Austin Avenue east of County Line Road. This can likely be accomplished by re-striping.

* * * * *

We trust our findings will assist you in gaining approval of the proposed Four Corners development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

COLORADO LICENSED
CHRISTOPHER S. MCGRANAHAN
39018
PROFESSIONAL ENGINEER

By_____
Christopher S. McGranahan, PE, PTOE
Principal

2-12-15

CSM/wc

Enclosures: Tables 1 and 2
Figures 1 - 10
Traffic Count Reports
Level of Service Definitions
Level of Service Reports

Z:\LSC\Projects\2014\141100-FourCorners\Report\FourCorners-021215.wpd

Table 1
Intersection Levels of Service Analysis
Four Corners
Erie, CO
(LSC #141100; February, 2015)

Intersection Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2020 Background Level of Service AM	2020 Background Level of Service PM	2020 Total Traffic Level of Service AM	2020 Total Traffic Level of Service PM	2035 Background Level of Service AM	2035 Background Level of Service PM	2035 Total Level of Service AM	2035 Total Level of Service PM
Erie Parkway/E. County Line Road	Signalized										
EB Left		B	B	B	B	B	B	C	B	C	C
EB Through		B	B	C	B	C	C	C	C	C	C
EB Right		B	B	C	B	C	C	C	C	D	D
WB Left		B	B	B	B	B	C	B	B	C	D
WB Through		B	B	B	B	C	B	C	B	C	B
WB Right		B	B	B	B	B	B	C	C	C	C
NB Left		C	C	C	C	C	C	D	D	D	D
NB Through		C	C	C	C	C	C	C	C	C	C
NB Right		C	C	C	C	C	C	B	C	B	C
SB Left		C	C	C	C	C	C	D	D	D	D
SB Through/Right		D	C	E	C	E	D	--	--	--	--
SB Through		--	--	--	--	--	--	C	C	C	D
SB Right		--	--	--	--	--	--	C	C	C	C
Entire Intersection Delay (sec /veh)		24.8	19.9	28.8	21.4	32.0	26.6	28.8	28.9	31.0	36.0
Entire Intersection LOS		C	B	C	C	C	C	C	C	C	D
Erie Parkway/RIRO Site Access											
NB Approach		--	--	--	--	B	B	--	--	B	D
Critical Movement Delay		--	--	--	--	10.0	14.1	--	--	10.9	26.4
E. County Line Road/Walgreens/North RIRO	TWSC										
EB Approach		--	--	--	--	B	C	--	--	C	D
WB Approach		B	B	B	B	B	B	B	B	B	B
Critical Movement Delay		10.2	10.2	10.6	10.6	13.5	16.4	13.2	13.3	19.8	27.3
E. County Line Road/Mitchell Way	TWSC										
NB Left		--	--	--	--	A	A	--	--	B	B
EB Approach		--	--	--	--	B	B	--	--	C	C
WB Approach		C	C	B	B	B	B	C	C	C	D
SB Left		A	A	A	A	A	A	B	B	B	B
Critical Movement Delay		17.2	15.5	13.7	12.8	13.3	14.2	22.4	23.2	21.1	26.5
E. County Line Road/Austin Avenue	TWSC										
NB Left		A	A	A	A	--	--	--	--	--	--
EB Approach		D	D	E	D	--	--	--	--	--	--
WB Left		E	E	F	F	--	--	--	--	--	--
WB Through/Right		D	C	F	E	--	--	--	--	--	--
SB Left		A	A	A	A	--	--	--	--	--	--
Critical Movement Delay		49.3	43.1	123.3	103.1	--	--	--	--	--	--
	Signalized										
EB Left		--	--	--	--	C	C	C	C	C	C
EB Through/Right		--	--	--	--	C	C	D	D	D	D
WB Left		--	--	--	--	C	C	C	C	C	C
WB Through/Right		--	--	--	--	C	C	C	D	D	D
NB Left		--	--	--	--	B	B	B	B	B	C
NB Through		--	--	--	--	B	B	C	B	D	C
NB Right		--	--	--	--	A	B	B	A	B	B
SB Left		--	--	--	--	B	B	C	B	C	B
SB Through		--	--	--	--	B	B	B	B	C	C
SB Right		--	--	--	--	A	B	A	A	B	B
Entire Intersection Delay (sec /veh)		--	--	--	--	16.1	16.1	25.7	19.4	30.6	29.4
Entire Intersection LOS		--	--	--	--	B	B	C	B	C	C
Austin Avenue/Graham Way	TWSC										
NB Approach		A	A	A	A	A	A	A	A	A	A
WB Approach		A	A	A	A	A	A	A	A	A	A
Critical Movement Delay		8.8	8.6	8.9	8.7	9.2	9.4	9.3	9.0	9.6	9.8
E. County Line Road/South RIRO Access	TWSC										
EB Approach		--	--	--	--	B	B	--	--	C	C
Critical Movement Delay		--	--	--	--	12.8	13.7	--	--	17.2	18.9
Austin Avenue/East FMA Access	TWSC										
EB Approach		--	--	--	--	A	A	--	--	A	A
SB Approach						A	B			B	B
Critical Movement Delay		--	--	--	--	9.7	11.6	--	--	10.5	12.7
Austin Avenue/West FMA Access	TWSC										
EB Approach		--	--	--	--	A	A	--	--	A	A
SB Approach						A	A			B	B
Critical Movement Delay		--	--	--	--	9.4	9.8	--	--	10.0	10.3
Austin Avenue/Alley Access	TWSC										
EB Approach		--	--	--	--	A	A	--	--	A	A
SB Approach		--	--	--	--	A	B	--	--	B	B
Critical Movement Delay		--	--	--	--	9.5	10.1	--	--	10.2	10.7

Table 2
ESTIMATED TRAFFIC GENERATION
Four Corners
Erie, CO
(LSC #141100; February, 2015)

Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday	AM Peak-Hour In	AM Peak-Hour Out	PM Peak-Hour In	PM Peak-Hour Out	Total Trips Generated Average Weekday	AM Peak-Hour In	AM Peak-Hour Out	PM Peak-Hour In	PM Peak-Hour Out
Single-Family [2]	45 DU [3]	9.52	0.188	0.563	0.630	0.370	428	8	25	28	17
Multi-Family [4]	485 DU	6.65	0.102	0.408	0.403	0.217	3,225	49	198	195	105
Shopping Center North [5]	85.33 KSF [6]	56.32	0.785	0.481	2.411	2.612	4,806	67	41	206	223
Shopping Center South [5]	85.33 KSF	56.32	0.785	0.481	2.411	2.612	4,806	67	41	206	223
						Subtotal =	**13,265**	**191**	**305**	**635**	**568**
						Internal Capture Reduction (10%)	1,327	19	31	64	57
						Pass-By Trips (25%) [7]	2,403	27	27	107	107
						Net External Trip Total =	**9,535**	**145**	**247**	**464**	**404**

Notes:
(1) Source: *Trip Generation*, Institute of Transportation Engineers, 9th Edition, 2012.
(2) ITE Land Use No. 210 - Single-Family Detached Housing
(3) DU = Dwelling Units
(4) ITE Land Use No. 220 - Apartments
(5) ITE Land Use No. 820 - Shopping Center - formula rates based on the total square footage
(6) KSF = 1,000 Square Feet
(7) Pass-by trips assumed for shopping center land use only

Approximate Scale
Scale: 1"=1,200'

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Figure 1

Vicinity Map

Four Corners (LSC # 141100)

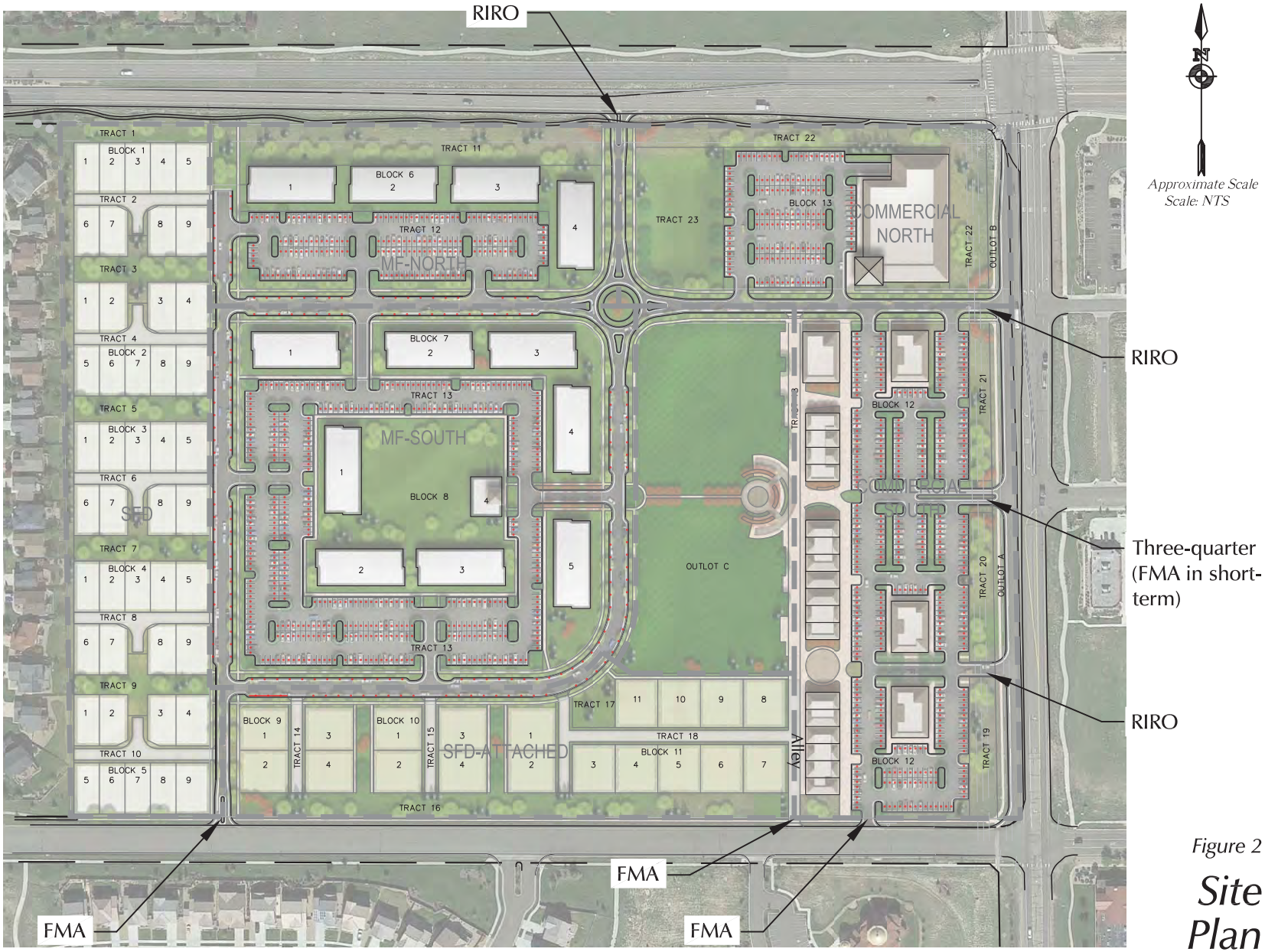
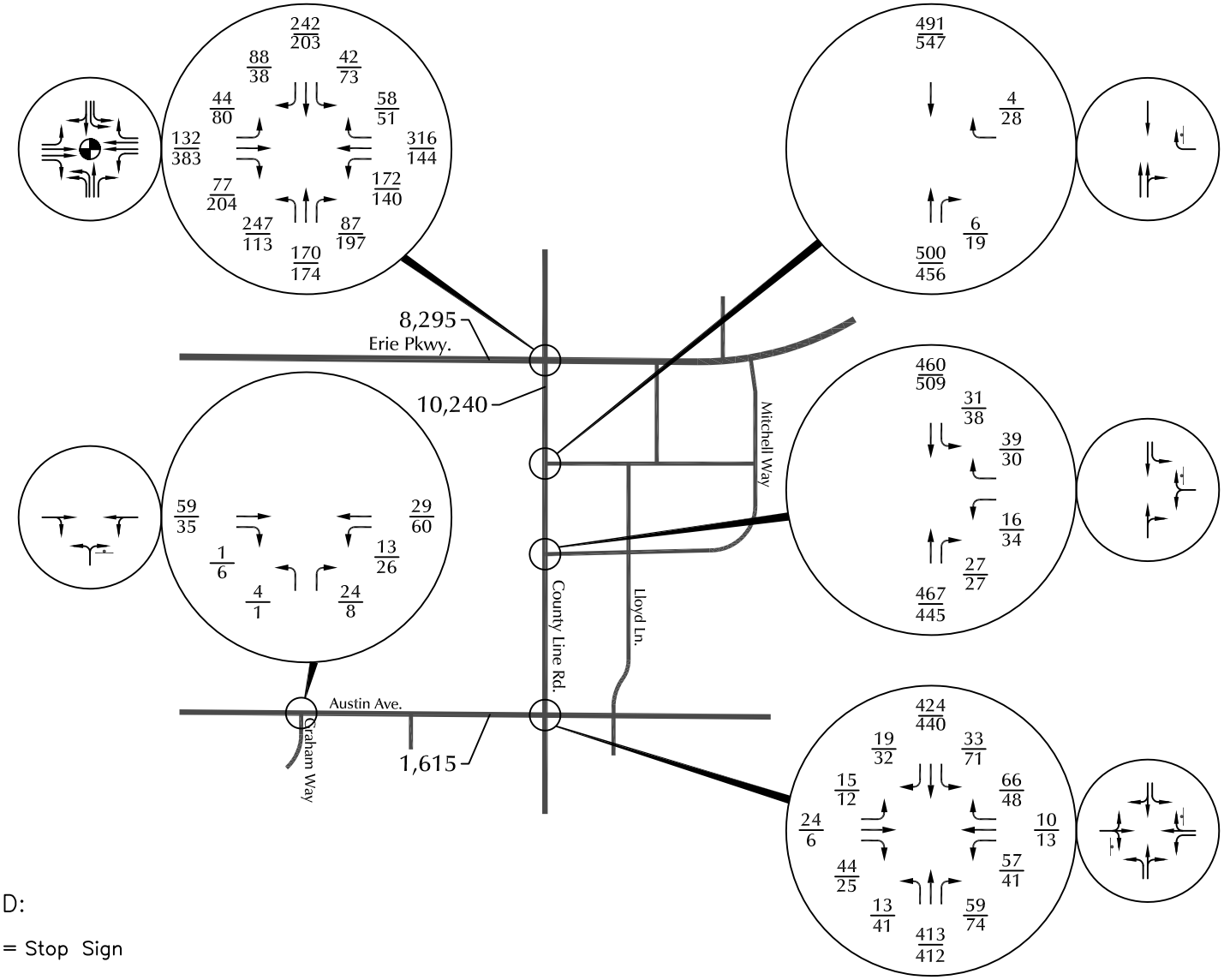


Figure 2

Site Plan

Four Corners (LSC # 141100)

LSC TRANSPORTATION CONSULTANTS, INC.



Approximate Scale
Scale: 1"=600'

LEGEND:

= Stop Sign

= Traffic Signal

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

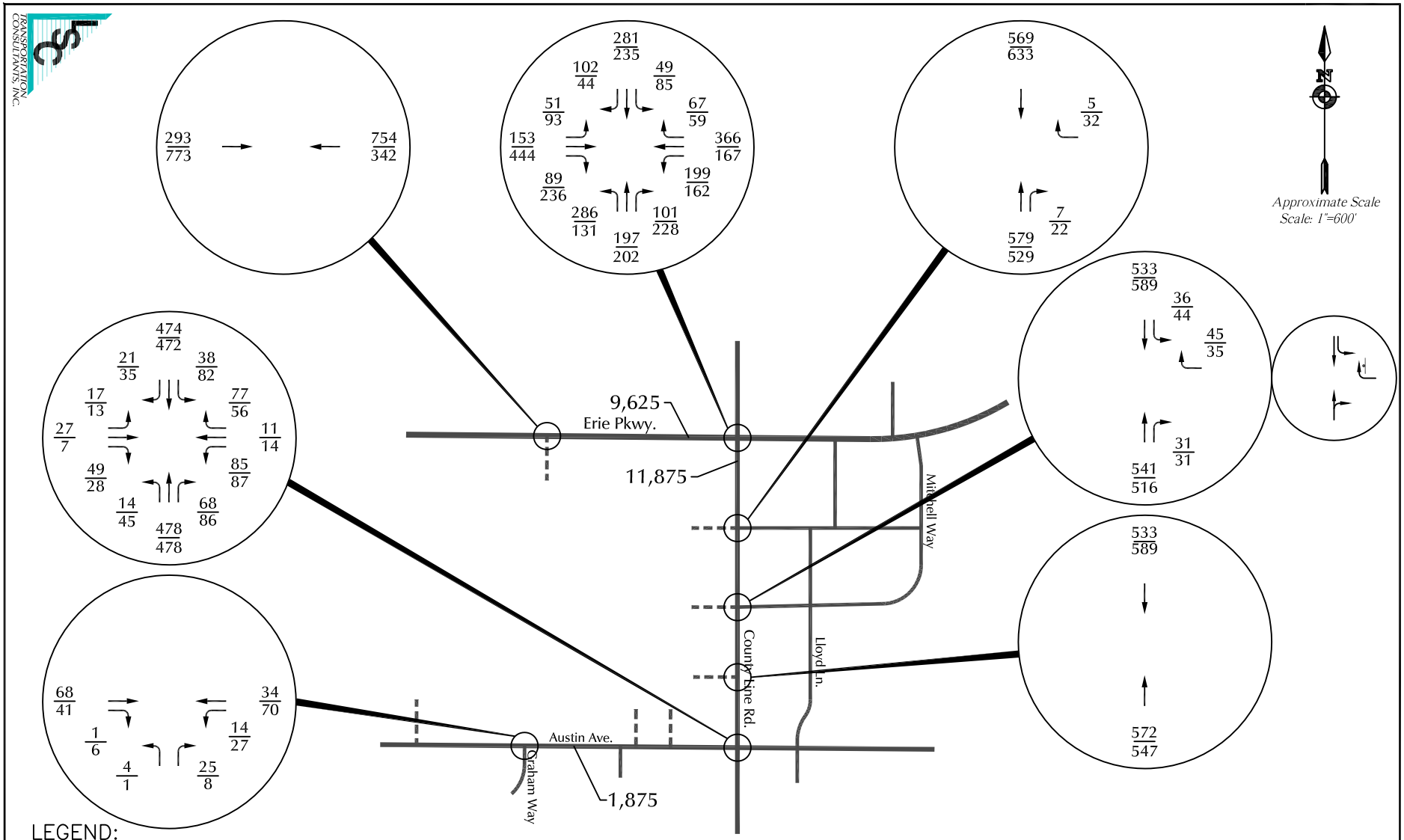
2,500 = Average Daily Traffic

Figure 3

Existing Traffic, Lane Geometry and Traffic Control

Four Corners (LSC # 141100)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND:

= Stop Sign

= Traffic Signal

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

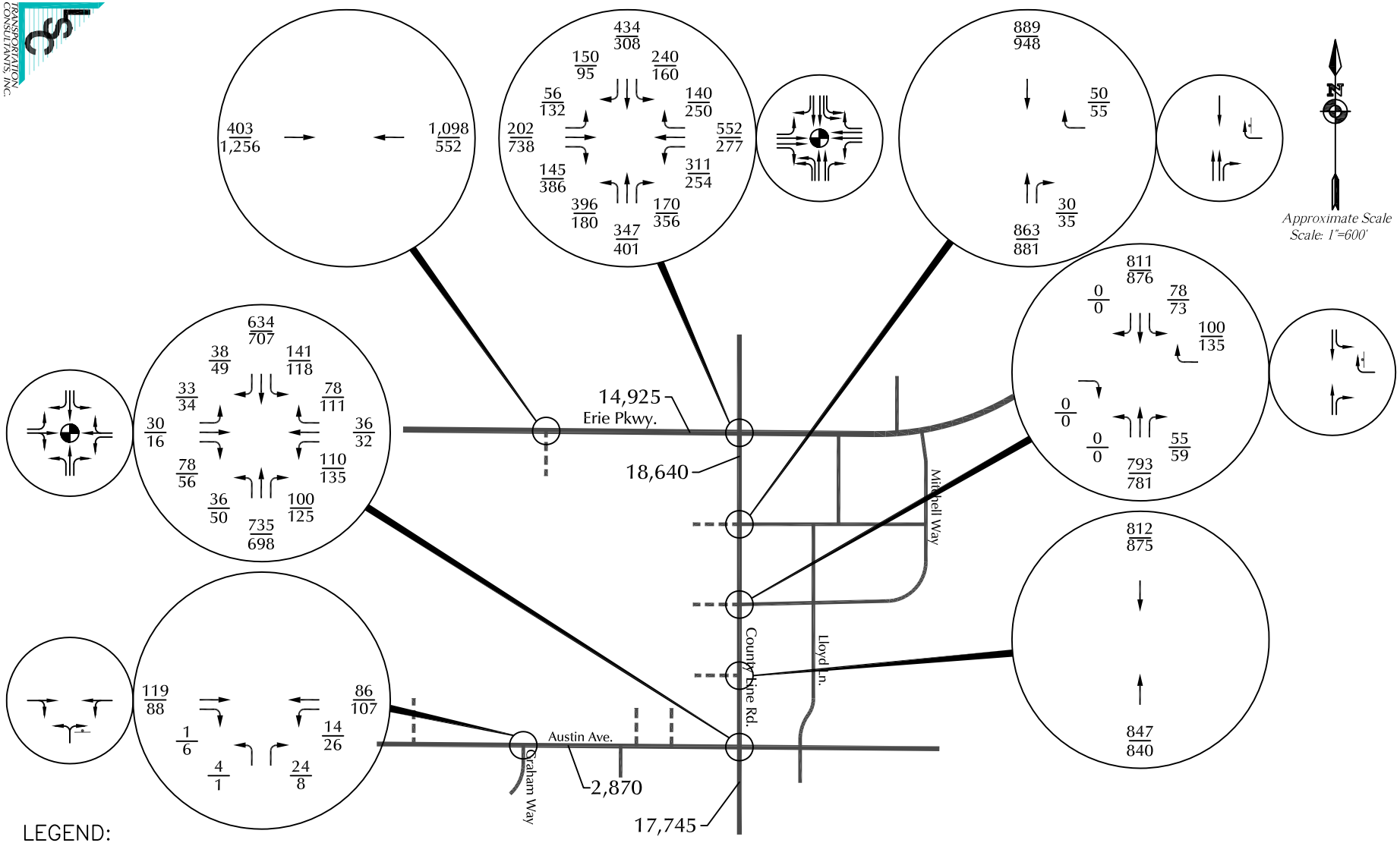
2,500 = Average Daily Traffic

Note:
Lane geometry and traffic control is the same as shown on Figure 3 unless shown different above.

Figure 4

Year 2020 Background Traffic

Four Corners (LSC # 141100)



LEGEND:

= Stop Sign

= Traffic Signal

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

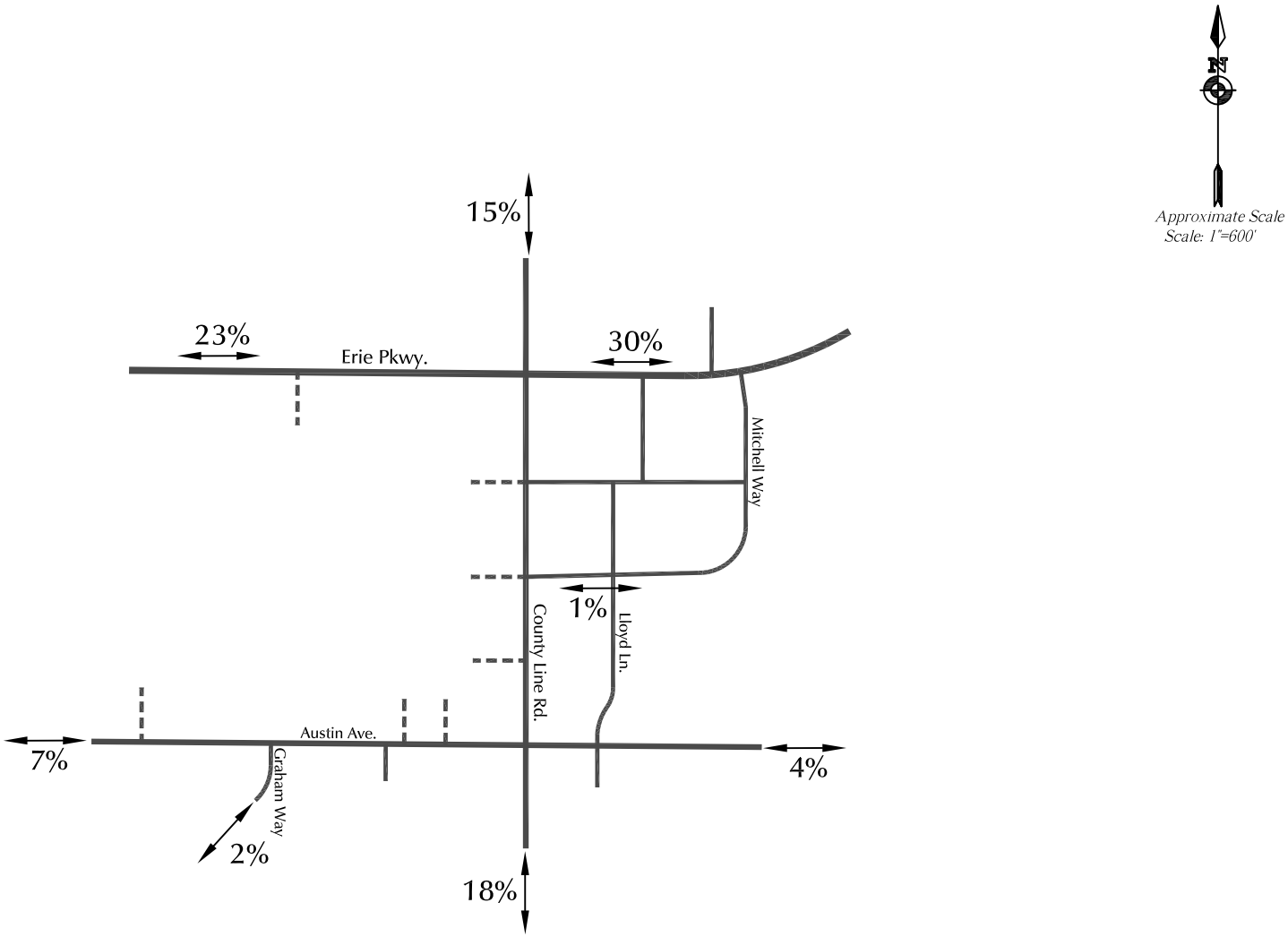
2,500 = Average Daily Traffic

Note:
Lane geometry and traffic control is the same as shown on Figure 3 unless shown different above.

Figure 5

Year 2035 Background Traffic

Four Corners (LSC # 141100)



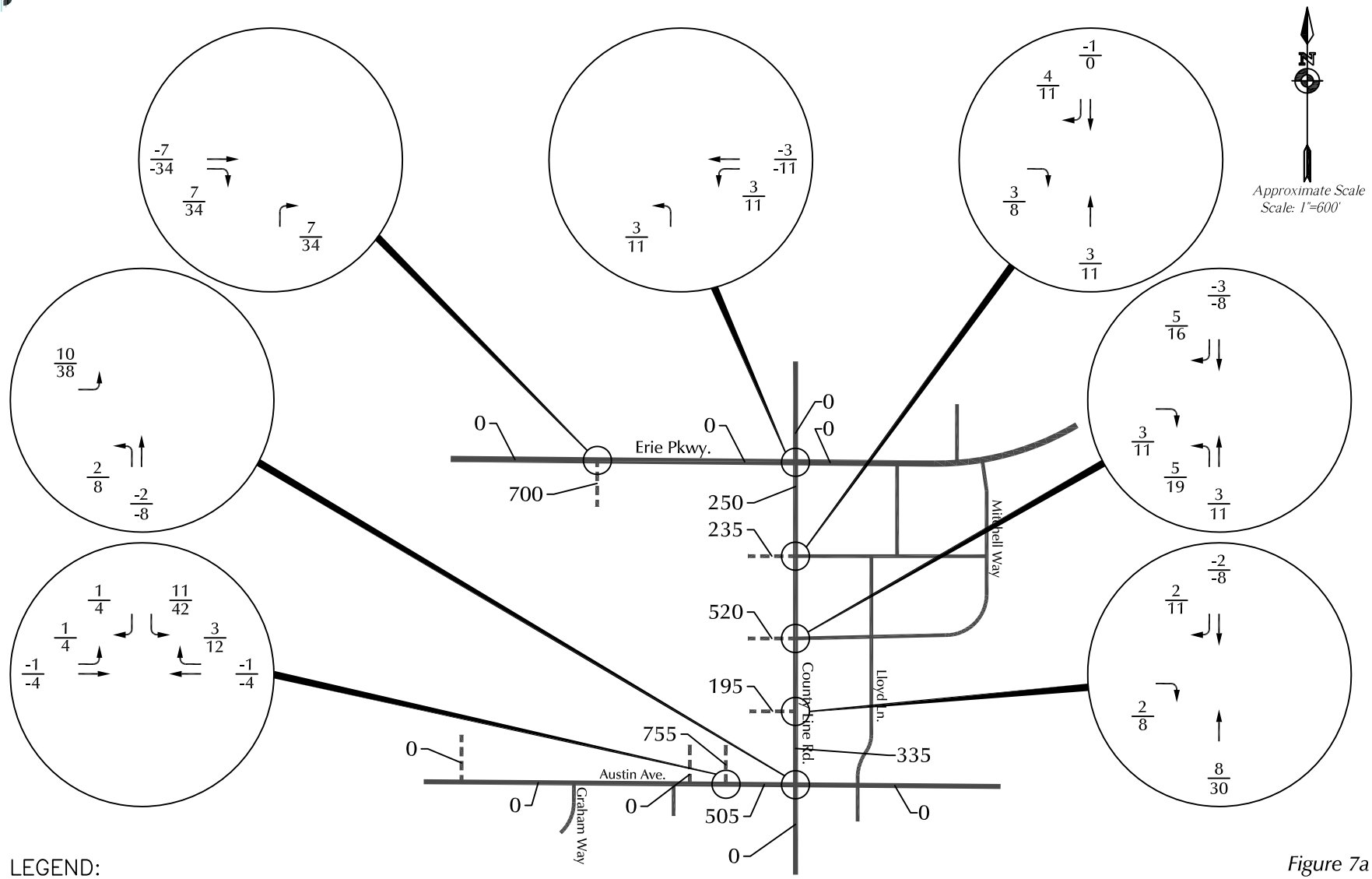
LEGEND:

65% = Percent Directional Distribution

Figure 6

Directional Distribution of Primary Site-Generated Traffic

Four Corners (LSC # 141100)



LEGEND:

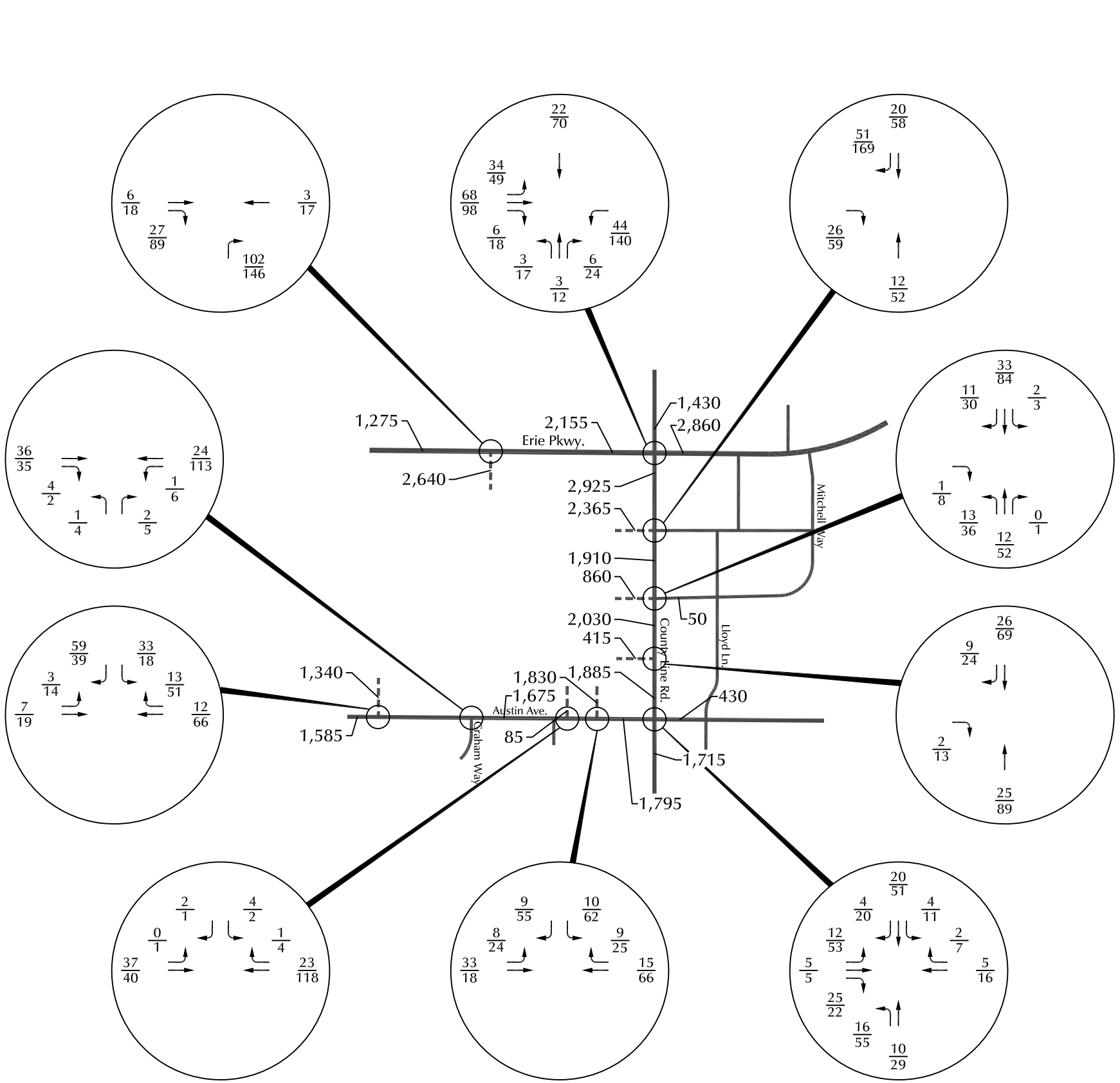
$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

2,500 = Average Daily Traffic

Figure 7a

Assignment of Pass-by Site-Generated Traffic

Four Corners (LSC # 141100)



LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

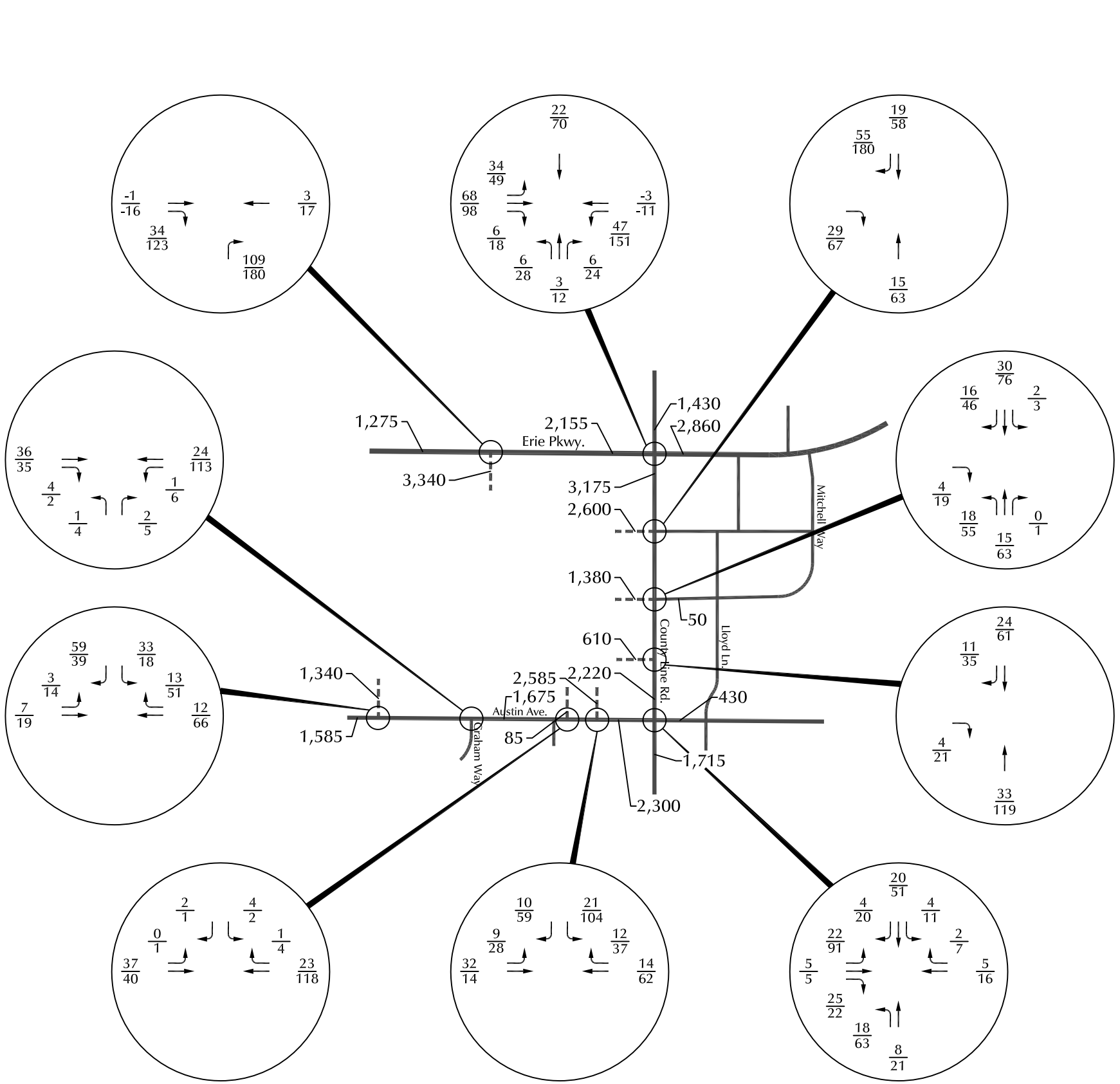
2,500 = Average Daily Traffic

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 7b

Assignment of Primary Site-Generated Traffic

Four Corners (LSC # 141100)



LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

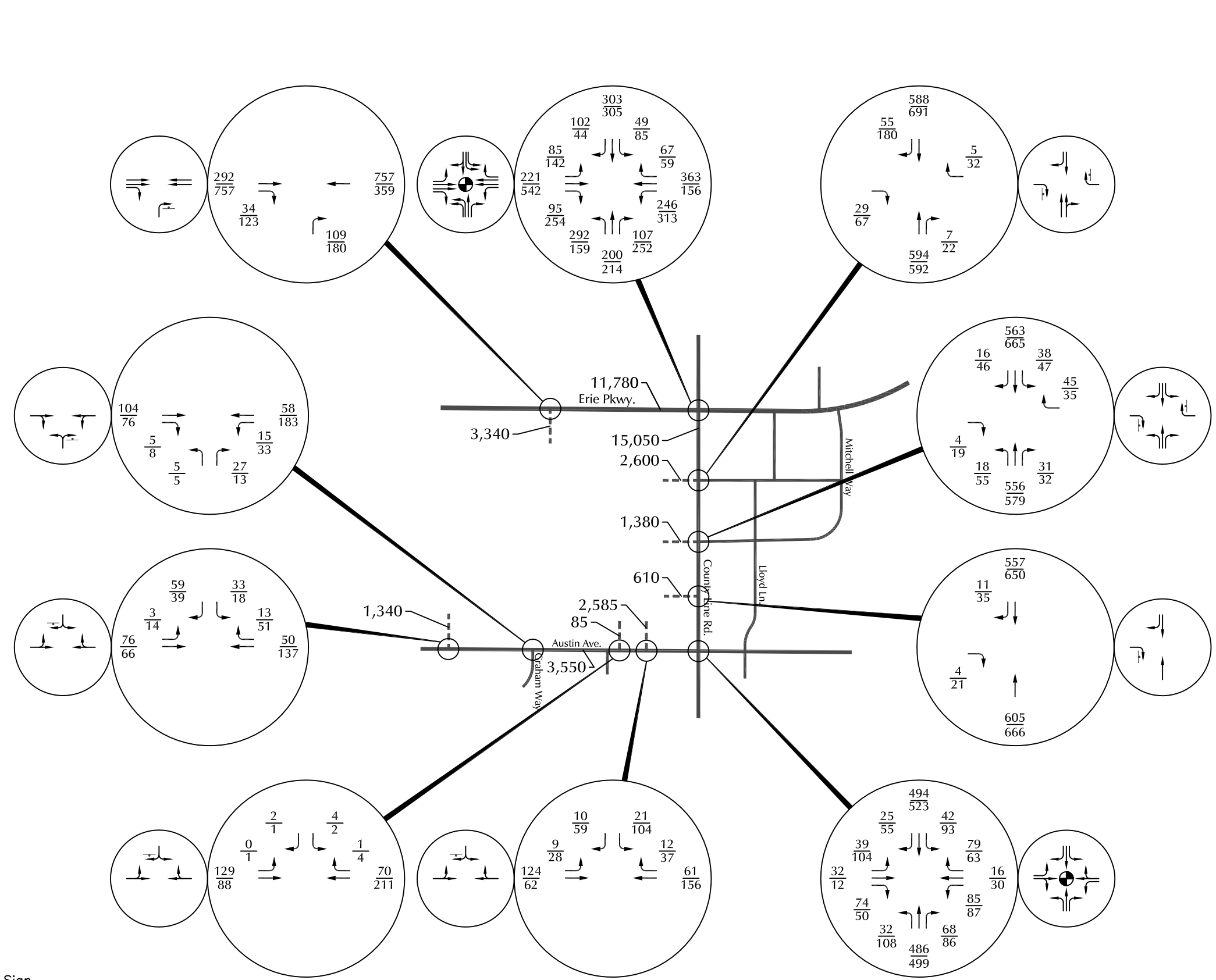
2,500 = Average Daily Traffic

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 7c

Assignment of Total Site-Generated Traffic

Four Corners (LSC # 141100)



LEGEND:

= Stop Sign

= Traffic Signal

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

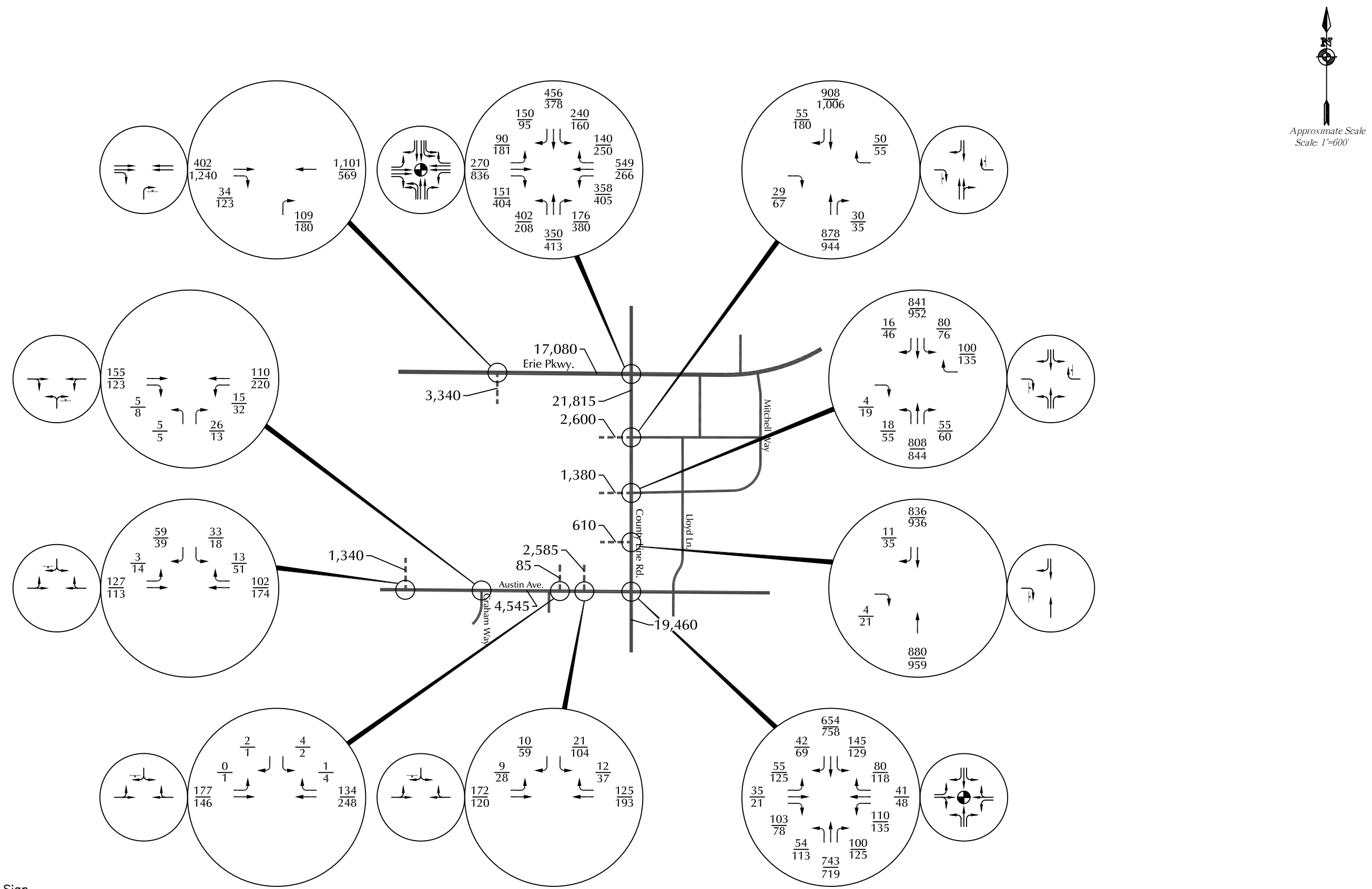
2,500 = Average Daily Traffic

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 8

Year 2020 Total Traffic, Lane Geometry and Traffic Control

Four Corners (LSC # 141100)



LEGEND:

= Stop Sign

= Traffic Signal

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

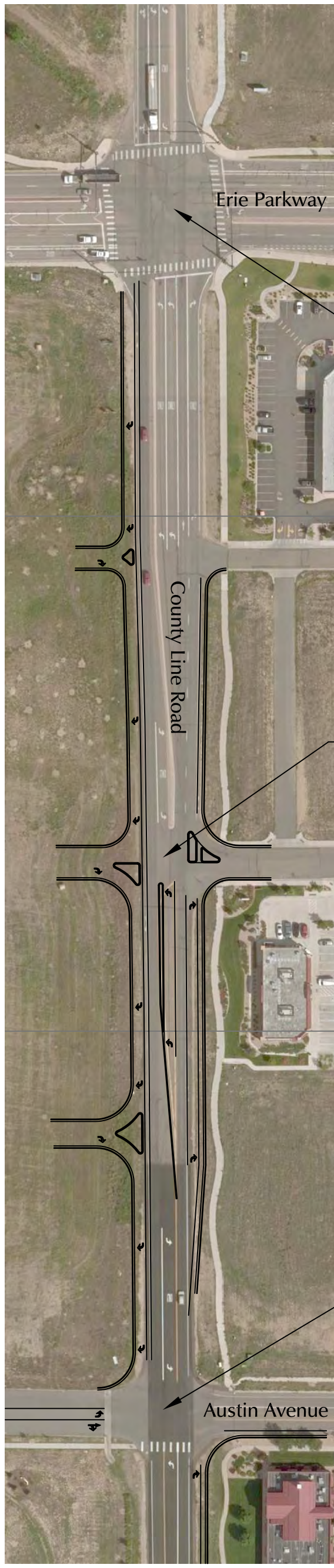
2,500 = Average Daily Traffic

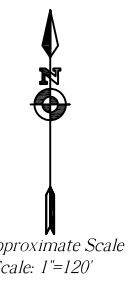
LSC TRANSPORTATION CONSULTANTS, INC.

Figure 9

Year 2035 Total Traffic, Lane Geometry and Traffic Control

Four Corners (LSC # 141100)





Existing Traffic Signal

Existing Full Movement Access to be constructed to Three-Quarter Only when the County Line Road/Austin Avenue intersection is signalized.

Traffic Signal to be Installed when Warranted

Note:
Auxiliary lanes on the east side of County Line Road are expected to be constructed by future development on the east side of County Line Road.

Figure 10

Recommended Improvements Based on 2020 Total Traffic

Four Corners (LSC # 141100)

LSC TRANSPORTATION CONSULTANTS, INC.

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: ERIE PKWY
CITY: ERIE
COUNTY: WELD

File Name : COUNERIE
Site Code : 02148992
Start Date : 12/4/2014
Page No : 1

Groups Printed- VEHICLES

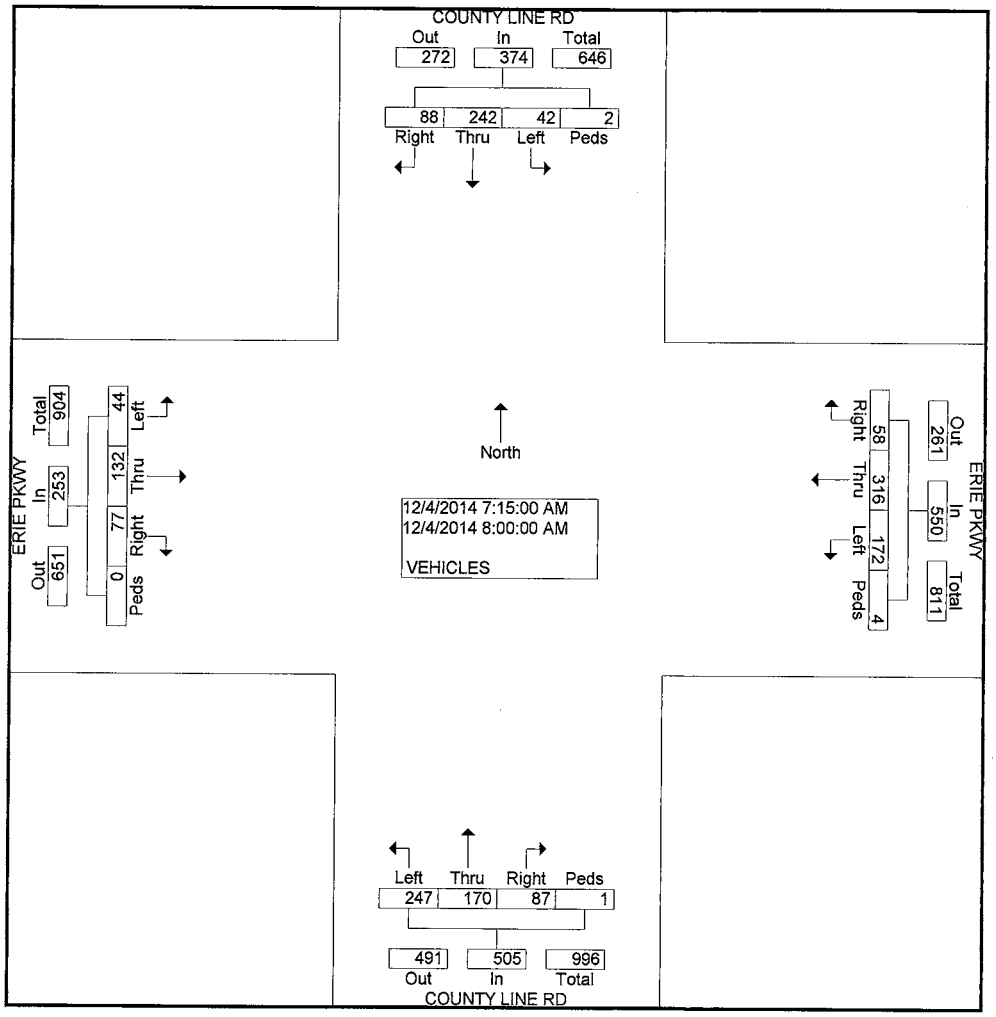
	COUNTY LINE RD Southbound				ERIE PKWY Westbound				COUNTY LINE RD Northbound				ERIE PKWY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	4	26	7	0	19	51	8	0	17	9	4	0	3	26	7	0	181
06:45 AM	6	44	10	0	30	45	14	0	35	13	17	0	2	19	17	0	252
Total	10	70	17	0	49	96	22	0	52	22	21	0	5	45	24	0	433
07:00 AM	13	45	7	1	24	58	8	0	42	29	27	0	6	39	12	1	312
07:15 AM	7	40	23	0	48	84	11	2	52	30	19	1	6	34	18	0	375
07:30 AM	6	63	15	1	46	81	18	2	60	52	17	0	13	39	12	0	425
07:45 AM	16	89	32	0	37	80	19	0	66	57	25	0	20	31	22	0	494
Total	42	237	77	2	155	303	56	4	220	168	88	1	45	143	64	1	1606
08:00 AM	13	50	18	1	41	71	10	0	69	31	26	0	5	28	25	0	388
08:15 AM	18	40	10	0	37	55	9	0	59	52	23	0	6	35	20	0	364
Total	31	90	28	1	78	126	19	0	128	83	49	0	11	63	45	0	752
04:00 PM	23	52	10	1	35	25	11	0	31	49	38	0	15	59	28	0	377
04:15 PM	17	40	14	1	41	36	13	0	13	34	64	0	22	84	35	0	414
04:30 PM	22	61	14	1	27	34	12	1	32	48	40	0	15	94	50	0	451
04:45 PM	20	51	10	0	40	40	9	0	19	24	50	0	17	95	38	0	413
Total	82	204	48	3	143	135	45	1	95	155	192	0	69	332	151	0	1655
05:00 PM	14	38	12	1	32	34	16	0	34	44	54	0	26	96	51	0	452
05:15 PM	17	53	2	2	41	36	14	0	28	58	53	0	22	98	65	0	489
05:30 PM	18	54	12	0	28	38	19	0	29	15	48	0	27	115	48	0	451
05:45 PM	12	43	3	0	27	29	10	0	18	29	49	0	28	101	42	0	391
Total	61	188	29	3	128	137	59	0	109	146	204	0	103	410	206	0	1783
Grand Total	226	789	199	9	553	797	201	5	604	574	554	1	233	993	490	1	6229
Apprch %	18.5	64.5	16.3	0.7	35.5	51.2	12.9	0.3	34.9	33.1	32.0	0.1	13.6	57.8	28.5	0.1	
Total %	3.6	12.7	3.2	0.1	8.9	12.8	3.2	0.1	9.7	9.2	8.9	0.0	3.7	15.9	7.9	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: ERIE PKWY
CITY: ERIE
COUNTY: WELD

File Name : COUNERIE
Site Code : 02148992
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					ERIE PKWY Westbound					COUNTY LINE RD Northbound					ERIE PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:30 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	42	242	88	2	374	172	316	58	4	550	247	170	87	1	505	44	132	77	0	253	1682
Percent	11.2	64.7	23.5	0.5		31.3	57.5	10.5	0.7		48.9	33.7	17.2	0.2		17.4	52.2	30.4	0.0		
07:45 Volume	16	89	32	0	137	37	80	19	0	136	66	57	25	0	148	20	31	22	0	73	494
Peak Factor																					0.851
High Int.	07:45 AM					07:30 AM					07:45 AM					07:45 AM					
Volume	16	89	32	0	137	46	81	18	2	147	66	57	25	0	148	20	31	22	0	73	
Peak Factor					0.682					0.935					0.853					0.866	

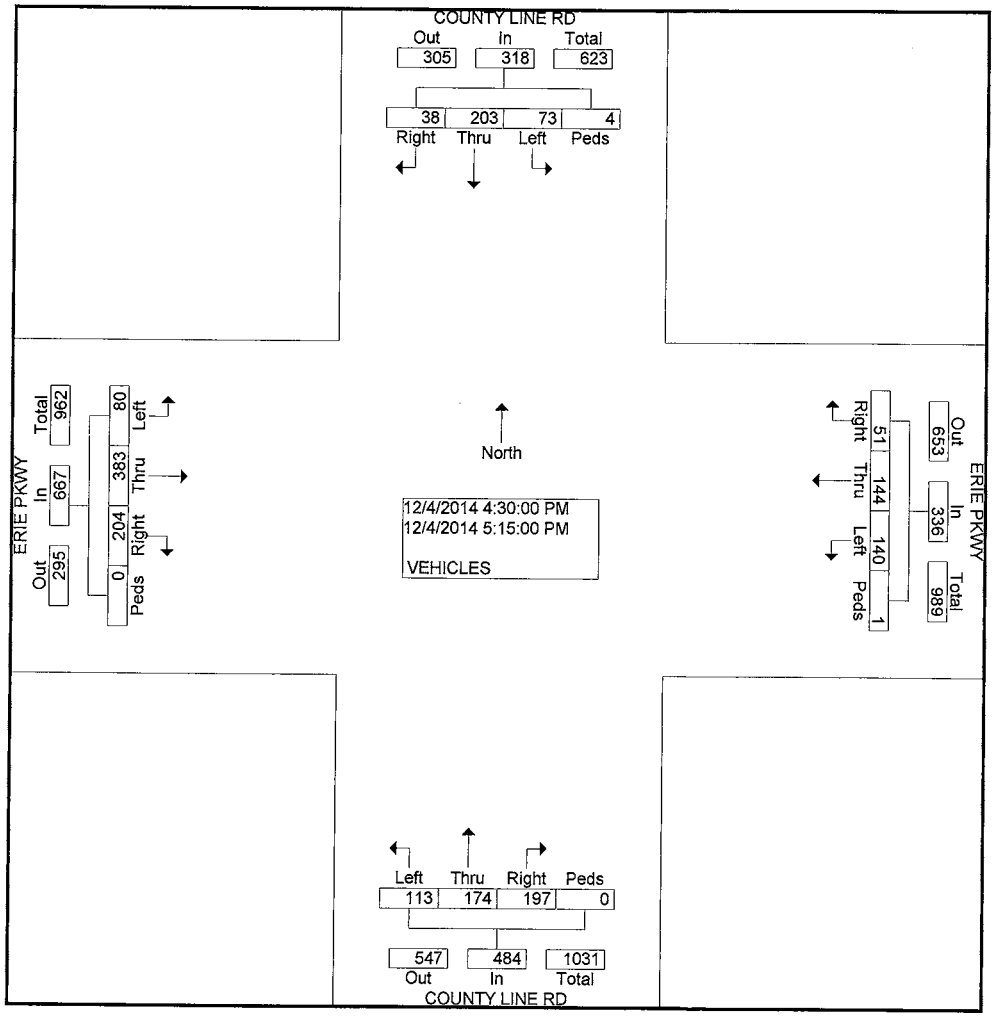


COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: ERIE PKWY
CITY: ERIE
COUNTY: WELD

File Name : COUNERIE
Site Code : 02148992
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					ERIE PKWY Westbound					COUNTY LINE RD Northbound					ERIE PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	73	203	38	4	318	140	144	51	1	336	113	174	197	0	484	80	383	204	0	667	1805
Percent	23.0	63.8	11.9	1.3		41.7	42.9	15.2	0.3		23.3	36.0	40.7	0.0		12.0	57.4	30.6	0.0		
05:15 Volume	17	53	2	2	74	41	36	14	0	91	28	58	53	0	139	22	98	65	0	185	489
Peak Factor																					0.923
High Int.	04:30 PM					05:15 PM					05:15 PM					05:15 PM					
Volume	22	61	14	1	98	41	36	14	0	91	28	58	53	0	139	22	98	65	0	185	
Peak Factor					0.811					0.923					0.871					0.901	



COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: WALGREENS ACCESS RD
CITY: ERIE
COUNTY: WELD

File Name : COUNWALG
Site Code : 00000016
Start Date : 12/4/2014
Page No : 1

Groups Printed- VEHICLES

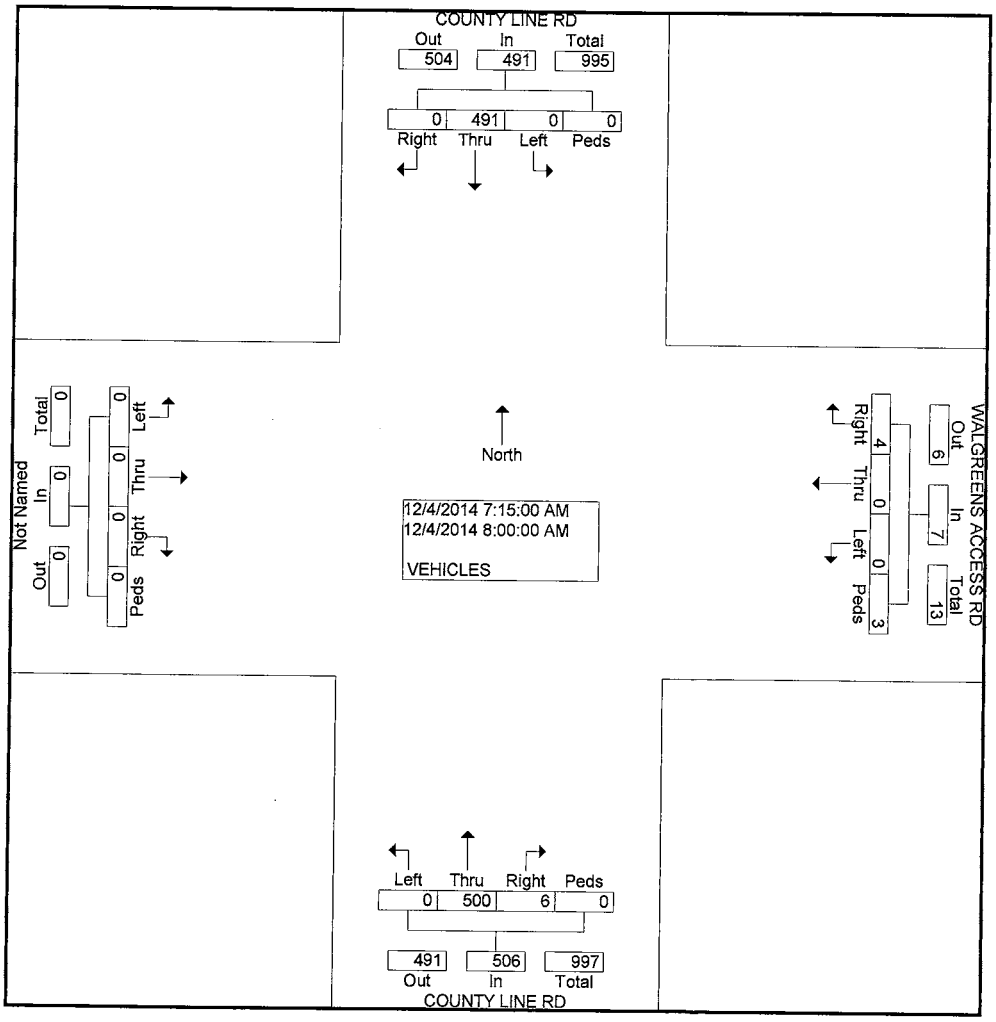
	COUNTY LINE RD Southbound				WALGREENS ACCESS RD Westbound				COUNTY LINE RD Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	52	0	0	0	0	0	0	0	30	0	0	0	0	0	0	82
06:45 AM	0	91	0	0	0	0	0	0	0	65	1	0	0	0	0	0	157
Total	0	143	0	0	0	0	0	0	0	95	1	0	0	0	0	0	239
07:00 AM	0	81	0	0	0	0	0	1	0	98	0	0	0	0	0	1	181
07:15 AM	0	106	0	0	0	0	0	1	0	101	1	0	0	0	0	0	209
07:30 AM	0	121	0	0	0	0	0	1	0	129	1	0	0	0	0	0	252
07:45 AM	0	148	0	0	0	0	1	0	0	147	1	0	0	0	0	0	297
Total	0	456	0	0	0	0	1	3	0	475	3	0	0	0	0	1	939
08:00 AM	0	116	0	0	0	0	3	1	0	123	3	0	0	0	0	0	246
08:15 AM	0	97	0	0	0	0	5	0	0	129	3	0	0	0	0	0	234
Total	0	213	0	0	0	0	8	1	0	252	6	0	0	0	0	0	480
04:00 PM	0	115	0	0	0	0	12	0	0	106	9	0	0	0	0	0	242
04:15 PM	0	116	0	0	0	0	5	0	0	106	5	0	0	0	0	0	232
04:30 PM	0	138	0	0	0	0	0	1	0	120	5	0	0	0	0	0	264
04:45 PM	0	129	0	0	0	0	7	0	0	86	6	0	0	0	0	0	228
Total	0	498	0	0	0	0	24	1	0	418	25	0	0	0	0	0	966
05:00 PM	0	121	0	0	0	0	13	1	0	119	5	0	0	0	0	0	259
05:15 PM	0	159	0	0	0	0	8	0	0	131	3	0	0	0	0	0	301
05:30 PM	0	130	0	0	0	0	3	0	0	89	6	0	0	0	0	0	228
05:45 PM	0	112	0	0	0	0	4	0	0	92	4	0	0	0	0	0	212
Total	0	522	0	0	0	0	28	1	0	431	18	0	0	0	0	0	1000
Grand Total	0	1832	0	0	0	0	61	6	0	1671	53	0	0	0	0	1	3624
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	91.0	9.0	0.0	96.9	3.1	0.0	0.0	0.0	0.0	100.0	
Total %	0.0	50.6	0.0	0.0	0.0	0.0	1.7	0.2	0.0	46.1	1.5	0.0	0.0	0.0	0.0	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: WALGREENS ACCESS RD
CITY: ERIE
COUNTY: WELD

File Name : COUNWALG
Site Code : 00000016
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					WALGREENS ACCESS RD Westbound					COUNTY LINE RD Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	491	0	0	491	0	0	4	3	7	0	500	6	0	506	0	0	0	0	0	1004
Percent	0.0	100.0	0.0	0.0		0.0	0.0	57.1	42.9		0.0	98.8	1.2	0.0		0.0	0.0	0.0	0.0		
07:45 Volume	0	148	0	0	148	0	0	1	0	1	0	147	1	0	148	0	0	0	0	0	297
Peak Factor																					0.845
High Int.	07:45 AM					08:00 AM					07:45 AM										
Volume	0	148	0	0	148	0	0	3	1	4	0	147	1	0	148						
Peak Factor					0.829					0.438					0.855						

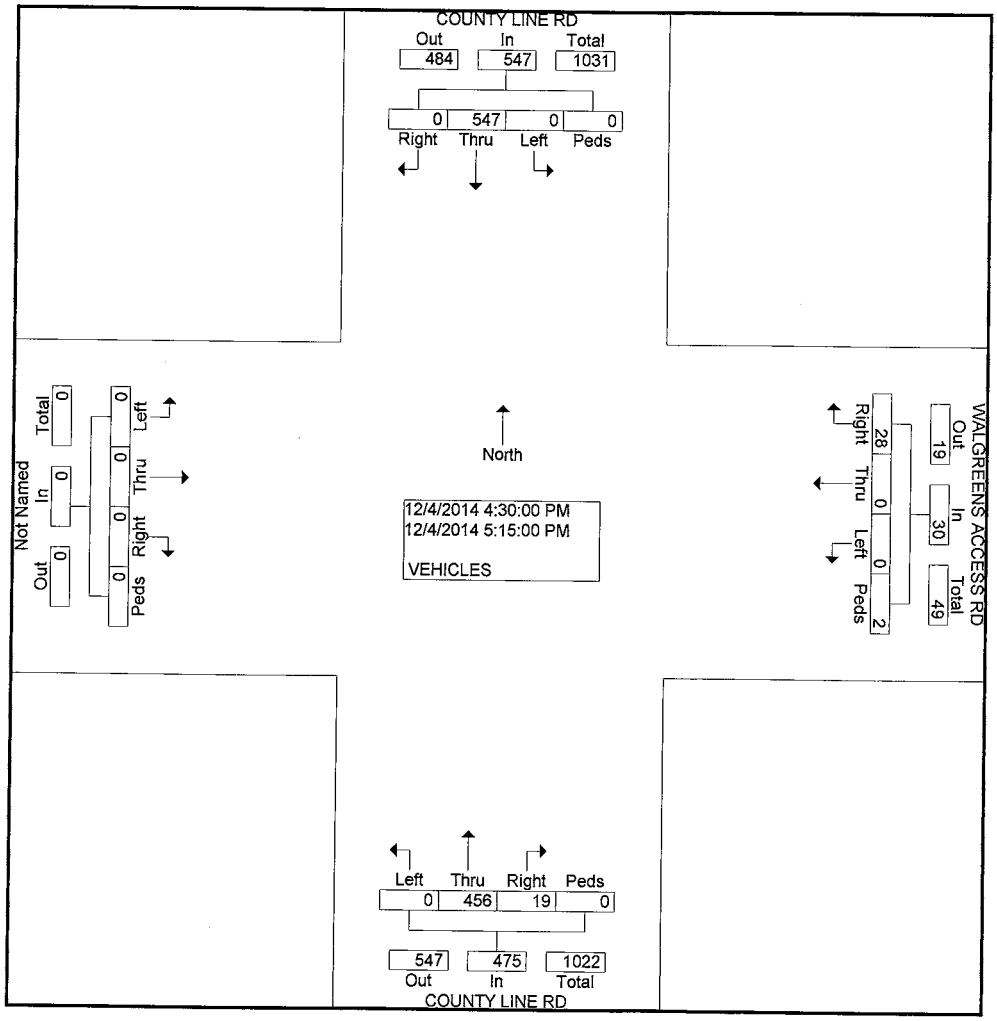


COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: WALGREENS ACCESS RD
CITY: ERIE
COUNTY: WELD

File Name : COUNWALG
Site Code : 00000016
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					WALGREENS ACCESS RD Westbound					COUNTY LINE RD Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	0	547	0	0	547	0	0	28	2	30	0	456	19	0	475	0	0	0	0	0	1052
Percent	0.0	100.0	0.0	0.0		0.0	0.0	93.3	6.7		0.0	96.0	4.0	0.0		0.0	0.0	0.0	0.0		
05:15 Volume	0	159	0	0	159	0	0	8	0	8	0	131	3	0	134	0	0	0	0	0	301
Peak Factor																					0.874
High Int.	05:15 PM					05:00 PM					05:15 PM										
Volume	0	159	0	0	159	0	0	13	1	14	0	131	3	0	134						
Peak Factor					0.860					0.536					0.886						



COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: MITCHELL WAY
CITY: ERIE
COUNTY: WELD

File Name : COUNMITC
Site Code : 00000013
Start Date : 12/4/2014
Page No : 1

Groups Printed- VEHICLES

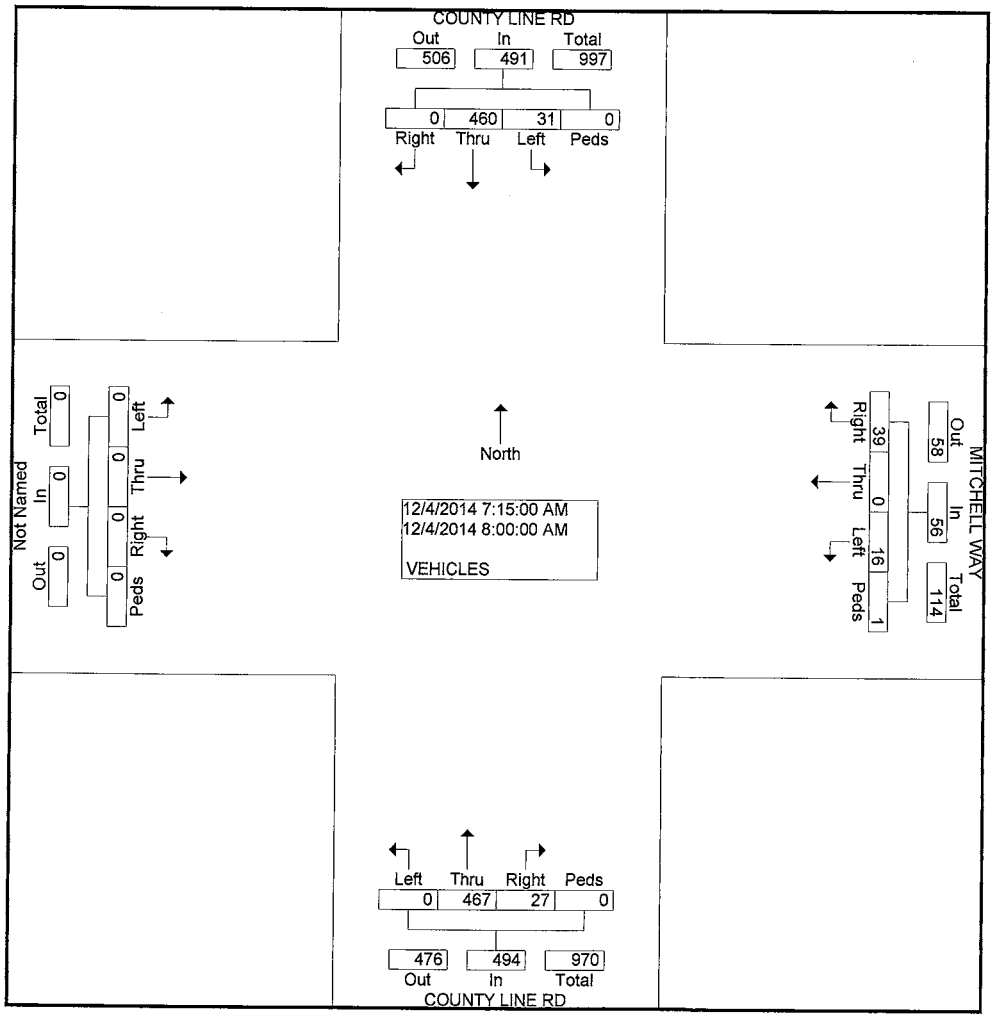
	COUNTY LINE RD Southbound				MITCHELL WAY Westbound				COUNTY LINE RD Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	4	48	0	0	6	0	3	0	0	27	4	0	0	0	0	0	92
06:45 AM	10	81	0	0	5	0	6	0	0	60	6	0	0	0	0	0	168
Total	14	129	0	0	11	0	9	0	0	87	10	0	0	0	0	0	260
07:00 AM	5	76	0	0	5	0	9	1	0	89	4	0	0	0	0	1	190
07:15 AM	6	100	0	0	1	0	10	0	0	92	2	0	0	0	0	0	211
07:30 AM	7	114	0	0	5	0	8	0	0	122	7	0	0	0	0	0	263
07:45 AM	10	138	0	0	5	0	9	0	0	139	6	0	0	0	0	0	307
Total	28	428	0	0	16	0	36	1	0	442	19	0	0	0	0	1	971
08:00 AM	8	108	0	0	5	0	12	1	0	114	12	0	0	0	0	0	260
08:15 AM	12	85	0	0	8	0	22	0	0	110	4	0	0	0	0	0	241
Total	20	193	0	0	13	0	34	1	0	224	16	0	0	0	0	0	501
04:00 PM	9	106	0	0	6	0	10	0	0	105	6	0	0	0	0	0	242
04:15 PM	16	100	0	0	10	0	6	0	0	105	2	0	0	0	0	0	239
04:30 PM	11	127	0	0	14	0	8	0	0	117	8	0	0	0	0	0	285
04:45 PM	7	122	0	0	10	0	7	0	0	85	5	0	0	0	0	0	236
Total	43	455	0	0	40	0	31	0	0	412	21	0	0	0	0	0	1002
05:00 PM	8	113	0	0	5	0	5	3	0	119	8	0	0	0	0	0	261
05:15 PM	12	147	0	0	5	0	10	0	0	124	6	0	0	0	0	0	304
05:30 PM	11	119	0	0	8	0	4	1	0	91	4	0	0	0	0	0	238
05:45 PM	6	106	0	0	4	0	6	0	0	90	4	0	0	0	0	0	216
Total	37	485	0	0	22	0	25	4	0	424	22	0	0	0	0	0	1019
Grand Total	142	1690	0	0	102	0	135	6	0	1589	88	0	0	0	0	1	3753
Apprch %	7.8	92.2	0.0	0.0	42.0	0.0	55.6	2.5	0.0	94.8	5.2	0.0	0.0	0.0	0.0	100.0	
Total %	3.8	45.0	0.0	0.0	2.7	0.0	3.6	0.2	0.0	42.3	2.3	0.0	0.0	0.0	0.0	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: MITCHELL WAY
CITY: ERIE
COUNTY: WELD

File Name : COUNMITC
Site Code : 00000013
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					MITCHELL WAY Westbound					COUNTY LINE RD Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	31	460	0	0	491	16	0	39	1	56	0	467	27	0	494	0	0	0	0	0	1041
Percent	6.3	93.7	0.0	0.0		28.6	0.0	69.6	1.8		0.0	94.5	5.5	0.0		0.0	0.0	0.0	0.0		
07:45 Volume	10	138	0	0	148	5	0	9	0	14	0	139	6	0	145	0	0	0	0	0	307
Peak Factor																					0.848
High Int.	07:45 AM					08:00 AM					07:45 AM										
Volume	10	138	0	0	148	5	0	12	1	18	0	139	6	0	145						
Peak Factor					0.829					0.778					0.852						

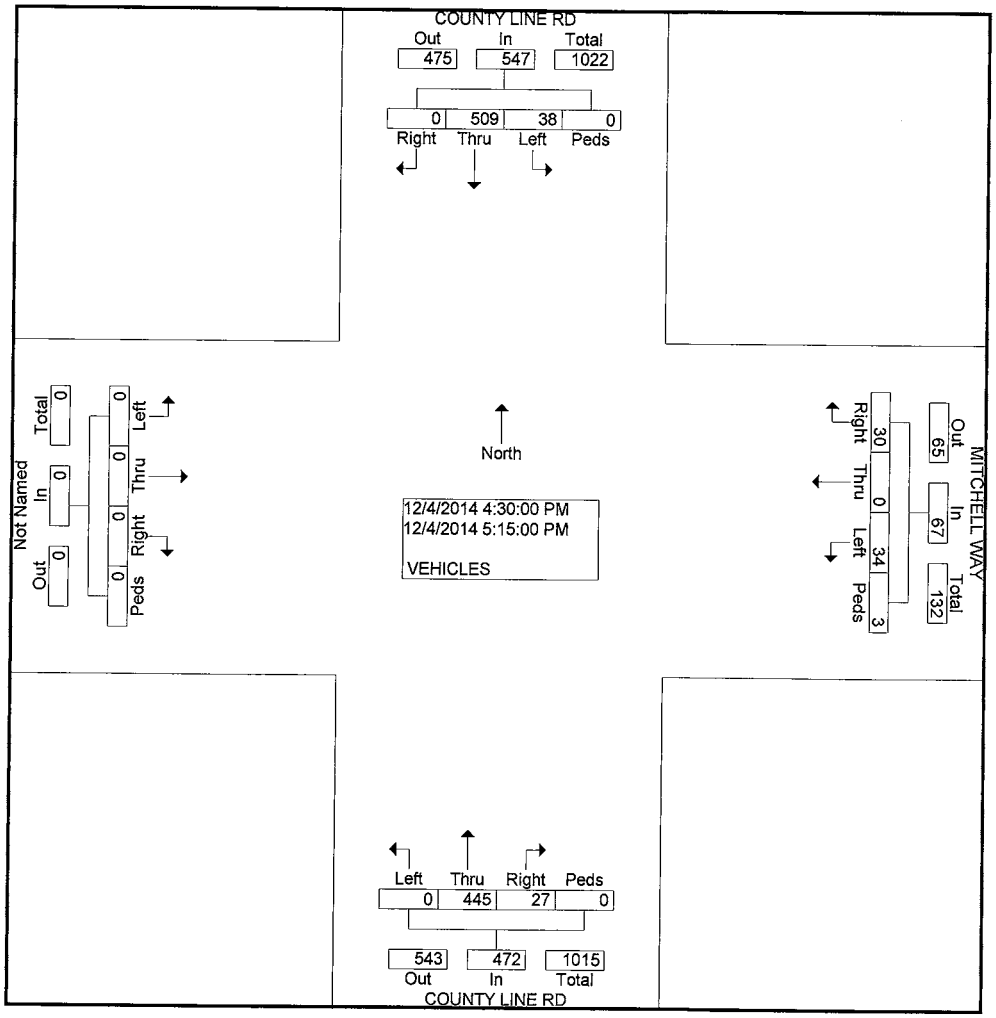


COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: MITCHELL WAY
CITY: ERIE
COUNTY: WELD

File Name : COUNMITC
Site Code : 00000013
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					MITCHELL WAY Westbound					COUNTY LINE RD Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	38	509	0	0	547	34	0	30	3	67	0	445	27	0	472	0	0	0	0	0	1086
Percent	6.9	93.1	0.0	0.0		50.7	0.0	44.8	4.5		0.0	94.3	5.7	0.0		0.0	0.0	0.0	0.0		
05:15 Volume	12	147	0	0	159	5	0	10	0	15	0	124	6	0	130	0	0	0	0	0	304
Peak Factor																					0.893
High Int.	05:15 PM					04:30 PM					05:15 PM										
Volume	12	147	0	0	159	14	0	8	0	22	0	124	6	0	130						
Peak Factor					0.860					0.761					0.908						



COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: AUSTIN AVE
CITY: ERIE
COUNTY: WELD

File Name : COUNAUST1
Site Code : 00000018
Start Date : 12/4/2014
Page No : 1

Groups Printed- VEHICLES

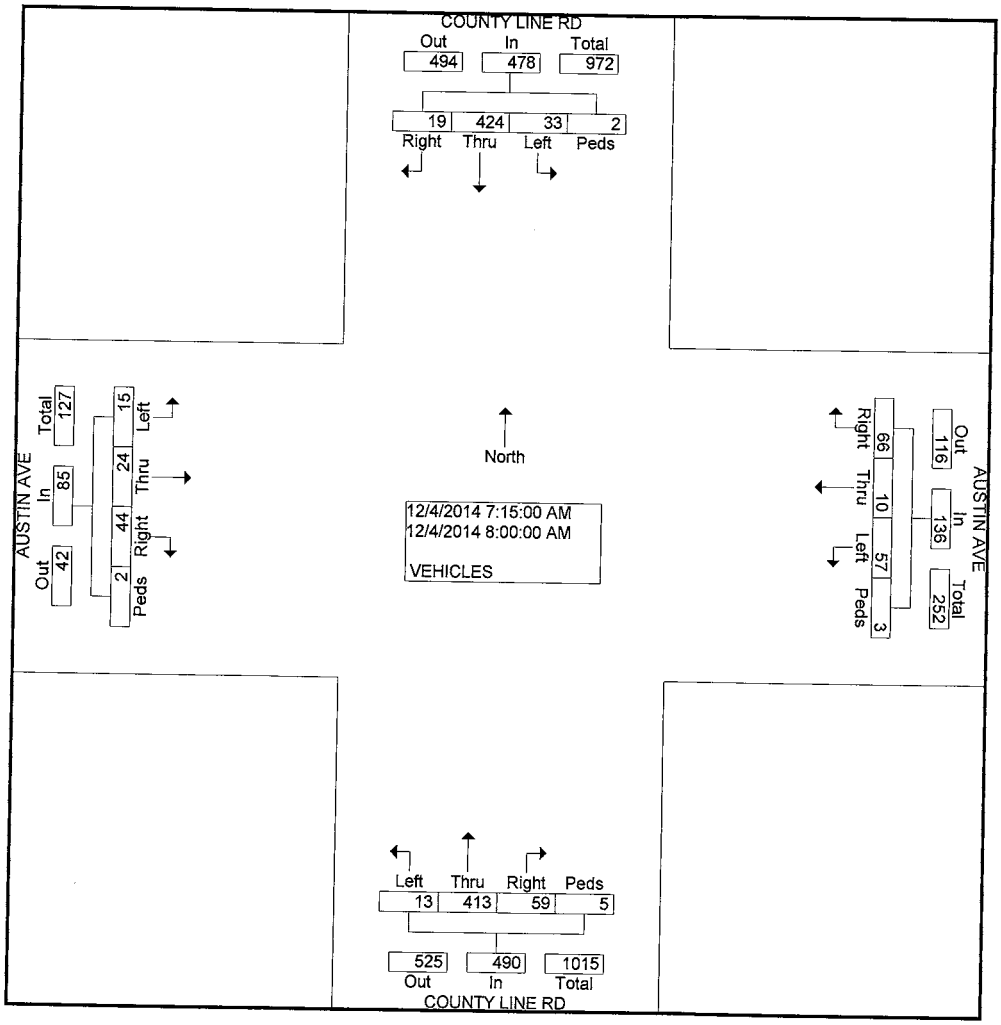
	COUNTY LINE RD Southbound				AUSTIN AVE Westbound				COUNTY LINE RD Northbound				AUSTIN AVE Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	53	1	0	9	3	1	0	2	27	5	0	3	3	4	0	111
06:45 AM	9	72	5	0	8	1	4	0	3	58	5	0	4	4	6	0	179
Total	9	125	6	0	17	4	5	0	5	85	10	0	7	7	10	0	290
07:00 AM	2	79	0	0	15	1	9	1	2	75	5	1	9	1	9	1	210
07:15 AM	7	89	5	1	7	0	12	1	1	78	14	1	4	3	8	1	232
07:30 AM	11	106	2	1	18	3	14	1	4	110	11	1	5	6	13	1	307
07:45 AM	5	132	6	0	19	4	24	0	4	119	22	1	2	5	13	0	356
Total	25	406	13	2	59	8	59	3	11	382	52	4	20	15	43	3	1105
08:00 AM	10	97	6	0	13	3	16	1	4	106	12	2	4	10	10	0	294
08:15 AM	26	64	3	0	24	7	19	0	5	92	15	1	3	12	14	0	285
Total	36	161	9	0	37	10	35	1	9	198	27	3	7	22	24	0	579
04:00 PM	11	94	7	0	12	0	12	0	6	95	12	1	4	0	9	0	263
04:15 PM	16	87	7	0	10	2	6	0	7	94	18	0	7	3	5	0	262
04:30 PM	18	112	11	0	10	4	20	0	10	104	23	1	1	2	4	0	320
04:45 PM	15	109	8	0	9	2	7	0	13	82	20	0	1	1	5	0	272
Total	60	402	33	0	41	8	45	0	36	375	73	2	13	6	23	0	1117
05:00 PM	11	101	6	0	10	3	14	1	9	110	12	5	3	2	9	0	296
05:15 PM	27	118	7	0	12	4	7	2	9	116	19	2	7	1	7	0	338
05:30 PM	16	102	9	0	11	5	12	0	16	80	17	0	3	3	3	0	277
05:45 PM	22	81	7	0	16	8	10	0	15	78	18	0	6	9	4	0	274
Total	76	402	29	0	49	20	43	3	49	384	66	7	19	15	23	0	1185
Grand Total	206	1496	90	2	203	50	187	7	110	1424	228	16	66	65	123	3	4276
Apprch %	11.5	83.4	5.0	0.1	45.4	11.2	41.8	1.6	6.2	80.1	12.8	0.9	25.7	25.3	47.9	1.2	
Total %	4.8	35.0	2.1	0.0	4.7	1.2	4.4	0.2	2.6	33.3	5.3	0.4	1.5	1.5	2.9	0.1	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: AUSTIN AVE
CITY: ERIE
COUNTY: WELD

File Name : COUNAUST1
Site Code : 00000018
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					AUSTIN AVE Westbound					COUNTY LINE RD Northbound					AUSTIN AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	33	424	19	2	478	57	10	66	3	136	13	413	59	5	490	15	24	44	2	85	1189
Percent	6.9	88.7	4.0	0.4		41.9	7.4	48.5	2.2		2.7	84.3	12.0	1.0		17.6	28.2	51.8	2.4		
07:45 Volume	5	132	6	0	143	19	4	24	0	47	4	119	22	1	146	2	5	13	0	20	356
Peak Factor																					0.835
High Int.	07:45 AM					07:45 AM					07:45 AM					07:30 AM					
Volume	5	132	6	0	143	19	4	24	0	47	4	119	22	1	146	5	6	13	1	25	
Peak Factor					0.836					0.723					0.839					0.850	

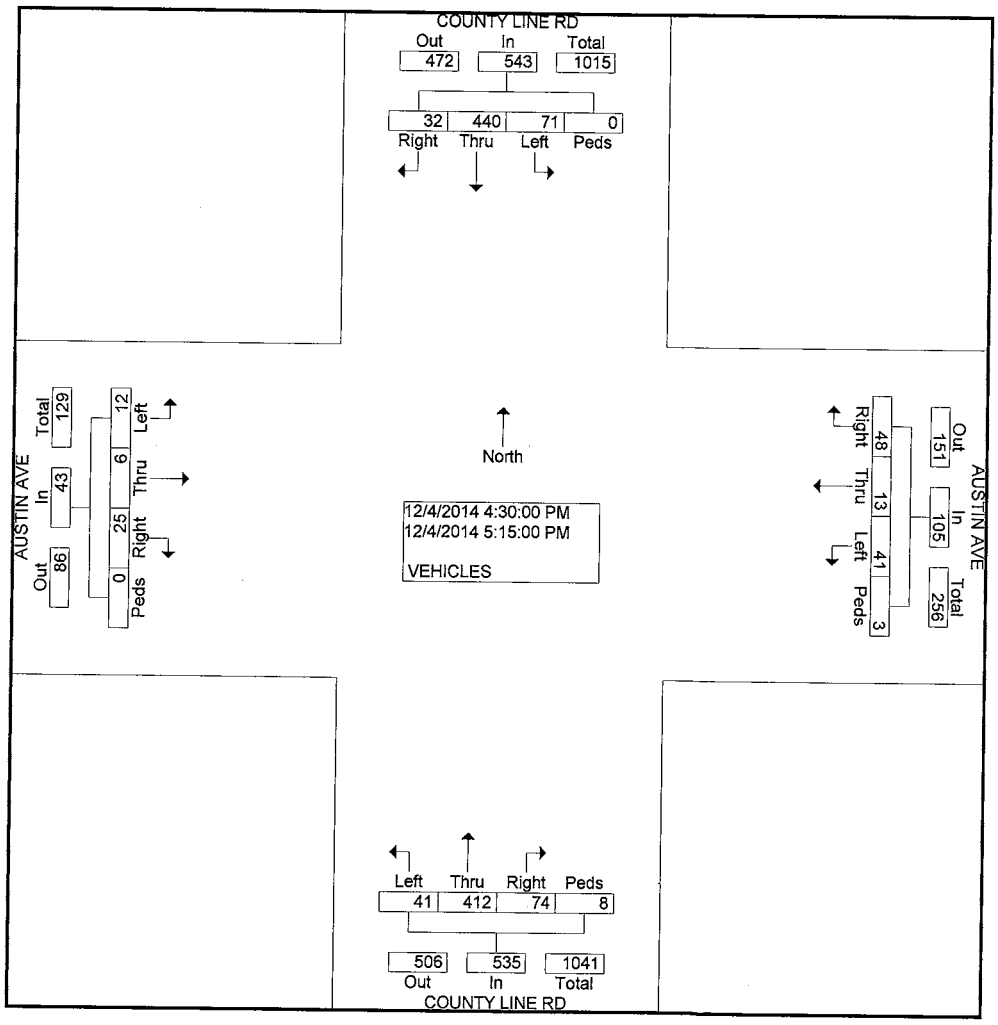


COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: COUNTY LINE RD
E/W STREET: AUSTIN AVE
CITY: ERIE
COUNTY: WELD

File Name : COUNAUST1
Site Code : 00000018
Start Date : 12/4/2014
Page No : 2

	COUNTY LINE RD Southbound					AUSTIN AVE Westbound					COUNTY LINE RD Northbound					AUSTIN AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	71	440	32	0	543	41	13	48	3	105	41	412	74	8	535	12	6	25	0	43	1226
Percent	13.1	81.0	5.9	0.0		39.0	12.4	45.7	2.9		7.7	77.0	13.8	1.5		27.9	14.0	58.1	0.0		
05:15 Volume	27	118	7	0	152	12	4	7	2	25	9	116	19	2	146	7	1	7	0	15	338
Peak Factor																					0.907
High Int.	05:15 PM					04:30 PM					05:15 PM					05:15 PM					
Volume	27	118	7	0	152	10	4	20	0	34	9	116	19	2	146	7	1	7	0	15	
Peak Factor					0.893					0.772					0.916					0.717	



COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: GRAHAM WAY
E/W STREET: AUSTIN AVE
CITY: ERIE
COUNTY: WELD

File Name : GRAHAUST
Site Code : 00000021
Start Date : 12/4/2014
Page No : 1

Groups Printed- VEHICLES

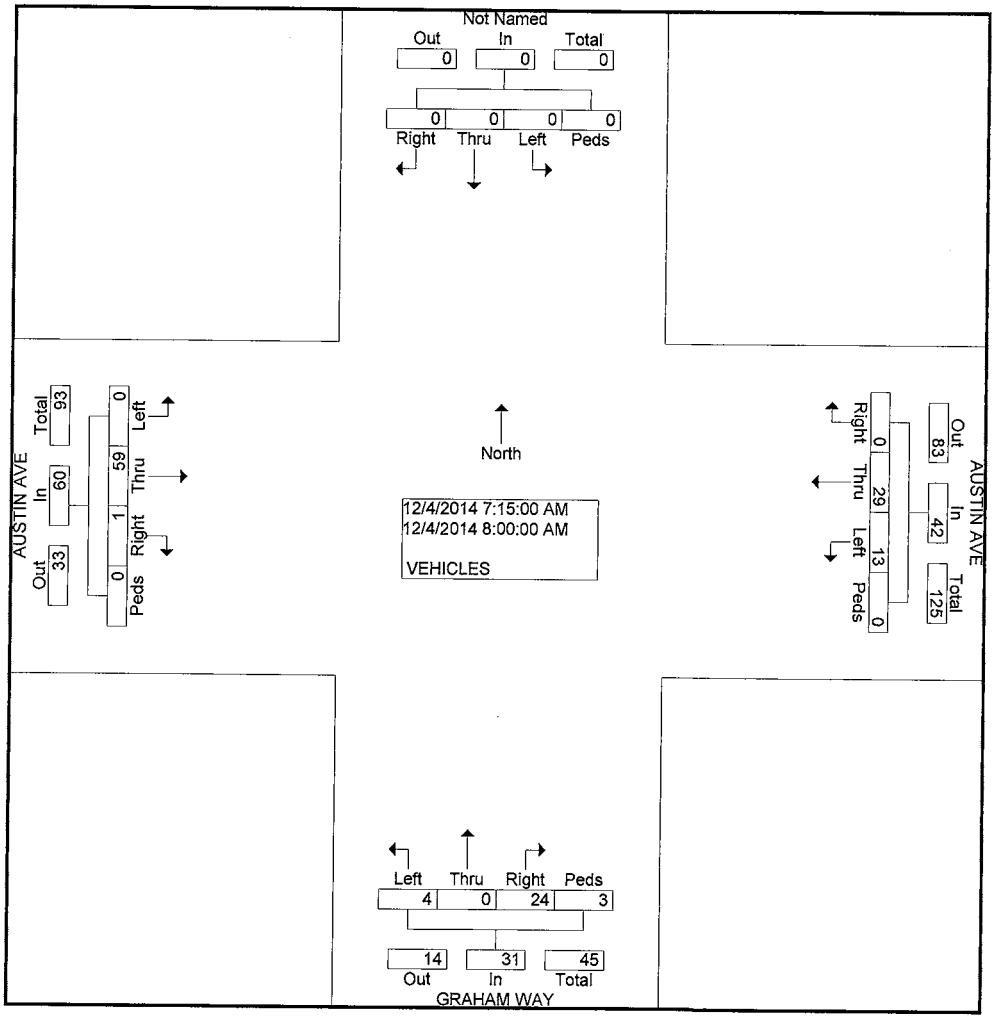
	Southbound				AUSTIN AVE Westbound				GRAHAM WAY Northbound				AUSTIN AVE Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	1	5	0	0	1	0	4	0	0	6	0	0	17
06:45 AM	0	0	0	0	2	7	0	0	1	0	5	0	0	9	0	0	24
Total	0	0	0	0	3	12	0	0	2	0	9	0	0	15	0	0	41
07:00 AM	0	0	0	0	0	3	0	0	4	0	7	1	0	12	0	0	27
07:15 AM	0	0	0	0	3	3	0	0	2	0	4	0	0	11	0	0	23
07:30 AM	0	0	0	0	1	8	0	0	1	0	7	1	0	17	0	0	35
07:45 AM	0	0	0	0	6	8	0	0	1	0	10	1	0	10	0	0	36
Total	0	0	0	0	10	22	0	0	8	0	28	3	0	50	0	0	121
08:00 AM	0	0	0	0	3	10	0	0	0	0	3	1	0	21	1	0	39
08:15 AM	0	0	0	0	3	12	0	0	0	0	8	1	0	21	0	0	45
Total	0	0	0	0	6	22	0	0	0	0	11	2	0	42	1	0	84
04:00 PM	0	0	0	0	2	11	0	0	1	0	6	0	0	7	3	0	30
04:15 PM	0	0	0	0	6	10	0	0	2	0	6	0	0	9	4	1	38
04:30 PM	0	0	0	0	10	15	0	0	0	0	1	1	0	6	1	0	34
04:45 PM	0	0	0	0	5	18	0	0	0	0	0	0	0	7	3	0	33
Total	0	0	0	0	23	54	0	0	3	0	13	1	0	29	11	1	135
05:00 PM	0	0	0	0	6	12	0	0	1	0	4	4	0	10	2	0	39
05:15 PM	0	0	0	1	5	15	0	0	0	0	3	1	0	12	0	0	37
05:30 PM	0	0	0	0	7	23	0	0	2	0	3	0	0	6	2	0	43
05:45 PM	0	0	0	0	7	23	0	0	1	0	5	0	0	14	3	0	53
Total	0	0	0	1	25	73	0	0	4	0	15	5	0	42	7	0	172
Grand Total	0	0	0	1	67	183	0	0	17	0	76	11	0	178	19	1	553
Apprch %	0.0	0.0	0.0	100.0	26.8	73.2	0.0	0.0	16.3	0.0	73.1	10.6	0.0	89.9	9.6	0.5	
Total %	0.0	0.0	0.0	0.2	12.1	33.1	0.0	0.0	3.1	0.0	13.7	2.0	0.0	32.2	3.4	0.2	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: GRAHAM WAY
E/W STREET: AUSTIN AVE
CITY: ERIE
COUNTY: WELD

File Name : GRAHAUST
Site Code : 00000021
Start Date : 12/4/2014
Page No : 2

	Southbound					AUSTIN AVE Westbound					GRAHAM WAY Northbound					AUSTIN AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	0	0	0	0	13	29	0	0	42	4	0	24	3	31	0	59	1	0	60	133
Percent	0.0	0.0	0.0	0.0		31.0	69.0	0.0	0.0		12.9	0.0	77.4	9.7		0.0	98.3	1.7	0.0		
08:00 Volume	0	0	0	0	0	3	10	0	0	13	0	0	3	1	4	0	21	1	0	22	39
Peak Factor																					0.853
High Int. Volume						07:45 AM					07:45 AM					08:00 AM					
Peak Factor	0	0	0	0	0	6	8	0	0	14	1	0	10	1	12	0	21	1	0	22	
										0.750					0.646					0.682	

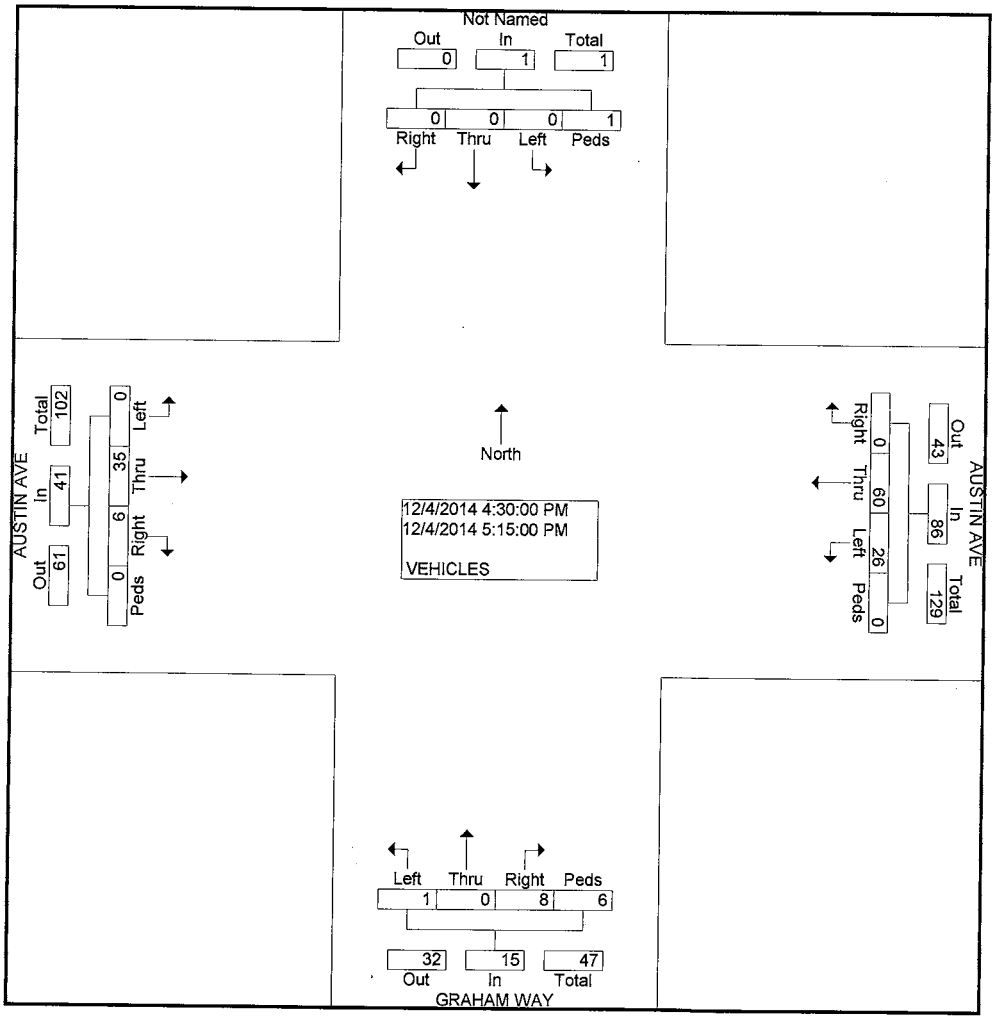


COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

N/S STREET: GRAHAM WAY
E/W STREET: AUSTIN AVE
CITY: ERIE
COUNTY: WELD

File Name : GRAHAUST
Site Code : 00000021
Start Date : 12/4/2014
Page No : 2

	Southbound					AUSTIN AVE Westbound					GRAHAM WAY Northbound					AUSTIN AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	0	0	0	1	1	26	60	0	0	86	1	0	8	6	15	0	35	6	0	41	143
Percent	0.0	0.0	0.0	100.0		30.2	69.8	0.0	0.0		6.7	0.0	53.3	40.0		0.0	85.4	14.6	0.0		
05:00 Volume	0	0	0	0	0	6	12	0	0	18	1	0	4	4	9	0	10	2	0	12	39
Peak Factor																					0.917
High Int.	05:15 PM					04:30 PM					05:00 PM					05:00 PM					
Volume	0	0	0	1	1	10	15	0	0	25	1	0	4	4	9	0	10	2	0	12	
Peak Factor					0.250					0.860					0.417					0.854	



Location: COUNTY LINE RD S/O ERIE PKWY
City: ERIE
County: WELD
Direction: SOUTHBOUND-NORTHBOUND

COUNTER MEASURES, INC
1889 YORK STREET
DENVER, CO 80206
303-333-1105

Site Code: 120108

Start Time	02-Dec-1 Tue	SB	NB							Total
12:00 AM		6	13							19
01:00		2	6							8
02:00		7	8							15
03:00		5	4							9
04:00		25	9							34
05:00		65	49							114
06:00		236	140							376
07:00		**470**	445							**915**
08:00		398	**454**							852
09:00		322	256							578
10:00		298	266							564
11:00		309	288							597
12:00 PM		322	270							592
01:00		281	236							517
02:00		310	313							623
03:00		458	**482**							940
04:00		496	458							954
05:00		**589**	458							**1047**
06:00		312	302							614
07:00		192	185							377
08:00		104	154							258
09:00		63	68							131
10:00		29	44							73
11:00		10	24							34
Total		5309	4932							10241
Percent		51.8%	48.2%							
AM Peak	-	07:00	08:00	-	-	-	-	-	-	07:00
Vol.	-	470	454	-	-	-	-	-	-	915
PM Peak	-	17:00	15:00	-	-	-	-	-	-	17:00
Vol.	-	589	482	-	-	-	-	-	-	1047
Grand Total		5309	4932							10241
Percent		51.8%	48.2%							

ADT ADT 10,241 AADT 10,241

Site Code: 120107

Location: ERIE PKWY W/O COUNTY LINE RD
City: ERIE
County: WELD
Direction: EASTBOUND-WESTBOUND

COUNTER MEASURES, INC
1889 YORK STREET
DENVER, CO 80206
303-333-1105

Start Time	02-Dec-1 Tue	EB	WB							Total
12:00 AM		13	9							22
01:00		7	8							15
02:00		3	4							7
03:00		2	2							4
04:00		5	3							8
05:00		9	13							22
06:00		63	40							103
07:00		120	216							336
08:00		**274**	**598**							**872**
09:00		244	508							752
10:00		199	266							465
11:00		187	170							357
12:00 PM		206	206							412
01:00		202	198							400
02:00		216	170							386
03:00		245	183							428
04:00		342	278							620
05:00		521	280							801
06:00		**679**	**324**							**1003**
07:00		396	205							601
08:00		147	143							290
09:00		104	86							190
10:00		73	60							133
11:00		35	33							68
Total		4292	4003							8295
Percent		51.7%	48.3%							
AM Peak	-	08:00	08:00	-	-	-	-	-	-	08:00
Vol.	-	274	598	-	-	-	-	-	-	872
PM Peak	-	18:00	18:00	-	-	-	-	-	-	18:00
Vol.	-	679	324	-	-	-	-	-	-	1003
Grand Total		4292	4003							8295
Percent		51.7%	48.3%							

ADT ADT 8,295 AADT 8,295

Site Code: 120105

Location: AUSTIN AVE W/O COUNTY LINE RD
City: ERIE
County: WELD
Direction: EASTBOUND-WESTBOUND

COUNTER MEASURES, INC
1889 YORK STREET
DENVER, CO 80206
303-333-1105

Start Time	02-Dec-1 Tue	EB	WB							Total
12:00 AM		1	5							6
01:00		1	3							4
02:00		2	1							3
03:00		1	1							2
04:00		2	1							3
05:00		33	2							35
06:00		39	12							51
07:00		**77**	29							106
08:00		64	**66**							**130**
09:00		40	41							81
10:00		55	25							80
11:00		26	35							61
12:00 PM		49	35							84
01:00		35	36							71
02:00		30	54							84
03:00		66	77							143
04:00		**69**	88							**157**
05:00		65	77							142
06:00		54	**99**							153
07:00		26	68							94
08:00		18	40							58
09:00		16	28							44
10:00		4	12							16
11:00		2	4							6
Total		775	839							1614
Percent		48.0%	52.0%							
AM Peak	-	07:00	08:00	-	-	-	-	-	-	08:00
Vol.	-	77	66	-	-	-	-	-	-	130
PM Peak	-	16:00	18:00	-	-	-	-	-	-	16:00
Vol.	-	69	99	-	-	-	-	-	-	157
Grand Total		775	839							1614
Percent		48.0%	52.0%							
ADT		ADT 1,614		AADT 1,614						

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2010

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

LOS	Average Vehicle Delay sec/vehicle	Operational Characteristics
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2010

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. The delay could be up to 20 seconds. Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 30 to 40 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.
D	25 to 35 seconds	This is the point at which a traffic signal may be warranted for this intersection. The delays for the stop-controlled intersection are not considered to be excessive, exceeding 35 seconds on a regular basis. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. There is a high probability that this intersection will meet traffic signal warrants. The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. The only remedy for these long delays in installing a traffic signal or restricting the accesses. The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	132	77	172	316	58	247	170	87	42	242	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	190.0
Lanes	1	2	1	1	2	1	2	1	1	2	1	0
Cap, veh/h	465	1314	559	604	1512	642	513	547	465	714	319	116
Arrive On Green	0.03	0.35	0.35	0.09	0.41	0.41	0.08	0.29	0.29	0.03	0.24	0.24
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	1863	1583	3442	1303	476
Grp Volume(v), veh/h	52	155	91	202	372	68	291	200	102	49	0	389
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	0	1779
Q Serve(g_s), s	1.6	2.4	3.4	5.4	5.6	2.3	4.8	7.2	4.1	0.9	0.0	18.0
Cycle Q Clear(g_c), s	1.6	2.4	3.4	5.4	5.6	2.3	4.8	7.2	4.1	0.9	0.0	18.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	465	1314	559	604	1512	642	513	547	465	714	0	435
V/C Ratio(X)	0.11	0.12	0.16	0.33	0.25	0.11	0.57	0.37	0.22	0.07	0.00	0.89
Avail Cap(c_a), veh/h	573	1314	559	618	1512	642	556	547	465	927	0	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	18.6	18.9	12.0	16.7	15.7	21.1	23.8	22.7	22.6	0.0	31.1
Incr Delay (d2), s/veh	0.1	0.2	0.6	0.3	0.4	0.3	1.2	0.4	0.2	0.0	0.0	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.6	1.1	1.3	2.1	2.5	0.9	2.3	3.3	1.6	0.4	0.0	9.7
Lane Grp Delay (d), s/veh	16.6	18.8	19.5	12.4	17.1	16.0	22.2	24.2	22.9	22.7	0.0	47.9
Lane Grp LOS	B	B	B	B	B	B	C	C	C	C		D
Approach Vol, veh/h		298			642			593			438	
Approach Delay, s/veh		18.6			15.5			23.0			45.1	
Approach LOS		B			B			C			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	7.8	35.0		12.3	39.5		11.9	30.0		7.7	25.8	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	30.0		8.0	30.0		8.0	24.0		8.0	24.0	
Max Q Clear Time (g_c+I1), s	3.6	5.4		7.4	7.6		6.8	9.2		2.9	20.0	
Green Ext Time (p_c), s	0.0	3.7		0.0	3.6		0.1	3.2		0.0	0.8	

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	4	500	6	0	491
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	588	7	0	578

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1170	298	0	0	595	0
Stage 1	592	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Follow-up Headway	3.519	3.319	-	-	2.22	-
Pot Capacity-1 Maneuver	199	699	-	-	977	-
Stage 1	517	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	199	699	-	-	977	-
Mov Capacity-2 Maneuver	336	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	977	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	-	-	10.2	0	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.02	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	16	39	467	27	31	460
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	115	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	46	549	32	36	541

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1179	565	0	0	581	0
Stage 1	565	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	211	524	-	-	993	-
Stage 1	569	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	203	524	-	-	993	-
Mov Capacity-2 Maneuver	203	-	-	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	520	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	0.6
HCM LOS	C		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	359	993	-
HCM Lane V/C Ratio	-	-	0.18	0.037	-
HCM Control Delay (s)	-	-	17.2	8.764	-
HCM Lane LOS			C	A	
HCM 95th %tile Q(veh)	-	-	0.648	0.114	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	24	44	57	10	66	13	413	59	33	424	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	195	-	-	470	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	29	52	68	12	79	15	492	70	39	505	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1198	1188	516	1193	1164	527	527	0	0	562	0	0
Stage 1	595	595	-	558	558	-	-	-	-	-	-	-
Stage 2	603	593	-	635	606	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	162	188	559	164	194	551	1040	-	-	1009	-	-
Stage 1	491	492	-	514	512	-	-	-	-	-	-	-
Stage 2	486	493	-	467	487	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	127	178	559	125	184	551	1040	-	-	1009	-	-
Mov Capacity-2 Maneuver	127	178	-	125	184	-	-	-	-	-	-	-
Stage 1	484	473	-	507	505	-	-	-	-	-	-	-
Stage 2	401	486	-	382	468	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.5	31.9	0.2	0.6
HCM LOS	D	D		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1040	-	-	250	125	291	1009	-	-
HCM Lane V/C Ratio	0.015	-	-	0.395	0.362	0.389	0.039	-	-
HCM Control Delay (s)	8.514	-	-	28.5	49.3	25	8.712	-	-
HCM Lane LOS	A			D	E	D	A		
HCM 95th %tile Q(veh)	0.045	-	-	1.791	1.481	1.767	0.121	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	59	1	13	29	4	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	1	15	34	5	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	135	70
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	65	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1529	-	859	993
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	958	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1529	-	850	993
Mov Capacity-2 Maneuver	-	-	-	-	850	-
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	948	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	8.8
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	970	-	-	1529	-
HCM Lane V/C Ratio	0.034	-	-	0.01	-
HCM Control Delay (s)	8.8	-	-	7.378	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.105	-	-	0.03	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	383	204	140	144	51	113	174	197	73	203	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	190.0
Lanes	1	2	1	1	2	1	2	1	1	2	1	0
Cap, veh/h	656	1520	646	487	1613	685	506	382	325	564	301	56
Arrive On Green	0.05	0.41	0.41	0.07	0.43	0.43	0.05	0.21	0.21	0.04	0.20	0.20
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	1863	1583	3442	1529	284
Grp Volume(v), veh/h	87	416	222	152	157	55	123	189	214	79	0	262
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	0	1813
Q Serve(g_s), s	2.1	5.5	7.1	3.4	1.8	1.5	2.0	6.6	9.1	1.3	0.0	10.0
Cycle Q Clear(g_c), s	2.1	5.5	7.1	3.4	1.8	1.5	2.0	6.6	9.1	1.3	0.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	656	1520	646	487	1613	685	506	382	325	564	0	357
V/C Ratio(X)	0.13	0.27	0.34	0.31	0.10	0.08	0.24	0.49	0.66	0.14	0.00	0.73
Avail Cap(c_a), veh/h	766	1520	646	553	1613	685	703	608	517	789	0	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	14.5	15.0	10.3	12.3	12.3	21.9	25.9	26.9	22.0	0.0	27.7
Incr Delay (d2), s/veh	0.1	0.4	1.5	0.4	0.1	0.2	0.2	1.0	2.3	0.1	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.8	2.3	2.7	1.3	0.8	0.5	0.8	3.0	3.5	0.5	0.0	4.6
Lane Grp Delay (d), s/veh	11.6	15.0	16.4	10.7	12.5	12.5	22.1	26.9	29.2	22.1	0.0	30.6
Lane Grp LOS	B	B	B	B	B	B	C	C	C	C		C
Approach Vol, veh/h		725			364			526			341	
Approach Delay, s/veh		15.0			11.7			26.7			28.7	
Approach LOS		B			B			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	8.4	35.0		10.3	36.8		8.8	20.1		8.2	19.5	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	30.0		8.0	30.0		8.0	24.0		8.0	24.0	
Max Q Clear Time (g_c+I1), s	4.1	9.1		5.4	3.8		4.0	11.1		3.3	12.0	
Green Ext Time (p_c), s	0.1	4.3		0.1	4.5		0.1	2.6		0.1	2.5	

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	28	456	19	0	547
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	32	524	22	0	629

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1164	273	0	0	546	0
Stage 1	535	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Follow-up Headway	3.519	3.319	-	-	2.22	-
Pot Capacity-1 Maneuver	201	725	-	-	1019	-
Stage 1	552	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	201	725	-	-	1019	-
Mov Capacity-2 Maneuver	201	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	725	1019	-
HCM Lane V/C Ratio	-	-	0.044	-	-
HCM Control Delay (s)	-	-	10.2	0	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.139	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	34	30	445	27	38	509
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	115	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	34	500	30	43	572

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1172	515	0	0	530	0
Stage 1	515	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	213	560	-	-	1037	-
Stage 1	600	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	204	560	-	-	1037	-
Mov Capacity-2 Maneuver	204	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	495	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.4	0	0.6
HCM LOS	C		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	291	1037	-
HCM Lane V/C Ratio	-	-	0.247	0.041	-
HCM Control Delay (s)	-	-	21.4	8.621	-
HCM Lane LOS			C	A	
HCM 95th %tile Q(veh)	-	-	0.952	0.129	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	6	25	41	13	48	41	412	74	71	440	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	195	-	-	470	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	7	27	45	14	53	45	453	81	78	484	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1274	1281	501	1258	1259	493	519	0	0	534	0	0
Stage 1	657	657	-	584	584	-	-	-	-	-	-	-
Stage 2	617	624	-	674	675	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	144	166	570	148	171	576	1047	-	-	1034	-	-
Stage 1	454	462	-	498	498	-	-	-	-	-	-	-
Stage 2	477	478	-	444	453	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	111	147	570	124	151	576	1047	-	-	1034	-	-
Mov Capacity-2 Maneuver	111	147	-	124	151	-	-	-	-	-	-	-
Stage 1	434	427	-	477	477	-	-	-	-	-	-	-
Stage 2	402	457	-	385	419	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.4	29.4	0.7	1.1
HCM LOS	D	D		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1047	-	-	223	124	267	1034	-	-
HCM Lane V/C Ratio	0.043	-	-	0.212	0.242	0.307	0.075	-	-
HCM Control Delay (s)	8.593	-	-	25.4	43.1	24.4	8.766	-	-
HCM Lane LOS	A			D	E	C	A		
HCM 95th %tile Q(veh)	0.135	-	-	0.779	0.891	1.262	0.244	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	35	6	26	60	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	7	28	65	1	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	163	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	122	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1563	-	828	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	903	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1563	-	812	1030
Mov Capacity-2 Maneuver	-	-	-	-	812	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	886	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	8.6
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1000	-	-	1563	-
HCM Lane V/C Ratio	0.01	-	-	0.018	-
HCM Control Delay (s)	8.6	-	-	7.346	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.03	-	-	0.055	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	153	89	199	366	67	286	197	101	49	281	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	190.0
Lanes	1	2	1	1	2	1	2	1	1	2	1	0
Cap, veh/h	416	1247	530	566	1450	616	489	594	505	720	350	127
Arrive On Green	0.03	0.33	0.33	0.09	0.39	0.39	0.09	0.32	0.32	0.03	0.27	0.27
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	1863	1583	3442	1306	473
Grp Volume(v), veh/h	60	180	105	234	431	79	336	232	119	58	0	451
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	0	1779
Q Serve(g_s), s	2.0	3.0	4.2	6.8	7.2	2.9	5.6	8.7	5.0	1.1	0.0	22.3
Cycle Q Clear(g_c), s	2.0	3.0	4.2	6.8	7.2	2.9	5.6	8.7	5.0	1.1	0.0	22.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	416	1247	530	566	1450	616	489	594	505	720	0	476
V/C Ratio(X)	0.14	0.14	0.20	0.41	0.30	0.13	0.69	0.39	0.24	0.08	0.00	0.95
Avail Cap(c_a), veh/h	513	1247	530	566	1450	616	502	594	505	910	0	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	20.9	21.3	13.6	18.9	17.6	21.6	23.7	22.5	22.3	0.0	32.2
Incr Delay (d2), s/veh	0.2	0.2	0.8	0.5	0.5	0.4	3.8	0.4	0.2	0.0	0.0	28.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.8	1.4	1.7	2.7	3.2	1.1	3.9	3.9	1.9	0.4	0.0	13.3
Lane Grp Delay (d), s/veh	18.6	21.1	22.1	14.1	19.4	18.0	25.4	24.2	22.7	22.4	0.0	60.5
Lane Grp LOS	B	C	C	B	B	B	C	C	C	C		E
Approach Vol, veh/h		345			744			687			509	
Approach Delay, s/veh		21.0			17.6			24.5			56.2	
Approach LOS		C			B			C			E	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	8.1	35.0		13.0	39.9		12.7	33.6		8.1	29.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	30.0		8.0	30.0		8.0	24.0		8.0	24.0	
Max Q Clear Time (g_c+I1), s	4.0	6.2		8.8	9.2		7.6	10.7		3.1	24.3	
Green Ext Time (p_c), s	0.0	4.3		0.0	4.2		0.1	3.6		0.0	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	5	579	7	0	569
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	681	8	0	669

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1354	345	0	0	689	0
Stage 1	685	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Follow-up Headway	3.519	3.319	-	-	2.22	-
Pot Capacity-1 Maneuver	152	652	-	-	901	-
Stage 1	463	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	152	652	-	-	901	-
Mov Capacity-2 Maneuver	290	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	508	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	652	901	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.027	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	45	541	31	36	533
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	115	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	636	36	42	627

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1367	655	0	0	673	0
Stage 1	655	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	162	466	-	-	918	-
Stage 1	517	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	155	466	-	-	918	-
Mov Capacity-2 Maneuver	155	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	464	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0.6
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	466	918	-
HCM Lane V/C Ratio	-	-	0.114	0.046	-
HCM Control Delay (s)	-	-	13.7	9.111	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.382	0.145	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	12.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	17	27	49	85	11	77	14	478	68	38	474	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	195	-	-	470	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	32	58	101	13	92	17	569	81	45	564	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1362	1350	577	1356	1323	610	589	0	0	650	0	0
Stage 1	667	667	-	643	643	-	-	-	-	-	-	-
Stage 2	695	683	-	713	680	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	125	150	516	126	156	494	986	-	-	936	-	-
Stage 1	448	457	-	462	468	-	-	-	-	-	-	-
Stage 2	433	449	-	423	451	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	90	140	516	# 88	146	494	986	-	-	936	-	-
Mov Capacity-2 Maneuver	90	140	-	# 88	146	-	-	-	-	-	-	-
Stage 1	440	435	-	454	460	-	-	-	-	-	-	-
Stage 2	337	441	-	331	429	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.3	74.1	0.2	0.6
HCM LOS	E	F		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	986	-	-	195	88	210	936	-	-
HCM Lane V/C Ratio	0.017	-	-	0.568	0.767	0.659	0.048	-	-
HCM Control Delay (s)	8.714	-	-	45.3	123.3	50.2	9.041	-	-
HCM Lane LOS	A			E	F	F	A		
HCM 95th %tile Q(veh)	0.052	-	-	3.055	3.907	4.011	0.152	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	68	1	14	34	4	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	1	16	40	5	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	81	0	154	81
Stage 1	-	-	-	-	81	-
Stage 2	-	-	-	-	73	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1517	-	838	979
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	950	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1517	-	829	979
Mov Capacity-2 Maneuver	-	-	-	-	829	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	8.9
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	955	-	-	1517	-
HCM Lane V/C Ratio	0.036	-	-	0.011	-
HCM Control Delay (s)	8.9	-	-	7.399	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.111	-	-	0.033	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	444	236	162	167	59	131	202	228	85	235	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	190.0
Lanes	1	2	1	1	2	1	2	1	1	2	1	0
Cap, veh/h	623	1445	614	448	1546	657	503	426	362	563	332	62
Arrive On Green	0.05	0.39	0.39	0.08	0.41	0.41	0.06	0.23	0.23	0.04	0.22	0.22
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	1863	1583	3442	1525	287
Grp Volume(v), veh/h	101	483	257	176	182	64	142	220	248	92	0	303
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	0	1812
Q Serve(g_s), s	2.6	7.1	9.2	4.3	2.3	1.9	2.4	8.0	11.1	1.6	0.0	12.2
Cycle Q Clear(g_c), s	2.6	7.1	9.2	4.3	2.3	1.9	2.4	8.0	11.1	1.6	0.0	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	623	1445	614	448	1546	657	503	426	362	563	0	394
V/C Ratio(X)	0.16	0.33	0.42	0.39	0.12	0.10	0.28	0.52	0.69	0.16	0.00	0.77
Avail Cap(c_a), veh/h	711	1445	614	489	1546	657	668	578	491	766	0	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.8	16.6	17.3	11.6	13.9	13.8	21.9	26.1	27.3	22.0	0.0	28.4
Incr Delay (d2), s/veh	0.1	0.6	2.1	0.6	0.2	0.3	0.3	1.0	2.4	0.1	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.0	3.1	3.6	1.7	1.0	0.7	1.0	3.6	4.4	0.6	0.0	5.7
Lane Grp Delay (d), s/veh	12.9	17.3	19.4	12.2	14.1	14.1	22.2	27.1	29.7	22.1	0.0	32.5
Lane Grp LOS	B	B	B	B	B	B	C	C	C	C		C
Approach Vol, veh/h		841			422			610			395	
Approach Delay, s/veh		17.4			13.3			27.0			30.1	
Approach LOS		B			B			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	9.1	35.0		11.2	37.1		9.3	22.7		8.4	21.8	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	30.0		8.0	30.0		8.0	24.0		8.0	24.0	
Max Q Clear Time (g_c+I1), s	4.6	11.2		6.3	4.3		4.4	13.1		3.6	14.2	
Green Ext Time (p_c), s	0.1	4.9		0.1	5.4		0.1	2.8		0.1	2.7	

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	32	529	22	0	633
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	37	608	25	0	728

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1349	317	0	0	633	0
Stage 1	621	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Follow-up Headway	3.519	3.319	-	-	2.22	-
Pot Capacity-1 Maneuver	154	680	-	-	946	-
Stage 1	499	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	154	680	-	-	946	-
Mov Capacity-2 Maneuver	154	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	477	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	946	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.171	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	35	516	31	44	589
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	115	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	580	35	49	662

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1358	597	0	0	615	0
Stage 1	597	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	164	503	-	-	965	-
Stage 1	550	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	156	503	-	-	965	-
Mov Capacity-2 Maneuver	156	-	-	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.6
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	503	965	-
HCM Lane V/C Ratio	-	-	0.078	0.051	-
HCM Control Delay (s)	-	-	12.8	8.932	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.253	0.162	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	7	28	87	14	56	45	478	86	82	472	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	195	-	-	470	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	8	31	96	15	62	49	525	95	90	519	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1428	1437	538	1408	1408	573	557	0	0	620	0	0
Stage 1	718	718	-	671	671	-	-	-	-	-	-	-
Stage 2	710	719	-	737	737	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	113	133	543	116	139	519	1014	-	-	960	-	-
Stage 1	420	433	-	446	455	-	-	-	-	-	-	-
Stage 2	424	433	-	410	425	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	81	115	543	# 93	120	519	1014	-	-	960	-	-
Mov Capacity-2 Maneuver	81	115	-	# 93	120	-	-	-	-	-	-	-
Stage 1	400	392	-	424	433	-	-	-	-	-	-	-
Stage 2	343	412	-	344	385	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34	69	0.6	1.3
HCM LOS	D	F		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1014	-	-	176	93	185	960	-	-
HCM Lane V/C Ratio	0.049	-	-	0.3	0.685	0.588	0.094	-	-
HCM Control Delay (s)	8.732	-	-	34	103.1	49	9.138	-	-
HCM Lane LOS	A			D	F	E	A		
HCM 95th %tile Q(veh)	0.154	-	-	1.192	3.391	3.205	0.31	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	41	6	27	70	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	7	29	76	1	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	51	0	183	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	135	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1555	-	806	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	891	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1555	-	791	1021
Mov Capacity-2 Maneuver	-	-	-	-	791	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	8.7
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	989	-	-	1555	-
HCM Lane V/C Ratio	0.01	-	-	0.019	-
HCM Control Delay (s)	8.7	-	-	7.36	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.03	-	-	0.058	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	292	34	0	757	0	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	344	40	0	891	0	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	344	0	789	172
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	445	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	1212	-	328	842
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	613	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1212	-	328	842
Mov Capacity-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	613	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	842	-	-	1212	-
HCM Lane V/C Ratio	0.152	-	-	-	-
HCM Control Delay (s)	10	-	-	0	-
HCM Lane LOS	B			A	
HCM 95th %tile Q(veh)	0.536	-	-	0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	221	95	246	363	67	292	200	107	49	303	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	190.0
Lanes	1	2	1	1	2	1	2	1	1	2	1	0
Cap, veh/h	432	1245	529	524	1374	584	459	596	506	715	357	120
Arrive On Green	0.05	0.33	0.33	0.09	0.37	0.37	0.09	0.32	0.32	0.03	0.27	0.27
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	1863	1583	3442	1334	450
Grp Volume(v), veh/h	100	260	112	289	427	79	344	235	126	58	0	476
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	0	1783
Q Serve(g_s), s	3.3	4.5	4.5	8.0	7.3	3.0	5.7	8.8	5.3	1.1	0.0	23.9
Cycle Q Clear(g_c), s	3.3	4.5	4.5	8.0	7.3	3.0	5.7	8.8	5.3	1.1	0.0	23.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	432	1245	529	524	1374	584	459	596	506	715	0	477
V/C Ratio(X)	0.23	0.21	0.21	0.55	0.31	0.14	0.75	0.39	0.25	0.08	0.00	1.00
Avail Cap(c_a), veh/h	494	1245	529	524	1374	584	468	596	506	904	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	21.4	21.4	17.1	20.2	18.8	21.6	23.8	22.6	22.4	0.0	32.9
Incr Delay (d2), s/veh	0.3	0.4	0.9	1.2	0.6	0.5	6.5	0.4	0.3	0.0	0.0	40.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.3	2.0	0.1	3.9	3.3	1.2	4.2	4.0	2.0	0.4	0.0	15.6
Lane Grp Delay (d), s/veh	18.2	21.8	22.3	18.3	20.8	19.3	28.1	24.2	22.8	22.4	0.0	73.6
Lane Grp LOS	B	C	C	B	C	B	C	C	C	C		E
Approach Vol, veh/h		472			795			705			534	
Approach Delay, s/veh		21.1			19.7			25.8			68.0	
Approach LOS		C			B			C			E	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	9.9	35.0		13.0	38.1		12.8	33.7		8.1	29.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	30.0		8.0	30.0		8.0	24.0		8.0	24.0	
Max Q Clear Time (g_c+I1), s	5.3	6.5		10.0	9.3		7.7	10.8		3.1	25.9	
Green Ext Time (p_c), s	0.0	4.9		0.0	4.7		0.0	3.7		0.0	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	29	0	0	5	0	594	7	0	588	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	92	87	92	87	87	87	87	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	0	0	6	0	683	8	0	676	60

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1359	1359	676	1359	1359	683	676	0	0	683	0	0
Stage 1	676	676	-	683	683	-	-	-	-	-	-	-
Stage 2	683	683	-	676	676	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	126	149	453	126	149	449	915	-	-	910	-	-
Stage 1	443	453	-	439	449	-	-	-	-	-	-	-
Stage 2	439	449	-	443	453	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	124	149	453	117	149	449	915	-	-	910	-	-
Mov Capacity-2 Maneuver	124	149	-	117	149	-	-	-	-	-	-	-
Stage 1	443	453	-	439	449	-	-	-	-	-	-	-
Stage 2	433	449	-	412	453	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	13.1	0	0
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	915	-	-	453	449	910	-	-
HCM Lane V/C Ratio	-	-	-	0.07	0.013	-	-	-
HCM Control Delay (s)	0	-	-	13.5	13.1	0	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0	-	-	0.223	0.039	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	4	0	0	45	18	556	31	38	563	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	250	115	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	89	92	89	92	89	89	89	89	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	0	0	51	20	625	35	43	633	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1382	1382	633	1382	1382	625	633	0	0	625	0	0
Stage 1	718	718	-	664	664	-	-	-	-	-	-	-
Stage 2	664	664	-	718	718	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	121	144	480	121	144	485	950	-	-	956	-	-
Stage 1	420	433	-	450	458	-	-	-	-	-	-	-
Stage 2	450	458	-	420	433	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	103	135	480	114	135	485	950	-	-	956	-	-
Mov Capacity-2 Maneuver	103	135	-	114	135	-	-	-	-	-	-	-
Stage 1	411	414	-	441	448	-	-	-	-	-	-	-
Stage 2	395	448	-	397	414	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	13.3	0.3	0.6
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	950	-	-	480	485	956	-	-
HCM Lane V/C Ratio	0.021	-	-	0.009	0.104	0.045	-	-
HCM Control Delay (s)	8.869	-	-	12.6	13.3	8.942	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0.063	-	-	0.027	0.347	0.14	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	4	0	605	557	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	712	655	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1367	655	655	0	-	0
Stage 1	655	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	162	466	932	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	162	466	932	-	-	-
Mov Capacity-2 Maneuver	162	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	486	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	932	-	466	-	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s)	0	-	12.8	-	-
HCM Lane LOS	A		B		
HCM 95th %tile Q(veh)	0	-	0.031	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	32	74	85	16	79	32	486	68	42	494	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Cap, veh/h	290	57	131	293	39	195	331	818	695	334	830	705
Arrive On Green	0.04	0.11	0.11	0.07	0.14	0.14	0.03	0.44	0.44	0.04	0.45	0.45
Sat Flow, veh/h	1774	500	1158	1774	273	1351	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	46	0	126	101	0	113	38	579	81	50	588	30
Grp Sat Flow(s),veh/h/ln	1774	0	1658	1774	0	1624	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.3	0.0	4.3	2.8	0.0	3.7	0.7	14.8	1.8	0.9	14.9	0.6
Cycle Q Clear(g_c), s	1.3	0.0	4.3	2.8	0.0	3.7	0.7	14.8	1.8	0.9	14.9	0.6
Prop In Lane	1.00		0.70	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	0	188	293	0	235	331	818	695	334	830	705
V/C Ratio(X)	0.16	0.00	0.67	0.34	0.00	0.48	0.11	0.71	0.12	0.15	0.71	0.04
Avail Cap(c_a), veh/h	530	0	284	478	0	278	579	1595	1356	570	1595	1356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	24.8	19.6	0.0	23.0	10.3	13.3	9.7	10.1	13.1	9.2
Incr Delay (d2), s/veh	0.3	0.0	4.1	0.7	0.0	1.5	0.2	1.1	0.1	0.2	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.6	0.0	1.8	1.2	0.0	1.5	0.2	5.7	0.6	0.3	6.0	0.2
Lane Grp Delay (d), s/veh	22.0	0.0	28.9	20.3	0.0	24.5	10.4	14.5	9.8	10.3	14.3	9.2
Lane Grp LOS	C		C	C		C	B	B	A	B	B	A
Approach Vol, veh/h		172			214			698			668	
Approach Delay, s/veh		27.1			22.5			13.7			13.7	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	7.1	11.6		8.9	13.4		6.8	30.6		7.2	31.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	10.0		10.0	10.0		10.0	50.0		10.0	50.0	
Max Q Clear Time (g_c+I1), s	3.3	6.3		4.8	5.7		2.7	16.8		2.9	16.9	
Green Ext Time (p_c), s	0.0	0.4		0.1	0.5		0.0	8.9		0.0	8.8	

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	9	124	61	12	21	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	146	72	14	25	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	86	0	-	0	246	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	167	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1510	-	-	-	742	981
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	863	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1510	-	-	-	736	981
Mov Capacity-2 Maneuver	-	-	-	-	736	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.7
HCM LOS			A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1510	-	-	-	800
HCM Lane V/C Ratio	0.007	-	-	-	0.046
HCM Control Delay (s)	7.401	0	-	-	9.7
HCM Lane LOS	A	A			A
HCM 95th %tile Q(veh)	0.021	-	-	-	0.143

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	129	70	1	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	152	82	1	5	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	84	0	-	0	235	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	152	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1513	-	-	-	753	976
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	876	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1513	-	-	-	753	976
Mov Capacity-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1513	-	-	-	815
HCM Lane V/C Ratio	-	-	-	-	0.009
HCM Control Delay (s)	0	-	-	-	9.5
HCM Lane LOS	A				A
HCM 95th %tile Q(veh)	0	-	-	-	0.026

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	104	5	15	58	5	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	6	18	68	6	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	229	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	104	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1458	-	759	926
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	920	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1458	-	749	926
Mov Capacity-2 Maneuver	-	-	-	-	749	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	908	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.2
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	893	-	-	1458	-
HCM Lane V/C Ratio	0.042	-	-	0.012	-
HCM Control Delay (s)	9.2	-	-	7.499	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.132	-	-	0.037	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	3	76	50	13	33	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	89	59	15	39	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	74	0	-	0	162	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	96	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1526	-	-	-	829	998
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	928	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1526	-	-	-	827	998
Mov Capacity-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.4
HCM LOS			A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	929
HCM Lane V/C Ratio	0.002	-	-	-	0.117
HCM Control Delay (s)	7.365	0	-	-	9.4
HCM Lane LOS	A	A			A
HCM 95th %tile Q(veh)	0.007	-	-	-	0.394

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	757	123	0	359	0	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	823	134	0	390	0	196

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	823	0	1018	411
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	195	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	803	-	233	590
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	819	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	803	-	233	590
Mov Capacity-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	819	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	590	-	-	803	-
HCM Lane V/C Ratio	0.332	-	-	-	-
HCM Control Delay (s)	14.1	-	-	0	-
HCM Lane LOS	B			A	
HCM 95th %tile Q(veh)	1.446	-	-	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	142	542	254	313	156	59	159	214	252	85	305	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	190.0
Lanes	1	2	1	1	2	1	2	1	1	2	1	0
Cap, veh/h	618	1334	567	407	1407	598	474	494	420	593	394	57
Arrive On Green	0.08	0.36	0.36	0.10	0.38	0.38	0.06	0.27	0.27	0.04	0.25	0.25
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	1863	1583	3442	1592	230
Grp Volume(v), veh/h	154	589	276	340	170	64	173	233	274	92	0	380
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	0	1822
Q Serve(g_s), s	4.5	10.1	11.3	8.0	2.5	2.2	3.0	8.8	12.9	1.6	0.0	16.6
Cycle Q Clear(g_c), s	4.5	10.1	11.3	8.0	2.5	2.2	3.0	8.8	12.9	1.6	0.0	16.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	618	1334	567	407	1407	598	474	494	420	593	0	451
V/C Ratio(X)	0.25	0.44	0.49	0.84	0.12	0.11	0.36	0.47	0.65	0.16	0.00	0.84
Avail Cap(c_a), veh/h	652	1334	567	407	1407	598	596	534	454	777	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.7	20.5	20.9	19.7	17.0	16.9	22.2	25.8	27.3	22.1	0.0	30.0
Incr Delay (d2), s/veh	0.2	1.1	3.0	14.1	0.2	0.4	0.5	0.7	3.0	0.1	0.0	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.8	4.5	4.6	4.3	1.1	0.8	1.2	4.0	5.1	0.7	0.0	8.6
Lane Grp Delay (d), s/veh	14.9	21.6	23.9	33.8	17.2	17.3	22.7	26.5	30.3	22.2	0.0	40.6
Lane Grp LOS	B	C	C	C	B	B	C	C	C	C		D
Approach Vol, veh/h		1019			574			680			472	
Approach Delay, s/veh		21.2			27.0			27.1			37.0	
Approach LOS		C			C			C			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	11.4	35.0		13.0	36.6		10.0	27.2		8.5	25.7	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	30.0		8.0	30.0		8.0	24.0		8.0	24.0	
Max Q Clear Time (g_c+I1), s	6.5	13.3		10.0	4.5		5.0	14.9		3.6	18.6	
Green Ext Time (p_c), s	0.1	5.4		0.0	6.2		0.1	3.0		0.1	2.1	

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	67	0	0	32	0	592	22	0	691	180
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	92	87	92	87	87	87	87	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	73	0	0	37	0	680	25	0	794	196

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1474	1474	794	1474	1474	680	794	0	0	680	0	0
Stage 1	794	794	-	680	680	-	-	-	-	-	-	-
Stage 2	680	680	-	794	794	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	105	127	388	105	127	451	827	-	-	912	-	-
Stage 1	381	400	-	441	451	-	-	-	-	-	-	-
Stage 2	441	451	-	381	400	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	96	127	388	85	127	451	827	-	-	912	-	-
Mov Capacity-2 Maneuver	96	127	-	85	127	-	-	-	-	-	-	-
Stage 1	381	400	-	441	451	-	-	-	-	-	-	-
Stage 2	405	451	-	309	400	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.4	13.7	0	0
HCM LOS	C	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	827	-	-	388	451	912	-	-
HCM Lane V/C Ratio	-	-	-	0.188	0.082	-	-	-
HCM Control Delay (s)	0	-	-	16.4	13.7	0	-	-
HCM Lane LOS	A			C	B	A		
HCM 95th %tile Q(veh)	0	-	-	0.681	0.265	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	19	0	0	35	55	579	32	47	665	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	250	115	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	89	92	89	92	89	89	89	89	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	0	0	39	60	651	36	53	747	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1623	1623	747	1623	1623	651	747	0	0	651	0	0
Stage 1	853	853	-	770	770	-	-	-	-	-	-	-
Stage 2	770	770	-	853	853	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	82	103	413	82	103	469	861	-	-	935	-	-
Stage 1	354	376	-	393	410	-	-	-	-	-	-	-
Stage 2	393	410	-	354	376	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	68	90	413	71	90	469	861	-	-	935	-	-
Mov Capacity-2 Maneuver	68	90	-	71	90	-	-	-	-	-	-	-
Stage 1	329	355	-	366	381	-	-	-	-	-	-	-
Stage 2	335	381	-	317	355	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	13.4	0.8	0.6
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	861	-	-	413	469	935	-	-
HCM Lane V/C Ratio	0.069	-	-	0.05	0.084	0.056	-	-
HCM Control Delay (s)	9.493	-	-	14.2	13.4	9.081	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0.223	-	-	0.157	0.273	0.179	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	21	0	666	650	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	23	0	724	707	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1431	707	707	0	-	0
Stage 1	707	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	148	435	891	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	148	435	891	-	-	-
Mov Capacity-2 Maneuver	148	-	-	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	891	-	435	-	-
HCM Lane V/C Ratio	-	-	0.052	-	-
HCM Control Delay (s)	0	-	13.7	-	-
HCM Lane LOS	A		B		
HCM 95th %tile Q(veh)	0	-	0.166	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	12	50	87	30	63	108	499	86	93	523	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Cap, veh/h	306	34	142	329	52	109	369	815	693	376	802	682
Arrive On Green	0.08	0.11	0.11	0.07	0.10	0.10	0.06	0.44	0.44	0.05	0.43	0.43
Sat Flow, veh/h	1774	312	1318	1774	538	1126	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	114	0	68	96	0	102	119	548	95	102	575	60
Grp Sat Flow(s),veh/h/ln	1774	0	1630	1774	0	1664	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.4	0.0	2.3	2.9	0.0	3.5	2.2	14.0	2.1	1.9	15.2	1.3
Cycle Q Clear(g_c), s	3.4	0.0	2.3	2.9	0.0	3.5	2.2	14.0	2.1	1.9	15.2	1.3
Prop In Lane	1.00		0.81	1.00		0.68	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	0	176	329	0	161	369	815	693	376	802	682
V/C Ratio(X)	0.37	0.00	0.39	0.29	0.00	0.64	0.32	0.67	0.14	0.27	0.72	0.09
Avail Cap(c_a), veh/h	465	0	272	508	0	278	556	1556	1322	576	1556	1322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	24.9	22.2	0.0	26.0	10.5	13.4	10.1	10.2	14.0	10.1
Incr Delay (d2), s/veh	0.8	0.0	1.4	0.5	0.0	4.1	0.5	1.0	0.1	0.4	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.4	0.0	0.9	1.2	0.0	1.6	0.8	5.5	0.7	0.7	6.2	0.4
Lane Grp Delay (d), s/veh	22.2	0.0	26.3	22.7	0.0	30.2	11.0	14.4	10.2	10.6	15.3	10.1
Lane Grp LOS	C		C	C		C	B	B	B	B	B	B
Approach Vol, veh/h		182			198			762			737	
Approach Delay, s/veh		23.7			26.5			13.3			14.2	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	9.6	11.5		8.9	10.8		8.7	31.2		8.3	30.8	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	10.0		10.0	10.0		10.0	50.0		10.0	50.0	
Max Q Clear Time (g_c+I1), s	5.4	4.3		4.9	5.5		4.2	16.0		3.9	17.2	
Green Ext Time (p_c), s	0.1	0.4		0.1	0.3		0.1	8.6		0.1	8.6	

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	28	62	156	37	104	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	67	170	40	113	64

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	210	0	-	0	318	190
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	128	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1361	-	-	-	675	852
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	898	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1361	-	-	-	659	852
Mov Capacity-2 Maneuver	-	-	-	-	659	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	877	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	11.6
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1361	-	-	-	718
HCM Lane V/C Ratio	0.022	-	-	-	0.247
HCM Control Delay (s)	7.706	0	-	-	11.6
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.069	-	-	-	0.969

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	88	211	4	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	96	229	4	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	234	0	-	0	330	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	98	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1333	-	-	-	665	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	926	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1333	-	-	-	664	807
Mov Capacity-2 Maneuver	-	-	-	-	664	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.1
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	706
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.703	0	-	-	10.1
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.002	-	-	-	0.014

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	76	8	33	183	5	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	9	36	199	5	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	91	0	358	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	271	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1504	-	640	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	775	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1504	-	623	971
Mov Capacity-2 Maneuver	-	-	-	-	623	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	754	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.4
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	841	-	-	1504	-
HCM Lane V/C Ratio	0.023	-	-	0.024	-
HCM Control Delay (s)	9.4	-	-	7.452	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.071	-	-	0.073	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	14	66	137	51	18	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	72	149	55	20	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	279	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	102	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1368	-	-	-	711	866
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	922	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1368	-	-	-	703	866
Mov Capacity-2 Maneuver	-	-	-	-	703	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	9.8
HCM LOS			A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1368	-	-	-	807
HCM Lane V/C Ratio	0.011	-	-	-	0.077
HCM Control Delay (s)	7.661	0	-	-	9.8
HCM Lane LOS	A	A			A
HCM 95th %tile Q(veh)	0.034	-	-	-	0.249

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	202	145	311	552	140	396	347	170	240	434	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	2	1	1	2	1	2	2	1	2	2	1
Cap, veh/h	291	845	359	527	1267	538	553	1039	686	364	833	354
Arrive On Green	0.04	0.23	0.23	0.15	0.34	0.34	0.16	0.28	0.28	0.11	0.22	0.22
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	3725	1583	3442	3725	1583
Grp Volume(v), veh/h	66	238	171	366	649	165	466	408	200	282	511	176
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	2.4	4.5	8.0	10.7	11.9	6.5	11.2	7.6	7.0	6.8	10.5	8.3
Cycle Q Clear(g_c), s	2.4	4.5	8.0	10.7	11.9	6.5	11.2	7.6	7.0	6.8	10.5	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	845	359	527	1267	538	553	1039	686	364	833	354
V/C Ratio(X)	0.23	0.28	0.48	0.69	0.51	0.31	0.84	0.39	0.29	0.78	0.61	0.50
Avail Cap(c_a), veh/h	323	845	359	607	1267	538	646	1529	894	444	1311	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	27.2	28.6	14.9	22.5	20.7	34.7	24.9	15.7	37.2	29.8	28.9
Incr Delay (d2), s/veh	0.4	0.8	4.5	2.9	1.5	1.5	8.7	0.2	0.2	6.9	0.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.0	2.1	3.4	4.5	5.5	2.6	5.3	3.4	2.5	3.2	4.8	3.2
Lane Grp Delay (d), s/veh	24.2	28.1	33.1	17.8	24.0	22.2	43.4	25.1	15.9	44.0	30.5	30.0
Lane Grp LOS	C	C	C	B	C	C	D	C	B	D	C	C
Approach Vol, veh/h		475			1180			1074			969	
Approach Delay, s/veh		29.3			21.8			31.4			34.4	
Approach LOS		C			C			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	8.5	24.3		18.2	34.0		18.7	28.8		14.0	24.1	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	5.0	17.0		17.0	29.0		16.0	35.0		11.0	30.0	
Max Q Clear Time (g_c+I1), s	4.4	10.0		12.7	13.9		13.2	9.6		8.8	12.5	
Green Ext Time (p_c), s	0.0	3.6		0.5	5.8		0.5	7.5		0.2	6.5	

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	50	863	30	0	889
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	59	1015	35	0	1046

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2079	525	0	0	1051	0
Stage 1	1033	-	-	-	-	-
Stage 2	1046	-	-	-	-	-
Follow-up Headway	3.519	3.319	-	-	2.22	-
Pot Capacity-1 Maneuver	52	498	-	-	658	-
Stage 1	305	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	52	498	-	-	658	-
Mov Capacity-2 Maneuver	170	-	-	-	-	-
Stage 1	305	-	-	-	-	-
Stage 2	337	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	498	658	-
HCM Lane V/C Ratio	-	-	0.118	-	-
HCM Control Delay (s)	-	-	13.2	0	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.399	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	100	793	55	78	811
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	0	115	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	118	933	65	92	954

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2071	933	0	0	933	0
Stage 1	933	-	-	-	-	-
Stage 2	1138	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	59	323	-	-	734	-
Stage 1	383	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	52	323	-	-	734	-
Mov Capacity-2 Maneuver	52	-	-	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	268	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.4	0	0.9
HCM LOS	C		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	323	734	-
HCM Lane V/C Ratio	-	-	0.364	0.125	-
HCM Control Delay (s)	-	-	22.4	10.604	-
HCM Lane LOS			C	B	
HCM 95th %tile Q(veh)	-	-	1.617	0.426	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	30	78	110	36	78	36	735	100	141	634	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Cap, veh/h	242	50	129	269	84	182	297	948	806	243	1013	861
Arrive On Green	0.03	0.11	0.11	0.08	0.16	0.16	0.03	0.51	0.51	0.07	0.54	0.54
Sat Flow, veh/h	1774	461	1191	1774	526	1137	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	39	0	129	131	0	136	43	875	119	168	755	45
Grp Sat Flow(s),veh/h/ln	1774	0	1653	1774	0	1662	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.6	0.0	6.4	5.0	0.0	6.3	1.0	36.6	3.4	3.4	26.2	1.1
Cycle Q Clear(g_c), s	1.6	0.0	6.4	5.0	0.0	6.3	1.0	36.6	3.4	3.4	26.2	1.1
Prop In Lane	1.00		0.72	1.00		0.68	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	0	179	269	0	266	297	948	806	243	1013	861
V/C Ratio(X)	0.16	0.00	0.72	0.49	0.00	0.51	0.14	0.92	0.15	0.69	0.75	0.05
Avail Cap(c_a), veh/h	402	0	294	337	0	296	454	995	846	338	1013	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	0.0	36.3	26.1	0.0	32.4	12.6	19.2	11.0	18.8	14.7	9.0
Incr Delay (d2), s/veh	0.3	0.0	5.4	1.4	0.0	1.5	0.2	13.3	0.1	3.5	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.7	0.0	2.8	2.2	0.0	2.6	0.4	18.6	1.2	3.7	11.3	0.4
Lane Grp Delay (d), s/veh	32.4	0.0	41.7	27.5	0.0	33.9	12.8	32.5	11.1	22.3	17.8	9.0
Lane Grp LOS	C		D	C		C	B	C	B	C	B	A
Approach Vol, veh/h		168			267			1037			968	
Approach Delay, s/veh		39.5			30.7			29.2			18.1	
Approach LOS		D			C			C			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	7.4	14.1		11.7	18.5		7.5	47.9		10.5	50.8	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	15.0		10.0	15.0		10.0	45.0		10.0	45.0	
Max Q Clear Time (g_c+I1), s	3.6	8.4		7.0	8.3		3.0	38.6		5.4	28.2	
Green Ext Time (p_c), s	0.0	0.8		0.1	0.8		0.0	4.2		0.2	10.4	

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	119	1	14	86	4	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	1	16	101	5	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	141	0	275	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	134	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1442	-	715	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	892	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1442	-	706	907
Mov Capacity-2 Maneuver	-	-	-	-	706	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.3
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	1442	-
HCM Lane V/C Ratio	0.038	-	-	0.011	-
HCM Control Delay (s)	9.3	-	-	7.525	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.118	-	-	0.035	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	132	738	386	254	277	250	180	401	356	160	308	95
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	2	1	1	2	1	2	2	1	2	2	1
Cap, veh/h	517	1472	626	371	1623	690	258	855	530	233	827	351
Arrive On Green	0.06	0.40	0.40	0.11	0.44	0.44	0.08	0.23	0.23	0.07	0.22	0.22
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	3725	1583	3442	3725	1583
Grp Volume(v), veh/h	139	777	406	267	292	263	189	422	375	168	324	100
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	4.5	15.7	20.6	7.9	4.7	11.1	5.3	9.7	20.4	4.7	7.3	5.2
Cycle Q Clear(g_c), s	4.5	15.7	20.6	7.9	4.7	11.1	5.3	9.7	20.4	4.7	7.3	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	517	1472	626	371	1623	690	258	855	530	233	827	351
V/C Ratio(X)	0.27	0.53	0.65	0.72	0.18	0.38	0.73	0.49	0.71	0.72	0.39	0.28
Avail Cap(c_a), veh/h	528	1472	626	544	1623	690	349	868	535	244	827	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	22.8	24.3	16.7	17.1	18.9	44.7	33.1	28.6	45.1	32.7	31.9
Incr Delay (d2), s/veh	0.3	1.4	5.1	2.6	0.2	1.6	5.1	0.4	4.2	9.6	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.9	7.2	8.5	3.3	2.1	4.4	2.5	4.5	8.3	2.4	3.4	2.0
Lane Grp Delay (d), s/veh	15.9	24.2	29.4	19.3	17.3	20.5	49.8	33.5	32.9	54.7	33.0	32.3
Lane Grp LOS	B	C	C	B	B	C	D	C	C	D	C	C
Approach Vol, veh/h		1322			822			986			592	
Approach Delay, s/veh		24.9			19.0			36.4			39.1	
Approach LOS		C			B			D			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	11.4	44.0		15.4	48.0		12.4	27.6		11.7	26.9	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	7.0	30.0		20.0	43.0		10.0	23.0		7.0	20.0	
Max Q Clear Time (g_c+I1), s	6.5	22.6		9.9	13.1		7.3	22.4		6.7	9.3	
Green Ext Time (p_c), s	0.0	4.9		0.5	11.1		0.1	0.3		0.0	4.6	

Intersection Summary	
HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	55	881	35	0	948
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	63	1013	40	0	1090

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2123	526	0	0	1053	0
Stage 1	1033	-	-	-	-	-
Stage 2	1090	-	-	-	-	-
Follow-up Headway	3.519	3.319	-	-	2.22	-
Pot Capacity-1 Maneuver	49	497	-	-	657	-
Stage 1	305	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	49	497	-	-	657	-
Mov Capacity-2 Maneuver	165	-	-	-	-	-
Stage 1	305	-	-	-	-	-
Stage 2	321	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	497	657	-
HCM Lane V/C Ratio	-	-	0.127	-	-
HCM Control Delay (s)	-	-	13.3	0	-
HCM Lane LOS			B	A	
HCM 95th %tile Q(veh)	-	-	0.434	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	135	781	59	73	876
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	0	115	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	152	878	66	82	984

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2026	878	0	0	878	0
Stage 1	878	-	-	-	-	-
Stage 2	1148	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	63	347	-	-	769	-
Stage 1	406	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	56	347	-	-	769	-
Mov Capacity-2 Maneuver	56	-	-	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	270	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.2	0	0.8
HCM LOS	C		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	347	769	-
HCM Lane V/C Ratio	-	-	0.437	0.107	-
HCM Control Delay (s)	-	-	23.2	10.24	-
HCM Lane LOS			C	B	
HCM 95th %tile Q(veh)	-	-	2.142	0.357	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	16	56	135	32	111	36	698	125	118	707	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Cap, veh/h	202	28	96	293	50	176	288	962	817	302	1010	858
Arrive On Green	0.03	0.08	0.08	0.09	0.14	0.14	0.03	0.52	0.52	0.06	0.54	0.54
Sat Flow, veh/h	1774	369	1270	1774	365	1273	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	37	0	80	148	0	157	40	767	137	130	777	54
Grp Sat Flow(s),veh/h/ln	1774	0	1639	1774	0	1638	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.5	0.0	3.6	5.2	0.0	7.0	0.8	25.9	3.5	2.4	25.1	1.2
Cycle Q Clear(g_c), s	1.5	0.0	3.6	5.2	0.0	7.0	0.8	25.9	3.5	2.4	25.1	1.2
Prop In Lane	1.00		0.77	1.00		0.78	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	0	124	293	0	226	288	962	817	302	1010	858
V/C Ratio(X)	0.18	0.00	0.65	0.51	0.00	0.69	0.14	0.80	0.17	0.43	0.77	0.06
Avail Cap(c_a), veh/h	383	0	214	363	0	226	467	1216	1034	435	1216	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	0.0	34.4	24.1	0.0	31.4	11.8	15.2	9.8	13.1	13.8	8.3
Incr Delay (d2), s/veh	0.4	0.0	5.6	1.4	0.0	8.8	0.2	3.0	0.1	1.0	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.7	0.0	1.6	2.2	0.0	3.3	0.3	11.2	1.2	0.9	10.6	0.4
Lane Grp Delay (d), s/veh	31.9	0.0	40.0	25.4	0.0	40.2	12.0	18.2	9.9	14.1	16.3	8.3
Lane Grp LOS	C		D	C		D	B	B	A	B	B	A
Approach Vol, veh/h		117			305			944			961	
Approach Delay, s/veh		37.4			33.0			16.8			15.5	
Approach LOS		D			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	7.2	10.8		12.0	15.6		7.3	44.5		9.3	46.5	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	10.0		10.0	10.0		10.0	50.0		10.0	50.0	
Max Q Clear Time (g_c+I1), s	3.5	5.6		7.2	9.0		2.8	27.9		4.4	27.1	
Green Ext Time (p_c), s	0.0	0.2		0.1	0.1		0.0	11.6		0.1	11.8	

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	88	6	26	107	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	7	28	116	1	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	102	0	272	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	173	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1490	-	717	957
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	857	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1490	-	703	957
Mov Capacity-2 Maneuver	-	-	-	-	703	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	920	-	-	1490	-
HCM Lane V/C Ratio	0.011	-	-	0.019	-
HCM Control Delay (s)	9	-	-	7.463	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.032	-	-	0.058	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	402	34	0	1101	0	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	473	40	0	1295	0	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	513	0	1141	256
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	648	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	1049	-	194	743
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	483	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1049	-	194	743
Mov Capacity-2 Maneuver	-	-	-	-	328	-
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	483	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	743	-	-	1049	-
HCM Lane V/C Ratio	0.173	-	-	-	-
HCM Control Delay (s)	10.9	-	-	0	-
HCM Lane LOS	B			A	
HCM 95th %tile Q(veh)	0.621	-	-	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	270	151	358	549	140	402	350	176	240	456	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	2	1	1	2	1	2	2	1	2	2	1
Cap, veh/h	308	787	335	514	1224	520	554	1057	724	360	846	360
Arrive On Green	0.06	0.21	0.21	0.17	0.33	0.33	0.16	0.28	0.28	0.10	0.23	0.23
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	3725	1583	3442	3725	1583
Grp Volume(v), veh/h	106	318	178	421	646	165	473	412	207	282	536	176
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	4.1	6.5	8.8	13.0	12.4	6.9	11.8	7.9	7.2	7.1	11.5	8.5
Cycle Q Clear(g_c), s	4.1	6.5	8.8	13.0	12.4	6.9	11.8	7.9	7.2	7.1	11.5	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	787	335	514	1224	520	554	1057	724	360	846	360
V/C Ratio(X)	0.34	0.40	0.53	0.82	0.53	0.32	0.85	0.39	0.29	0.78	0.63	0.49
Avail Cap(c_a), veh/h	308	787	335	547	1224	520	624	1477	903	429	1266	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	30.0	30.9	16.7	24.1	22.2	36.0	25.5	14.9	38.5	30.8	29.7
Incr Delay (d2), s/veh	0.7	1.5	5.9	9.2	1.6	1.6	10.2	0.2	0.2	7.7	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.8	3.1	3.9	6.1	5.8	2.8	5.8	3.5	2.6	3.4	5.3	3.3
Lane Grp Delay (d), s/veh	25.8	31.6	36.9	25.9	25.7	23.8	46.2	25.7	15.2	46.3	31.6	30.7
Lane Grp LOS	C	C	D	C	C	C	D	C	B	D	C	C
Approach Vol, veh/h		602			1232			1092			994	
Approach Delay, s/veh		32.1			25.5			32.6			35.6	
Approach LOS		C			C			C			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	10.0	23.7		20.3	34.0		19.2	30.0		14.2	25.1	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	5.0	17.0		17.0	29.0		16.0	35.0		11.0	30.0	
Max Q Clear Time (g_c+I1), s	6.1	10.8		15.0	14.4		13.8	9.9		9.1	13.5	
Green Ext Time (p_c), s	0.0	3.5		0.3	6.2		0.4	7.8		0.2	6.6	

Intersection Summary	
HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	29	0	0	50	0	878	30	0	908	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	85	87	85	87	87	87	87	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	34	0	0	57	0	1009	34	0	1044	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1549	2088	1044	2070	2070	522	1044	0	0	1044	0	0
Stage 1	1044	1044	-	1026	1026	-	-	-	-	-	-	-
Stage 2	505	1044	-	1044	1044	-	-	-	-	-	-	-
Follow-up Headway	3.519	4.019	3.319	3.519	4.019	3.319	2.218	-	-	2.22	-	-
Pot Capacity-1 Maneuver	85	52	277	35	54	500	666	-	-	662	-	-
Stage 1	276	305	-	252	311	-	-	-	-	-	-	-
Stage 2	519	305	-	276	305	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	75	52	277	31	54	500	666	-	-	662	-	-
Mov Capacity-2 Maneuver	189	163	-	127	165	-	-	-	-	-	-	-
Stage 1	276	305	-	252	311	-	-	-	-	-	-	-
Stage 2	459	305	-	242	305	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.8	13.1	0	0
HCM LOS	C	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	666	-	-	277	500	662	-	-
HCM Lane V/C Ratio	-	-	-	0.123	0.115	-	-	-
HCM Control Delay (s)	0	-	-	19.8	13.1	0	-	-
HCM Lane LOS	A			C	B	A		
HCM 95th %tile Q(veh)	0	-	-	0.416	0.387	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	4	0	0	100	18	808	55	80	841	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	150	-	0	115	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	89	85	89	85	89	89	89	89	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	112	21	908	62	90	945	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2075	2075	945	2075	2075	908	945	0	0	908	0	0
Stage 1	1125	1125	-	950	950	-	-	-	-	-	-	-
Stage 2	950	950	-	1125	1125	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	39	54	318	39	54	334	726	-	-	750	-	-
Stage 1	249	280	-	312	339	-	-	-	-	-	-	-
Stage 2	312	339	-	249	280	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	23	46	318	34	46	334	726	-	-	750	-	-
Mov Capacity-2 Maneuver	23	46	-	34	46	-	-	-	-	-	-	-
Stage 1	242	246	-	303	329	-	-	-	-	-	-	-
Stage 2	201	329	-	216	246	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	21.1	0.2	0.9
HCM LOS	C	C		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	726	-	-	318	334	750	-	-
HCM Lane V/C Ratio	0.029	-	-	0.015	0.336	0.12	-	-
HCM Control Delay (s)	10.108	-	-	16.5	21.1	10.453	-	-
HCM Lane LOS	B			C	C	B		
HCM 95th %tile Q(veh)	0.09	-	-	0.045	1.445	0.407	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	4	0	880	836	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	1035	984	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2025	990	996	0	-	0
Stage 1	990	-	-	-	-	-
Stage 2	1035	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	63	299	695	-	-	-
Stage 1	360	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	63	299	695	-	-	-
Mov Capacity-2 Maneuver	63	-	-	-	-	-
Stage 1	360	-	-	-	-	-
Stage 2	342	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	0	0
HCM LOS	C		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	695	-	299	-	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	0	-	17.2	-	-
HCM Lane LOS	A		C		
HCM 95th %tile Q(veh)	0	-	0.048	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	35	103	110	41	80	54	743	100	145	654	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Cap, veh/h	266	54	157	262	93	181	270	924	786	224	983	835
Arrive On Green	0.04	0.13	0.13	0.08	0.16	0.16	0.04	0.50	0.50	0.07	0.53	0.53
Sat Flow, veh/h	1774	419	1227	1774	568	1101	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	65	0	165	131	0	144	64	885	119	173	779	50
Grp Sat Flow(s),veh/h/ln	1774	0	1646	1774	0	1668	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.8	0.0	8.5	5.3	0.0	6.9	1.5	40.0	3.6	3.8	29.8	1.3
Cycle Q Clear(g_c), s	2.8	0.0	8.5	5.3	0.0	6.9	1.5	40.0	3.6	3.8	29.8	1.3
Prop In Lane	1.00		0.75	1.00		0.66	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	211	262	0	275	270	924	786	224	983	835
V/C Ratio(X)	0.24	0.00	0.78	0.50	0.00	0.52	0.24	0.96	0.15	0.77	0.79	0.06
Avail Cap(c_a), veh/h	391	0	282	322	0	286	408	957	813	307	983	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	0.0	37.0	27.7	0.0	33.5	14.6	21.2	12.0	19.9	16.8	10.1
Incr Delay (d2), s/veh	0.5	0.0	9.8	1.5	0.0	1.6	0.4	19.3	0.1	7.9	4.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.2	0.0	4.0	2.3	0.0	3.0	0.6	21.7	1.2	4.2	13.3	0.5
Lane Grp Delay (d), s/veh	31.8	0.0	46.9	29.2	0.0	35.1	15.0	40.4	12.1	27.9	21.3	10.1
Lane Grp LOS	C		D	C		D	B	D	B	C	C	B
Approach Vol, veh/h		230			275			1068			1002	
Approach Delay, s/veh		42.6			32.3			35.8			21.9	
Approach LOS		D			C			D			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	8.8	16.2		12.0	19.4		8.2	48.5		10.9	51.2	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	15.0		10.0	15.0		10.0	45.0		10.0	45.0	
Max Q Clear Time (g_c+I1), s	4.8	10.5		7.3	8.9		3.5	42.0		5.8	31.8	
Green Ext Time (p_c), s	0.0	0.7		0.1	0.9		0.0	1.5		0.2	9.0	

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	9	172	125	12	21	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	202	147	14	25	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	161	0	-	0	378	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	224	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1418	-	-	-	624	892
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	813	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1418	-	-	-	618	892
Mov Capacity-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.5
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1418	-	-	-	686
HCM Lane V/C Ratio	0.007	-	-	-	0.053
HCM Control Delay (s)	7.558	0	-	-	10.5
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.023	-	-	-	0.168

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	177	134	1	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	208	158	1	5	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	366	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	208	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1420	-	-	-	634	887
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	827	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1420	-	-	-	634	887
Mov Capacity-2 Maneuver	-	-	-	-	634	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	827	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1420	-	-	-	701
HCM Lane V/C Ratio	-	-	-	-	0.01
HCM Control Delay (s)	0	-	-	-	10.2
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0	-	-	-	0.031

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	155	5	15	110	5	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	6	18	129	6	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	188	0	350	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	165	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1386	-	647	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	864	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1386	-	638	857
Mov Capacity-2 Maneuver	-	-	-	-	638	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.6
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	812	-	-	1386	-
HCM Lane V/C Ratio	0.045	-	-	0.013	-
HCM Control Delay (s)	9.6	-	-	7.631	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.141	-	-	0.039	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	3	127	102	13	33	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	149	120	15	39	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	135	0	-	0	284	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	156	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1449	-	-	-	706	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	872	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1449	-	-	-	704	922
Mov Capacity-2 Maneuver	-	-	-	-	704	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1449	-	-	-	830
HCM Lane V/C Ratio	0.002	-	-	-	0.13
HCM Control Delay (s)	7.491	0	-	-	10
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.007	-	-	-	0.448

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1240	123	0	569	0	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1348	134	0	618	0	196

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1482	0	1724	741
Stage 1	-	-	-	-	1415	-
Stage 2	-	-	-	-	309	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	450	-	80	359
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	718	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	450	-	80	359
Mov Capacity-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	718	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.4
HCM LOS			D

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	359	-	-	450	-
HCM Lane V/C Ratio	0.545	-	-	-	-
HCM Control Delay (s)	26.4	-	-	0	-
HCM Lane LOS	D			A	
HCM 95th %tile Q(veh)	3.117	-	-	0	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	181	836	404	405	266	250	208	413	380	160	378	95
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	2	1	1	2	1	2	2	1	2	2	1
Cap, veh/h	468	1170	497	456	1621	689	288	836	659	232	776	330
Arrive On Green	0.07	0.31	0.31	0.19	0.44	0.44	0.08	0.22	0.22	0.07	0.21	0.21
Sat Flow, veh/h	1774	3725	1583	1774	3725	1583	3442	3725	1583	3442	3725	1583
Grp Volume(v), veh/h	191	880	425	426	280	263	219	435	400	168	398	100
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	7.0	21.0	24.9	16.8	4.5	11.1	6.2	10.1	19.5	4.7	9.4	5.3
Cycle Q Clear(g_c), s	7.0	21.0	24.9	16.8	4.5	11.1	6.2	10.1	19.5	4.7	9.4	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	468	1170	497	456	1621	689	288	836	659	232	776	330
V/C Ratio(X)	0.41	0.75	0.85	0.93	0.17	0.38	0.76	0.52	0.61	0.72	0.51	0.30
Avail Cap(c_a), veh/h	468	1170	497	475	1621	689	348	867	672	244	776	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	30.5	31.8	26.8	17.1	18.9	44.3	33.7	22.5	45.2	34.7	33.1
Incr Delay (d2), s/veh	0.6	4.5	16.9	25.4	0.2	1.6	7.8	0.5	1.5	9.6	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.1	10.1	11.8	7.5	2.0	4.4	3.0	4.7	7.5	2.4	4.4	2.1
Lane Grp Delay (d), s/veh	21.5	34.9	48.7	52.2	17.3	20.5	52.1	34.2	24.1	54.8	35.3	33.6
Lane Grp LOS	C	C	D	D	B	C	D	C	C	D	D	C
Approach Vol, veh/h		1496			969			1054			666	
Approach Delay, s/veh		37.1			33.5			34.1			39.9	
Approach LOS		D			C			C			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	12.0	36.0		24.0	48.0		13.3	27.2		11.7	25.6	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	7.0	30.0		20.0	43.0		10.0	23.0		7.0	20.0	
Max Q Clear Time (g_c+I1), s	9.0	26.9		18.8	13.1		8.2	21.5		6.7	11.4	
Green Ext Time (p_c), s	0.0	2.4		0.2	12.2		0.1	0.7		0.0	4.4	

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Notes

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	67	0	0	55	0	944	35	0	1006	180
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	85	87	85	87	87	87	87	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	79	0	0	63	0	1085	40	0	1156	212

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1699	2281	1156	2261	2261	563	1156	0	0	1125	0	0
Stage 1	1156	1156	-	1105	1105	-	-	-	-	-	-	-
Stage 2	543	1125	-	1156	1156	-	-	-	-	-	-	-
Follow-up Headway	3.519	4.019	3.319	3.519	4.019	3.319	2.218	-	-	2.22	-	-
Pot Capacity-1 Maneuver	66	40	239	25	41	470	604	-	-	617	-	-
Stage 1	239	270	-	225	286	-	-	-	-	-	-	-
Stage 2	492	279	-	239	270	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	57	40	239	17	41	470	604	-	-	617	-	-
Mov Capacity-2 Maneuver	163	143	-	93	145	-	-	-	-	-	-	-
Stage 1	239	270	-	225	286	-	-	-	-	-	-	-
Stage 2	426	279	-	160	270	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.3	13.8	0	0
HCM LOS	D	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	604	-	-	239	470	617	-	-
HCM Lane V/C Ratio	-	-	-	0.33	0.135	-	-	-
HCM Control Delay (s)	0	-	-	27.3	13.8	0	-	-
HCM Lane LOS	A			D	B	A		
HCM 95th %tile Q(veh)	0	-	-	1.381	0.462	0	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	19	0	0	135	55	844	60	76	952	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	150	-	0	115	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	89	85	89	85	89	89	89	89	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	22	0	0	152	65	948	67	85	1070	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2318	2318	1070	2318	2318	948	1070	0	0	948	0	0
Stage 1	1240	1240	-	1078	1078	-	-	-	-	-	-	-
Stage 2	1078	1078	-	1240	1240	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	26	38	269	26	38	316	651	-	-	724	-	-
Stage 1	214	247	-	265	295	-	-	-	-	-	-	-
Stage 2	265	295	-	214	247	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	11	30	269	20	30	316	651	-	-	724	-	-
Mov Capacity-2 Maneuver	11	30	-	20	30	-	-	-	-	-	-	-
Stage 1	193	218	-	239	266	-	-	-	-	-	-	-
Stage 2	124	266	-	173	218	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	26.5	0.7	0.8
HCM LOS	C	D		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	651	-	-	269	316	724	-	-
HCM Lane V/C Ratio	0.099	-	-	0.083	0.48	0.118	-	-
HCM Control Delay (s)	11.139	-	-	19.6	26.5	10.636	-	-
HCM Lane LOS	B			C	D	B		
HCM 95th %tile Q(veh)	0.33	-	-	0.27	2.472	0.399	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	21	0	959	936	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	23	0	1042	1017	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2078	1036	1055	0	-	0
Stage 1	1036	-	-	-	-	-
Stage 2	1042	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	59	281	660	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	59	281	660	-	-	-
Mov Capacity-2 Maneuver	59	-	-	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	340	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	0	0
HCM LOS	C		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	660	-	281	-	-
HCM Lane V/C Ratio	-	-	0.081	-	-
HCM Control Delay (s)	0	-	18.9	-	-
HCM Lane LOS	A		C		
HCM 95th %tile Q(veh)	0	-	0.263	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	125	21	78	135	48	118	113	719	125	129	758	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Cap, veh/h	269	45	169	332	65	160	232	910	773	257	920	782
Arrive On Green	0.09	0.13	0.13	0.09	0.14	0.14	0.06	0.49	0.49	0.06	0.49	0.49
Sat Flow, veh/h	1774	345	1290	1774	479	1176	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	137	0	109	148	0	183	124	790	137	142	833	76
Grp Sat Flow(s),veh/h/ln	1774	0	1635	1774	0	1655	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.7	0.0	5.4	6.2	0.0	9.4	3.0	33.0	4.2	3.4	35.9	2.2
Cycle Q Clear(g_c), s	5.7	0.0	5.4	6.2	0.0	9.4	3.0	33.0	4.2	3.4	35.9	2.2
Prop In Lane	1.00		0.79	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	214	332	0	226	232	910	773	257	920	782
V/C Ratio(X)	0.51	0.00	0.51	0.45	0.00	0.81	0.53	0.87	0.18	0.55	0.91	0.10
Avail Cap(c_a), veh/h	319	0	280	373	0	283	336	957	813	352	957	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	35.4	28.7	0.0	36.7	18.7	19.9	12.6	17.8	20.3	11.8
Incr Delay (d2), s/veh	1.5	0.0	1.9	0.9	0.0	13.1	1.9	8.3	0.1	1.8	11.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.6	0.0	2.3	2.7	0.0	4.6	1.5	15.7	0.0	1.4	18.0	0.8
Lane Grp Delay (d), s/veh	31.1	0.0	37.3	29.7	0.0	49.9	20.6	28.2	12.7	19.7	32.0	11.8
Lane Grp LOS	C		D	C		D	C	C	B	B	C	B
Approach Vol, veh/h		246			331			1051			1051	
Approach Delay, s/veh		33.8			40.8			25.3			28.9	
Approach LOS		C			D			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	12.5	16.5		13.0	16.9		9.9	47.8		10.3	48.3	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	15.0		10.0	15.0		10.0	45.0		10.0	45.0	
Max Q Clear Time (g_c+I1), s	7.7	7.4		8.2	11.4		5.0	35.0		5.4	37.9	
Green Ext Time (p_c), s	0.1	1.0		0.1	0.5		0.1	7.1		0.1	5.4	

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	28	120	193	37	104	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	130	210	40	113	64

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	250	0	-	0	421	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	191	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1316	-	-	-	589	809
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	841	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1316	-	-	-	574	809
Mov Capacity-2 Maneuver	-	-	-	-	574	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	12.7
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1316	-	-	-	641
HCM Lane V/C Ratio	0.023	-	-	-	0.276
HCM Control Delay (s)	7.8	0	-	-	12.7
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.071	-	-	-	1.124

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	146	248	4	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	159	270	4	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	433	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	161	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1289	-	-	-	580	767
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	868	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1289	-	-	-	579	767
Mov Capacity-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	867	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.7
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1289	-	-	-	631
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.795	0	-	-	10.7
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.003	-	-	-	0.016

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	123	8	32	220	5	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	9	35	239	5	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	142	0	447	138
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	309	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1441	-	569	910
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	745	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1441	-	553	910
Mov Capacity-2 Maneuver	-	-	-	-	553	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	724	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.8
HCM LOS			A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	772	-	-	1441	-
HCM Lane V/C Ratio	0.025	-	-	0.024	-
HCM Control Delay (s)	9.8	-	-	7.56	0
HCM Lane LOS	A			A	A
HCM 95th %tile Q(veh)	0.078	-	-	0.074	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	14	113	174	51	18	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	123	189	55	20	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	245	0	-	0	370	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	153	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1321	-	-	-	630	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	875	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1321	-	-	-	622	823
Mov Capacity-2 Maneuver	-	-	-	-	622	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.3
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1321	-	-	-	747
HCM Lane V/C Ratio	0.012	-	-	-	0.083
HCM Control Delay (s)	7.757	0	-	-	10.3
HCM Lane LOS	A	A			B
HCM 95th %tile Q(veh)	0.035	-	-	-	0.27

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

CTL | THOMPSON INCORPORATED

GEOLOGIC AND PRELIMINARY GEOTECHNICAL INVESTIGATION ERIE PARCEL SOUTHWEST OF ERIE PARKWAY AND EAST COUNTY LINE ROAD ERIE, COLORADO

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Project No. DN47,332-115

September 10, 2014

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SCOPE

This report presents the results of our Geologic and Preliminary Geotechnical Investigation for the 47-acre parcel (Erie Parcel) southwest Erie Parkway and East County Line Road in Erie, Colorado (Fig. 1). The purpose of our investigation was to evaluate the subsurface conditions and review previous mine subsidence reports to assist in planning of site development and residential and commercial construction. The report includes a description of the subsurface conditions encountered in our exploratory borings, descriptions of materials encountered in test pits, identification of geologic hazards, a summary of available mine subsidence data, and discussions of site development and construction as influenced by geologic and geotechnical conditions. The scope was described in our Service Agreement (DN 14-0290) dated June 24, 2014.

This report is based on our understanding of the planned development, subsurface conditions found in exploratory borings and test pits, results of field and laboratory tests, engineering analysis of field and laboratory data, review of previous mine subsidence reports, and our experience with similar projects. The discussions and criteria presented in this report are intended for planning purposes only. Additional investigations will be necessary to design foundations and floor systems, pavements, and other improvements. Further investigation of mine subsidence risk will likely be merited. A brief summary of our conclusions and recommendations follows, with more detailed discussion in the report.

SUMMARY

1. There are geologic hazards that will affect the development of this site. The hazards include abandoned coal mines, abandoned mine entries, undocumented fill, and expansive soil and bedrock. We believe these concerns can be mitigated with proper planning, engineering, design and construction.

2. Subsoils encountered in our borings consisted of about 3 to 24.5 feet of interlayered clay and sand and clean to clayey sand underlain by bedrock. Overburden clay is judged as low swelling and the sand is non-expansive.

Bedrock was encountered deeper than 15 feet in 6 of 9 borings and consisted of low to moderately swelling claystone with thin beds of non-expansive sandstone and lignite. Moderate swelling, shallower claystone was encountered at depths of 3 to 13 feet at the northwest corner and southwest portion of the parcel.

3. Groundwater was encountered in all nine borings at depths ranging from 11 to 27.5 feet below existing grade. Groundwater levels will fluctuate seasonally and may rise in response to precipitation, land-use changes, and landscape irrigation. Groundwater is not expected to impact the construction.

4. Review of available records and documents pertaining to the underlying Marfel and Pinnacle mines indicates that two levels of coal mining occurred within 85 to 136 feet of existing grade. Extraction thickness varied 7 to 14 feet. Mine maps are not known to exist. Additional mine subsidence investigation will likely be required.

5. Exploratory test pits revealed the locations of the Marfel mine entry and Pinnacle shaft. We recommend further investigation of the Marfel mine entry to confirm the entry orientation. Site development planning should avoid construction of structures over the mine entry areas.

6. Based on historical aerial photography and site reconnaissance, we have identified probable areas of undocumented fill (Fig. 5). This fill should be removed and replaced if buildings or roadways are planned in these areas.

7. We believe that use of shallow foundations would be prudent considering the presence of underground coal mines. To allow use of shallow foundations, sub-excavation will likely be necessary in the southwest portion of the site and possibly in the northwest corner. Further investigation will be necessary to define these areas after preliminary grading plans are available. A design-level soils and foundation investigation should be done prior to building design and construction.

8. We advocate use of underdrain systems below sanitary sewer mains to help control groundwater and provide a gravity outlet for basement foundation drains (if basements are planned).

9. Preliminary data suggest that the Town of Erie's minimum pavement sections will be appropriate. It is unlikely that expansive subgrade treatment will be necessary. A design-level subgrade investigation should be done prior to paving.

10. Control of surface and subsurface drainage will be critical to the performance of foundations, slabs-on-grade and pavements. Overall surface drainage should be designed to provide rapid run-off of surface water away from structures, pavements and flatwork.

SITE CONDITIONS

The 47-acre Erie Parcel is located southwest of Erie Parkway and East County Line Road in Erie, Colorado (Fig. 1 / Photo 1). The site is bordered by a residential subdivision on the west residential/commercial developments on the south, and commercial property on the east. Topography prepared by Rock Creek Surveying, LLC indicates that the ground surface generally slopes to the east with about 50 feet of vertical relief across the parcel. We visited the site on June 12, 2014 to stake boring locations and observe site conditions. The parcel was being used for agricultural purposes and was predominately covered with wheat.

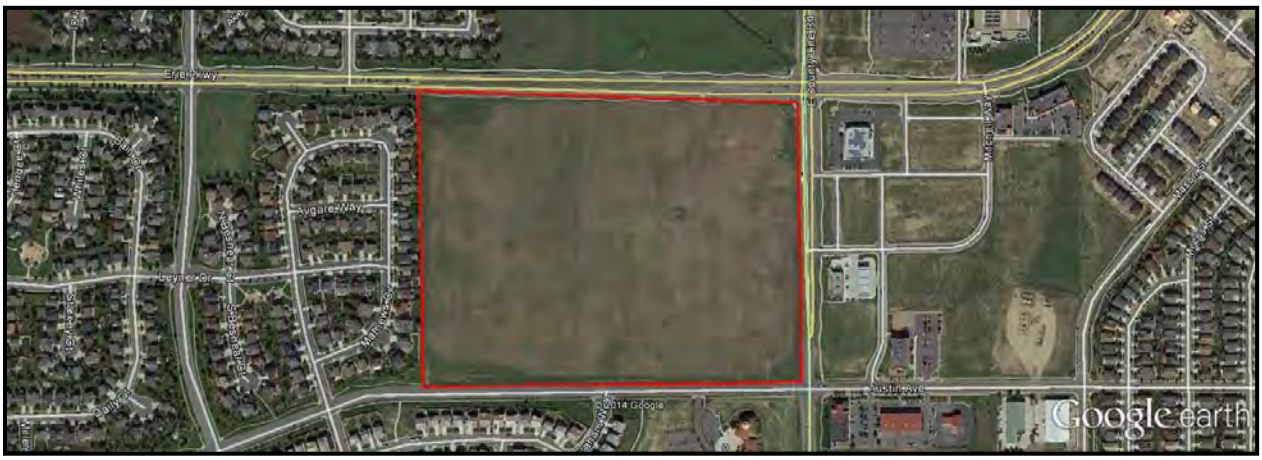


Photo 1 – Google Earth© Aerial Site Photo, October 6, 2013.

PROPOSED DEVELOPMENT

Grading plans are not available. We understand that the site may be developed for mixed-use including single-family residences, townhomes, apartments, and commercial/retail facilities. Single-family residences and townhomes may be one or two-story, wood-framed structures with or without basements. Apartments will likely be

multi-story, wood-framed structures. Commercial/Retail structures would likely be one to two-stories without basements. Paved roads and parking lots will provide access. Buried utilities would serve the project.

PREVIOUS INVESTIGATIONS

CTL | Thompson has performed several investigations in the immediate vicinity of the parcel including a Due Diligence Investigation and Geotechnical Investigation (DN43,169-125/145) for the Saint Luke's Orthodox Christian Church to the south. We identified geologic hazards including compressible soil, expansive soil and bedrock, and abandoned underground coal mines and shafts of the McGregor Mine on the church property. We estimated that the subsidence risk is low on the church parcel. We recommended use of footings with minimum dead load or mat foundations after about 5 feet of sub-excavation (to reduce risk related to compressible/swelling soil) below finished floor level. Below grade areas were not planned for the church or auxiliary buildings.

INVESTIGATION

Subsurface conditions were investigated by drilling nine exploratory borings at the locations shown on Fig. 1. The boring locations were selected and staked by our engineers and surveyed by Rock Creek Surveying. Prior to drilling, we contacted the Utility Notification Center of Colorado and local sewer and water districts to clear boring locations for conflicts with buried utilities.

The borings were advanced to depths of 25 to 35 feet using 4-inch diameter, continuous-flight auger and a truck-mounted CME-45 drill rig. Samples of the soil and bedrock were obtained at 5-foot intervals using 2.5-inch diameter (O.D.) modified California barrel samplers driven by a 140-pound hammer falling 30 inches. A representative of CTL | Thompson, Inc. was present during drilling to observe drilling operations, log the soil and bedrock, and obtain samples. Upon completion of drilling, the

holes were left open to facilitate delayed groundwater measurements. Groundwater was measured 40 days after drilling. Summary logs of the exploratory borings with results of field penetration resistance tests and a portion of the laboratory data are presented in Appendix A.

Samples were returned to our laboratory where they were examined by our engineers and tests were assigned. Laboratory tests included dry density, moisture content, percent silt and clay-sized particles (passing the No. 200 sieve), Atterberg limits, gradation, swell-consolidation, and water-soluble sulfate concentration. Swell-consolidation tests were performed by wetting the samples under approximate overburden pressures (the weight of the overlying soil). Results of laboratory tests are presented in Appendix B and are summarized in Table B-I.

SUBSURFACE CONDITIONS

Subsoils encountered in our borings consisted of about 3 to 24.5 feet of interlayered sand and clay and clean to clayey sand underlain by bedrock. Bedrock predominately consisted of claystone with thin intermittent beds of sandstone and lignite. Pertinent engineering characteristics of the soil and bedrock are presented in the following paragraphs.

Interlayered Sand and Clay

About 3 to 15 feet of interlayered sand and clay was encountered above bedrock in all borings except TH-7. The interlayered strata predominately consisted of sand with thin seams of clay. Four samples contained 24 to 71 percent clay and silt and exhibited low plasticity. Field penetration tests indicate that the interlayered strata are either medium dense (sand) or medium stiff to stiff (clay). Water-soluble sulfate concentrations of less than 0.01 and 0.05 percent were measured in two samples. Three samples swelled 0.2 to 1.4 percent, one did not swell, and three compressed 0.6 to 0.9 percent when wetted. We judge that the sand is non-expansive and the clay is low swelling.

Sand

About 3 to 12 feet of clean to clayey sand was encountered at variable depths in all 9 borings. Two samples contained 94 and 95 percent sand size particles and exhibited low plasticity. One sample had a water-soluble sulfate concentration of 0.04 percent. One sample did not swell and four compressed 0.1 o 2.4 percent when wetted. The sand is non-expansive.

Bedrock

Bedrock was encountered at depths of 3 to 24.5 feet below existing grade. Estimated surface elevation contours and depths to the bedrock surface are shown on Fig. 2. Bedrock is relatively shallow in the northwest corner and south portion of the parcel and deep in remaining areas. Bedrock predominately consisted of weathered and comparatively unweathered claystone with a few thin beds of sandstone and lignite. Lignite was encountered in TH-3 and 6 at depths of 25 and 28 feet below existing grade. Two samples contained 76 and 85 percent clay and silt size particles and were low to moderately plastic. One sample had a water-soluble sulfate concentration of 0.03 percent. Samples swelled 0.1 to 4.0 percent and did not swell when wetted. We judge that the bedrock is low to moderately swelling.

Groundwater

Groundwater was encountered in TH-4 and TH-9 during drilling at depths of 17 and 18 feet below existing grade. When the holes were checked 40 days after drilling groundwater was measured 11 to 27 feet below existing grade in all nine borings. Figure 3 shows our estimates of the groundwater surface elevations. Groundwater is not anticipated to impact site development or building construction. Groundwater levels will fluctuate seasonally and may rise in response to precipitation, land-use changes, and landscape irrigation.

GEOLOGIC HAZARDS

Geologic hazards were evaluated through review of available mine subsidence reports, historical aerial photography, historical topographic maps, geologic maps, field observations, conditions found in our exploratory borings and test pits, and our experience with similar projects and conditions. The hazards identified are:

- Abandoned Underground Coal Mines,
- Abandoned Mine Entries;
- Undocumented Fill,
- Expansive Soil and Bedrock, and
- Regional Issues of Seismicity and Radioactivity.

The geologic hazards will affect development of this site. We believe the hazards can be mitigated with proper planning, engineering, design and construction.

Abandoned Underground Coal Mines

The presence of abandoned underground coal mines presents risk of ground subsidence. Ground subsidence can induce slight vertical movement, collapse, and/or lateral strain to buildings, pavement, and other improvements.

We reviewed three documents that reference the abandoned underground coal mines on this site that were obtained from the Colorado Geological Survey (CGS) or provided by you including:

- *Preliminary Subsidence and Preliminary Geotechnical Engineering Investigation, ATEC Associates, Project No. 41-74001, April 3, 1987;*

- *Preliminary Mine Subsidence Investigation, Western Environmental and Ecology, Project No. 422-001-01, December 23, 2005; and,*

- *Review Reports and Documents, Abandoned Mine and Subsidence Investigation, Zapata Engineering, Blackhawk, Project No. 5083, October 24, 2007;*

Review of mine subsidence data indicates that the Marfel and Pinnacle mines are located below this property. We understand that very few records were submitted by the mining company after mining was complete. Pertinent information that is not available includes mine surveys (maps) and records of the number of mined levels and depths to the mines. Blackhawk's 2007 document review indicated a discrepancy in the Marfel mine documents. One record pertaining to the Marfel mine reports that the mine is located several miles north in Section 13. The Erie Parcel is located in Section 24. We do not know if this is a numerical error in Section reporting by the mining company or if the record is accurate. As discussed later, mine entries were found on the property during this investigation.

Western Environmental and Ecology (WEE) drilled fifteen deep borings in their 2005 Mine Subsidence Investigation. Their data indicates that two mineable coal seams exist below the property. They reported that the depth to the roof of the upper seam varies from 80 to 116 feet and the depth to the lower seam varies from 101 to 136 feet. The two seams are about 12 feet apart. ATEC's 1987 report indicates that records of the Marfel mine report an average coal thickness of about 14 feet. This record appears to be relatively consistent with the conditions found by WEE who found that each extraction was about 7 feet thick. Data from WEE's 2005 investigation reveal that only the upper level was mined at 3 of 15 boring locations, only the lower level was mined at 4 locations, both levels were mined at 4 locations, and there was no coal extraction at 4 locations. We show the approximate boring locations and summarized data from WEE's studies on Fig. 4.

Using data from WEE's 2005 investigation, bedrock surface elevations estimated during this study, and ground surface elevations provided by Rock Creek Surveying, we have estimated the thickness of bedrock above the original mined level (Fig. 4). Bedrock thickness appears to vary from 71 to 126 feet with the thinnest cover in the northeast portion of the site. WEE comments on the height of collapse above the mine workings in the Boulder-Weld Coal Field and this project which reads as follows: *"..the observed results from the drilling on the site show that collapse is confined to an interval*

of 20 to 40 feet above the workings." Based on this observation, estimated bedrock thicknesses, and our experience, we believe that the risk of ground collapse/sinkhole formation due to mine subsidence is low.

WEE performed a lateral strain analysis in their 2005 study. WEE found that the "*worst case theoretical horizontal strains and surface subsidence would be 0.325% and 0.5 feet, respectively."* WEE stated *"development will allow for construction of buildings with a foundation length of 60 feet or less."* The width of the extraction is critical to a lateral strain analysis. The actual width of the extraction is not known. WEE assumed a width of 100 feet based on the width of the mapped workings of the nearby Mitchell and Garfield Mines. We believe that additional investigation will be merited to estimate the geographical extent and geometry of mining, evaluate the mine conditions, verify risk of potential mine subsidence, and to determine appropriate remedial actions (if any). The additional investigation may incorporate surface geophysical testing techniques to attempt to delineate the areas and depths of mining. A number of deep verification borings may also be recommended. Our experience suggests that the Town of Erie will likely refer subsidence studies to CGS. It may be beneficial to discuss any proposed investigations with CGS prior to initiation.

Abandoned Mine Entries

Two mine entries to the Marfel and Pinnacle mines are reported on the property by CGS and United States Geological Survey (USGS). Blackhawk concluded that the two government agencies report two different locations for each access point; totaling four possible locations. The United States Bureau of Mines (USBM) records indicate that a slope entry occurred for the Marfel mine. The reported locations of the four possible locations are shown on Fig. 4.

The potential mine entries were investigated using test pits excavated by Don Rice Excavating. All locations were surveyed and staked in the field by Rock Creek Surveying, LLC. The reported location by CGS was immediately adjacent to a soil pile (Photo 2/ Fig. 4).

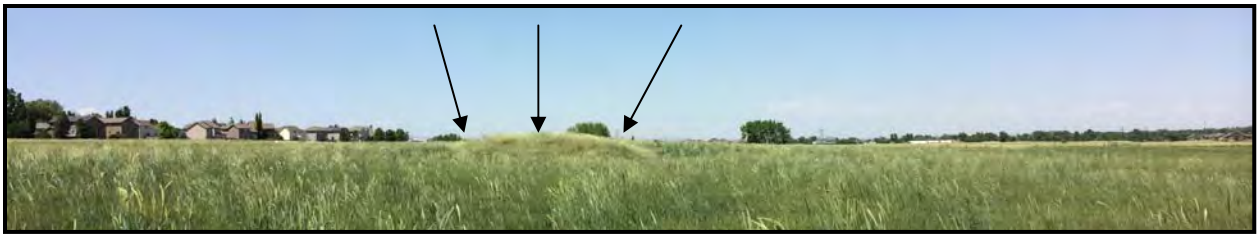


Photo 2 – Photograph of spoil pile, June 13, 2014.

Test pits at the two reported locations of the Marfel mine entry did not reveal evidence of mining. Excavations of the soil pile indicated that the pile likely originated from a mine entry excavation. A suspicious location was observed northeast of the spoil pile that did not contain vegetation. A test pit at this location (Fig. 4) unearthed evidence of a mine entry. Debris and trash from around the time of mining including bottles, shoes, bed framing, a cow carcass, wagon parts, and other garbage and mining tools were found. At a depth of about 30 feet below existing grade, an apparent sloped entry haulway to the Marfel mine was found (Photo 3). The excavation exposed in-place timber lagging on the haulway wall sides and roof that angled downward to the north-north-east toward the Garfield No. 1 Mine (Photo 3). Collapsed lagging was also observed. The haulway had collapsed up-gradient and below the estimated roof as shown in Photo 3. Soil above the roof did not cave. Safety concerns prevented us from entering the excavation to measure the slope of the lagging. We can provide close-up photographs of the declined entry haulway and lagging upon request. After the excavation was finished, Rock Creek surveyed the location and orientation of the sloped haulway as shown on Fig. 4.

Photo 3 – Photograph of Marfel mine declined access, July 18, 2014.

A sloped mine entry poses risk of ground subsidence and/or lateral strain within some horizontal distance above the haulway. Remediation at the mine access surface will be necessary. We recommend plans avoid placing structures (buildings) within a 100 foot easement outside of the estimated haulway orientation (Fig. 4). Other improvements that can sustain potential ground movement can be planned for this easement. The estimate of the haulway orientation is based on one test pit. We recommend additional investigation to verify and increase confidence of the haulway orientation that may include surface geophysical testing techniques and drilling.

Test pits of the two reported locations of the Pinnacle mine entry did not reveal evidence of mining. An excavation at a suspicious location unearthed the Pinnacle mine entry and revealed deep spoils extending downward. The spoils extended horizontally in an almost perfect circle with a diameter of about 10 feet which indicates that this entry was a vertical shaft (Photo 4). These conditions were encountered consistently to the maximum explored depth of 20 feet.

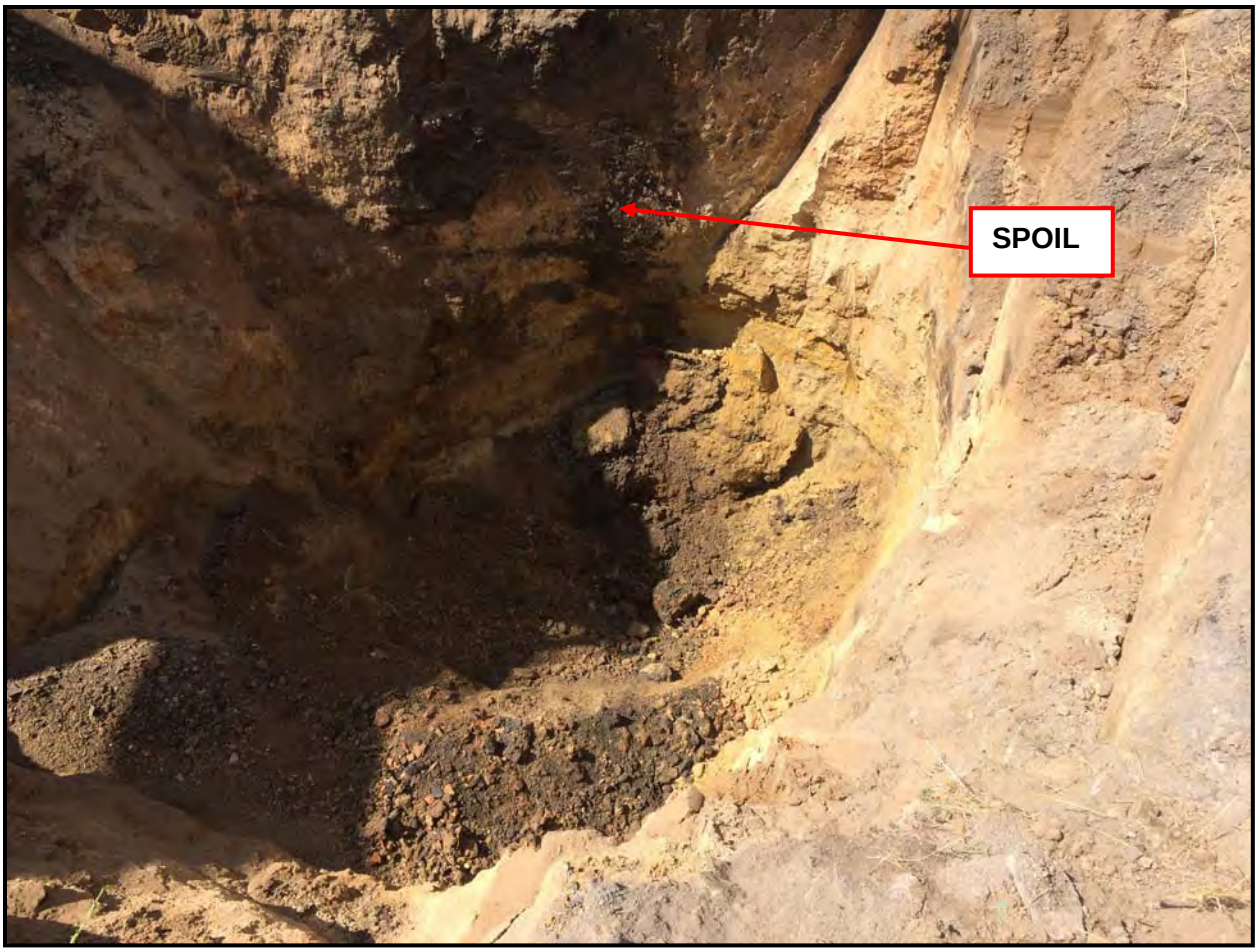


Photo 4 – Photograph of Pinnacle Shaft, July 18, 2014.

The presence of a vertical shaft presents risk of ground subsidence and/or lateral strain. We recommend that the shaft be grouted and capped during site development. We recommend no buildings be planned within 50 feet of the capped shaft. Other improvements that can sustain potential ground movement can be planned for this easement. Table A includes the location data for the shafts/entry points.

TABLE A
MINE SHAFT/ENTRY LOCATION DATA

Shaft/Entry	Northing	Easting
Marfel Slope Entry (depth of 30 feet)	256355.8	124798.8
Pinnacle Shaft	255595.6	125162.8

Due to the lack of records of the Marfel and Pinnacle mines, it is possible that undocumented mine entries or air shafts exist on the property. We did not find any evidence of unmapped mine entries during our site observation. It is possible that after vegetation is stripped, mine spoils will be observed at other locations across the property. We should be present to observe grading and help identify potential mine spoils and potential shaft locations.

Undocumented Fill

Review of historical aerials indicates that the site has been used for agricultural purposes since at least 1993. Very little site activity was apparent prior to the fall/winter of 2002 when Austin Avenue on the south and the residential developments on the west and south were graded (Photo 5). Aerials photos show that access roads were graded on the Erie Parcel during the 2002 site development. We have shown the approximate locations of earthwork visible on aerials on Fig. 5. These locations could contain undocumented fill. We did not find indication of undocumented fill at these locations during our site visits.

Photo 5 – Google Earth© Aerial Site Photo, December 31, 2002.

Aerial photography shows that Erie Parkway was widened during the summer of 2007 (Photo 6). It appears that earthwork was performed on the northern edge of this parcel and an area on the northeast corner was used for construction staging. These

locations could contain undocumented fill. We did not observe indication of undocumented fill during our site walk (Fig. 5).

Photo 6 – Google Earth© Aerial Site Photo, July 30, 2007

We do not recommend building structures, roadways, or other improvements over undocumented fill due to potential settlement issues. If fill is present it should be removed and replaced as densely compacted fill. We recommend additional investigation where improvements are planned over these areas.

Mine spoils and buried trash were observed during our test pit exploration in the vicinity of the Marfel mine entry and Pinnacle shaft. Mine spoils and trash below buildings, roadways, or other improvements should be substantially removed.

Expansive Soil and Bedrock

Review of Geologic Maps[1] shows the site soils consist of windblown alluvium (Qes) underlain by bedrock of the Laramie formation (Kl). Typical geologic hazards associated with these geologic units include expansive soil and bedrock and, sometimes, compressible soil. Our investigation data verifies that expansive soil and bedrock are present. Swelling soil and bedrock could heave and damage foundations, slab-on-grade, exterior flatwork, paved roads, and other improvements. Proper engineering of

[1] "Colton, R.B., and Anderson, L.W., 1977, Preliminary Geologic Map of the Erie Quadrangle, Boulder, Weld, and Adams Counties, Colorado: U.S. Geological Survey, Miscellaneous Field Studies Map MF-882, scale 1:24,000

these structures should be planned to reduce, but not eliminate potential heave and associated distress.

We used the results of swell tests to estimate the post-construction potential heave due to swelling. The estimates are based on 24-foot depth of wetting below existing grade. If extensive cut/fill is planned, we should reevaluate our estimates. Our experience indicates that the heave estimates are conservative and it is unlikely that the full calculated heave will occur. The potential heave estimates are summarized in Table B. These estimates are for heave only and do not include movement due to settlement of undocumented fill and/or mine subsidence.

TABLE B
SUMMARY OF POTENTIAL HEAVE ESTIMATES

Soil Boring	Heave Estimate (inches)	Risk due to Expansive Soil and Bedrock
TH-1	2.2	Low
TH-2	0.6	Low
TH-3	<0.5	Low
TH-4	0.9	Low
TH-5	2.4	Low
TH-6	2.1	Low
TH-7	1.6	Moderate
TH-8	3.3	Moderate
TH-9	1.0	Low

We estimate the risk due to expansive soil and bedrock is predominately low except where moderately swelling shallow claystone was encountered (Fig. 5).We estimated that the risk is moderate where claystone is shallow.

Seismicity

The soil and bedrock are not expected to respond unusually to seismic activity. According to the 2012 International Building Code (IBC, Standard Penetration Resistance method of Section 1613.5.2), and based upon the results of our investigation, we judge the site classifies as Site Class D. The subsurface and groundwater conditions indicate low susceptibility to liquefaction. Only minor damage to relatively new, properly

designed and constructed structures would be expected with a major seismic event. Wind loads typically govern dynamic structural design in this area.

Radon Gas

It is normal in the areas east of the Front Range to measure accumulations of radon gas in poorly ventilated spaces that are in contact with soil or bedrock, such as full-depth basements. Radon gas is one of several radioactive products of the natural decay of uranium into stable lead. There is a potential for radon gas accumulation in poorly ventilated spaces. Typical mitigation methods consist of sealing soil gas entry areas and ventilation of below-grade spaces. Radon rarely accumulates to significant levels in above-grade spaces. The only method to accurately evaluate radon concentrations in a closed area is to perform testing after construction. We believe it is prudent to plan contingencies for radon mitigation during design of structures, such as provision for venting of foundation drain systems.

SITE DEVELOPMENT

Geologic hazards that may influence site development and building performance include the presence of abandoned underground coal mines, abandoned mine entries, undocumented fill, and expansive soil and bedrock. These concerns can be mitigated with proper planning, engineering, design and construction. We believe there are no geologic or geotechnical constraints that preclude development. We believe the risk due to expansive soil and bedrock can be reduced by sub-excavation and risk associated with undocumented fill can be reduced by removing and replacing the fill. Additional investigation of the abandoned underground coal mines and entries is recommended to evaluate risk of subsidence and determine appropriate remedial measures (if any). The following sections provide site development recommendations based on available data.

Excavation

We believe the soil and bedrock penetrated by our exploratory borings can be excavated with typical, heavy-duty equipment. We recommend the owner and the contractor become familiar with applicable local, state and federal safety regulations, including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards. Based on our investigation and OSHA standards, we anticipate the fill and sand will classify as Type C soil and the bedrock as Type A based on OSHA Standards governing excavations published in 29 CFR, Part 1926. Type A soil requires a maximum slope inclination of ¾:1 (horizontal to vertical) and Type C requires 1½:1 for temporary excavations in dry conditions. Saturated soils may require flatter slopes or bracing. Excavation slopes specified by OSHA are dependent upon soil types and groundwater conditions encountered. The contractor's "competent person" should identify the soils encountered in the excavations and refer to OSHA standards to determine appropriate slopes. Stockpiles of soils and equipment should not be placed within a horizontal distance equal to one-half the excavation depth, from the edge of the excavation. A professional engineer should design excavations deeper than 20 feet.

Site Grading

Grading plans are not available. Due to the presence of underground coal mines, the safest site development approach is to limit cuts. The ground surface in areas to be filled should be stripped of vegetation, existing fill and trash, scarified, and moisture conditioned to between optimum and 3 percent above optimum moisture content for clay and within 2 percent of optimum for sand and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698). We anticipate stripping may require cuts of 3 to 6 inches.

The properties of fill will affect the performance of foundations, slabs-on-grade, utilities, pavements, flatwork and other improvements. If import soil is needed, it should ideally consist of soil having a maximum particle size of 3 inches, less than 50 percent

passing a No. 200 sieve, a liquid limit less than 30 percent and a plasticity index less than 15 percent. Potential fill materials should be submitted to our office for approval prior to importing to the site.

On-site soils free of vegetation, trash, and deleterious material are suitable for reuse as site grading fill. Fill should be placed in thin loose lifts, moisture conditioned to between optimum and 3 percent above optimum moisture content for clay and within 2 percent of optimum for sand, and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698). The placement and compaction of site grading fill should be observed and density tested by our representative during construction. Guideline grading specifications are presented in Appendix C.

Our experience indicates fill and backfill can settle, even if properly compacted to criteria provide above. Factors that influence the amount of settlement are depth of fill, material type, degree of compaction, amount of wetting and time. The degree of compression of fill under its own weight will likely range from low for granular soils (½ percent or less) to moderate for clay/sand mixtures (1 to 2 percent).

Sub-Excavation

Shallow, moderately swelling bedrock was found in TH-1, TH-7, and TH-8 located in the northwest corner and southwest portions of the parcel. Very long and heavily-reinforced drilled piers and structurally supported basement floors are normally recommended for moderate to high risk sites. Use of shallow foundations is preferable due to potential mine subsidence. In order to allow use of shallow foundations, sub-excavation will likely be necessary in these areas. Additional investigation will be necessary to better define these areas after preliminary grading plans are available. We anticipate sub-excavation to a minimum depth of 10 feet below the lowest foundation excavation level may be merited. The bottom of the sub-excavated area should extend laterally at least 5 feet and preferably 10 feet outside the largest possible foundation footprints to ensure foundations are constructed over moisture-conditioned fill.

The excavation contractor should be chosen carefully to assure they have experience with fill placement at over-optimum moisture and have the necessary compaction equipment. The contractor should provide a construction disc to break down fill materials and anticipate use of push-pull scraper operations and dozer assistance. The operation will be relatively slow. In order for the procedure to be performed properly, close contractor control of fill placement to specifications is required. Sub-excavation fill should be moisture-conditioned between 1 and 4 percent above optimum moisture content with an average test moisture content each day of at least 1.5 percent above optimum. Fill should be compacted as recommended in Site Grading.

Special precautions should be taken for compaction of fill at corners, access ramps, and along the perimeters of the excavations as large compaction equipment cannot easily reach these areas. Our representative should observe placement procedures and test compaction of the fill on a “full-time” basis. The swell of the moisture-conditioned fill should be tested after the fill placement. Guideline sub-excavation grading specifications are presented in Appendix D.

If the fill dries excessively prior to construction, it may be necessary to rework the upper drier materials just prior to constructing foundations. We judge the fill should retain adequate moisture for about two years and can check moisture conditions in each excavation as construction progresses, if requested.

Sub-excavation and replacement with low swell fill will likely allow use of footing foundations and enhance performance of slab-on-grade basement floor construction. Sub-excavation will also enhance performance of concrete flatwork (driveways and sidewalks) and pavements, potentially reducing warranty and maintenance costs.

Existing Fill

Undocumented fill was not apparent in our borings; however, we did observe buried trash and debris in one test pit. Historical aerial photography also indicates that

undocumented fill could be present at several locations. We have shown potential undocumented fill locations on Fig. 5. The fill should be removed and recompacted as specified in Site Grading.

Slopes

We recommend permanent cut and fill slopes be designed with a maximum grade of 3:1 (horizontal:vertical). Use of 4:1 or flatter slope is better to control erosion. If site constraints (property boundaries and streets) do not permit construction with recommended slopes, we should be contacted to evaluate the subsurface soils and steeper slopes. Slopes greater than 20 feet high should be evaluated on a case-by-case basis. Surface drainage should not be allowed to sheet flow across slopes or pond near the crest of slopes. All cut and fill slopes should be re-vegetated as soon as practical after grading to reduce potential for erosion problems. Excavation contractors should evaluate ground conditions and control slopes in accordance with OSHA criteria.

Underdrain Collection System

The use of an underdrain collection system in sanitary sewer main trenches is a common method to provide a gravity outlet for basement foundation drains. The merits of underdrains will depend on proposed grading and the types of structures. If used, the underdrains should consist of 0.75 to 1.5-inch clean, free draining gravel surrounding a perforated PVC pipe (Fig. 7). We believe use of perforated pipe below sanitary sewer mains is the most effective approach to control groundwater. The pipe should have a minimum diameter of 3-inches. The line should consist of smooth, perforated, or slotted rigid PVC pipe placed at a grade of at least 0.5 percent. A positive cutoff (concrete) should be constructed around the sewer pipe and underdrain pipe immediately downstream of the point where the underdrain pipe leaves the sewer trench (Fig. 8). Solid pipe should be used down gradient of this cutoff wall. The underdrains should be designed to discharge to a gravity outfall constructed with a permanent concrete headwall and trash rack. The underdrain should be installed with clean-outs. To reduce the risk of

cross-connecting sewer and underdrain services, we recommend using a 4-inch diameter pipe for sewer services and 3-inch diameter pipe for the underdrain services. Where feasible, the underdrain services should be installed deep enough so that the lowest point or the sump pit of the basement foundation drain (if any) can be connected to the underdrain service as a gravity outlet (Fig. 9). For non-walkout basements (if any), the low point of the basement foundation drain may be about 3 feet deeper than the sewer service. For residences with walkout basements (if any), the low point or sump pit of the basement foundation drain will be below the frost stem wall in the rear portion of the basement. The foundation drain in a walkout basement would require a deeper underdrain service for a gravity discharge and may not be practical. For these conditions, we suggest the front portion of the foundation drain be connected to the underdrain and a sump pit used for the rear portion.

Utilities

Water and sewer lines are usually constructed beneath paved roads. Compaction of trench backfill can have a significant effect on the life and serviceability of pavements. Trench backfill should be placed in thin (8 inches or less) loose lifts and moisture conditioned to between optimum and 3 percent above optimum moisture content for clay and claystone, within 2 percent of optimum moisture content for gravel and sand, and compacted to at least 95 percent of maximum dry density (ASTM D 698). The placement and compaction of trench fill and backfill should be observed and tested by our firm during construction.

Our experience indicates use of a self-propelled compactor results in more reliable performance compared to backfill “compacted” by a sheepsfoot wheel attachment on a backhoe or trackhoe. The upper portion of the trenches should be widened to allow the use of a self-propelled compactor. Special attention should be paid to backfill placed adjacent to manholes as we have seen instances where settlement in excess of 2 percent has occurred. Any improvements placed over backfill should be designed to accommodate movement.

Pavements

Pavement subgrade soils will likely consist of interlayered sand and clay or clean to silty sand. We consider the on-site soil as good pavement subgrade. Potential subgrade samples swelled 0.2 and 1.4 percent, did not swell, and compressed 0.1 to 2.4 percent when wetted. We do not anticipate expansive subgrade mitigation. The data suggests that the Town of Erie's minimum pavement sections will likely be appropriate. We understand that the Town prefers the use of combined a section of hot mix asphalt concrete and aggregate base course. The Town will consider use of full depth hot mix asphalt or Portland cement concrete pavement on a case by case basis. The following minimum pavement sections are specified for combined asphalt and base course and full depth asphalt sections. Erie does not specify minimum Portland cement concrete pavement sections.

TABLE C
SUMMARY OF PRELIMINARY PAVEMENT SECTIONS

Roadway Classification	EDLA	Hot Mix Asphalt Concrete (HMAC) + Aggregate Base Course (ABC)	Full Depth Hot Mix Asphalt Concrete (HMAC)	Portland Cement Concrete Pavement (PCCP)
Local Residential DU > 50	10	4" HMAC + 8" ABC	6.5" HMAC	6" PCCP
Residential Collector	30	4" HMAC + 8" ABC	6.5" HMAC	6" PCCP
Commercial Collector	100	6" HMAC + 9" ABC	8.5" HMAC	6.5" PCCP

A subgrade investigation will be required after roadways are rough cut to grade to design pavements.

BUILDING CONSTRUCTION CONSIDERATIONS

The following discussions are preliminary and are not intended for design or construction. After grading is completed, design-level investigations should be performed on a site specific basis.

Foundations

Our investigation indicated predominately non-expansive sand with seams of low swelling clay and deep bedrock within depths likely to influence the performance of foundations. A few locations of moderately swelling shallow bedrock were also encountered. Abandoned underground coal mines could influence the performance of foundations. A mine subsidence investigation will be necessary to assess this risk. The safest foundation types considering the potential mining are footings, mats, or post-tensioned slab-on-grade. Deep foundation systems anchored in bedrock would more likely to be affected by potential subsidence movement. In order to allow use of shallow foundations, sub-excavation will likely be needed for the southwest portion of the site and possibly the northwest corner. Additional investigation is merited to better identify and delineate areas of sub-excavation.

Below-Grade Areas

Surface water can penetrate relatively permeable loose backfill soils located adjacent to buildings and collect at the bottom of relatively impermeable excavations causing wet or moist conditions. Foundation walls should be designed for lateral earth pressures. Foundation drains should be constructed around the lowest excavation levels. The drains can be connected to a sump pit where water can be removed by pumping if an underdrain is not provided.

Slab-On-Grade Construction

Slab-on-grade basement floors may be considered where low and some moderate swell soils are within the depth of influence and where potential movement is acceptable to the home buyers. Structurally-supported basement floors should be used if the home buyers cannot accept potential movements. Structurally-supported floors should be planned in all non-basement living areas in residences unless post tensioned slab-on-grade floors are used. Use of slab-on-grade floors in commercial/retail buildings

should be viable possibly with some over-excavation. The following precautions will be required to reduce the potential for damage due to movement of slabs-on-grade placed at this site:

1. Isolation of conventional slabs (not post-tensioned) from foundation walls, columns and other slab penetrations;

2. Voiding of interior partition walls to allow for conventional slab movement without transferring the movement to the structures;

3. Flexible water and gas connections to allow for slab movement. A flexible plenum above furnaces will be required; and

4. Proper surface grading and foundation drain installation around excavations to reduce water availability to sub-slab and foundation soils.

Surface Drainage

The performance of improvements will be influenced by surface drainage. When developing an overall drainage scheme, consideration should be given to drainage around each building. The ground surface around the buildings should be sloped to provide positive drainage away from the foundations. We recommend a slope of at least 10 percent for the first 10 feet in landscaped areas surrounding single-family residences with basements, where practical. Where possible, drainage swales should slope at least 2 percent; more slope is desirable. Variation from these criteria is acceptable in some areas. For examples, for lots graded to direct drainage from the rear to the front of the lot, it is difficult to achieve the recommended slope at the high point behind the building. We believe it is acceptable to use a slope of about 6 inches in the first 10 feet at this location. For larger townhomes, apartments, and commercial/retail buildings a minimum slope of 5 percent may be used. Roof downspouts and other water collection systems should discharge well beyond the limits of all backfill around structures.

Proper control of surface runoff is also important to control the erosion of surface soils. Sheet flow should not be directed over unprotected slopes. Water should not be allowed to pond at the crest of slopes. Permanent slopes should be prepared in such a way to reduce erosion.

Attention should be paid to compact the soils behind curb and gutter adjacent to streets and in utility trenches during the development. If surface drainage between preliminary development and construction phases is neglected, performance of the roadways, flatwork and foundations may be poor.

RECOMMENDED FUTURE INVESTIGATIONS

We recommend the following investigations and services:

1. Investigation will likely be merited to evaluate mine subsidence and we recommend investigation of the mine entry conditions to develop remedial recommendations;
2. Supplemental Preliminary Geotechnical Investigation to delineate areas of sub-excavation and investigate potential areas of undocumented fill
3. Construction testing and observation during site development, grading, and pavement construction.
4. Subgrade investigation and pavement design after grading;
5. Design-level soils investigation(s) after grading; and
6. Foundation installation observations.

GEOTECHNICAL RISK

The concept of risk is an important aspect with any geotechnical evaluation, primarily because the methods used to develop geotechnical recommendations do not comprise an exact science. We never have complete knowledge of subsurface conditions. Our analysis must be tempered with engineering judgment and experience.

Therefore, the recommendations presented in any geotechnical evaluation should not be considered risk-free. Our recommendations represent our judgment of those measures that are necessary to increase the chances that the structures and improvements will perform satisfactorily. It is critical that all recommendations in this report are followed during construction. Owners or property managers must assume responsibility for maintaining structures and use appropriate practices regarding drainage and landscaping. Improvements designed after grading will require additional soil investigation and consultation.

LIMITATIONS

Our borings were widely spaced to provide a general picture of subsurface conditions for preliminary planning of development and construction. We believe this investigation was conducted in a manner consistent with that level of care and skill ordinarily used by geotechnical engineers practicing in this area at this time. No warranty, express or implied, is made.

If we can be of further service in discussing the contents of this report or the analysis of the influence of subsurface conditions on the design of the proposed development, please call.

CTL | THOMPSON, INC.

Matthew D. Monteith, E.I.T.
Staff Engineer

Reviewed by:

Ronald M. McOmber, P.E., D.GE
Chairman & CEO

MDM:RMM/mdm/nt
(3 copies)

Via email: justinrmcs@gmail.com

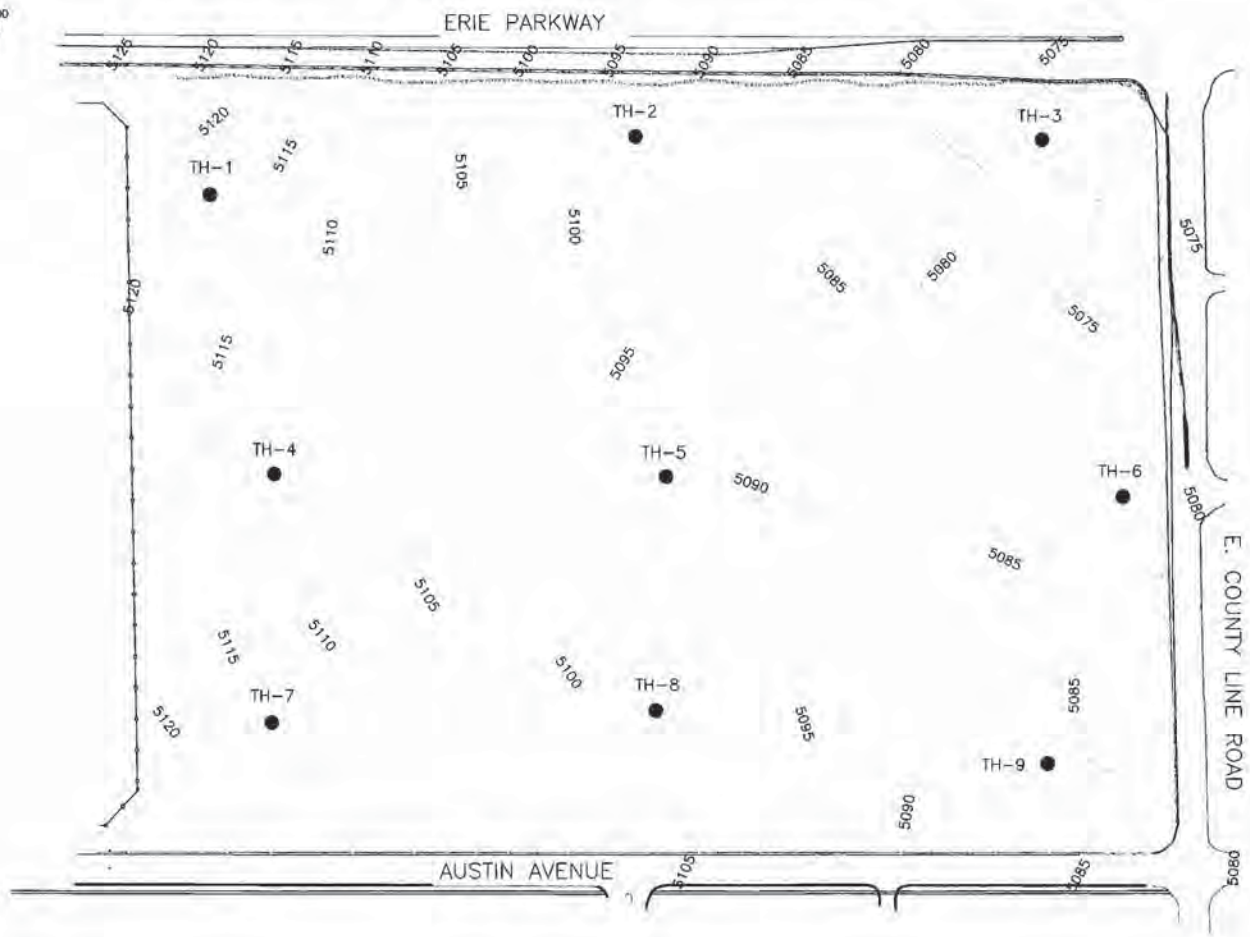
LEGEND:

TH-1 ● LOCATION OF EXPLORATORY BORING SURVEYED BY ROCK CREEK SURVEYING.

5105 EXISTING GROUND SURFACE ELEVATION (FEET)

NOTE: BORINGS, SHAFTS, AND CONTOUR LOCATIONS PROVIDED BY ROCK CREEK SURVEYING

0 100 200
SCALE: 1" = 200'



VICINITY MAP
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Locations of Exploratory Borings Fig. 1

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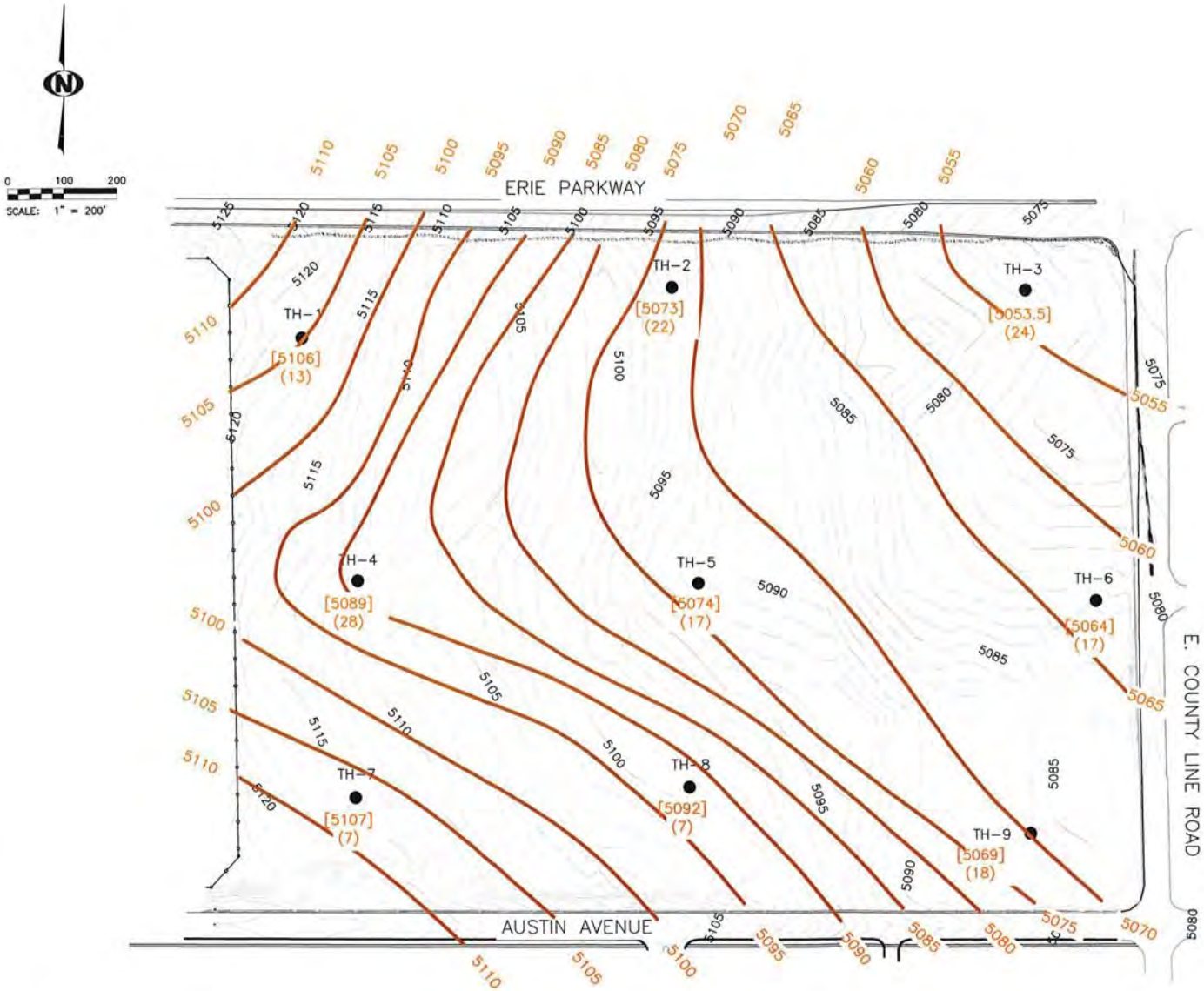

LEGEND:

TH-1 ● LOCATION OF EXPLORATORY BORING SURVEYED BY ROCK CREEK SURVEYING.

5105 EXISTING GROUND SURFACE ELEVATION (FEET)

NOTE: BORINGS, SHAFTS, AND CONTOUR LOCATIONS PROVIDED BY ROCK CREEK SURVEYING

(17) DEPTH TO BEDROCK BELOW EXISTING GRADE.

[5055] ELEVATION OF BEDROCK SURFACE

5110 INDICATES ESTIMATED BEDROCK ELEVATION (FEET)

NOTE: THIS ESTIMATE WAS BASED UPON A SUBJECTIVE ANALYSIS OF DRILL HOLE DATA AND MAY NOT REFLECT LOCAL VARIATIONS.

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Depth and Estimated Elevation of Bedrock Surface

Fig. 2

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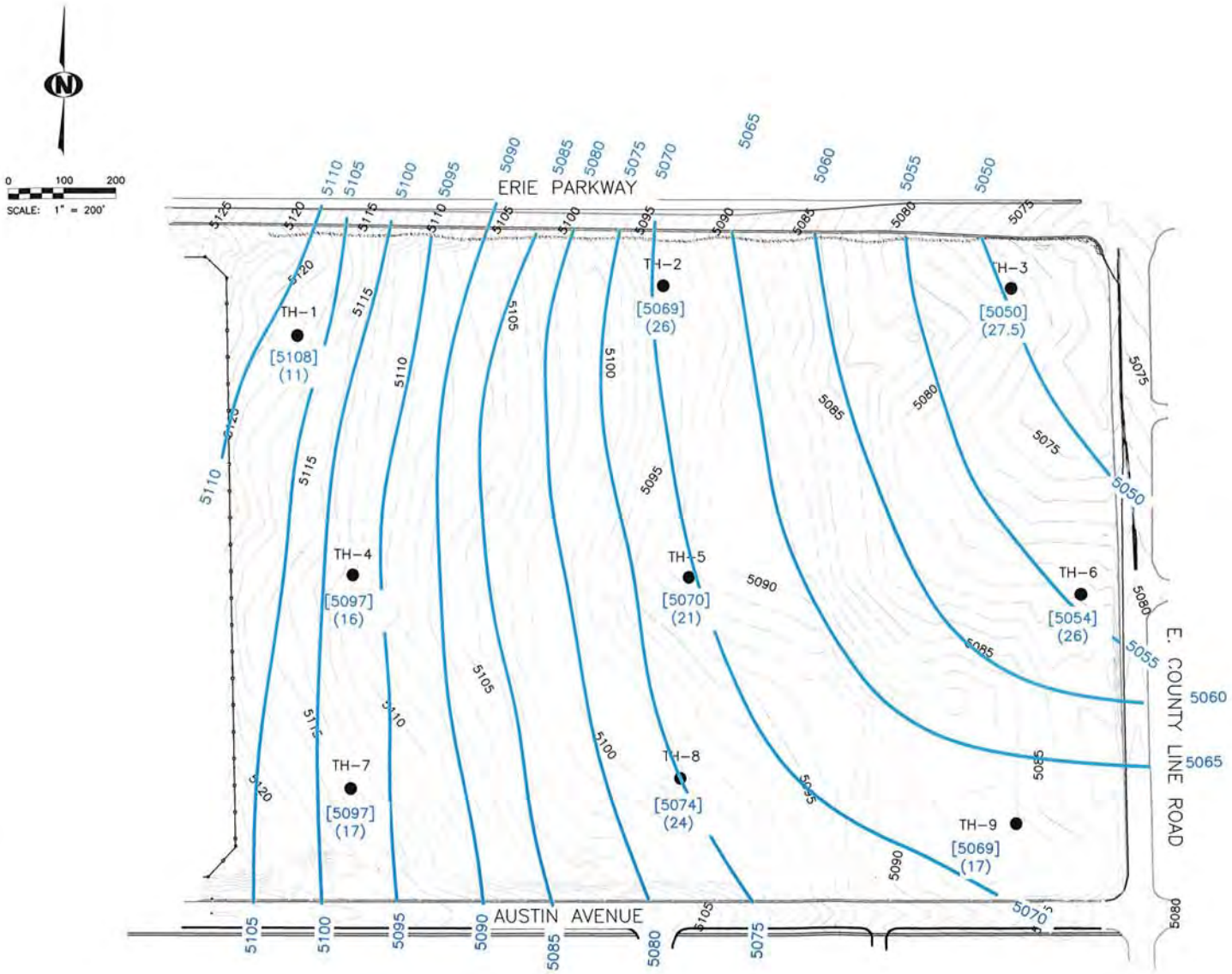

LEGEND:

TH-1 ● LOCATION OF EXPLORATORY BORING SURVEYED BY ROCK CREEK SURVEYING.

5105 EXISTING GROUND SURFACE ELEVATION (FEET)

NOTE: BORINGS, SHAFTS, AND CONTOUR LOCATIONS PROVIDED BY ROCK CREEK SURVEYING

(17) DEPTH OF GROUNDWATER BELOW EXISTING GRADE.

[5055] ELEVATION OF GROUNDWATER SURFACE

5110 INDICATES ESTIMATED GROUNDWATER ELEVATION (FEET)

NOTE: THIS ESTIMATE WAS BASED UPON A SUBJECTIVE ANALYSIS OF DRILL HOLE DATA AND MAY NOT REFLECT LOCAL VARIATIONS AND SEASONAL FLUCTUATIONS.

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Depth and Estimated Elevation of Groundwater

Fig. 3

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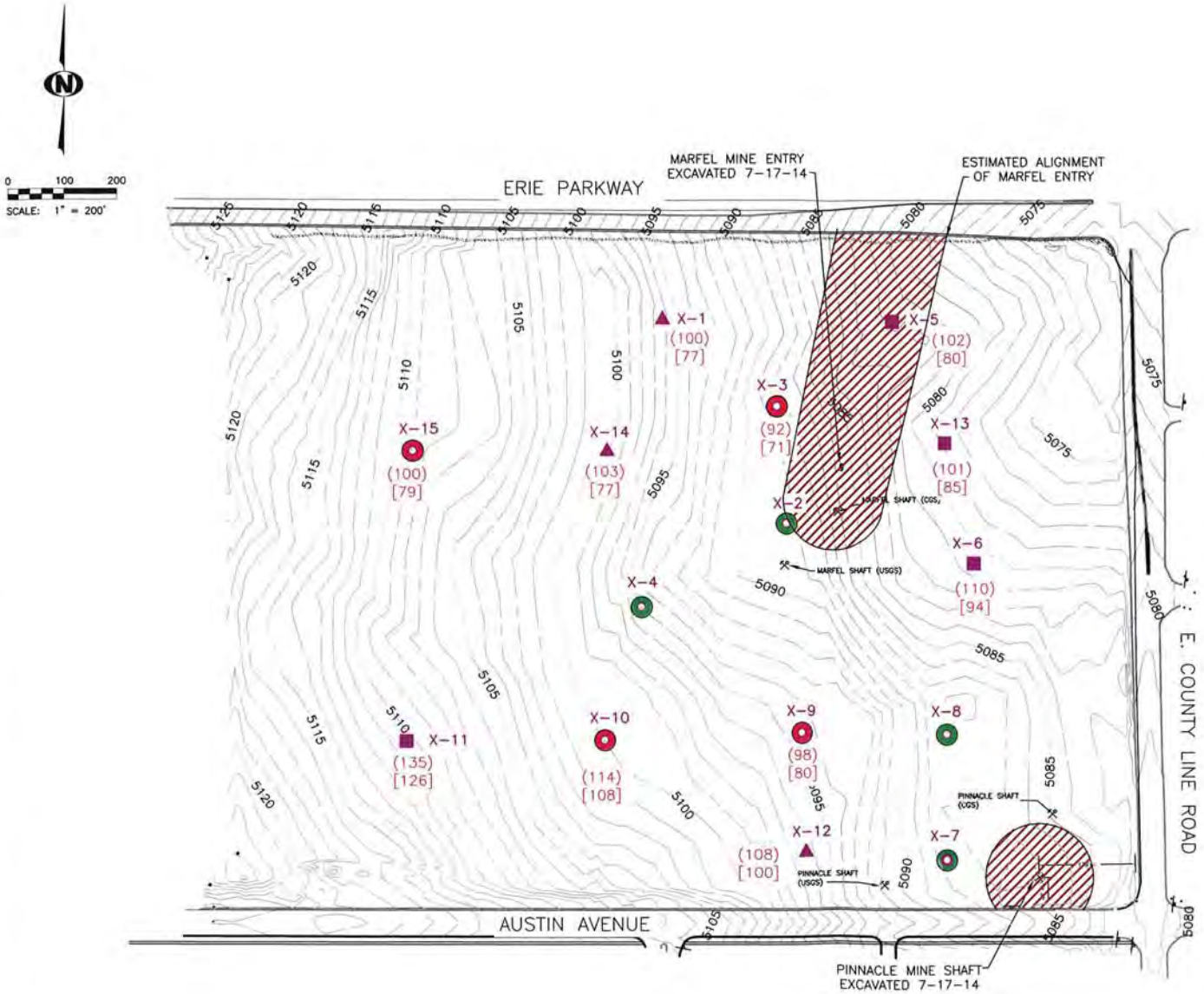

LEGEND:

- X-1 APPROXIMATE LOCATION OF BORING DRILLED DURING WESTERN ENVIRONMENTAL AND ECOLOGY'S 2005 PRELIMINARY MINE SUBSIDENCE INVESTIGATION
- NO WORKINGS REPORTED
- UPPER LEVEL WORKINGS REPORTED ONLY
- LOWER LEVEL WORKINGS REPORTED ONLY
- UPPER AND LOWER LEVEL WORKINGS REPORTED
- (100) DEPTH TO MINING
- [78] ESTIMATED BEDROCK THICKNESS ABOVE MINED LEVEL
- PRELIMINARY ESTIMATE OF AREAS WHERE STRUCTURAL DEVELOPMENT SHOULD BE AVOIDED (100 FEET SETBACK)

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Summary of Mine Data

Fig. 4

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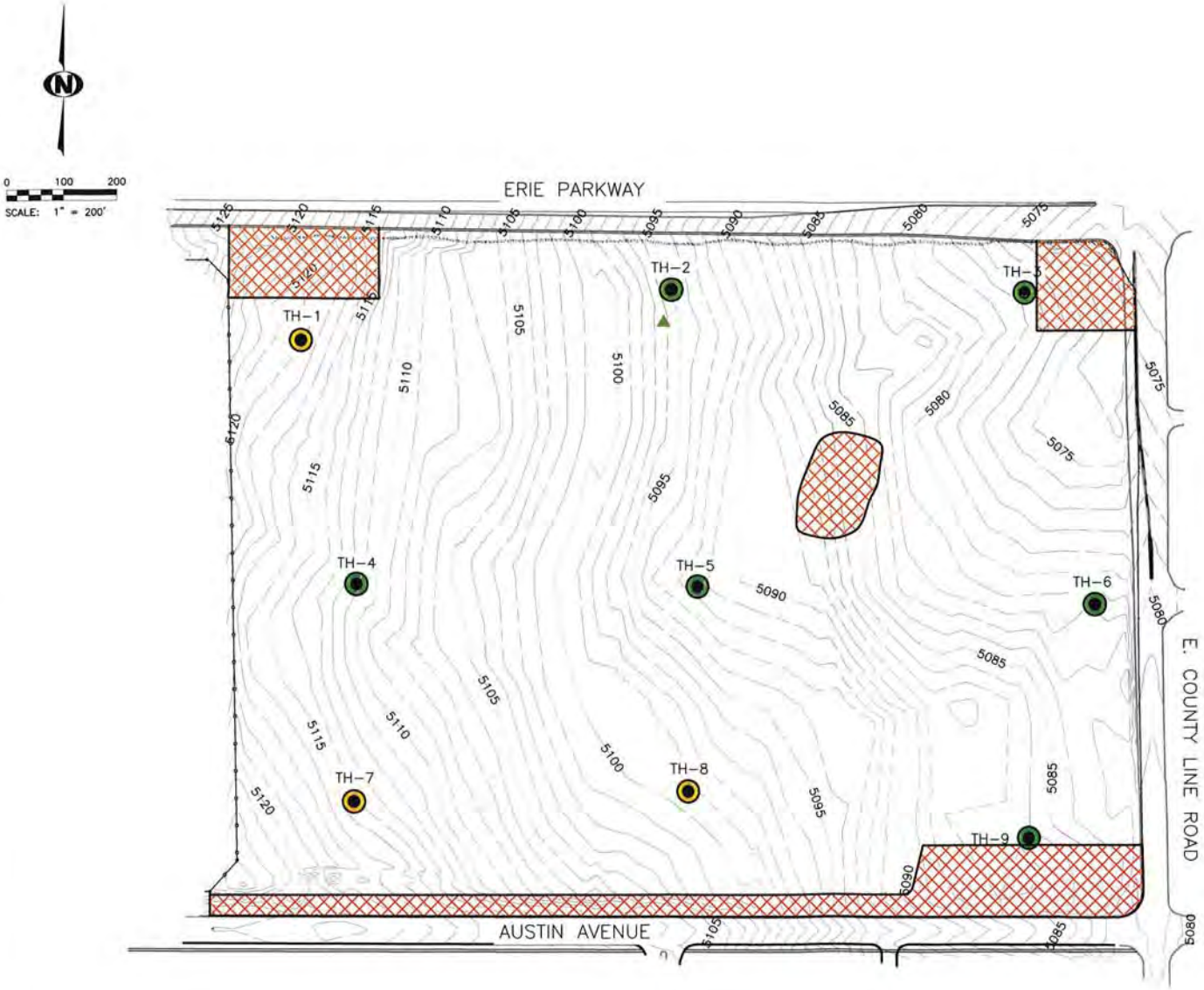

LEGEND:

- TH-1 ● LOCATION OF EXPLORATORY BORING SURVEYED BY ROCK CREEK SURVEYING.
- 5105 EXISTING GROUND SURFACE ELEVATION (FEET)
- LOW RISK
- MODERATE RISK
- APPROXIMATE LOCATIONS OF UNDOCUMENTED FILL

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Preliminary Risk Due to Expansive Soil and Bedrock Fig. 5

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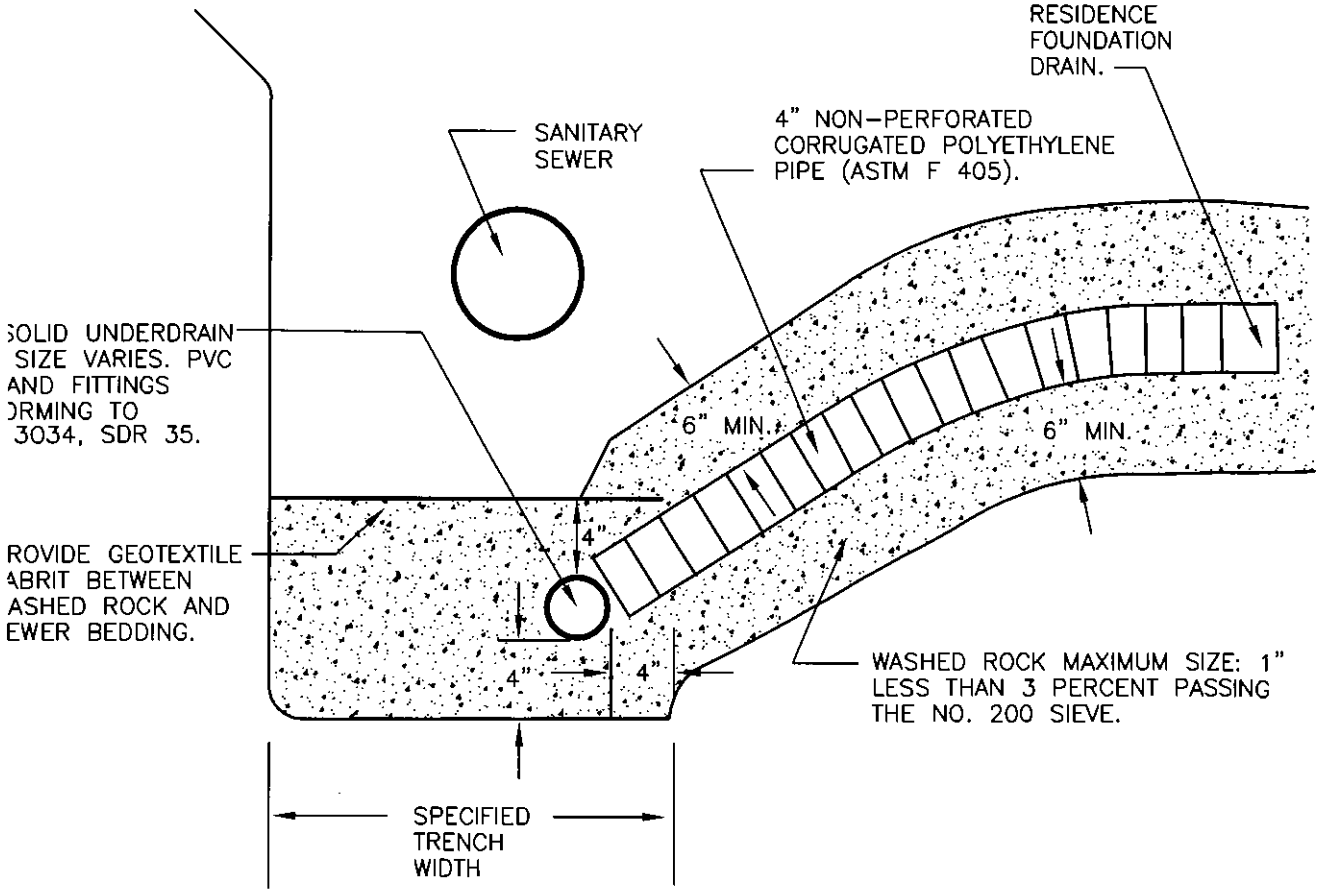
50-UNDERDRAIN_01



NOTE: NOT TO SCALE.

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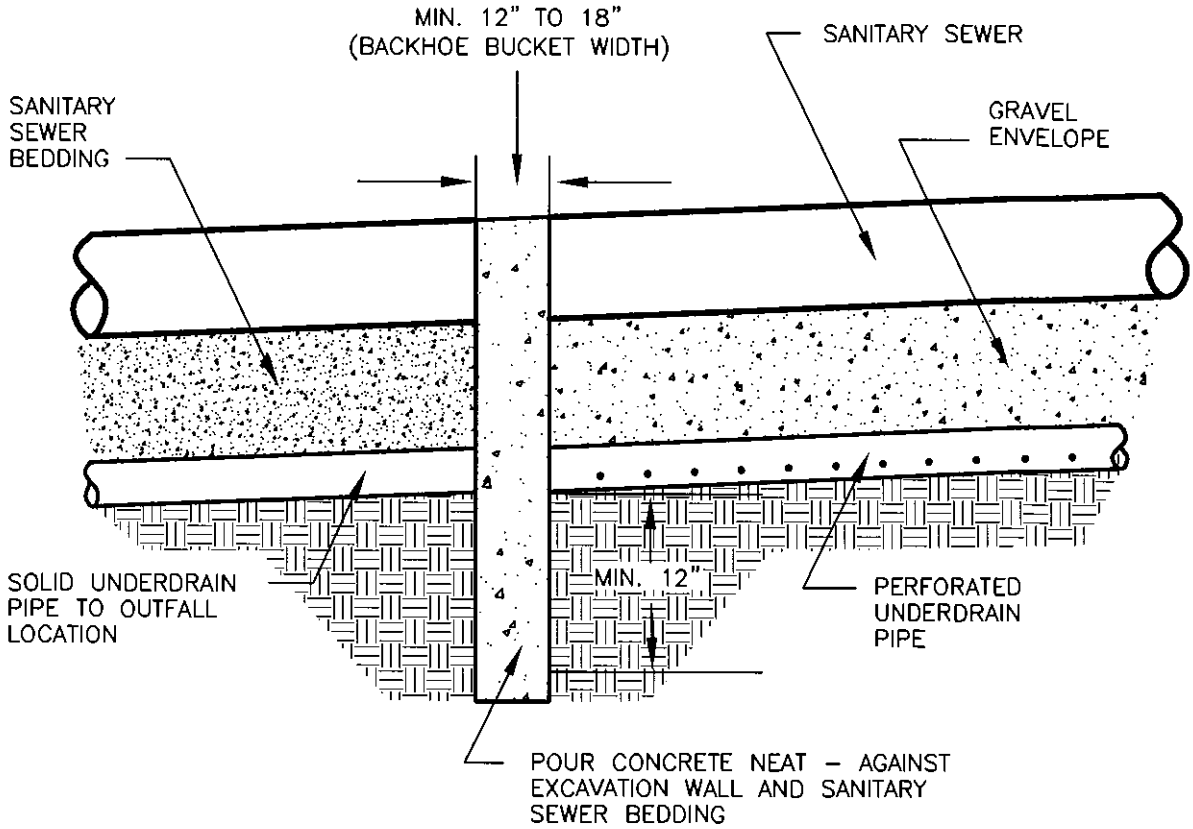
Sewer Underdrain Detail

Fig. 6



NOTE:
THE CONCRETE CUTOFF WALL SHOULD EXTEND INTO THE UNDISTURBED SOILS OUTSIDE THE UNDERDRAIN AND SANITARY SEWER TRENCH A MINIMUM DISTANCE OF 12 INCHES.

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Underdrain Cutoff Wall Detail

Fig. 7

50-UNDERDRAIN_05
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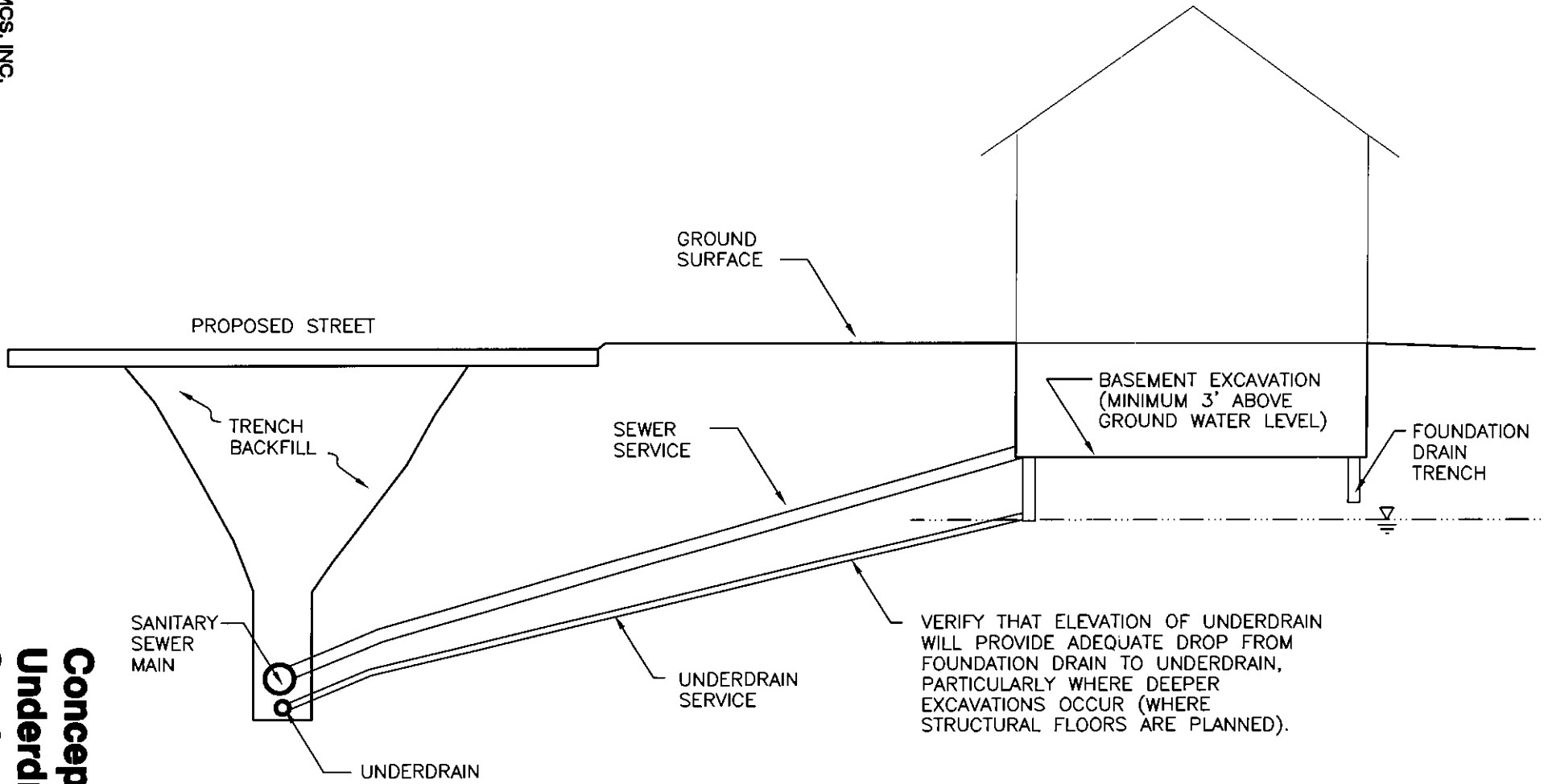
Project No. DN47,332-115



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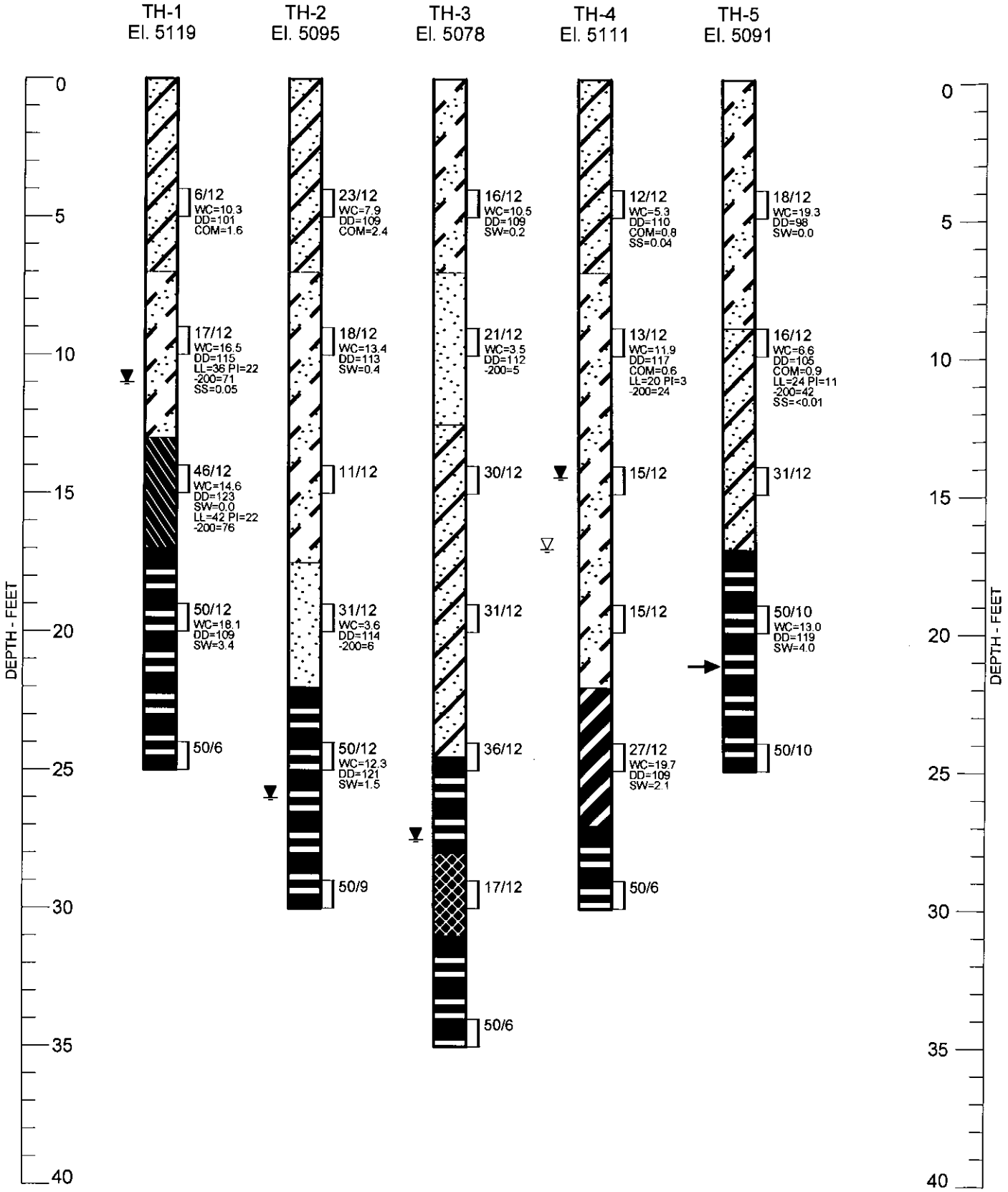
Conceptual Underdrain Service Profile

Fig. 8

APPENDIX A

SUMMARY LOGS OF EXPLORATORY BORINGS



SUMMARY LOGS OF EXPLORATORY BORINGS

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FIG. A- 1

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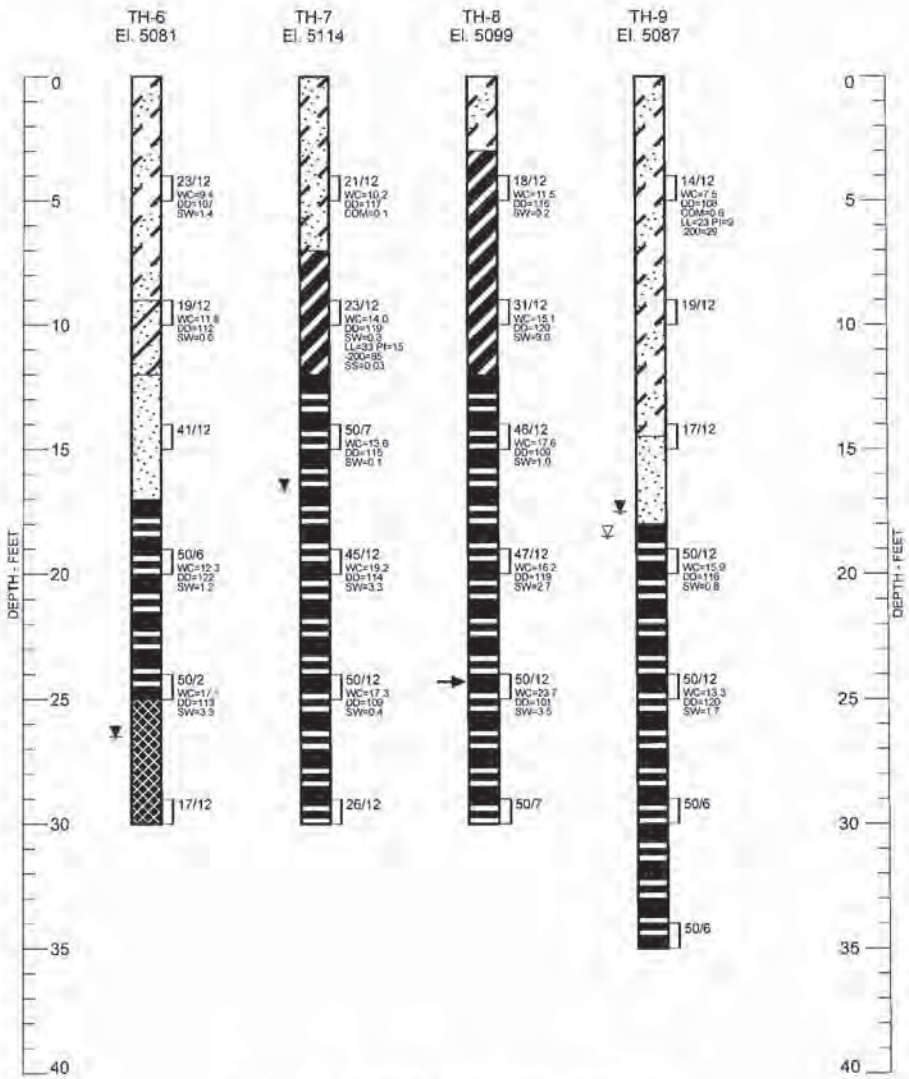


SUMMARY LOGS OF EXPLORATORY BORINGS

LEGEND:

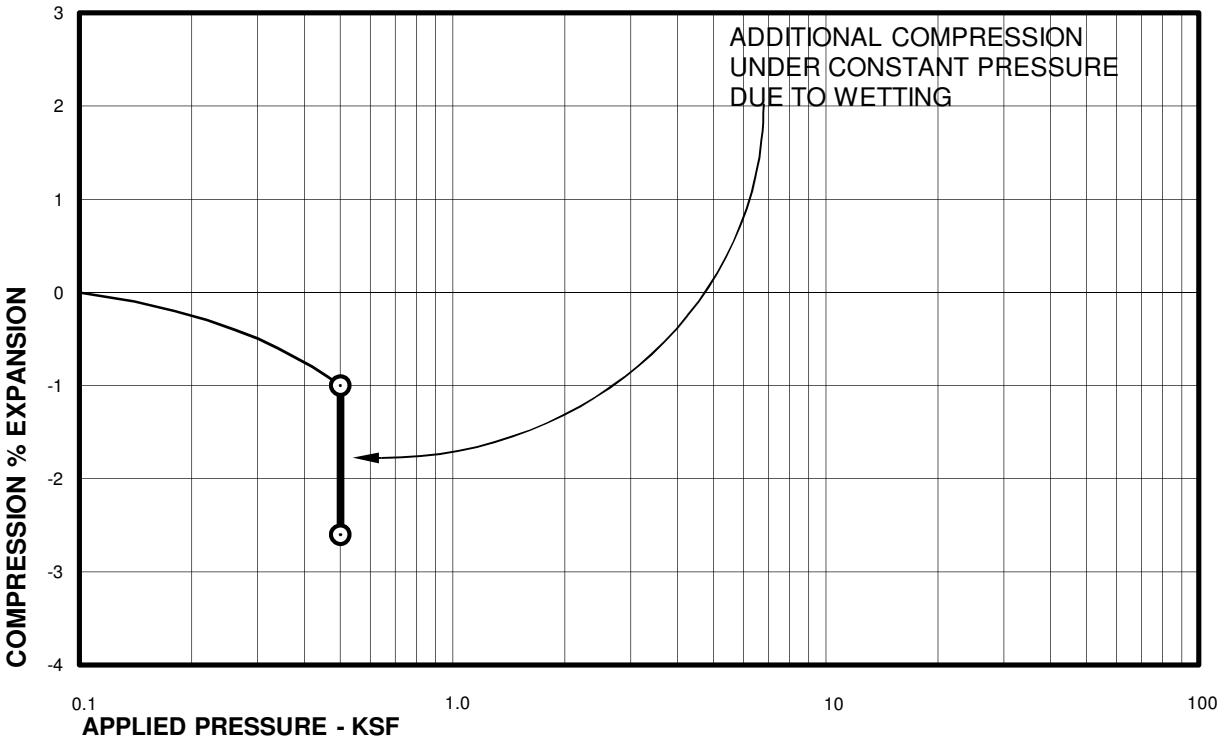
- SAND, SILTY, LOOSE TO MEDIUM DENSE, MOIST, BROWN (SM).
- INTERLAYERED CLAY/SAND, MEDIUM DENSE, SLIGHTLY MOIST, BROWN, GRAY (CL OR SC).
- SAND, SILTY, MEDIUM DENSE, SLIGHTLY MOIST, BROWN, GRAY (SM).
- SAND, CLAYEY, SAND, SLIGHTLY MOIST, BROWN, GRAY (SC).
- SAND, CLEAN TO SLIGHTLY SILTY, MEDIUM DENSE, MOIST, BROWN, GRAY (SP, SP-SM).
- WEATHERED CLAYSTONE, MOIST, BROWN, GRAY.
- BEDROCK, CLAYSTONE, HARD, MOIST, BROWN, GRAY.
- LIGNITE.
- DRIVE SAMPLE. THE SYMBOL 6/12 INDICATES 6 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH O.D. SAMPLER 12 INCHES.
- WATER LEVEL MEASURED AT TIME OF DRILLING.
- WATER LEVEL MEASURED AFTER DRILLING ON AUGUST 7, 2014.
- INDICATES DEPTH WHERE HOLE CAVED.

NOTES:

1. THE BORINGS WERE DRILLED ON JUNE 20, 2014 USING 4-INCH DIAMETER, CONTINUOUS-FLIGHT AUGER AND A TRUCK-MOUNTED DRILL RIG.
2. WC - INDICATES MOISTURE CONTENT (%).
   DD - INDICATES DRY DENSITY (PCF).
   SW - INDICATES SWELL WHEN WETTED UNDER APPLIED PRESSURE (%).
   COM- INDICATES COMPRESSION WHEN WETTED UNDER APPLIED PRESSURE (%).
   LL - INDICATES LIQUID LIMIT.
   PI - INDICATES PLASTICITY INDEX.
   -200 - INDICATES PASSING NO. 200 SIEVE (%).
   SS - INDICATES WATER-SOLUBLE SULFATE CONTENT (%).
3. BORING LOCATIONS AND ELEVATIONS WERE DETERMINED BY A REPRESENTATIVE OF OUR FIRM REFERENCING THE TEMPORARY BENCHMARK SHOWN ON FIG. 1.
4. THESE LOGS ARE SUBJECT TO THE EXPLANATIONS, LIMITATIONS AND CONCLUSIONS CONTAINED IN THIS REPORT.

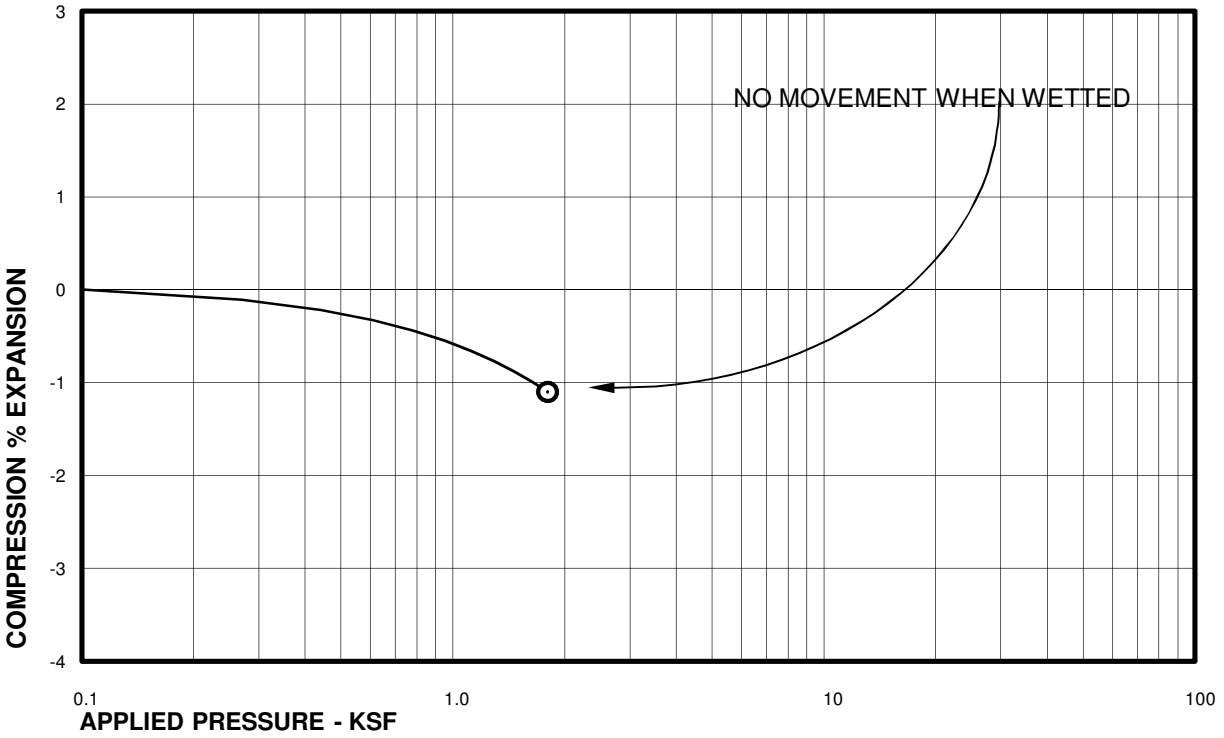
APPENDIX B

LABORATORY TEST RESULTS



Sample of SAND, SILTY (SM)
From TH-1 AT 4 FEET

DRY UNIT WEIGHT= 101 PCF
MOISTURE CONTENT= 10.3 %



Sample of INTERBEDDED CLAYSTONE/SANDSTONE
From TH-1 AT 14 FEET

DRY UNIT WEIGHT= 123 PCF
MOISTURE CONTENT= 14.6 %

Swell Consolidation Test Results

FIG. B-1

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PROJECT NO. DN46,332-115
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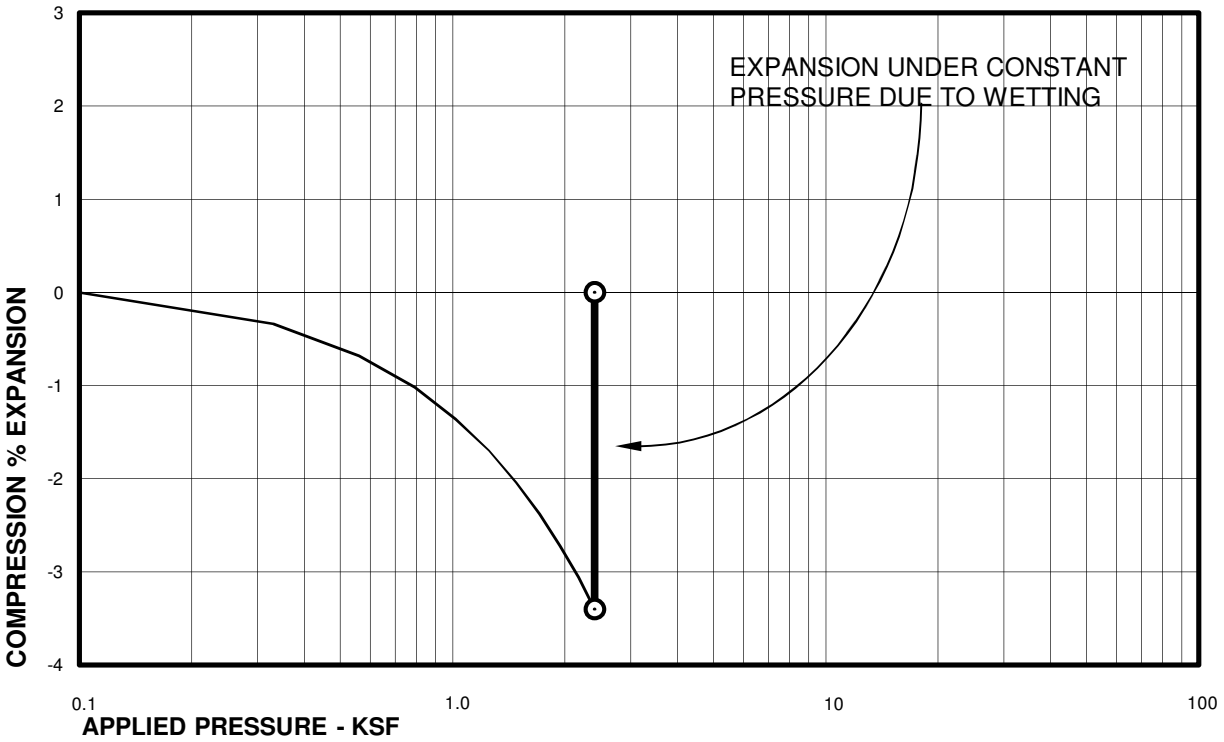
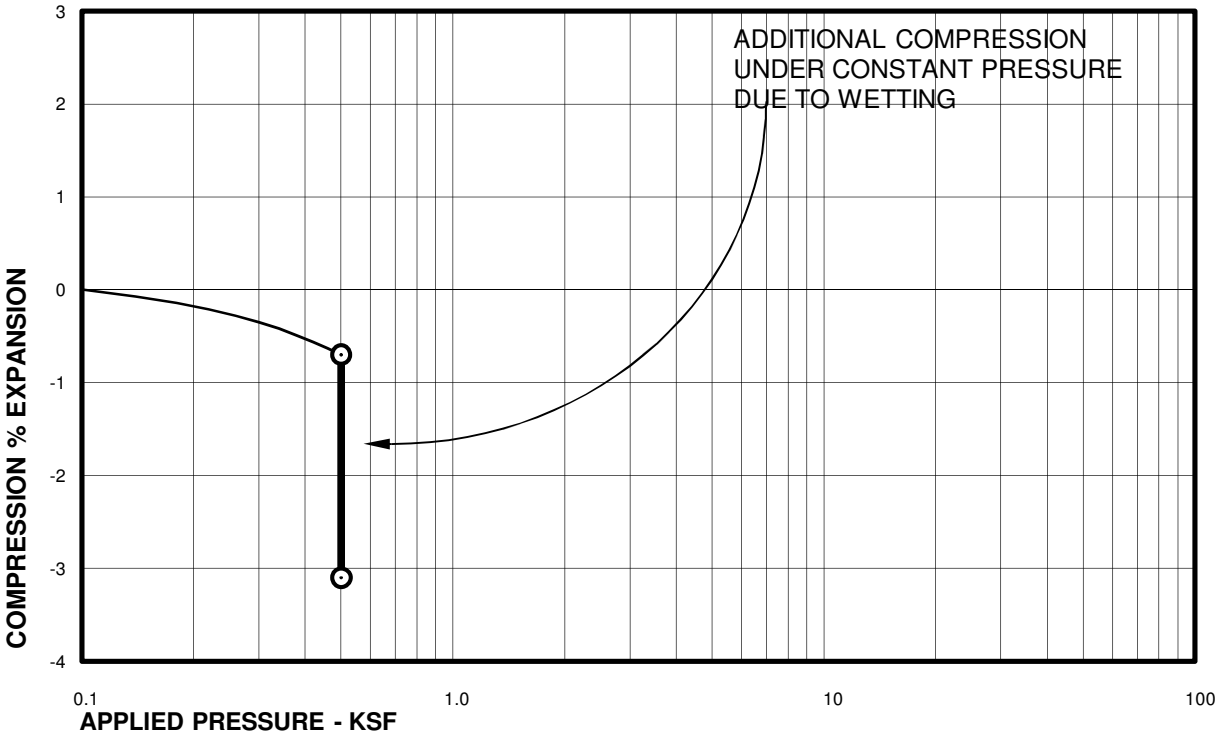


Sample of CLAYSTONE
From TH-1 AT 19 FEET

DRY UNIT WEIGHT= 109 PCF
MOISTURE CONTENT= 18.1 %



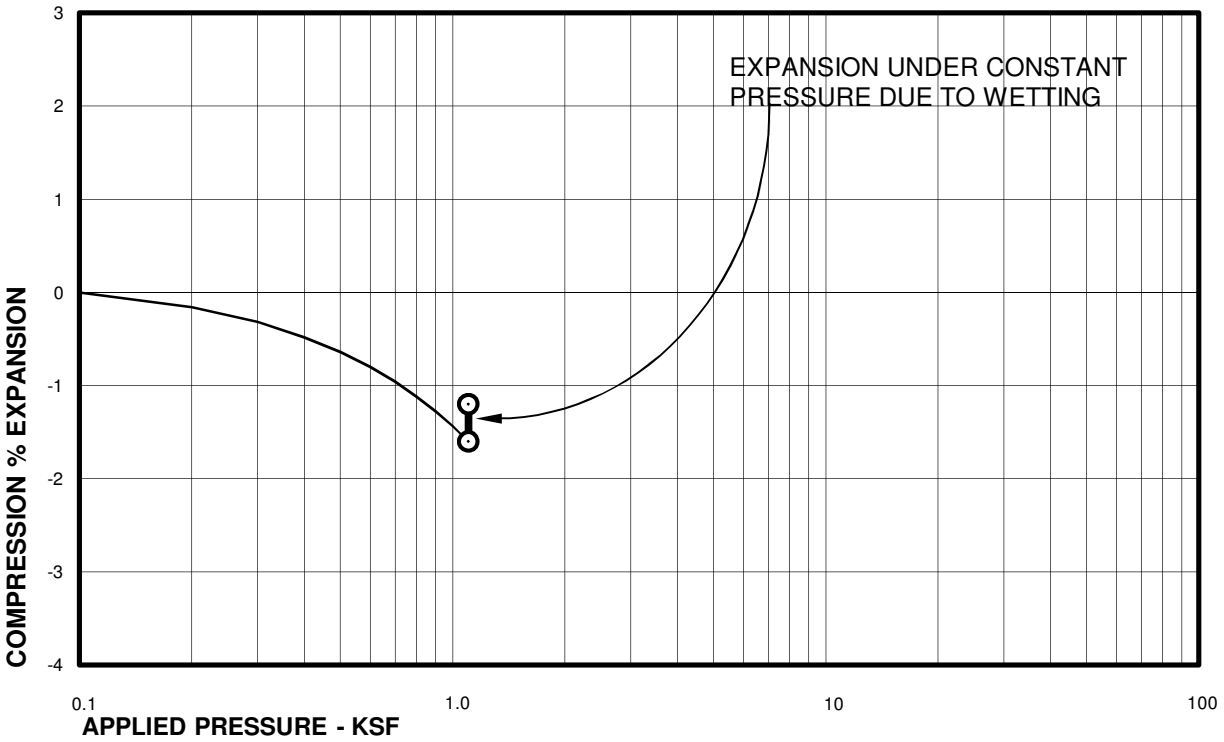
Sample of SAND, SILTY (SM)
From TH-2 AT 4 FEET

DRY UNIT WEIGHT= 109 PCF
MOISTURE CONTENT= 7.9 %

Swell Consolidation Test Results

FIG. B-2

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

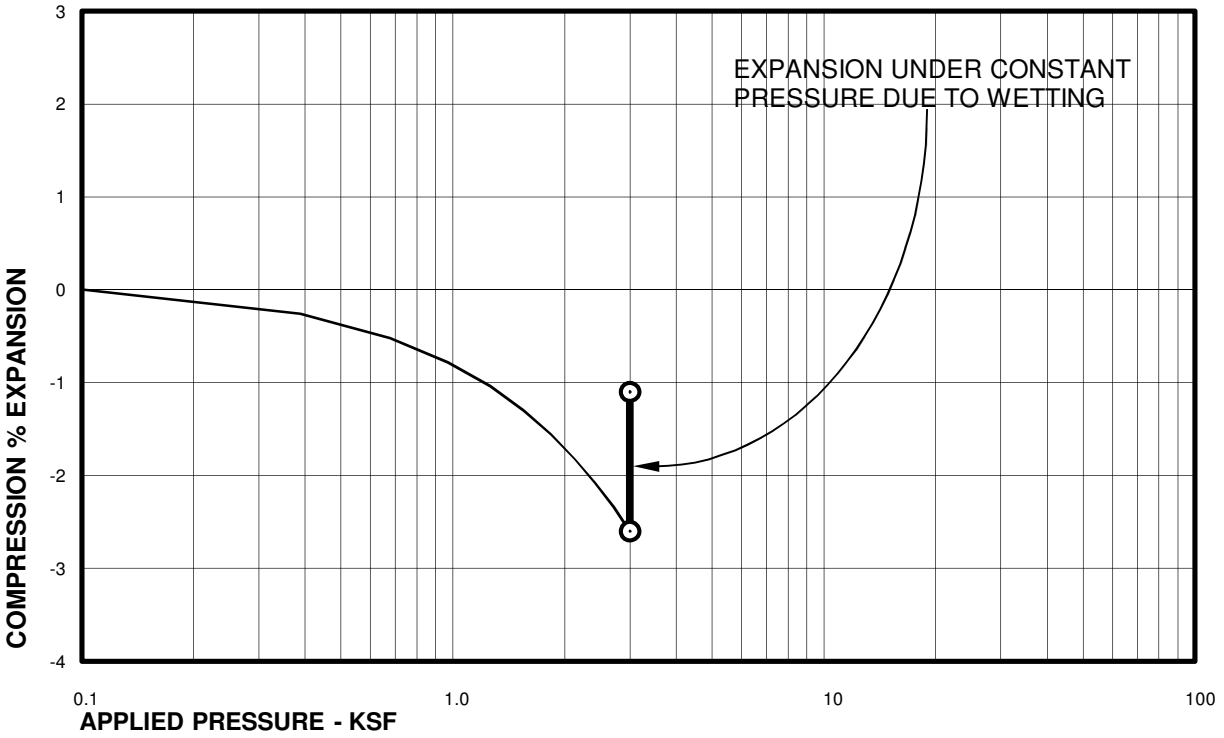


Sample of INTERLAYERED CLAY/SAND

From TH-2 AT 9 FEET

DRY UNIT WEIGHT= 113 PCF

MOISTURE CONTENT= 13.4 %



Sample of CLAYSTONE

From TH-2 AT 24 FEET

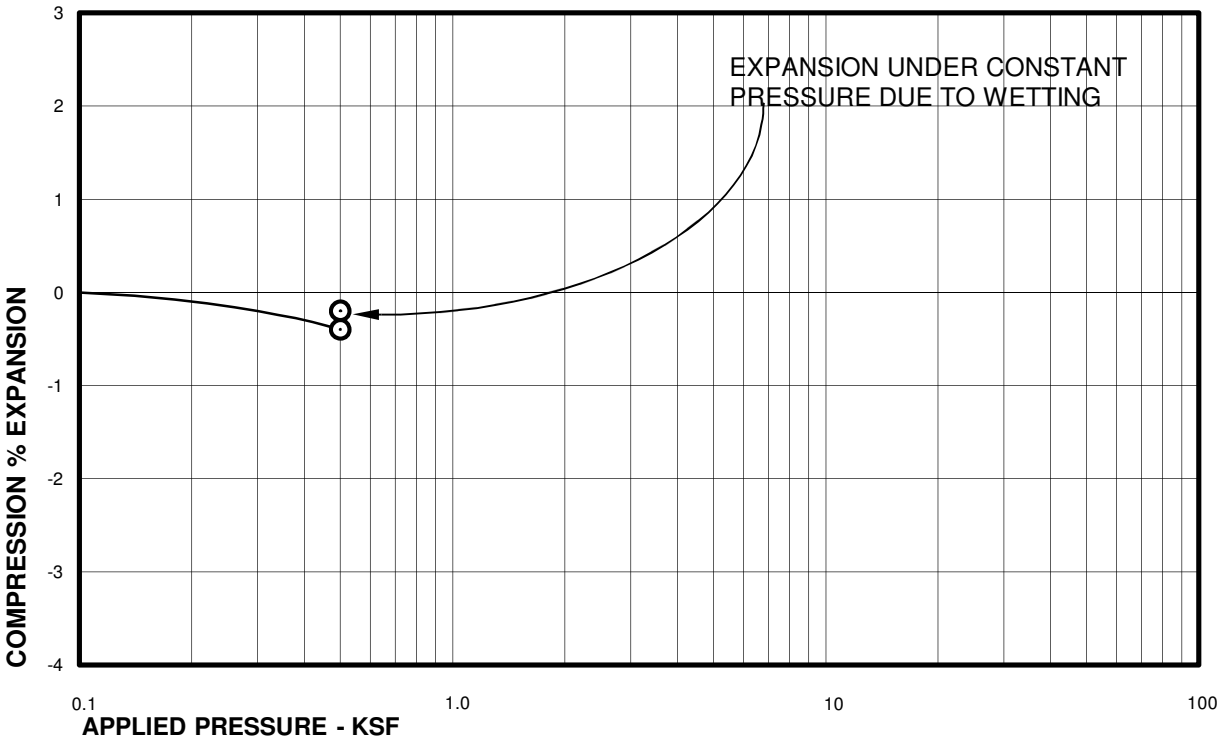
DRY UNIT WEIGHT= 121 PCF

MOISTURE CONTENT= 12.3 %

Swell Consolidation Test Results

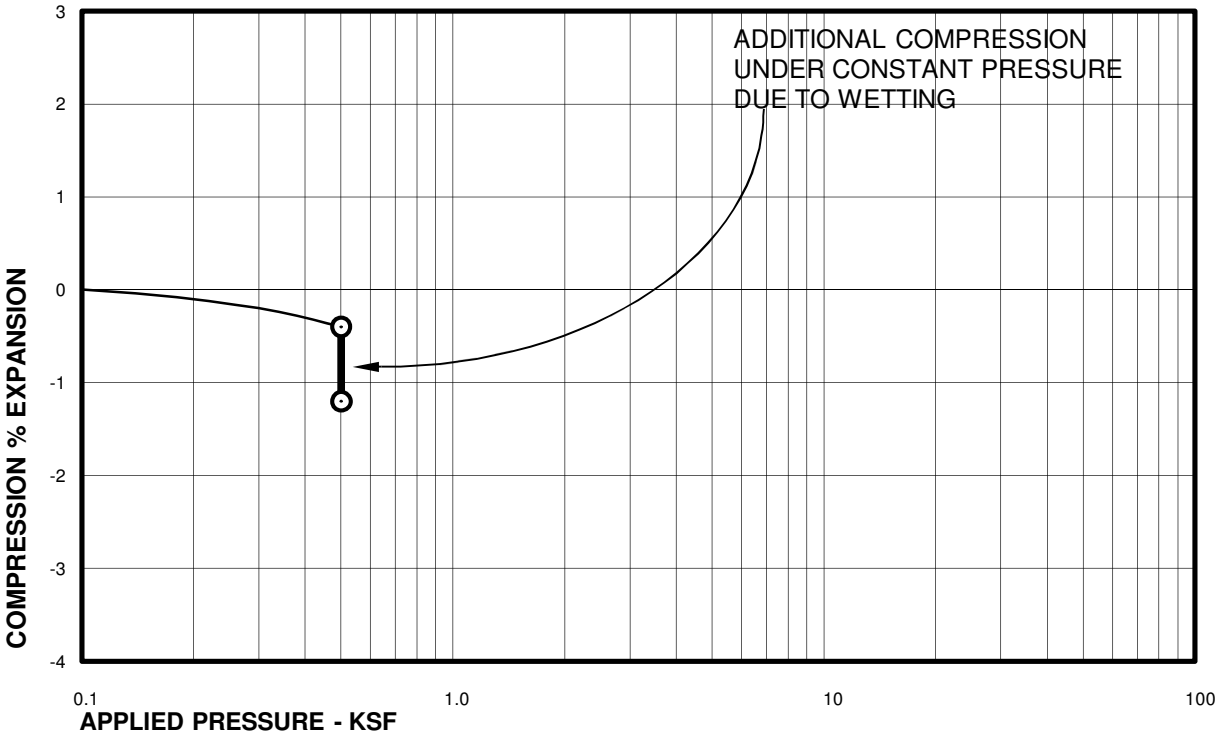
FIG. B-3

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm



Sample of INTERLAYERED CLAY/SAND
From TH-3 AT 4 FEET

DRY UNIT WEIGHT= 109 PCF
MOISTURE CONTENT= 10.5 %



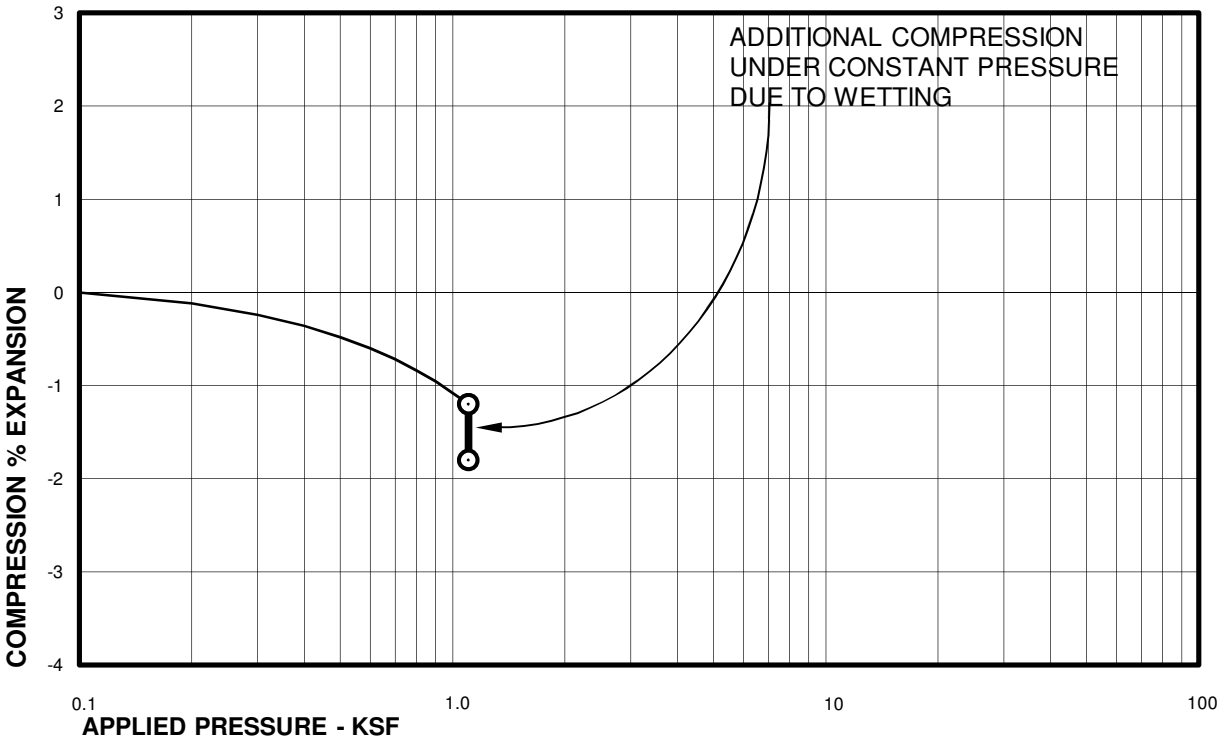
Sample of SAND, SILTY (SM)
From TH-4 AT 4 FEET

DRY UNIT WEIGHT= 110 PCF
MOISTURE CONTENT= 5.3 %

Swell Consolidation Test Results

FIG. B-4

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

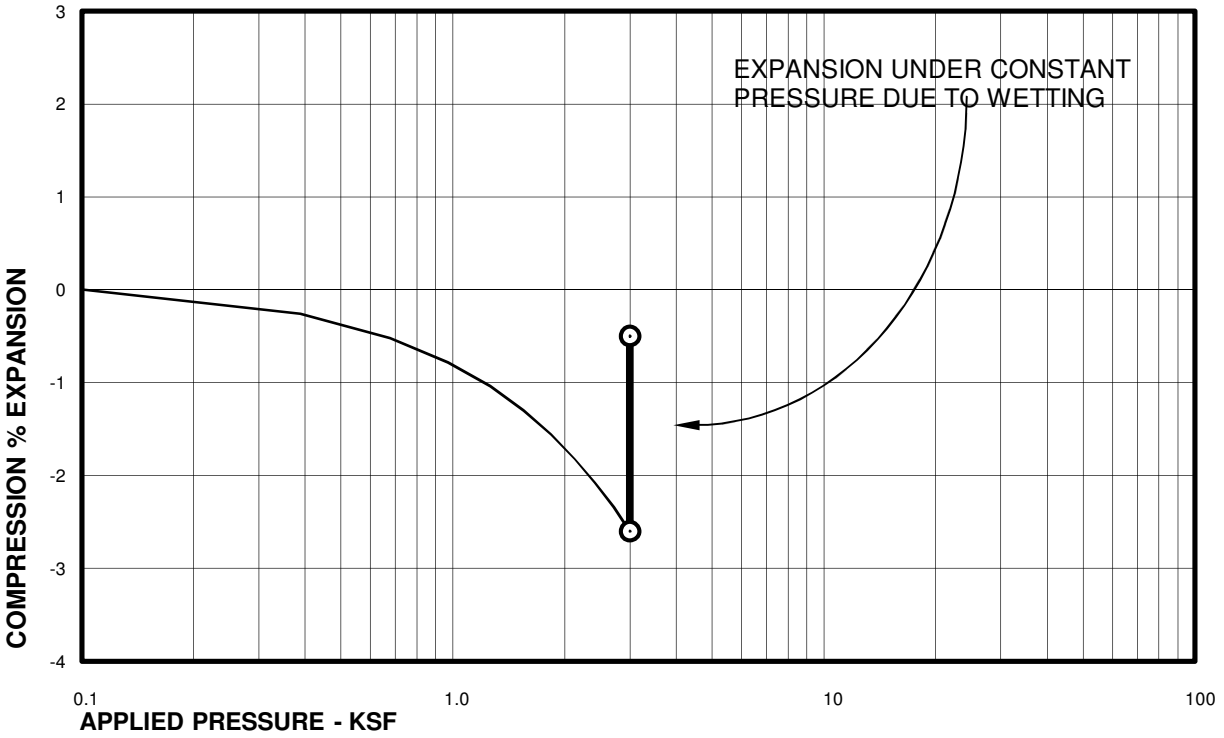


Sample of INTERLAYERED CLAY/SAND

From TH-4 AT 9 FEET

DRY UNIT WEIGHT= 117 PCF

MOISTURE CONTENT= 11.9 %



Sample of WEATHERED CLAYSTONE

From TH-4 AT 24 FEET

DRY UNIT WEIGHT= 109 PCF

MOISTURE CONTENT= 19.7 %

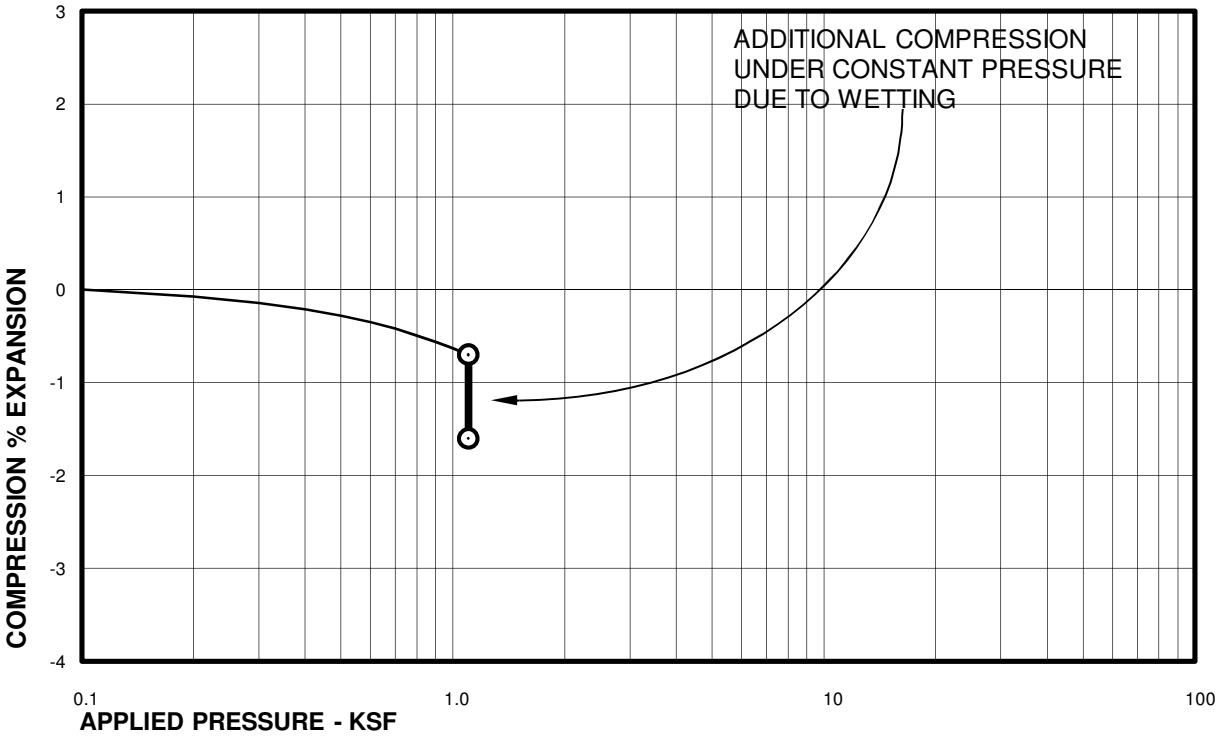
Swell Consolidation Test Results

FIG. B-5

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

Sample of INTERLAYERED CLAY/SAND
From TH-5 AT 4 FEET

DRY UNIT WEIGHT= 98 PCF
MOISTURE CONTENT= 19.3 %



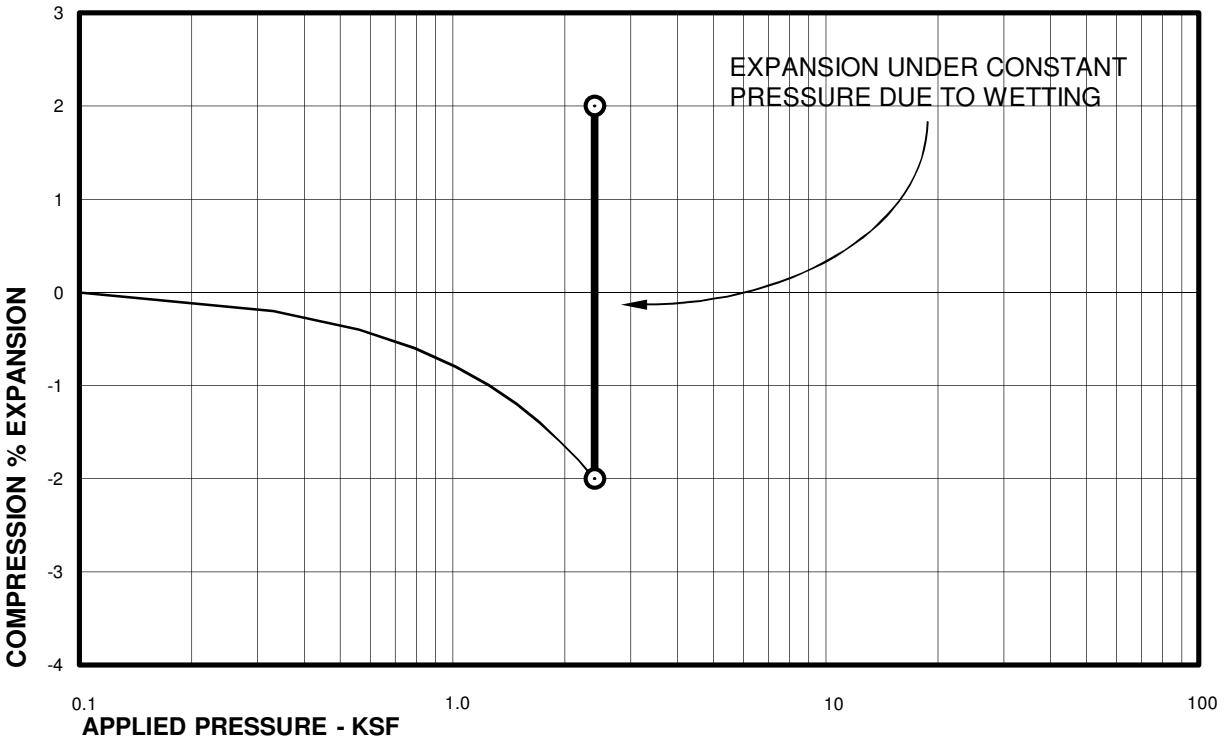
Sample of SAND, SILTY (SM)
From TH-5 AT 9 FEET

DRY UNIT WEIGHT= 105 PCF
MOISTURE CONTENT= 6.6 %

Swell Consolidation Test Results

FIG. B-6

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

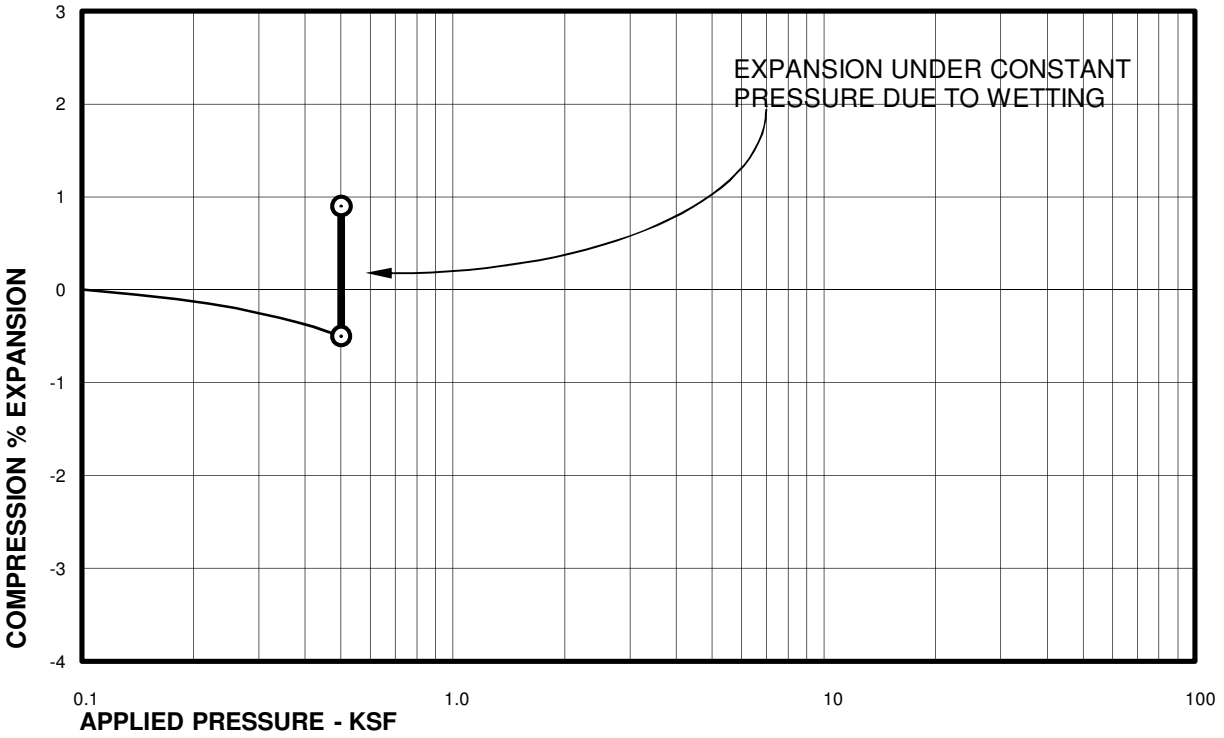


Sample of CLAYSTONE

From TH-5 AT 19 FEET

DRY UNIT WEIGHT= 119 PCF

MOISTURE CONTENT= 13.0 %



Sample of INTERLAYERED CLAY/SAND

From TH-6 AT 4 FEET

DRY UNIT WEIGHT= 107 PCF

MOISTURE CONTENT= 9.4 %

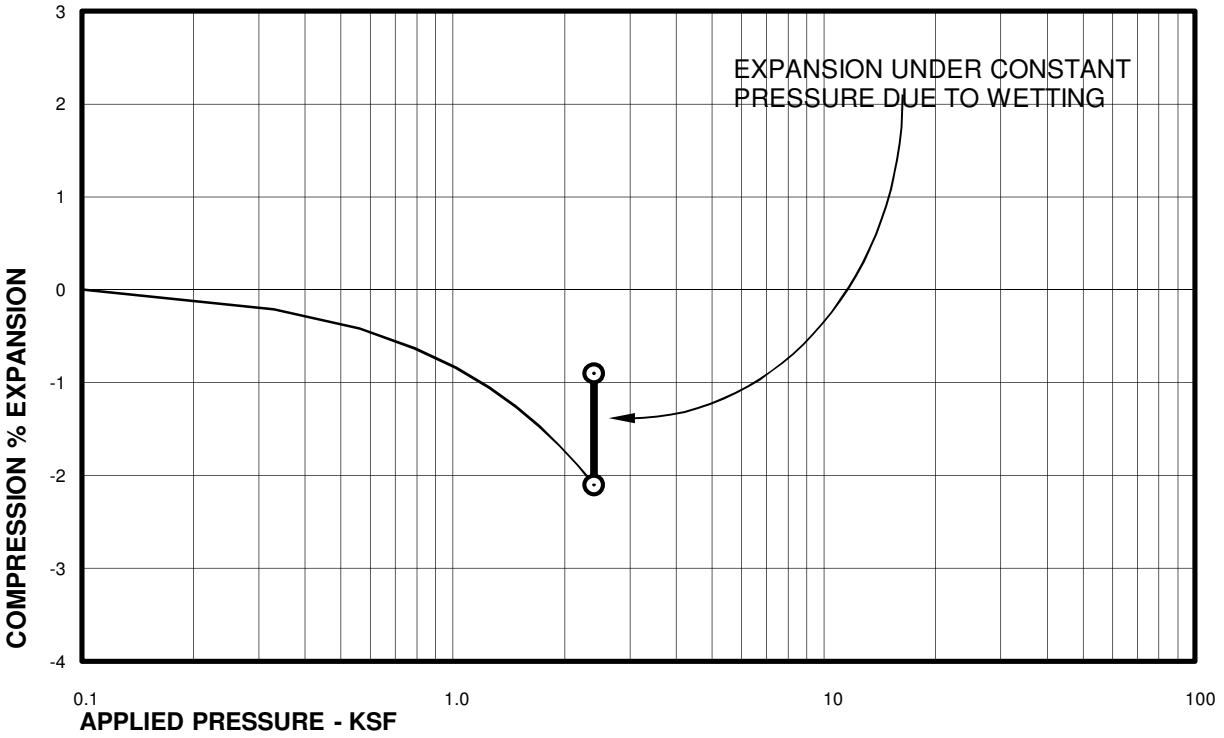
Swell Consolidation Test Results

FIG. B-7

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

Sample of SAND, SILTY (SM) DRY UNIT WEIGHT= 112 PCF

From TH-6 AT 9 FEET MOISTURE CONTENT= 11.8 %



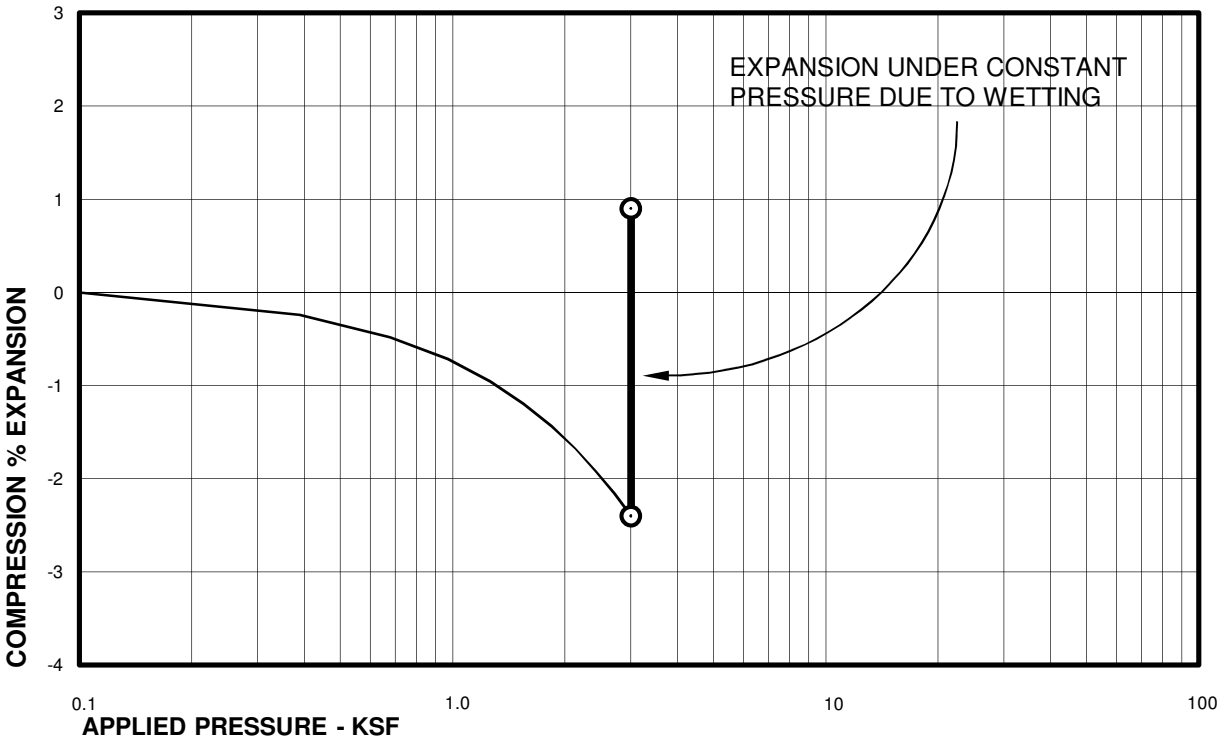
Sample of CLAYSTONE DRY UNIT WEIGHT= 122 PCF

From TH-6 AT 19 FEET MOISTURE CONTENT= 12.3 %

Swell Consolidation Test Results

FIG. B-8

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

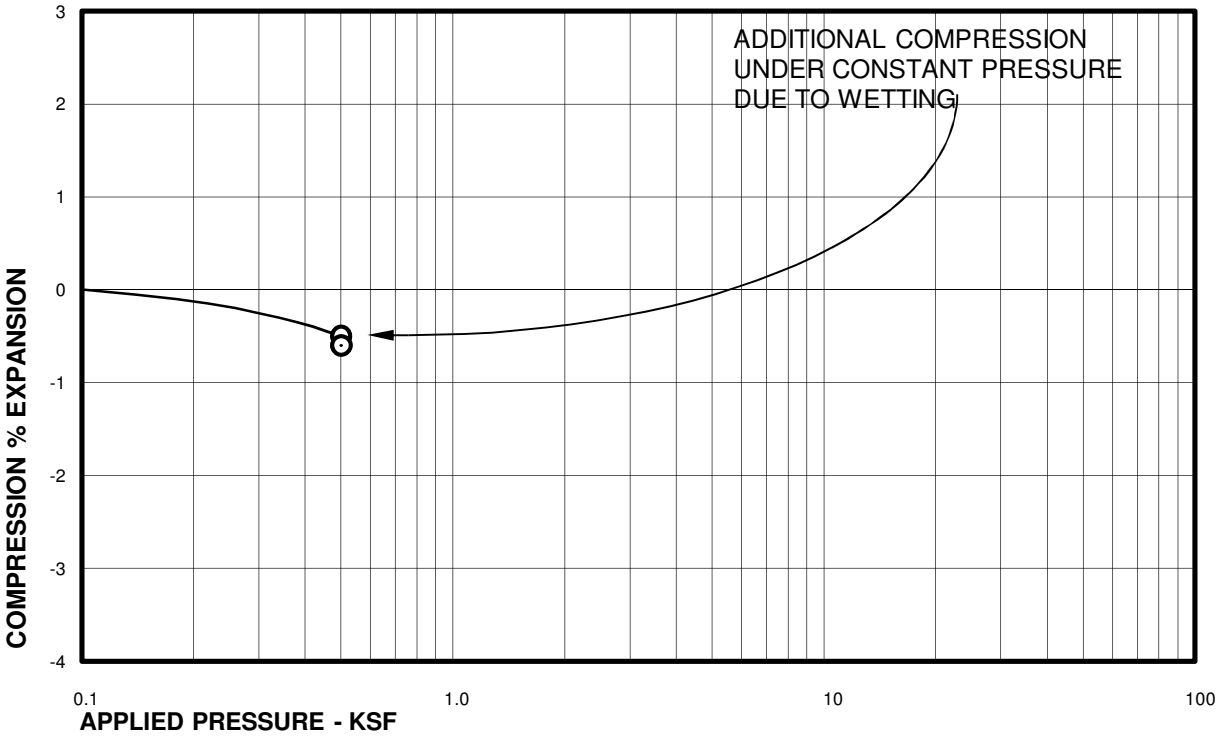


Sample of CLAYSTONE

From TH-6 AT 24 FEET

DRY UNIT WEIGHT= 113 PCF

MOISTURE CONTENT= 17.1 %



Sample of SAND, CLAYEY (SC)

From TH-7 AT 4 FEET

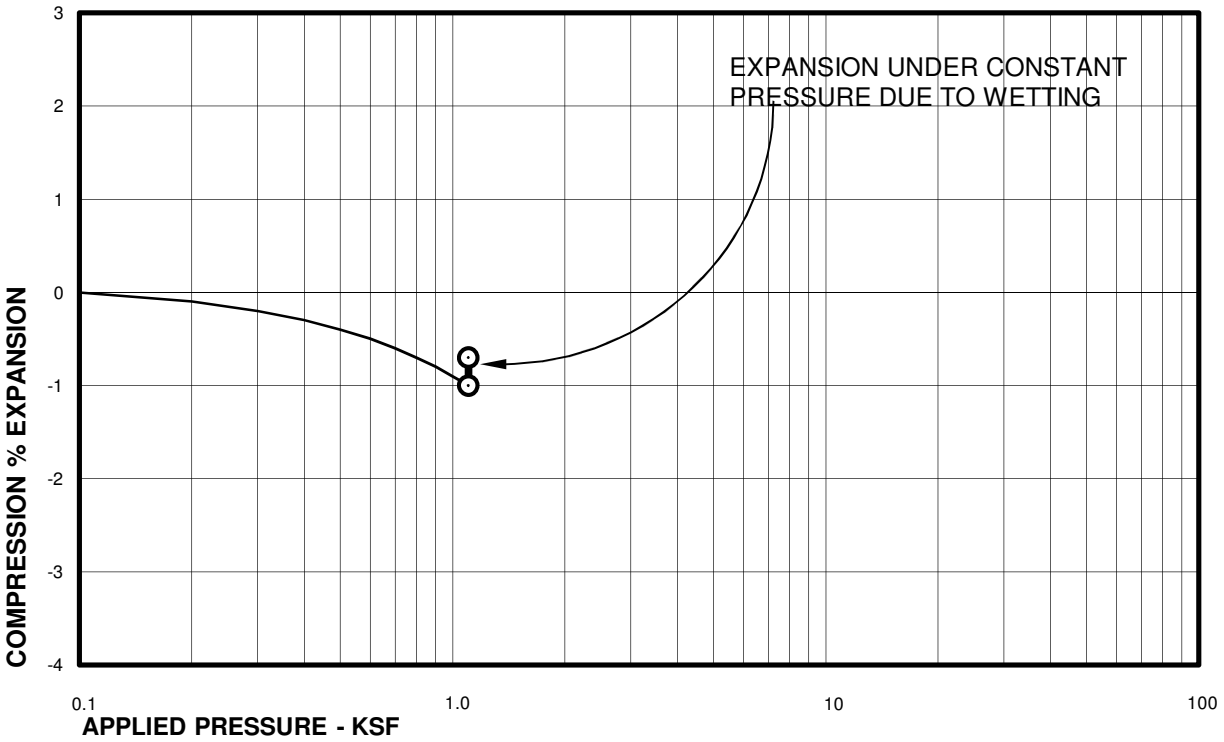
DRY UNIT WEIGHT= 117 PCF

MOISTURE CONTENT= 10.2 %

Swell Consolidation Test Results

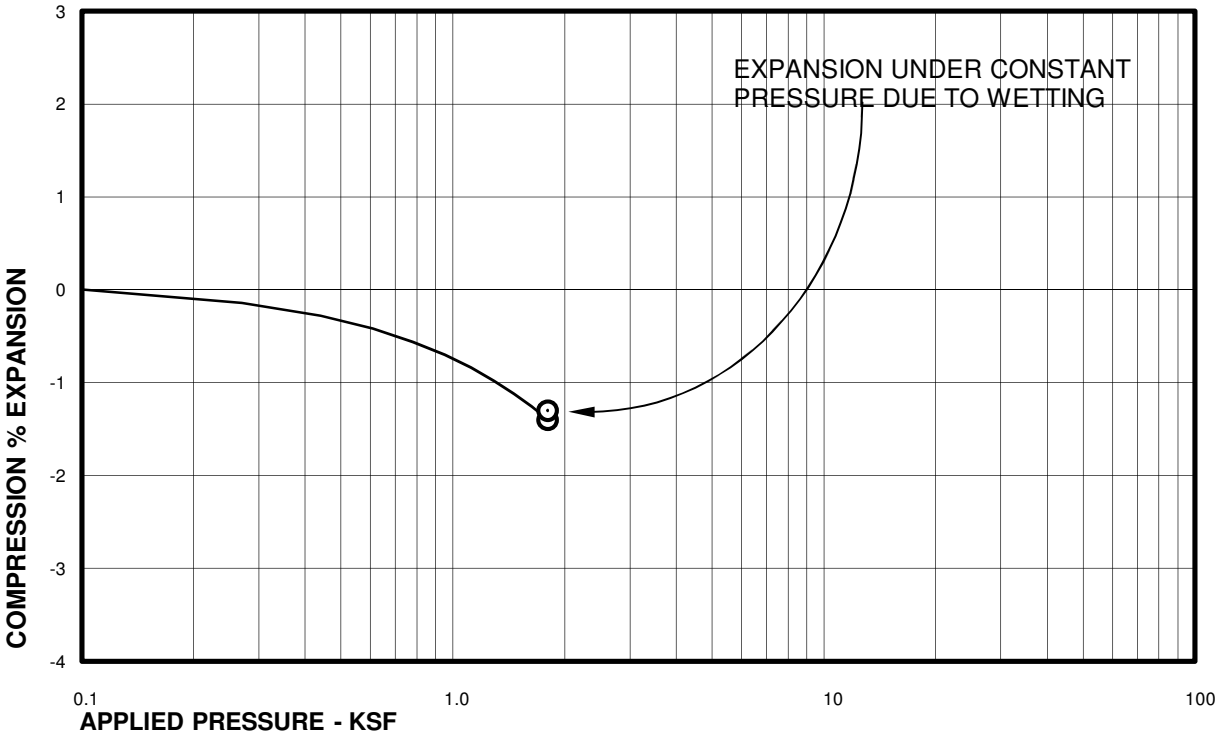
FIG. B-9

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm



Sample of WEATHERED CLAYSTONE
From TH-7 AT 9 FEET

DRY UNIT WEIGHT= 119 PCF
MOISTURE CONTENT= 14.0 %



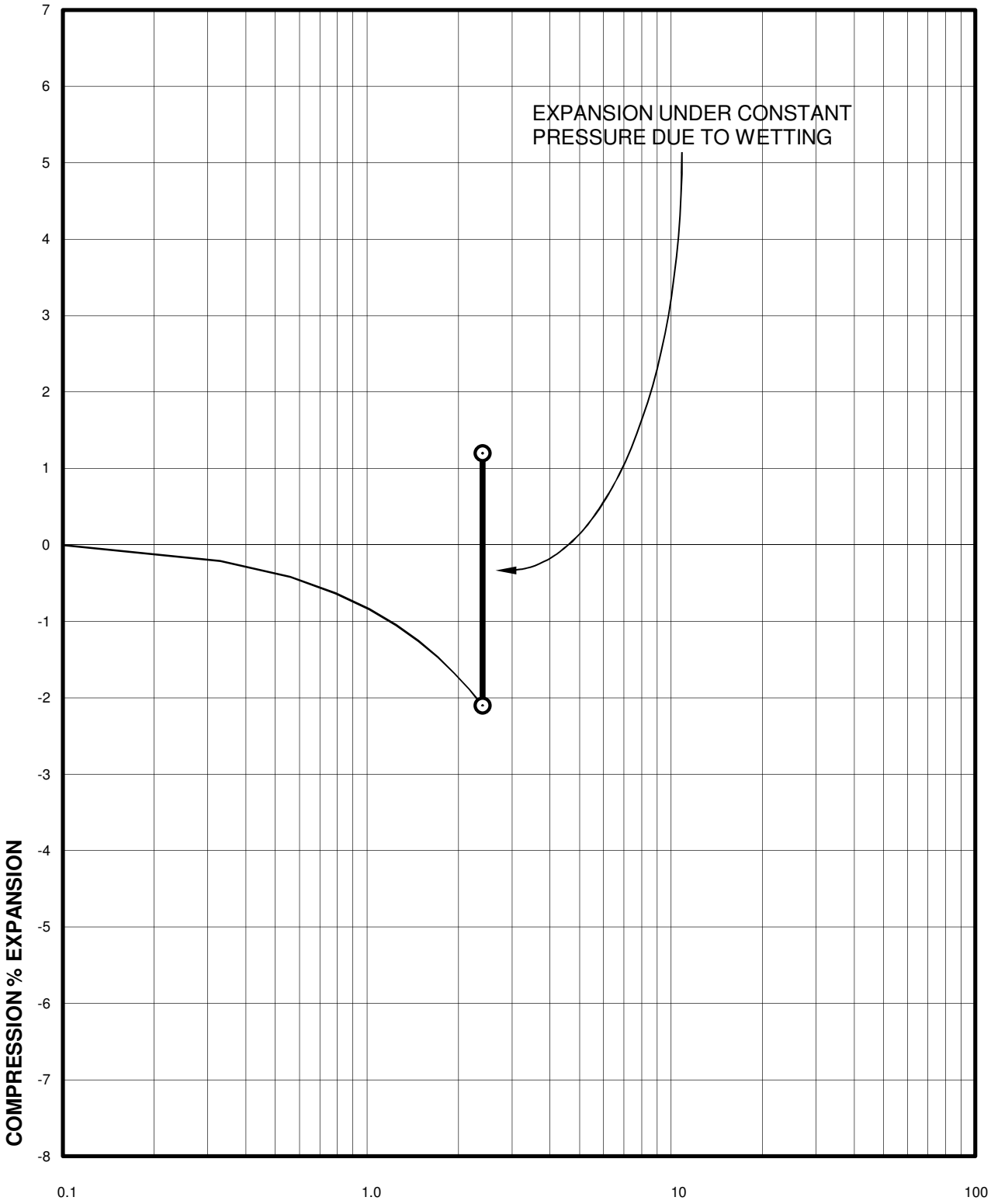
Sample of CLAYSTONE
From TH-7 AT 14 FEET

DRY UNIT WEIGHT= 115 PCF
MOISTURE CONTENT= 13.6 %

Swell Consolidation Test Results

FIG. B-10

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm



Sample of CLAYSTONE

From TH-7 AT 19 FEET

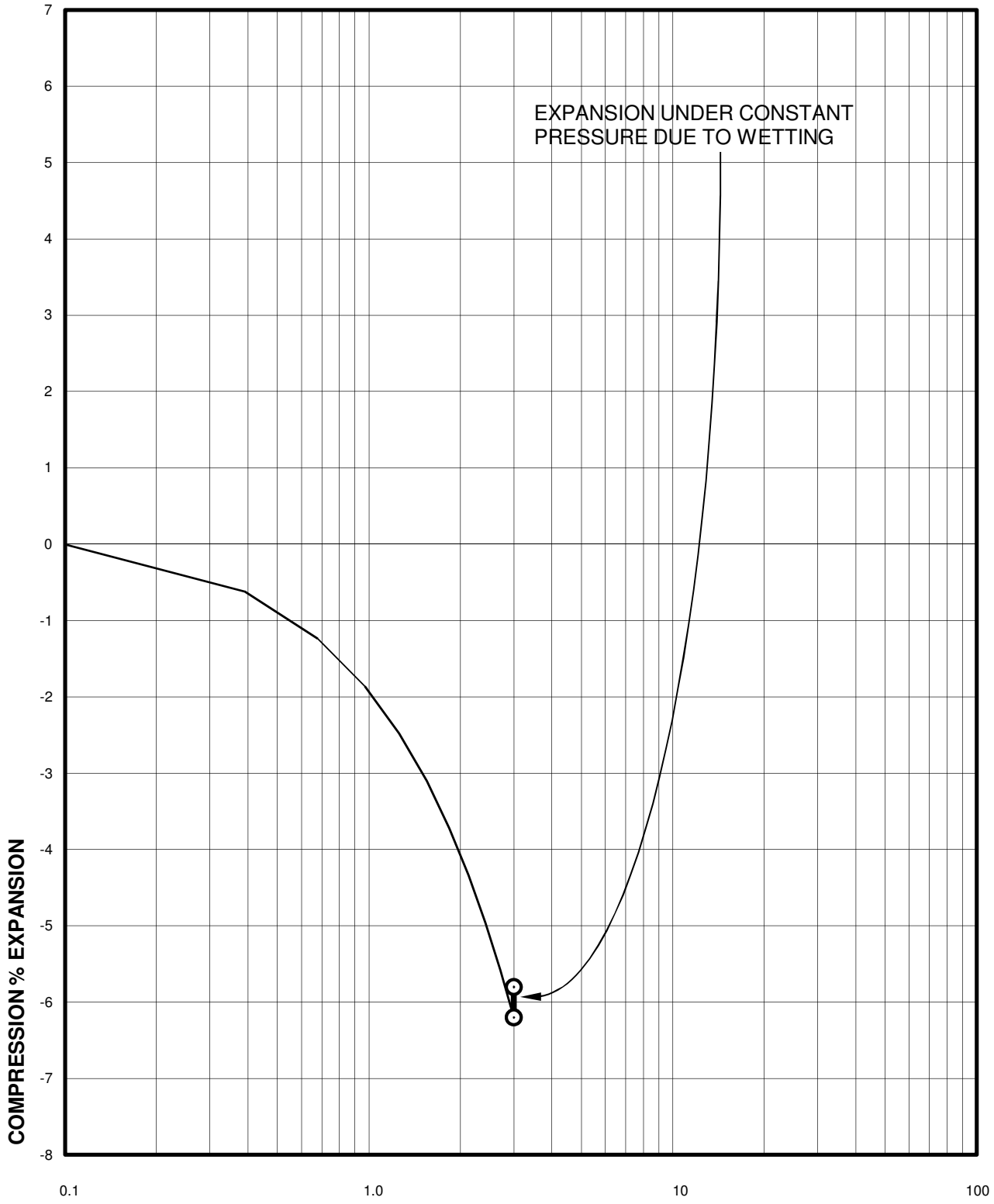
DRY UNIT WEIGHT= 114 PCF

MOISTURE CONTENT= 19.2 %

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

Swell Consolidation Test Results

FIG. B-11



Sample of CLAYSTONE

From TH-7 AT 24 FEET

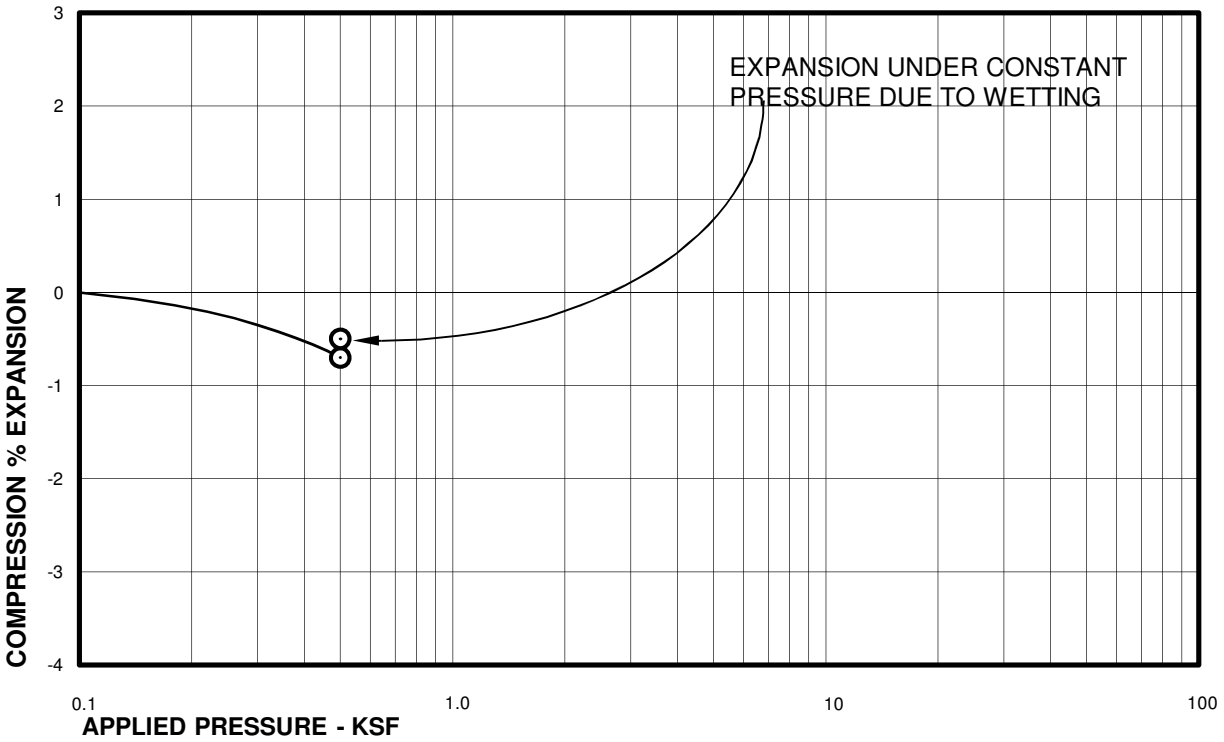
DRY UNIT WEIGHT= 109 PCF

MOISTURE CONTENT= 17.3 %

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

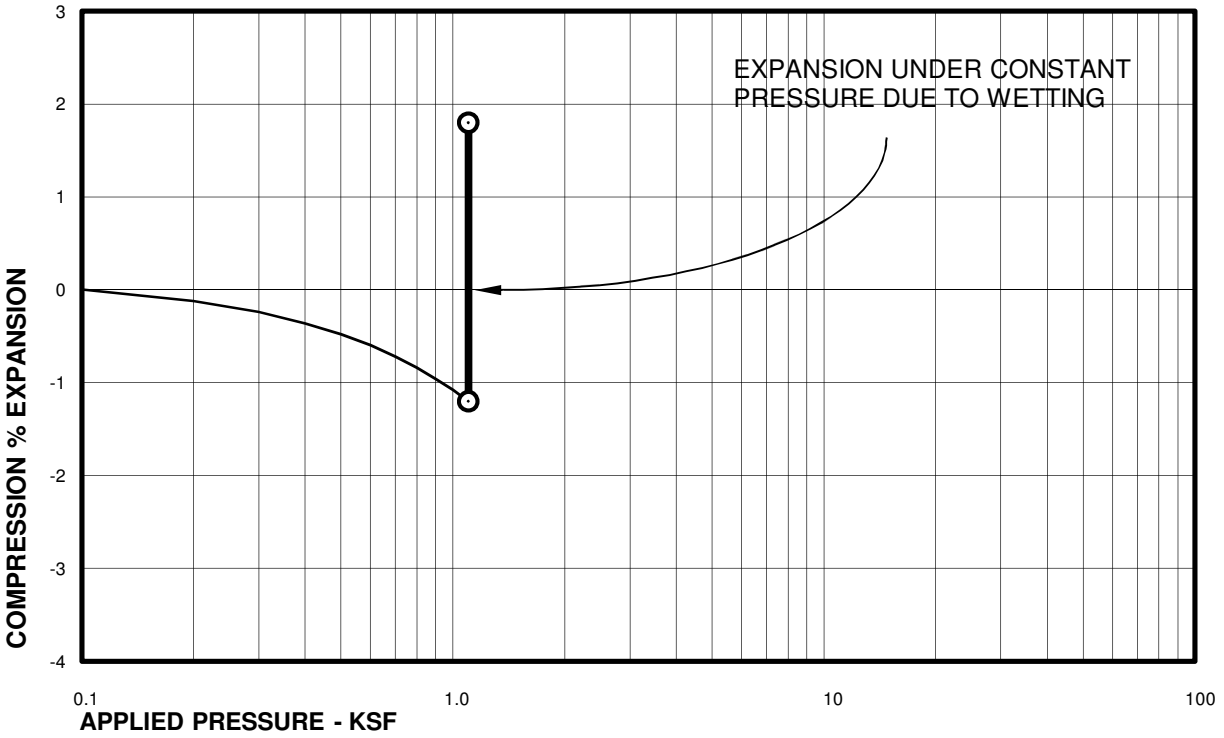
Swell Consolidation Test Results

FIG. B-12



Sample of WEATHERED CLAYSTONE
From TH-8 AT 4 FEET

DRY UNIT WEIGHT= 116 PCF
MOISTURE CONTENT= 11..5 %



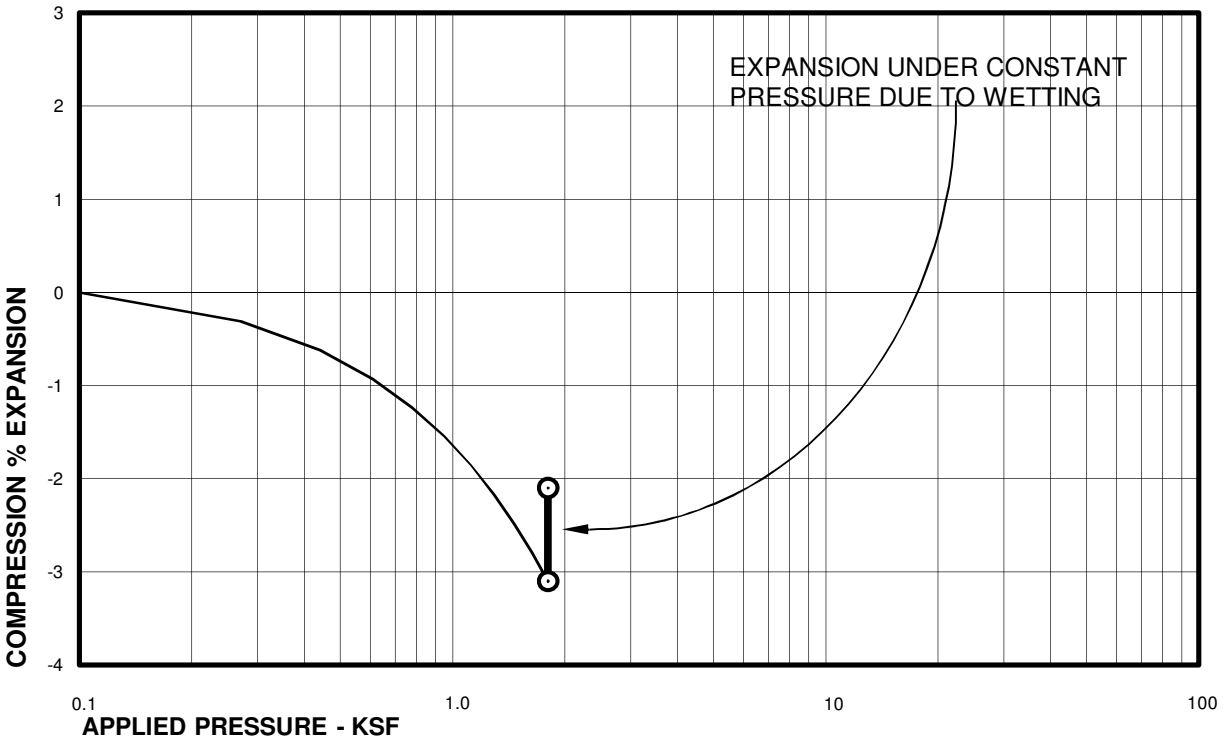
Sample of WEATHERED CLAYSTONE
From TH-8 AT 9 FEET

DRY UNIT WEIGHT= 120 PCF
MOISTURE CONTENT= 15.1 %

Swell Consolidation Test Results

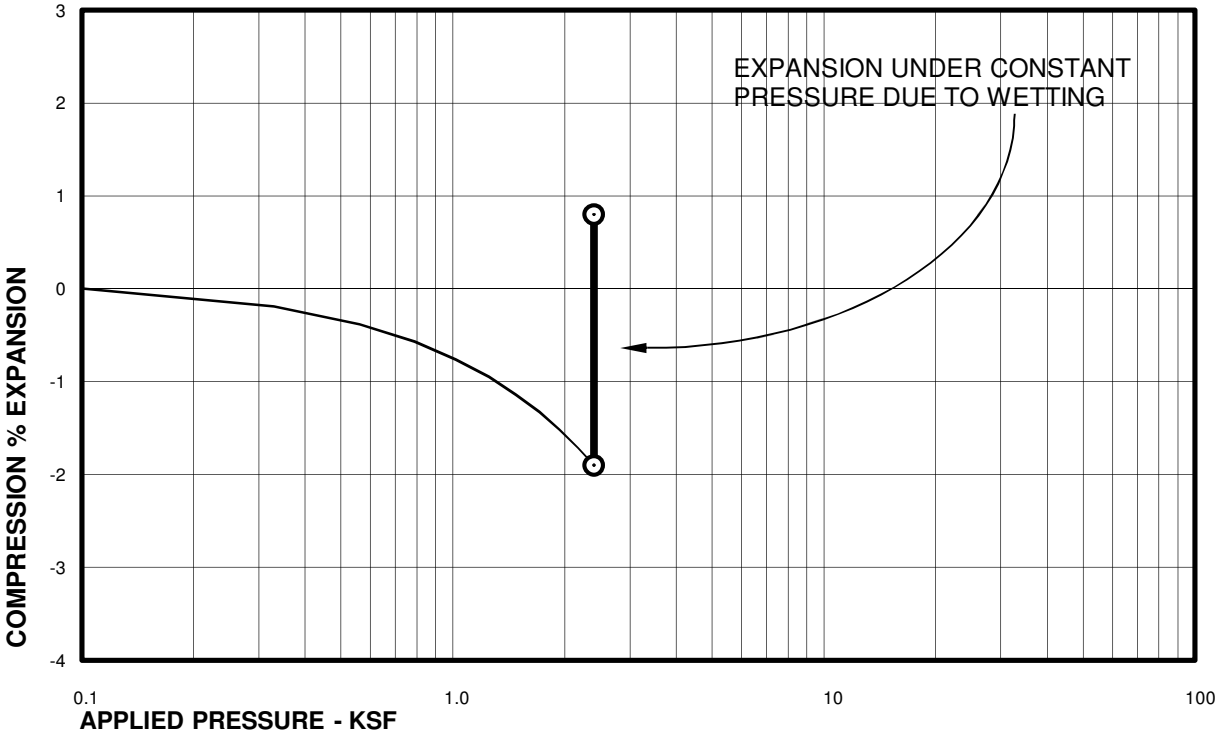
FIG. B-13

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm



Sample of CLAYSTONE
From TH-8 AT 14 FEET

DRY UNIT WEIGHT= 109 PCF
MOISTURE CONTENT= 17.6 %



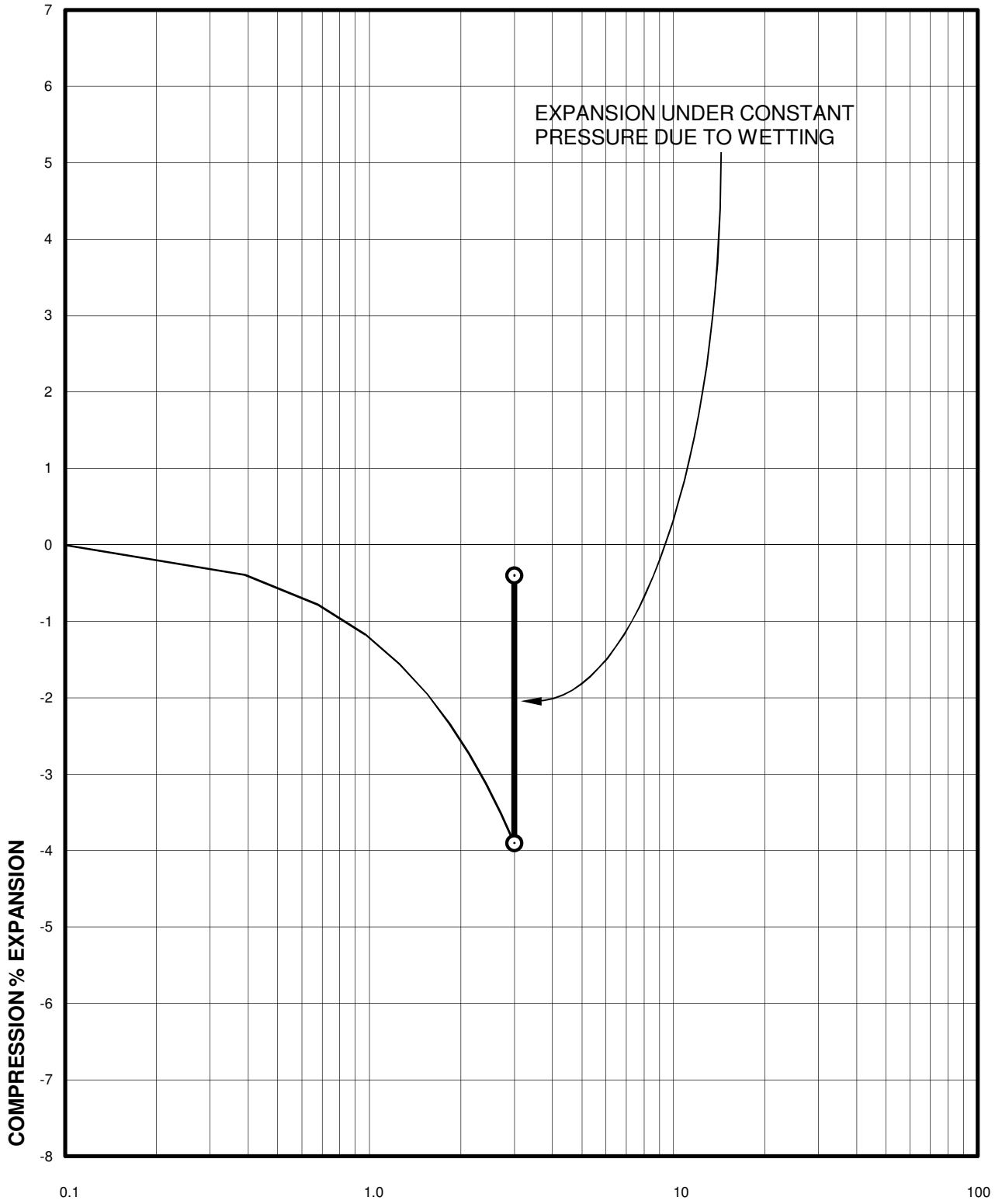
Sample of CLAYSTONE
From TH-8 AT 19 FEET

DRY UNIT WEIGHT= 119 PCF
MOISTURE CONTENT= 16.2 %

Swell Consolidation Test Results

FIG. B-14

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm



Sample of CLAYSTONE

From TH-8 AT 24 FEET

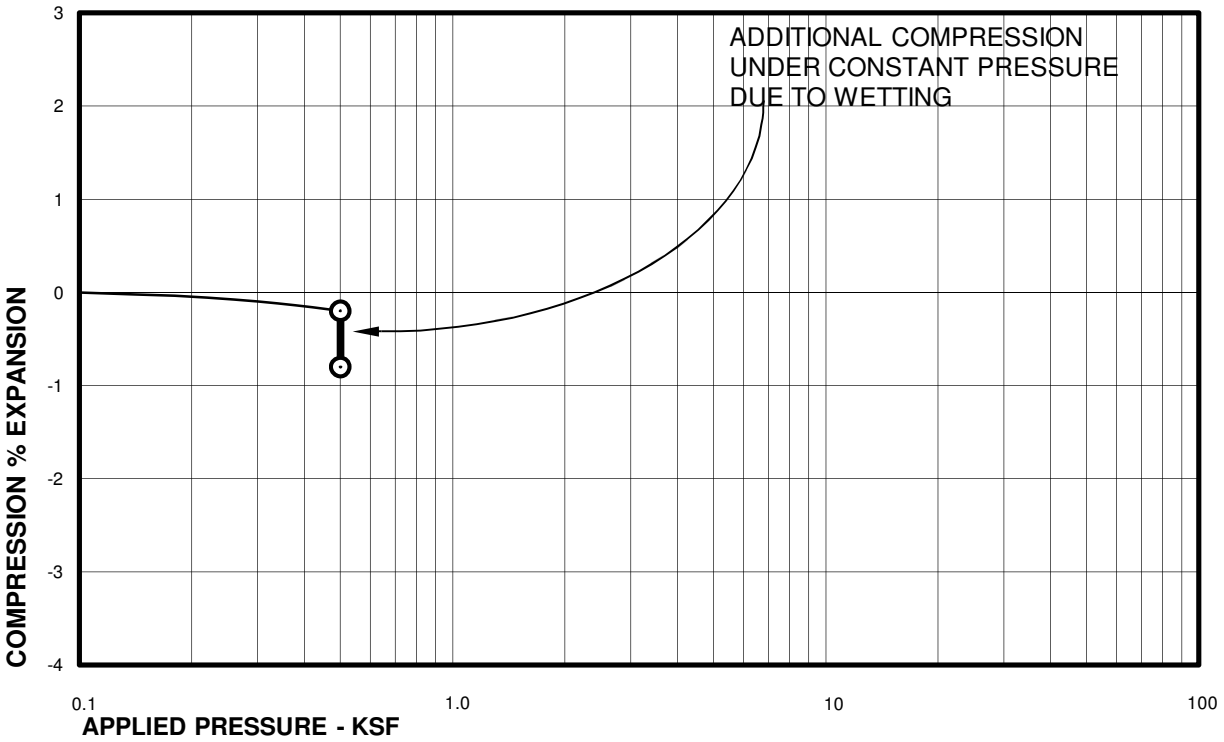
DRY UNIT WEIGHT= 101 PCF

MOISTURE CONTENT= 23.7 %

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

Swell Consolidation Test Results

FIG. B-15

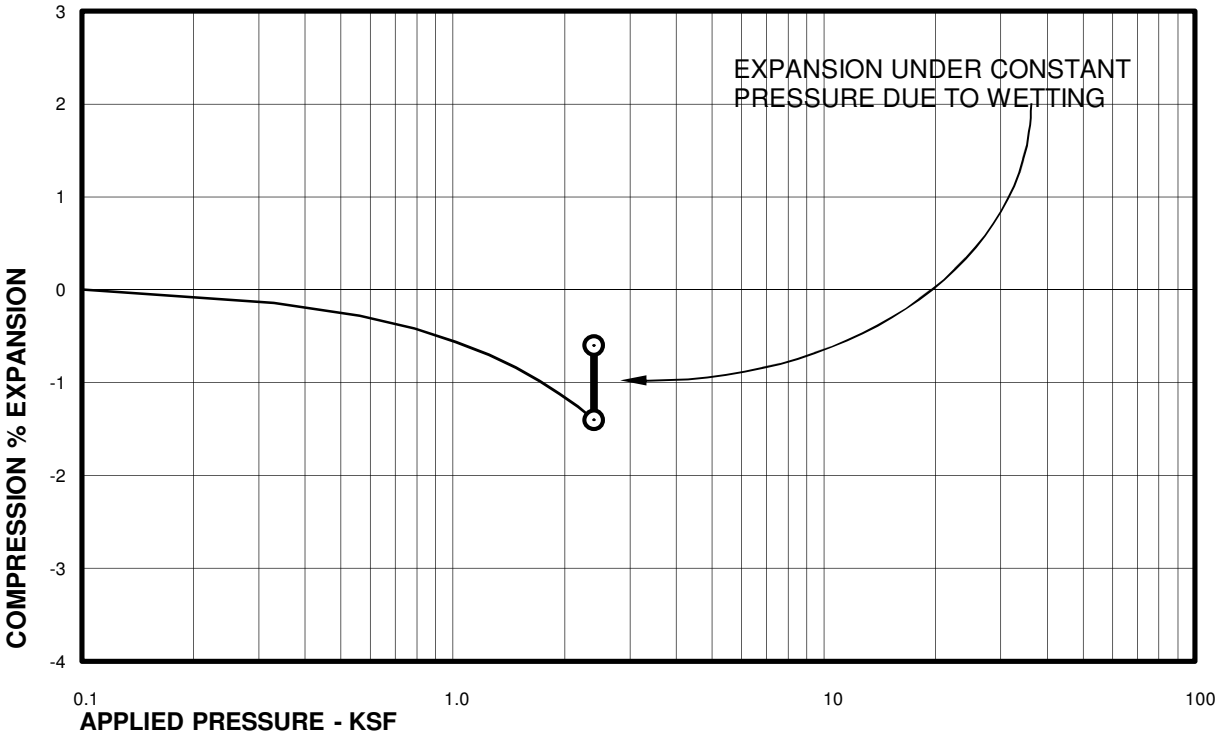


Sample of INTERLAYERED CLAY/SAND

From TH-9 AT 4 FEET

DRY UNIT WEIGHT= 108 PCF

MOISTURE CONTENT= 7.5 %



Sample of CLAYSTONE

From TH-9 AT 19 FEET

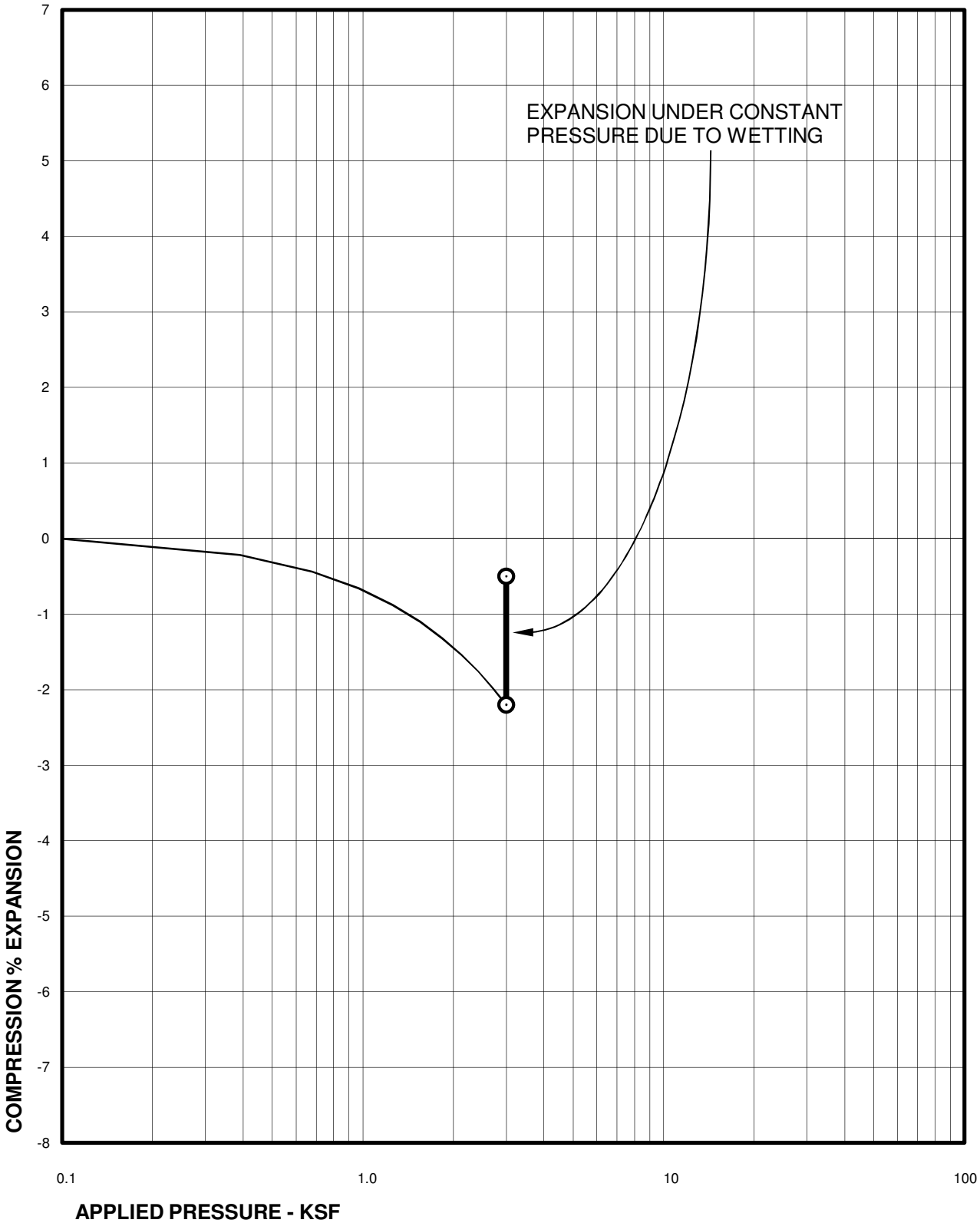
DRY UNIT WEIGHT= 116 PCF

MOISTURE CONTENT= 15.9 %

Swell Consolidation Test Results

FIG. B-16

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm



Sample of CLAYSTONE

From TH-9 AT 24 FEET

DRY UNIT WEIGHT= 120 PCF

MOISTURE CONTENT= 13.3 %

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN46,332-115
S:\PROJECTS\47300\47332.000\115\2. Reports\R1\dn47332-115-R1-X1(SWELL).xlsm

Swell Consolidation Test Results

FIG. B-17

TABLE B - I

SUMMARY OF LABORATORY TEST RESULTS

BORING	DEPTH (ft)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	SWELL TEST DATA: SWELL (%)	SWELL TEST DATA: COMPRESSION (%)	SWELL TEST DATA: APPLIED PRESSURE (psf)	SWELL TEST DATA: SWELL PRESSURE (psf)	ATTERBERG LIMITS: LIQUID LIMIT (%)	ATTERBERG LIMITS: PLASTICITY INDEX (%)	SOLUBLE SULFATE CONTENT (%)	PASSING NO. 200 SIEVE (%)	SOIL TYPE
TH-1	4	10.3	101		1.6	500						SAND, SILTY (SM)
TH-1	9	16.5	115					36	22	0.05	71	INTERLAYERED CLAY/SAND
TH-1	14	14.6	123	0.0		1,800		42	22		76	CLAYSTONE/SANDSTONE
TH-1	19	18.1	109	3.4		2,400						CLAYSTONE
TH-2	4	7.9	109		2.4	500						SAND, SILTY (SM)
TH-2	9	13.4	113	0.4		1,100						INTERLAYERED CLAY/SAND
TH-2	19	3.6	114								6	SAND, SLIGHTLY SILTY (SP-SM)
TH-2	24	12.3	121	1.5		3,000						CLAYSTONE
TH-3	4	10.5	109	0.2		500						INTERLAYERED CLAY/SAND
TH-3	9	3.5	112								5	SAND, SLIGHTLY SILTY (SP-SM)
TH-4	4	5.3	110		0.8	500				0.04		SAND, SILTY (SM)
TH-4	9	11.9	117		0.6	1,100		20	3		24	INTERLAYERED CLAY/SAND
TH-4	24	19.7	109	2.1		3,000						WEATHERED CLAYSTONE
TH-5	4	19.3	98	0.0		500						INTERLAYERED CLAY/SAND
TH-5	9	6.6	105		0.9	1,100		24	11	<0.01	42	INTERLAYERED CLAY/SAND
TH-5	19	13.0	119	4.0		2,400						CLAYSTONE
TH-6	4	9.4	107	1.4		500						INTERLAYERED CLAY/SAND
TH-6	9	11.8	112	0.0		1,100						INTERLAYERED CLAY/SAND
TH-6	19	12.3	122	1.2		2,400						CLAYSTONE
TH-6	24	17.1	113	3.3		3,000						CLAYSTONE
TH-7	4	10.2	117		0.1	500						SAND, CLAYEY (SC)
TH-7	9	14.0	119	0.3		1,100		33	15	0.03	85	WEATHERED CLAYSTONE
TH-7	14	13.6	115	0.1		1,800						CLAYSTONE
TH-7	19	19.2	114	3.3		2,400						CLAYSTONE
TH-7	24	17.3	109	0.4		3,000						CLAYSTONE
TH-8	4	11.5	116	0.2		500						WEATHERED CLAYSTONE
TH-8	9	15.1	120	3.0		1,100						WEATHERED CLAYSTONE
TH-8	14	17.6	109	1.0		1,800						CLAYSTONE
TH-8	19	16.2	119	2.7		2,400						CLAYSTONE
TH-8	24	23.7	101	3.5		3,000						CLAYSTONE
TH-9	4	7.5	108		0.6	500		23	9		29	INTERLAYERED CLAY/SAND
TH-9	19	15.9	116	0.8		2,400						CLAYSTONE
TH-9	24	13.3	120	1.7		3,000						CLAYSTONE

APPENDIX C

GUIDELINE SITE GRADING SPECIFICATIONS

Erie Parcel
Erie, Colorado

GUIDELINE SITE GRADING SPECIFICATIONS

Erie Parcel, Erie, Colorado

1. DESCRIPTION

This item shall consist of the excavation, transportation, placement and compaction of materials from locations indicated on the plans, or staked by the Engineer, as necessary to achieve preliminary street and overlot elevations. These specifications shall also apply to compaction of excess cut materials that may be placed outside of the subdivision and/or filing boundaries.

2. GENERAL

The Soils Representative shall be the Owner's representative. The Soils Representative shall approve fill materials, method of placement, moisture contents and percent compaction, and shall give written approval of the completed fill.

3. CLEARING JOB SITE

The Contractor shall remove all vegetation, trees, brush and rubbish before excavation or fill placement begins. The Contractor shall dispose of the cleared material to provide the Owner with a clean, neat appearing job site. Cleared material shall not be placed in areas to receive fill or where the material will support structures of any kind.

4. SCARIFYING AREA TO BE FILLED

Topsoil and vegetable matter shall be substantially removed from the ground surface upon which fill is to be placed. The surface shall then be plowed or scarified to a depth of 8 inches, moisture treated to above optimum moisture content, and compacted until the surface is free from ruts, hummocks or other uneven features, which would prevent uniform compaction by the equipment to be used.

5. COMPACTING AREA TO BE FILLED

After the foundation for the fill has been cleared and scarified, it shall be disked or bladed until it is free from large clods to a depth of 8 to 12 inches, brought to the proper moisture content (between optimum and 3 percent above optimum for clay and within 2 percent of optimum for sand) and compacted to not less than 95 percent of maximum density as determined in accordance with ASTM D 698 and 100 percent for the portion of fill deeper than 20 feet below proposed grade (if any). The foundation materials shall be worked, stabilized, or removed and replaced if necessary in accordance with the soils representative’s recommendations in preparation for fill.

6. FILL MATERIALS

Fill soils shall be substantially free from vegetable matter or other deleterious substances, and shall not contain rocks having a diameter greater than six (6) inches and claystone pieces larger than three (3) inches. Fill materials shall be obtained from cut areas shown on the plans or staked in the field by the Engineer.

On-site or imported materials classifying as CL, CH, SC, SM, SW, SP, GP, GC and GM are acceptable. Organic matter and other deleterious materials or debris shall not be used as fill. Concrete can be mixed with the fill provided it is crushed to 6 inches or less in diameter.

7. MOISTURE CONTENT

For fill material classifying as CH, CL or SC, the fill shall be moisture treated to between optimum and 3 percent above optimum moisture content. Soils classifying as SM, SW, SP, GP, GC and GM shall be moisture treated to within 2 percent of optimum moisture content as determined from Proctor compaction tests. Sufficient laboratory compaction tests shall be made to determine the optimum moisture content for the various soils encountered in borrow areas.

The Contractor may be required to add moisture to the excavation materials in the borrow area if, in the opinion of the Soils Representative, it is not possible to obtain uniform moisture content by adding water on the fill surface. The Contractor may be required to rake or disc the fill soils to provide uniform moisture content through the soils.

The application of water to embankment materials shall be made with any type of watering equipment approved by the Soils Representative, which will give the desired results. Water jets from the spreader shall not be directed at the embankment with such force that fill materials are washed out.

Should too much water be added to any part of the fill, such that the material is too wet to permit the desired compaction from being obtained, rolling and all work on that section of the fill shall be delayed until the material has been allowed to dry to the required moisture content. The Contractor will be permitted to rework wet material in an approved manner to hasten its drying.

8. COMPACTION OF FILL AREAS

Selected fill material shall be placed and mixed in evenly spread layers. After each fill layer has been placed, it shall be uniformly compacted to not less than the specified percentage of maximum density. Fill shall be compacted to at least 95 percent of the maximum density as determined in accordance with ASTM D 698 and 100 percent for fill deeper than 20 feet below proposed grade. At the option of the Soils Representative, soils classifying as SW, GP, GC, or GM may be compacted to 95 percent of maximum density as determined in accordance with ASTM D 1557 or 70 percent relative density for cohesionless sand soils. Fill materials shall be placed such that the thickness of loose materials does not exceed 8 inches and the compacted lift thickness does not exceed 6 inches.

Compaction as specified above shall be obtained by the use of sheepsfoot rollers, multiple-wheel pneumatic-tired rollers, or other equipment approved for soils classifying as CL, CH, or SC. Granular fill shall be compacted using vibratory equipment or other approved equipment. Compaction shall be accomplished while the fill material is at the specified moisture content. Compaction of each layer shall be continuous over the entire area. Compaction equipment shall make sufficient passes to ensure that the required density is obtained.

9. COMPACTION OF SLOPES

Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction operations shall be continued until slopes are stable, but not too dense for planting, and there is not an appreciable amount of loose soils on the slopes. Compaction of slopes may be done progressively in increments of three to five feet (3' to 5') in height or after the fill is brought to its total height. Permanent fill slopes shall not exceed 3:1 (horizontal to vertical).

10. PLACEMENT OF FILL ON NATURAL SLOPES

Where natural slopes are steeper than 20 percent in grade and the placement of fill is required, cut benches shall be provided at the rate of one bench for each 5 feet in height (minimum of two benches). Benches shall be at least 10 feet in width. Larger bench widths may be required by the Engineer. Fill shall be placed on completed benches as outlined within this specification.

11. DENSITY TESTS

Field density tests shall be made by the Soils Representative at locations and depths of his choosing. Where sheepsfoot rollers are used, the soil may be disturbed to a depth of several inches. Density tests shall be taken in compacted material below the disturbed surface. When density tests indicate that the density or moisture content of any layer of fill or portion thereof is below that required, the particular layer or portion shall be reworked until the required density or moisture content has been achieved.

12. SEASONAL LIMITS

No fill material shall be placed, spread or rolled while it is frozen, thawing, or during unfavorable weather conditions. When work is interrupted by heavy precipitation, fill operations shall not be resumed until the Soils Representative indicates that the moisture content and density of previously placed materials are as specified.

13. NOTICE REGARDING START OF GRADING

The Contractor shall submit notification to the Soils Representative and Owner advising them of the start of grading operations at least three (3) days in advance of the starting date. Notification shall also be submitted at least 3 days in advance of any resumption dates when grading operations have been stopped for any reason other than adverse weather conditions.

14. REPORTING OF FIELD DENSITY TESTS

Density tests made by the Soils Representative, as specified under "Density Tests" above, shall be submitted progressively to the Owner. Dry density, moisture content, and percentage compaction shall be reported for each test taken.

15. DECLARATION REGARDING COMPLETED FILL

The Soils Engineer shall provide a written declaration stating that the site was filled with acceptable materials, and was placed in general accordance with the specifications.

APPENDIX D

GUIDELINE SITE GRADING SPECIFICATIONS
(SUB-EXCAVATION)

Erie Parcel, Erie, Colorado

Note: This guideline is intended for use with sub-excavation. If sub-excavation is not selected, the guidelines in Appendix C should be followed.

GUIDELINE SITE GRADING SPECIFICATIONS
(SUB-EXCAVATION)

Erie Parcel, Erie, Colorado

1. DESCRIPTION

This item shall consist of the excavation, transportation, placement and compaction of materials from locations indicated on the plans, or staked by the Engineer, as necessary to achieve preliminary street and overlot elevations. These specifications shall also apply to compaction of materials that may be placed outside of the development boundaries.

2. GENERAL

The Soils Engineer shall be the Owner's representative. The Soils Engineer shall observe fill materials, method of placement, moisture content and percent compaction, and shall provide written opinions of the completed fill.

3. CLEARING JOB SITE

The Contractor shall remove all vegetation and debris before excavation or fill placement is begun. The Contractor shall dispose of the cleared material to provide the Owner with a clean, neat appearing job site. Cleared material shall not be placed in areas to receive fill where the material will support structures of any kind.

4. SCARIFYING AREA TO BE FILLED

All topsoil and vegetable matter shall be removed from the ground surface where fill is to be placed. The surface shall then be plowed or scarified until the surface is free from ruts, hummocks or other uneven features that would prevent uniform compaction.

5. COMPACTING AREA TO BE FILLED

After the foundation for the fill has been cleared and scarified, it shall be disked or bladed until it is free from large clods, brought to the proper moisture content, (1 to 4 percent above optimum) and compacted to not less than 95 percent of maximum density as determined in accordance with ASTM D 698.

6. FILL MATERIALS

Fill soils shall be free from vegetable matter or other deleterious substances, and shall not contain clay and claystone having a diameter greater than three (3) inches. Fill materials shall be obtained from cut areas shown on the plans or staked in the field by the Engineer.

On-site materials classifying as CL, CH, SC, SM, SP, GP, GC and GM are acceptable. Concrete, asphalt, and other deleterious materials or debris shall not be used as fill.

7. MOISTURE CONTENT

Fill materials shall be moisture-conditioned to within limits of optimum moisture content specified in “Moisture Content and Density Criteria”. Sufficient laboratory compaction tests shall be made to determine the optimum moisture content for the various soils encountered in borrow areas or imported to the site.

The Contractor may be required to add moisture to the excavation materials in the borrow area if, in the opinion of the Soils Engineer, it is not possible to obtain uniform moisture content by adding water on the fill surface. The Contractor will be required to rake or disc the fill to provide uniform moisture content throughout the fill.

The application of water to embankment materials shall be made with any type of watering equipment that will give the desire results. Water jets from the spreader shall not be directed at the embankment with such force that fill materials are washed out.

Should too much water be added to any part of the fill, such that the material is too wet to permit the desired compaction from being obtained, rolling and all work on that section of the fill shall be delayed until the material has been allowed to dry to the required moisture content. The Contractor will be permitted to rework wet material in an approved manner to hasten its drying.

8. COMPACTION OF FILL MATERIALS

Selected fill material shall be placed and mixed in evenly spread layers. After each fill layer has been placed, it shall be uniformly compacted to not less than the specified percentage of maximum density given in “Moisture Content and Density Criteria”. Fill materials shall be placed such that the thickness of loose material does not exceed 8 inches and the compacted lift thickness does not exceed 6 inches.

Compaction, as specified above, shall be obtained by the use of suitable equipment. Compaction shall be accomplished while the fill material is at the specified moisture content. Compaction of each layer shall be continuous over the entire area. Compaction equipment shall make sufficient trips to ensure that the required density is obtained.

9. MOISTURE CONTENT AND DENSITY CRITERIA

Fill material shall be substantially compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698, AASHTO T 99) dry density at 1 to 4 percent above optimum moisture content. Additional criteria for acceptance are presented in DENSITY TESTS.

10. DENSITY TESTS

Field density tests shall be made by the Soils Engineer at locations and depths of his choosing. Where sheepsfoot rollers are used, the soil may be disturbed to a depth of several inches. Density tests shall be taken in compacted material below the disturbed surface. When density tests indicate the density or moisture content of any layer of fill

or portion thereof not within specifications, the particular layer or portion shall be re-worked until the required density or moisture content has been achieved.

Allowable ranges of moisture content and density given in MOISTURE CONTENT AND DENSITY CRITERIA are based on design considerations. The moisture shall be controlled by the Contractor so that moisture content of the compacted earth fill, as determined by tests performed by the Soils Engineer, shall be within the limits given. The Soils Engineer will inform the Contractor when the placement moisture is less than or exceeds the limits specified and the Contractor shall immediately make adjustments in procedures as necessary to maintain placement moisture content within the specified limits, to satisfy the following requirements.

A. Moisture

1. The average moisture content of material tested each day shall not be less than 1.5 percent over optimum moisture content.

2. Material represented by samples tested having moisture lower than 1 percent over optimum will be rejected. Such rejected materials shall be reworked until moisture equal to or greater than 1 percent above optimum is achieved.

B. Density

1. The average dry density of material tested each day shall not be less than 95 percent of standard Proctor maximum dry density (ASTM D 698).

2. No more than 10 percent of the material represented by the samples tested shall be at dry densities less than 95 percent of standard Proctor maximum dry density (ASTM D 698).

3. Material represented by samples tested having dry density less than 93 percent of standard Proctor maximum dry density (ASTM D 698) will be rejected. Such rejected materials shall be reworked until a dry density equal to or greater than 95 percent of standard Proctor maximum dry density (ASTM D 698) is obtained.

11. OBSERVATION AND TESTING OF FILL

Observation by the Soils Engineer shall be sufficient during the placement of fill and compaction operations so that they can declare the fill was placed in general conformance with specifications. All observations necessary to test the placement of fill and observe compaction operations will be at the expense of the Owner.

12. SEASONAL LIMITS

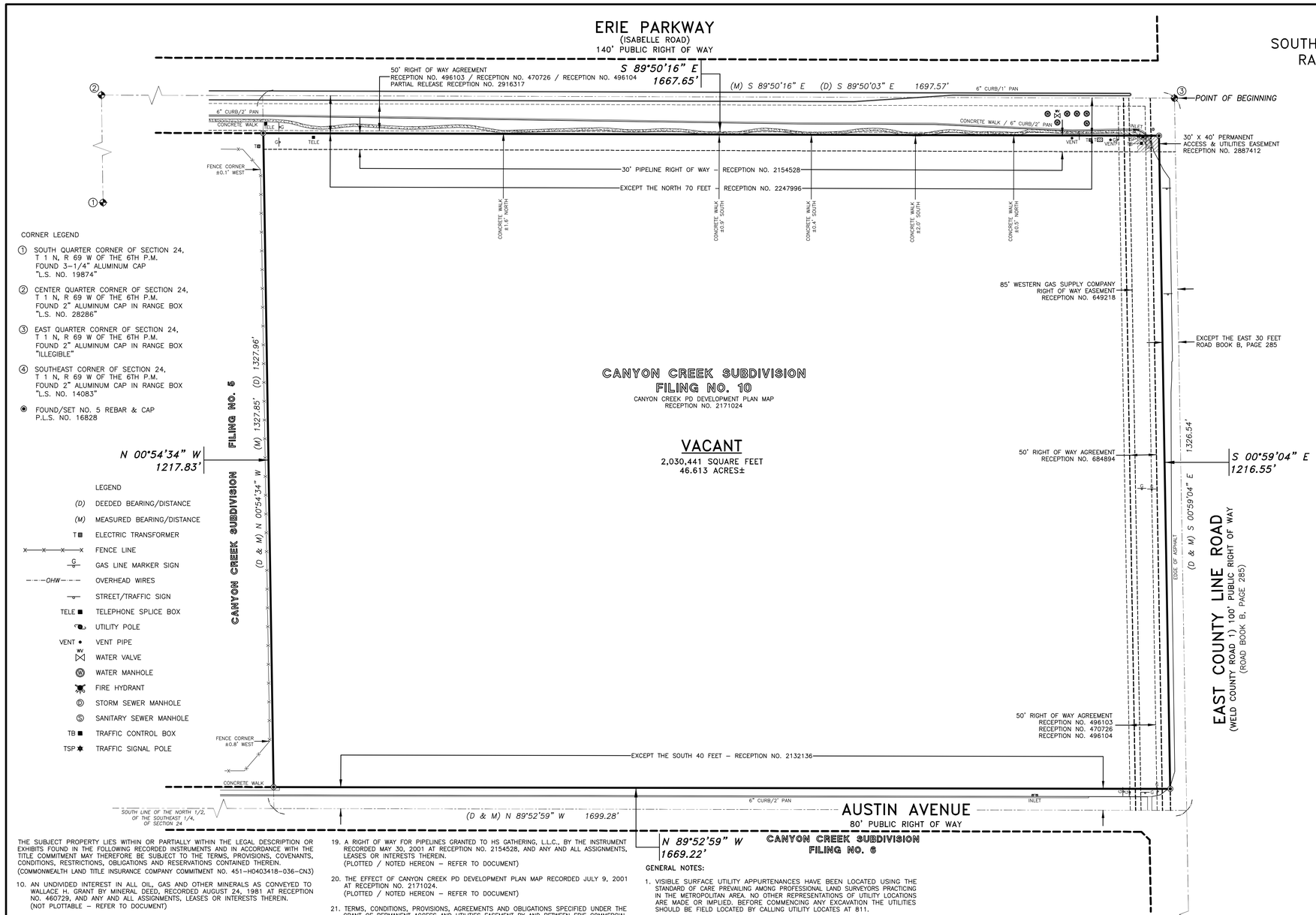
No fill material shall be placed, spread or rolled while it is frozen, thawing, or during unfavorable weather conditions. When work is interrupted by heavy precipitation, fill operations shall not be resumed until the Soils Engineer indicates the moisture content and density of previously placed materials are as specified.

13. REPORTING OF FIELD DENSITY TESTS

Density tests made by the Soils Engineer, as specified under “Density Tests” above, shall be submitted progressively to the Owner. Dry density, moisture content and percentage compaction shall be reported for each test taken.

ALTA/ACSM LAND TITLE SURVEY

SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN COUNTY OF BOULDER, STATE OF COLORADO



VICINITY MAP – NOT TO SCALE

PARCEL DESCRIPTION

A PARCEL OF LAND IN THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH P.M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE EAST 1/4 CORNER OF SECTION 24, WHICH IS ALSO THE TRUE POINT OF BEGINNING; THENCE SOUTH 0°59'04" EAST 1326.54 FEET; THENCE NORTH 89°52'59" WEST 1699.28 FEET; THENCE NORTH 0°54'34" WEST 1327.96 FEET; THENCE SOUTH 89°50'03" EAST 1697.57 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THAT PORTION CONVEYED TO THE TOWN OF ERIE IN DEED RECORDED JANUARY 29, 2002 AT RECEPTION NO. 2247996, COUNTY OF BOULDER, STATE OF COLORADO.

EXCEPT THE EAST 30 FEET IN ROAD BOOK B, PAGE 285, AND THE SOUTH 40 FEET AS CONVEYED TO THE TOWN OF ERIE BY SPECIAL WARRANTY DEED RECORDED MARCH 28, 2001 AT RECEPTION NO. 2132136, COUNTY OF BOULDER, STATE OF COLORADO.

CONTAINING 2,030,441 SQUARE FEET OR 46.613 ACRES MORE OR LESS.

CERTIFICATION

TO: RMCS, LLC, A COLORADO LIMITED LIABILITY COMPANY, ERIE COMMERCIAL VENTURE, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, COMMONWEALTH LAND TITLE INSURANCE COMPANY AND HERITAGE TITLE COMPANY.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 3, 4, 6(b), 8, 11(a), 16, 17 AND 18 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JUNE 11, 2014.

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
(C.R.S. 13-80-105)

NOTICE: THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY BELL SURVEYING COMPANY TO DETERMINE THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS, OWNERSHIP, OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS OF WAY, OR TITLE OF RECORD, BELL SURVEYING COMPANY RELIED UPON TITLE COMMITMENT NO. 451-H0403418-036-CN3, DATED MAY 29, 2014, ISSUED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY.

CERTIFICATION DEFINED

THE USE OF THE WORD "CERTIFY" OR "CERTIFICATION" BY A REGISTERED PROFESSIONAL SURVEYOR IN THE PRACTICE OF LAND SURVEYING, CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OF FINDINGS WHICH ARE THE SUBJECT OF THE CERTIFICATION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

COPIES OF THIS DOCUMENT MAY BE MADE AND DISTRIBUTED TO OTHER PARTIES FOR REFERENCE PURPOSES AND REVIEW, HOWEVER, ONLY PRINTS OF THIS SURVEY BEARING ORIGINAL SIGNATURE AND WET SEAL BY THE SURVEYOR NAMED HEREON SHALL BE CONSIDERED VALID CERTIFIED DOCUMENTS.

DEAN O. DANIELSON,
P.L.S. NO. 16828
DATE OF SURVEY: 6/11/2014

DEAN O. DANIELSON REGISTERED 16828 LAND SURVEYOR STATE OF COLORADO

THE SUBJECT PROPERTY LIES WITHIN OR PARTIALLY WITHIN THE LEGAL DESCRIPTION OR EXHIBITS FOUND IN THE FOLLOWING RECORDED INSTRUMENTS AND IN ACCORDANCE WITH THE TITLE COMMITMENT MAY THEREFORE BE SUBJECT TO THE TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, OBLIGATIONS AND RESERVATIONS CONTAINED THEREIN.
(COMMONWEALTH LAND TITLE INSURANCE COMPANY COMMITMENT NO. 451-H0403418-036-CN3)

10. AN UNDIVIDED INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS CONVEYED TO WALLACE H. GRANT BY MINERAL DEED, RECORDED AUGUST 24, 1981 AT RECEPTION NO. 460729, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

11. AN UNDIVIDED INTEREST IN ALL OIL, GAS AND OTHER MINERALS CONVEYED TO DOUGLAS GRANT BY MINERAL DEED, RECORDED AUGUST 24, 1981 AT RECEPTION NO. 460730, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

12. AN UNDIVIDED 1/4 INTEREST IN ALL OIL, GAS AND OTHER MINERALS CONVEYED TO SUSAN J. TROUDT, MARIAN J. BOTINELLI AND CARLA JOHNSON HOBBS DBA JOHNSON FARMS BY MINERAL DEED, RECORDED SEPTEMBER 23, 1981 AT RECEPTION NO. 465242, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

13. A RIGHT OF WAY FOR PIPELINES AND APPURTENANCES GRANTED TO PANHANDLE EASTERN PIPELINE COMPANY BY THE INSTRUMENT RECORDED MAY 26, 1982 AT RECEPTION NO. 496103, AND RECORDED SEPTEMBER 21, 1981 AT RECEPTION NO. 470726, PARTIAL RELEASE OF RIGHT OF WAY RECORDED MARCH 13, 2008 AT RECEPTION NO. 2916317, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

14. A RIGHT OF WAY FOR PIPELINES AND APPURTENANCES GRANTED TO PANHANDLE EASTERN PIPELINE COMPANY BY THE INSTRUMENT RECORDED MAY 26, 1982 AT RECEPTION NO. 496104, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

15. A RIGHT OF WAY FOR PIPELINES GRANTED TO WESTERN GAS SUPPLY COMPANY BY THE INSTRUMENT RECORDED SEPTEMBER 28, 1984 AT RECEPTION NO. 649218, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

16. ANY ASSESSMENT OR LIEN OF THE ERIE WATER AND SANITATION DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED JANUARY 17, 1985 AT RECEPTION NO. 667325.
(NOT PLOTTABLE – REFER TO DOCUMENT)

17. ANY ASSESSMENT OR LIEN OF THE NORTHERN COLORADO WATER CONSERVANCY DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED SEPTEMBER 24, 1997 AT RECEPTION NO. 1733175.
(NOT PLOTTABLE – REFER TO DOCUMENT)

18. A RIGHT OF WAY FOR PIPELINES GRANTED TO VESSELS OIL AND GAS COMPANY BY THE INSTRUMENT RECORDED APRIL 25, 1985 AT RECEPTION NO. 684894, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

19. A RIGHT OF WAY FOR PIPELINES GRANTED TO HS GATHERING, L.L.C., BY THE INSTRUMENT RECORDED MAY 30, 2001 AT RECEPTION NO. 2154528, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

20. THE EFFECT OF CANYON CREEK PD DEVELOPMENT PLAN MAP RECORDED JULY 9, 2001 AT RECEPTION NO. 2171024.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

21. TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS SPECIFIED UNDER THE GRANT OF PERMANENT ACCESS AND UTILITIES EASEMENT BY AND BETWEEN ERIE COMMERCIAL VENTURES, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, AND TOWN OF ERIE, A COLORADO MUNICIPAL CORPORATION, RECORDED OCTOBER 3, 2007 AT RECEPTION NO. 2887412.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

22. ASSIGNMENTS AND CONVEYANCES OF MINERAL INTERESTS TO JOHNSON DEVELOPMENT COMPANY IN INSTRUMENTS RECORDED JULY 13, 2001 AT RECEPTION NO. 2173368 AND INSTRUMENTS RECORDED APRIL 3, 2001 AT RECEPTION NOS. 2134267 THROUGH 2134284 INCLUSIVE, INCLUSIVE, AND MINERAL DEED RECORDED MAY 1, 2008 AT RECEPTION NO. 2927263.
(NOT PLOTTABLE – REFER TO DOCUMENT)

23. QUIT CLAIM, ASSIGNMENT, BILL OF SALE AND CONVEYANCE OF INTERESTS AS RECORDED OCTOBER 17, 2002 AT RECEPTION NO. 2344511, AND ANY AND ALL ASSIGNMENTS OR LEASES THERETO.
(NOT PLOTTABLE – REFER TO DOCUMENT)

24. MINERAL RIGHTS AS CONVEYED TO ECV MINERALS, LLC IN MINERAL DEED RECORDED MAY 1, 2008 AT RECEPTION NO. 2927263.
(NOT PLOTTABLE – REFER TO DOCUMENT)

25. TERMS CONDITIONS PROVISIONS AS SET FORTH IN THE WELL ABANDONMENT AGREEMENT AS RECORDED MAY 1, 2008 AT RECEPTION NO. 2927262.
(NOT PLOTTABLE – REFER TO DOCUMENT)

26. TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS CONTAINED IN THE RESTRICTIVE COVENANT AND NON-DISTURBANCE AGREEMENT RECORDED MAY 29, 2008 AT RECEPTION NO. 2932960.
(NOT PLOTTABLE – REFER TO DOCUMENT)

27. OIL AND GAS LEASE FROM ECV MINERALS, LLC TO ENCANA OIL & GAS USA INC. AS RECORDED JULY 2, 2008 AT RECEPTION NO. 2941006.
(NOT PLOTTABLE – REFER TO DOCUMENT)

28. ALL OF THE FOLLOWING DOCUMENTS AS THEY RELATE TO MINERAL INTERESTS, WELLBORE SPECIFIC DECLARATION OF POOLING AS RECORDED SEPTEMBER 22, 2009 AT RECEPTION NO. 3031124, OPERATING AGREEMENT AND FINANCING STATEMENT AS RECORDED JUNE 16, 2010 AT RECEPTION NO. 03080637, QUITCLAIM DEED AS TO OIL GAS AND MINERAL INTERESTS AS RECORDED FEBRUARY 11, 2011 AT RECEPTION NO. 3132655, ASSIGNMENT, BILL OF SALE AND CONVEYANCE FROM ENCANA OIL & GAS TO KERR -MCGEE GATHERING LLC AS RECORDED APRIL 14, 2011 AT RECEPTION NO. 3143701.
(NOT PLOTTABLE – REFER TO DOCUMENT)

GENERAL NOTES:

1. VISIBLE SURFACE UTILITY APPURTENANCES HAVE BEEN LOCATED USING THE STANDARD OF CARE PREVAILING AMONG PROFESSIONAL LAND SURVEYORS PRACTICING IN THE METROPOLITAN AREA. NO OTHER REPRESENTATIONS OF UTILITY LOCATIONS ARE MADE OR IMPLIED. BEFORE COMMENCING ANY EXCAVATION THE UTILITIES SHOULD BE FIELD LOCATED BY CALLING UTILITY LOCATES AT 811.

2. THE SUBJECT PROPERTY LIES WITHIN THE FLOOD HAZARD AREA DESIGNATED AS "ZONE X" IN ACCORDANCE WITH F.E.M.A. PANEL 441 OF 615, MAP NUMBER 08013C0441J, DATED DECEMBER 18, 2012.

   ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

3. BEARINGS BASED ON THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN AS BEARING S 00°59'04" E (MONUMENTS DESCRIBED ON PLAT).

4. NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

5. NO OBSERVABLE EVIDENCE OR KNOWLEDGE OF ANY CHANGES IN STREET RIGHT OF WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION. NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.

6. NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

7. CANYON CREEK PD DEVELOPMENT PLAN – FILING NO. 10

   PRINCIPAL LAND USES:
   COMMERCIAL / BUSINESS / RETAIL (CBR)
   OPEN SPACE, PARKS & RECREATION FACILITIES (OS)

   MINIMUM SET BACK TO PRINCIPAL BUILDINGS:
   FRONT – 20 FEET
   SIDE (INTERIOR LOT) – 10 FEET
   SIDE (ALONG STREET) – 20 FEET
   REAR – 20 FEET
   BUILDING HEIGHT – 35 FEET

   MINIMUM SET BACK TO ACCESSORY BUILDINGS:
   FRONT – 30 FEET
   SIDE (INTERIOR LOT) – 5 FEET
   SIDE (ALONG STREET) – 20 FEET
   REAR – 5 FEET
   BUILDING HEIGHT – 25 FEET

   ZONING COMPLIANCE AND REQUIREMENTS NOT PROVIDED TO SURVEYOR.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

COUNTY SURVEYORS CERTIFICATE

DEPOSITED THIS____DAY OF_____20____
AT____.M., IN BOOK_____ OF THE COUNTY SURVEYOR'S LAND SURVEY/RIGHT OF WAY SURVEYS AT PAGE _____, RECEPTION NUMBER _____

COUNTY SURVEYOR BY DEPUTY COUNTY SURVEYOR

ALTA/ACSM LAND TITLE SURVEY		
ORDERED BY: OVERTON & ASSOCIATES, LLC 6950 EAST BELLEVIEW AVENUE #202 GREENWOOD VILLAGE, COLORADO 80111	REVISION: PREV: 0710-113	DRAWN: WB
BELL SURVEYING COMPANY 500 KALAMATH STREET DENVER, COLORADO 80204 303-629-0165 FAX 303-629-0168 www.BELLSURVEYING.com	SCALE: 1"=100'	
	DATE: 6/11/2014	
	DRAWING NO.: 1406-102	

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**LAND DEVELOPMENT RESOLUTIONS AND ORDINANCES** **Consideration of Resolution 15-101 (Continue to 8/25/2015 for Vote)**: A Resolution By The Board Of Trustees Of The Town Of Erie, Colorado Approving The 4 Corners Pre-Development Agreement; Authorizing The Appropriate Town Official To Sign Said Pre-Development Agreement; And, Setting Forth Details In Relation Thereto.
PURPOSE:	Authorize Town officials to accept, and to sign the Termination and Release of Annexation Agreement, and the 4 Corners Pre-Development Agreement.
CODE:	Erie Municipal Code, Title 10
DEPARTMENT:	Community Development
PRESENTER:	Deborah Bachelder AICP, Senior Planner

FISCAL INFORMATION:	Cost as Recommended:	n/a
	Balance Available:	n/a
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☒ No

STAFF RECOMMENDATION:	Approval of Resolution 15-101 authorizing Town officials to accept, and to sign the 4 Corners Pre-Development Agreement. Staff requests that the Board of Trustees reviews the application materials during this meeting but continue the item, for a final vote, to the next Board of Trustees meeting on Tuesday, August 25, 2015. This will allow the Board of Trustees to make a final determination on the Resolution at the same meeting you make final determination on the second reading of the Ordinances for the Canyon Creek PD Amendment No. 9 application.
PLANNING COMMISSION RECOMMENDATION:	N/A

SUMMARY AND BACKGROUND

The Resolution provided for the Board of Trustees authorizes Town officials to accept, and to sign the 4 Corners Pre-Development Agreement. The Pre-Development Agreement addresses the current development proposal for residential and commercial development of the property, as illustrated in the Canyon Creek PD Amendment No. 9 application and the Canyon Creek Filing No. 10 Sketch Plan application that is being reviewed concurrently with the Pre-Development Agreement.

Staff Review:

____Town Attorney
____Town Clerk
____Community Development Director
____Finance Director
____Police Chief
____Public Works Director

Approved by:

A. J. Krieger
Town Administrator

ATTACHMENTS:

A. Draft Resolution 15-101
B. 4 Corners Pre-Development Agreement

EXHIBIT A

RESOLUTION NO. 15-101

A RESOLUTION BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO APPROVING THE 4 CORNERS PRE-DEVELOPMENT AGREEMENT; AUTHORIZING THE APPROPRIATE TOWN OFFICIAL TO SIGN SAID PRE-DEVELOPMENT AGREEMENT; AND, SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, the Board of Trustees approved Ordinance 20-2015, rezoning the Canyon Creek Filing No. 10 (4 Corners) Property, in Canyon Creek PD Amendment No.9, from the Commercial Business Retail (CBR) land use category, to a combination of Community Commercial (CC), High Density Residential (HR) and Medium Density Residential (MR) land use categories; and,

WHEREAS, both Erie and the Owner now desire to enter into the Pre-Development Agreement to bind the Owner to those uses, maximum number of dwelling units, lot size, bulk and dimension standards, landscaping and densities for the Property specifically relied upon by the Board of Trustees in approving the rezoning ordinance; and,

WHEREAS, the Director of the Community Development Department recommends that the Board of Trustees approve and accept the Pre-Development Agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. That the Board of Trustees of the Town of Erie hereby approves the 4 Corners Pre-Development Agreement, a copy of which is attached hereto and incorporated herein by this reference.

Section 2. That the Town of Erie be and is hereby authorized and directed to enter into the 4 Corners Pre-Development Agreement, and the appropriate Town officers are hereby authorized and directed to sign and bind the Town to the Pre-Development Agreement.

ADOPTED AND APPROVED THIS ___ DAY OF AUGUST, 2015, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____

Nancy Parker, Town Clerk

EXHIBIT B

4 CORNERS
Pre-Development Agreement

THIS PRE-DEVELOPMENT AGREEMENT ("Agreement") is made and entered into this ____ day of _____, 2015, by and between the **TOWN OF ERIE**, a Colorado municipal corporation, hereinafter referred to as "Erie", and **ERIE COMMERCIAL VENTURE, LLLP,** a Colorado limited liability limited partnership, hereinafter referred to as "Owner;"

WHEREAS, Owner owns the real property described on Exhibit A, attached hereto and incorporated herein by this reference (the "Property"); and,

WHEREAS, Owner has submitted to Erie an application to amend the current Canyon Creek PD zoning ("PD Amendment") of the Property from the Commercial Business Retail (CBR) land use category to a combination of Community Commercial (CC), High Density Residential (HR) and Medium Density Residential (MR) land use categories; and,

WHEREAS, the Board of Trustees of Erie held public hearings on the Owner's PD Amendment application for re-zoning on _____ and again on _____ ("Public Hearing"), at which time evidence and testimony were received by the Board of Trustees, and which evidence and testimony were relied upon by the Board of Trustees in making findings and in determining whether or not the Erie Municipal Code's criteria for the re-zoning had been met by the Owner; and,

WHEREAS, Owner presented evidence and testimony at the Public Hearing, regarding uses, maximum number of dwelling units, lot size, bulk and dimension standards, landscaping and densities for the Property, which evidence and testimony was specifically relied upon by the Board of Trustees in making findings and in determining that the Erie Municipal Code's criteria for the re-zoning had been met by the Owner and in approving the re-zoning of the Property; and,

WHEREAS, the Board of Trustees of Erie did approve the PD Amendment application for re-zoning of the property on _____, as depicted on the zoning map, marked Exhibit B ("Zoning Map"); and,

WHEREAS, both Erie and Owner understand and agree that Owner will submit a subdivision and/or site plan applications for the Property at some future date in accordance with the Erie Municipal Code and the terms of the PD Amendment, and that at the time of the subdivision of the Property a development agreement will be required of Owner in conjunction with the subdivision process, which development agreement will include provisions regarding the required improvements and special provisions related to the subdivision and development of the Property, together with the terms set forth herein; and,

WHEREAS, this Agreement is not intended to replace the development agreements that may be required as part of the Erie Municipal Code, but is intended only to bind the parties hereto to those items specifically set forth herein and relied upon by the Board of Trustees in making findings and in determining that the Erie Municipal Code's criteria for the re-zoning had been met by the Owner.

NOW, THEREFORE, in consideration of the foregoing, the parties hereto promise, covenant and agree as follows:

1. **Zoning**. The approved zoning for the Property is depicted on the Zoning Map, attached hereto as Exhibit B and incorporated herein by this reference.

2. **Access Locations**. Access points to the Property may be located as depicted on Exhibit C attached hereto and incorporated herein by this reference; provided however that Owner obtains written agreement from Erie and the Ranchwood Minor Subdivision owners for such access locations.

3. **Street Standards**. All streets lying within the Property shall be constructed in accordance with the standards set forth on Exhibit D attached hereto and incorporated herein by this reference. Any street classification not shown on Exhibit D shall follow the street standards identified in the Town of Erie Standards and Specifications for Design and Construction of Public Improvements.

4. **Metropolitan, Improvement and Financing Districts**. Owner may apply to include the Property, subject to Erie and/or Town of Erie Urban Renewal Authority approvals, in one or more metropolitan, special improvement, urban renewal and/or other financing districts for construction of improvements to street and other public ways, or other private or public improvements authorized by law.

5. **Reimbursable Expenses.** Owner acknowledges that Erie is due reimbursements for certain improvements as set forth herein below. Owner may request from Erie and/or Town of Erie Urban Renewal Authority that the reimbursements due Erie be funded through inclusion of all or a portion of the Property in a Tax Infrastructure Financing (TIF) district and/or a 30-year deferral repayment agreement between Owner and Erie, consistent with the provisions of the Erie Municipal Code:

   a. 25% of the cost of the signal at Erie Parkway and County Line Road, in an amount not to exceed $57,507;

   b. Erie Parkway construction along frontage, in an amount not to exceed $913,546;

   c. 15 inch and 30 inch Coal Creek Sewer Interceptor, in an amount not to exceed $177.66 per single-family equivalent (SFE); and

   d. NWRF Sewer Interceptor, in an amount not to exceed $410.00 per SFE.

6. **Fees**. Erie may consider reviewing documentation and other data provided by Owner to reduce certain development fees including without limitation raw water and tap fees. By way of example, residential raw water fees and tap fees can be determined on projected annual usage of the various residential unit types based on current regional demographic studies of occupants per residential unit type and per capita water usage. All residential and commercial tap fees will be due upon issuance of building permits.

7. **Maximum Total Number of Dwelling Units.** The maximum total number of dwelling units on the Property shall be five hundred (500).

8. **Open Space and Park Dedication Fees**. Erie may consider adjusting the persons per dwelling unit figure for calculating residential Open Space and Park dedications based on current regional demographic studies of average occupants per residential unit types.

9. **Default**. If Owner fails to fulfill the terms and conditions of this Agreement, and such failure continues for a period of fifteen (15) days after written notice thereof from Erie, Erie, in its sole discretion, may declare Owner in default and may withhold any additional building permits, certificates of occupancy, or provision of new utilities fixtures or services until the default is cured. Erie may further pursue any other remedy now or hereafter available to Erie under applicable law. Any costs incurred by Erie, including, but not limited to, administrative costs and reasonable attorney's fees, in pursuit of any remedies due to the breach by Owner shall be paid by Owner. Erie may deduct these costs from any Improvement Guarantee which may be in place. No remedy or election hereunder shall be deemed exclusive but shall, whenever possible, be cumulative with all other remedies at law or in equity.

10. **Indemnification and Release of Liability**. Owner agrees to indemnify and hold harmless Erie, its officers, employees, agents, or servants, and to pay any and all judgments rendered against said persons on account of any suit, action, or claim caused by arising from, or on account of acts or omissions by Owner, its officers, employees, agents, consultants, contractors, and subcontractors, and/or suit, action or claim resulting from Owner's default under the terms of this Agreement, and to pay to Erie and said persons their reasonable expenses, including, but not limited to, reasonable attorney's fees and reasonable expert witness fees, incurred in defending any such suit, action or claim. Owner's obligation herein shall not apply to the extent said suit, action or claim results from any acts or omissions of officers, employees, agents, or servants of Erie or conformance with requirements imposed by Erie.

11. **Recording Agreement**. Erie shall record this Agreement at Owner's expense in the office of the Clerk and Recorder, County of Boulder, State of Colorado, and Erie shall retain the recorded Agreement.

12. **Binding Effect of Agreement.** The Agreement shall run with the Property and shall insure benefit of and be binding upon the successors and assigns of the parties hereto.

13. **Assignment**. Owner's duties and obligations pursuant to this Agreement may not be assigned to any third party or agency without the express written consent of Erie, which consent may be withheld at Erie's sole discretion, with the exception that Owner may assign this Agreement to Erie Four Corners, LLC, at any time without the need for Erie's consent.

14. **Modification and Waiver.** No modification of the terms of this Agreement shall be valid unless in writing and executed with the same formality as this Agreement, and no waiver of the breach of the provisions of any sections of this agreement shall be

construed as a waiver of any subsequent breach of the same section or any other sections which are contained herein.

15. **Addresses for Notice.** Any notice or communication required or permitted hereunder shall be given in writing and shall be personally delivered, sent via overnight delivery service o sent by United States mail postage, prepaid, registered or certified mail, return receipt requested, addressed as follows:

Erie:

Town of Erie
Town Administrator
P.O Box 750
Erie, Colorado 80516

With a copy (which shall not constitute notice) to:

Mark Shapiro
Mark R. Shapiro, PC
1650 38th Street, Suite 103
Boulder, CO 80301-2624

Owner:

Erie Commercial Venture, LLLP
ATTN: A.L (Sid) Overton
6950 E. Belleview Avenue, Suite 202
Greenwood Village, CO 80111

With a copy (which shall not constitute notice) to:

James Tienken
Tienken & Associates, P.C.
824 Pine Street
Louisville, CO 80027

With a copy to such other address or the attention of such other person(s) as hereafter designated in writing by the applicable parties in conformance with this procedure. Notices shall be effective upon mailing or personal delivery in compliance with this paragraph.

16. **Previous Agreements**. This Agreement shall constitute the entire agreement between the parties hereto and shall supersede all prior contracts, proposals, representations, negotiations and letters of intent, whether written or oral, pertaining to the Property.

17. **Severability**. If any part, section, subsection, sentence, clause or phrase of this Agreement is for any reason held to be invalid, such invalidity shall not affect the validity of the remaining sections of the Agreement. The parties hereby declare that they would have ratified this Agreement including each part, section, subsection, sentence, clause or phrase thereof irrespective of the fact that one or more parts, sections, subsections, sentence, clauses or phrases be declared invalid.

18. **Attorney Fees**. In the event that either party finds it necessary to retain an attorney in connection with a default by the other as to any of the provisions contained in this Agreement, the defaulting party shall pay the other's reasonable attorney's fees and costs incurred in enforcing the provisions of this Agreement.

19. **Situs, Venue and Severability**. The laws of the State of Colorado shall govern the interpretation, validity, performance and enforcement of this Agreement. For the resolution of any dispute arising hereunder, venue shall be in the Courts of the County of Weld, State of Colorado.

20. **Paragraph Headings**. Paragraph headings are inserted for convenience only and in no way limit or define the interpretation to be placed upon this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Pre-Development Agreement as of the date first set forth above.

ERIE:
TOWN OF ERIE, a Colorado municipal Corporation

By:_____

_____

ATTEST:

_____

_____

OWNER:
ERIE COMMERCIAL VENTURE, LLLP Colorado limited liability limited partnership

By:_____

_____

STATE OF COLORADO)
) SS.
COUNTY OF BOULDER)

Subscribed and sworn before me this ___day of_____, 2015, by _____, General Partner of Erie Commercial Venture, LLLP.

Witness my hand and official seal.
My Commission Expires: _____.

(Seal)

_____
Notary Public

EXHIBITS LIST

EXHIBIT A	Legal Description of the 4 Corners Parcel
EXHIBIT B	Property Zoning Map
EXHIBIT C	Access Location Map
EXHIBIT D	Street Standards

EXHIBIT A

4 Corners Parcel Legal Description

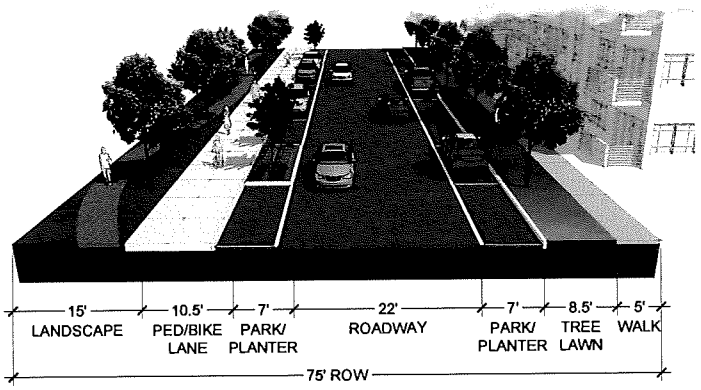
A portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.

EXHIBIT B

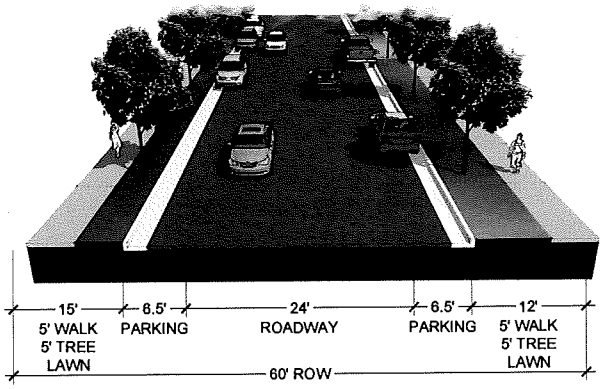
Property Zoning Map

EXHIBIT C
Access Location Map

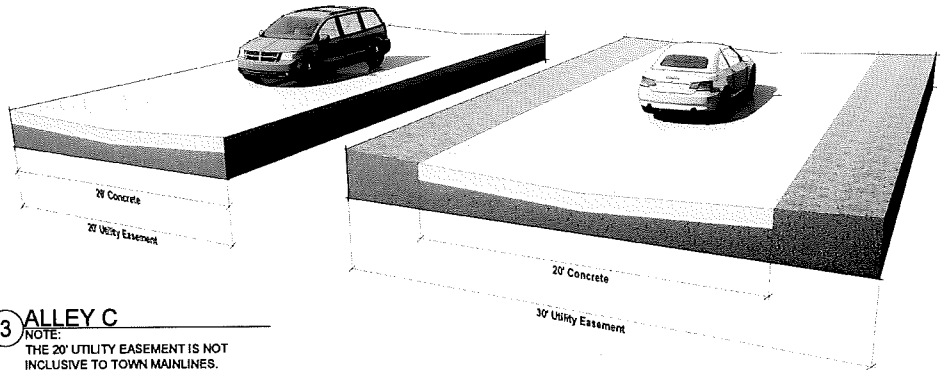
EXHIBIT D
Street Standards



1 STREET SECTION A



2 STREET SECTION B



3 ALLEY C
NOTE:
THE 20' UTILITY EASEMENT IS NOT INCLUSIVE TO TOWN MAINLINES.

4 ALLEY D

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**LAND DEVELOPMENT RESOLUTIONS AND ORDINANCES** **CANYON CREEK FILING NO. 10 – SKETCH PLAN REVIEW:** A Sketch Plan represents a generalized land use plan and layout for the area proposed to be included within a subdivision. A Sketch Plan application is required to allow early, informal evaluation of a proposed subdivision before detailed planning and engineering work has occurred.
PURPOSE:	Board of Trustees review and comment of the proposed Sketch Plan for Canyon Creek Filing No. 10.
CODE REVIEW:	Erie Municipal Code, Title 10
DEPARTMENT:	Community Development
PRESENTER:	Deborah Bachelder AICP, Senior Planner

FISCAL INFORMATION:	Cost as Recommended:	na
	Balance Available:	na
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☐ No

STAFF RECOMMENDATION:	A recommendation is not applicable; this is a review and comment session for the Board of Trustees. Staff and OSTAB review comments to the applicant are included in the packet materials following this memo.
PLANNING COMMISSION RECOMMENDATION:	A recommendation is not applicable; Planning Commission meeting minutes are included in the packet materials.

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Applicant:	RMCS, LLC 21 South Sunset Street Longmont, Colorado, 80501
Owners:	Erie Commercial Venture, LLC 7720 East Belleview Avenue, Suite 350 Greenwood Village, Colorado, 80111

Property Location:

Canyon Creek Subdivision Filing No. 10 (4 Corners) is located on the southwest corner of Erie Parkway and County Line Road.

Current Land Use and Zoning – Canyon Creek Filing No. 10:

Zoning:	Canyon Creek PD – Planned Development
Project Size:	46.6 Acres
Existing Use:	Vacant Lot

Adjacent Land Use and Zoning:

	ZONING	LAND USE
NORTH	CC – Community Commercial CMU – Community Mixed Use LR – Low Density Residential	Ranchwood – Vacant Commercial Ranchwood – Vacant Mixed Use Sunwest – Single Family Residential
EAST	CC – Community Commercial	Commercial Uses / Charter School
SOUTH	PD – Planned Development	Canyon Creek Filing 6: Church Canyon Creek Filing 6 – Single Family Residential
WEST	PD – Planned Development	Canyon Creek Filing 5 – Single Family Residential

SITE SPECIFIC DEVELOPMENT INFORMATION:

The applicant named Canyon Creek Filing No. 10 as "4 Corners" in the Sketch Plan application. The Sketch Plan illustration represents a mix of housing types and commercial development that could develop on the property based on the Canyon Creek PD Amendment No. 9 application that is being reviewed concurrently with this Sketch Plan application.

Sketch Plan Development Data:

- Preliminary Plat Size: 46.6 acres
- Residential Development:
  - Single Family Detached 45 dwelling units
  - Duplex 32 dwelling units
  - Townhomes: 52 dwelling units
  - Apartments: 330 dwelling units
  - Total Dwelling Units 459 dwelling units
- Commercial Development: 8.82 acres
- Landscape Tracts: 8.01 acres
  - 1 Pocket Park Tract 11 (Greenway) 1.93 acres

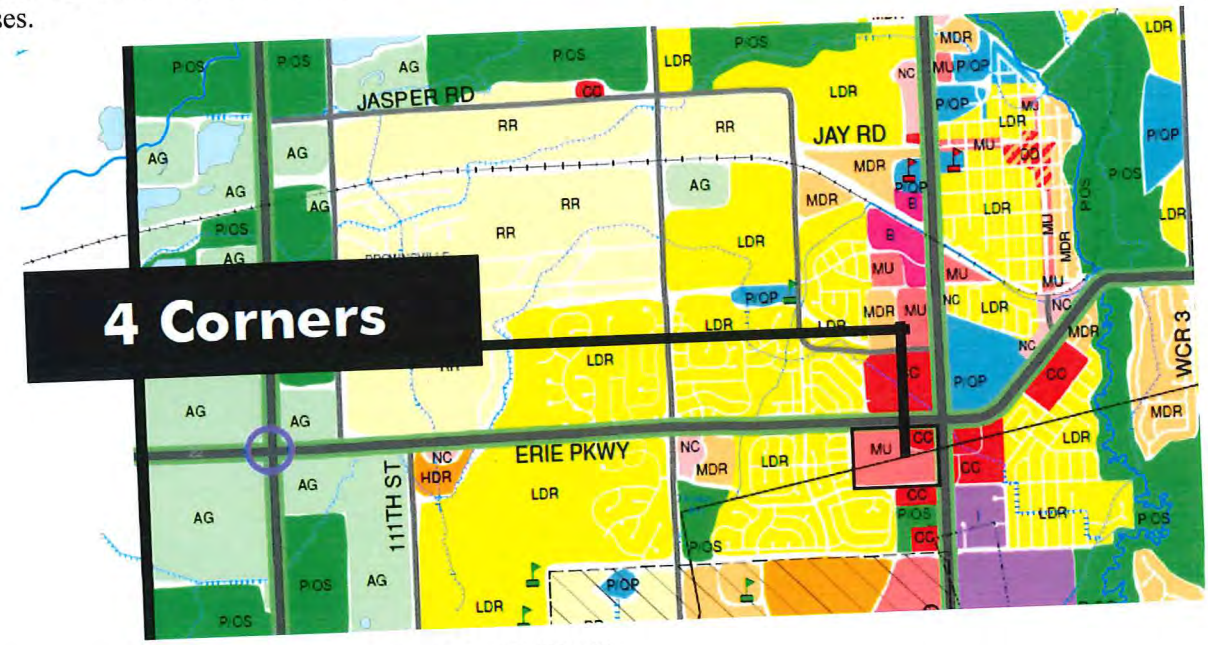
Access into the site is proposed in 1 location along Erie Parkway, 3 locations along County Line Road and in 2 locations on Austin Avenue. Internal streets within the subdivision are proposed to be somewhat modified from the Town standards, as illustrated in the Sketch Plan document. Alley loaded single family, duplex and townhome units are proposed in the Sketch Plan; while the apartments are served by internal parking lots around a common pool facility. The commercial development is mainly oriented toward the intersection of Erie Parkway and County Line Road and south along County Line Road to Austin Avenue.

Parks and Open Space:
The applicant proposes to fulfill the pocket park requirement in the linear, greenway (Tract 11). A portion of the neighborhood park, community park and open space dedications were dedicated with previous final plats

within the Canyon Creek development. Determination of any credits that may be available for this development will be reviewed and reported on with a future preliminary plat application.

Compliance with Town of Erie Comprehensive Plan:

The application is in general Compliance with the Land Use designations on the Comprehensive Plan, Land Use Plan Map. This property allows for MU – Mixed Use and CC – Community Commercial land uses.



Compliance with Municipal Code Title 10 (UDC):

Town staff has reviewed the proposed Sketch Plan for compliance with the UDC and has provided the applicant with comments. The applicant has modified the plan accordingly.

Natural Areas Inventory and Endangered Species:

The Town of Erie Natural Areas Inventory does not identify a natural area within the proposed project area.

Open Space and Trails Advisory Board:

The Open Space and Trails Advisory Board have provided the applicant with comments.

<u>SKETCH PLAN PROCESS:</u>

Below is the process outlined in Title 10 (UDC) of the Municipal Code for Sketch Plan review.

Step 2A (Development Application Submittal – Sketch Plan)

Two types of application submittals are required – first, a Sketch Plan, followed by a Preliminary Plat. The Sketch Plan requirements are listed in this Subsection. The Preliminary Plat requirements are listed below as "Step 2B." Applications for Subdivision shall only be accepted for property annexed into the municipality. A Subdivision application cannot be reviewed concurrently with an annexation application.

a. ***Purpose***

A Sketch Plan represents a generalized land use plan and layout for the area proposed to be included within a subdivision. Sketch Plan is required to allow early, informal evaluation of

a proposed subdivision before detailed planning and engineering work has been undertaken and before substantial expenses have been incurred by the applicant.

b. ***Sketch Plan Submittal Requirements***
A Sketch Plan shall be prepared and submitted to the Community Development Director pursuant to the User's Guide. An Alta Survey shall be prepared and submitted to illustrate the existing conditions on the property and, at a minimum, the Sketch Plan shall contain the following:

i. Uses proposed;

ii. Intensity or density of uses proposed;

iii. Location of public and private open space;

iv. Drainage Facilities;

v. Road, street, and pedestrian networks proposed; and

vi. Existing or proposed utilities and public services for the development.

c. ***Staff Review***
The Community Development Department shall review the Sketch Plan, focusing on standards and criteria of this UDC that are applicable to the proposed development. The Community Development Department shall summarize the results of the review in writing and provide a copy to the applicant. The summary shall include any special information regarding the proposed project, plus an evaluation of the proposal with respect to the current policies of the Town, identifying areas of potential compatibility or conflict with these policies. All comments made by the Community Development Department shall not be binding on the Town's consideration of any subsequent application, and are intended only to provide an informal evaluation of the proposed project.

d. ***Meeting to Discuss Sketch Plan***
At the request of the Community Development Director or applicant, the parties shall meet to discuss the results of the review. The applicant shall be informed of the necessary provisions of this UDC relating to subdivision application, including submittal requirements, required public improvements, design standards, and Development Agreements. The Community Development Director shall inform the applicant whether or not a Planning Commission Review shall be required.

e. ***Planning Commission Review***
In addition to the staff review the Community Development Director may require that the Sketch Plan be reviewed by the Planning Commission or the applicant may request this review. The staff review summary shall be submitted to the Planning Commission for consideration. All comments made by the Planning Commission shall not be binding on the Town's consideration of any subsequent application, and are intended only to provide an informal evaluation of the proposed project.

f. ***Effect of Review***
The Sketch Plan is not part of a formal application for approval of a subdivision and any comments made by the Town in reaction to a Sketch Plan shall not be binding on the Town's consideration of any subsequent Preliminary or Final Plat application, nor result in a vested property right under this UDC or State Statute. Since the Sketch Plan is conceptual only, there are no lapse provisions applicable.

Staff Review:

____Town Attorney
____Town Clerk
____Community Development Director
____Finance Director
____Police Chief
____Public Works Director

Approved by:

A. J. Krieger
Town Administrator

ATTACHMENTS:

A. Application Materials
B. Staff Review Memos
C. Planning Commission Minutes
D. OSTAB Referral Comments

EXHIBIT A

FOUR CORNERS SKETCH PLAN

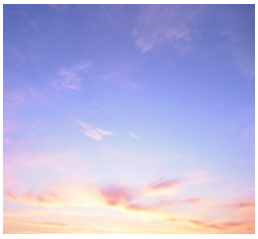
PCS Group, Inc.
1001 16th Street
Denver, CO 80265

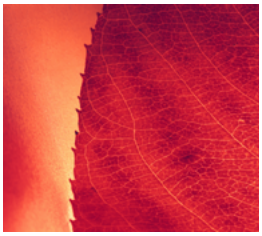
OZ Architecture
3003 Larimer Street
Denver, CO 80205

J3 Engineering
6505 S. Paris St., Suite B
Centennial, CO 80111

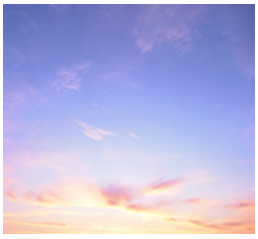
contents

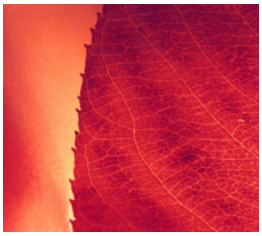
1. Cover Letter and Project Team
2. Application Fee
3. Narrative
4. Proof of Ownership
5. Letter of Authorization
6. Special Agreements
7. ALTA
8. Sketch Plan and Supplemental Graphics
9. Development Reports and Plans





cover letter
and
project team





February 20, 2015

Town of Erie
Martin Ostholthoff
Community Development Director
645 Holbrook Street
Erie, Colorado 80516

Re: Four Corners Sketch Plan

Dear Mr. Ostholthoff,

RMCS is pleased to submit the attached Sketch Plan. Moreover, it is our understanding, that we will work together in good faith with the Town of Erie, to generate a Service Plan (funding district only) for Four Corners in addition to exploring the possibility of incorporating Four Corners into an Urban Renewal Authority District. These proposed funding mechanisms will allow RMCS to compete within the marketplace while providing a significantly higher level of both public and private infrastructure as envisioned in the submittal documents.

RMCS is a local privately owned company that has worked hard, throughout the front range of Colorado, to earn a reputation for fostering and developing high quality, distinct master planned neighborhoods. Through strong partnerships with municipalities, we strive to create finance mechanisms that allow for an expedited build out of innovative public infrastructure. Uniquely designed public and private improvements will set a standard of quality for Four Corners that the residents and visitors of Erie will enjoy for generations to come.

The Four Corners proposes a strong mix of uses, including but not limited to, anchored commercial space complimented by a new restaurant and shopping district, single family detached patio homes, paired ranch homes, ranch style town homes, multi-family homes, and generous public spaces and amenities. In conclusion, we feel that our proposal furthers the goals established in the Town of Erie's Comprehensive Plan and will generate one of Erie's most innovative neighborhoods.

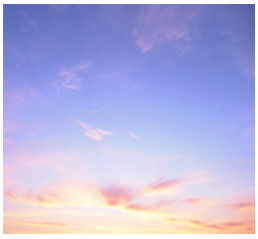
Respectfully,

Justin McClure
RMCS, Inc.

project team

applicant:
RMCS, Inc.
21 South Sunset Street, Longmont CO 80503
tel. 303.475.2106 - contact: Justin McClure

planning consultant:
PCS Group, Inc.
#3 Independence Plaza B180,
1001 16th Street, Denver, Colorado 80265
tel. 720.259.8248 - contact: Paul Shoukas



engineering consultant:
J3 Engineering
6505 S. Paris St., Ste B Centennial, CO 80111
tel. 303.368.5601 - contact: Jason Margraf

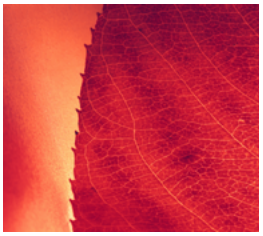
transportation consultant:
LSC Transportation Consultants
1889 York Street, Denver, CO 80206
tel. 303.333.1105 - contact: Chris McGranahan

survey consultant:
Bell Surveying Company
500 Kalamath Street, Denver, CO 80204
tel. 303.629.0165 - contact: William Barnes

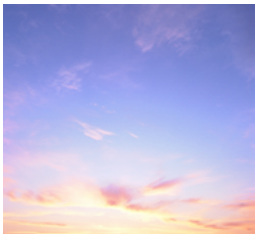
geologic & geotechnical consultant:
CTL Thompson, Inc.
1971 W. 12th Avenue, Denver, CO 80204
tel. 303.626.7645 - contact: Matt Monteith

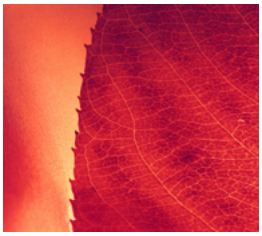
mining engineer:
Mining-Geotechnical Consulting
11225 W. Coal Mine, Littleton, CO 80127
tel. 720.035.5842 - contact: Kanaan Hanna

architect:
OZ Architecture, Inc.
3003 Larimer Street, Denver, CO 80205
tel. 303.861.5704 - contact: Rob Rydel



application fee





Print Form

TOWN OF ERIE
Community Development Department – Planning Division
645 Holbrook Street – PO Box 750 – Erie, CO 80516
Tel: 303.926.2770 – Fax: 303.926.2706 – Web: www.erieco.gov

LAND USE APPLICATION

Please fill in this form completely. Incomplete applications will not be processed.

STAFF USE ONLY

FILE NAME:

FILE NO: DATE SUBMITTED: FEES PAID:

PROJECT/BUSINESS NAME: Four Corners

PROJECT ADDRESS: Vacant Land (southwest corner of Erie Parkway and County Line Road)

PROJECT DESCRIPTION: The Four Corners Sketch Plan is a proposal for a 47 acre mixed use community consisting of tenant anchored commercial space flanked by a local retail shopping district (including restaurants), single family (alley loaded) patio homes, paired ranch homes, multi-family homes, and generous public spaces and amenities.

LEGAL DESCRIPTION *(attach legal description if Metes & Bounds)*

Subdivision Name:

Filing #: Lot #: Block #: Section: 24 Township: 1 North Range: 69 West

OWNER *(attach separate sheets if multiple)*

Name/Company: Erie Commercial Venture , LLLP

Contact Person: A. L. (Sid) Overton

Address: 6950 East Belleview Ave. Suite 202

City/State/Zip: Greenwood Village, CO 80111

Phone: 303.779.5900 Fax: 303.779.6006

E-mail: sidoverton@oalaw.net

AUTHORIZED REPRESENTATIVE

Company/Firm: RMCS, Inc.

Contact Person: Justin McClure

Address: 21 South Sunset Street

City/State/Zip: Longmont, CO 80501

Phone: 720.524.3620 Fax:

E-mail: justinrmcs@gmail.com

MINERAL RIGHTS OWNER *(attach separate sheets if multiple)*

Name/Company: ECV Minerals, LLC

Address: 7720 East Belleview Ave. Suite 350

City/State/Zip: Greenwood Village, CO 80111

MINERAL LEASE HOLDER *(attach separate sheets if multiple)*

Name/Company: N/A

Address:

City/State/Zip:

LAND-USE & SUMMARY INFORMATION

Present Zoning: CBR

Proposed Zoning: CC, HR, MR

Gross Acreage: 46.613

Gross Site Density (du/ac): 11.4

Lots/Units Proposed: 530

Gross Floor Area: 170,688

SERVICE PROVIDERS

Electric: Xcel Energy

Metro District: Pending

Water *(if other than Town)*:

Gas: Xcel Energy

Fire District: Mountain View Fire Protection District

Sewer *(if other than Town)*:

PAGE TWO MUST BE SIGNED AND NOTARIZED

DEVELOPMENT REVIEW FEES			
ANNEXATION		**SUBDIVISION**	
☐ Major (10+ acres)	$ 4000.00	☐ Sketch Plan	$ 1000.00 + 10.00 per lot
☐ Minor (less than 10 acres)	$ 2000.00	☐ Preliminary Plat	$ 2000.00 + 40.00 per lot
☐ Deannexation	$ 1000.00	☐ Final Plat	$ 2000.00 + 20.00 per lot
COMPREHENSIVE PLAN AMENDMENT		☐ Minor Subdivision Plat	$ 2000.00
☐ Major	$ 3000.00	☐ Minor Amendment Plat	$ 1000.00 + 10.00 per lot
☐ Minor	$ 1200.00	☐ Road Vacation (constructed)	$ 1000.00
ZONING/REZONING		☐ Road Vacation (paper)	$ 100.00
☐ Rezoning	$ 1700.00 + 10.00 per acre	**SITE PLAN**	
☐ PUD Rezoning	$ 1700.00 + 10.00 per acre	☐ Residential	$ 1400.00 + 10.00 per unit
☐ PUD Amendment	$ 1700.00 + 10.00 per acre	☐ Non-Resi. (>10,000 sq. ft.)	$ 2200.00
☑ Major PD Amendment	$ 3700.00 + 10.00 per acre	☐ Non-Resi. (>2,000 sq. ft.)	$ 1000.00
☐ Minor PD Amendment	$ 500.00	☐ Non-Resi. (<2,000 sq. ft.)	$ 200.00
SPECIAL REVIEW USE		☐ Amendment (major)	$ 1100.00
☐ Major	$ 1000.00	☐ Amendment (minor)	$ 350.00
☐ Minor	$ 400.00	**VARIANCE**	**$ 600.00**
☐ Oil & Gas	$ 1200.00	**SERVICE PLAN**	**$ 10,000.00**

*All fees **include** both Town of Erie Planning & Engineering review. These fees **do not include** referral agency review fees, outside consultant review fees, or review fees incurred by consultants acting on behalf of staff. See Town of Erie Municipal Code, Title 2-10-5 for all COMMUNITY DEVELOPMENT FEES.*

The undersigned is fully aware of the request/proposal being made and the actions being initiated on the referenced property. The undersigned understand that the application must be found to be complete by the Town of Erie before the request can officially be accepted and the development review process initiated. The undersigned is aware that the applicant is fully responsible for all reasonable costs associated with the review of the application/request being made to the Town of Erie. Pursuant to Chapter 7 (Section 7.2.B.5) of the Unified Development Code (UDC) of the Town of Erie, applicants shall pay all costs billed by the Town for legal, engineering and planning costs incurred by staff, including consultants acting on behalf of staff, necessary for project review. By this acknowledgement, the undersigned hereby certify that the above information is true and correct.

ERIE COMMERCIAL VENTURE, LLLP

Owner: _____ Date: 2/10/2015

By: A. L. (Sid) Overton, General Partner

Owner: _____ Date: _____

RMCS, Inc.

Applicant: _____ Date: 2/10/2015

By: Justin McClure, Vice President

STATE OF COLORADO)
) ss.
County of Arapahoe)

The foregoing instrument was acknowledged before me this 10th day of February, 2015 by A. L. (Sid) Overton, General Partner of Erie Commercial Venture, LLLP

My commission expires: 8/7/2017.

Witness my hand and official seal.

SARAH J. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20094025068
MY COMMISSION EXPIRES AUGUST 7, 2017

_____
Notary Public

TOWN OF ERIE
Land Use Application Form
RMCS, Inc., Applicant

ACKNOWLEDGMENT

STATE OF COLORADO)
)
COUNTY OF ARAPAHOE)

The foregoing instrument was acknowledged before my on this 10th **day of February, 2015 by Justin McClure, Vice President of RMCS, Inc.**

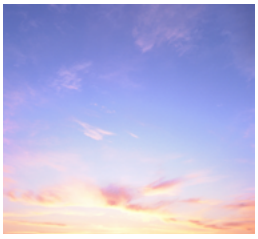
Witness my hand and official seal.

Notary Public

My commission expires: August 7, 2017

SARAH J. MORRIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20094025068
MY COMMISSION EXPIRES AUGUST 7, 2017

narrative



section a:

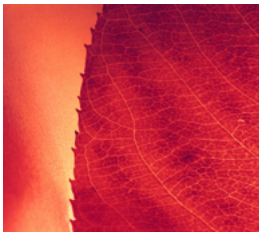
General project concept and purpose of the request.

section b:

Relationship to existing land use and adjacent properties.

section c:

Submittal Criteria



section a:

GENERAL PROJECT CONCEPT AND PURPOSE OF THE REQUEST.

Project Concept

RMCS Inc., is pleased to present this introduction for Four Corners Sketch Plan. The Four Corners application covers a portion of land located in the North One-Half of the Southeast One-Quarter of Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.

Four Corners is envisioned as a vibrant mixed use community with a very strong emphasis on public and private amenities, diverse housing options, and most importantly, uniquely designed commercial space supported by a restaurant and shopping district. Four Corners will cater to a balanced range of uses and activities where people live, shop, reside and build their families. The proposed project plans to provide its residents with a sense of community, while also giving the Four Corners intersection a sense of identity.

A great deal of attention has been paid to maintaining a human scale in everything from street widths and a pedestrian friendly environment, to the commercial and retail uses along East County Line Road. By mixing both residential and commercial uses with recreational opportunities, the intent is to create a social and economic balance not commonly found in typical new residential developments. This plan proposes to bring all of these ingredients together to create a scale and style of living

which encourages residents to greet their neighbors from their front porches, and walk their children to the nearby shops and parks that serve the surrounding residents. This plan hopes to foster in the community an unparalleled sense of pride in their neighborhood and the Town in which they live.

Purpose of the Request

The principal land uses and associated permitted uses are referred to as Business Commercial (BC) and Commercial/ Business/Retail (CBR), which are not consistent with current zoning districts in the Town of Erie. This proposal re-defines the CBR portion of property to be more consistent with the Town's 2005 Comprehensive Plan, and the Town's Unified Development Code (UDC).

The property has been identified as Mixed Use & Community Commercial within the Town of Erie's 2005 Comprehensive Plan and is designated as Planned Development on the Town's zoning map. The principal land uses for the proposed Four Corners is a combination of principal land uses as defined in the Unified Development Code which include Community Commercial (CC), Medium Density Residential (MR) and High Density Residential (HR).

The proposed plan encourages a flexible approach to development that will promote a more balanced mix of residential and commercial uses for the community. An update to the Town's Unified Development Code was prepared concurrent with the last Comprehensive Plan, revising many of the key ideas and policies that have been codified within this site plan giving this project a solid foundation for implementation. The proposed site plan is aligned with the Town's Comprehensive Plan's goals and policies, and provides focused guidance as the community continues to grow.

The proposed development encourages smart, compact growth, and proposes a maximum number of 500 dwelling units on the property, for an overall density of approximately 10.7 dwelling units per acre. The clustered design approach, the transition between different densities and uses, and diverse housing is consistent with the spirit and intent of the residential & commercial policies set forth in the Town's Comprehensive Plan.

Proposed Variations from the Principal Land Uses

The site plan proposes Community Commercial, Medium and High Density Residential principal land uses with a PD Development Plan to accommodate diversified housing products, and to allow for a more creative approach to the clustering and the planning of parcels within the overall development of the property. The PD Overlay will limit the number of units allowed within the property to 500 Units. In order to ensure compatibility with our surrounding neighbors, the PD will establish development areas, and transitional densities. The PD Overlay will also be necessary to allow for dimensional standards that support the housing variations proposed to facilitate the Town of Erie Housing Diversity requirements.

Public Benefits

The site plan identifies a landscape area to serve both as an outdoor recreational amenity, and as a transition from the commercial retail and shopping district to the high and medium density residential uses within the development. As requested by the Town of Erie, the plan proposes to enhance areas with the associated trails along County Line Road and Erie Parkway. These trails serve as a major pedestrian corridor and connection to the Town of Erie's Community Center. The remainder of the property will be preserved as either dedicated or non-dedicated green space areas with an internal trail network.

Proposed Development Time Line

The proposed development timeline and phasing is dependent on project approvals and market conditions. A proposed date of final zoning approval is requested by July 2015.

Utilities and Public Services

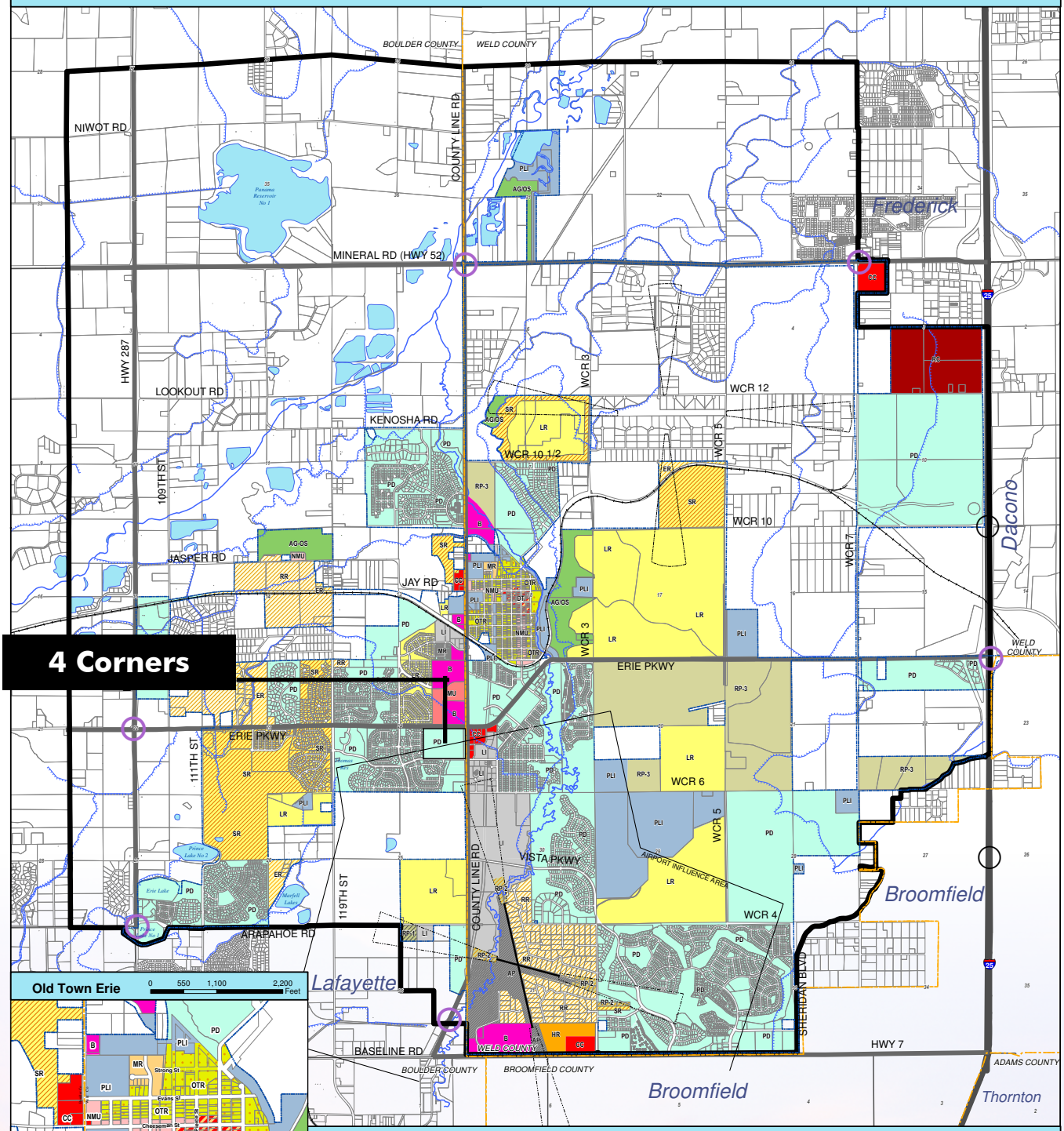
The property was originally part of the Homestake PUD, which was amended and approved by the Town in 2001 to the current Canyon Creek PD. Town services were anticipated for a commercial and retail zoned property. The public infrastructure that was anticipated for Four Corners area by the Canyon Creek PD includes schools within the St. Vrain Valley School District, Mountain View Fire Protection District, Police protection, water and sewer services provided by the Town of Erie and utilities provided by Excel.

As the existing zoning is being amended, the proposed land uses would anticipate public services as well as utilities to the site.

Status of Mineral Rights

A portion of the Four Corners property was part of the Marfel and Pinnacle Mine, which encompassed much of the surrounding area to the North beyond the site. The property was undermined for minerals mainly consisting of coal. For further information please reference the Geotechnical report conducted by CTL Thompson.

Town of Erie, Colorado
Zoning Map



Zoning Legend

- Rural Preservation 1 (RP-1)
- Rural Preservation 2 (RP-2)
- Rural Preservation 3 (RP-3)
- Rural Residential (RR)
- Estate Residential (ER)
- Suburban Residential (SR)
- Low Density Residential (LR)
- Medium Density Residential (MR)
- High Density Residential (HR)
- Old Town Residential (OTR)
- Planned Development (PD)
- Regional Commercial (RC)
- Community Commercial (CC)
- Business (B)
- Downtown District (DT)
- Neighborhood Mixed-Use (NMU)
- Community Mixed-Use (CMU)
- Light Industrial (LI)
- Public Lands & Institutions (PLI)
- Airport (AP)
- Agriculture/Open Space (AG/OS)

0 0.15 0.3 0.6 0.9 Miles

- Planning Area Boundary
- Town Boundary
- Community Gateways
- I-25 Interchange (Future)
- County Boundary

Sources: Boulder Co GIS, Weld Co GIS, CDOT, Town of Erie

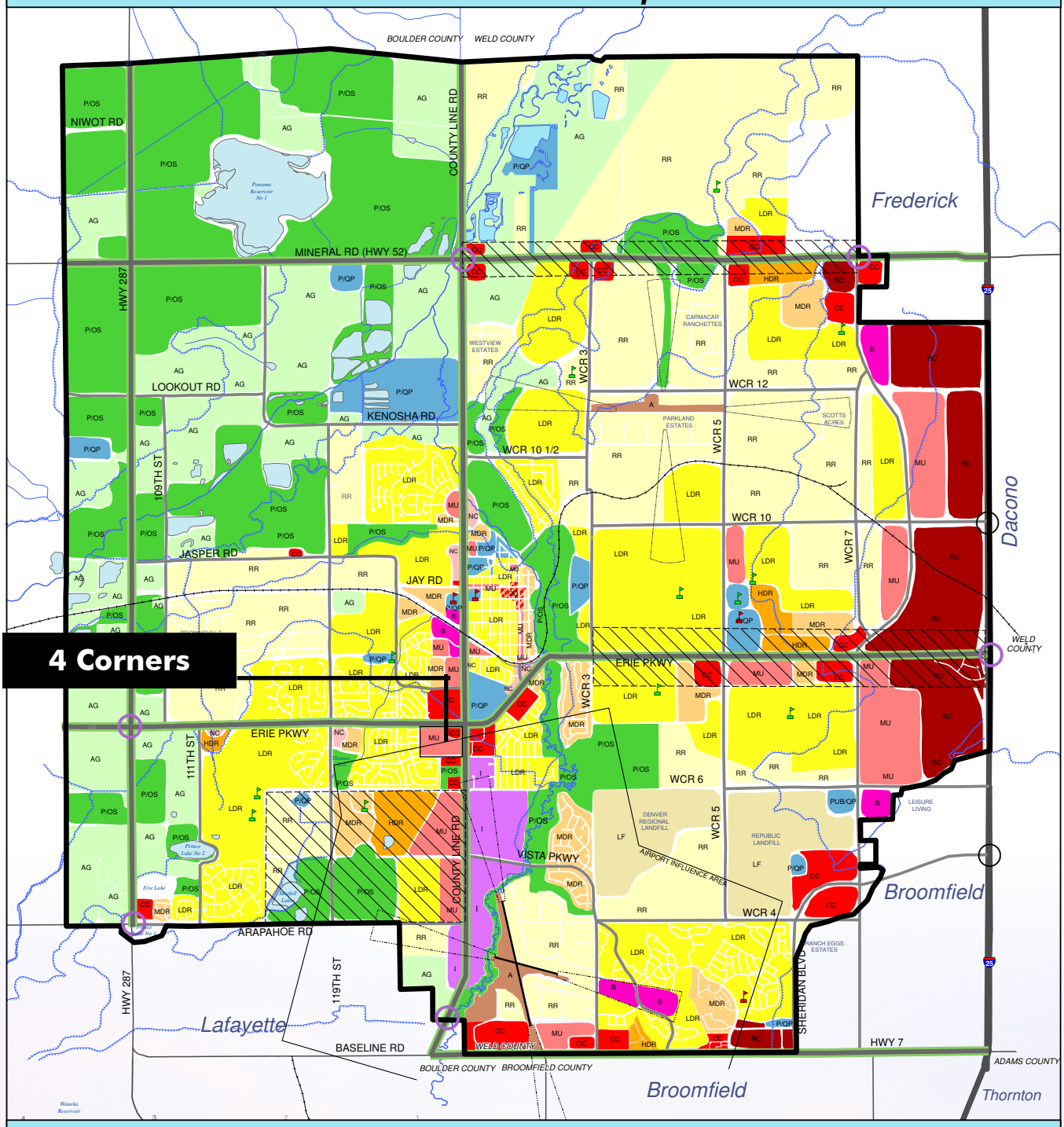
Note: This map is intended to serve as a guide for future land use patterns within the Town of Erie's Planning Area Boundary and is advisory in nature. Land Use patterns depicted on the map are generalized, recognizing that development proposals may contain a mixture of land uses and density levels which achieve the intent of the Town of Erie Comprehensive Plan. Adopted Date: Dec. 21, 2005.

The Comprehensive Plan contains guidelines for the refinement of the generalized areas depicted on the map. These guidelines should be referred to by applicants prior to the preparation of a development submittal and by Town staff, elected, and appointed officials as part of the development review process.

Map Revision Date: November 16, 2012

X:\GIS\MXD\Zoning map 11 16 2012.MXD

Town of Erie, Colorado
2005 Comprehensive Plan
Land Use Plan Map



Land Use Plan Legend

AG	Agriculture	MDR	Medium Density Residential (6-12 du/ac)	B	Business		Canal/Ditch
P/OS	Parks/Public Open Space	HDR	High Density Residential (12-20 du/ac)	I	Industrial		Railroad
P/QP	Public/Quasi Public	DD	Downtown District		Reservoirs		Community Gateways
LF	Landfill	NC	Neighborhood Commercial		County Boundary		I-25 Interchange (Future)
A	Airport	CC	Community Commercial		Planning Area Boundary		Elementary School
RR	Rural Residential (0-2 du/ac)	RC	Regional Commercial		Areas of Special Consideration		Middle School
LDR	Low Density Residential (2-6 du/ac)	MU	Mixed Use				High School

0 0.25 0.5 1 Miles

Sources: Boulder CO GIS, Weld CO GIS, CDOT, Town of Erie

Note: This map is intended to serve as a guide for future land use patterns within the Town of Erie's Planning Area Boundary and is advisory in nature. Land Use patterns depicted on the map are generalized, recognizing that development proposals may contain a mixture of land uses and density levels which achieve the intent of the Town of Erie Comprehensive Plan. Adopted Date: Dec. 21, 2005.

The Comprehensive Plan contains guidelines for the refinement of the generalized areas depicted on the map. These guidelines should be referred to by applicants prior to the preparation of a development submittal and by Town staff, elected, and appointed officials as part of the development review process.

Town Boundary Not Shown - Refer to Zoning Map for Town Boundary

Map Revision Date: JULY 20, 2011

section b:

RELATIONSHIP TO EXISTING LAND USE AND ADJACENT PROPERTIES

Site & Location

Four Corners is approximately 46 acres, located at the South West Corner of Erie Parkway and East County Line Road, (See the Vicinity Map in this section). As mentioned previously, the property was originally part of the Homestake PUD which was then amended to the Canyon Creek PD and approved by the town in 2000. Since this amendment was approved, town services such as schools, administration, police, water and sewer have either been provided or are anticipated for this in fill property.

The Western boundary is bordered by part of Canyon Creek Filing No. 5 and existing single family homes. To the East of the property along County Line Road are Commercial and Light Industrial uses, including an existing Walgreens and Stop & Save gas station. To the South across Austin Avenue are single family residential homes which are a part of Canyon Creek PD Filing No. 6. The Town of Erie's Community Center and its associated ball fields and other recreational amenities are located across the intersection at the North East corner of Erie Parkway and East County Line Road (catty-corner to the site). A pedestrian sidewalk/trail corridor running in the East/ West direction along Erie Parkway has been preserved along this portion of the property.

The surrounding area has a diversity of uses, ranging from Mixed Use, to Low Density Residential, Medium Density Residential, Community Commercial and Open Space. The proposed site plan aligns with the Town of Erie Comprehensive Plan and provides many opportunities for a positive impact to the adjacent properties and residents including:

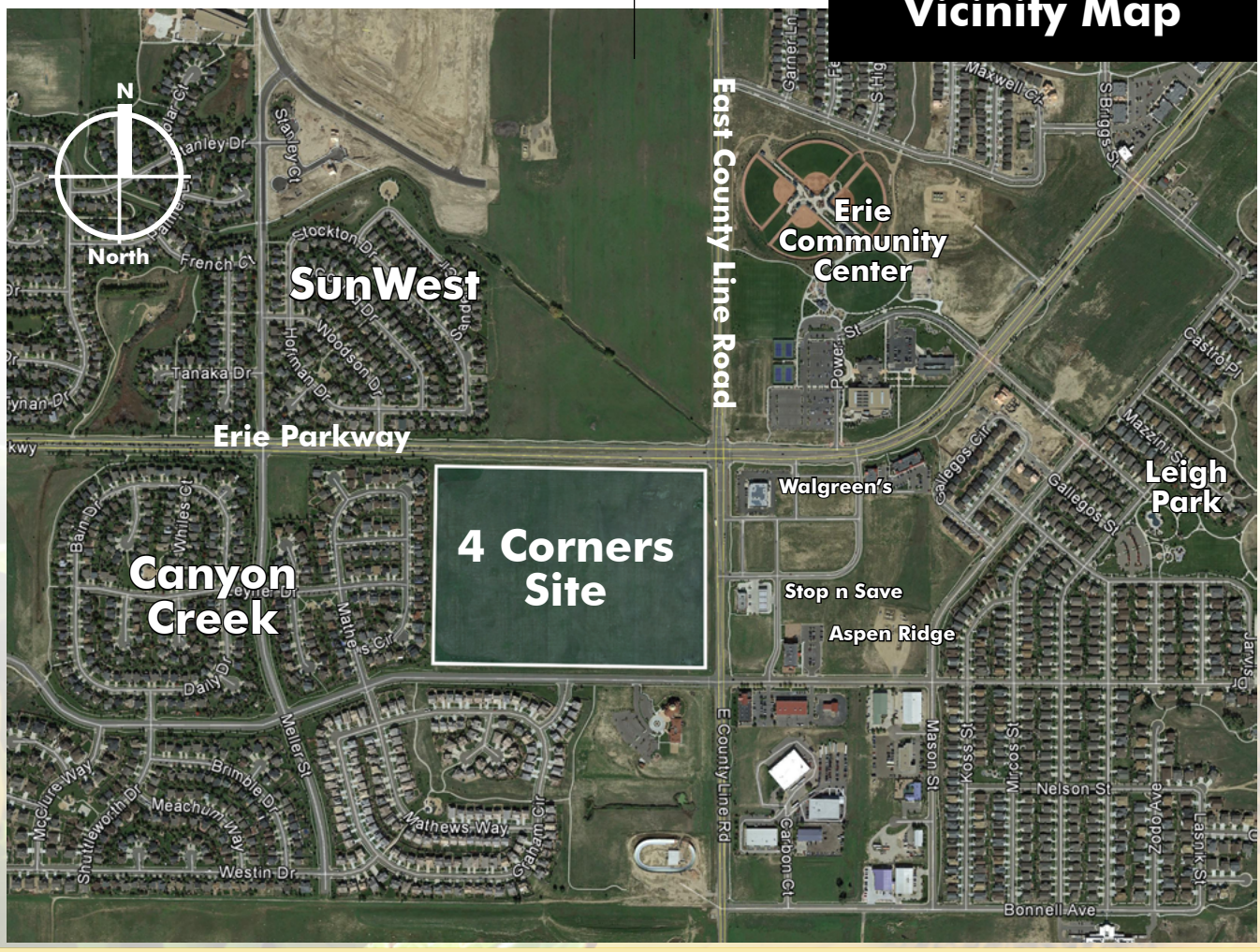
- Concentrating residential density within Four Corners aids in preserving more valuable land within the Town of Erie for other uses.

- As depicted in the Sketch Plan, the proposed layout creates a transition of density and intensity of uses from the East to West and North to South that is compatible with the abutting existing neighbors.

- Internal mews and corridors will be provided to accommodate pedestrian connections that lead to a central green space.

- This proposal promotes a logical extension of Canyon Creek by creating additional neighborhoods containing diverse housing and commercial options to meet the varying needs of Erie's residents.

Vicinity Map



section c:

SUBMITTAL CRITERIA

a: General project concept and purpose of the request.

The Four Corners sketch plan covers a portion of land located in the North One-Half of the Southeast One-Quarter of Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.

Four Corners is envisioned as a vibrant mixed use community with a very strong emphasis on public and private amenities, diverse housing options, and most importantly, uniquely designed commercial space supported by restaurants and a shopping district. Four Corners will cater to a balanced range of uses and activities where people live, shop, reside and build their families. The proposed project plans to provide its residents with a sense of community, while also giving the Four Corners intersection a sense of identity.

A great deal of attention has been paid to maintaining a human scale in everything from street widths and a pedestrian friendly environment, to the commercial and retail uses along East County Line Road. By mixing both residential and commercial uses with recreational opportunities, the intent of this site plan is to create a social and economic balance not commonly found in typical new residential developments. This plan proposes to bring all of these ingredients together to create a scale and style of living which encourages residents to greet their neighbors from their front porches, and walk their children to the nearby shops and parks that serve the surrounding residents. This plan hopes to foster in the community an unparalleled sense of pride in their neighborhood and the Town in which they live.

b: The total land area to be subdivided.

The total land area of Four Corners is 46.61 acres. The residential portion is approximately 32.06 acres. The commercial portion is approximately 14.55 acres.

c: The total number of lots, and if residential the proposed density.

There is a total of 129 lots and two super blocks within the Four Corners. Of the the two super blocks, one is the apartments and the other is the commercial. The overall density for the residential portion of the site is 14.3 du/ac

d. If non-residential, the total square footage of floor area proposed.

The total square footage of floor area proposed is 86,650.

e. The total land area to be preserved as open space.

At this time, no land is designate as open space.

f. A brief description regarding the phasing of the proposed subdivision.

Site specific phasing will be determined during the platting process.

g. A brief description regarding the availability and adequacy of existing infrastructure and other necessary services including school, fire protection, water/sewer service, and utility providers.

The site is anticipated to be served by a 12-inch water supply line located in County Line Road. The sanitary sewer from this filing will connect into an 8-inch line located at the intersection of County Line Road and Erie Parkway. The site lies within the boundaries of St. Vrain Valley Schools District. Fire protection will be provided by Mountain Veiw Fire Rescue. Dry utility services are anticipated to be provided by Xcel Energy, Comcast and Century Link.

h. A brief description regarding the location, function and ownership / maintenance of public and private open space, parks, trails, common areas, common buildings.

The current site plan has designated tract areas as landscaping to serve both as an outdoor recreational amenity, and as a transition from the commercial retail and shopping district to the high and medium density residential uses within the development. As requested by the Town of Erie, the plan proposes to enhance areas with the associated trails along County Line Road and Erie Parkway. These trails serve as a major pedestrian corridor and connection to the Town of Erie's Community Center. The remainder of the property will be preserved as green space areas with an internal trail network. Maintenance for the all private parcels, including landscape, hardscape and structures will be provided by a separate association.

i. A brief description regarding the substance of any existing or proposed covenants, special conditions, grants of easements,or other restrictions applying to the proposed subdivision.

A portion of the Four Corners property was part of the Marfel and Pinnacle Mine, which encompassed much of the surrounding area to the North beyond the site. The property was undermined for minerals mainly consisting of coal. For further information please reference the Geotechnical report conducted by CTL Thompson.

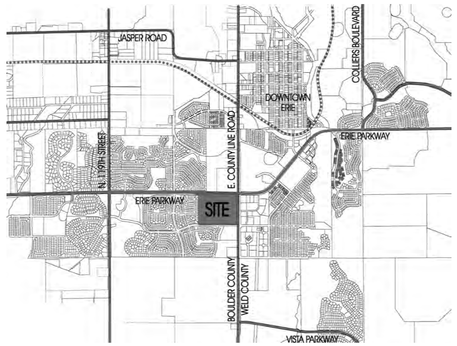
These subsurface shafts have been inactive for decades. They have already been located by the applicant in the field and further physical property testing and depth of overburden has deemed them to be benign. The locations are depicted on the site analysis exhibit included in this document.

The existing ROW trail corridor and utility lines which run along East County Line Road have also been taken into account in the community design.

Setbacks are provided to avoid the existing utility easements and the existing trail corridor running along Erie Parkway. The plan adds additional space for the proposed continuation of the walk along Austin Avenue which connects to the existing trail within Canyon Creek. These physical conditions and constraints of the site have helped shaped the plan. The clustering of the development into different zoning areas helps to maximize the potential use of the property while avoiding the physical constraints of the site.

4 CORNERS SKETCH PLAN

A Portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.
46.613 ACRES - 68 LOTS - 13 TRACTS
SK000206-2015



Vicinity Map
1"=3000' (approx)
North

LAND USE SUMMARY CHART		
TYPE	AREA (AC)	% OF TOTAL AREA
RESIDENTIAL (HR)	13.65	29%
RESIDENTIAL (MR)	6.83	15%
COMMERCIAL (CC)	8.82	19%
TRACTS / LANDSCAPING / GREENWAY	8.01	17%
TRACTS / ALLEYS	1.71	4%
PUBLIC ROW	7.59	16%
TOTAL	46.61	100%

UNIT AND SF SUMMARY CHART		
AREA	# OF UNITS	Sq.Ft. (approx)
SFD	45	NA
SFA	32	NA
TH	52	NA
MULTIFAMILY	330	NA
COMMERCIAL	NA	86,650
TOTAL*	**459**	**86,650**

*REFER TO THE CANYON CREEK PD AMENDMENT #9 FOR THE MAXIMUM APPROVED DENSITY WITHIN 4 CORNERS

TRACT SUMMARY CHART				
TRACT #	AREA (AC)	USE	OWNERSHIP	MAINTENANCE
1	0.74	LANDSCAPING	HOA	HOA
2	0.15	ALLEY	HOA	HOA
3	0.25	LANDSCAPING	HOA	HOA
4	0.15	ALLEY	HOA	HOA
5	0.19	LANDSCAPING	HOA	HOA
6	0.15	ALLEY	HOA	HOA
7	0.22	LANDSCAPING	HOA	HOA
8	0.15	ALLEY	HOA	HOA
9	0.25	LANDSCAPING	HOA	HOA
10	0.21	ALLEY	HOA	HOA
11	1.93	LANDSCAPING / GREENWAY	HOA	HOA
12	0.46	ALLEY	HOA	HOA
13	0.04	LANDSCAPING	HOA	HOA
14	0.04	LANDSCAPING	HOA	HOA
15	0.04	LANDSCAPING	HOA	HOA
16	0.11	ALLEY	HOA	HOA
17	0.11	ALLEY	HOA	HOA
18	0.11	ALLEY	HOA	HOA
19	0.11	ALLEY	HOA	HOA
20	0.90	LANDSCAPING	HOA	HOA
21	0.85	LANDSCAPING	HOA	HOA
22	0.83	LANDSCAPING	HOA	HOA
23	0.71	LANDSCAPING	HOA	HOA
24	0.26	LANDSCAPING	HOA	HOA
25	0.27	LANDSCAPING	HOA	HOA
26	0.49	LANDSCAPING	HOA	HOA

PARKS AND OPEN SPACE DEDICATION	
AREA	ACRES REQUIRED*
POCKET PARK**	0.64
NEIGHBORHOOD PARK	3.84
COMMUNITY PARK	6.40
OPEN SPACE (PUBLIC)	21.77

* FINAL ACRES TO BE DETERMINED WITH A SITE SPECIFIC DEVELOPMENT PLAN ACCOMPANYING, OR SUBSEQUENT PRIOR TO THE PLAT

**THE GREENWAY WITHIN TRACT 11 AND ERIE PARKWAY FULFILLS ALL POCKET PARK REQUIREMENTS PER MC 10.6.3 IF THE QUALITY OF DESIGN MEETS OR EXCEEDS THE INTENT OF "PROST'S LIST OF COMPONENTS" AT THE SOLE DISCRETION OF THE TOWN OF ERIE

SHEET INDEX

1 COVER SHEET
2 EXISTING CONDITIONS
3 SKETCH PLAN
4 PROJECT SIGNAGE
5 STREET SECTIONS
6 SITE DETAILS
7 CHARACTER SKETCHES

4 CORNERS
erie - co

COVER SHEET

OWNER'S REP
RMCS, INC
21 South Sunset Street
Longmont, CO 80501
Phone (720) 524-3620

PLANNING & LA
pcs group inc
PCS Group Inc.
1001 16th Street, 3B-180
Denver, CO 80265
Phone (303) 531-4905
www.pcsgroupco.com

ENGINEERING
J3 Engineering Consultants
6505 S. Paris Street, Ste B
Centennial, CO 80111
Phone (303)368-5601
Fax (303)368-5603
www.j3engineering.net

OWNER
4 CORNERS, LLC
21 South Sunset Street
Longmont, CO 80501
Phone (720) 524-3620

SUBMITTAL

no	date	description
1	02.20.2015	1st Submittal
2	05.01.2015	2nd Submittal
3	06.25.2015	3rd Submittal

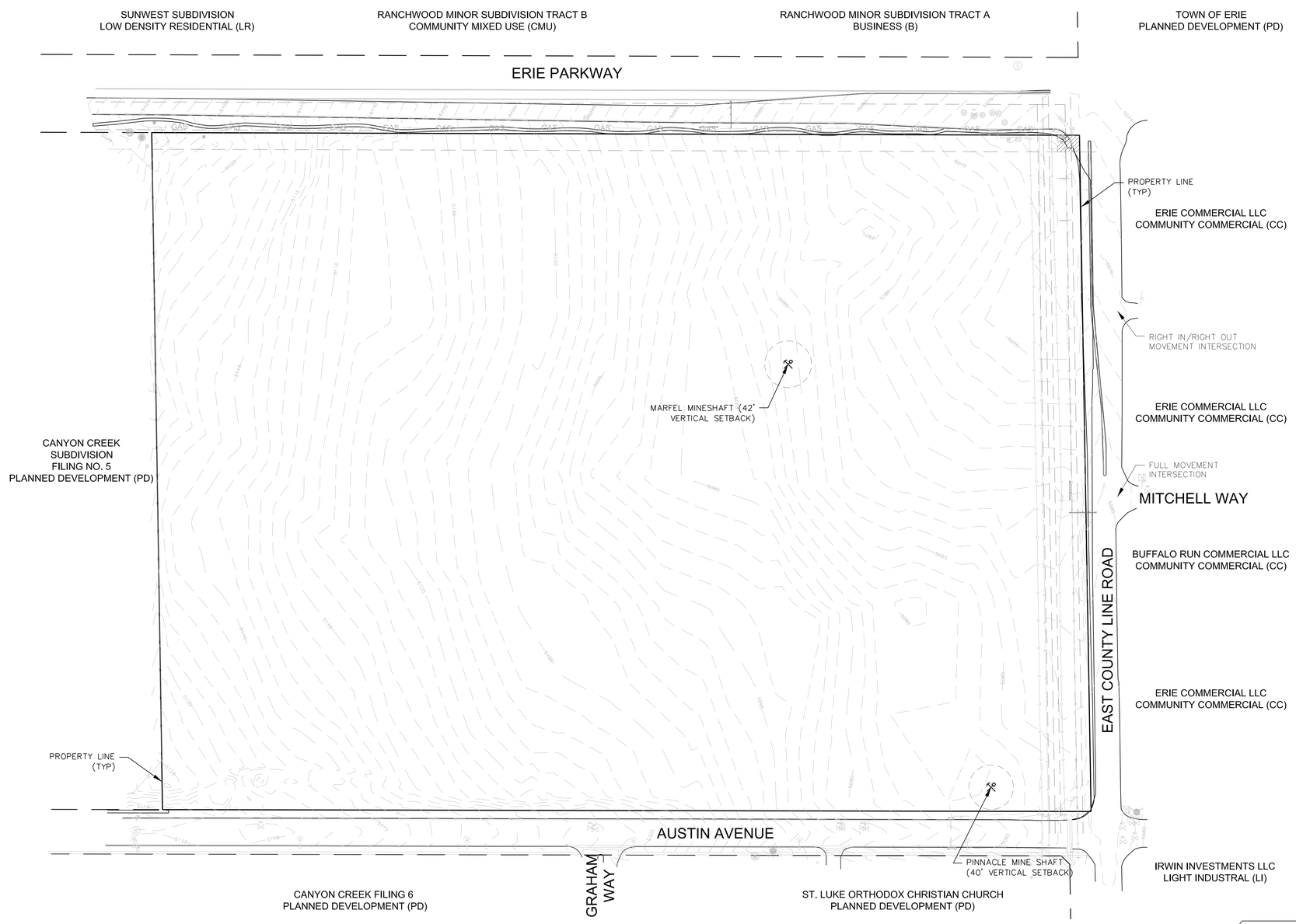
designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 1
1 of 7

Jan 25, 2015 - 9:45am - USER kurt
P:\94762-Erie-Retail-Lot-Planning\Current Dwgs\24x36-Sheet\Plan Sheets.dwg

4 CORNERS SKETCH PLAN

A Portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.
46.613 ACRES - 68 LOTS - 13 TRACTS
SK000206-2015



4 CORNERS
erie - co

EXISTING CONDITIONS

no	date	description
1	02.20.2015	1st Submittal
2	05.01.2015	2nd Submittal
3	06.25.2015	3rd Submittal

designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 2
2 of 7

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www.j3engineering.net

OWNER
4 CORNERS, LLC
21 South Sunset Street
Longmont, CO 80501
Phone (720) 524-3620

SUBMITTAL

Jun 25, 2015 - 9:14am - USER Kurt
V:\94762\Eng Mead Use\Planning\Comm Dwgs\2x\06 Sketch Plan Sheets.dwg

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A Portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.

46.613 ACRES - 68 LOTS - 13 TRACTS

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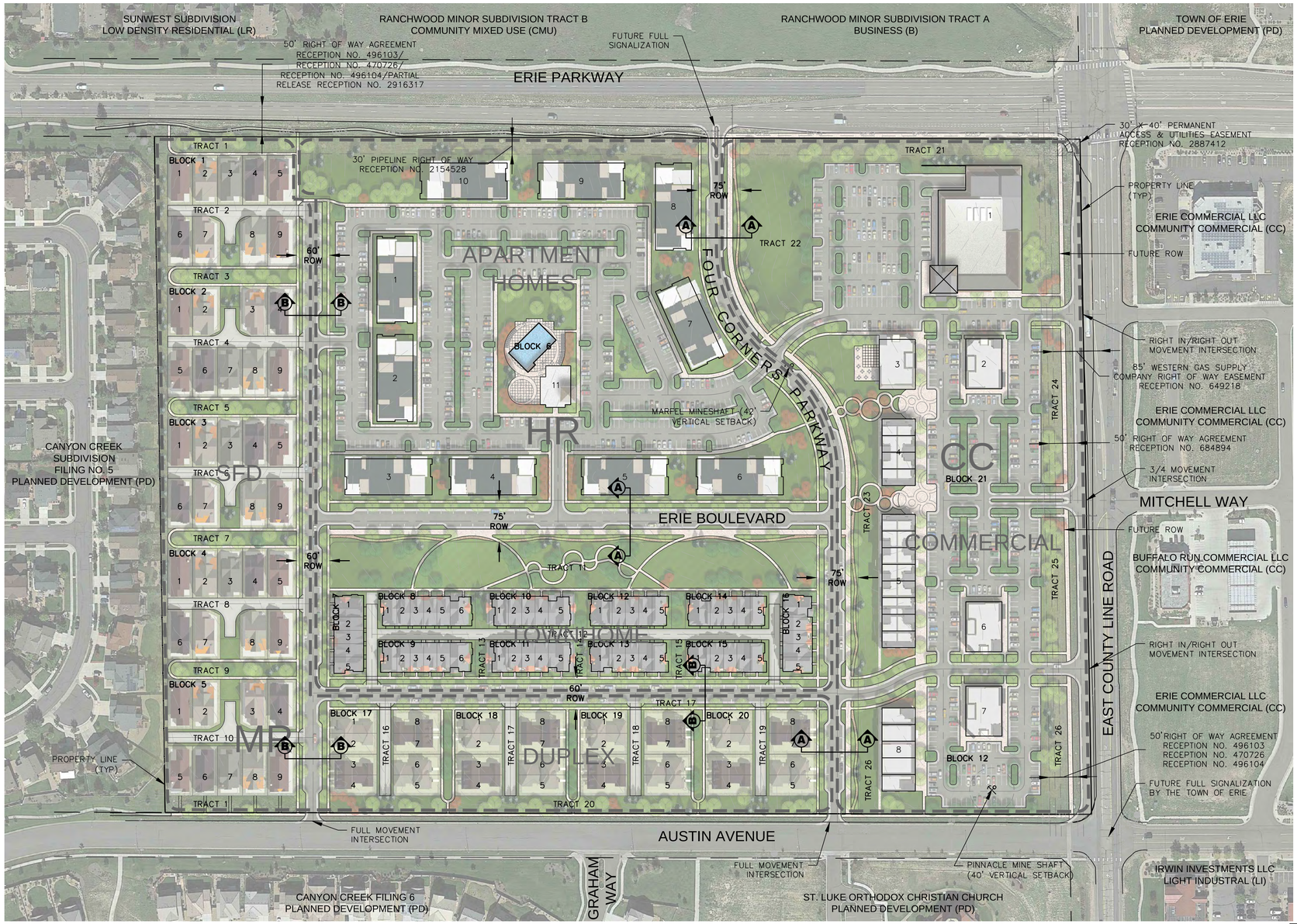

GENERAL NOTES

1. THE APARTMENTS AND CONDOMINIUMS WILL BE ORGANIZED AROUND TWO PRIMARY POINTS OF ACCESS. THE LAYOUT WILL ENHANCE ADJACENT GREEN SPACES, ACT AS A BUFFER AND WILL HAVE MULTI MODAL TRANSPORTATION OPPORTUNITIES.
2. BUILDINGS MAY BE CONSTRUCTED AT, ONE, TWO, OR THREE STORY HEIGHTS WITH AN ADDITIONAL MEZZANINE OR COMBINATIONS THEREOF AND MAY INCLUDE OUTDOOR LIVING AREAS AND AMENITY SPACES.
3. ALL IMAGERY, LANDSCAPING, SITE DESIGNS, AND COVERED PARKING AREAS ARE CONCEPTUAL IN NATURE AND MAY BE REMOVED, RELOCATED OR MODIFIED.
4. THE USE OF SHARED DRIVES ARE PERMITTED
5. SHARED USE EASEMENTS MAY APPLY TO THE SINGLE FAMILY RESIDENTIAL AREAS WITHIN THIS PD AMENDMENT NO. 9.
6. THE LOCATION OF THE FUTURE, FULL MOVEMENT, SIGNALIZATION AT THE INTERSECTION OF ERIE PARKWAY AND FOUR CORNERS PARKWAY IS CONTINGENT UPON A PENDING AGREEMENT FROM THE NORTHERN PROPERTY OWNERS WITHIN RANCHWOOD.
7. PUBLIC IMPROVEMENTS OUTSIDE OF THE PROJECT BOUNDARY ARE SHOWN FOR REFERENCE PURPOSES ONLY. FUNDING FOR ANY SUCH PUBLIC IMPROVEMENTS HAS NOT BEEN DETERMINED.

PUBLIC BENEFIT NOTES

THE DEVELOPMENT OF FOUR CORNERS YIELDS PUBLIC BENEFITS GENERATED BY THE PLANNING, LAYOUT AND INNOVATION WITHIN ITS DESIGN. THESE BENEFITS INCLUDE, BUT ARE NOT LIMITED, TO THE FOLLOWING:

1. THIS MIXED USE PROJECT WILL PROMOTE A HEALTHY, THRIVING ECONOMY THAT PROVIDES OPPORTUNITIES FOR QUALITY EMPLOYMENT WITH LIVABLE WAGES FOR ITS RESIDENTS.
2. FOUR CORNERS WILL PROMOTE A HIGH STANDARD OF DESIGN, WHILE CREATING A WALKABLE COMMUNITY WITH UNIQUE AMENITIES FOR RESIDENTS ALONG WITH, PUBLIC PLACES, AND COMMERCIAL BUSINESSES TO BE ENJOYED BY THE PUBLIC AT LARGE.
3. THE PROJECT IS AN INFILL DEVELOPMENT THAT ENCOURAGES MIXED USE GROWTH AND FOSTERS THE EFFICIENT PROVISION OF INFRASTRUCTURE AND SERVICES, WHILE BALANCING DEVELOPMENT AND THE CONSERVATION OF ERIE'S NATURAL ENVIRONMENT.
4. THE PROJECT WILL PROVIDE A DIVERSE RANGE OF RECREATIONAL OPPORTUNITIES TO INCLUDE BOTH MULTI-MODAL TRANSPORTATION OPPORTUNITIES, A LINEAR PARK, AND MEWS' INTENDED TO BE CONNECTED WITH TRANSITIONAL GREEN WAYS, EXISTING COMMUNITY PATHS AND OPEN TRAILS.
5. FOUR CORNERS WILL PROMOTE A DIVERSITY OF CHOICES OF LAND USES AND HOUSING OPTIONS MEETING THE VARYING NEEDS OF ITS RESIDENTS, WHICH MAY INCLUDE, BUT IS NOT LIMITED TO SINGLE FAMILY, ATTACHED HOMES, MULTIFAMILY DWELLINGS, ALONG WITH HORIZONTAL MIX OF USES.
6. FOUR CORNERS WILL PROMOTE, ENCOURAGE AND STIMULATE PRIVATE DEVELOPMENT AND INVESTMENT THAT REALIZES PUBLIC BENEFITS THROUGH HIGH QUALITY COMMERCIAL SERVICES THAT PROVIDE VARIOUS RETAIL OPPORTUNITIES, BUT NOT LIMITED TO UPSCALE EATING, DRINKING, CLOTHING AND OFFICE ESTABLISHMENTS.
7. FOUR CORNERS MAY PROMOTE A POSITIVE ENVIRONMENT FOR EMPTY NESTERS WHOSE CHILDREN HAVE GROWN AND ARE DOWNSIZING THEIR HOME AND MOVING TO MORE CENTRALLY LOCATED, MAINTENANCE FREE LIVING.
8. FOUR CORNERS PROVIDES APPROPRIATELY LOCATED AREAS FOR RESIDENTIAL DEVELOPMENT THAT ARE SUBSTANTIALLY CONSISTENT WITH THE TOWN'S COMPREHENSIVE MASTER PLAN AND WITH STANDARDS FOR PUBLIC HEALTH, SAFETY, MORALS, AND GENERAL WELFARE.
9. THE PROJECT ENSURES THAT THE SCALE AND CHARACTER OF EXISTING RESIDENTIAL NEIGHBORHOODS AND COMMUNITY CHARACTER IS PROTECTED THROUGH THE ALLOWED USES AND BULK AND DIMENSION STANDARDS WITHIN PD AMENDMENT NO. 9
10. THE PD AMENDMENT NO. 9 PROTECTS EXISTING RESIDENTIAL DEVELOPMENT FROM USES THAT ARE INCOMPATIBLE WITH A RESIDENTIAL ENVIRONMENT, TO THE EXTENT PRACTICAL.
11. THE PD AMENDMENT NO. 9 ENSURES THAT THE APPEARANCE AND EFFECTS OF COMMERCIAL AND RETAIL BUILDINGS AND USES ARE OF AN APPROPRIATELY HIGH QUALITY AND ARE SUBSTANTIALLY CONSISTENT WITH THE CHARACTER OF THE AREA WHILE PROVIDING AREAS FOR RESIDENTIAL, PUBLIC, AND SEMI-PUBLIC USES NEEDED TO COMPLEMENT COMMERCIAL AND RETAIL DEVELOPMENT.
12. THE TRANSPORTATION SYSTEM NETWORK HAS BEEN LAID OUT TO PROVIDE RESIDENTIAL AREAS WITH DIRECT ACCESS TO THE ADJACENT NON-RESIDENTIAL PORTIONS OF PROJECT.
13. THE PROJECT GENERATES A COMPACT AND PEDESTRIAN - ORIENTED ENVIRONMENT THAT ENCOURAGES TRANSIT, MULTI MODAL AND PEDESTRIAN ACCESS.
14. THE CONCENTRATION OF COMMERCIAL AND RETAIL SERVICES PROPOSED WITHIN THIS DEVELOPMENT PLAN ARE LOCATED TO SERVE THE SURROUNDING COMMUNITY.

SCALE: 1"=100'

0 50 100 200 300 NORTH

4 CORNERS
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SKETCH PLAN

OWNER'S REP
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SUBMITTAL

no	date	description
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2	05.01.2015	2nd Submittal
3	06.25.2015	3rd Submittal

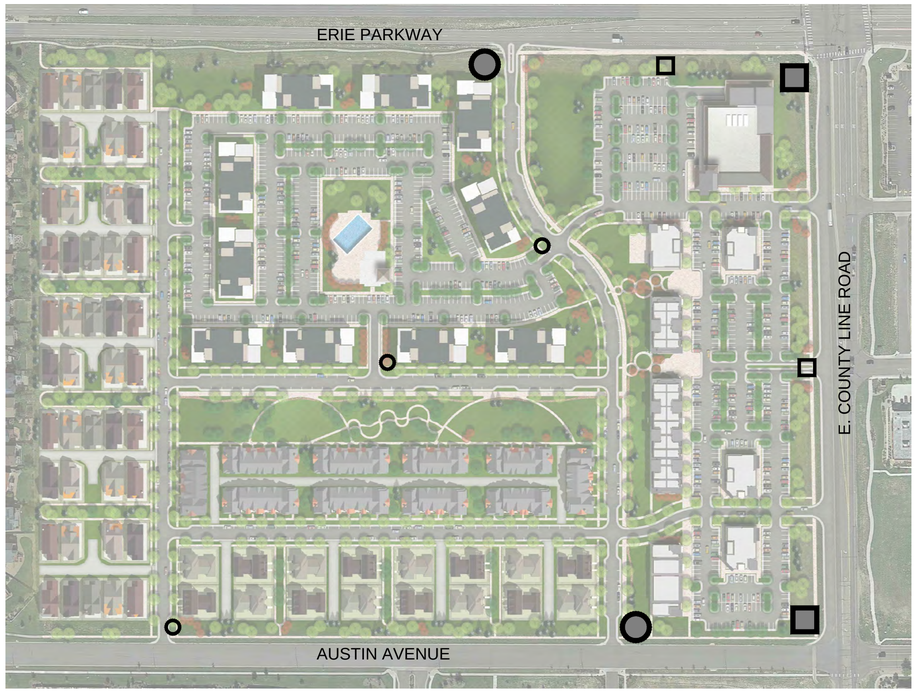
designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 3

June 25, 2015 - 9:25am - USER Kurt
J:\RMCS\Erie Mixed Use\Planning\Current Dwgs\SK-05 Sketch Plan 4Corners.dwg

4 CORNERS SKETCH PLAN

A Portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.
46.613 ACRES - 68 LOTS - 13 TRACTS
SK000206-2015

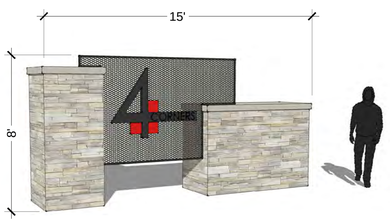


LEGEND

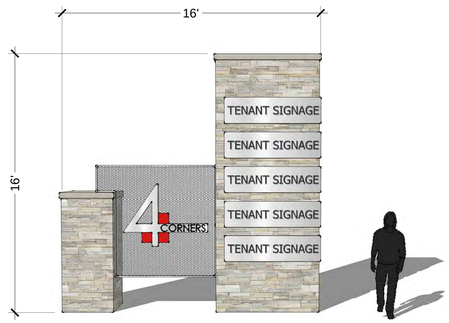
- PRINCIPLE COMMERCIAL MONUMENT OR WALL SIGN
- JOINT TENANT AND PROJECT IDENTIFICATION SIGN
- PRINCIPLE RESIDENTIAL IDENTIFICATION SIGN
- SECONDARY RESIDENTIAL IDENTIFICATION SIGN

PROPOSED SIGNAGE PLAN

SCALE: 1"=100'
0 50 100 200 300
NORTH



PRINCIPLE COMMERCIAL MONUMENT OR WALL SIGN



JOINT TENANT AND PROJECT IDENTIFICATION SIGN

SIGNAGE NOTES

GENERAL

ALL SIGNAGE SHOULD SERVE TO INFORM, IDENTIFY, AND DIRECT. EACH STRUCTURE WITHIN THE DEVELOPMENT SHALL BE CLEARLY IDENTIFIABLE, AND THE OVERALL DEVELOPMENT SHALL DEMONSTRATE A UNIFORM AND COMPREHENSIVE SIGN DESIGN PACKAGE. ALL SIGNAGE, FROM DEVELOPMENT SIGNS THROUGH INDIVIDUAL IDENTIFICATION SIGNAGE, SHOULD CONTRIBUTE TO THE AESTHETIC APPEAL OF THE DEVELOPMENT, YET REMAIN SECONDARY TO ARCHITECTURAL AND LANDSCAPE DESIGN ELEMENTS.

COORDINATION OF DESIGN

ALL SIGNAGE SHALL BE COORDINATED THROUGHOUT ALL PHASES OF THE DEVELOPMENT, SO AS TO GIVE THE APPEARANCE OF A UNIFIED, COHESIVE DEVELOPMENT AS WELL AS TO CONTRIBUTE TO THE OVERALL DESIGN THEME OF THE DEVELOPMENT.

1. MONUMENT SIGNS SHALL NOT BE PLACED WITHIN THE SIGHT TRIANGLE OF ANY INTERSECTION OR ACCESS DRIVE .
2. MONUMENT SIGNS SHOULD BE LOCATED IN A PLANTER SETTING WITHIN A LANDSCAPED AREA.
3. TENANT SIGNAGE ON THE BACK/REAR ELEVATIONS OF STRUCTURES ADJACENT TO RESIDENTIALLY-ZONED PROPERTIES SHALL BE PROHIBITED. EXCEPT NON-ILLUMINATED DELIVERY OR DOOR IDENTIFICATION SIGNAGE NOT EXCEEDING TWO SQUARE FEET IN SIZE.
4. ALL SIGNAGE SHOULD BE SUFFICIENTLY VISIBLE FROM PUBLIC RIGHTS-OF-WAY SO AS TO PROVIDE MAXIMUM VISIBILITY AND NOTICE OF SITE ACCESS POINTS FOR BOTH PEDESTRIANS AND PERSONS TRAVELING IN MOTOR VEHICLES.
5. ALL ELEVATED SIGNS, WHETHER FREESTANDING OR BUILDING-MOUNTED, SHALL BE MOUNTED AT LEAST SEVEN FEET FROM GRADE, OR OTHERWISE PROVIDE ADEQUATE OVERHEAD CLEARANCE SO AS TO NOT ENDANGER PEDESTRIAN, BICYCLE OR VEHICULAR TRAFFIC.

JOINT TENANT AND PROJECT IDENTIFICATION SIGNS

ONSITE SIGNAGE IDENTIFYING OR ADVERTISING TWO OR MORE TENANTS IN THE SAME DEVELOPMENT OR SIGNS IDENTIFYING DEVELOPMENTS OR PROJECTS, INCLUDING BUILDING OR DEVELOPMENT NAMES ARE ALLOWED. PROJECT IDENTIFICATION SIGNS ARE A SIGN GIVING THE NATURE, LOGO, TRADEMARK, OR OTHER IDENTIFYING SYMBOL; ADDRESS; OR ANY COMBINATION OF THE NAME, SYMBOL AND ADDRESS OF A BUILDING, BUSINESS, DEVELOPMENT, OR ESTABLISHMENT ON THE PREMISES WHERE IT IS LOCATED ARE ALLOWED. IN ADDITION FOR MULTI - TENANT DEVELOPMENTS, ONE (1) JOINT TENANT OR PROJECT IDENTIFICATION WALL OR MONUMENT SIGN FOR EACH PUBLIC STREET OR HIGHWAY ABUTTING THE PROJECT IS PERMITTED.

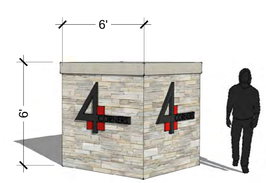
SIZE

PRINCIPLE AND SECONDARY COMMERCIAL MONUMENT SIGNS
THE MAXIMUM SIZE OF PRINCIPLE SIGN WALLS AND MONUMENTS SHALL BE LIMITED TO 150 SQUARE FEET PER SIGN FACE WITH A MAXIMUM HEIGHT OF SIXTEEN FEET. SECONDARY SIGN WALLS AND MONUMENTS SIGNS SHALL BE LIMITED TO 32 SQUARE FEET PER SIGN FACE WITH A MAXIMUM HEIGHT OF TEN FEET.

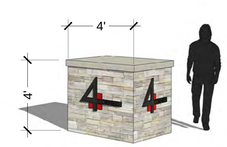
PRINCIPLE AND SECONDARY RESIDENTIAL IDENTIFICATION SIGNS
THE MAXIMUM HEIGHT FOR RESIDENTIAL SIGN WALLS AND MONUMENTS SHALL BE A MAXIMUM HEIGHT OF TEN FEET AND A GROSS SURFACE SIGNAGE AREA OF 100 SQUARE FEET. SECONDARY IDENTIFICATION SIGNS TO THE DEVELOPMENT ARE PERMITTED WITH A MAXIMUM HEIGHT OF EIGHT FEET AND A MAX GROSS SURFACE AREA OF 32 SQUARE FEET.

LOCATION

SETBACKS: 4' FROM BACK OF SIDEWALK OR 21' FROM FLOW LINE AND CANNOT BE PLACED WITHIN ANY SIGHT TRIANGLES UNLESS THE STRUCTURE IS UNDER 36" IN HEIGHT.



PRINCIPLE RESIDENTIAL IDENTIFICATION SIGN



SECONDARY RESIDENTIAL IDENTIFICATION SIGN

NOTE: ALL DEPICTED SIGNAGE IS FOR PURPOSES OF INTENT AND MAY BE FURTHER REFINED IN SUBSEQUENT SUBMITTALS.

4 CORNERS
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PROJECT SIGNAGE

OWNER'S REP
RMCS, INC
21 South Sunset Street
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SUBMITTAL

no	date	description
1	02.20.2015	1st Submittal
2	05.01.2015	2nd Submittal
3	06.25.2015	3rd Submittal

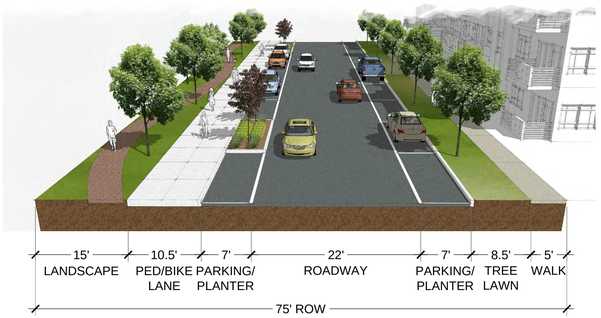
designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 4
4 of 7

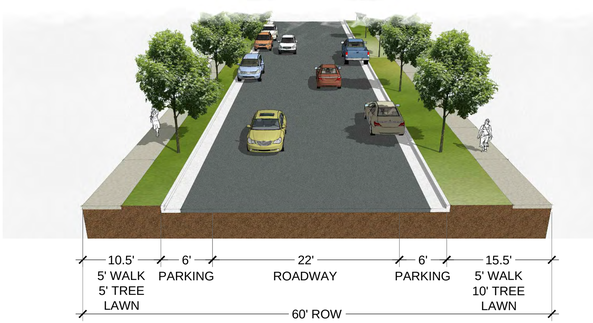
Jun 25, 2015 - 9:14am - ISEB Kurt
J:\RMCS\Site Mixed Use\Planning\Current Dwgs\04x05 Sketch Plan 4Corners.dwg

4 CORNERS SKETCH PLAN

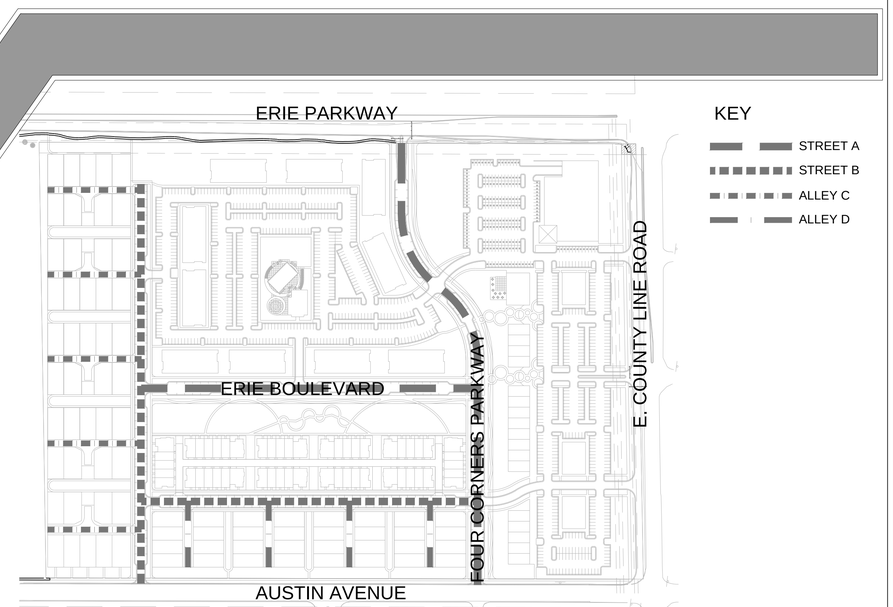
A Portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.
46.613 ACRES - 68 LOTS - 13 TRACTS
SK000206-2015



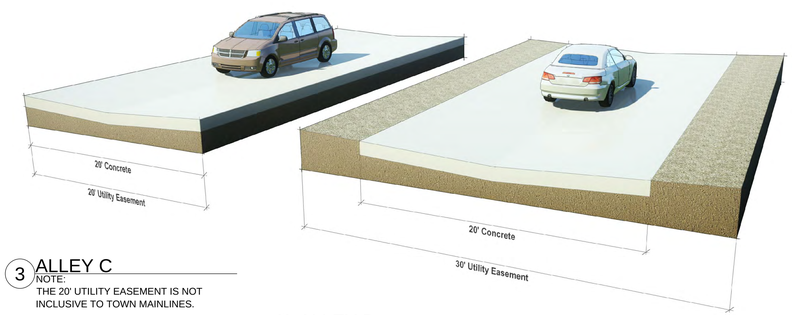
1 STREET SECTION A (FOUR CORNERS PARKWAY & ERIE BOULEVARD)



2 STREET SECTION B



STREET SECTION PLAN



3 ALLEY C
NOTE:
THE 20' UTILITY EASEMENT IS NOT INCLUSIVE TO TOWN MAINLINES.

4 ALLEY D

STREET SECTION NOTES:

1. ALL STREET TREES DEPICTED ON THE TYPICAL SECTIONS ARE ILLUSTRATIVE ONLY. LANDSCAPE PLANTINGS WILL BE DEFINED IN SUBSEQUENT SUBMITTALS.
2. ACCESS SHALL BE GRANTED OVER AND ACROSS ALL PAVED AREAS FOR EMERGENCY, PUBLIC AND PRIVATE VEHICULAR ACCESS.

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STREET SECTIONS

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SUBMITTAL

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1	02.20.2015	1st Submittal
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3	06.25.2015	3rd Submittal

designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 5
5 of 7

Jun 25, 2015 - 9:14am - USER Kurt
P:\94762 Erie Retail Use\Planning\Current Dwgs\24x36\Sketch Plan Sheets.dwg

4 CORNERS SKETCH PLAN

A Portion of the Southeast One-Quarter of Section 13, and A portion of the South One-Half Section 24, Township 1 North Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado.
46.613 ACRES - 68 LOTS - 13 TRACTS
SK000206-2015

LIGHTING

LIGHTING IS COMPRISED OF THE FOLLOWING CATEGORIES: PARKING LOT LIGHTING, STREET LIGHTING, BUILDING LIGHTING, PEDESTRIAN LIGHTING AND LANDSCAPE LIGHTING. LIGHTING SHALL CONSIST OF QUALITY FIXTURES THAT ARE BOTH APPEALING AND PROVIDE SAFETY FOR BOTH PEDESTRIANS AND AUTOMOBILES. LIGHTING SHALL COMPLIMENT THE BUILDING ARCHITECTURE, SIGNAGE, PARKING, LANDSCAPING AND PLAZA DESIGNS. FIXTURES ARE TO BE USED THAT REDUCE GLARE AND MINIMIZE IMPACT TO SURROUNDING PROPERTIES.

DESIGN NOTES & STANDARDS

- PARKING LOT LIGHTING IS TO BE OF A ZERO CUTOFF TYPE AND BE NO TALLER THAN 25 FEET IN HEIGHT. THE FIXTURES ARE TO BE IN THE STYLE, TYPE AND COLOR THAT COMPLIMENT THE ARCHITECTURE AND CHARACTER OF THE PROJECT.
- STREET LIGHTING IS TO BE ZERO OR PARTIAL CUTOFF TYPE AND BE NO TALLER THAN 15 FEET IN HEIGHT.
- BUILDING MOUNTED LIGHTING IS ENCOURAGED TO ENHANCE THE ADJACENT PEDESTRIAN AREAS AS WELL AS THE ARCHITECTURE ITSELF. LIGHTING MAY BE USED TO ENHANCE IMPORTANT ARCHITECTURAL FEATURES OF THE BUILDING IT SERVES.
- LANDSCAPE LIGHTING IS TO ENHANCE THE LANDSCAPE FEATURE IT SERVES, AS WELL AS TO FURTHER ENHANCE THE SAFETY OF THE PEDESTRIAN AREA.

NOTE: SITE DETAILS DEPICTED ARE FOR PURPOSES OF INTENT AND ARE SUBJECT TO CHANGE WITH SUBSEQUENT SUBMITTALS.

BENCH

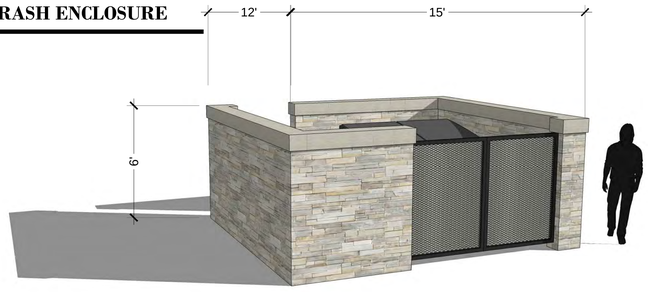
BICYCLE RACK

TRASH RECEPTACLE

SITE FURNITURE

THE DEVELOPMENT OF THIS PROMINENT SITE WILL SERVE TO STRENGTHEN AND UNIFY THE SURROUNDING AREA. SITE FURNISHINGS WILL ENHANCE AND UNIFY THE OVERALL PROJECT, CONTRIBUTING TO THE SENSE OF PLACE AND OVERALL CHARACTER. THE INTENT IS TO BENEFIT ALL USERS WITH A THEMATIC, SAFE AND PLEASANT ENVIRONMENT. A KIT-OF-PARTS HAS BEEN DEVELOPED AS A STARTING POINT FOR THE DESIGN OF THE SITE FURNISHINGS AND WILL HELP TO GUIDE THE SITE PLANNING PROCESS WHICH FOLLOWS THIS DOCUMENT. THE FURNISHINGS BEING SHOWN ARE INTENDED TO PORTRAY THE CHARACTER AND QUALITY OF FOUR CORNERS.

TRASH ENCLOSURE



SITE ELEMENTS

STYLE

CHARACTER

4 CORNERS
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SITE DETAILS

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designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 6
6 of 7

June 25, 2015 - 9:15am - USER: Kurt
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4 CORNERS SKETCH PLAN

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MULTI FAMILY VIEW

SINGLE FAMILY DETACHED VIEW

FOUR CORNERS PARKWAY

PLACE MAKING

RETAIL PLAZA VIEW

PEDESTRIAN ORIENTED

LINEAR PARK VIEW

COMMERCIAL PLAZA VIEW

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CONCEPTUAL CHARACTER SKETCHES

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designed by: sa
checked by: pms
drawn by: klm
project #: 94762

SHEET 7
7 of 7

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N:\94762-4-Corners\Land Planning\Current Design\24x36 Sketch Plan Sheets.dwg

4 CORNERS SKETCH PLAN

SUPPLEMENTAL GRAPHIC

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46.613 ACRES - 68 LOTS - 13 TRACTS

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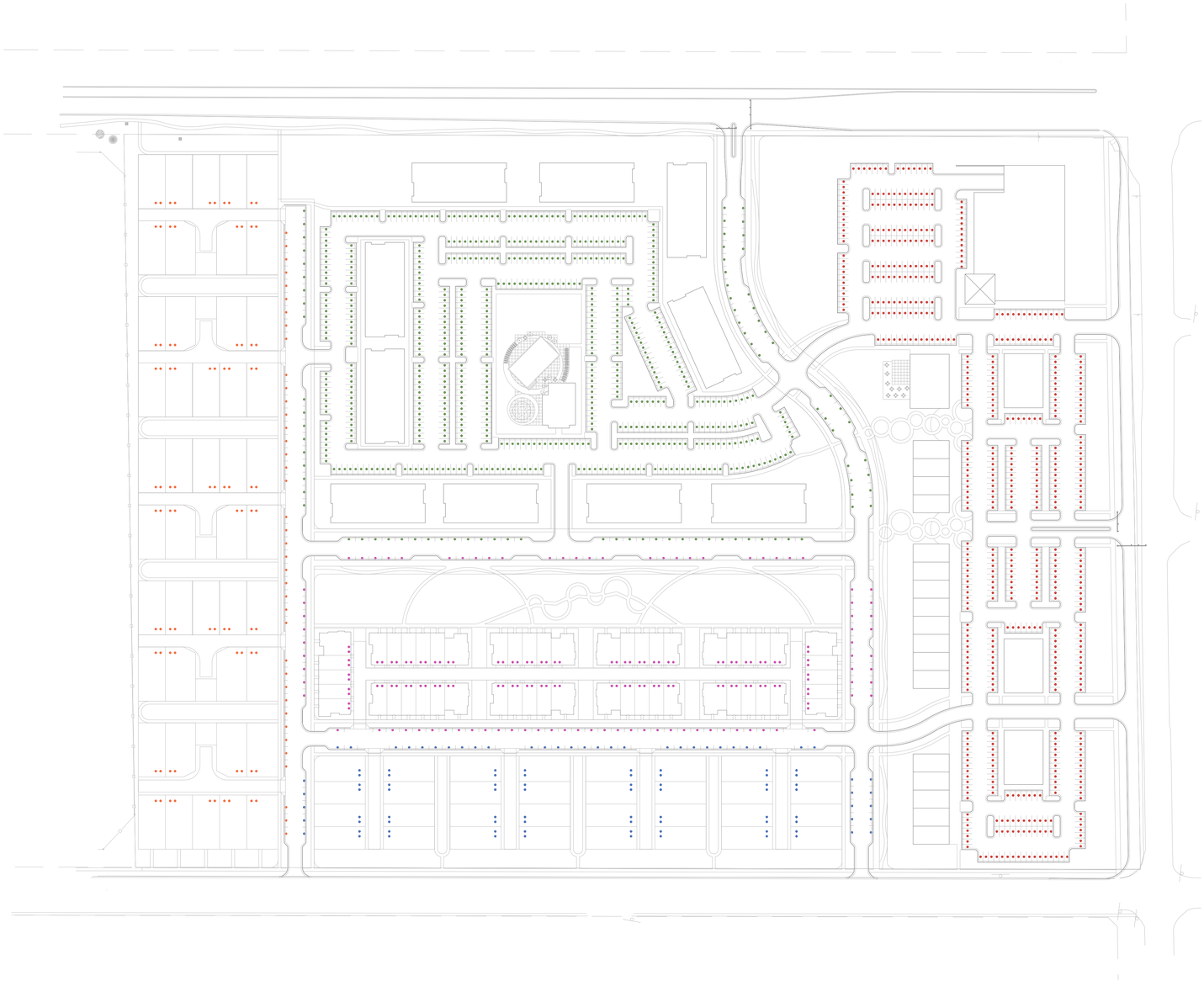

PARKING REQUIREMENT

33 PLEX

# OF BLDGS	UNIT TYPE	PARKING REQUIREMENT	
9	STUDIO	1.5 /DU	13.5
18	1-BEDROOM UNITS	1.5 /DU	27
3	2-BEDROOM UNITS	2 /DU	6
3	3-BEDROOM UNITS	2 /DU	6
	GUEST PARKING	1 /3DU	11
33	TOTAL REQ. PER BLDG		63.5

MF

# OF BLDGS	# OF UNITS	PARCEL	REQUIREMENT		PROVIDED OFF STREET	PROVIDED ON STREET
10	330		63.5 /BUILDING	635	582	84
10	330	TOTAL		635	666	

TOWNHOME

# OF UNITS	UNIT TYPE	REQUIREMENT		PROVIDED OFF STREET	PROVIDED ON STREET
52	TOWNHOME	2 /DU	104	104	0
	GUEST PARKING	1 /3DU	17	0	84
52	TOTAL		121	188	

SFA

UNITS	UNIT TYPE			OFF STREET	ON STREET
32	DUPLEX	2 /DU	64	64	0
	GUEST PARKING	1 /3DU	11	0	43
32	TOTAL		75	107	

SFD

# OF UNITS	UNIT TYPE	REQUIREMENT		PROVIDED OFF STREET	PROVIDED ON STREET
45	SFD	2 /DU	90	90	39
45	TOTAL		90	129	

COMMERCIAL

SF	PARCEL	REQUIREMENT		PROVIDED OFF STREET	PROVIDED ON STREET
32,650	NORTH	1 /200SF	163	174	0
54,000	SOUTH	1 /200SF	270	372	0
86,650	TOTAL		433	546	

	REQUIRED	PROVIDED
GRAND TOTAL	**1354**	**1636**

SCALE: 1"=100'

0 50 100 200 300 NORTH

4 CORNERS
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PARKING EXHIBIT

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SHEET 1

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CTL | THOMPSON INCORPORATED

PHASE I ENVIRONMENTAL SITE ASSESSMENT
ERIE PARCEL
SOUTHWEST OF ERIE PARKWAY
AND EAST COUNTY LINE ROAD
ERIE, COLORADO

Prepared for:

RMCS, Inc.
950 Spruce Street, Suite 2A
Louisville, Colorado 80211

Attention: Justin McLure

Project No. DN47,332-200

September 22, 2014

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EXECUTIVE SUMMARY

This report presents the results of the Phase I Environmental Site Assessment (ESA) that was performed by CTL | Thompson, Inc. for RMCS, Inc. The Site consists of vacant land, situated immediately southwest of Erie Parkway and East County Line Road, in Erie, Colorado.

The Phase I ESA was conducted in general conformance with the methods and procedures described in the American Society for Testing and Materials (ASTM) E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

The Site and much of the surrounding area appears to have remained in agricultural use since at least 1937. The only prior known use of the Site was for the Marfel and Pinnacle coal mine shafts. The dates of use for the Marfel Mine shaft are 1897-1904 with no dates listed for the Pinnacle Mine shaft. The areas of at least two mine shafts are visible in the 1937 aerial photograph. The historic presence of mine shafts at the Site, presents the potential for the presence of methane in the subsurface soils above the mine shaft areas. We believe this is a REC for the site which can be assessed through soil gas testing.

This executive summary does not contain all the information that is found in the full report. The report should be read in its entirety to obtain a more complete understanding of the information provided and to aid in any decisions made or actions taken based on this information.

1.0 INTRODUCTION

This report was prepared by CTL | Thompson, Inc. (CTL) for RMCS, Inc and presents the results of the Phase I Environmental Site Assessment (ESA) for the Erie Parcel. The Phase I ESA was conducted in general accordance with CTL's Proposal No. DN 14-0290 and subsequent authorization by Mr. Justin McLure on August 21, 2014.

1.1 Purpose

The purpose of the Phase I ESA was to identify Recognized Environmental Conditions (REC), to the extent feasible, pursuant to the methods and procedures described in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessments, E 1527-13.

A REC is defined as the presence or likely presence of hazardous substances or petroleum products on a site under conditions that indicate an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into structures on the site or into the ground, groundwater, or surface water of the Site. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

ASTM Standard E1527-13 also has separate definitions for past conditions that would otherwise be considered a REC but have been addressed to the satisfaction of the applicable regulatory agencies and would either allow for generally unrestricted use of the Site (referred to as a Historic Recognized Environmental Condition, or

HREC) or for use of the Site with various restrictions (referred to as a Controlled Recognized Environmental Condition, or CREC).

1.2 Scope of Services

The scope of services for this assessment consisted of a records review, a site reconnaissance, historical research, interviews, and documentation of findings in a report.

1.3 Limitations

This Phase I ESA was prepared in general accordance with ASTM Standard E 1527-13. There may be additional environmental issues present at the site that are outside the scope of this practice that include, but are not limited to, the following:

- Asbestos-containing materials;
- Radon;
- Lead-based paint;
- Lead in drinking water;
- Cultural and historic resources;
- Mold and fungi;
- Industrial hygiene;
- Indoor air quality;
- Health & safety;
- Ecological resources;
- Endangered species;
- Biological or infectious agents and pathogens;
- Wetlands;
- Jurisdictional waters of the U.S;
- Regulatory compliance;
- High voltage power lines; and,
- Mine subsidence.

CTL provided an opinion based upon the condition of the Site on the day it was observed and a review of existing and reasonably ascertainable regulatory records and historical information. Our scope did not include chemical testing of soil, groundwater, air, or building materials. The opinion, conclusions, and recommendations of this report are not intended to be used or relied upon by a third party to this Agreement. With the written consent of our client, CTL may be available to contract with other parties to provide an opinion or conduct additional environmental assessment services. Due to latent conditions and other contingencies which may become evident in the future, the current assessment does not result in any guarantee the subject site is free and clear of hazardous materials. Should additional surface, subsurface or chemical data become available, the conclusions and recommendations contained in this report shall not be considered valid unless the data is reviewed and the conclusions of this report are modified or approved in writing by our firm.

We believe that this investigation was conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the locality of the project. No other warranty, express or implied, is made.

2.0 SITE DESCRIPTION AND LOCATION

2.1 Location and Legal Description

The “Site” consists of 45.83 acres, located southwest of the intersection of Erie Parkway and East County Line Road, in Erie, Colorado. The Site is legally described as 47.48 ACS NEI/4 SEI/4 24-1N-69 LESS OIL GAS & HYDROCARBONS LESS POR TO CITY and is generally located in Section 24, Township 1 North, Range 69 West of the 6th Principal Meridian, in Boulder County, Colorado. The Site location and plan are shown on Figure 1 (Area Map) and Figure 2 (Site Plan).

2.2 General Description of Site and Improvements

The Site consists of vacant land. A photographic record of our site reconnaissance is presented in Appendix A.

2.3 General Uses of Adjoining Properties

The Site is located in a vacant area of Erie, Colorado. The surrounding properties consist of residential properties, vacant land and commercial businesses including a gasoline service station. Additional details regarding our observations of adjacent properties are presented in Section 7.4 of this report.

3.0 USER AND OWNER PROVIDED INFORMATION

Mr. David Waldner, President of RMCS, completed the user questionnaire. The Site is currently unoccupied.

3.1 Environmental Liens/Title Records

An environmental lien is a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous material or petroleum products upon a property. Mr. Waldner is not aware of any existing environmental liens associated with the Site.

RMCS provided CTL with title records available from Commonwealth Land Title Insurance Company, Commitment No. 451-H0403418-036-CN3 dated May 29, 2014. Based on a cursory review of the title exceptions, there were no obvious indications of environmental liens or AULs associated with environmental contamination. It should be noted that CTL's practitioners are not title professionals or attorneys, and our review of

title documents does not necessarily eliminate the user's ASTM requirement to perform a search for environmental liens and AULs.

3.2 Activity and Use Limitations

Environmental AULs are legal or physical restrictions or limitations on the use of, or access to, a Site or facility to: 1) reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the property, or 2) prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions may include engineering controls, institutional controls, or land use restrictions. Mr. Waldner was not aware of recorded environmental AULs related to the Site.

3.3 Specialized Knowledge

Mr. Waldner was not aware of specialized knowledge or experience related to previous environmental activities on the Site, with the exception of coal mining operations occurring around 1900.

3.4 Valuation Reduction for Environmental Issues

Mr. Waldner was not aware of valuation reduction of the Site because of environmental issues.

3.5 Commonly Known or Reasonably Ascertainable Information

Mr. Waldner was not aware of commonly known or reasonably ascertainable information regarding environmental issues related to the site vicinity.

3.6 Reason for Performing a Phase I ESA

RMCS requested a Phase I ESA as part of due diligence prior to acquisition of the Site.

3.7 Previous Environmental Site Assessments

A previous Phase I Environmental Site Assessment completed by Western Environment and Ecology, Inc. and dated March 27, 2006 (Project Number 422-001-02) was provided to CTL. The report mentions the Marfel and Pinnacle mines; however, no RECs are identified with the Site. The report is included as Appendix E.

4.0 RECORDS REVIEW

CTL reviewed existing sources listed in the **REFERENCES** section to assess the soils, geologic and hydrogeologic conditions of the general vicinity of the Site.

4.1 Physiography

The Site is located on relatively flat land with a gentle slope to the east, as presented on the topographic map (Figure 1). The elevation of the Site ranges from approximately 5,110 to 5,070 feet. The predominant surface water feature in the vicinity of the Site is the Thomas Reservoir located approximately 1/2 mile to the west.

4.2 Geology and Soils

CTL conducted a Geotechnical Investigation for the Site (Project No. DN47,332-115, report dated September 10, 2014). The soils encountered at the property generally consist of sand and clay soils to depths of 3 to 24.5 feet below ground surface (bgs). Bedrock consisting of weathered claystone, with some thin beds of sandstone and

lignite, was encountered beneath these soils to depths up to 28 feet bgs. The geotechnical report should be read for further details on soils.

4.3 Groundwater

Groundwater was encountered at depths ranging from 11 to 27 feet bgs. During the geotechnical investigation a total of nine temporary monitoring wells were installed to measure groundwater elevation and determine flow direction. The general flow direction was determined to be to the east across the Site which conforms with the topographic slope as well.

4.4 Water Wells

Water wells were identified through the Colorado Division of Water Resources online water well permit database. The database did not indicate the presence of wells located on the Site. No well structures were observed during our Site visit.

4.5 Oil/Gas Wells

Records regarding oil/gas wells were obtained from the Colorado Oil and Gas Conservation Commission (COGCC) online database. The database did not indicate the presence of oil or gas wells at the Site; however there was historically one located 300 feet to the south in an area that now consists of residential development.

4.6 Physical Setting Analysis of Migration of Hazardous/Petroleum Substances

A hypothetic spill of a hazardous or petroleum substance on the Site would be expected to migrate along the ground surface to the east eventually arriving at East County Line Road. Off-Site surface spills on the adjoining parcels to the west appear to have the highest potential to migrate on-Site. Based on local topography, we estimate

groundwater generally flows to the east. Sources of contamination to groundwater beneath the Site, if present, would most likely be located to the west.

5.0 HISTORICAL USE INFORMATION

5.1 Historical Aerial Photographs and Topographic Maps

Historical aerial photographs of the Site and surrounding area were reviewed for 1937, 1967, 1974, 1985, 1993, 2002 and 2013; a copy of the 2013 photograph is presented in Appendix B. USGS topographic maps were reviewed for 1965 revised 1994. An interpretation of the aerial photographs and maps is presented, as follows:

- 1937: The Site is partially developed with cultivated farmland on the western portion and at least two potential mine shaft areas present on the eastern portion. Erie Parkway is visible to the north and East County Line Road is visible to the east. The surrounding area is either vacant or farmland.
- 1967-74: The entire Site appears to be developed as cultivated farmland.
- 1985: The Site remains generally unchanged; however, oil/gas wells are visible to the north and south of the Site. The building for Atomic Forge & Welding is now visible to the southwest of the Site.
- 1993: The oil/gas wells are no longer present.
- 2002: Residential development is present to the northwest and west of the Site. The area south of the Site appears to be graded in preparation for development.
- 2013: Additional residential development is present to the west and south and the St. Luke Orthodox Church is also located to the south. Walgreens and Stop N Save are the now located to the east. The Site generally appears as it did at the time of the Site visit.

5.2 Sanborn Fire Insurance Maps

Sanborn fire insurance maps were a tool used by the fire insurance industry to evaluate property risk. The maps often show details of historic dwellings, commercial buildings, and factories, indicate property uses and addresses, and show locations of items such as wells, cisterns, and fuel storage tanks. Sanborn Fire Insurance Map coverage was not available for the Site and surrounding area.

5.3 Assessor Records

We reviewed Boulder County Assessor online files for the Site. The Site is owned by Erie Commercial Venture, LLP. There are no records of buildings. The listed area of the site is 45.83 acres.

6.0 REGULATORY AGENCY RECORDS

Regulatory agency records were provided by GeoSearch. The report, dated August 26, 2014, is presented in Appendix C.

6.1 Summary of Findings

This section discusses those findings which are located on the Site, topographically up-gradient of the Site, or which otherwise may present an environmental concern to the Site. These findings are summarized in Table I. All other listings not in Table I are not believed to be a REC for the Site based on regulatory status, distance, and/or location from the Site. In addition to the findings listed in Table I, there were three unlocatable findings identified in the database: one for an underground storage tank facility (UST) and two for historic leaking underground storage tank trust fund facilities (LUSTTRUST). No evidence of an historic UST was discovered during our assessment. The Site has only been used for agricultural and coal mining purposes, therefore, we do not believe these listings present a REC to the Site.

TABLE I

Summary of Selected Nearby Regulatory Agency Findings

Findings	Distance and Estimated Topographic Location	Search Radius											
		1 Mile		½ Mile					¼ Mile				
		National Priority List (NPL)	RCRA CORRACTS	RCRA Treatment, Storage, Disposal (TSD)	CERCLIS/NFRAP	Colorado Voluntary Cleanup List (VCL)	Solid Waste	Leaking Storage Tank (LST)	Registered Tanks (UST/AST)	Institutional Controls/Engineering Controls (AUL)	Spills (ERNS)	RCRA Generator	Other HW
Stop N Save 681 Mitchell Way	~300 feet east Down-gradient								X				

6.1.1 Underground Storage Tank Facilities (UST)

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of underground storage tank facilities. There is one listing for the three underground storage tanks that are located at the Stop N Save service station approximately 300 feet to the east. Due to the topographic location of these tanks we do not believe that it presents a REC to the Site; however it is mentioned here due to proximity.

6.2 Local Government Records

We sent a request to the Boulder County Department of Health and Environment for information pertaining to hazardous material spills and releases on the Site. Ms. Susan Martino responded via email on September 11, 2014. There was one record of 10 gallons of crude oil being spilled at 2601 East County Line Road in October 1993.

The impacted soil was removed and we do not believe this presents a REC to the Site. Additionally Boulder County Records show eight mine listings for the area, of which the Marfel is known to be on the site. The majority of these listings are north of the Site according to USGS maps.

We contacted Mountain View Fire Protection District for information of hazardous material incidents on the Site. We received a response via telephone on September 5, 2014 from Ms. LuAnn Penfold stating that they have no records associated with the Site.

7.0 SITE RECONNAISSANCE

The following section discusses observations made during our Site reconnaissance.

7.1 Methodology and Limiting Conditions

Mr. Trevor M. Branch conducted a Site visit on August 29, 2014. The Site was accessed by walking. A photographic record of the Site reconnaissance is presented in Appendix A.

7.2 Description of Site Structures and Roads

No roads or structures are present on the Site.

7.3 Site Observations

During our reconnaissance, we specifically looked for obvious evidence of the Site features listed in Table II. Table II lists features typically observed outside of Site structures. An “X” located within each table indicates that the feature was readily

observable. Those features which were observed on the Site are discussed in further detail within the following subsection(s).

TABLE II
EXTERIOR SITE FEATURES

	Aboveground Storage Tanks		Stained Soil and/or Pavement
	Air Emissions Sources	X	Stockpiles of Soil or Debris
	Cultivated Land/Crops		Stressed Vegetation
	Drains, Sumps, Pits		Surface Water, Streams, Ponds, Lagoons
	Hazardous Material Storage		Transformers (Potential PCB)
	High Power Transmission Lines		Underground Storage Tanks
	Natural Gas Pipelines		Unidentified Piping
	Odors		Unidentified Substance Containers
	Petroleum Pipelines		Vehicle Maintenance Areas
	Physical Irregularities		Waste Water Discharge
	Placed Fill or Imported Soils		Waste Treatment Processes
	Railroad Lines		Wells (Agricultural, Water Supply)
	Septic Systems or Leach Fields		Wells (Monitoring)
	Solid Waste or Disposal Areas		Wells (Oil or Natural Gas)

7.3.1 Stockpiles of Soil or Debris

We observed some of the spoil materials that had been uncovered during test pits excavated as part of the geotechnical investigation. From the surface, dark stained soil, brick and fragments of coal (likely bituminous or lignite) were visible in the two excavated areas.

7.4 Review of Adjacent Properties

General observations of properties adjacent to the Site were performed in conjunction with on-site observations made on August 29, 2014. Properties adjacent to the Site are described below, based on outdoor observations from the Site or nearby public streets. The surrounding properties generally consist of residential subdivisions.

- North: The Site is bounded by Erie Parkway with vacant land beyond.
- East: The Site is bounded by East County Line Road with commercial business including the Stop N Save service station located beyond.
- South: The Site is bounded by Austin Avenue, with residential subdivisions and the St. Luke Orthodox Church beyond.
- West: The Site is bounded by residential development.

Observation of adjacent properties did not reveal obvious visual indications of environmental concern. We did not observe evidence of landfills, lagoons, pits, or other waste treatment or disposal operations; underground storage tanks, spills, releases, or discharge of hazardous material; with the exception of the underground storage tanks located at the Stop N Save which is discussed in Section 6.1.

8.0 INTERVIEWS

8.1 Owner, Site Manager and/or Occupants

The owner and manager of the Site is Erie Commercial Venture, LLLP. The owner's representative is Mr. Sid Overton. CTL spoke with Mr. Overton by phone on September 12, 2014. Mr. Overton has been associated with the Site since 1970 and the only known use of the property during that time has been agricultural production of wheat and hay. He was aware of the historic presence of coal mine shafts on the property as they have had previous preliminary mine subsidence and geotechnical investigations completed at the Site. Mr. Overton was not aware of any onsite or nearby environmental concerns.

9.0 DEVIATIONS

9.1 Exceptions and Deletions

ASTM Standard E 1527-13 for Phase I Environmental Site Assessments, Section 8.3.2, states that “all obvious uses of the Site shall be identified from the present, back to the Site’s obvious first developed use, or back to 1940, whichever is earlier.” The term “developed use” includes agricultural uses (i.e., cultivated land / agricultural crops) and placement of fill. In our opinion, livestock rangeland is not a developed use.

The historical documentation for this assessment went back to 1937 on the basis of an historical aerial photograph; which showed the Site developed with cultivated farmland and coal mine shafts. Thus, the historical documentation was not fully satisfied for the ASTM standard.

It is the opinion of CTL that obtaining earlier historical information would not be sufficiently useful, reasonably ascertainable, or change the likelihood for the presence of a REC on the Site.

9.2 Data Gaps

Based on the information presented in this report, we do not believe that there are significant data gaps which would affect our ability to identify recognized environmental conditions associated with the Site.

10.0 FINDINGS AND OPINION

10.1 Summary of Site Historical Use

The Site is currently being used for agricultural purposes and is primarily covered in wheat. The Site was historically located above the Marfel and Pinnacle coal mine

shafts that were in use before 1937 and abandoned prior to 1967. After the closure of mining activities, the Site was used primarily for agricultural purposes. Due to historic location of the onsite coal mine shafts, there is the potential for methane to migrate to subsurface soils in the areas immediately in and around the mine shafts. We believe this presents a current REC to the Site.

10.2 Nearby Environmental Concerns

There is a service station with gasoline and diesel underground storage tanks that is located approximately 300 feet to the east of the Site. Due to its downgradient location we do not believe this presents a REC to the Site.

10.3 Storm Water Discharges Associated with Construction Activity

Under current Federal/state regulations, construction Sites that disturb one acre, or are part of a larger development in which total disturbed area is equal to or greater than one acre, are required to apply for a General Permit for Storm Water Discharges Associated With Construction Activity (General Permit) from the Colorado Department of Public Health and Environment (CDPHE). Some Municipal Separate Storm Sewer Systems (MS4s) also require additional permitting for construction Sites within their jurisdiction.

The General Permit application must be submitted to the CDPHE at least ten days prior to the start of construction activities. The General Permit requires a Storm Water Management Plan (SWMP) to be developed, implemented, and modified as needed from before commencement of construction activities until final stabilization is complete and a Notice of Termination has been submitted to the CDPHE. Furthermore, the General Permit requires that Site inspections be performed at least every 14 calendar days and within 24 hours following a storm event that causes significant movement of sediment on-Site. The local MS4 may require more frequent inspections. Complete

and current storm water management plans should be kept on-Site. CTL can assist with your storm water management and compliance needs, if desired.

11.0 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment (ESA) in general conformance with the scope and limitations of ASTM Practice E 1527-13 of the Erie Parcel, the Site. Any exceptions to, or deletions from, this practice are described in Section 9.1 of this report. We did not find any evidence of recognized environmental conditions with the exception of the following:

- The historic presence of two mine shaft locations encountered during the CTL geotechnical investigation (Project No. DN47332-115) presents the potential presence for methane migration from coal mine shafts. This presents a REC to the areas in and immediately around the mine shafts.

We understand that additional investigation into mine shaft locations is being recommended and that no residences are recommended to be placed over historic mine shaft locations. Additional characterization of subsurface soils and methane testing should be considered prior to any development in the vicinity of the mine shafts.

12.0 QUALIFICATIONS

This Phase I ESA was supervised by, and the report reviewed by, Mr. Matthew Wardlow, a licensed Professional Engineer (P.E.) registered in the State of Colorado. Mr. Wardlow has performed or reviewed over 1,000 Phase I ESAs in the State of Colorado, and has been practicing within the local environmental consulting profession for at least 15 years. The resumes of the individuals conducting this Phase I ESA are included in Appendix F.

I, Mr. Wardlow, declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject Site. I have developed and performed all appropriate inquiries in general conformance with the standards and practices set forth in 40 CFR Part 312.

We believe that this ESA was conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the locality of the project. No warranty, express or implied, is made.

If we can be of further service in discussing the contents of this report, please call.

CTL | THOMPSON, INC.

Trevor M. Branch, E.I.T.
Environmental Staff Engineer

Reviewed by:

Matthew Wardlow

Matthew L. Wardlow, P.E.
Environmental Department Manager

TMB:MLW/tmb/ot
(3 copies)

Via e-mail: justinrmcs@gmail.com

REFERENCES

Colorado Aerial Photo Service, Aerial Photographs, Stereo Pairs, from 1937, 1967, 1974, and 1985.

Colorado Oil and Gas Conservation Commission, online Oil/Gas Well Permit Database, http://www.oil-gas.state.co.us

CTL | Thompson, Inc., Geotechnical Investigation for Erie Parcel, Project No. DN47,332-115, report dated September 10, 2014.

GeoSearch Report. (Job #87962, dated August 26, 2014).

http://maps.bouldercounty.org/boco/propertyviewer/

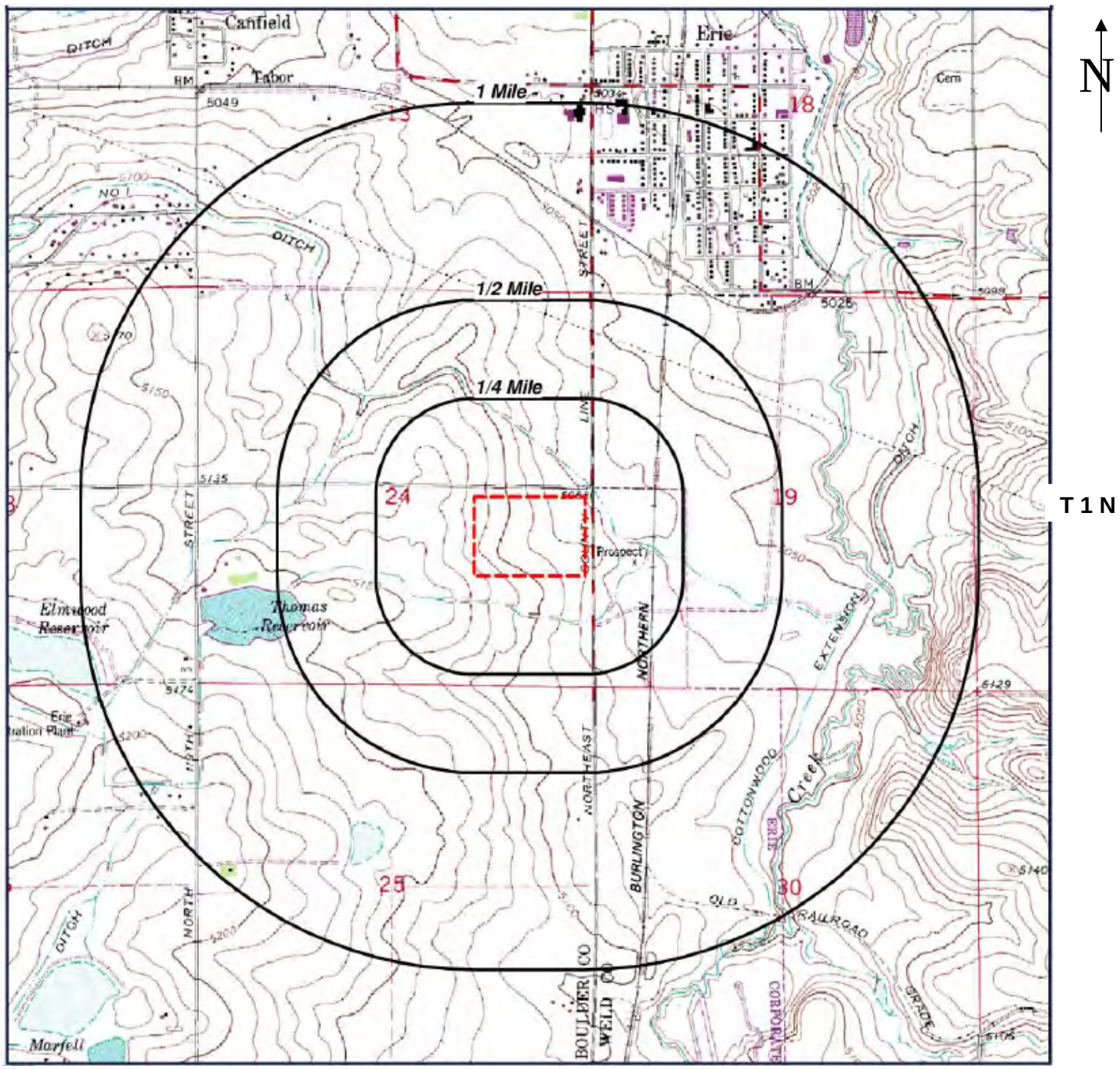
http://water.state.co.us/pubs/aquamap.asp

Environmental Questionnaire, Mr. David Waldner, RMCS, completed September 11, 2014

U.S. Geological Survey Topographic Map, Erie Quadrangle, Colorado (1965 revised 1994).

Google Earth©, Aerial Photography 1993, 2002 and 2013

Interview by phone with Mr. Sid Overton of Erie Capital Venture, LLLP on September 12, 2014



Source:
U.S.G.S. Topographic Map
Erie Quadrangle, Colorado
1994

Scale:
1" ~ 2,000'

RMCS,INC
ERIE PARCEL
CTL | PROJECT NO. DN47,332-200

Topographic Area Map
Fig. 1

Approximate locations of former coal mine entrances

Figure 2
Site Plan

APPENDIX A

SITE PHOTOGRAPHS

Description: View east of Site
Direction: East

Description: View north of Site
Direction: North

Description: View south of Site
Direction: South

Description: View of piece of lignite on surface
Direction: South

CTL | THOMPSON

SITE PHOTOGRAPHS

Erie Parcel
August 29, 2014
CTL Project No. DN47332-200

Description: View west of Site
Direction: West

Description: View across Site
Direction: West

Description: Small pile of fill/concrete debris
Direction: N/A

Description: Looking south of Site
Direction: South

CTL | THOMPSON

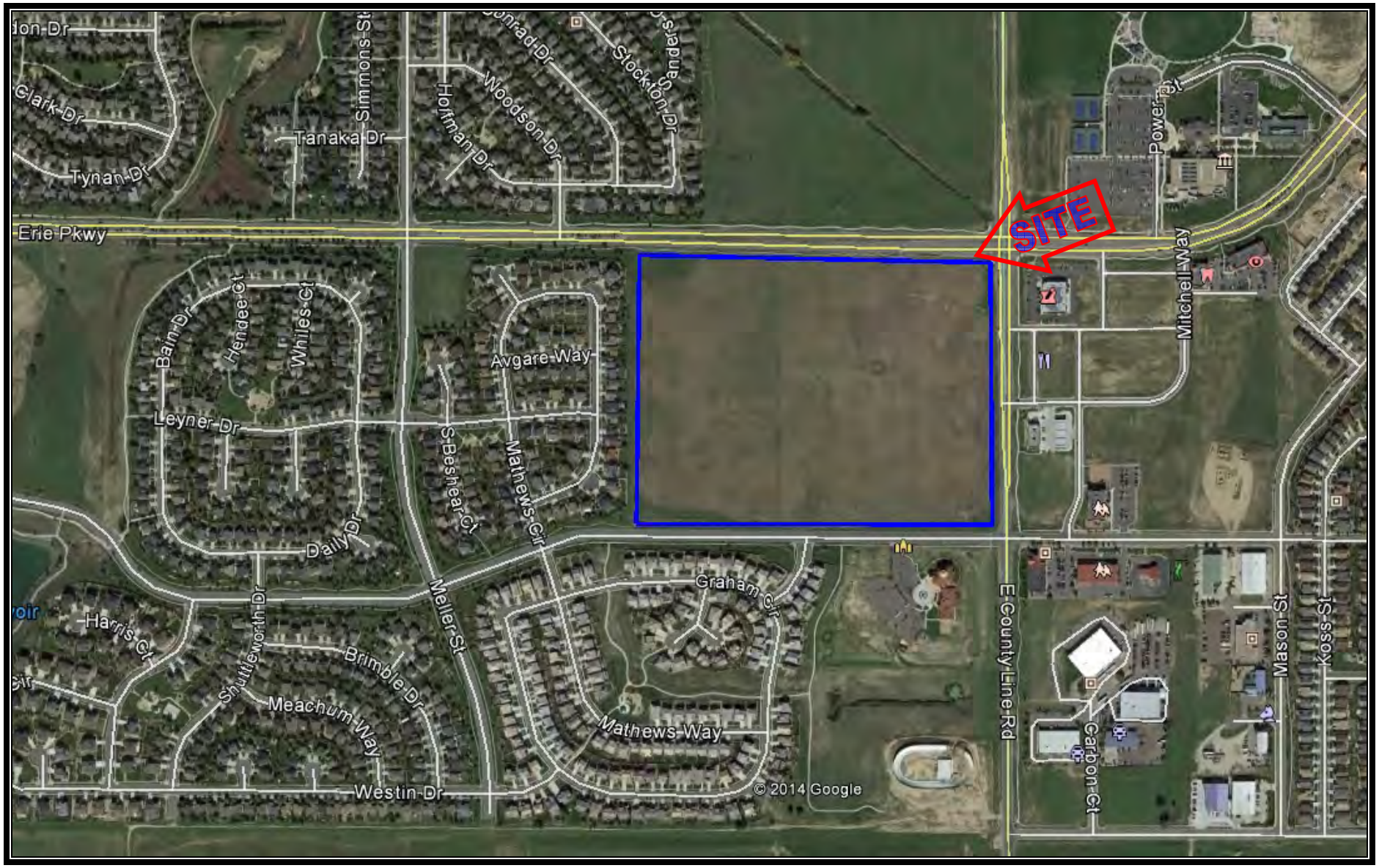
SITE PHOTOGRAPHS

Erie Parcel
August 29, 2014
CTL Project No. DN47332-200

APPENDIX B

AERIAL PHOTOGRAPH

N



CTL | T PROJECT NO. DN-47,332-200

2013 AERIAL PHOTOGRAPH
Approximate Site Location

APPENDIX C

GEOSEARCH REPORT

Radius Report

Satellite view

Target Property:

Erie Parcel

ERIE, Boulder County, Colorado 80516

Prepared For:

CTL Thompson- Denver

Order #: 39912

Job #: 87962

Project #: DN47332.000-200

Date: 08/26/2014

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Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquires Rule (40 CFR §312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR §312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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Target Property Summary

Erie Parcel
ERIE, Boulder County, Colorado 80516

USGS Quadrangle: ***Erie, CO***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-105.06113, 40.036304), (-105.06113, 40.036304), (-105.06113, 40.033436), (-105.05581, 40.033436), (-105.05581, 40.036331), (-105.06113, 40.036331), (-105.06113, 40.036304)

County/Parish Covered:
Boulder (CO) , Weld (CO)

Zipcode(s) Covered:
Lafayette CO: 80026
Erie CO: 80516

State(s) Covered:
CO

****Target property is located in Radon Zone 1.***
Zone 1 areas have a predicted average indoor radon screening level greater than 4 pCi/L (picocuries per liter).

Database Findings Summary

FEDERAL LISTING

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	0.2500
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	0.2500
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSCO	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR08	0	0	0.2500
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	0.2500
NO LONGER REGULATED RCRA GENERATOR FACILITIES	NLRRCRAG	0	0	0.2500
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR FACILITIES	RCRAGR08	2	0	0.2500
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR FACILITIES	RCRANGR08	1	0	0.2500
RCRA SITES WITH CONTROLS	RCRASC	0	0	0.2500
TOXICS RELEASE INVENTORY	TRI	0	0	0.2500
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM	CERCLIS	0	0	0.5000
NO FURTHER REMEDIAL ACTION PLANNED SITES	NFRAP	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
OPEN DUMP INVENTORY	ODI	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000

SUB-TOTAL		3	0	

Database Findings Summary

STATE (CO) LISTING

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
ABOVEGROUND STORAGE TANK FACILITIES	AST	0	0	0.2500
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	0.2500
ENVIRONMENTAL REAL COVENANTS LIST	COVENANTS	0	0	0.2500
HAZARDOUS WASTE SITES- GENERATOR	HWSG	0	0	0.2500
SPILLS LISTING	SPILLS	0	0	0.2500
UNDERGROUND STORAGE TANK FACILITIES	UST	1	1	0.2500
HISTORICAL SOLID WASTE LANDFILLS	HISTSWLF	0	0	0.5000
HAZARDOUS WASTE SITES- TREATMENT, STORAGE & DISPOSAL	HWSTSD	0	0	0.5000
LEAKING STORAGE TANK FACILITIES	LST	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS TRUST FUND SITES	LUSTTRUST	0	2	0.5000
METHANE GAS STUDY SITES	METHANESITES	0	0	0.5000
SOLID WASTE FACILITIES	SWF	0	0	0.5000
VOLUNTARY CLEANUP AND REDEVELOPMENT PROGRAM SITES	VCRA	0	0	0.5000
HAZARDOUS WASTE SITES- CORRECTIVE ACTION	HWSCA	0	0	1.0000
SUPERFUND SITES	SF	0	0	1.0000

SUB-TOTAL		1	3	

Database Findings Summary

LOCAL LISTING

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
WELD COUNTY SOLID WASTE FACILITIES	WCSWF	0	0	0.5000

SUB-TOTAL		0	0	

Database Findings Summary

TRIBAL LISTING

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR08	0	0	0.2500
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR08	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	
TOTAL		4	3	

Locatable Database Findings

FEDERAL LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
CDL	0.2500		0	0	NS	NS	NS	0
EC	0.2500		0	0	NS	NS	NS	0
ERNSCO	0.2500		0	0	NS	NS	NS	0
HISTPST	0.2500		0	0	NS	NS	NS	0
HMIRSR08	0.2500		0	0	NS	NS	NS	0
LUCIS	0.2500		0	0	NS	NS	NS	0
NLRRCRAG	0.2500		0	0	NS	NS	NS	0
RCRAGR08	0.2500		0	2	NS	NS	NS	2
RCRANGR08	0.2500		0	1	NS	NS	NS	1
RCRASC	0.2500		0	0	NS	NS	NS	0
TRI	0.2500		0	0	NS	NS	NS	0
BF	0.5000		0	0	0	NS	NS	0
CERCLIS	0.5000		0	0	0	NS	NS	0
NFRAP	0.5000		0	0	0	NS	NS	0
NLRRCRAT	0.5000		0	0	0	NS	NS	0
ODI	0.5000		0	0	0	NS	NS	0
RCRAT	0.5000		0	0	0	NS	NS	0
DNPL	1.0000		0	0	0	0	NS	0
NLRRCRAC	1.0000		0	0	0	0	NS	0
NPL	1.0000		0	0	0	0	NS	0
PNPL	1.0000		0	0	0	0	NS	0
RCRAC	1.0000		0	0	0	0	NS	0
RODS	1.0000		0	0	0	0	NS	0
SUB-TOTAL			0	3	0	0	0	3

Locatable Database Findings

STATE (CO) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AST	0.2500		0	0	NS	NS	NS	0
CDL	0.2500		0	0	NS	NS	NS	0
COVENANTS	0.2500		0	0	NS	NS	NS	0
HWSG	0.2500		0	0	NS	NS	NS	0
SPILLS	0.2500		0	0	NS	NS	NS	0
UST	0.2500		1	0	NS	NS	NS	1
HISTSWLF	0.5000		0	0	0	NS	NS	0
HWSTSD	0.5000		0	0	0	NS	NS	0
LST	0.5000		0	0	0	NS	NS	0
LUSTTRUST	0.5000		0	0	0	NS	NS	0
METHANESITES	0.5000		0	0	0	NS	NS	0
SWF	0.5000		0	0	0	NS	NS	0
VCRA	0.5000		0	0	0	NS	NS	0
HWSCA	1.0000		0	0	0	0	NS	0
SF	1.0000		0	0	0	0	NS	0
SUB-TOTAL			1	0	0	0	0	1

Locatable Database Findings

LOCAL LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
WCSWF	0.5000		0	0	0	NS	NS	0
SUB-TOTAL			0	0	0	0	0	0

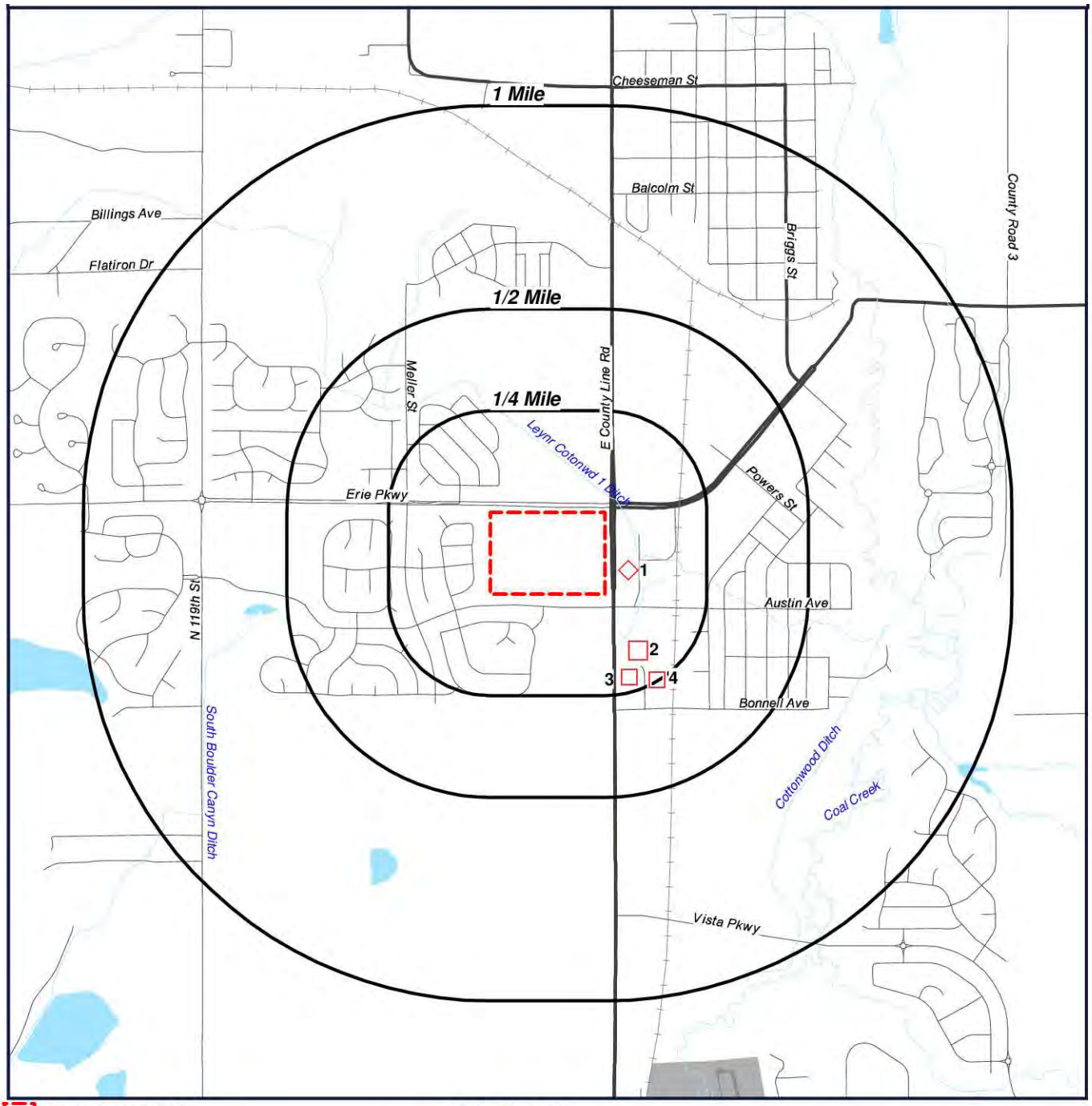
Locatable Database Findings

TRIBAL LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR08	0.2500		0	0	NS	NS	NS	0
LUSTR08	0.5000		0	0	0	NS	NS	0
ODINDIAN	0.5000		0	0	0	NS	NS	0
INDIANRES	1.0000		0	0	0	0	NS	0
SUB-TOTAL			0	0	0	0	0	0
TOTAL			1	3	0	0	0	4

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



Target Property (TP)
UST
RCRANGR08
RCRAGR08

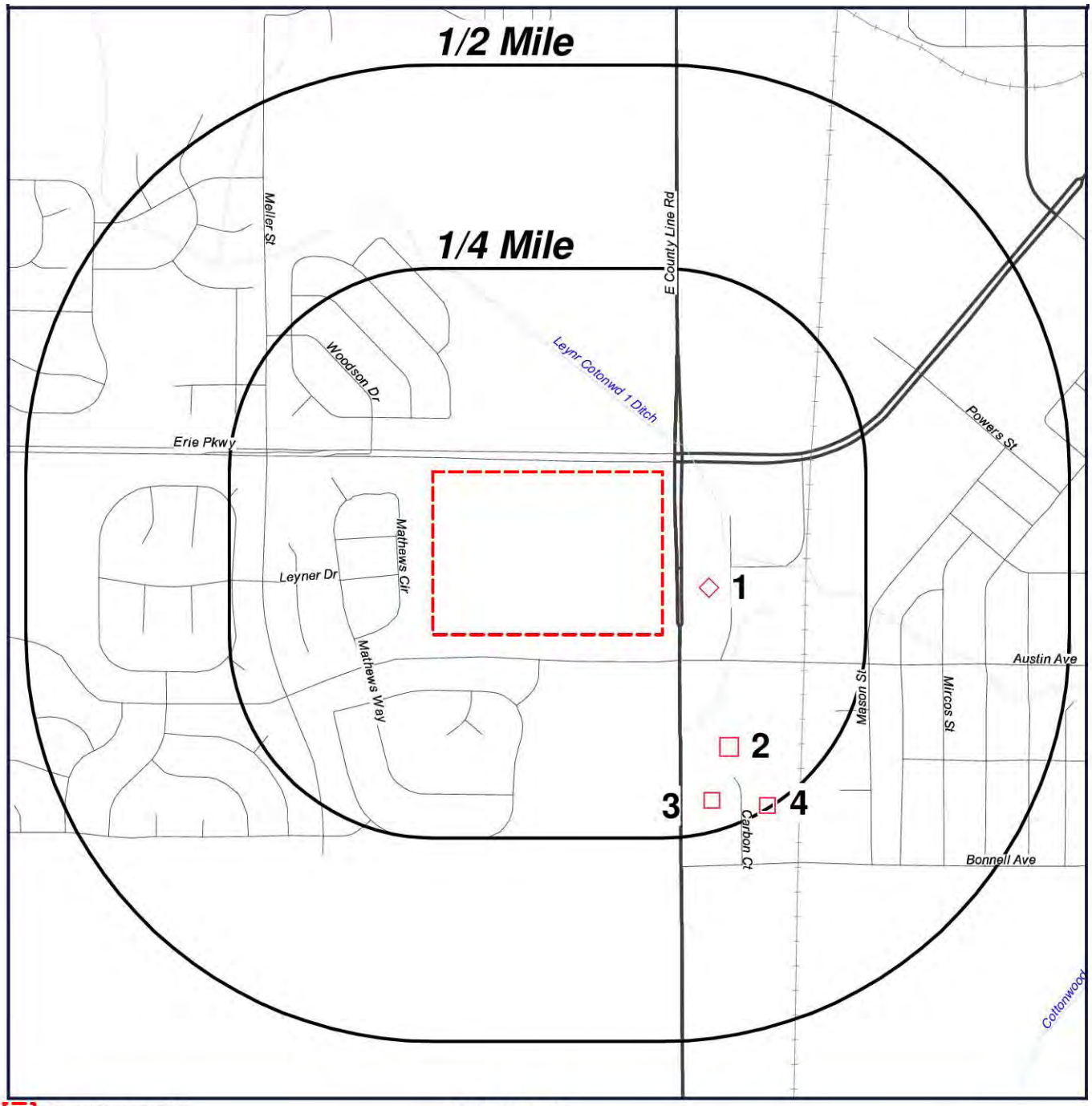
Erie Parcel
ERIE, Colorado
80516

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Click here to access Satelite view

Radius Map 2



Target Property (TP)
UST
RCRANGR08
RCRAGR08

Erie Parcel
ERIE, Colorado
80516

N
W E
S

0' 500' 1000' 1500'
SCALE: 1" = 1000'

Click here to access Satelite view

Ortho Map

Target Property (TP)
UST
RCRANGR08
RCRAGR08

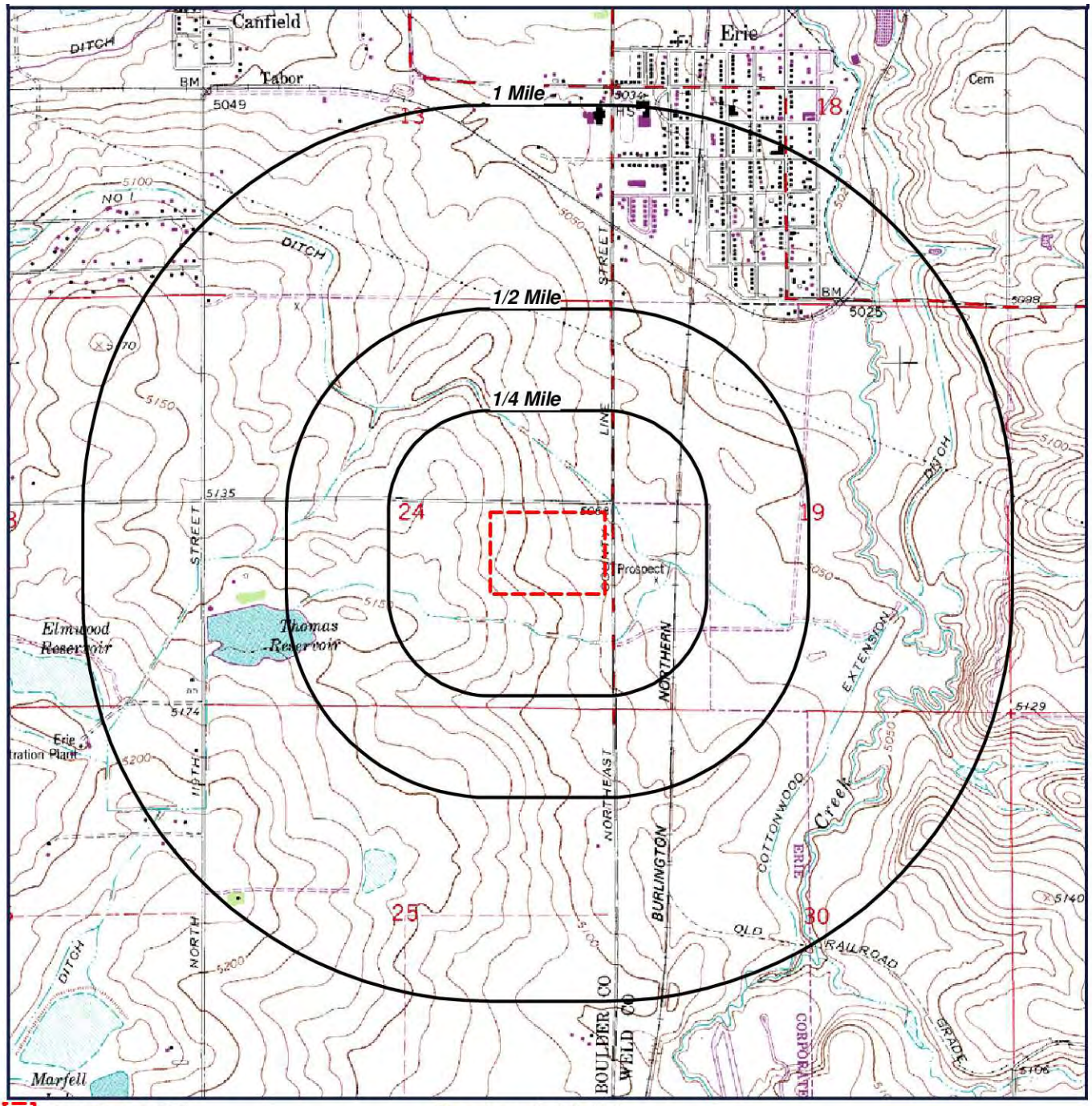
Quadrangle(s): Erie
Erie Parcel
ERIE, Colorado
80516

N
W E
S

0' 500' 1000' 1500'
SCALE: 1" = 1000'

Click here to access Satelite view

Topographic Map



Target Property (TP)

Quadrangle(s): Erie
Source: USGS, 1979
Erie Parcel
ERIE, Colorado
80516

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Click here to access Satelite view

Report Summary of Locatable Sites

Map ID#	Database Name	Site ID#	Distance From Site	Site Name	Address	City, Zip Code	PAGE #
1	UST	18961	0.06 SE	STOP N SAVE #24	681 MITCHELL WAY	ERIE, 80516	15
2	RCRANGR08	COR000230441	0.17 SE	ATOMIC FORGE INC	1010 CARBON CT UNIT H	ERIE, 80516	16
3	RCRAGR08	COR000227785	0.22 SE	WELLS FARGO BANK @ UNIQUE MANAGEMENT SOL	1020 CARBON CT	ERIE, 80516	18
4	RCRAGR08	COR000222844	0.25 SE	COUNTY LINE AUTO BODY INC	1021 CARBON CT	ERIE, 80516	20

Underground Storage Tank Facilities (UST)

MAP ID# 1 **Distance from Property: 0.06 mi. SE**

FACILITY INFORMATION

FACILITY ID: **18961**

NAME: **STOP N SAVE #24**

ADDRESS: **681 MITCHELL WAY**
ERIE, CO 80516

TOTAL TANK: **3**

COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=18961

OWNER INFORMATION

NAME: **FEATHER PETROLEUM CO**

ADDRESS: **2492 INDUSTRIAL BLVD**
GRAND JUNCTION, CO 81505

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
18961-1	**UST**	**1 - UNLEADED REGULAR (RUL)**	**20000**	**OPEN**	**NOT REPORTED**
18961-2	**UST**	**9 - GAS/GAS (MULTI-COMP)**	**20000**	**OPEN**	**NOT REPORTED**
18961-3	**UST**	**4 - DIESEL**	**12000**	**OPEN**	**NOT REPORTED**

Back to Report Summary

MAP ID# 2 **Distance from Property: 0.17 mi. SE**

FACILITY INFORMATION

EPA ID#: **COR000230441**
NAME: **ATOMIC FORGE INC**
ADDRESS: **1010 CARBON CT UNIT H**
ERIE, CO 80516
CONTACT NAME: **NOT REPORTED**
CONTACT ADDRESS: **NOT REPORTED**

CONTACT PHONE: **NOT REPORTED**
NON-NOTIFIER: **X**
DATE RECEIVED BY AGENCY: **06/26/2013**

OWNER TYPE: **NOT REPORTED**
OWNER NAME: **NOT REPORTED**
OPERATOR TYPE: **NOT REPORTED**
OPERATOR NAME: **NOT REPORTED**

CERTIFICATION **- NO CERTIFICATION REPORTED -**

INDUSTRY CLASSIFICATION (NAICS) **- NO NAICS INFORMATION REPORTED -**

SITE HISTORY (INCLUDES GENERATORS AND NON-GENERATORS)

DATE RECEIVED BY AGENCY: **06/26/2013**
NAME: **ATOMIC FORGE INC**
GENERATOR CLASSIFICATION: **NOT A GENERATOR**

CURRENT ACTIVITY INFORMATION

GENERATOR STATUS: **NOT A GENERATOR** LAST UPDATED DATE: **06/28/2013**
SUBJECT TO CORRECTIVE ACTION UNIVERSE: **NO**
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **NO**
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **NO**
CORRECTIVE ACTION WORKLOAD UNIVERSE: **NO**

IMPORTER: **NO**
MIXED WASTE GENERATOR: **NO**
RECYCLER: **NO**
TRANSPORTER: **NO**
ONSITE BURNER EXEMPTION: **NO**
FURNACE EXEMPTION: **NO**
USED OIL REFINER: **NO**
USED OIL TRANSFER FACILITY: **NO**

UNDERGROUND INJECTION: **NO**
UNIVERSAL WASTE DESTINATION FACILITY: **NO**
TRANSFER FACILITY: **NO**
USED OIL FUEL BURNER: **NO**
USED OIL PROCESSOR: **NO**
USED OIL FUEL MARKETER TO BURNER: **NO**
SPECIFICATION USED OIL MARKETER: **NO**
USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS

03/26/2013	**CEI**	**COMPLIANCE EVALUATION INSPECTION ON-SITE**
06/26/2013	**CEI**	**COMPLIANCE EVALUATION INSPECTION ON-SITE**
07/24/2013	**FCI**	**FOCUSED COMPLIANCE INSPECTION**

VIOLATIONS

06/26/2013	**261.A**	**LISTING - GENERAL**
06/26/2013	**262.A**	**GENERATORS - GENERAL**

ENFORCEMENTS

06/26/2013 **175 COMPLIANCE ADVISORY**

HAZARDOUS WASTE

- NO HAZARDOUS WASTE INFORMATION REPORTED -

UNIVERSAL WASTE **- NO UNIVERSAL WASTE REPORTED -**

CORRECTIVE ACTION AREA **- NO CORECTIVE ACTION AREA INFORMATION REPORTED -**

CORRECTIVE ACTION EVENT **- NO CORECTIVE ACTION EVENT REPORTED -**

Back to Report Summary

Resource Conservation & Recovery Act - Generator Facilities (RCRAGR08)

MAP ID# 3 **Distance from Property: 0.22 mi. SE**

FACILITY INFORMATION

EPA ID#: **COR000227785**
NAME: **WELLS FARGO BANK @ UNIQUE MANAGEMENT SOLUTIONS**
ADDRESS: **1020 CARBON CT**
ERIE, CO 80516

OWNER TYPE: **PRIVATE**
OWNER NAME: **WELLS FARGO BANK**
OPERATOR TYPE: **PRIVATE**
OPERATOR NAME: **WELLS FARGO BANK**

CONTACT NAME: **KEVIN HAGER**
CONTACT ADDRESS: **1873 S BELLAIR ST #800**
DENVER CO 80222
CONTACT PHONE: **303-219-5888**
NON-NOTIFIER: **NOT A NON-NOTIFIER**
DATE RECEIVED BY AGENCY: **07/10/2012**

CERTIFICATION

CERTIFICATION NAME:	CERTIFICATION TITLE:	CERTIFICATION SIGNED DATE:
KEVIN HAGER	**PROPERTY MGR**	**07/09/2012**

INDUSTRY CLASSIFICATION (NAICS)

52211 - COMMERCIAL BANKING

SITE HISTORY (INCLUDES GENERATORS AND NON-GENERATORS)

DATE RECEIVED BY AGENCY: **07/10/2012**
NAME: **WELLS FARGO BANK @ UNIQUE MANAGEMENT SOLUTIONS**
GENERATOR CLASSIFICATION: **LARGE QUANTITY GENERATOR**

CURRENT ACTIVITY INFORMATION

GENERATOR STATUS: **CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR** LAST UPDATED DATE: **07/13/2012**
SUBJECT TO CORRECTIVE ACTION UNIVERSE: **NO**
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **NO**
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **NO**
CORRECTIVE ACTION WORKLOAD UNIVERSE: **NO**

IMPORTER: **NO**
MIXED WASTE GENERATOR: **NO**
RECYCLER: **NO**
TRANSPORTER: **NO**
ONSITE BURNER EXEMPTION: **NO**
FURNACE EXEMPTION: **NO**
USED OIL REFINER: **NO**
USED OIL TRANSFER FACILITY: **NO**

UNDERGROUND INJECTION: **NO**
UNIVERSAL WASTE DESTINATION FACILITY: **NO**
TRANSFER FACILITY: **NO**
USED OIL FUEL BURNER: **NO**
USED OIL PROCESSOR: **NO**
USED OIL FUEL MARKETER TO BURNER: **NO**
SPECIFICATION USED OIL MARKETER: **NO**
USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS **- NO EVALUATIONS REPORTED -**
VIOLATIONS **- NO VIOLATIONS REPORTED -**
ENFORCEMENTS **- NO ENFORCEMENTS REPORTED -**

HAZARDOUS WASTE

D001 **IGNITABLE WASTE**

UNIVERSAL WASTE **- NO UNIVERSAL WASTE REPORTED -**

CORRECTIVE ACTION AREA **- NO CORECTIVE ACTION AREA INFORMATION REPORTED -**

CORRECTIVE ACTION EVENT **- NO CORECTIVE ACTION EVENT REPORTED -**

Back to Report Summary

MAP ID# 4 **Distance from Property: 0.25 mi. SE**

FACILITY INFORMATION

EPA ID#: **COR000222844**
NAME: **COUNTY LINE AUTO BODY INC**
ADDRESS: **1021 CARBON CT**
ERIE, CO 80516
CONTACT NAME: **TRACY S CHAVEZ**
CONTACT ADDRESS: **1021 CARBON CT**
ERIE CO 80516
CONTACT PHONE: **303-828-2699**
NON-NOTIFIER: **NOT A NON-NOTIFIER**
DATE RECEIVED BY AGENCY: **03/03/2010**

OWNER TYPE: **PRIVATE**
OWNER NAME: **COUNTY LINE AUTO BODY INC**
OPERATOR TYPE: **PRIVATE**
OPERATOR NAME: **COUNTY LINE AUTO BODY INC**

CERTIFICATION

CERTIFICATION NAME:	CERTIFICATION TITLE:	CERTIFICATION SIGNED DATE:
TRACY S CHAVEZ	**OWNER**	**02/25/2010**

INDUSTRY CLASSIFICATION (NAICS)
811121 - AUTOMOTIVE BODY, PAINT, AND INTERIOR REPAIR AND M

SITE HISTORY (INCLUDES GENERATORS AND NON-GENERATORS)
DATE RECEIVED BY AGENCY: **03/03/2010**
NAME: **COUNTY LINE AUTO BODY INC**
GENERATOR CLASSIFICATION: **LARGE QUANTITY GENERATOR**

CURRENT ACTIVITY INFORMATION

GENERATOR STATUS: **CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR** LAST UPDATED DATE: **03/03/2010**
SUBJECT TO CORRECTIVE ACTION UNIVERSE: **NO**
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: **NO**
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: **NO**
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: **NO**
CORRECTIVE ACTION WORKLOAD UNIVERSE: **NO**

IMPORTER: **NO**
MIXED WASTE GENERATOR: **NO**
RECYCLER: **NO**
TRANSPORTER: **NO**
ONSITE BURNER EXEMPTION: **NO**
FURNACE EXEMPTION: **NO**
USED OIL REFINER: **NO**
USED OIL TRANSFER FACILITY: **NO**

UNDERGROUND INJECTION: **NO**
UNIVERSAL WASTE DESTINATION FACILITY: **NO**
TRANSFER FACILITY: **NO**
USED OIL FUEL BURNER: **NO**
USED OIL PROCESSOR: **NO**
USED OIL FUEL MARKETER TO BURNER: **NO**
SPECIFICATION USED OIL MARKETER: **NO**
USED OIL TRANSPORTER: **NO**

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS **- NO EVALUATIONS REPORTED -**
VIOLATIONS **- NO VIOLATIONS REPORTED -**
ENFORCEMENTS **- NO ENFORCEMENTS REPORTED -**

HAZARDOUS WASTE

D001 **IGNITABLE WASTE**

F001 THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE,TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE ANDCHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

F002 THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE,TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE,CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

F003 THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

F004 THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: CRESOLS, CRESYLIC ACID, AND NITROBENZENE; AND THE STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F002, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

F005 THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE,CARBON DISULFIDE, ISOBUTANOL, PYRIDINE,BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

UNIVERSAL WASTE **- NO UNIVERSAL WASTE REPORTED -**

CORRECTIVE ACTION AREA **- NO CORECTIVE ACTION AREA INFORMATION REPORTED -**

CORRECTIVE ACTION EVENT **- NO CORECTIVE ACTION EVENT REPORTED -**

Back to Report Summary

Report Summary of Unlocatable Sites

Database Name	Site ID#	Site Name	Address	City	Zip Code	Page #
UST	8191	UNKNOWN	NE CORNER SEC24 TS 1N R69W	ERIE	80516	23
LUSTTRUST	00023-0000048	ERIE	ERIE	ERIE	80000	24
LUSTTRUST	00023-0000265	ERIE #1	ERIE #1	ERIE	80000	25

FACILITY INFORMATION

FACILITY ID: **8191**
NAME: **UNKNOWN**
ADDRESS: **NE CORNER SEC24 TS 1N R69W**
ERIE, CO 80516
TOTAL TANK: **1**
COSTIS LINK: http://costis.cdle.state.co.us/facility.asp?h_id=8191

OWNER INFORMATION

NAME: **UNKNOWN**
ADDRESS: **UNKNOWN**
ZIPCODE UNKNOWN, XX 99999

TANK INFORMATION

TANK ID:	TANK TYPE:	TANK PRODUCT:	TANK CAPACITY:	TANK STATUS:	INSTALLATION DATE:
8191-1	**UST**	**Z UNKNOWN**	**500**	**CLOSED**	**NOT REPORTED**

Back to Report Summary of Unlocatable Sites

FACILITY INFORMATION

UNIQUE ID: **00023-0000048**

AGENCY ID: **NOT REPORTED**

NAME: **ERIE**

ADDRESS: **ERIE**

ERIE, CO 80000

COUNTY: **BOULDER**

COMMENTS: **FROM AN OLD CDPHE LIST OF LOCATIONS WHERE TANK LEAKS WERE SUSPECTED AND LUST TRUST FUNDS WERE USED IN AN EFFORT TO IDENTIFY THE SOURCE. OFTEN, THE SOURCE WAS FOUND NEARBY AND WAS ENTERED IN THE LUST DATABASE (NOW COSTIS).**

THIS LISTING NOT ENTERED INTO COSTIS BACK WHEN CDPHE TRANSFERRED RESPONSIBILITY FOR TANK LEAKS TO OPS. FEW PEOPLE AT OPS KNOW OF THIS OLD CDPHE LIST, AND ANY ASSOCIATED FILES ARE THOUGHT TO HAVE BEEN DISPOSED OF OR MISPLACED.

COSTIS LINK: **NOT REPORTED**

Back to Report Summary of Unlocatable Sites

FACILITY INFORMATION

UNIQUE ID: **00023-0000265**

AGENCY ID: **NOT REPORTED**

NAME: **ERIE #1**

ADDRESS: **ERIE #1**
ERIE, CO 80000

COUNTY: **WELD**

COMMENTS: **FROM AN OLD CDPHE LIST OF LOCATIONS WHERE TANK LEAKS WERE SUSPECTED AND LUST TRUST FUNDS WERE USED IN AN EFFORT TO IDENTIFY THE SOURCE. OFTEN, THE SOURCE WAS FOUND NEARBY AND WAS ENTERED IN THE LUST DATABASE (NOW COSTIS).**
THIS LISTING NOT ENTERED INTO COSTIS BACK WHEN CDPHE TRANSFERRED RESPONSIBILITY FOR TANK LEAKS TO OPS. FEW PEOPLE AT OPS KNOW OF THIS OLD CDPHE LIST, AND ANY ASSOCIATED FILES ARE THOUGHT TO HAVE BEEN DISPOSED OF OR MISPLACED.

COSTIS LINK: **NOT REPORTED**

Back to Report Summary of Unlocatable Sites

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 09/06/13

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 01/14/14

This database includes site locations where Engineering and/or Institutional Controls have been identified as part of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ERNSCO Emergency Response Notification System

VERSION DATE: 07/27/14

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

HISTPST Historical Gas Stations

VERSION DATE: 07/01/30

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

HMIRSR08 Hazardous Materials Incident Reporting System

VERSION DATE: 01/10/14

The HMIRS database contains unintentional hazardous materials release information reported to the U.S.

Department of Transportation located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

NLRRCRAG No Longer Regulated RCRA Generator Facilities

VERSION DATE: 04/10/14

This database includes RCRA Generator facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly generated hazardous waste.
Large Quantity Generators: Generate 1,000 kg or more of hazardous waste during any calendar month; or Generate more than 1 kg of acutely hazardous waste during any calendar month; or Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.
Small Quantity Generators: Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.
Conditionally Exempt Small Quantity Generators: Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

RCRAGR08 Resource Conservation & Recovery Act - Generator Facilities

VERSION DATE: 04/10/14

This database includes sites listed as generators of hazardous waste (large, small, and exempt) in the RCRAInfo system. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act

(RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). This database includes sites located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.
Large Quantity Generators: Generate 1,000 kg or more of hazardous waste during any calendar month; or Generate more than 1 kg of acutely hazardous waste during any calendar month; or Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.
Small Quantity Generators: Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.
Conditionally Exempt Small Quantity Generators: Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

RCRANGR08 Resource Conservation & Recovery Act - Non-Generator Facilities

VERSION DATE: 04/10/14

This database identifies RCRAInfo system sites that only handle hazardous waste, such as transporters, without generating any amount hazardous waste. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). This database includes sites located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

RCRASC RCRA Sites with Controls

VERSION DATE: 01/14/14

This list of Resource Conservation and Recovery Act sites with institutional controls in place is provided by the U.S. Environmental Protection Agency.

TRI Toxics Release Inventory

VERSION DATE: 12/31/12

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

BF Brownfields Management System

VERSION DATE: 04/15/14

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment.

CERCLIS Comprehensive Environmental Response, Compensation & Liability Information System

VERSION DATE: 10/25/13

CERCLIS is the repository for site and non-site specific Superfund information in support of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This United States Environmental Protection Agency database contains an extract of sites that have been investigated or are in the process of being investigated for potential environmental risk.

NFRAP No Further Remedial Action Planned Sites

VERSION DATE: 10/25/13

This database includes sites which have been determined by the United States Environmental Protection Agency, following preliminary assessment, to no longer pose a significant risk or require further activity under CERCLA. After initial investigation, no contamination was found, contamination was quickly removed or contamination was not serious enough to require Federal Superfund action or NPL consideration.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 04/10/14

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An “open dump” is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Treatment, Storage & Disposal Facilities

VERSION DATE: 04/10/14

This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste in the RCRAInfo system. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

DNPL Delisted National Priorities List

VERSION DATE: 10/25/13

This database includes sites from the United States Environmental Protection Agency’s Final National Priorties List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 04/10/14

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NPL National Priorities List

VERSION DATE: 10/25/13

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 10/25/13

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 04/10/14

This database includes hazardous waste sites listed with corrective action activity in the RCRAInfo system. The Corrective Action Program requires owners or operators of RCRA facilities (or treatment, storage, and disposal facilities) to investigate and cleanup contamination in order to protect human health and the environment. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RODS Record of Decision System

VERSION DATE: 07/01/13

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

AST Aboveground Storage Tank Facilities

VERSION DATE: 04/28/14

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of aboveground storage tank (AST) facilities. This AST database also includes other types of storage tank facilities such as liquefied petroleum gas (LPG), vehicle tank meters (VTM), and compressed natural gas facilities.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 04/28/14

This list of Methamphetamine lab seizures is provided by multiple sources: the North Metro Task Force, FACTS (Forensic Applications Consulting Technologies, Inc) and the Colorado Springs Police Department. The North Metro Task Force list of Methamphetamine labs were seized between 2001 and 2010. The North Metro area includes the following Cities and Counties of Colorado: Adams County, Broomfield, Brighton, Commerce City, Federal Heights, Northglenn, Thornton, and Westminster. According to Section 2 of Colorado Revised Statutes: "25-18.5-103. Discovery of an illegal drug laboratory - property owner - clean-up - liability. (1) (a) Upon notification from a peace officer that chemicals, equipment, or supplies indicative of an illegal drug laboratory are located on a property, or when an illegal drug laboratory used to manufacture methamphetamine is otherwise discovered and the property owner has received notice, the owner of any contaminated property shall meet the cleanup standards for property established by the board in section 25-18.5-102". The FACTS and Colorado Springs Police Department Methamphetamine labs were seized between 2001 and 2014.

COVENANTS Environmental Real Covenants List

VERSION DATE: 12/23/13

Senate Bill 01-145 gave authority to the Colorado Department of Public Health and Environment to approve requests to restrict the future use of a property using an enforceable agreement called an environmental covenant. These covenants, which are recorded with the deed and run with the land, provide a mechanism to ensure that institutional controls that are part of environmental remediation projects are properly implemented and that engineered structures are protected and maintained, so that implemented remedies continue to be protective of human health and the environment for as long as any residual contamination remains a risk.

HWSG Hazardous Waste Sites- Generator

VERSION DATE: 06/30/03

The Resource Conservation and Recovery Act (RCRA) was enacted by congress in 1976, followed by the promulgation of implementing regulations in 1980. In 1984, the State was authorized by EPA to implement the RCRA program in Colorado on their behalf. This facility listing includes RCRA sites listed as generators of hazardous waste (Small Quantity Generators and Large Quantity Generators) and was provided by the Colorado Department of Public Health and Environment.
Small Quantity Generators (SQG) generate, in any calendar month, more than 100 kg (220 lbs.) but less than 1,000 kg (2,200 lbs.) of RCRA hazardous waste; and generate, in any calendar month, or accumulate at any time, no more than 1 kg (2.2 lbs.) of acute hazardous waste and no more than 100 kg (220 lbs.) of material from

the cleanup of a spill of acute hazardous waste; and accumulate on-site no more than 6000 kg (13,200 lbs) of hazardous waste at any one time; or, the site is a Small Quantity Generator if the site met all other criteria for a Conditionally Exempt Small Quantity Generator, but accumulated, at any time, more than 1,000 kg (2,200 lbs.) of RCRA hazardous waste.
Large Quantity Generators (LQG) generate, in any calendar month, 1,000 kg (2,200 lbs.) or more of RCRA hazardous waste; or generate, in any calendar month, or accumulated at any time, more than 1 kg (2.2 lbs.) of RCRA acute hazardous waste; or generate, in any calendar month, or accumulated at any time, more than 100 kg (220 lbs.) of spill cleanup material contaminated with RCRA acute hazardous waste.

SPILLS Spills Listing

VERSION DATE: 03/13/14

The Colorado Department of Public Health and Environment's Division of Emergency Preparedness and Response maintains this listing of chemical spills and/or releases.

UST Underground Storage Tank Facilities

VERSION DATE: 04/28/14

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of underground storage tank facilities.

HISTSWLF Historical Solid Waste Landfills

VERSION DATE: NR

This historical solid waste landfills database contains data from the Hazardous Materials Waste Management Division (HMWMD) of the Colorado Department of Public Health and other various state and local agencies. In the early 1980s, the HMWMD conducted a survey of staff members and local agencies to compile this listing of sites that were known or thought to have waste issues. This Solid Waste Historical Data is not considered complete or verifiable and has not been maintained since the late 1980s. The HMWMD is not responsible and shall not be liable to the used for damages of any kind arising out of the use of this data or information.

HWSTSD Hazardous Waste Sites- Treatment, Storage & Disposal

VERSION DATE: 06/30/03

The Resource Conservation and Recovery Act (RCRA) was enacted by congress in 1976, followed by the promulgation of implementing regulations in 1980. In 1984, the State was authorized by EPA to implement the RCRA program in Colorado on their behalf. TSD facilities treat, store, dispose, or recycle hazardous waste on site in units and therefore are subject to RCRA permitting requirements. Historic TSDs are facilities that have completed closure and/or post-closure of the RCRA Subtitle C Regulated Unit(s) or the Treatment/Storage/Disposal Unit is no longer regulated. This database was provided by the Colorado Department of Public Health and Environment.

LST Leaking Storage Tank Facilities

VERSION DATE: 04/28/14

The Oil and Public Safety Division of the Colorado Department of Labor and Employment maintains this list of leaking aboveground and underground storage tank facilities.

LUSTTRUST Leaking Underground Storage Tanks Trust Fund Sites

VERSION DATE: 01/01/00

Suspected tank leaks have been discovered at the sites included in this database, but the facility responsible for the leak has not been identified. The state's investigtion and search for responsible parties is paid for out of the state's Leaking Underground Storage Tank (LUST) Trust Fund. This database was provided by the Colorado Department of Labor & Employment, Division of Oil and Public Safety, State Fund Section and is no longer updated.

METHANESITES Methane Gas Study Sites

VERSION DATE: 01/01/81

This Investigation of Methane Gas Hazards report was prepared by the Denver Office of Emergency Preparedness in 1981. The purpose of this study was to assess the actual and potential generation, migration, explosive and related problems associated with specified landfills, and to identify existing and potential problems, suggested strategies to prevent, abate, and control such problems and recommend investigative and monitoring functions as may be deemed necessary. The Colorado Department of Health selected eight landfills as priorities due to population density and potential hazards to population and property.

SWF Solid Waste Facilities

VERSION DATE: 01/14/14

The Colorado Department of Public Health and Environment maintains this database of active solid waste disposal facilities, transfer stations, recyclers, waste tire registrants, and waste grease registrants.

VCRA Voluntary Cleanup and Redevelopment Program Sites

VERSION DATE: 04/07/14

This site listing is provided by the Colorado Department of Public Health and Environment (CDPHE) and includes both voluntary cleanup and brownfield properties. The Voluntary Cleanup and Redevelopment program was created in 1994. The objective of the program is to facilitate the redevelopment and transfer of contaminated properties. Properties that sit untouched because of their real or perceived contamination can be rehabilitated using the CDPHE's Brownfields Program in conjunction with the Voluntary Cleanup Program. Cleanup decisions are based on existing standards and the proposed use of the property. The actual cleanup and verification is the owner's responsibility.

HWSCA Hazardous Waste Sites- Corrective Action

VERSION DATE: 06/30/03

The Resource Conservation and Recovery Act (RCRA) was enacted by congress in 1976, followed by the promulgation of implementing regulations in 1980. In 1984, the Hazardous and Solid Waste Amendments (HSWA) were added to RCRA providing for corrective action at facilities subject to RCRA. That same year, the State was authorized by EPA to implement the RCRA program in Colorado on their behalf. Corrective action may be implemented as part of a RCRA Hazardous Waste Permit, an Order, or a Corrective Action Plan pursuant to the Colorado Hazardous Waste Regulations. Corrective action is the process by which regulated facilities investigate and remediate, as necessary, all contamination (soil, ground water, surface water, air) associated with their releases into the environment. Historic Corrective Action Sites are facilities that have completed the RCRA Subtitle C corrective Action process. This database was provided by the Colorado Department of Public Health and Environment.

SF Superfund Sites

VERSION DATE: 06/01/03

This listing contains active, deleted and proposed "Superfund" hazardous waste sites, as well as those sites identified through the Natural Resource Damages section of Superfund legislation and one Private Non-Superfund Cleanup site. A site qualifies for the National Priorities List (NPL or Superfund list) when the U.S. Environmental Protection Agency (EPA) determines there is a release or threatened release of hazardous substances that may endanger public health, welfare or the environment. In Colorado, the lead agency for Superfund remediation may be either the EPA or the Colorado Department of Public Health and Environment.

WCSWF Weld County Solid Waste Facilities

VERSION DATE: 08/03/09

This listing of solid waste facilities is provided by the Weld County Public Health Department.

Environmental Records Definitions - TRIBAL

USTR08 Underground Storage Tanks On Tribal Lands

VERSION DATE: 11/25/13

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

LUSTR08 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 11/25/13

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 8. This region includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

APPENDIX D

LOCAL HEALTH DEPARTMENT RESPONSE

September 11, 2014

Environmental Site Assessment Inquiry

Requestor: Trevor Branch, CTL Thompson, Inc.

RE: (Property Location) SW corner of Erie Parkway and County Line Road

Thank you for your request. I have researched the site and the surrounding area in our database within 1 mile of the site you requested.

Be advised that the database includes only those incidents which were reported and included in our database. There may be incidents which were either not reported or not entered in our database.

For information on underground storage tanks and wells, the State of Colorado maintains those records. Information on septic systems in Boulder County can be obtained at www.septicsmart.org

If I can be of any further assistance, please feel free to contact me at (303) 441-1176.

Sincerely,

Susan Martino, MLA
Environmental Health Specialist II
Boulder County Environmental Health
3450 Broadway, Boulder, CO 80304
303-441-1176
smartino@bouldercounty.org

Erie Parkway & County Line Rd / Historic Hazmat

DATE	ADDRESS	MATERIAL	CONDITION	HAZARD	AMOUNT
10281993	2601 E County Line Rd	Crude Oil	Soil removed	soil/water contamination	10 gallons

Erie Parkway & County Line Rd / Coal Mines

FID	MINE
1	Northrup Mine
2	Chase Mine
38	Stewart Mine
39	Unknown
40	McGregor Mine, Cleveland Mine
41	Marfel Mine
42	Garfield No. 1

APPENDIX E

PREVIOUS PHASE I ESA

Phase I Environmental Site Assessment

Erie Commercial Venture Property
46.613 Acres in Section 24,
Township 1 North, Range 69 West,
Erie, Colorado

Prepared For:
Erie Commercial Venture, LLLP
7720 East Bellview Avenue, Suite 350
Greenwood Village, Colorado 80111

WESTERN ENVIRONMENT AND ECOLOGY, INC.
2217 West Powers Avenue
Littleton, Colorado 80120
(303) 730-3452 (phone)
(303) 730-3461 (fax)
westernenvironment.com

Phase I Environmental Site Assessment

Erie Commercial Venture Property
46.613 Acres in Section 24,
Township 1 North, Range 69 West,
Erie, Colorado

Project Number: 422-001-02

March 27, 2006

Prepared For:

Erie Commercial Venture, LLLP
7720 East Bellview Avenue, Suite 350
Greenwood Village, Colorado 80111

PREPARED BY:

Brian R. Partington
Project Manager

REVIEWED BY:

Greg D. Sherman P.G.
President

WESTERN ENVIRONMENT AND ECOLOGY, INC.
2217 West Powers Avenue
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APPENDICES

APPENDIX A	Reference Lists
APPENDIX B	Air Photo Documentation
APPENDIX C	Western Environment and Ecology, Inc. - Statement of Qualifications

1.0 INTRODUCTION

The following document was prepared at the request of Erie Commercial Venture, LLLP (ECV). The purpose of this Phase I Environmental Site Assessment is to identify, to the extent feasible, recognized environmental conditions in connection with the subject property. A Phase I Environmental Site Assessment has four components - records review, site reconnaissance, interviews and a report. These specific activities are further defined by the American Society for Testing and Materials (ASTM E 1527-00, Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessments, July 2000).

Mr. Overton indicated that ECV is interested in developing the property. According to the Boulder County Assessor, the current owner of the site is Erie Commercial Venture, LLLP. Mr. Overton stated that he was unaware of any environmental issues associated with the site.

Undeveloped agricultural land on site

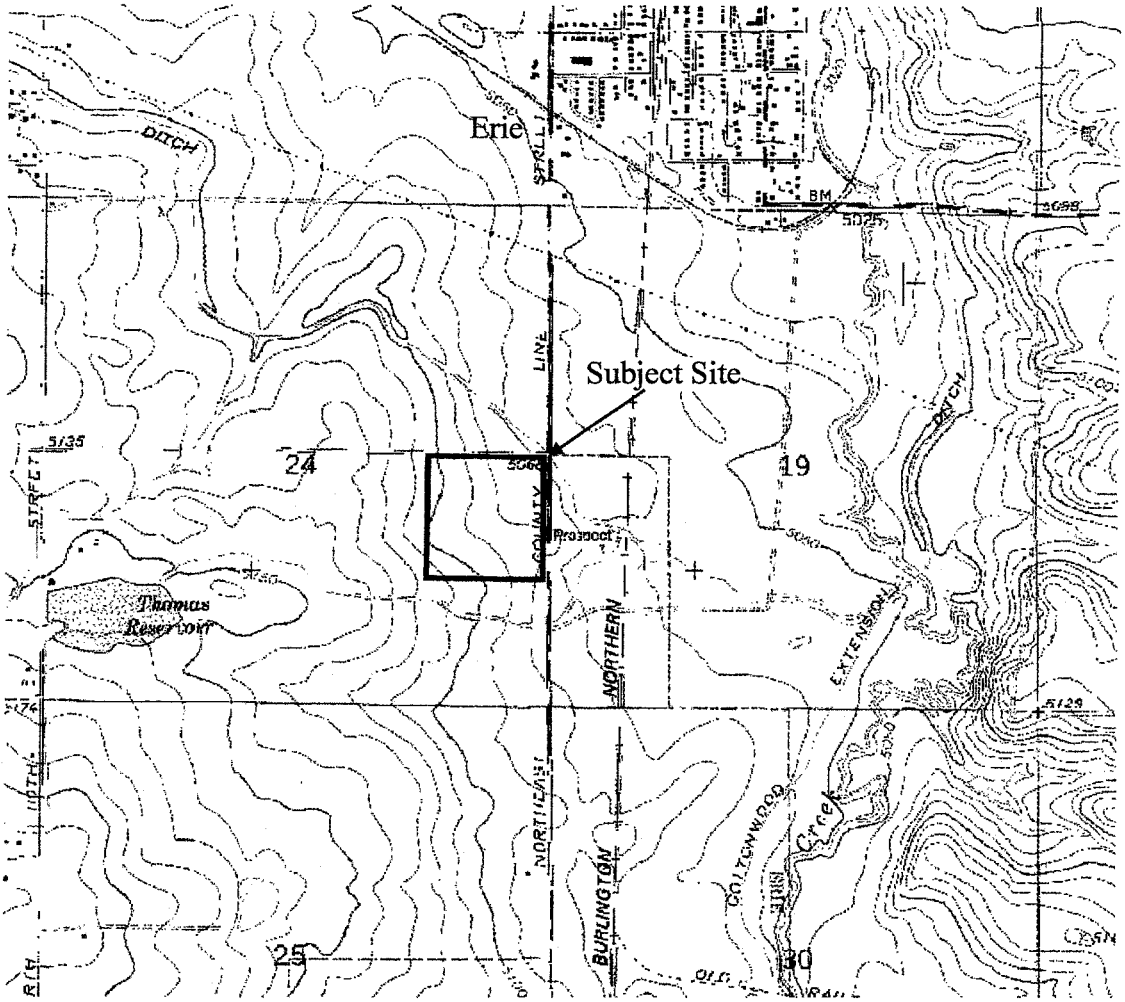
2.0 SITE DESCRIPTION

This Phase I Environmental Site Assessment was conducted for 46.613acres in Section 24, Township 1 North, Range 69 West, in Erie, Colorado (Figure 1). According to the Boulder County Assessors Office, the property is currently zoned for agricultural use. No buildings exist on the site.

The site is located south of Leon A. Wurl Parkway and west of County Line Road (Weld County Road 1), as shown on Figure 2. Developed residential property occurs to the west, with undeveloped property to the north, east and south. At the time of this investigation the site was vacant, most recently being used for dry land wheat farming. At the time of this assessment, the property was covered in unharvested wheat.

The site occurs at an elevation of 5,070 to 5,110 feet, and gradually slopes to the east/northeast toward Coal Creek (USGS Erie 7.5 Minute Quadrangle, 1979). During a mine subsidence investigation performed on the site, Western Environment identified eolian sands and clays overlying the Cretaceous Age Laramie Formation (Project Number 422-001-01, dated December 23, 2005).

Residential development to the west



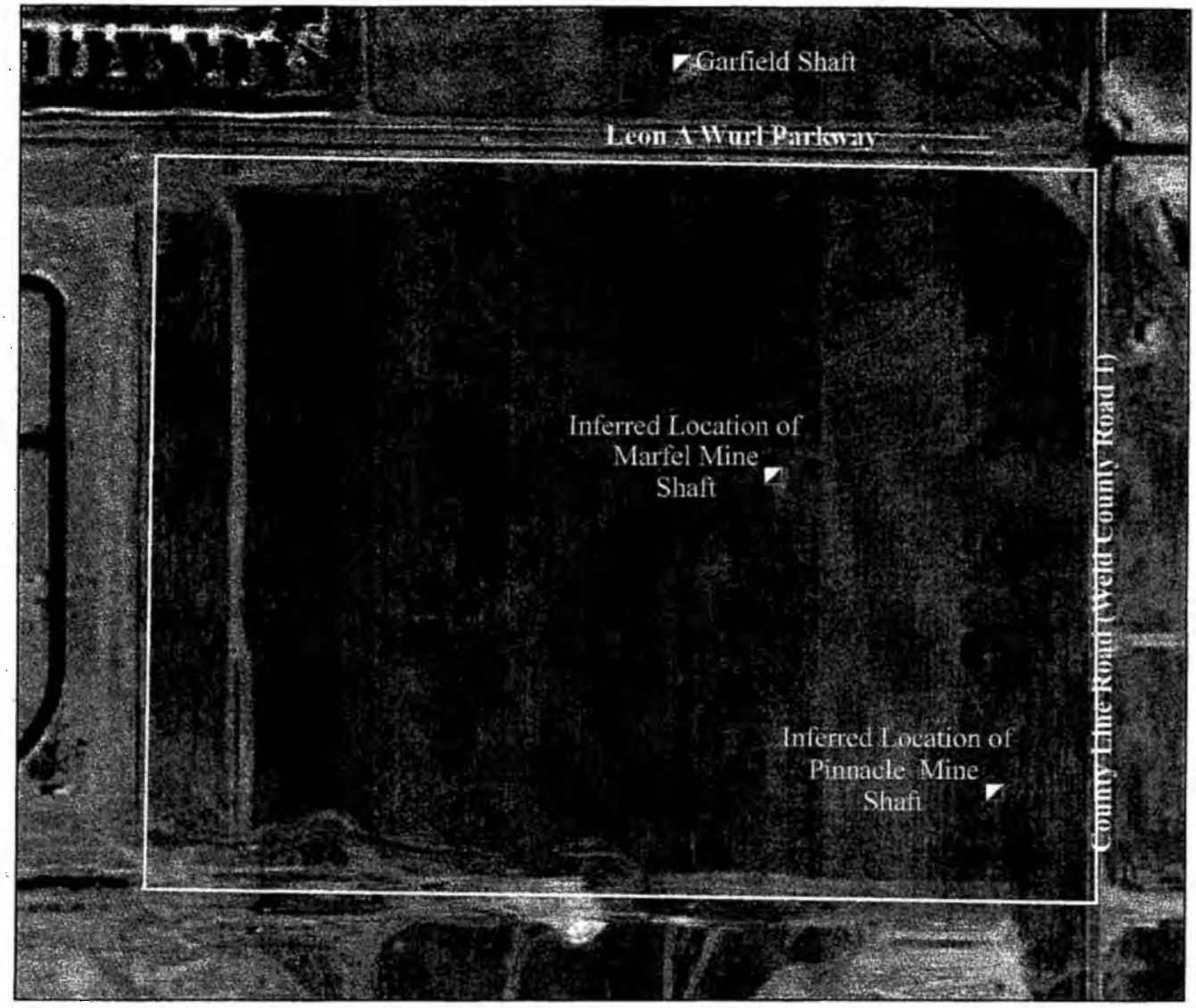
N

Scale 1 Inch = 2,000 feet

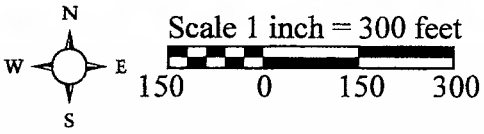
1,000 0 1,000 2,000

WESTERN ENVIRONMENT AND ECOLOGY, INC.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 1 - Project Location Map
Erie Commercial Venture Property
NE ¼ of the SE ¼ of Section 24
Township 1 North, Range 69 West,
Erie, Colorado



Airphoto obtained from Google Earth



WESTERN ENVIRONMENT AND ECOLOGY, INC.
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 2 - Site Map
Erie Commercial Venture Property
NE ¼ of the SE ¼ of Section 24
Township 1 North, Range 69 West,
Erie, Colorado

3.0 RECORDS REVIEW

The purpose of the records review is to obtain and review information that will help identify potential environmental conditions in connection with the property. Availability of records varies from information source to information source, including governmental jurisdictions. Western Environment did not identify, obtain or review every possible record that might exist with respect to the property. Instead, record information from reasonably ascertainable standard sources was reviewed. The approximate minimum search distance utilized in the review, the resources utilized, and the number of sites found are listed below:

Lists Reviewed	ASTM Standard Minimum Search Distance	Number of Sites Within Search Distance
Federal and State NPL Site List	1.0 mile	0
Federal and State CERCLIS List	0.5 mile	1
Federal RCRA TSD Facilities List	1.0 mile	0
Federal RCRA Generators List	Property and adjoining property	0
State Landfill and/or Solid Waste Disposal Site List	0.5 mile	5
State Leaking UST List	0.5 mile	0
State Registered UST List	Property and adjoining properties	0
Colorado Voluntary Cleanup List	1.0 mile	0

3.1 RESULTS

One CERCLIS site is located just beyond the one mile minimum search distance. This is identified as the Columbine Landfill located at the Denver Regional Landfill South on the site of the abandoned Columbine Mine, just over 1 mile to the east. Discovery of a violation was reported on October 1, 1984. A site inspection on December 1, 1984 determined no further remedial action was required, and the site was archived on June 19, 1992.

Five landfills were identified just over the one mile search radius. The Denver Regional Landfill South, Denver Regional Landfill North, Front Range Landfill, Old Erie Landfill and the Columbine Landfill are located to the east.

The Old Erie Landfill (Pratt Property) is a closed landfill. According to the Colorado Department of Public Health and Environment, the landfill began operation around 1964. The original use was the disposal of municipal refuse. Records indicate liquid waste and other compounds were accepted, including torpedo propellant which was destroyed (burned) on the site. Waste disposal ended in 1969. The Erie Landfill is monitored as a condition of the permit for the Denver Regional Landfill South. The Old Erie Landfill has 4 monitoring wells, which were last sampled in March of 2002. At that time two of the wells were dry, and the remaining two (GW1 and S210) had minor detections of the Volatile Organic Compounds (VOC's) Trichloroethylene (TCA) and Trichorofluoromethane. Documented VOC contaminated groundwater and methane above the Lower Explosive Limits (LEL) have occurred on the Erie Landfill property. No offsite investigations have been performed. In 1998 post closure care and maintenance of the Old Erie Landfill was fulfilled. Ground water monitoring will continue through the active life of the Denver Regional Landfill South.

The Front Range Landfill is located to the southwest of the subject property. As of November 29, 2005, the Front Range Landfill was in compliance with EPA procedural requirements. The Front Range Landfill is listed as a RCRA small quantity generator, with actual or potential emissions grater than the applicable major threshold. Recent monitoring reports of groundwater indicate no contamination resulting from the landfill. However, no offsite investigations have been performed. Western Environment has performed investigations on adjacent properties, where no shallow perched groundwater was present.

The Denver Regional Landfill South is listed as a RCRA small quantity generator. As of December 7, 2005 the site is in violation with actual or potential emissions above the applicable major source threshold. Second quarter 2005 monitoring reports show measurable levels of methane at test points along the north boundary of the landfill adjacent to Weld County Road 6. Recent groundwater monitoring results on this site are inconclusive due to a majority of the wells being dry. Additionally, no offsite sampling points are included in the sampling program.

The Denver Regional Landfill North is listed as a RCRA small quantity generator currently in compliance with procedural requirements. Presently, this landfill is closed and undergoing post-closure monitoring. Only one monitoring well has been sampled due to the remaining wells being dry.

Based on investigations performed by Western Environment and the hydro geologic relationship of the landfills to the subject project, it is the opinion of Western Environment that shallow groundwater migration from the landfills to the Erie Commercial Ventures project is unlikely.

Files were reviewed with the Colorado Oil and Gas Conservation Commission pertaining to petroleum production facilities located in the area. These records indicate no petroleum facilities have been drilled on the property. The nearest active wells currently occur more than 1,000 feet to the east on Secton 19. These facilities have no recorded releases.

View to the south

3.2 AERIAL PHOTOGRAPHY REVIEW

Western Environment personnel reviewed aerial photography to help identify past uses of the property. The earliest photograph available was dated October 13, 1973. At that time, the subject property was in agricultural use, as well was the adjacent properties. Leon Wurl Parkway was not constructed, and limited development was seen in the area. The most recent photograph from 2002, showed the site much as it currently appears. No structures or improvements are located on the property. Residential development to the west was underway, and commercial development was to the southeast. A list of the photos reviewed is presented in Appendix B.

Aerial photograph obtained from GoogleEarth, 2002

4.0 SITE INSPECTION / INTERVIEWS

The purpose of a site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the property. During a site visit on March 16, 2006, Western Environment personnel visually and physically observed the property to the extent not obstructed by bodies of water, adjacent buildings, or other obstacles and debris. The property was inspected to identify unusual debris, chemical staining, evidence of contamination, and hazardous materials.

At the time of the site inspection, the property was undeveloped and contained no structures or improvements. The site was vegetated with an unharvested wheat crop. In the northeast portion of the site there was surface evidence of the Marfel Shaft. However, the exact location of the shaft could not be verified. Mr. Overton was interviewed on March 27, 2006. He indicated that ECV has owned the site for more than 30 years. During that time, it has been leased for dry land farming. He was unaware of any petroleum facilities ever occurring on the site. Additionally, biosolid application has not been performed.

View to the east, note Erie Landfills in background

4.1 Undermining

On December 23, 2005, Western Environment completed a Mine Subsidence Investigation on the subject property (Project Number 422-001-01). This investigation confirmed the workings of the Marfel Mine which are known to occur on the ECV property, however, no maps exist confirming the location and extent of the workings. Records on file with the Colorado Division of Mines and the Colorado Geological Survey show it began operations in 1897 and continued through 1904. Total production was placed at 14,302 tons. The records indicate that extraction of coal was from a slope entry, located on the subject property (see Figure 2). However, the exact location of this entry could not be confirmed. The Pinnacle Mine is referenced on maps from adjacent mines, and is recorded with the Colorado Division of Mines. However, no production records or mine maps are available.

The adjacent Mitchell Mine and Garfield #1 Mine produced coal during the same period as the Marfel and Pinnacle Mines. The technology and methods used were likely similar to the Marfel and Pinnacle Mines. These operations were classified as a modified room and pillar (room and board) mines. Haulage ways were ten feet wide and were separated by 30 foot wide "chain pillars." Rooms had approximate widths of twenty feet and lengths of 100 feet. Based upon previous investigations, calculated extraction rates of approximately 50% could be anticipated.

Props and Caps roof support, from Denver Public Library Western History Collection

5.0 CONCLUSIONS

Western Environment performed a Phase I Environmental Site Assessment for 46.613 acres in Section 24, Township 1 North, Range 69 West, in Erie, Colorado, in general conformance with the scope and limitations of ASTM Practice E 1527. This assessment has revealed **no further evidence of recognized environmental conditions with the subject property.**

5.1 DEVIATIONS

Site reconnaissance did not extend to 1940, however, it is the professional opinion of Western Environment that no environmental encumbrances were likely to have occurred between 1940 and the first available air photo from 1973.

6.0 LITERATURE CITED

ASTM. 2000. American Society for Testing and Materials, Special Technical Publication E 1527-00. 1916 Race Street, Philadelphia, Pennsylvania.

Colorado Geologic Survey. Colorado Front Range Inactive Coal Mine Data and Subsidence Information, Weld County, 1983.

Documents Referenced for Records Review (Appendix B)

APPENDICES

APPENDIX A

REFERENCE LISTS

Documents Referenced for Records Review

1) National Superfund Priorities List Sites: Colorado Region VIII March, 2006
2) U.S. EPA Superfund Program CERCLIS, Colorado Region VIII. March, 2006
3) RCRIS Master Facility List, TSD Sites, Colorado. March, 2006
4) Colorado Active Landfills. March, 2006
5) Historic Landfill Database. March, 2006
6) Colorado Department of Labor and Employment-Underground Storage Tank List Database. March, 2006
7) Colorado Transfer Stations. March, 2006
8) Colorado Voluntary Cleanup List. March, 2006
9) Colorado List of Historic Places March, 2006
10) Colorado Front Range Inactive Coal Mine Data and Subsidence Information, Weld County, Colorado Geological Survey, 1983

APPENDIX B

AIR PHOTO DOCUMENTATION

Aerial Photography Review

Date	Frames
2002	GoogleEarth
10/13/1973	Colorado Aerial Service

APPENDIX C

Western Environment and Ecology Inc.

Statement of Qualifications

REAL ESTATE TRANSFER ENVIRONMENTAL AUDITS
(RETA)

In response to provisions contained within the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA), lending institutions, firms and individuals involved with property transfers have become painfully aware of the costs associated with environmental liabilities. In an attempt to make informed decisions and potentially avail themselves of the "innocent purchaser defense" as defined in CERCLA, lending institutions are requiring the completion of an environmental audit. Previously, the completeness and the thoroughness of these audits varied as greatly as the cost. However, in late 1992, the American Society of Testing and Materials (ASTM) adopted specific standards for completion of Phase I audits. The ASTM standards (E-1527 and E-1528) are quite specific as to the level of investigation necessary to complete the audit. **WESTERN ENVIRONMENT AND ECOLOGY, INC.** has performed Real Estate Transfer Environmental Audits to ASTM standards long before the standards were adopted. Additionally, **WESTERN ENVIRONMENT AND ECOLOGY, INC.** personnel have provided training to FDIC regional offices on environmental compliance and financial institution liabilities. This familiarity with lending institutions and more than fifteen years of experience in performing RETA's allows **WESTERN ENVIRONMENT AND ECOLOGY, INC.** to provide efficient and complete reports meeting short time frame requirements.

SERVICES

- Historical Photo Records Search
- Environmental Records Search
- Interviews
- On-site Inspection
- Lead-Based Paint Survey
- Asbestos Survey
- Radon Survey
- PCB Survey

SELECTED CLIENT LIST

Community Development Group Denver, Colorado
City of Aurora, Aurora, Colorado
City of Wheat Ridge, Colorado
Shively, Strommen & Holst, Longmont, Colorado
Town of Lyons, Colorado
Grant & Grant, Longmont, Colorado

GREG D. SHERMAN, P.G.

President

PROFESSIONAL CAPABILITIES:

Mr. Sherman has more than 20 years of professional experience. He is currently President of **WESTERN ENVIRONMENT AND ECOLOGY, INC.** Prior to his current position, he was the Principal Geologist with SEACOR in its Lakewood, Colorado office.

Duties performed in these capacities involved responsibility for CERCLA RI/FS studies and RCRA investigations. His professional assignments include project management and technical direction of the design and installation of a 2,000-foot long interception trench at the Rocky Flats Nuclear Weapons Plant in Jefferson County, Colorado. Mr. Sherman has recently completed the oversight and management of the installation of more than 70 groundwater extraction wells and vapor extraction and sparging points. This work was completed on the Stanford Research Park Superfund site in Palo Alto, California. Recently, he has concentrated on hydrocarbon remediation system design and installation utilizing on-site reinjection of treated groundwater and enhanced oxygenation systems.

Mr. Sherman is past Chairman of the Rocky Mountain Section of the Association of Engineering Geologists. He has served as Chairman of Executive Enterprises Seminars on Sampling and Data Analysis. He has extensive experience in geotechnical and geological investigations, groundwater studies, UST testing and evaluation construction materials testing and mineral resource evaluation.

Mr. Sherman is recognized in the region as one of the leading experts in underground storage tank management and mine subsidence. He has placed special emphasis on the application of geophysical techniques to environmental and geotechnical investigations. Clients for these projects range from Federal, state and local governments to private industry and commercial developments. The project types included petroleum distribution facilities, nuclear power plants, highways and streets, dams and reservoirs, transmission lines, sewage treatment plants and sewage systems, hazardous and industrial waste disposal areas, and mining facilities, as well as residential and commercial developments. Mr. Sherman has performed geotechnical

and geological investigations in Alaska, Arizona, California, Colorado, Idaho, Illinois, Montana, New Mexico, New York, Nevada, North Dakota, South Dakota, Texas, Utah and Wyoming. Additionally, he has international evaluation experience in the Middle East and Mexico.

REGISTRATION/CERTIFICATION

Wyoming Professional Geologist #2296

Indiana Certified Geologist #786

Certified Professional Geologist, CPG #6586

Petro Tite Training Course, 1986

40-Hour OSHA Training Course, 1987

8-Hour OSHA Supervisor Course, 1987

Nuclear Density Gauge Operation and Safety Training Course, 1984

NRC Quality Assurance Training, 1978

Asbestos Inspector, 1996

EXPERIENCE

Western Environment and Ecology, Inc., Littleton, Colorado; President, 1994.
SEACOR, Inc., Lakewood, Colorado; Principal Scientist, 1992-1993.
Roy F. Weston, Inc., Lakewood, Colorado; Principal Geologist, 1990-1992.
ATEC Associates, Inc., Denver, Colorado; Environmental Division Manager, 1985-1990.
Tierra Consultants, Inc., Denver, Colorado; President, 1982-1985.
Apache Energy and Minerals, Denver, Colorado; Senior Project Geologist, 1979-1982.
Dames and Moore, Denver, Colorado; Project Geologist, 1977-1979.
Resource Associates of Alaska, Fairbanks, Alaska; Staff Geologist, 1976.
Uranerez U.S.A., Inc., Casper, Wyoming; Staff Geologist, 1975-1976.
Amoco Production Company, Denver, Colorado; Lab Technician, 1974.
Cities Service Company, Durango, Colorado; Field Technician, 1973.

EDUCATION

B.S., Geology, University of Northern Colorado, 1975
Graduate Studies, New Mexico Institute of Mining and Technology, 1977

AWARDS

Rocky Mountain Associate of Geologists, Outstanding Senior, 1975
Who's Who in the West, 1988

PROFESSIONAL ASSOCIATIONS

Association of Engineering Geologist
Society of Mining Engineers, American Institute of Mining Engineers
American Institute of Professional Geologists
Senior Scientist Colca Canyon Scientific Expedition, 1990
Colorado School of Mines, Non-facility Senior Design Team Advisor

PUBLICATIONS/PRESENTATIONS

Sherman, Greg D., "Sampling and Data Analysis"; Executive Enterprises Seminar, Chairman, May 1992.

Sherman, Greg D., "Statistical Design of Sampling Plans"; Executive Enterprises Seminar, June 1990.

Sherman, Greg D., "Impact of the EPA UST Regulations"; Tri-State Petroleum Marketer, December 1988.

Sherman, Greg D., "Variables Effecting Volumetric Leak Detection Methods for Underground Storage Tanks"; Paper given to the Colorado Section, American Society of Civil Engineers, 1988.

Sherman, Greg D., "The Impact of Underground Storage Tank Regulations on Industry"; Extended Abstracts, American Institute of Chemical Engineers, National Meeting, 1988.

Sherman, Greg D., "Assessment of Subsidence Damage to Existing Structures in Louisville, Lafayette, Colorado"; Proceedings of the Colorado Governor's Conference on Subsidence, 1985.

Sherman, Greg D., "Geology and Mining History of the Boulder/Weld Coal Field"; Paper given at Denver Coal Club Meeting, 1985.

Sherman, Greg D., "The New Mexico Gold Belt Regional Structural Implications"; Proceedings of the Western Mining Association, 1982 Convention.

Sherman, Greg D., "Colorado Front Range Uranium Deposits, A Possible Origin": in review.

Sherman, Greg D., "Origin of Monoclinal Folding Near Livermore, Colorado"; Mountain Geologist, April 1976.

BRIAN R. PARTINGTON
Project Manager

PROFESSIONAL CAPABILITIES

Mr. Partington is currently the Senior Project Manager at **WESTERN ENVIRONMENT AND ECOLOGY, INC.** Prior to his present position, he was an Engineering Technician for Soils and Materials Consultants, Inc. in Arvada, Colorado. Soils and Materials is a Geotechnical Engineering firm which performs engineering services in the Colorado front range. Duties included, but were not limited to, field observations and testing, drilled sample logging for subsurface investigations, providing foundation recommendations, and engineering report preparation.

Mr. Partington's activities at **WESTERN ENVIRONMENT AND ECOLOGY, INC.** include the oversight of drilling operations, monitoring well completion, water and soil sampling, conduct mine subsidence investigations, generate Phase I and II Environmental Site Assessments, Underground Storage Tank Removal, Corrective Action Plan generation, prepare Site Characterization Plans, perform Threatened and Endangered Species Surveys, Geologic Hazard Assessments, wetland delineations, mentor junior level staff, and provide proposals for new projects.

REGISTRATIONS/QUALIFICATIONS

40 Hour OSHA Hazardous Waste Site Operations Certification

EXPERIENCE

Western Environment and Ecology, Inc., Littleton, Colorado
Project Manager, 2004

Soils and Materials Consultants, Inc. Arvada, Colorado
Field Technician, 1999 - 2004

EDUCATION

B.S., Environmental Science, Metropolitan State College of Denver, May 2002.
U.S. Army Corps of Engineers Wetland Delineation Course

APPENDIX F

RESUMES

Resume

TREVOR BRANCH

Staff Engineer

EDUCATION

B.S. Environmental Engineering
University of New Hampshire
Durham, NH 2010

TRAINING & CERTIFICATIONS

40 Hour OSHA Training

Engineer-in Training,
State of New Hampshire Serial No. 5359

PROFESSIONAL AFFILIATIONS

National Groundwater Association (NGWA)

PROFESSIONAL SUMMARY

Mr. Branch recently joined CTL | Thompson with over two years of previous experience providing environmental consulting throughout New York, New Jersey and Connecticut.

Currently, as a Staff Engineer/Geologist for CTL's Denver-based environmental consulting division, his responsibilities are primarily providing Phase I environmental site assessments and Phase II due diligence reports.

Mr. Branch's experience includes Phase I and II environmental site assessments, underground storage tank removals and site characterization and remediation.

PROJECT EXPERIENCE

5th and Walnut Parking Garage, Auraria Higher Education Center, Denver, Colorado
Served as site geologist during subsurface investigation activities to determine the extent of PAH contamination previously encountered in test borings and pits. Oversight of drilling, logging and field screening of soils, lab analysis and groundwater flow determination were all conducted during the Phase II investigation. The findings of this investigation indicated that the site was not a source of contamination and was likely downgradient from an unidentified source.

Baptist Community Center, Mount Vernon, New York
Performed Phase I ESA for a Baptist church and community center in Mount Vernon. A Phase I was required prior to bank approval of a refinanced loan due to environmental concerns due to site being located in a historically industrial area. Site assessment proved there were no RECs in the immediate area except for the heating oil UST located onsite that advised to be removed. Following recommendations from our Phase I ESA the loan was approved.

Rochester Avenue apartments, Brooklyn, New York
Served as project manager of a vacant previously developed lot in Brooklyn proposed for residential redevelopment. Site characterization, organization of contractors, oversight of soil removal, air quality monitoring, end-point soil and soil vapor sampling, vapor system design and summary report were all part of my duties during this project.

CTL | THOMPSON

Resume

MATTHEW L. WARDLOW, P.E.
Environmental Division Manager

EDUCATION

B.S. Engineering and Policy
Washington University, St. Louis, MO, 1993

TRAINING & CERTIFICATIONS

40 Hour OSHA Training

Confined Space Training

Mold Remediation Technician Training

Principals of Forced Air Remediation

Asbestos Inspector #775 Management Planner

Air Monitoring Specialist

PROFESSIONAL REGISTRATION

Registered Professional Engineer, Colorado No. 36223

PROFESSIONAL SOCIETIES

American Society of Civil Engineers

American Society of Foundation Engineers

Colorado Hazardous Waste Management Society

PROFESSIONAL SUMMARY

Mr. Wardlow joined CTL|Thompson, Inc. in 2004, having ten years of previous experience providing environmental consulting throughout Colorado. He currently serves as the Division Manager for CTL|Thompson's Denver-based Environmental Consulting Division, which includes staff supervision, project management, and business marketing. Mr. Wardlow has a variety of technical expertise in Phase I and II Environmental Site Assessments, underground storage tank removals, site characterizations, CDPHE Voluntary Cleanup applications, mold and moisture evaluations, and asbestos consulting services. Mr. Wardlow reviews and stamps Phase I and II studies that CTL|Thompson publishes, making sure that the latest regulations and standards are followed. He has developed a reputation as a consistent and reliable consultant for his clients, which include builders, lenders, attorneys, and government representatives. He encompasses a variety of project experience including transportation facilities, municipal buildings, residential developments, historical sites, medical facilities, and wastewater treatment plants.

PROJECT EXPERIENCE

Rose Medical Center, Aurora, Colorado -

Served as Project Manager for removal of this backup generator tank. Mr. Wardlow was able to negotiate closure of the site even though residual diesel and PAH contamination remained. This was accomplished by demonstrating the lack of impact to ground water, the inapplicability and uncertainty of certain soil standards, the lack of impact on proposed use, and by submitting a materials management and health and safety plan for proposed construction.

Aurora Academy Charter School, Aurora, Colorado -

Served as Project Manager for this voluntary study arising out of a concern of a TCE plume from the nearby Lowry site. Ground water sampling and characterization followed by soil vapor sampling indicated that the impact to a proposed gymnasium addition from solvent vapors was negligible. Served as head liaison to CDPHE personnel, detailing the site activities in a face-to-face meeting. CDPHE personnel issued a No Further Action letter to the school within one week of the meeting.

Roaring Fork Transportation Authority, Aspen, Colorado -

Served as Project Engineer for Roaring Fork Transportation Authority during the Environmental Consultation phase of the project. This project involved designing a treatment process for wash down waters and other waste streams. This will enable the client to abandon the septic field properly and switch its service over to Aspen Wastewater.

Troxel Residential Property, Gardner, Colorado -

As Project Manager, Mr. Wardlow was able to coordinate a contractor and obtain an UST Closure permit on an expedited basis. Extensive soil removal was needed at this UST installation in Carbondale, Colorado. Diesel-contaminated soils were segregated and characterized properly. The client was able to obtain tank closure on a rapid turnaround basis.

3960 High Street, Denver, Colorado -

Currently serving as Project Manager for a Phase I ESA, Phase II ESA and an UST removal. Phase II ESA was performed out of concern of prolonged industrial use on site and surrounding area. CTL discovered Carbon Tetrachloride and Chloroform above ground water standards, but in keeping up with the latest regulatory revision of March 2005 and by staying in contact with regulators, CTL was able to demonstrate that the more stringent standard of Carbon Tet is inapplicable, and that Chloroform is ubiquitous in lab results. Client successfully sold this industrial property.

Governor's Mansion, Denver, Colorado -

Project Manager for removal of a 1,000-gallon gasoline tank, and a second, 500-gallon waste oil tank that was discovered. Closure was obtained.

3500 South Clarkson, Denver, Colorado -

Project Manager for a soil and ground water study. This involved concerns by Swedish Hospital of a historical gas station at the specific site. Temporary monitoring wells were installed around the site of the project and the ground water was tested. The ground water was discovered to be un-impacted and the client purchased the site successfully.

Highlands Ranch and Grant Ranch Subdivisions, Denver Area, Colorado -

Project Manager and reviewer for over 200 mold and moisture intrusion evaluations for various builders. Projects have included an initial evaluation with air sampling, a perimeter drain observation, a post-mitigation observation, and followup sampling and placement of a temperature and humidity datalogger in the crawl space. Other evaluations throughout a given house have included roof leaks, elevated humidity in the attic, foul odors from sump pits and other locations, window flashing, and drainage issues.

Hotel Building, Aspen, Colorado -

Project Engineer for mold and moisture consultation. This consultation was performed in association with contractor remodeling of the building. CTL|T assisted in evaluating moisture intrusion pathways such as roof flashing. CTL|T gathered engineering information and air sampling data into a report detailing the recommended remediation protocols. CTL|T performed a follow-up evaluation and sampling after remediation, documenting that remediation was performed to industry standards. The contractor was able to proceed with the remodel, putting previously abandoned hotel space into profitable use.

Beacon Point, Aurora, Colorado -

Project Engineer and Reviewer for storm water consultation for a residential developer. Reviewed the Storm Water Management Plan (SWMP) after development and before initial application to the state. Reviews the SWMP to reflect changing site conditions. Also provides general consultation to the client during construction, offering erosion and sediment control alternatives.

Denver Federal Center, Colorado –

Project Engineer for development of the SWMP for the general contractor. Project involves reconstruction of roads, parking lots, and utilities. This federal project is administered directly by the EPA. Mr. Wardlow provided senior review and oversight for development of the SWMP

CTL | THOMPSON INCORPORATED

MINE SUBSIDENCE INVESTIGATION
ERIE PARCEL
A.K.A 4-CORNERS
SOUTHWEST OF ERIE PARKWAY
AND EAST COUNTY LINE ROAD
ERIE, COLORADO

Prepared For:

RMCS, Inc.
21 South Sunset Street
Longmont, Colorado 80503

Attention: Justin McClure

Project No. DN47,332-110

February 10, 2015

1971 West 12th Avenue | Denver, Colorado 80204 | Phone: 303-825-0777 | Fax: 303-825-4252

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APPENDIX A – SUMMARY LOGS OF EXPLORATORY BORINGS

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SCOPE AND SUMMARY

This report presents the results of our Mine Subsidence Investigation for the 47-acre Erie Parcel, also known as 4-Corners, southwest of Erie Parkway and East County Line Road in Erie, Colorado (Fig. 1). It is reported that the Marfel and Pinnacle mines underlie this property and entry points to both mines are on the property. The purpose of this investigation is to evaluate the subsurface conditions, estimate the depths where coal mining occurred, confirm the mapped mine access locations, evaluate the risk of subsidence, and provide mitigation concept (if merited) to reduce the likelihood of potential subsidence impacts on site development and construction. This investigation was a team effort performed by CTL | Thompson, Inc. and Kanaan Hanna, who served as a consultant to RMCS. The report includes a descriptions of the site conditions, our understanding of the proposed development, a summary of previous investigations and available mine data, subsurface conditions encountered in our exploratory borings and test pits, and discussions of site development and construction as influenced by the coal mine(s). The scope was described in our Contract Modification No. 2 (DN 14-0290-CM2) dated October 9, 2014 and revised on October 15, 2014.

The field investigation was performed between October 22 and November 5, 2014. A total of ten (10) deep exploratory borings (B-1 to B-10) were drilled, of which three where cored and seven drilled with air rotary. Boring depths varied from 120 to 155 feet. Borehole geophysical logging and void imaging were conducted in support of the exploratory plan.

This report is based on available historical coal mine records, review of previous investigation performed by others, exploratory data collected during this investigation, our subsidence experience in the Boulder-Weld Coal Field, and our understanding of the planned development. The results and findings have led to the following conclusions and recommendations, with more detailed discussion in the report.

Conclusions

1. Historical records indicate that the Marfel and Pinnacle mines and shafts are on this property. Maps of the Marfel and Pinnacle extractions are not available. Mining records show that there are three mines adjacent to the parcel including Garfield No. 1 mine to the north, Mitchell mine to the east, and McGregor mine to the south. A map of the McGregor mine documents a subsidence feature on the south boundary of this site and indicates that mining in the Pinnacle occurred prior to 1894.

2. The Marfel and Pinnacle shafts were found through test pits and borings. The Marfel shaft is 7-feet wide, 12-feet long, and at least 225 feet deep and is backfilled with mine spoil and trash. The Pinnacle shaft is circular with a measured diameter of 10 feet. The depth of the Pinnacle shaft is not known. The Pinnacle shaft backfill consisted of mine spoil. A sloped entry was not found in this investigation.

3. Subsoils encountered in our borings consisted of about 8 to 21 feet of interlayered sand and clay underlain by bedrock of the Laramie formation to the maximum explored depth of 155. The Fox Hills formation was not encountered. Thin rider coal seams were found within the upper 55 feet of most borings. Two mineable coal seams were found. The upper mineable seam depth varied between 80 and 125 feet and was 2.5 to 7 feet thick. The depth to the lower mineable seam varied between 90 and 142 feet and it was 3 to 8 feet thick.

4. Exploratory program: The geotechnical underground exploration, borehole geophysical logging, and void mapping confirmed the presence of two coal seams, referred to as the upper and lower seam, and indicated the following:

   - The upper seam was not mined.
   - The lower seam was mined using a room and pillar mining method.
   - The mine is flooded and contains fine coal/rubble without open void space, as confirmed by the downhole video camera and sonar imaging in boring B-3 and drill observation. The density of the coal/rubble is assumed to be less than 70 pcf. This indicates that the residual subsidence is complete.

5. Bedrock physical characteristics:

- Rock strength – The average rockmass strength of the bedrock claystone/sandstone, based on measured laboratory physical properties, is 2,200 psi. This strength is considerably greater than the overburden pressure, estimated as 100-120 psi.

- Rock Quality Designation (RQD) – RQD values for core in B-1 to B-3 ranged from 50 to 100 percent, which indicates the bedrock quality is good.

- Overburden pressure – Stress calculations indicate that the overburden pressure (vertical and horizontal stress) imposed on the mine workings of the lower seam is static. We conclude that the stresses acting on the mine roof are low and will not adversely affect the bedrock integrity.

- Mine time period effect – Since mining operation ceased more than 100 years ago, residual subsidence has not produced any surface disturbance. The subsidence feature reported on the McGregor mine map was dated 1894.

- Interburden stability – The interburden thickness between the two seams is approximately 12 feet. This is likely too thin to allow for mining in both seams, as reported by ATEC/WEE. We believe that an unstable mine roof/floor would have resulted if multi level mining 12 feet apart occurred. This would have led to major ground control hazards.

- Given the present conditions of the mine workings and the bedrock integrity, we believe the likelihood of any further surface subsidence or ground movement is very low.

6. Mine subsidence risk evaluation:

- Evaluation of subsidence using mine geometry and bulking factor methods indicates that the subsidence risk is very low.

- Probability of sinkhole development – The sinkhole risk evaluation performed for the lower seam using B-1 to B-3 core data indicates that the probability of ground deformation or sinkhole development is less than 5 percent. This is also attributed to the physical characteristics of the bedrock claystone/sandstone materials. Therefore the risk for future subsidence and or sudden sinkhole formation is very lot.

7. Based on analysis of the soil and bedrock conditions, depth of mining, extraction thicknesses, and our geotechnical-mining experience, we judge that the overall risk of future mine subsidence is very low. The subsidence hazard will not preclude the development of this site. Post-tensioned slab-on-grade, spread footings and/or mat foundations are ideal. Basements can be used. Deep foundations should be avoided. Sub-excavation as means to mitigate expansive soil and bedrock and to allow for shallow foundation use will not substantially increase the risk. Wells or other groundwater altering devices should not be used.

   Risk of potential ground subsidence is considered high within the vicinity of the two shafts if they are not mitigated. We recommend that the shafts be mitigated; after which, passive uses should be planned within 42 feet of the Marfel and 40 feet of the Pinnacle shaft centers.

SITE CONDITIONS

The 47-acre Erie Parcel is located south of Erie Parkway and west of East County Line Road in Erie, Colorado (Fig. 1 / Photo 1). The site is bordered by a residential subdivision on the west, residential/commercial developments on the south, and commercial property on the east. The site was formerly used for agricultural purposes and was predominately covered with wheat. Topography prepared by Rock Creek Surveying, LLC indicates that the ground surface generally slopes to the east with about 50 feet of vertical relief across the parcel. We visited the site several times over the course of this investigation and did not observe any surficial evidence of ground surface settlement due to underground coal mining except a spoil pile near the reported location of the Marfel shaft. Surficial subsidence features were not apparent.

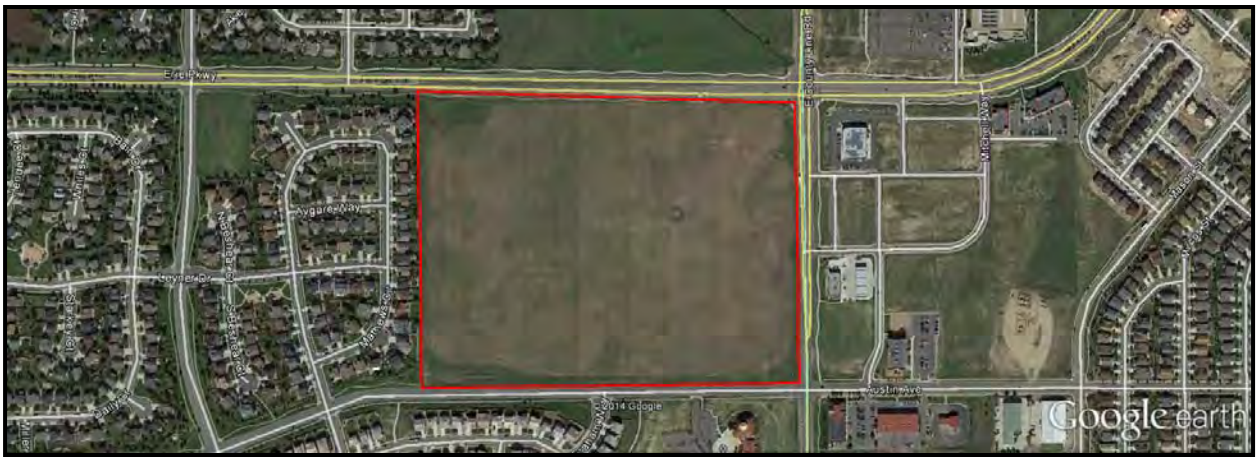

Photo 1 – Google Earth© Aerial Site Photo, October 6, 2013.

PROPOSED DEVELOPMENT

We understand that the proposed development is planned as mixed-use including single-family residences, townhomes, apartments, and commercial/retail facilities. Single-family residences and townhomes may be one or two-story, wood-framed structures with or without basements. Apartments will likely be multi-story, wood or metal stud-framed structures. Commercial/Retail structures would likely be one to two-stories without basements. Paved roads and parking lots will provide access. Buried utilities would serve the project.

ABANDONED COAL MINING RECORDS

We reviewed mining records and maps provided by the Colorado Geologic Survey (CGS) and the Division of Reclamation and Mining Safety (DRMS). Review of these records indicates that the property is underlain by abandoned coal mines associated with Marfel and Pinnacle operations (Photo 2). As shown in Photo 2, three mines are reported adjacent to the property: Garfield No. 1 mine to the north, Mitchell mine to the east, and the McGregor mine to the south.

Photo 2 – Google Earth© Aerial Site Photo, October 6, 2014.

Very few records about the Marfel and Pinnacle mines were submitted by the mining companies. Pertinent information that is not available includes mine surveys (maps), records of the number of mined levels, and depths to the extraction. Data pertaining to Marfel and Pinnacle mines and adjacent mines are listed below in Table 1.

TABLE 1
SUMMARY OF MINE RECORDS

Mine	Production Years	Production (tons)	Number of Mined Seams
Mitchell	1883-1891	204,171	1
Pinnacle	Before 1894	--	--
McGregor	1885-1895	85,159	1
Garfield #1	1893-1897	122,711	1
Marfel	1897-1904	14,302	--

Mining Methods

Coal in the Boulder-Weld Coalfield was typically mined during the early 20th century using a room and pillar mining method. To access the coal, slope entries and/or shafts were excavated to the depth of the mineable coal seam and sometimes deeper. Mine shafts were also used to explore the subsurface materials. Air shafts were placed near entry or production shafts and at other locations depending upon the ventilation layout of the mine. Once the slope entry or production shaft reached the mineable coal

layer, haulageways (main and submain entries) were excavated (cut) parallel and perpendicular to the strike of the seam. After these entities were constructed, rooms – typically 15 to 20 feet wide and 100 to 300 feet long – were mined with pillars approximately 15 to 40 feet wide between rooms for support. Upon completion of the room and pillar operation, pillars were partially or fully removed using retreat mining techniques. Typically, 15 to 25-foot wide sections of support pillars were removed leaving stump pillars. Maps of the Garfield No. 1, Mitchell, and McGregor mines show that a room and pillar method was used.

Garfield No. 1 Mine

Photo 4 shows a portion of the map of Garfield No. 1 Mine. The southern border of the map correlates to present day Erie Parkway. The pillars for Garfield No. 1 upper seam are mapped as mined out to southern boundary.

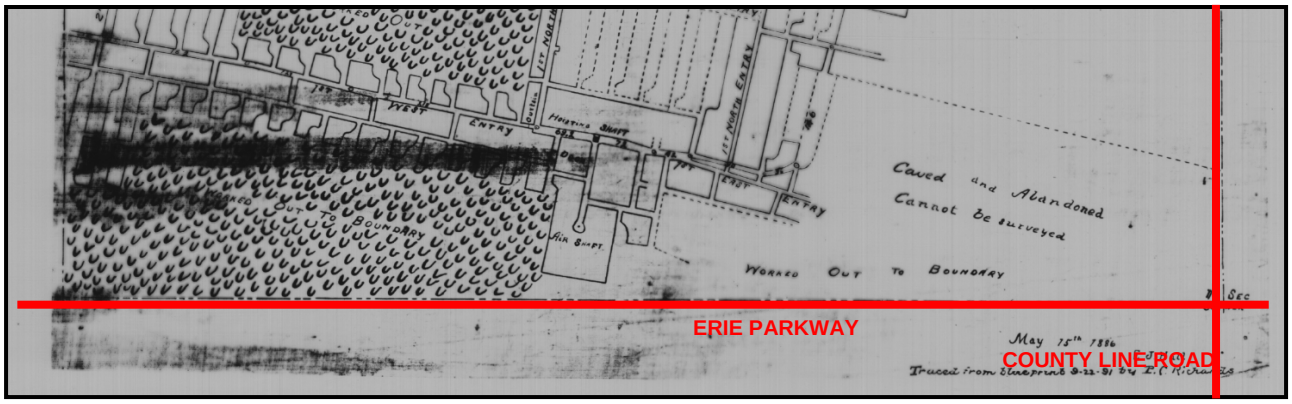

Photo 4 – Map of Garfield No. 1 – Upper Seam

Mitchell Mine

Photo 5 shows an 1886 map of the Mitchell Mine. We have no records indicating the depths to the mine. The mine was worked out up to the edge of East County Line Road. A haulageway can be seen extending up to the east edge of County Line Road.

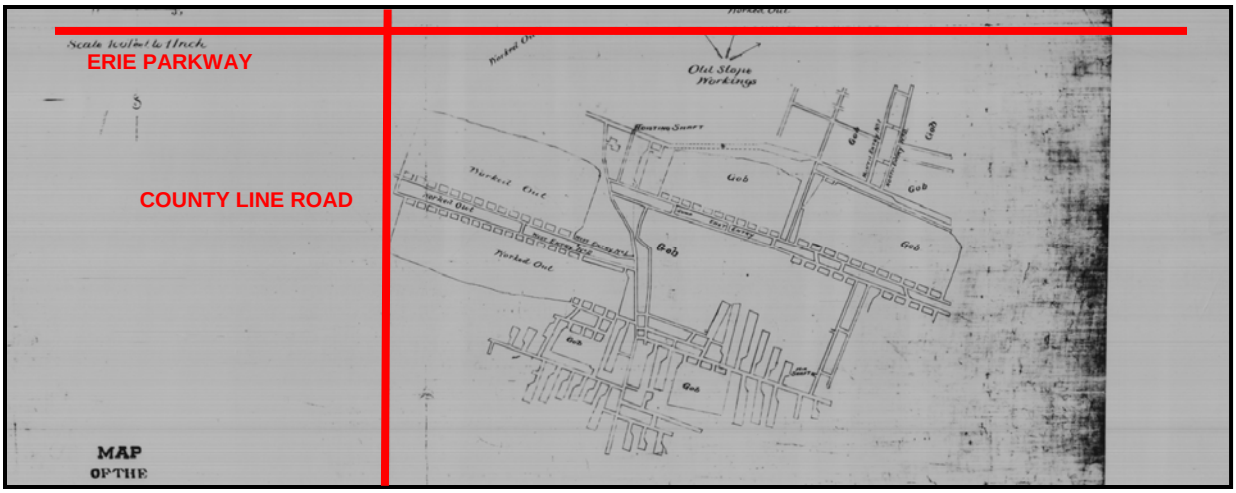

Photo 5 – Map of Mitchell Mine

McGregor Mine

Photo 6 shows an 1894 map of the McGregor Mine. The mine was relatively far south of the project site. Two important features on this map are the reported crevice (subsidence) feature caused by the mine workings associated with Pinnacle operations and boney coal encountered on the north side of the McGregor Mine. Boney coal is a term used for coal that has no mineral value. We assume that the Pinnacle was mined prior to 1885 and the subsidence feature occurred approximately 10 years later.

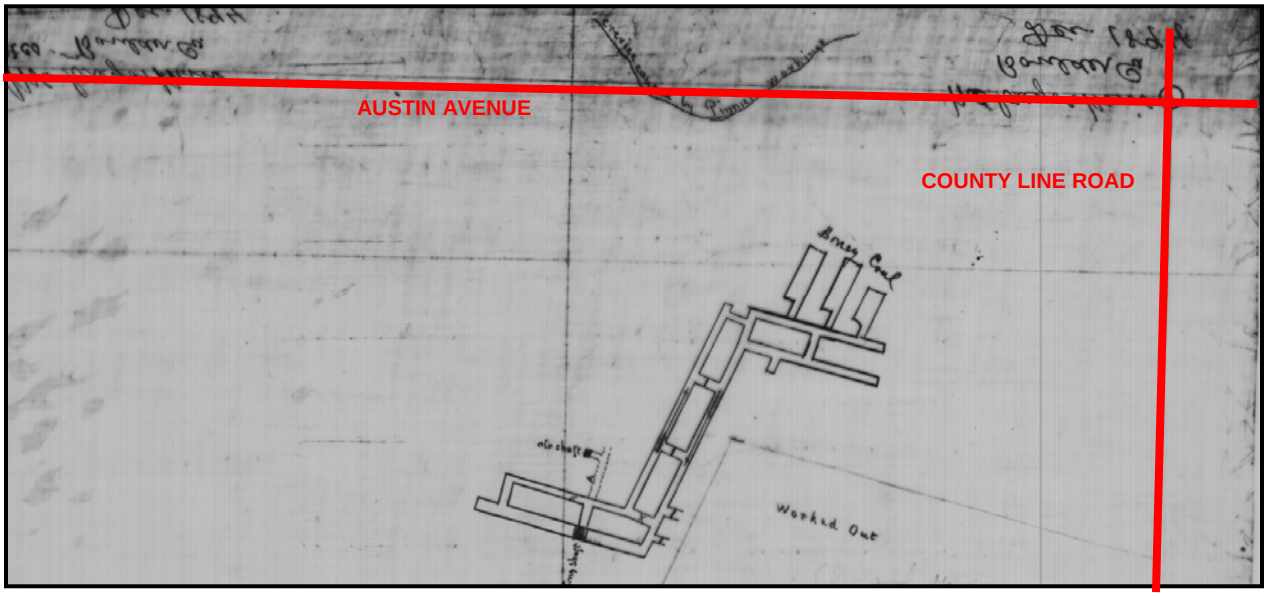

Photo 6 – Map of McGregor Mine

PREVIOUS INVESTIGATIONS

Several previous investigations were performed for this site. We reviewed four documents that were obtained from the CGS or provided by RMCS:

- *Preliminary Subsidence and Preliminary Geotechnical Engineering Investigation, ATEC Associates, Project No. 41-74001, April 3, 1987;*
- *Preliminary Mine Subsidence Investigation, Western Environmental and Ecology, Project No. 422-001-01, December 23, 2005;*
- *Review Reports and Documents, Abandoned Mine and Subsidence Investigation, Zapata Engineering, Blackhawk, Project No. 5083, October 24, 2007; and,*
- *Preliminary Geotechnical Investigation, CTL | Thompson, Project No. DN47,332.000-115, September 10, 2014.*

<u>ATEC and WEE Investigations (1987 and 2005)</u>

ATEC and Western Environmental and Ecology (WEE) advanced a total of 15 deep borings in their 1987 and 2005 investigations. It was reported that two mineable coal seams exist below the property. They reported that the depth to the top of the upper seam varies from 80 to 116 feet and the depth to the lower seam varies from 101 to 136 feet. The two seams are reportedly 12 feet apart (interburden). ATEC's 1987 report indicates that the Marfel mine has an average combined coal thickness of about 14 feet. WEE reported that mining occurred in the upper, lower, and both seams at individual drill locations. An 18-inch thick void was reported at X-13. WEE commented on the height of collapse above the mine workings in the Boulder-Weld Coal Field and this project as follows: *"the observed results from the drilling on the site show that collapse is confined to an interval of 20 to 40 feet above the workings".* The reports include vertical profiles of electrical resistivity, spontaneous potential, caliper, and natural gamma. The profiles and boring descriptions were considered in the development of this report. The approximate locations of the borings from previous investigation have been included in this report (Fig. 1). We have the geophysical data in our files.

Blackhawk Document Review (2007)

Blackhawk's 2007 document review indicated a discrepancy in the Marfel mine documents. One record pertaining to the Marfel mine reports that the mine is located several miles north in Section 13. The Erie Parcel is located in Section 24. We do not know if this is a numerical error in Section reporting by the mining company or if the record is accurate.

CTL | Thompson Preliminary Geotechnical Investigation (2014)

Exploratory test pits were excavated in an effort to locate mapped mine shafts or slope entries. Two mine shafts to the Marfel and Pinnacle mines are reported on the property by CGS and United States Geological Survey (USGS). Blackhawk concluded that the two government agencies report two different locations for each access point; totaling four possible shaft locations. The United States Bureau of Mines (USBM) records indicate that a sloped entry occurred for the Marfel mine. The reported locations of the four possible locations are shown on Fig. 1. All locations were surveyed and staked in the field by Rock Creek Surveying, LLC. The reported Marfel shaft location by CGS was immediately adjacent to a spoil pile (Photo 7).

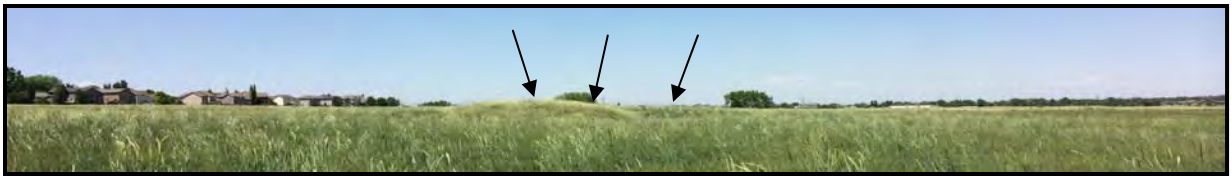

Photo 7 – Photograph of spoil pile, June 13, 2014.

Test pits at the two reported locations of the Marfel mine entry did not reveal evidence of mining. Excavation of the soil pile indicated that the pile likely originated from a mine entry excavation. A suspicious location was observed northeast of the spoil pile that did not contain vegetation. A test pit at this location unearthed evidence of mining. Debris and trash including bottles, shoes, bed framing, a cow carcass, wagon parts, and other garbage and mining tools were found. The excavation exposed in-place

timber lagging. We initially suspected that the reported sloped entry to the mine was exposed. A horizontal alignment was approximated in the field and surveyed by Rock Creek. Verification testing (drilling or geophysics) was recommended to evaluate the entry and overlying bedrock properties.

Test pits of the two reported locations of the Pinnacle mine entry did not reveal evidence of mining. An excavation at a suspicious location unearthed the Pinnacle mine entry and revealed spoils extending downward. The spoils extended horizontally in a circle with a diameter of about 10 feet which indicates that this entry was a vertical shaft. These conditions were encountered consistently to the maximum explored depth of 20 feet. Rock Creek surveyed the location.

MINE SUBSIDENCE INVESTIGATION

Based on review of previous mine subsidence investigations, the exposed conditions in our June 2014 test pits, and meetings with CGS, an investigative approach to evaluate the suspected slope entry to the Marfel mine and reported underlying coal extractions was developed by Kanaan Hanna, (as a consultant to RMCS) and Ron McOmber and Matt Monteith of CTL | Thompson. The field investigation began in October, 2014 and consisted of drilling 10 deep exploratory borings (B-1 to B-10). Three borings, B-1 to B-3, were sampled using 3-inch diameter HQ cores and seven borings were advanced using air-rotary drilling. Additionally, we drilled several shallow and deep borings using solid-stem auger to evaluate the location of the suspect sloped entry. We also tested and logged the deep holes for resistivity, gamma, density, and caliper. Downhole video camera and sonar scanning tools were used to attempt to image the conditions of mine workings encountered during drilling. IDS-Colog Group performed the geophysical logging and Zapata provided the imaging tools. Each boring location was surveyed by Rock Creek Surveying, LLC prior to drilling. Precision Sampling of Colorado Springs drilled the borings using a CME750X all-terrain drill rig and a Boart Longyear track-mounted rig. Our representatives observed the drilling and coring operations, logged the subsurface conditions, and obtained core samples. Logs of

Exploratory Borings are presented in Appendix A, Core Logs and Photographs in Appendix B, and Geophysical Test Logs in Appendix C.

The samples were transported to our laboratory where they were examined, classified by our engineers, and test intervals were selected. Advanced Terra Testing Group of Lakewood, Colorado performed 19 unconfined compression tests with Poisson's ratio measurements utilizing ASTM D 7012 Method D. We performed general classification testing and splitting tensile tests utilizing ASTM C 496.

Marfel Mine Entry Investigation

As discussed previously, the USBM reported that the access to the mine was through a sloped entry (haulageway). Our June 2014 test pit investigation led us to believe that this was the case. B-1 was cored at station 1+00 of the suspected slope alignment to: a) verify the presences of the haulageway; b) collect samples for testing; and c) evaluate the subsidence potential above the entry (Fig. 2). B-1 did not indicate the presence of a sloped entry. Several shallow borings were then advanced to further investigate the location of the sloped entry. One boring was drilled at station 0+40 but did not encounter the entry. Two more borings were then offset from 0+40, 5 feet left and 10 feet right of the suspected alignment. Neither indicated the presence of a sloped entry (Figs. 2 and A-1). We then reassessed our opinion of a sloped entry and postulated that the entry could be a vertical shaft.

To investigate the possibility of a shaft, we returned to our 2014 test pit location and drilled seven shallow borings and one deep boring. A vertical shaft was found at station -0+05. The shaft appeared to be rectangular with dimensions of approximately 7-feet, 12-feet and at least 225 feet deep. The boring drilled at station -0+05 was terminated in shaft backfill at a depth of 225 feet. Observation of drill performance leads us to believe that the shaft backfill is very soft to soft. Our 2014 test pits revealed trash within the fill. These holes were not logged with geophysical test equipment. Logs of Exploratory Shaft Borings are shown in Appendix A.

Description of Deep Exploratory Borings (Mine Extraction Borings)

The following descriptions summarize the results of our 10 borings (B-1 to B-10) and do not incorporate descriptions from previous investigations. Subsoils consisted of about 8 to 21 feet of interlayered sand and clay underlain by bedrock of the Laramie formation to the maximum explored depth of 155 feet. The Fox Hills formation was not encountered. Thin, rider coal seams, up to 1.5 feet were found within the upper 55 feet of most borings. Two mineable, upper and lower, coal seams were found. The depth to the upper seam varied between 80 and 125 feet and it was 2.5 to 7 feet thick. The depth to the lower mineable seam varied between 90 and 142 feet and was 3 to 8 feet thick. Table 2 presents the data (B-1 to B-10) from this investigation and information on the coal seam geometry including elevation data and thickness, drilling circulation, and interburden thickness. For the purpose of comparison, the table also includes the boring data from the previous ATEC and WEE studies (X-1 to X-15). The table also includes our opinions of were mining occurred. Pertinent engineering characteristics of the soil and bedrock are described in the following paragraphs.

TABLE 2
SUMMARY OF COAL AND MINE GEOMETERY

BORING	GROUND SURFACE ELEVATION (FEET)	UPPER SEAM				LOWER SEAM				CIRCULATION LOST (YES/NO)	INTERBURDEN THICKNESS (FEET)
		TOP OF COAL DEPTH (FEET)	TOP OF COAL ELEVATION (FEET)	COAL THICKNESS (FEET)	MINED (YES/NO)	TOP OF COAL DEPTH (FEET)	TOP OF COAL ELEVATION (FEET)	COAL THICKNESS (FEET)	MINED (YES/NO)		
WEE 2005 STUDY											
X-1	5096	100	4996	5	NO	--	--	--	YES	YES	--
X-2	5089	99	4990	4	NO	116	4973	5	NO	NO	13
X-3	5088	92	4996	4	NO	106	4982	5	NO	NO	10
X-4	5095	116	4979	5	NO	136	4959	4	NO	NO	15
X-5	5082	80	5002	6	NO	102	4980	4	YES	YES	16
X-6	5080	95	4985	3	NO	110	4970	4	YES	YES	12
X-7	5088	97.5	4990.5	5	NO	115.5	4972.5	4.5	NO	NO	13
X-8	5088	100.5	4987.5	5	NO	118	4970	4	NO	NO	12.5
X-9	5094	98.5	4995.5	4	NO	115	4979	5	NO	YES	12.5
X-10	5100	114	4986	5	NO	130	4970	--	NO	YES	11
X-11	5110	121	4989	5	NO	135	4975	4	NO	NO	9
X-12	5096	108.5	4987.5	5	NO	128.5	4967.5	7	NO	YES	15
X-13	5079	85	4994	4.5	NO	101	4978	5	YES	YES	11.5
X-14	5100	103	4997	4	NO	--	--	--	YES	YES	--
X-15	5109	100	5009	2.5	NO	116	4993	4	YES	YES	13.5
CURRENT INVESTIGATION											
B-1	5087	92	4995	4.5	NO	102	4975	4.5	YES	--	15.5
B-2	5081	96	4985	6	NO	123	4958	3	NO	--	21
B-3	5078	85.5	4992.5	4.5	NO	97	4981	8	YES	--	7
B-4	5078	84	4994	3	NO	90	4988	4	NO	NO	3
B-5	5076	87	4989	4.5	NO	103	4973	4	NO	NO	11.5
B-6	5085	93	4992	5	NO	109	4976	3	YES	NO	11
B-7	5100	125	4975	7	NO	142	4958	7	NO	NO	10
B-8	5116	87	5029	6	NO	--	--	--	NO	NO	--
B-9	5118	80	5038	7	NO	114	5004	3	NO	NO	21
B-10	5086	100	4986	7	NO	119	4967	8	YES	NO	12

Core Boring B-1

Sandy clay was encountered from 0 to 10 feet underlain by silty sand to 21 feet. Bedrock sandstone and claystone with intermittent thin rider coal seams was encountered to a depth of 92 feet. The upper seam was penetrated from 92 to 96 feet. Core recovery of 73 percent and rock quality designation (RQD) of 40 percent was measured in the upper seam. Maximum caliper deflection of 4 inches was measured in the upper seam at 94 feet. The lower seam was penetrated from 102 feet to 106 feet. The core recovery and RQD was zero in the lower seam. *The lower seam was mined*. Total core depth was 115 feet. The geophysical tools could not be lowered past 107 feet.

Core Boring B-2

Interlayered sand and clay was encountered from 0 to 20 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 96 feet. The upper seam was penetrated from 96 to 102 feet. Core recovery of 77 percent and RQD of 47 percent was measured in the upper coal seam. The lower seam was penetrated from 123 to 126 feet. The core recovery was 100 percent and RQD was 40 percent in the lower coal seam. The geophysical tools could not be lowered past 70 feet. *No mining occurred at this location*. Total core depth was 131 feet.

Core Boring B-3

Interlayered sand and clay was encountered from 0 to 19 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 85.5 feet. The upper seam was penetrated from 85.5 to 90 feet. Core recovery of 100 percent and RQD of 58 percent was measured in the upper coal seam. The caliper tool did not deflect in the upper coal seam. The lower seam was penetrated from 97 to 105 feet. The core recovery was 63 percent and RQD was 50 percent in the lower coal seam. A possible void was encountered from 99.5 to 101.5 feet; however, less than 1-inch of caliper deflection was measured in the lower seam. The geophysical tools could not be lowered past 103 feet. Also, the downhole video camera and sonar tools could not be lowered past 99 feet. This indicates that the mine workings are filled with rubble/coal with no evidence of an open void. *The lower seam was mined at this location*. Total core depth was 107 feet.

Air-Rotary Boring B-4

Interlayered sand and clay was encountered from 0 to 22 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 84 feet. The upper seam was penetrated from 84 to 87 feet. The caliper tool did not deflect in the upper coal seam. The lower seam was penetrated from 90 to 94 feet. The caliper tool did not deflect in the lower coal seam. Drilling circulation was not lost. *No mining occurred at this location*. Total drilled depth was 115 feet.

Air-Rotary Boring B-5

Interlayered sand and clay was encountered from 0 to 19 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 87 feet. The upper seam was penetrated from 87 to 91.5 feet. The lower seam was penetrated from 103 to 107 feet. The geophysical tools could not be lowered deeper than 85 feet. Drilling circulation was not lost. Evidence of mining was not apparent during drilling. Total drilled depth was 115 feet.

Air-Rotary Boring B-6

Sandy clay was encountered from 0 to 18 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 93 feet. The upper seam was penetrated from 93 to 98 feet. The lower seam was penetrated from 109 to 112 feet. Drilling circulation was not lost. The geophysical tools could not be lowered deeper than 89 feet due to borehole caving during the PVC casing installation. Drill performance indicates that *mining occurred in the lower coal seam*. Total drilled depth was 125 feet.

Air-Rotary Boring B-7

Interlayered sand and clay was encountered from 0 to 14 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 125 feet. The upper seam was penetrated from 125 to 132 feet. The lower seam was penetrated from 142 to 149 feet. Drilling circulation was not lost. Geophysical tools lowered to a depth of 155 feet. Caliper deflection measurements show *no indication of mining*. Total drilled depth was 155 feet.

Air-Rotary Boring B-8

Interlayered sand and clay was encountered from 0 to 8 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 87 feet. The upper seam was penetrated from 87 to 93 feet. The lower seam was not apparent. Drilling circulation was not lost. Geophysical tools lowered to a depth of 146 feet. Caliper deflection of 2-inches was measured at 134 feet. We believe that this magnitude of deflection was likely created by drilling. *No mining occurred at this location*. Total drilled depth was 155 feet.

Air-Rotary Boring B-9

Sandy clay was encountered from 0 to 13 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 80 feet. The upper seam was penetrated from 80 to 87 feet. The lower seam was penetrated from 114 to 117 feet. Drilling circulation was not lost. Geophysical tools lowered to a depth of 112 feet. *No evidence of mining was observed at this location*. Total drilled depth was 125 feet.

Air-Rotary Boring B-10

Interlayered sand and clay was encountered from 0 to 18 feet underlain by bedrock sandstone and claystone with intermittent thin coal seams to a depth of 100 feet. The upper seam was penetrated from 100 to 107 feet. The lower seam was penetrated from 119 to 127 feet. Drilling circulation was not lost. Geophysical tools lowered to a depth of 110 feet. *Mining was observed in the lower seam.* Total drilled depth was 155 feet.

Material Physical and Strength Properties

Laboratory tests consisted of moisture content, density, gradation, Atterberg limits, unconfined compression, Young's Modulus, Poission's Ratio, and splitting tensile strength (Table 3). The following summarizes the results of the tests.

TABLE 3
SUMMARY OF LABORATORY TEST RESULTS

CORE	DEPTH	MOISTURE CONTENT (%)	MOIST DENSITY (pcf)	PASSING NO. 200 SIEVE (%)	ATTERBERG LIMITS		UNCONFINED COMPRESSION TESTS			SPLITTING TENSILE STRENGTH (psi)	SOIL TYPE
					LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (psi)	YOUNG'S MODULUS (x 10^6 psi)	POISSON'S RATIO		
B-1	62	10.7	144	99	51	34	1090	0.17	0.429		CLAYSTONE
B-1	76	10.1	137	77	30	12	4680	0.06	0.141		CLAYSTONE
B-1	86	17.7	133	98			400	0.04	0.374		CLAYSTONE
B-1	87.5		131				80	0.00	0.362		CLAYSTONE
B-1	91		122				180	0.02	0.443		COAL
B-1	98		139				300	0.02	0.135	20	CLAYSTONE AND LIGNITE
B-1	109		138				1800	0.09	0.138		CLAYSTONE/SANDSTONE
B-2	79		139				1330	0.11	0.163		CLAYSTONE
B-2	82		136				40	0.00	0.137		LIGNITE/COAL
B-2	97		79				780	0.03	0.032		COAL
B-2	104.5		142				2080	0.44	0.146	215	CLAYSTONE/SANDSTONE
B-2	108.5		145				1690	0.31	0.073	170	CLAYSTONE/SANDSTONE
B-2	122		142				780	0.14	0.254	260	CLAYSTONE/SANDSTONE
B-2	126.5		146				1740	0.22	0.379		CLAYSTONE/SANDSTONE
B-3	79.5		162				8470	4.05	0.339		SANDSTONE
B-3	81		146				1230	0.13	0.372		CLAYSTONE
B-3	88.5		81				1150	0.23	0.144		COAL
B-3	98		135				90	0.01	0.369	15	LIGNITE/COAL
B-3	105		142				940	0.17	0.308		SANDSTONE/CLAYSTONE

Bedrock primarily consisted of claystone with interbedded sandstone and lens of coal (rider seams) and lignite. Three bedrock samples had 77 to 99 percent clay and silt size particles and exhibited low and moderate plasticity. Moist density varied 133 to 162 pcf. The unconfined compressive strength (UCS) for claystone in six samples varied 400 to 4680 psi, and the UCS for claystone/sandstone varied 780 to 2080 psi in six samples. The UCS for sandstone measured in one sample was 8470 psi. In general, the UCS varied 400 to 8470 psi with an average strength of 2200 psi. Poisson's ratio varied from 0.14 to 0.429. Tensile strength varied 170 to 260 psi in three samples. We judge the claystone and sandstone are comparatively strong and competent.

Coal cores were primarily brown to black, highly fractured, and blocky. Lignite was interbedded in a few cores. Coal moist density varied 79 to 139 pcf. Coal UCS varied 40 to 1150 psi with an average strength of 420 psi. Poisson's ratio varied 0.032 to 0.443. Tensile strengths of 15 and 20 psi were measured in two samples. We judge the coal and lignite are weak.

Bedrock Physical Characterization and Ground Stability Evaluation

The methodology used in our evaluation was quantitatively based on: 1) various rock mass classifications methods (such as Bieniawski 1984 & 1989); 2) core data and physical properties and 3) our practical mining-geotechnical experience, and knowledge of underground mining operations (see reference list at the end of the text).

Rock Strength

The rockmass strength of the bedrock claystone/sandstone varied 700 to 8,470 psi, and was 400 psi in one sample. The average strength was 2,200 psi. The rock strength rating is estimated to be medium strong to strong. This range of rock strength is much greater than the overburden pressure, estimated as 100 – 120 psi (using 1.0-1.2 psi per foot of depth, and an average overburden depth of 100 feet).

Rock Quality Designation (RQD)

The RQD value is another criterion used to classify the bedrock quality. An RQD value of less than 25 indicates very poor rock, 50-75 fair, 75–90 good, and 90-100 excellent. Reviewing B-1, B-2, and B-3 core data (Figs. B-1 to B-6) shows the RQD values ranged from 50 to 100 percent. We judge that the bedrock quality is good.

Overburden Pressure

We believe that the overburden pressure (vertical and horizontal stress), imposed on the mine workings of the lower seam, is static. The following equations were used:

S_v = 1.0-1.2 h (psf), or $S_v = \gamma h$ and
$S_h = S_v (\nu/1-\nu)$, where
S_v and S_h = vertical and horizontal stress (psf), respectively
h = overburden (vertical) depth (feet)
γ = the unit weight of the rock (pcf)
ν = Poisson's ratio

The value of the Poisson's ratio (ν) for the claystone/sandstone is between 0.2 and 0.35. For a value of Poission's ratio of 0.2, $S_h = 1/4\ S_v$; and if; $\nu = 0.33$, $S_h = 1/2\ S_v$, and if $\nu = 0.44$ to 0.5, $S_h \leq S_v$, and the stress field is hydrostatic. Since no core discing was observed, we can conclude that $S_h < S_v$. Based on this analysis, we believe that the stresses acting on the mine roof are low and will not adversely affect the bedrock integrity.

Mine Time Period Effects

We used the time of mining as a measure of the rock-mass strength. Mining records show that the production years for the Marfel Mine were from 1897 to 1904 and the Pinnacle was mined prior to 1894. Mining ceased more than 100 years ago, and residual subsidence has not produced any appreciable surface deformation. Given the pre-

sent conditions of the filled mine workings and the bedrock integrity, we do not anticipate any further surface subsidence displacement or ground movement due to subsidence of the mine workings.

Void Imaging

A potential void encountered in core B-3 was investigated using a downhole video camera and sonar scanning tools. The tools were lowered in an attempt to observe the ground conditions and size of the potential void at 99.5 to 101.5 feet. Imaging was very limited and no data could be obtained due to poor groundwater clarity and the fine coal/rubble materials filling the extraction. Based on the unsuccessful void mapping, we conclude that the mine workings are flooded with water, coal, and rubble. No void was apparent.

ANALYSIS AND INTERPRETATION OF MINED AREAS

It is important to understand how and where coal was mined and the depth to the extraction to evaluate the risk of subsidence potential. We reviewed data from historical records, previous investigations, and data from this investigation to evaluate potentially mined areas. We also reviewed top of coal depths and bedrock stratigraphy. We have included Isopach Maps of the upper and lower seams using ground surface elevations and drilled hole data (Figs. 3 and 4). It is our opinion that mining did not occur in both seams; however, if mining did occur in both seams, mining of each seam does not appear to overlap horizontally.

Upper Coal Seam Isopach

A plan showing the elevation of top of coal, coal thickness, and our interpretation of where mining occurred in the upper seam is provided as Fig. 3. We made our own interpretation of the data from previous investigations by ATEC and WEE. Our opinions are sometimes different. For example, we do not believe that mining occurred in the

upper seam. ATEC and WEE reported multi-level mining at a few locations. From a ground control point of view, it would be very difficult to mine both levels at the same horizontal level with an interburden thickness of approximately 12 feet without creating major ground hazards.

A potential reason that the multi-level mining was reported was due to multi-level caliper deflection records. We believe that there are two explanations for this. One potential reason is due to erosion of the borehole walls within coal due to the mud rotary drill method. Observation of the coal cores indicates that the coal is highly fractured. Some of the coal cores fell apart when removed from the core barrel. It is possible that coal eroded when drill fluid motion/pressure occurred which would create a void or bed separation. This mechanism could have led to false interpretation of where mining occurred. One way to evaluate this is to review the gamma and resistivity data where caliper deflection is reported. High resistivity and low gamma lead us to believe that coal is present. Comparatively low resistivity and higher gamma would indicate rubble since the coal extractions were found to be water filled.

Another possible explanation for double coal seam deflections is voids created by bulking or subsidence. This mechanism comes into play where mining occurred in the lower seam. After mining, the interburden and overlying upper seam likely bulked or collapsed into the lower extraction creating voids in the upper coal seam. The collapse limit above mines in the Boulder-Weld Coalfield is commonly 20 to 40 feet above the extraction which would intercept the upper coal seam. Testing indicated that the coal is weak. Bulking and/or collapse of the upper coal seam could have contributed to caliper deflections. This mechanism could have led to false interpretation of where mining occurred.

Lower Coal Seam Isopach

A plan showing the depth and elevation of top of coal, coal thickness, and our interpretation of where mining occurred in the lower seam is provided as Fig. 4. As stated

previously, we made our own interpretation of the data from previous investigations by ATEC and WEE. We believe that mining occurred at 12 of 25 drill hole locations from this and previous studies. We believe that the coal was extracted using a room and pillar technique. The precise horizontal extents of mining and the degree in which the pillars were removed are impossible to determine due to the lack of mine maps.

Data indicates that the Marfel and Pinnacle shafts were utilized to mine the lower seam. The depth of mining in the vicinity of the Marfel appears to vary between 100 and 116 feet below grade. The depth to mining varies between 115 and 128.5 feet in the vicinity of the Pinnacle shaft.

We used the reported coal quantity of 14302 tons, average coal thickness of 5 feet from this investigation, and average moist coal density from this study of 90 pcf to approximate the square footage of mining recorded in the Marfel. We found that the mining footprint is about 63560 square feet or 1.5 acres which is about 3 percent of this site. If the pillars were left in place, the mining area should approximately double in footprint to about 3 acres or 6 percent of the site area. The computed area is small compared to the span between borings where we believe mining occurred. It appears that most of the coal production was unreported. It is also possible that the Garfield No. 1 mine to the north extended onto the property in the area of X-1, X-14, and X-15 and went unreported/undocumented. We do not know the depth to the Garfield No. 1.

SUBSIDENCE MECHANISMS

When coal is mined underground, stress increases in the soil and bedrock overlying the mined seam due to the loss of vertical support. Eventually the overburden begins to subside into the extraction. The occurrence of subsidence and the mechanisms by which the overburden rock is distressed and displaced depend on the physical properties of the overburden, the geometry of the mine and the extraction thickness. Testing indicates that the overlying bedrock is medium strong to strong. Subsidence may be caused as a result of failure of the mine roof, coal pillars, or mine floor.

Several environmental factors can increase subsidence potential including; land-use changes, vibratory loading, seismic events, and fluctuation of groundwater. When buildings are constructed above a mine, the risk of subsidence may increase due to introduction of new surface loads, excavation of soils resisting subsidence, changes in drainage patterns and increased water percolation from landscape irrigation. Vibrations of construction equipment and ground motion due to earthquakes are also known to accelerate ground subsidence. If water-filled workings are drained, risk of collapse tends to increase due to loss in water pressure support. Field data indicates that the workings encountered below this site are filled with water. If subsidence occurs, features may be observed at the ground surface in the form of caving subsidence, trough subsidence, or settlement of entry/air shaft backfill materials.

Caving Subsidence

Caving of materials overlying comparatively shallow mine workings can produce sinkholes or depressions at the ground surface. Caving occurs as the roof over a mine fails and collapses into the space created by coal extraction. This process continues until the space is either filled with debris, or caving propagates to the surface. Caving is common over room and pillar operations.

The depth to mining is important when estimating whether or not a subsidence feature will reach the surface. The thickness of the extracted layer, presence of groundwater, and the bulking and strength characteristics of the overburden bedrock are also important. The size of the sinkholes caused by caving is controlled by the geometry of the mine and properties of the overburden. The areal extent of surface depressions is largely controlled by the size of the mine extraction. Research has found that sinkholes typically are circular or elliptical in shape and usually not larger than the width of the underlying extraction.

Trough Subsidence

Trough subsidence is caused by sagging of the overburden triggered when large extraction ratios and panel sizes are achieved, both in areas of room and pillar mining and longwall mining. This generally occurs as caving of the roof followed by sagging and bed separation of the overlying strata. Trough-type subsidence is the common mechanism over longwall mines in the United States and Europe. Troughs that develop over partial extractions, such as room and pillar mines, differ greatly from those which occur over longwall mining. Oravecz (1977) found the magnitude of surface subsidence above partial extractions is considerably smaller than subsidence that develops over total extraction mines. The presence of internal barriers and the low width to depth ratios help reduce the magnitude of surface displacement.

Trough subsidence over room and pillar mining will be localized as compared to the area-wide troughs developed by longwall mining. As with sinkholes, the depth and areal extent of troughs will depend on the depth to mining, physical properties of the overburden, and extraction ratios. The shape of depressions will be irregular due to the presence of remnant pillars. Like longwall mining, subsidence over retreat mining should develop rapidly due to recompression of rubble or re-orientation of beds which have sagged.

Shaft Hazards

The subsidence hazard associated with entry and shafts is high because of the potential sudden and significant movement. Although small in area, shafts can be dangerous because of the haphazard way in which they were backfilled. The two shafts on this site were filled with debris including timber, mine waste, and trash. Over a period of time, the debris can loosen and settle, leading to subsidence at the surface. We discovered no documented settlement associated with the Marfel and Pinnecle shafts since the crevice reported on 1894 McGreger mine map.

MINE SUBSIDENCE RISK EVALUATION

We evaluated the risk of subsidence-sinkhole potential considering mine geometry, bulking factor, probability methods, and research conducted in the Boulder-Weld Coalfield.

Mine Geometry

One method of evaluating whether caving subsidence will propagate to the surface can be addressed through the mine geometry. The critical dimensions are the thickness of cover or overburden height (H) and extraction thickness (h). Piggot and Eynon (1977) suggest subsidence will not propagate to the ground surface over room and pillar workings where the overburden to extraction thickness ratio (H/h) exceeds 10. We have defined the overburden thickness as the bedrock thickness only. The soil thickness was neglected due to comparatively low strength to resist caving. Using an extraction thickness of 4 and 5 feet, caving is not expected to propagate through more than about 40 and 50 feet of bedrock, respectively. The actual bedrock thickness (the distance between the soil/bedrock interface and top of the original mine roof) ranges from 77 to 110 feet.

Bulking Factor

Caving of the roof above a mine can continue until the extraction and collapse area is filled with broken and bulked rock or the caving reaches the surface. The height to which caving can occur is based on the coal seam thickness and bulking properties of the collapsed rock. The increase in the volume of the collapsed rock is referred as a “Bulking Factor.” The Bulking Factor is defined as the original extraction height minus any remaining void, divided by the height of the rubble zone above the original mine roof. Typical bulking factors for this coal strata range from 30 to 50 percent (Piggott and Eynon). The data indicates an extraction thickness of 4 to 5 feet and marginally thicker

at a few locations. We used a bulking factor of 40 percent and the extraction recorded at each boring in our analysis. The following equation was used in our analysis:

H = 3h/B for conical collapse, where
H = Collapse height above mined coal seam roof.
B = Bulking Factor (0.40)
h = Original extraction thickness (4 to 5 feet)

The calculated average height of potential conical collapse is 28 to 35 feet. We assessed the subsidence risk by computing a factor of safety (FS) by dividing the actual bedrock thickness above the mine by the computed height of potential conical collapse. We typically use a minimum factor of safety of 1.5 to distinguish where risk is low. We consider a factor of safety of less than 1.2 as high. Table 4 summarizes the compacted factor of safety which ranges from 2.0 to 4.0.

TABLE 4
SUMMARY OF POTENTIAL MINE SUBSIDENCE EVALUATION

BORING	DEPTH TO BEDROCK (FEET)	INITIAL BEDROCK THICKNESS ABOVE MINE ROOF (FEET)	EXTRACTION THICKNESS (FEET)	REQUIRED BEDROCK THICKNESS (FEET)	FACTOR OF SAFETY	COMPARATIVE RISK
X-15	15	101	4.0	30.0	3.4	LOW
X-9	20	95	5.0	37.5	2.5	LOW
X-10	20	110	5.0	37.5	2.9	LOW
X-12	25	103.5	7.0	52.5	2.0	LOW
X-5	25	77	4.0	30.0	2.6	LOW
X-6	15	95	4.0	30.0	3.2	LOW
X-13	17	91	4.5	33.8	2.7	LOW
B-1	21	91	4.5	33.8	2.7	LOW
B-3	17	80	5.0	37.5	2.1	LOW
B-6	18	91	3.0	22.5	4.0	LOW

Probability of Sinkhole Development

Figure 7 is a plot derived from case studies showing the probability and expected lateral size of a caved zone reaching a given height, as a function of overburden thickness (Hanna, 2011). This figure assumes a subsidence angle of draw of 19° and a void size of 7 feet high by 10 feet wide which is typical of historic abandoned room-and-pillar mining. Statistically, angle of draw measured for subsidence in the American West

ranges from 12° to 16° (Peng, 1978). The 19° angles of draw used here allows for a margin of safety in sinkhole size estimation.

For comparison purposes, boreholes B-1 to B-3 are plotted along with other boreholes, H1 to H5, obtained from various studies of other sites. For example, the area within borehole H1 at a depth of approximately 30 feet has the highest probability (greater than 100 percent) of forming a sinkhole at the surface (according to this statistical approach, sinkhole formation is a virtual certainty). If and when a sinkhole forms, the edge of the surface settlement could propagate approximately 8 feet (dashed red line) from the edge of the void space. For this site, the mine at B-1 to B-3 occurs at depth of approximately 100 feet which indicated a probability less than 5 percent of forming a sinkhole at the surface. Since the 1904 operation of the Marfel mine and the subsidence occurrence in 1894, no apparent surface settlement or sinkhole formation has been recorded or observed, indicative of stable mine workings at these depths. This is further supported by the physical characteristics of the bedrock claystone/sandstone materials. Therefore, we believe that the risk of future subsidence and/or sudden sinkhole occurrence due to the mine workings is very low or minimal. This does not include areas around the two shafts.

Time Methods

Research in the Boulder-Weld Coalfield indicates that about 95 percent of subsidence occurs within 15 years of mining (Matheson, 1987). This research is consistent with the documented crevice over the Pinnacle mine. Based on the extraction thicknesses of 4 to 5 feet, only 2 to 4-inches of residual subsidence would have occurred after 15 years of the mine closure.

Results of Risk Evaluation

Overall, we judge the potential subsidence risk is very low for this site. Risk is judged high in the vicinity of the shaft locations.

RECOMMENDATIONS

The subsidence hazard will not preclude the development of this site. We found that the risk of potential subsidence is very low over mined areas. Several development aspects should be considered over the mined areas. We judge the risk is high in the vicinity of the shafts. Due to the haphazard way in which shafts were backfilled and the sudden nature in which subsidence develops over shafts, we believe that the two shafts pose a potential safety concern to the public. We recommend that the shafts be mitigated; after which, the immediate shaft areas should be sited for passive uses. We believe that passive uses will be safe after mitigation.

Development Considerations over Mined Areas

Lightly loaded structures that utilize shallow foundations can be planned over mined areas. Shallow foundations ideally consist of post-tensioned slab-on-grade, footings, or mats. Basements and below grade areas can be used. Heavy loaded buildings requiring the use of deep foundations should be avoided. The use of shallow foundations and minimal grading is considered safest to reduce effects of subsidence movement. Our previous preliminary investigation revealed expansive soils and bedrock that may require sub-excavation to allow use of shallow foundations. If necessary, sub-excavation can be utilized without significantly increasing to the subsidence hazard. Groundwater drawdown could trigger subsidence. Wells and/or other mechanical systems that would alter the groundwater level should not be used.

Shaft Mitigation

We judge the subsidence potential is high in the vicinity of the shafts. We recommend that the shafts be mitigated. Several mitigation techniques can be considered, including grouting and construction of reinforced soil or reinforced concrete caps. We can discuss these options with you and design the selected mitigation technique upon request. After mitigation, we believe the shaft areas can be safely used for passive uses

such as parks, parking lots, greenways, and associated structures that can tolerate movement. Buildings, roadways, utility corridors, and structures sensitive to movement should not be planned within a 42 foot radius from the Marfel shaft center and 40 foot radius from the Pinnacle shaft center. The “no build’ radii were estimated using depths to the mine roof at each shaft, measured shaft widths, an angle of draw of 16° (Peng, 1978), and a safety factor of 1.2.

GEOTECHNICAL RISK

The concept of risk is an important aspect with any geotechnical evaluation, primarily because the methods used to develop geotechnical recommendations do not comprise an exact science. We never have complete knowledge of subsurface conditions. Our analysis must be tempered with engineering judgment and experience. Therefore, the recommendations presented in any geotechnical evaluation should not be considered risk-free.

LIMITATIONS

Our investigation was planned to obtain information necessary to perform an analysis and evaluation of the subsidence hazard. Our conclusions regarding the risk of future subsidence were based on our investigation and analysis, previous investigation, review of available mine records, previous studies and our experience. There is no method, to our knowledge, of eliminating all risk of subsidence. If additional data become available concerning unreported mining or subsidence features develop at the site, we should be contacted to evaluate the situation.

We believe this investigation was conducted with the level of skill and care ordinarily used by geotechnical and mining engineers practicing in this area at this time. No warranty, express or implied, is made. We appreciate the opportunity to provide service. If we can further explain our opinions and conclusions, please contact us.

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Kanaan Hanna
Senior Mining Engineer (Independent)

Reviewed by:

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Chairman & CEO

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REFERENCES

- Bieniawaski, Z. T. (1989). Engineering Rock Mass Classification. John Wiley & Sons, New York. 251 pp.

- Bieniawaski, Z. T. (1984). Rock Mechanics Design in Mining and Tunneling. A.A. Balkema. 272 pp.

- Hanna, K., and Heasley, K. (2011). Engineering Geophysics – Mine Subsidence Risk Assessment Study. Proceeding 0f the 30th Anniversary of the International Conference on Ground Control in Mining, pp. 296-307

- Hanna, K., Conover, D, and Haramy, K. (1991). Coal Mine Entry Intersection Behavior Study. U.S. Bureau of Mines, RI 9337, 49 pp.

- Hanna, K., Haramy, K.Y., Conover, D.P. Conover, and Dopp, D. (1986). Effect of High Horizontal Stress on Coal Mine Entry Intersection Stability. Proceeding of the 5th International Conference on Ground Control in Mining, pp.167-182.

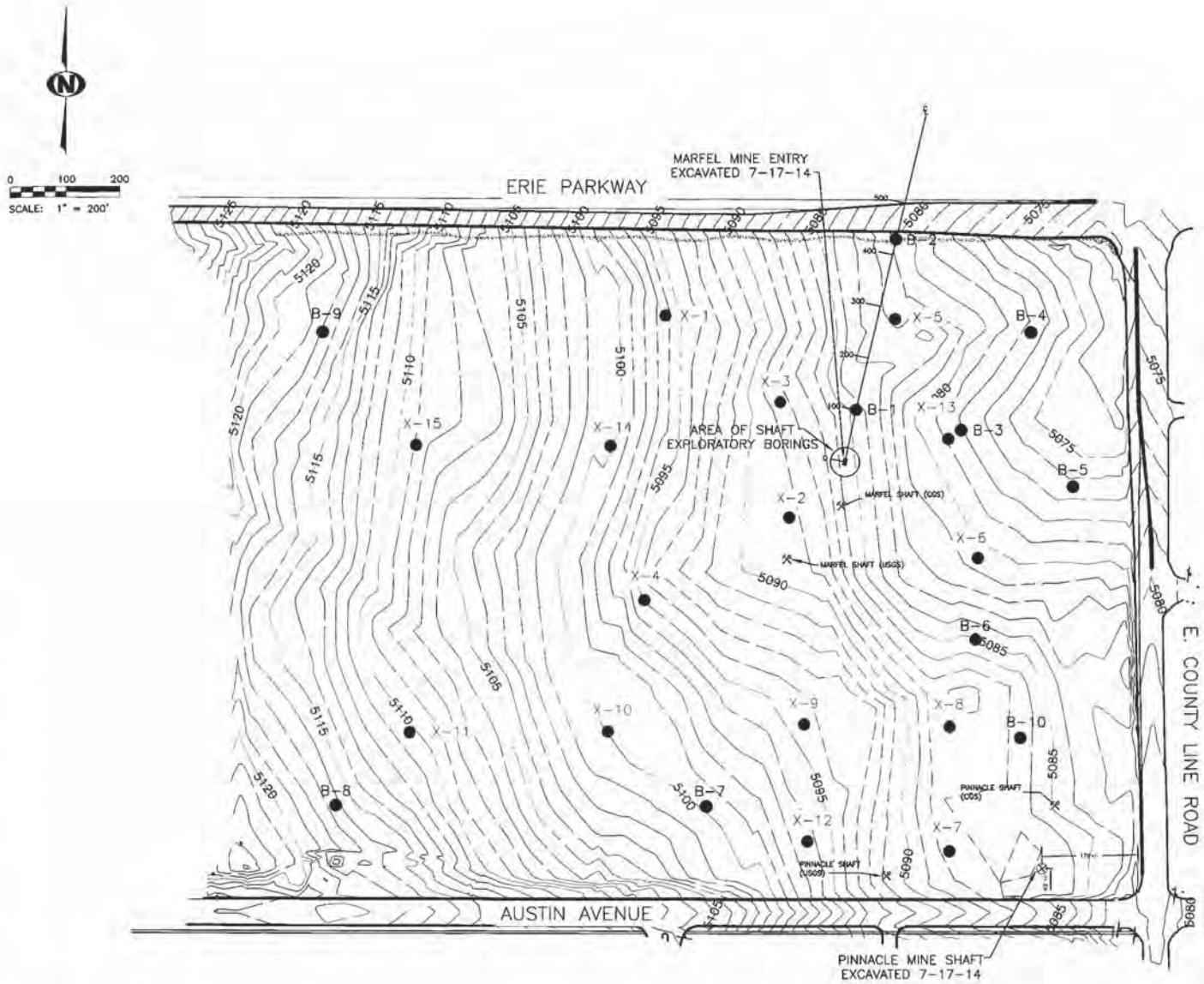
- Matheson, Gordon, (1987), Geologic and Mining Factors that Control Subsidence above Abandoned Underground Coal mines along the Colorado Front Range, PhD dissertation, Department of Geology and Geologic Engineering, Colorado School of Mines, Golden, Colorado

- Peng, S. S. (2008, 3rd Edition). Coal Mine Ground Control. Copyright © 2008 by Syd S. Peng, Department of Mining Engineering, College of Engineering and Mineral Resources, West Virginia University, Morgantown, WV, 750 pp.

- Piggott, R. I., and Eynon, P.,(1978) “Ground Movements Arising from the Presence of Shallow Abandoned Mine Workings,” Proceedings, Conference on Large Ground Movements and Structures, UWIST, Cardiff, Geddes, J. D., ed., Pentech Press, 749-780.

- SME (Society for Mining, Metallurgy, and Exploration), (1992, 2nd Edition, Volume 1, 1269 pp). Mining Engineering Handbook, Howard L. Hartman, Senior Editor.

- SME, (1982). Underground Mining Methods Handbook. W. A. Hustrulid, Editor, 1754 pp



VICINITY MAP
NOT TO SCALE

LEGEND:

B-1 ● APPROXIMATE LOCATION OF DEEP BORING DRILLED DURING THIS INVESTIGATION

X-1 ● APPROXIMATE LOCATION OF BORING DRILLED DURING WESTERN ENVIRONMENTAL AND ECOLOGY'S 2005 PRELIMINARY MINE SUBSIDENCE INVESTIGATION

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Locations of Exploratory Mine Borings

Fig. 1

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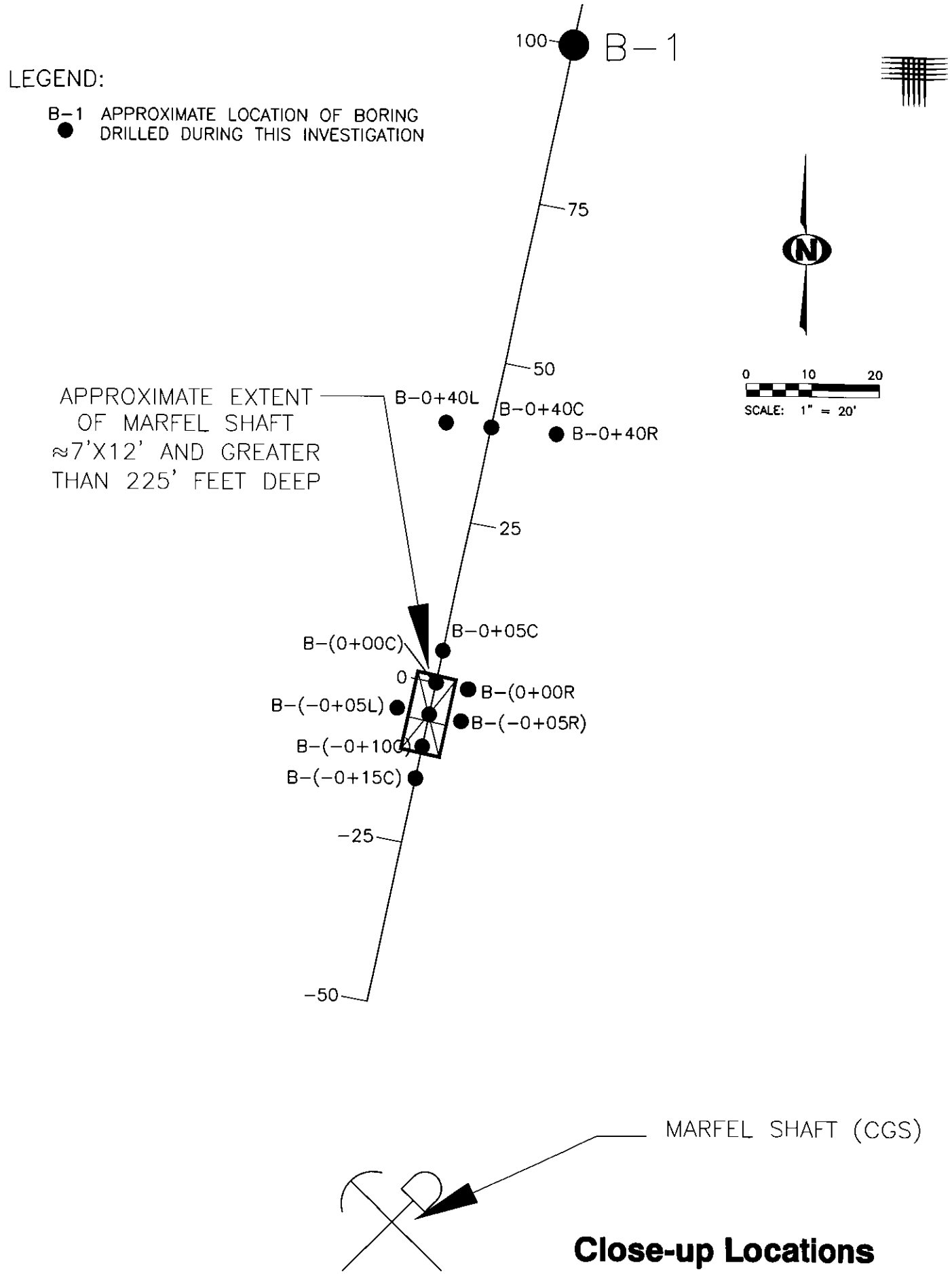

Close-up Locations of Exploratory Shaft Borings Fig. 2

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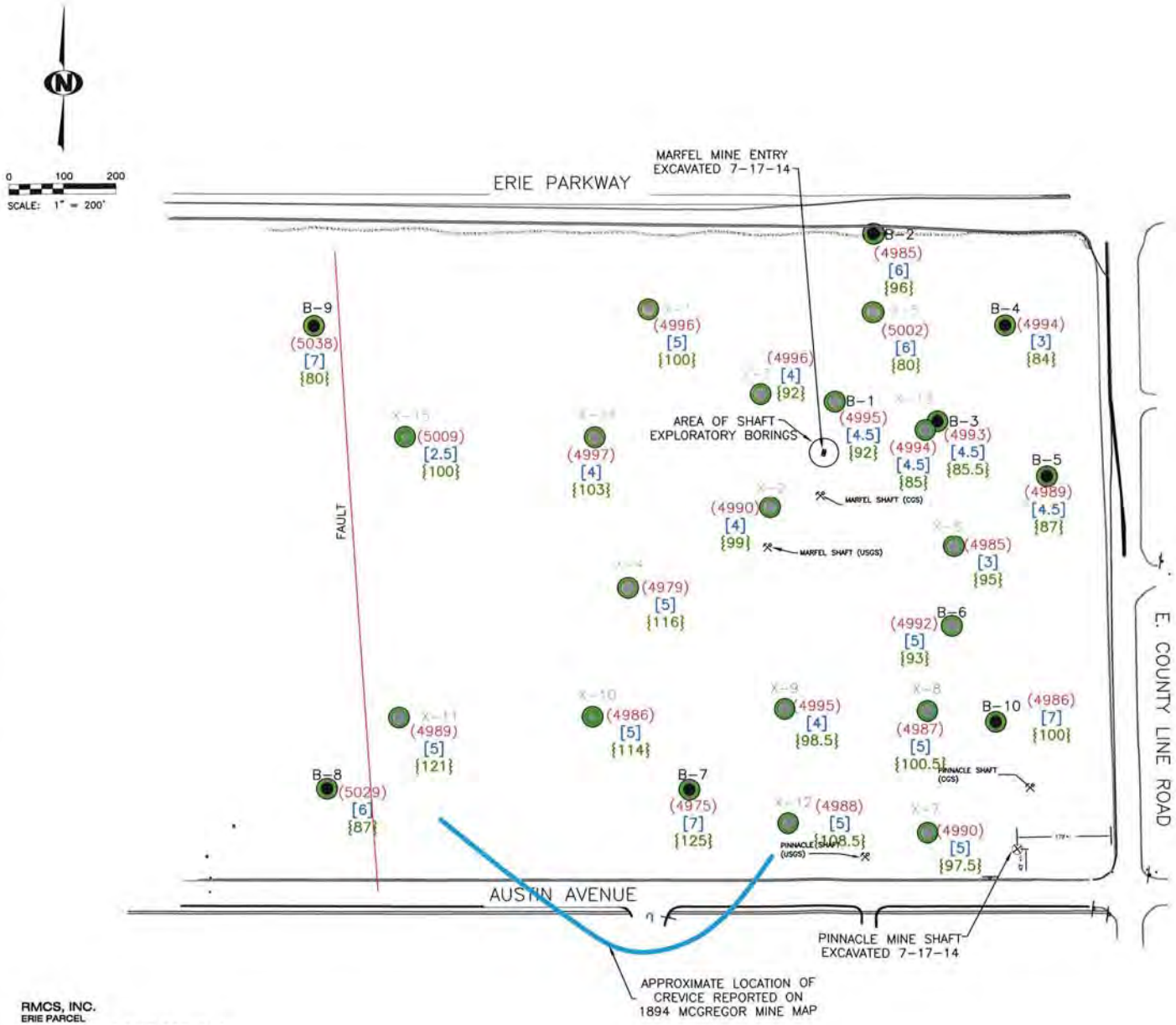

LEGEND:

B-1 ● APPROXIMATE LOCATION OF DEEP BORING DRILLED DURING THIS INVESTIGATION

X-1 ● APPROXIMATE LOCATION OF BORING DRILLED DURING WESTERN ENVIRONMENTAL AND ECOLOGY'S 2005 PRELIMINARY MINE SUBSIDENCE INVESTIGATION

(4996) INDICATES APPROXIMATE ELEVATION OF TOP OF UPPER COAL SEAM

[4] INDICATES APPROXIMATE UPPER COAL SEAM THICKNESS (FEET)

● DATA INDICATES THAT NO MINING OCCURED IN UPPER SEAM

● DATA INDICATES THAT MINING OCCURED IN UPPER SEAM

{117} INDICATES APPROXIMATE DEPTH TO TOP OF UPPER COAL SEAM

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Upper Seam Isopach Map Fig. 3

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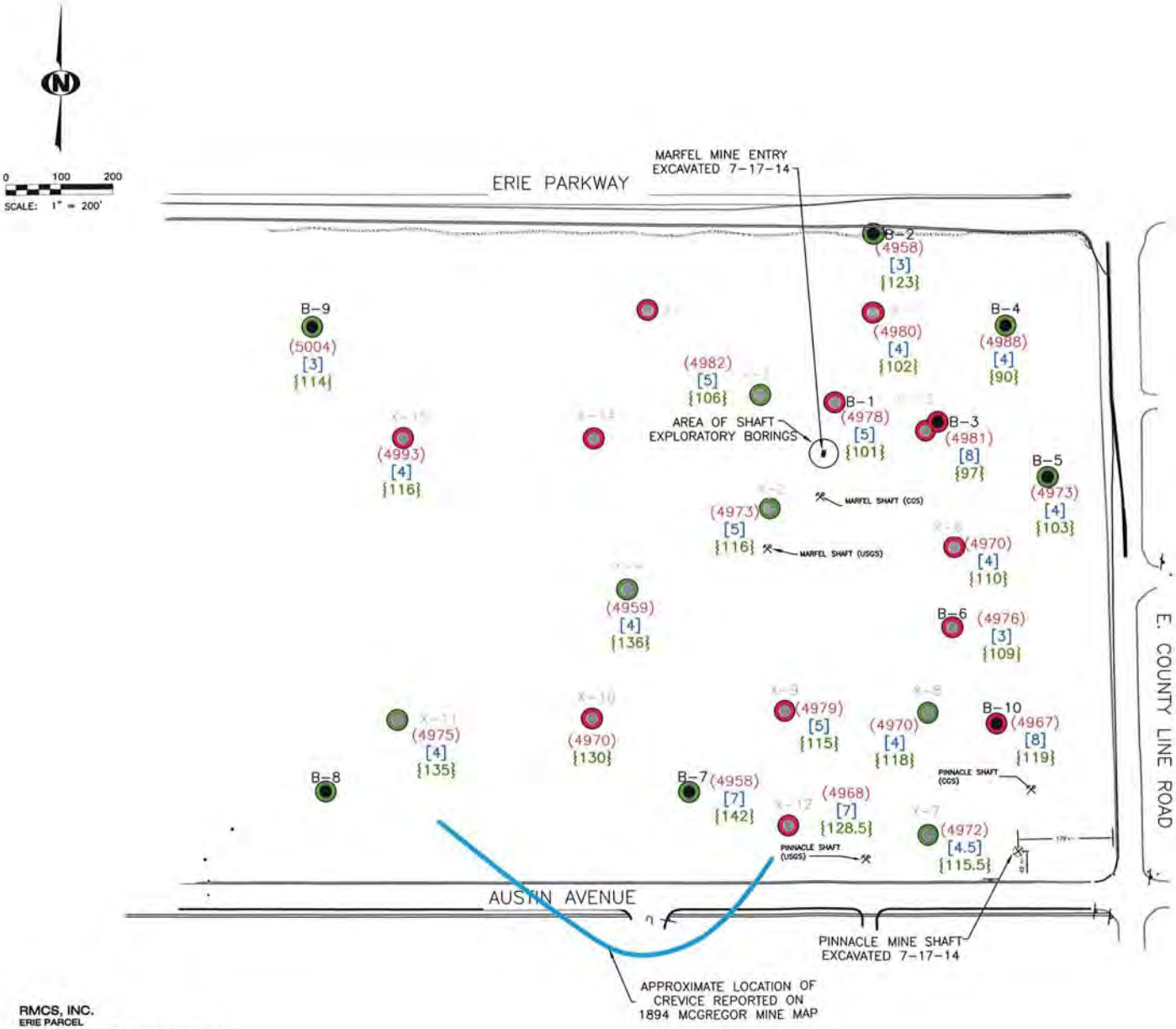

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B-1 ● APPROXIMATE LOCATION OF DEEP BORING DRILLED DURING THIS INVESTIGATION

APPROXIMATE LOCATION OF BORING DRILLED DURING WESTERN ENVIRONMENTAL AND ECOLOGY'S 2005 PRELIMINARY MINE SUBSIDENCE INVESTIGATION

(4996) INDICATES APPROXIMATE ELEVATION OF TOP OF LOWER COAL SEAM

[4] INDICATES APPROXIMATE LOWER COAL SEAM THICKNESS (FEET)

DATA INDICATES THAT NO MINING OCCURED IN LOWER SEAM

DATA INDICATES THAT MINING OCCURED IN LOWER SEAM

{117} INDICATES APPROXIMATE DEPTH TO TOP OF UPPER COAL SEAM

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Lower Seam Isopach Map Fig. 4

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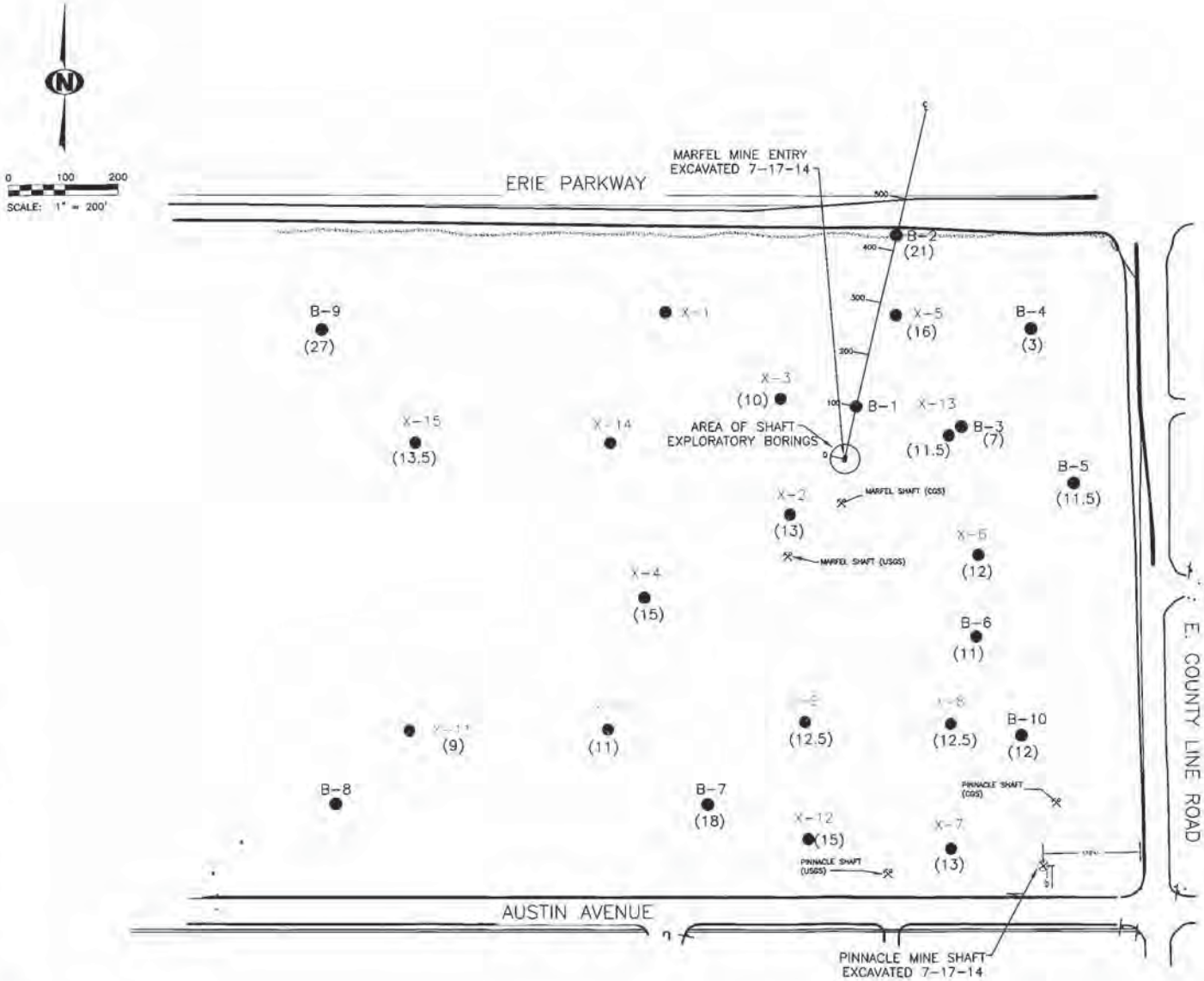

LEGEND:

B-1 ● APPROXIMATE LOCATION OF DEEP BORING DRILLED DURING THIS INVESTIGATION

X-1 ● APPROXIMATE LOCATION OF BORING DRILLED DURING WESTERN ENVIRONMENTAL AND ECOLOGY'S 2005 PRELIMINARY MINE SUBSIDENCE INVESTIGATION

(13) INDICATES APPROXIMATE INTERBURDEN THICKNESS BETWEEN UPPER AND LOWER SEAM (FEET)

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Interburden Thickness Map Fig. 5

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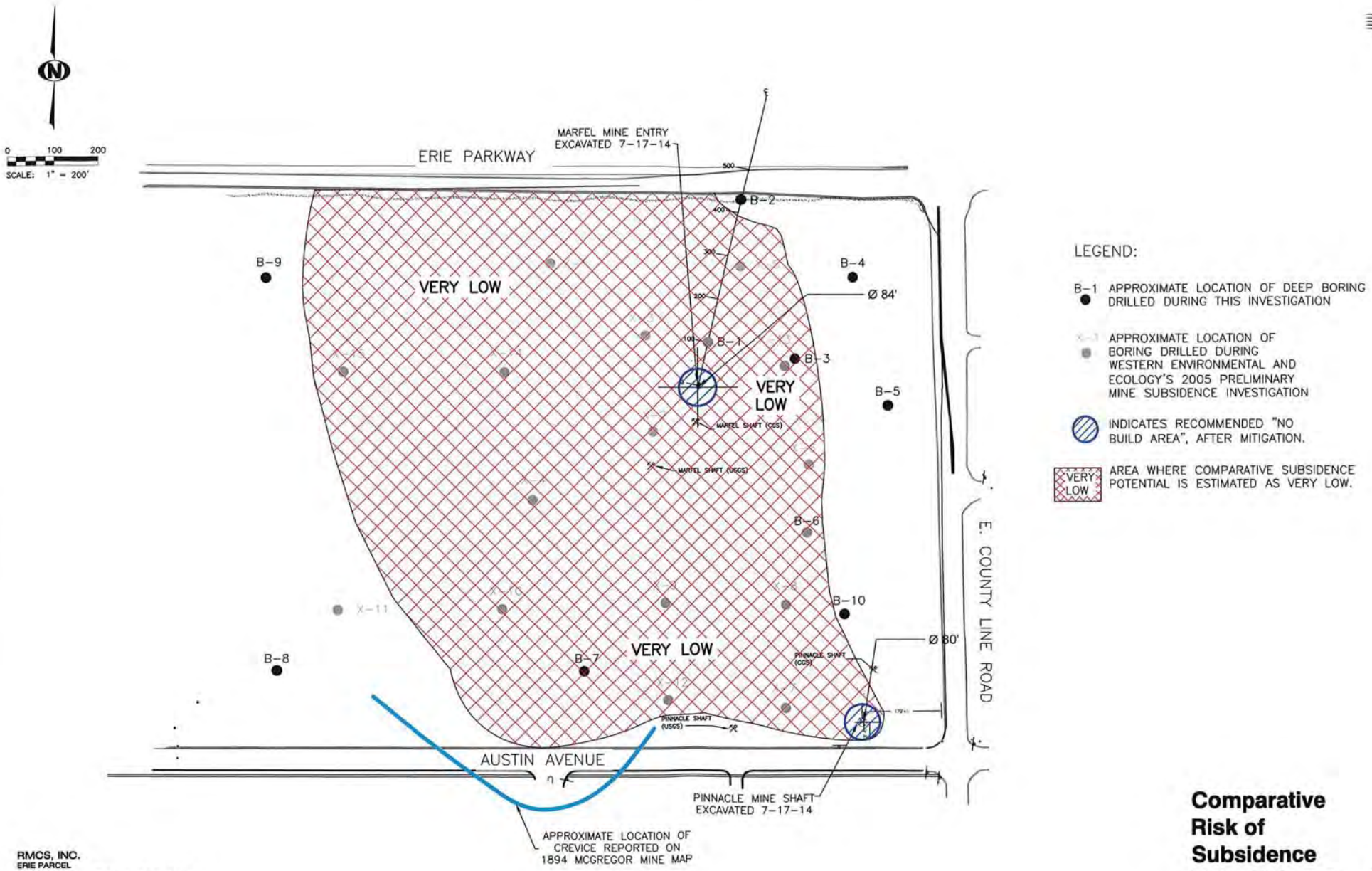

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Comparative Risk of Subsidence Potential Fig. 6

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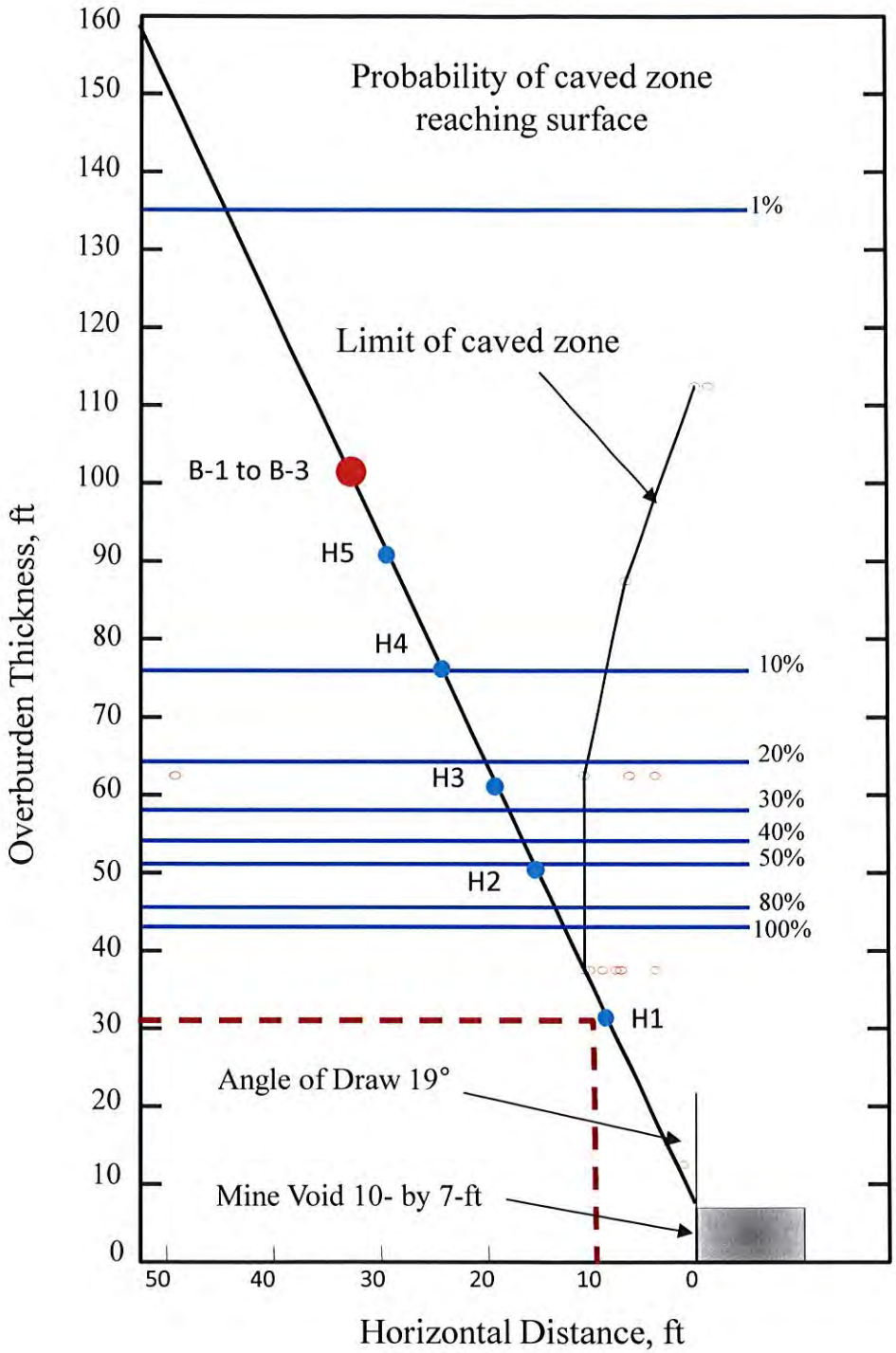
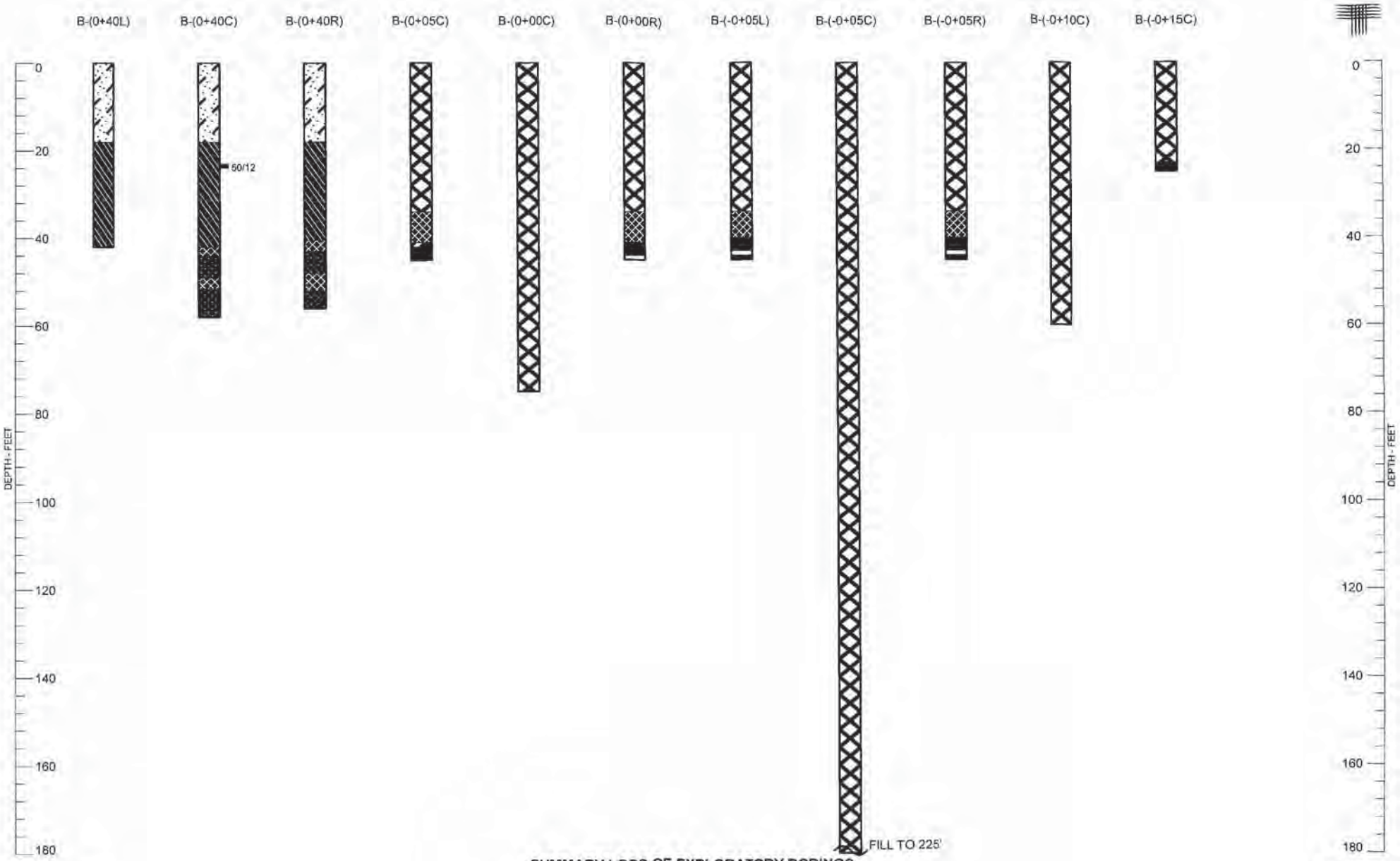


Figure 7: Probability of Sinkhole Development

APPENDIX A

SUMMARY LOGS OF EXPLORATORY BORINGS



SUMMARY LOGS OF EXPLORATORY BORINGS

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN47,332-110

FIG. A- 1

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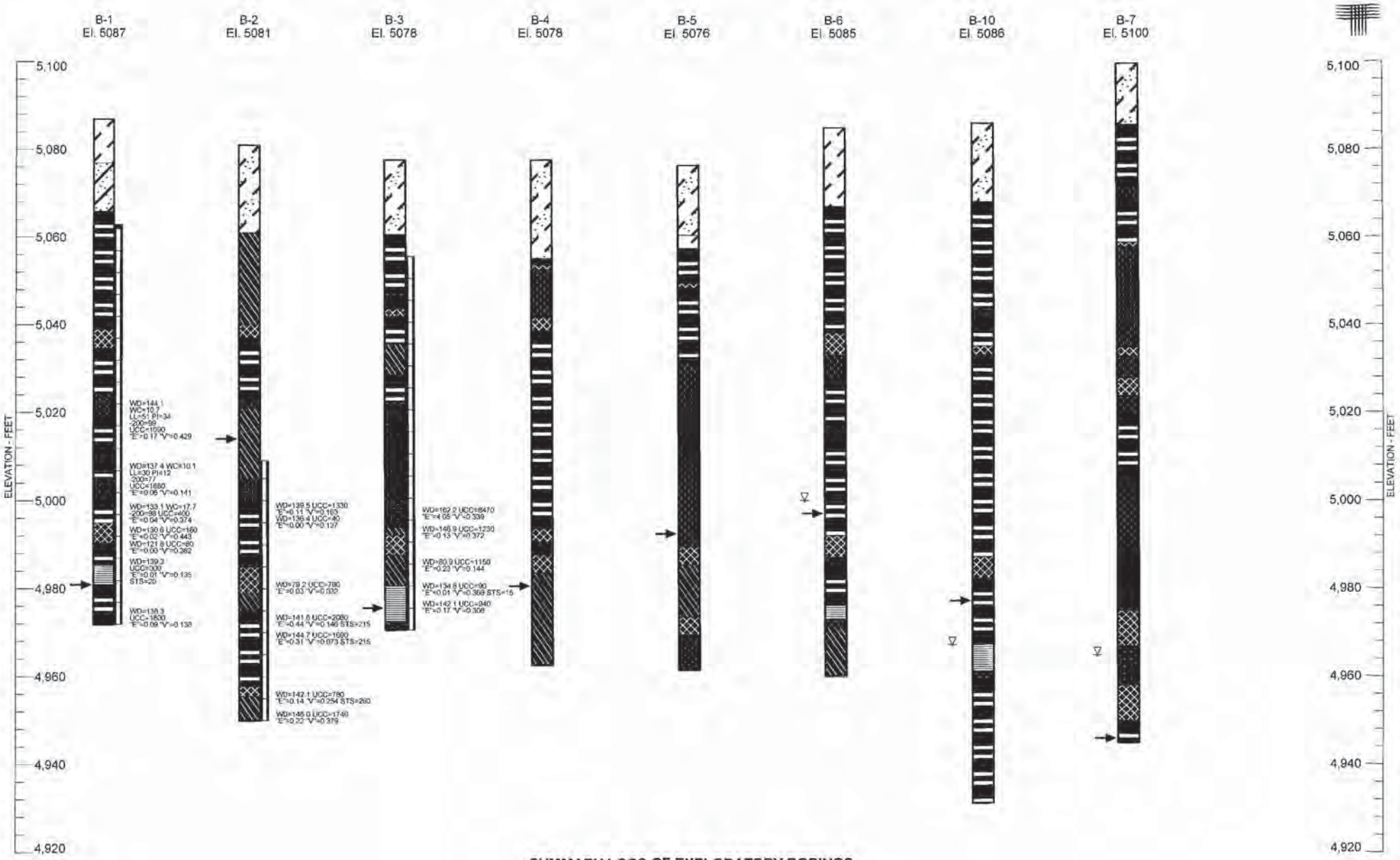
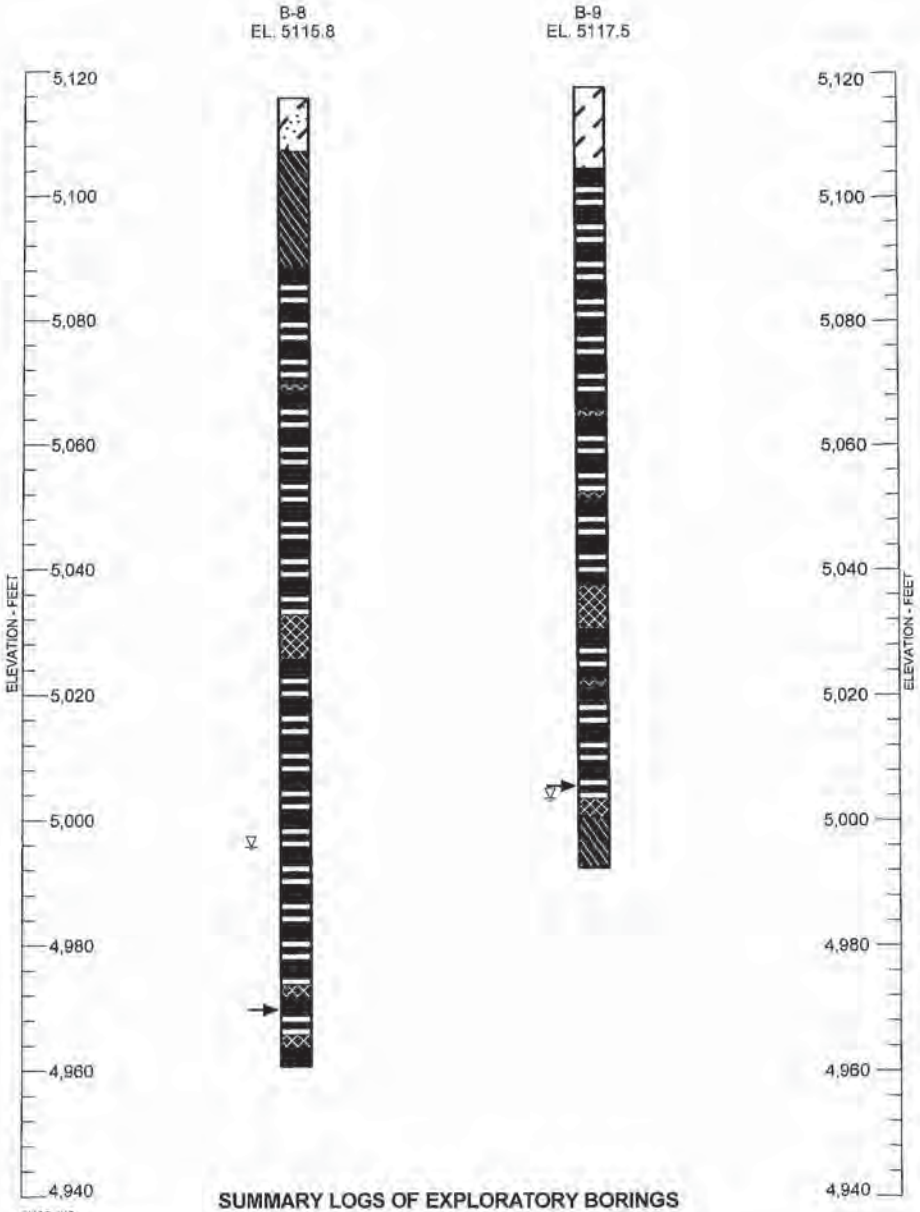


RMCS, INC.
ERIE PARCEL
PROJECT NO. DN47.332.110

SUMMARY LOGS OF EXPLORATORY BORINGS

FIG. A- 2

S:\PROJECTS\47\32\DN47332.00\011\02_REPORTS\110\DN47332.110-01-G.GPJ



SUMMARY LOGS OF EXPLORATORY BORINGS

RMCS, INC.
ERIE PARCEL
PROJECT NO. DN47332-110

LEGEND:

- FILL, CLAY, SANDY, MINE SPOILS, WOOD FRAGMENTS, MINING DEBRIS.
- CLAY, SANDY, MOIST, BROWN (CL).
- SAND, SILTY, MEDIUM DENSE, MOIST, BROWN (SM).
- INTERLAYERED CLAY/SAND, MOIST, BROWN, GRAY (CL OR SC).
- BEDROCK, CLAYSTONE, LIGNITE LENSES, HARD, MOIST, BROWN, GRAY.
- BEDROCK, SANDSTONE, CLAYSTONE LENSES, HARD, MOIST, BROWN, TAN.
- BEDROCK, INTERBEDDED CLAYSTONE/SANDSTONE, LIGNITE LENSES, HARD, MOIST, BROWN, GRAY.
- COAL, SOME LIGNITE, BROWN, MOIST.
- RUBBLE.
- CORE SAMPLE.
- DRIVE SAMPLE. THE SYMBOL INDICATES BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.0-INCH O.D. SAMPLER INCHES.
- INDICATES DEPTH WHERE GROUNDWATER APPEARED IN AIR CIRCULATION.
- INDICATES DEPTH WHERE HOLE CAVED DURING GEOPHYSICAL TESTING.

NOTES:

1. THE BORINGS WERE DRILLED ON OCTOBER 28, 2014 USING 4-INCH DIAMETER, CONTINUOUS-FLIGHT AUGER AND A TRUCK-MOUNTED DRILL RIG.
2. BORING LOCATIONS AND ELEVATIONS WERE DETERMINED BY A REPRESENTATIVE OF OUR FIRM REFERENCING THE TEMPORARY BENCHMARK SHOWN ON FIG. 1.
3. WC - INDICATES MOISTURE CONTENT (%).
   WD - INDICATES MOIST DENSITY (PCF).
   LL - INDICATES LIQUID LIMIT.
   PI - INDICATES PLASTICITY INDEX.
   -200 - INDICATES PASSING NO. 200 SIEVE (%).
   UC - INDICATES UNCONFINED COMPRESSIVE STRENGTH (PSI).
   E - INDICATES YOUNG'S MODULUS (x10 PSI)
   V - INDICATES POISSON'S RATIO.
   STS - INDICATES SPLITTING TENSILE STRENGTH (PSI).
4. THESE LOGS ARE SUBJECT TO THE EXPLANATIONS, LIMITATIONS AND CONCLUSIONS CONTAINED IN THIS REPORT.

FIG. A- 3

S:\PROJECTS\47300\47332.000\1102_REPORTS\REV1\DN47332-110-R1-G.GPJ

APPENDIX B

CORE LOGS AND PHOTOGRAPHS

PROJECT NODN47,332-110

PROJECT NAME ERIE PARCEL

CTL/THOMPSON, INC.

(303) 825-0777

1971 WEST 12TH AVENUE DENVER, COLORADO 80204

BORING NUMBER B-1	BEGIN DRILLING TIME: 10/22/2014	END DRILLING TIME: 10/28/2014
TOP OF HOLE ELEVATION 5086.9	GROUND WATER ELEVATION	DIRECTION OF HOLE VERTICAL
TOTAL DEPTH 115	OVERBURDEN THICKNESS 21	SIZE AND TYPE OF BIT HQ 3.5"OD
DRILLING COMPANY PRECISION	DRILLER TIM/JUAN/STEVEN	DRILL TYPE CME75 / ENGINEER MDM

DEPTH FROM	DEPTH TO	REMARKS	DRILL TIME (MIN.)	CORE INTERVAL (FEET)	CORE LENGTH (INCHES)	CORE RECOVERY (%)	RQD (%)	LOG	DESCRIPTION
0	10								CLAY, SANDY, SILTY, MOIST, BROWN.
10	21								SAND, SILTY, MOIST TO VERY MOIST, LIGHT BROWN, LIGHT YELLOWISH BROWN.
21	23.5		5	2.5	27	90%	55		CLAYSTONE, SLIGHTLY SANDY, SLIGHLTY SILTY, MOIST, LIGHT GRAYISH BROWN, CONTAINS OCCASIONAL LIGNITE.
23.5	26			5	27	45%	55		
26	31		6	5	36	60%	53		
31	36		7	5	60	100%	86		
36	41		6.5	5	59	98%	98		
41	46		5	5	59	98%	75		COAL, BLACK. CLAYSTONE, SLIGHTLY SANDY, LIGHT TO GRAYISH BROWN.
46	51		4.5	5	60	100%	52		LIGNITE, DARK BROWN, VERY MOIST. COAL, INTENSITY FRACTURED, SLIGHTLY SANDY OR SILTY.
51	56		5	5	60	100%	75		CLAYSTONE, MOIST, SLIGHTLY SANDY OR SILTY.
56	61		6	5	60	100%	100		
61	66		8	5	60	100%	53		SANDSTONE, LIGHT GRAY, BROWN, FINE GRAINED.
66	71		6	5	57	95%	52		CLAYSTONE, FRACTURED, GRAY TO GRAYISH BROWN, MOIST, SLIGHTLY SANDY.
71	76		18	5	41	68%	47		CLAYSTONE, FRACTURED, GRAY TO DARK GRAY.
76	81		10	5	48	80%	56		SANDSTONE, SILTY. CLAYSTONE, DARK BROWN, CONTAINED

FIG. B-1

PROJECT NODN47,332-110

PROJECT NAME ERIE PARCEL

CTL/THOMPSON, INC.

(303) 825-0777

1971 WEST 12TH AVENUE DENVER, COLORADO 80204

BORING NUMBER B-1	BEGIN DRILLING TIME: 10/22/2014	END DRILLING TIME: 10/28/2014
TOP OF HOLE ELEVATION 5086.9	GROUND WATER ELEVATION	DIRECTION OF HOLE VERTICAL
TOTAL DEPTH 115	OVERBURDEN THICKNESS 21	SIZE AND TYPE OF BIT HQ 3.5"OD
DRILLING COMPANY PRECISION	DRILLER TIM/JUAN/STEVEN	DRILL TYPE CME750 / ENGINEER MDM

DEPTH FROM	DEPTH TO	REMARKS	DRILL TIME (MIN.)	CORE INTERVAL (FEET)	CORE LENGTH (INCHES)	CORE RECOVERY (%)	RQD (%)	LOG	DESCRIPTION
									WOOD.
81	86		4	5	37	62%	25		SANDSTONE, LIGHT GRAY TO GRAY, FINE GRAINED.
86	91		2	5	42	70%	70		CLAYSTONE, FRACTURED, GRAY TO GRAYISH BROWN, CONTAINS GRAVEL.
91	96		2	5	44	73%	40		COAL/LIGNITE, FRACTURED, DARK GRAY TO BROWN.
96	101		4.5	5	54	90%	87		CLAYSTONE, DARK GRAY, BROWN.
101	106		3	5	15	25%	0		RUBBLE, LIGHT GRAY.
									CLAYSTONE, DARK GRAY, BROWN.
106	111		3.5	5	49	82%	62		SANDSTONE.
111	115		12	4	48	100%	63		CLAYSTONE, SANDY, FRACTURED, GRAY.

FIG. B-2

PROJECT NODN47,332-110 PROJECT NAME ERIE PARCEL	CTL/THOMPSON, INC. (303) 825-0777 1971 WEST 12TH AVENUE DENVER, COLORADO 80204

BORING NUMBER B-2	BEGIN DRILLING TIME: 10/29/2014	END DRILLING TIME: 11/4/2014
TOP OF HOLE ELEVATION 5081.0	GROUND WATER ELEVATION	DIRECTION OF HOLE VERTICAL
TOTAL DEPTH 131	OVERBURDEN THICKNESS 20	SIZE AND TYPE OF BIT HQ 3.5"OD
DRILLING COMPANY PRECISION	DRILLER TIM/JUAN/STEVEN	DRILL TYPE CME750
ENGINEER MDM		

DEPTH FROM	DEPTH TO	REMARKS	DRILL TIME (MIN.)	CORE INTERVAL (FEET)	CORE LENGTH (INCHES)	CORE RECOVERY (%)	RQD (%)	LOG	DESCRIPTION
0	20		4						INTERLAYERED CLAY/SAND, SILTY, MOIST, LIGHT BROWN.
20	27		4						INTERBEDDED CLAYSTONE/SANDSTONE, SLIGHTLY SANDY, BROWN TO GRAY.
27	32		4						
32	37		4						
37	42		3						
42	47		3						COAL, RIDER SEAM
47	52		2						CLAYSTONE, SANDY TO SLIGHTLY SANDY, BROWN, GRAY.
52	57		2						
57	62		7						SANDSTONE, SILTY, MOIST, GRAYISH BROWN.
62	67		3						INTERBEDDED CLAYSTONE/SANDSTONE, SLIGHTLY SANDY TO SANDY, BROWN TO GRAYISH BROWN.
67	72		4						
72	76		4	4	48	100%	50		
76	81		5	5	44	73%	16		SANDSTONE, BROWN, LIGHT GRAY.

FIG. B-3

PROJECT NODN47,332-110 PROJECT NAME ERIE PARCEL	CTL/THOMPSON, INC. (303) 825-0777 1971 WEST 12TH AVENUE DENVER, COLORADO 80204

BORING NUMBER B-2	BEGIN DRILLING TIME: 10/29/2014	END DRILLING TIME: 11/4/2014
TOP OF HOLE ELEVATION 5081.0	GROUND WATER ELEVATION	DIRECTION OF HOLE VERTICAL
TOTAL DEPTH 131	OVERBURDEN THICKNESS 20	SIZE AND TYPE OF BIT HQ 3.5"OD
DRILLING COMPANY PRECISION	DRILLER TIM/JUAN/STEVEN	DRILL TYPE CME750	ENGINEER MDM

DEPTH FROM	DEPTH TO	REMARKS	DRILL TIME (MIN.)	CORE INTERVAL (FEET)	CORE LENGTH (INCHES)	CORE RECOVERY (%)	RQD (%)	LOG	DESCRIPTION
81	86		4	5	42	70%	35		CLAYSTONE, SILTY,LIGHT GRAY TO GRAYISH BROWN, CONTAINS LIGNITE AND COAL LENSES.
86	91		7	5	47	78%	58		
91	96		8	5	47	78%	48		
96	101		7	5	46	77%	47		COAL, FRACTURED, DRILLED SOFTER.
101	106		5	5	57	95%	57		INTERBEDDED CLAYSTONE/SANDSTONE,GRAY TO LIGHT GRAY.
106	111		8	5	60	100%	83		CLAYSTONE, SLIGHTLY SANDY TO SANDY, LIGHT TO DARK GRAY.
111	116		7	5	51	85%	51		
116	121		9	5	60	100%	50		
121	126		7	5	60	100%	40		COAL, DARK BROWN, CHUNKY SOLID.
126	131		5	5	58	97%	70		INTERBEDDED CLAYSTONE/SANDSTONE, LIGHT GRAY.

FIG. B-4

PROJECT NODN47,332-110 PROJECT NAME ERIE PARCEL	CTL/THOMPSON, INC. (303) 825-0777 1971 WEST 12TH AVENUE DENVER, COLORADO 80204

BORING NUMBER B-3	BEGIN DRILLING TIME: 10/28/2014	END DRILLING TIME: 10/29/2014
TOP OF HOLE ELEVATION 5077.6	GROUND WATER ELEVATION	DIRECTION OF HOLE VERTICAL
TOTAL DEPTH 107	OVERBURDEN THICKNESS 17	SIZE AND TYPE OF BIT HQ 3.5"OD
DRILLING COMPANY PRECISION	DRILLER TIM/STEVEN	DRILL TYPE CME750	ENGINEER MDM

DEPTH FROM	DEPTH TO	REMARKS	DRILL TIME (MIN.)	CORE INTERVAL (FEET)	CORE LENGTH (INCHES)	CORE RECOVERY (%)	RQD (%)	LOG	DESCRIPTION
0	19								INTERLAYERED CLAY/SAND, SILTY, SLIGHTLY GRAVELLY, MOIST, DARK BROWN.
19	22		2	3	18	50%	100		CLAYSTONE, DARK GRAYISH BROWN.
22	27	DRILL ISSUES PREVENTED CORE RECOVERY	8	5	N/A	N/A	N/A		
27	29.5		4	2.5	30	100%	47		
29.5	32		4	2.5	28	93%	67		SANDSTONE, BROWN TO GRAYISH BROWN.
32	37		5	5	60	100%	58		CLAYSTONE, DARK GRAYISH BROWN. COAL, RIDER SEAM, DARK BROWN, WET.
37	42		10	5	60	100%	60		CLAYSTONE, DARK GRAYISH BROWN.
42	47		10	5	60	100%	90		INTERBEDDED CLAYSTONE/SANDSTONE, SILTY, LIGHT GRAY.
47	52		10	5	60	100%	87		CLAYSTONE, SILTY, DARK GRAY TO GRAY.
52	57		6	5	60	100%	78		
57	62		5	5	60	100%	78		SANDSTONE, CLAYEY, FRACTURED, FINE GRAIN, LIGHT GRAY.
62	67		4.5	5	60	100%	74		
67	72		4.5	5	60	100%	70		
72	77		5.75	5	59	98%	74		CLAYSTONE, SANDY, GRAY TO DARK GRAY.
77	82		7.5	5	60	100%	69		SANDSTONE, LIGHT GRAY.

FIG. B-5

PROJECT NODN47,332-110 PROJECT NAME ERIE PARCEL	CTL/THOMPSON, INC. (303) 825-0777 1971 WEST 12TH AVENUE DENVER, COLORADO 80204

BORING NUMBER B-3	BEGIN DRILLING TIME: 10/28/2014	END DRILLING TIME: 10/29/2014
TOP OF HOLE ELEVATION 5077.6	GROUND WATER ELEVATION	DIRECTION OF HOLE VERTICAL
TOTAL DEPTH 107	OVERBURDEN THICKNESS 17	SIZE AND TYPE OF BIT HQ 3.5"OD
DRILLING COMPANY PRECISION	DRILLER TIM/STEVEN	DRILL TYPE CME75 / ENGINEER MDM

DEPTH FROM	DEPTH TO	REMARKS	DRILL TIME (MIN.)	CORE INTERVAL (FEET)	CORE LENGTH (INCHES)	CORE RECOVERY (%)	RQD (%)	LOG	DESCRIPTION
82	87		5	5	60	100%	42		CLAYSTONE, CONTAINS COAL AND LIGNITE.
87	92		5	5	60	100%	58		COAL, DARK BROWN
92	97		10	5	60	100%	53		INTERBEDDED CLAYSTONE/SANDSTONE, SILTY, DARK GRAY, GRAYISH BROWN.
97	102		5	5	88	63%	50		RUBBLE
102	107		3.5	5	60	100%	55		INTERBEDDED CLAYSTONE/SANDSTONE, LIGHT GRAY, DARK GRAY, FINE GRAINED.

FIG. B-6

VIEW OF CORE B-1 AT 23.5-26.0

VIEW OF CORE B-1 AT 26.0-31.0

VIEW OF CORE B-1 AT 31.0-36.0

VIEW OF CORE B-1 AT 36.0-41.0

VIEW OF CORE B-1 AT 36.0-41.0

VIEW OF CORE B-1 AT 41.0-46.0

VIEW OF CORE B-1 AT 41.0-46.0

VIEW OF CORE B-1 AT 46.0-51.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-10

VIEW OF CORE B-1 AT 46.0-51.0

VIEW OF CORE B-1 AT 46.0-51.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-11

VIEW OF CORE B-1 AT 51.0-56.0

VIEW OF CORE B-1 AT 51.0-56.0

RMCS, INC
ERIE PARCEL
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FIG. B-12

VIEW OF CORE B-1 AT 56.0-61.0

VIEW OF CORE B-1 AT 56.0-61.0

VIEW OF CORE B-1 AT 56.0-61.0

VIEW OF CORE B-1 AT 61.0-66.0

VIEW OF CORE B-1 AT 61.0-66.0

VIEW OF CORE B-1 AT 61.0-66.0

VIEW OF CORE B-1 AT 71.0-76.0

VIEW OF CORE B-1 AT 71.0-76.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-16

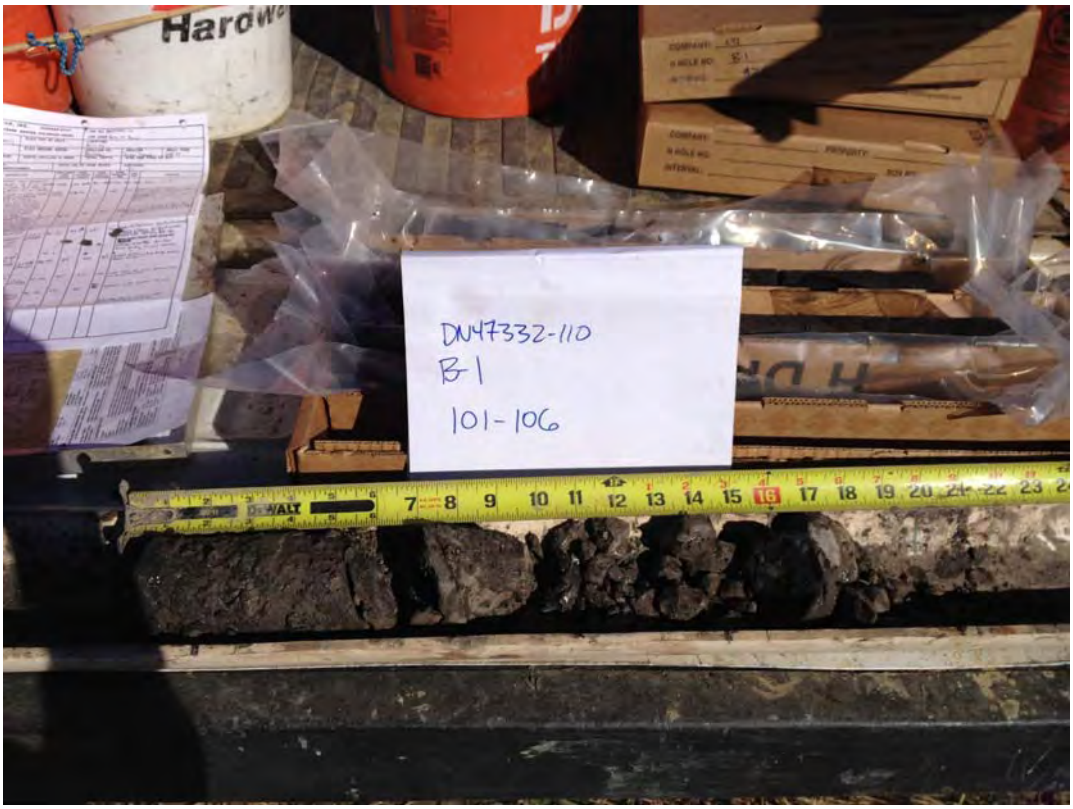
VIEW OF CORE B-1 AT 76.0-81.0

VIEW OF CORE B-1 AT 81.0-86.0

VIEW OF CORE B-1 AT 86.0-91.0

VIEW OF CORE B-1 AT 91.0-96.0

VIEW OF CORE B-1 AT 96.0-101.0



VIEW OF CORE B-1 AT 101.0-106.0

VIEW OF CORE B-1 AT 106.0-111.0

VIEW OF CORE B-1 AT 106.0-111.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-20

VIEW OF CORE B-2 AT 76.0-81.0

VIEW OF CORE B-2 AT 76.0-81.0

VIEW OF CORE B-2 AT 81.0-86.0

VIEW OF CORE B-2 AT 81.0-86.0

VIEW OF CORE B-2 AT 86.0-91.0

VIEW OF CORE B-2 AT 86.0-91.0

VIEW OF CORE B-2 AT 91.0-96.0

VIEW OF CORE B-2 AT 91.0-96.0

VIEW OF CORE B-2 AT 96.0-101.0

VIEW OF CORE B-2 AT 96.0-101.0

VIEW OF CORE B-2 AT 101.0-106.0

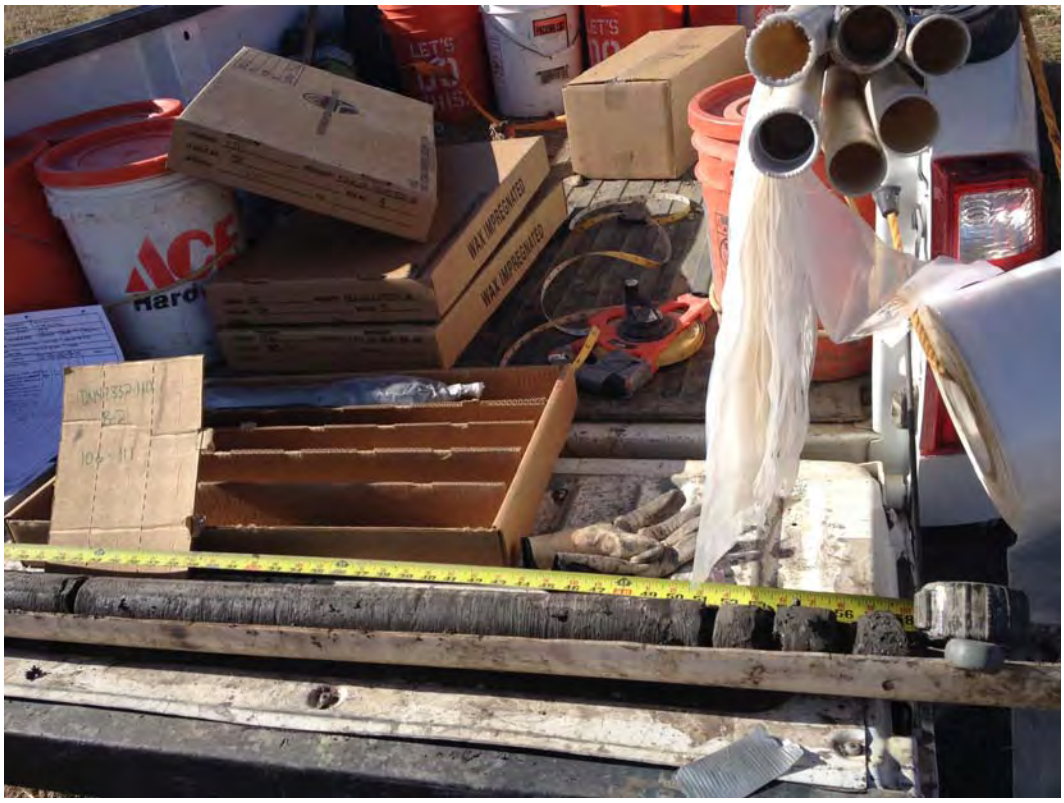
VIEW OF CORE B-2 AT 101.0-106.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-26

VIEW OF CORE B-2 AT 106.0-111.0

VIEW OF CORE B-2 AT 106.0-111.0



VIEW OF CORE B-2 AT 106.0-111.0

VIEW OF CORE B-2 AT 111.0-116.0

VIEW OF CORE B-2 AT 111.0-116.0

VIEW OF CORE B-2 AT 116.0-121.0

VIEW OF CORE B-2 AT 116.0-121.0

VIEW OF CORE B-2 AT 121.0-126.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-30

VIEW OF CORE B-2 AT 121.0-126.0

VIEW OF CORE B-2 AT 121.0-126.0

VIEW OF CORE B-3 AT 19.0-22.0

VIEW OF CORE B-3 AT 27.0-29.5

VIEW OF CORE B-3 AT 29.5-32.0

VIEW OF CORE B-3 AT 32.0-37.0

VIEW OF CORE B-3 AT 32.0-37.0

VIEW OF CORE B-3 AT 37.0-42.0

VIEW OF CORE B-3 AT 42.0-47.0

VIEW OF CORE B-3 AT 42.0-47.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-35

VIEW OF CORE B-3 AT 47.0-52.0

VIEW OF CORE B-3 AT 47.0-52.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-36

VIEW OF CORE B-3 AT 52.0-57.0

VIEW OF CORE B-3 AT 52.0-57.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-37

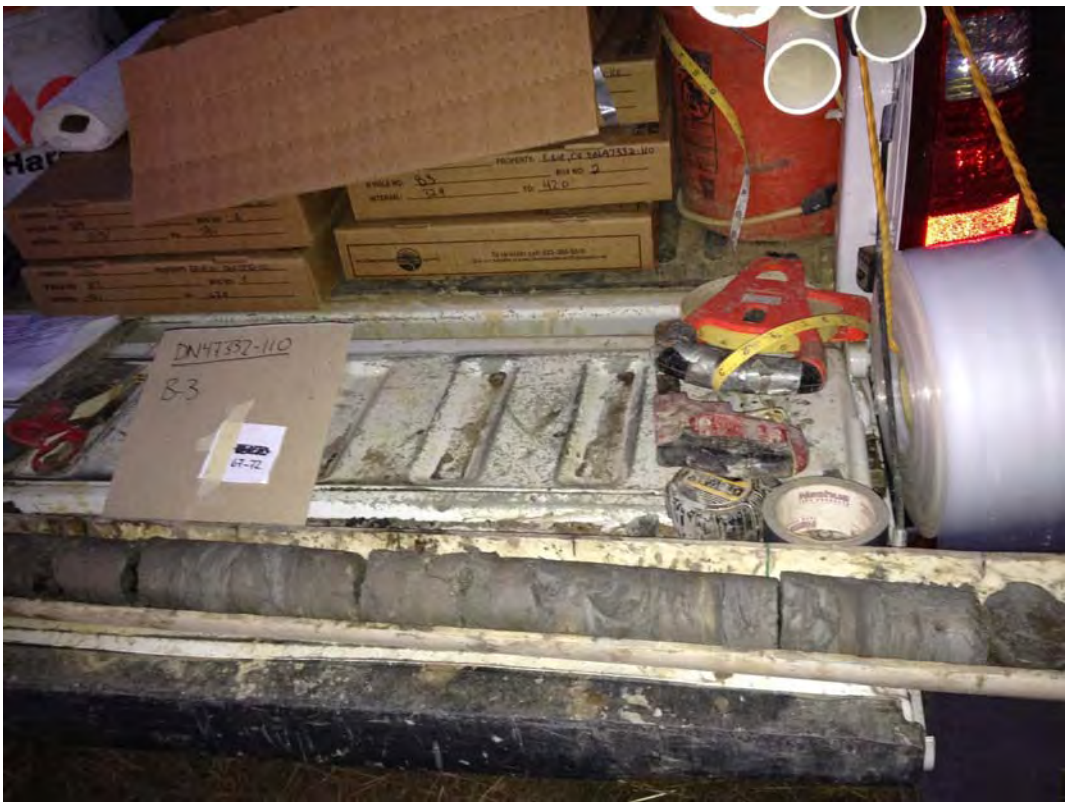
VIEW OF CORE B-3 AT 57.0-62.0

VIEW OF CORE B-3 AT 57.0-62.0

VIEW OF CORE B-3 AT 62.0-67.0

VIEW OF CORE B-3 AT 62.0-67.0

VIEW OF CORE B-3 AT 67.0-72.0



VIEW OF CORE B-3 AT 67.0-72.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-40

VIEW OF CORE B-3 AT 72.0-77.0

VIEW OF CORE B-3 AT 72.0-77.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-41

VIEW OF CORE B-3 AT 77.0-82.0

VIEW OF CORE B-3 AT 77.0-82.0

VIEW OF CORE B-3 AT 82.0-87.0

VIEW OF CORE B-3 AT 82.0-87.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-43

VIEW OF CORE B-3 AT 82.0-87.0

VIEW OF CORE B-3 AT 87.0-92.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-44

VIEW OF CORE B-3 AT 87.0-92.0

VIEW OF CORE B-3 AT 92.0-97.0

VIEW OF CORE B-3 AT 92.0-97.0

VIEW OF CORE B-3 AT 97.0-102.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-46

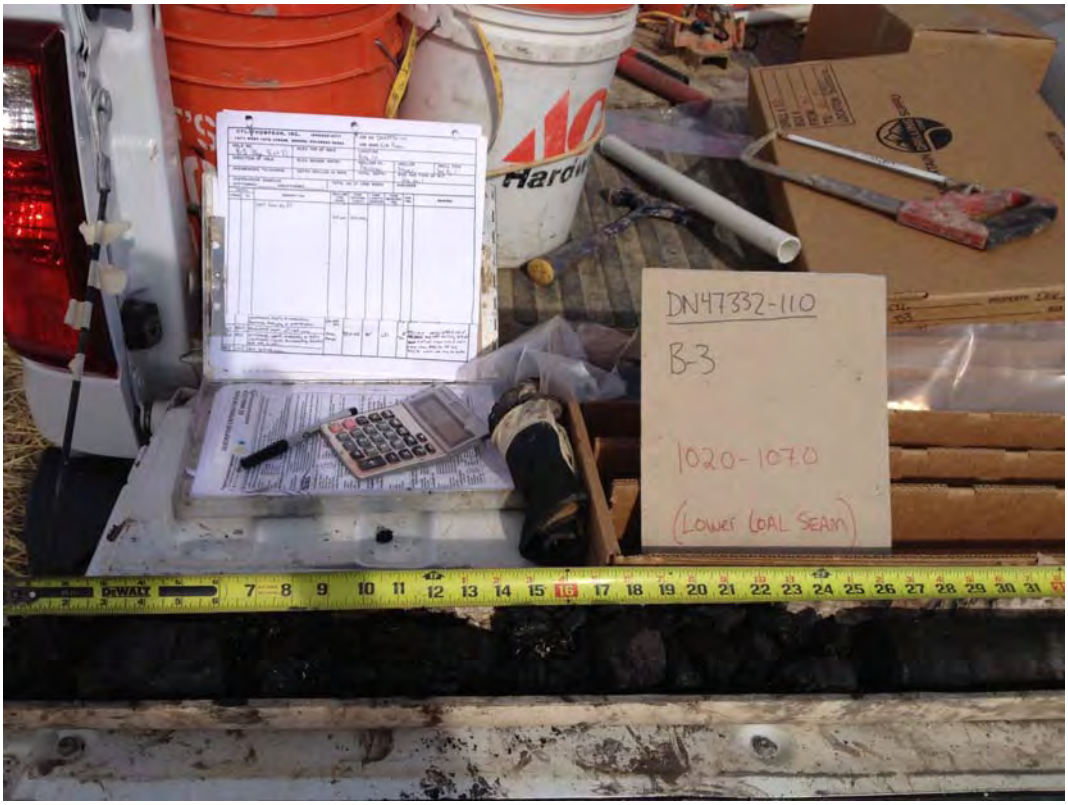
VIEW OF CORE B-3 AT 97.0-102.0

VIEW OF CORE B-3 AT 102.0-107.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-47

VIEW OF CORE B-3 AT 102.0-107.0



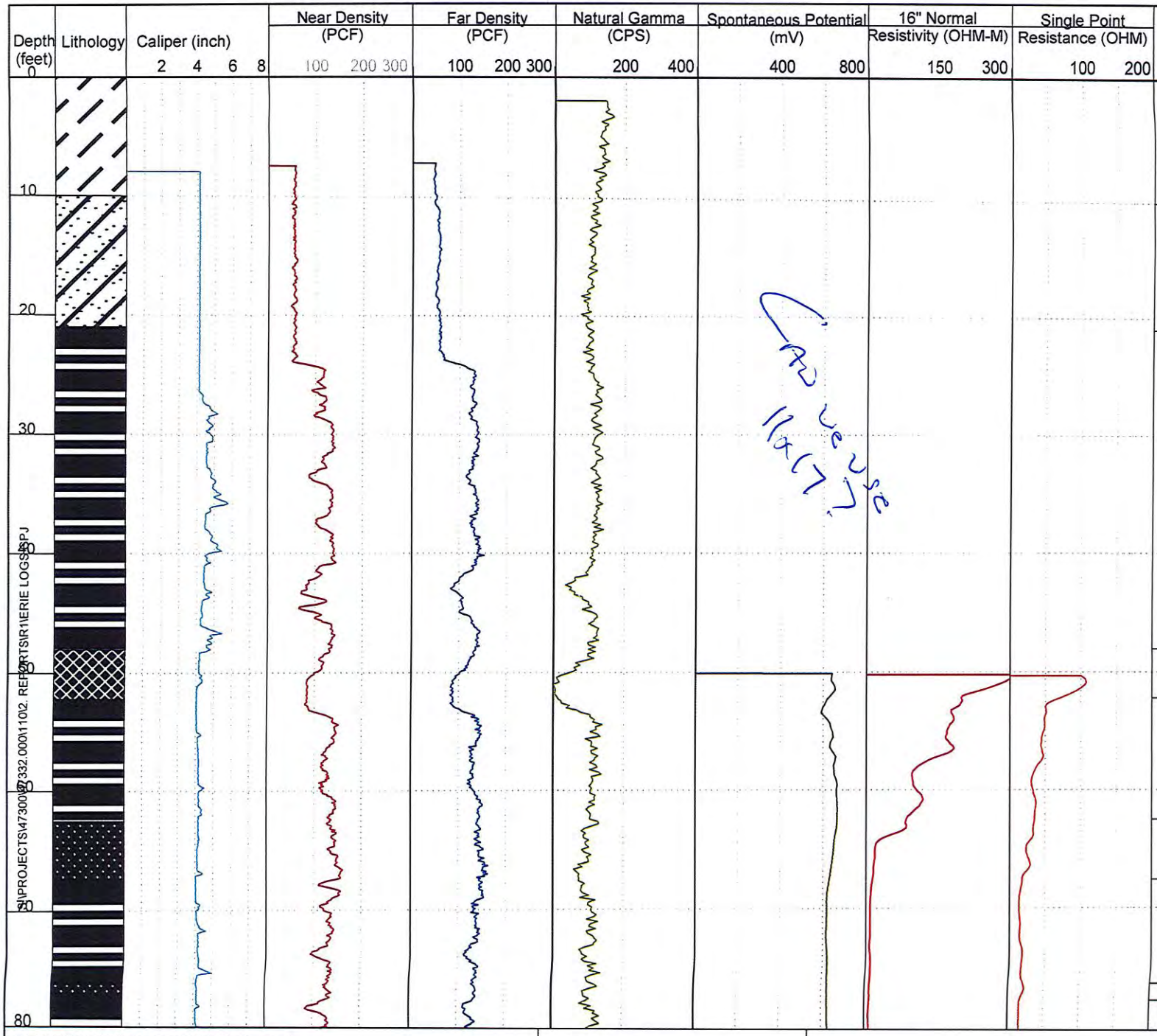
VIEW OF CORE B-3 AT 102.0-107.0

RMCS, INC
ERIE PARCEL
CTL | T PROJECT NO. DN47,332-110

FIG. B-48

APPENDIX C

GEOPYSICAL TEST LOGS



Material Description

CLAY, SANDY, SILTY, MOIST, BROWN.

SAND, SILTY, MOIST TO VERY MOIST, LIGHT BROWN, LIGHT YELLOWISH-BROWN.

CLAYSTONE, SLIGHTLY SANDY, SLIGHTLY SILTY, MOIST, LIGHT GRAYISH BROWN, CONTAINS OCCASIONAL LIGNITE.

COAL, BLACK.

CLAYSTONE, SLIGHTLY SANDY, LIGHT TO GRAYISH BROWN.

SANDSTONE, LIGHT GRAY, BROWN, FINE GRAINED.

CLAYSTONE, FRACTURED, GRAY TO GRAYISH BROWN, MOIST, SLIGHTLY SANDY.

SANDSTONE, SILTY.

CLAYSTONE, DARK BROWN,

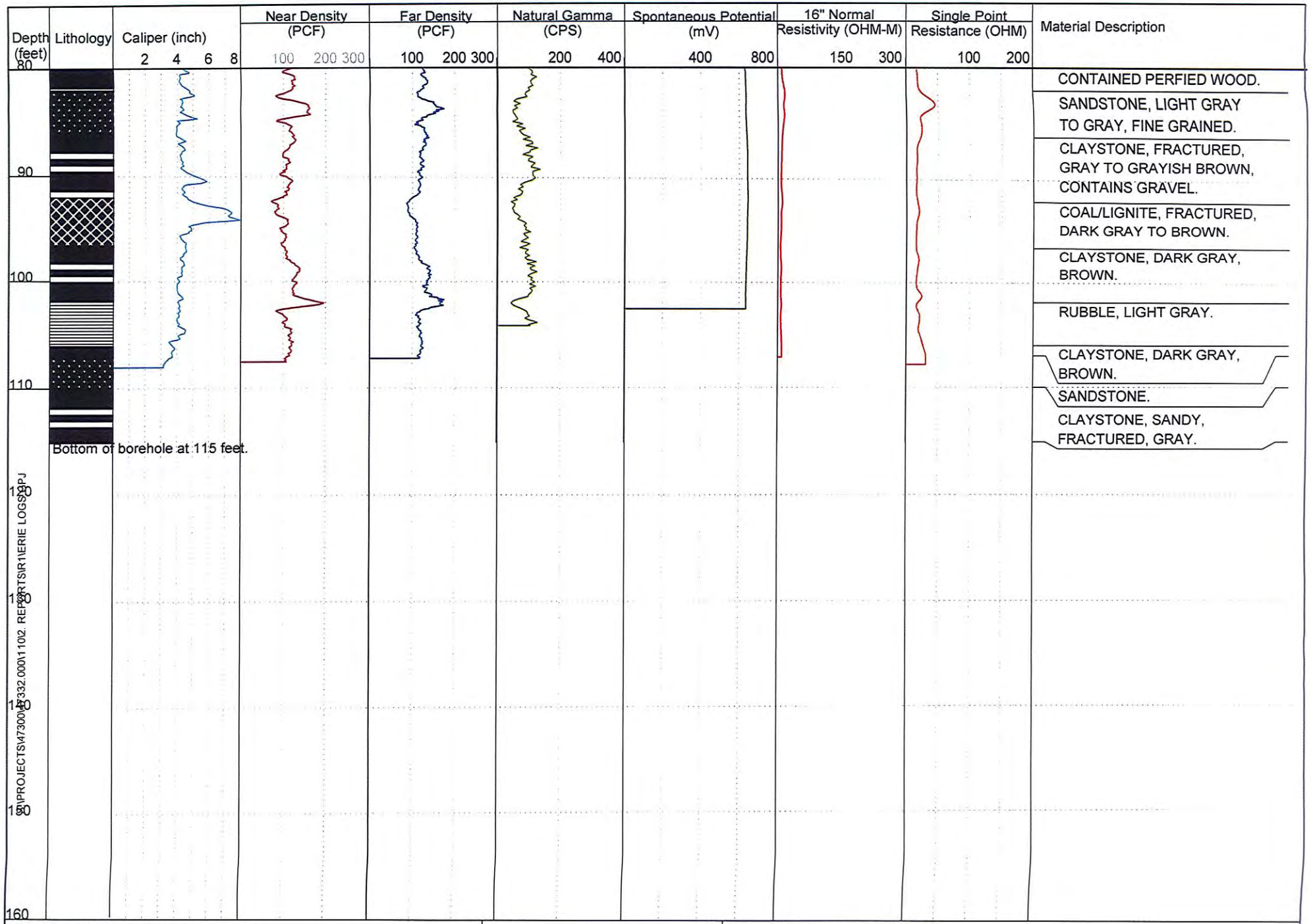
GEOPHYSICAL TEST LOG: B-1

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-1

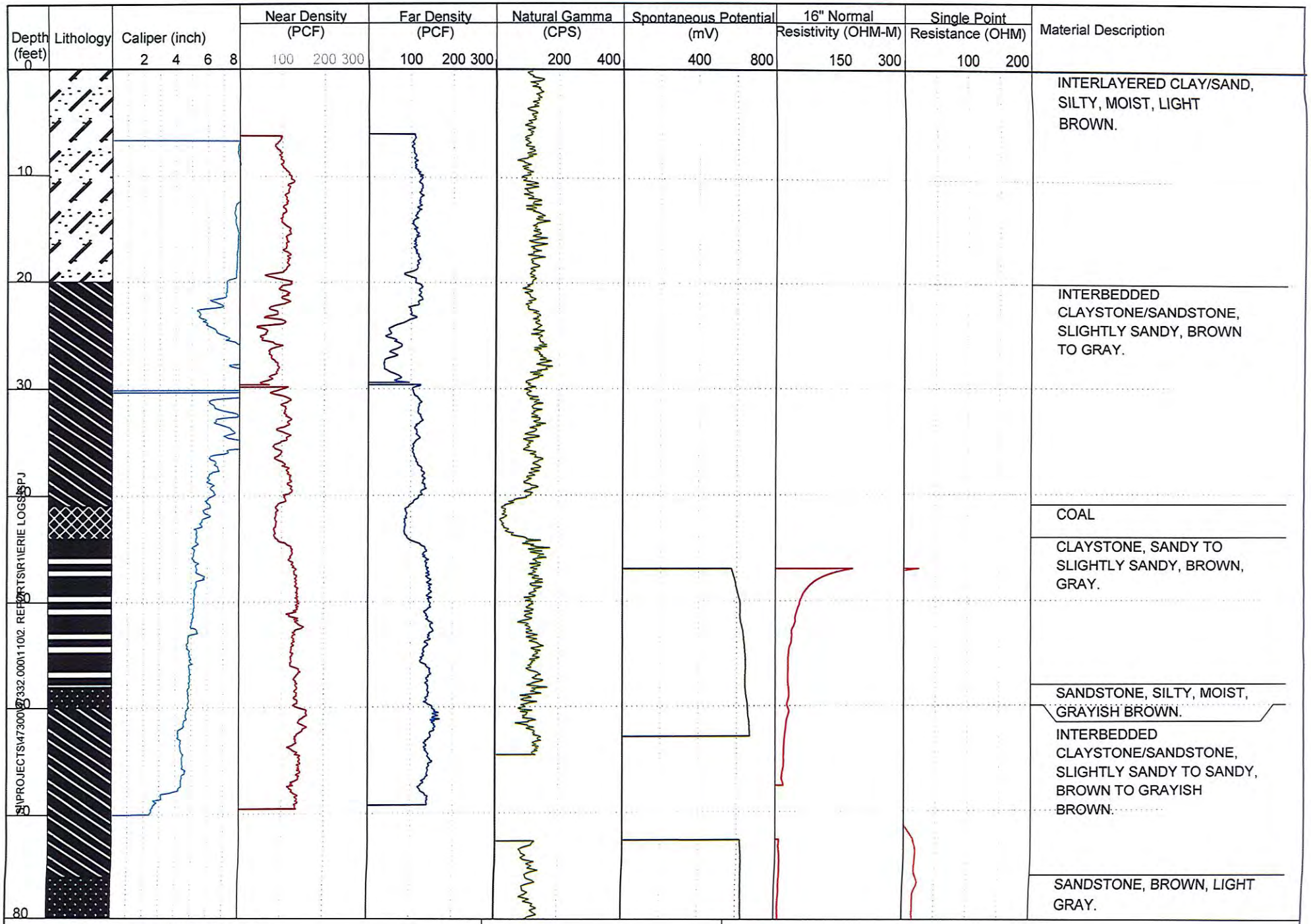
CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

I:\PROJECTS\47300\47332.000\111002. REPORTS\R1\ERIE LOGS.PJ



GEOPHYSICAL TEST LOG: B-2

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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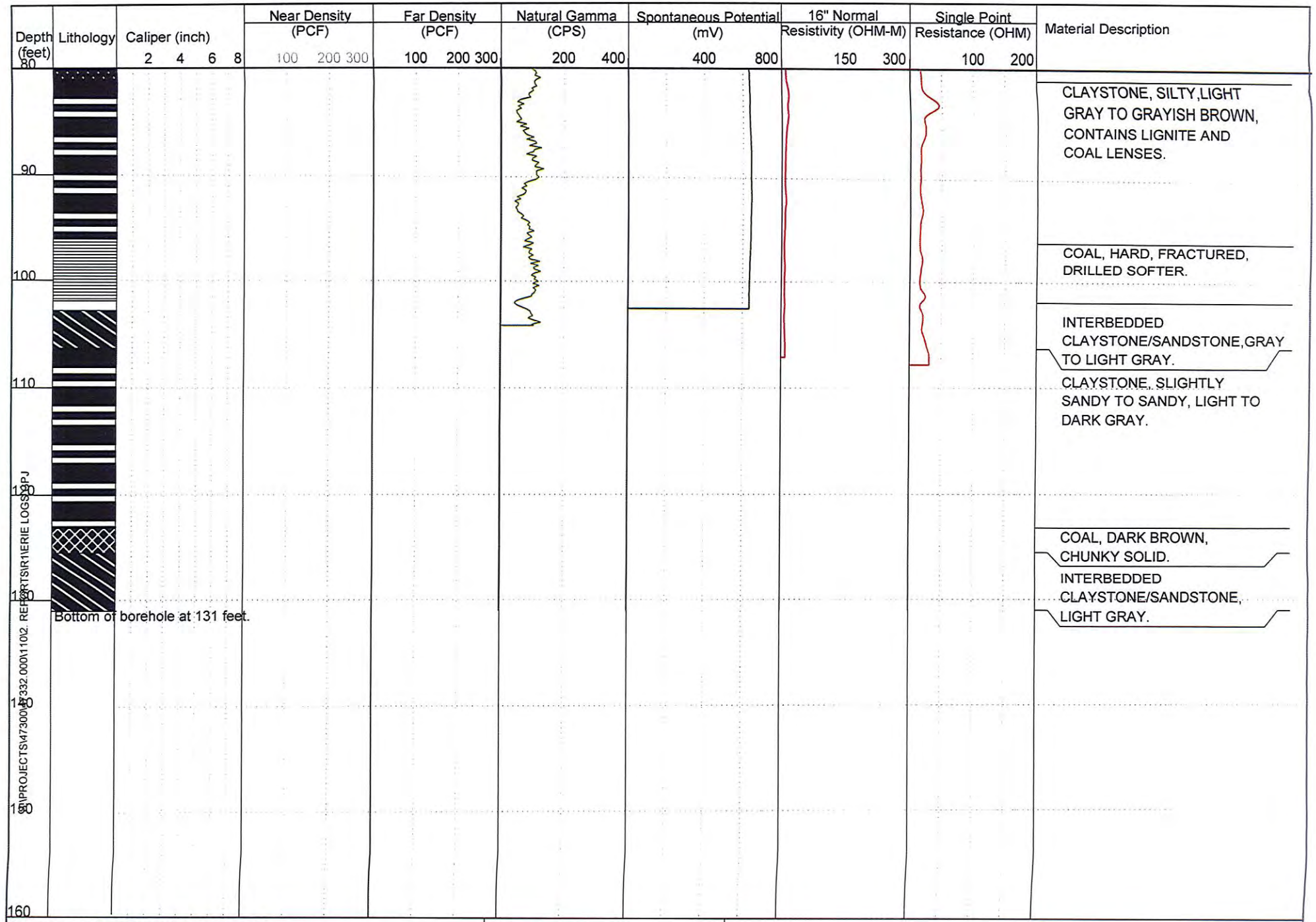

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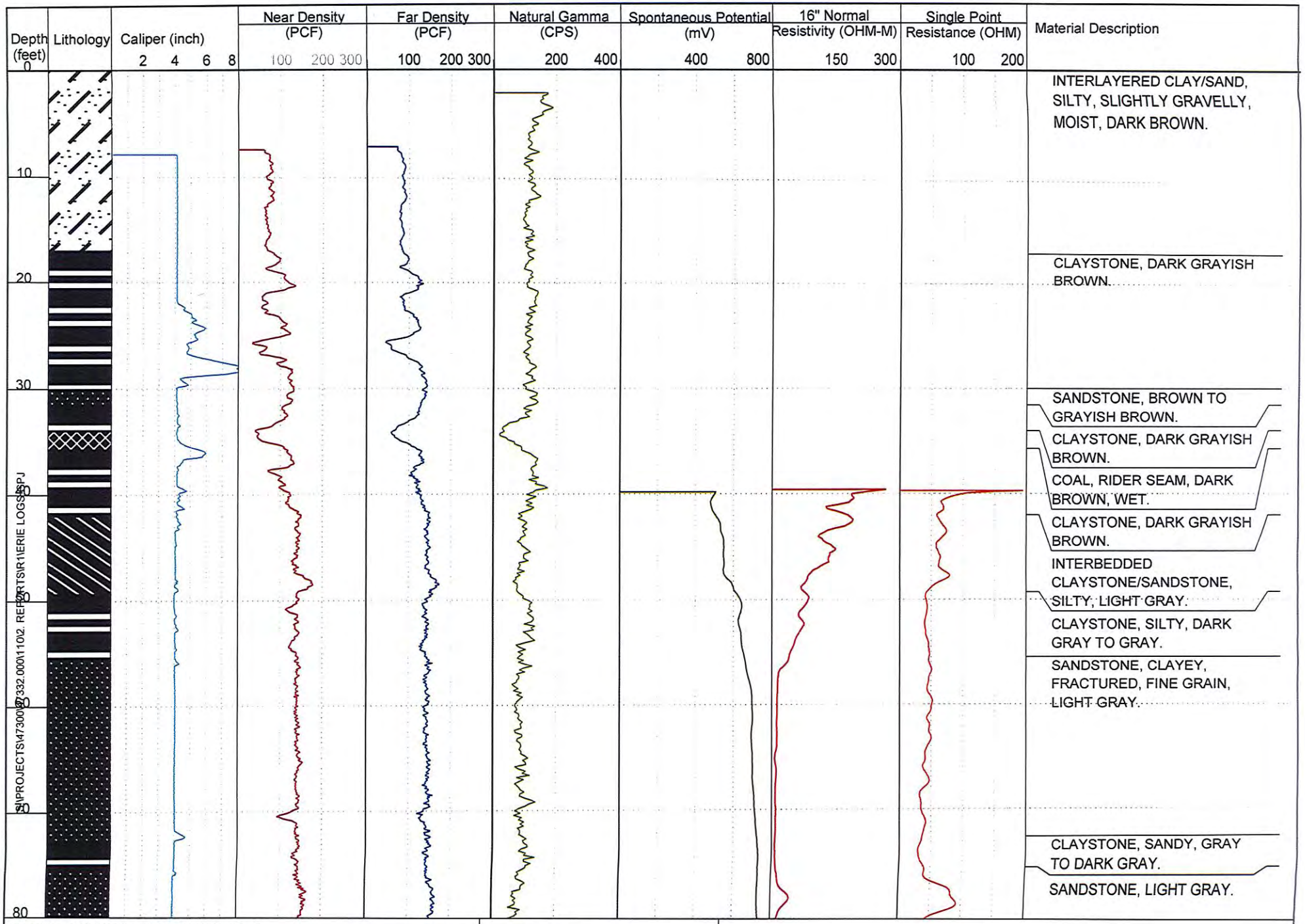
GEOPHYSICAL TEST LOG: B-2

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-3

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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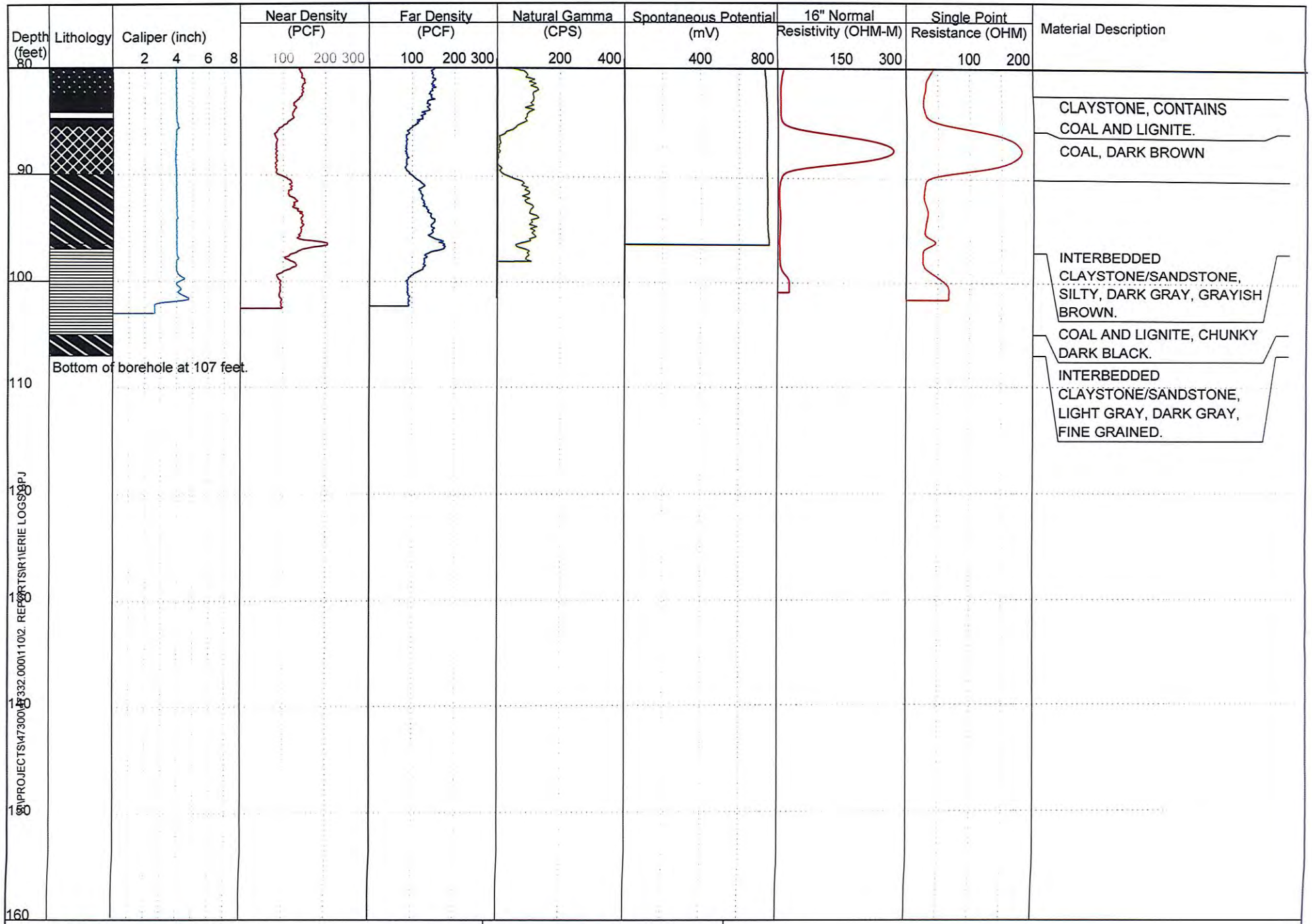


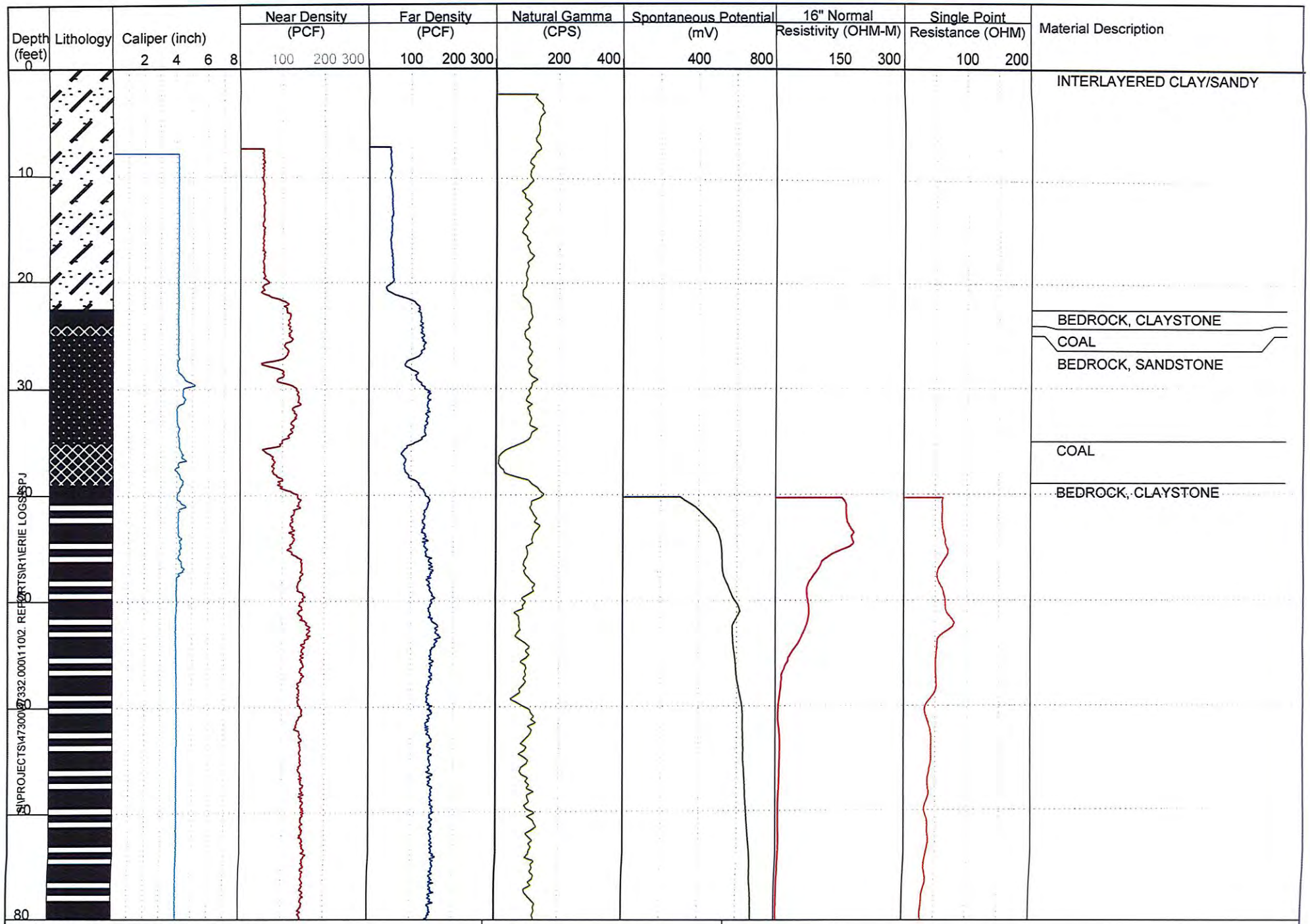
GEOPHYSICAL TEST LOG: B-3

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-4

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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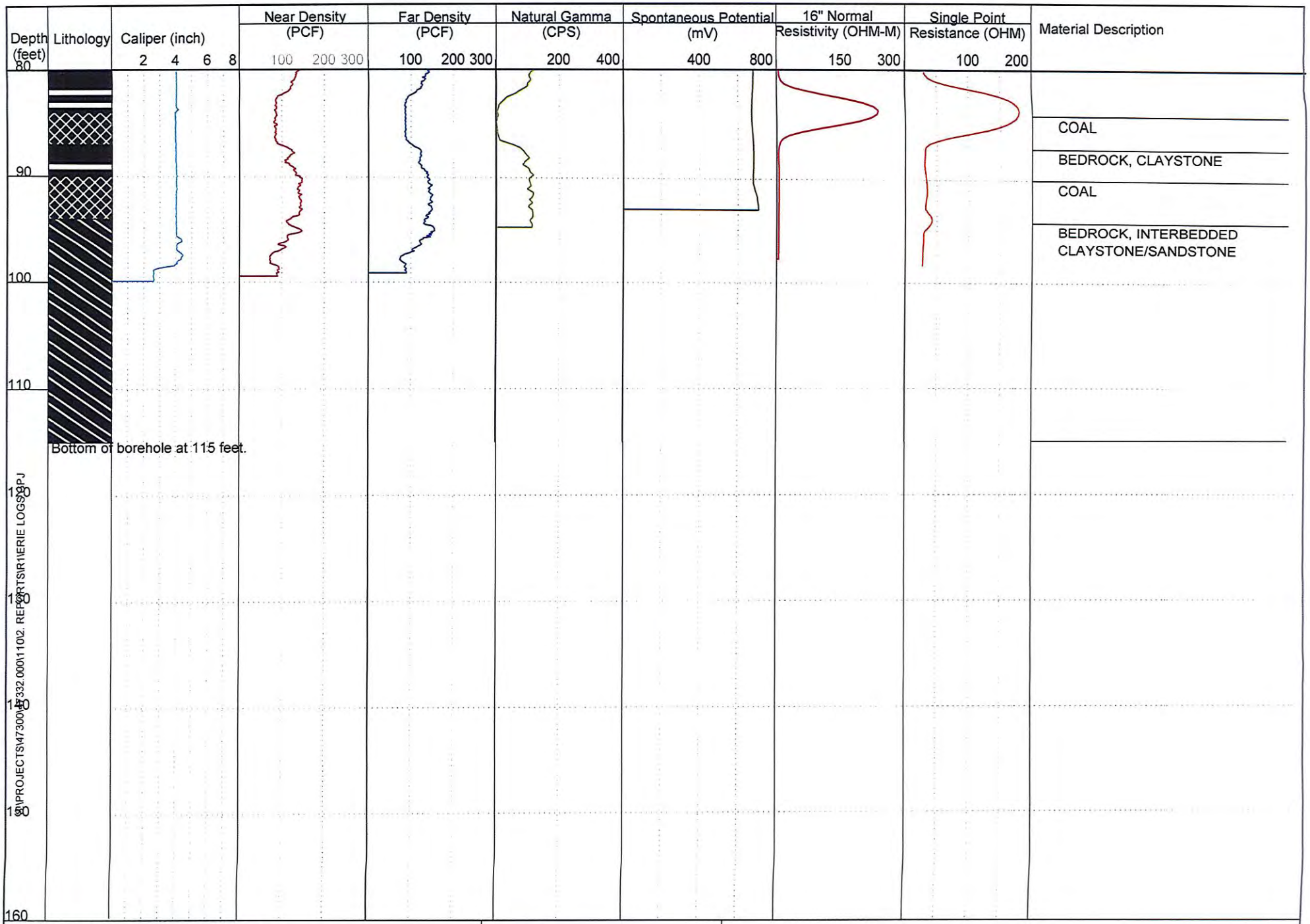

GEOPHYSICAL TEST LOG: B-4

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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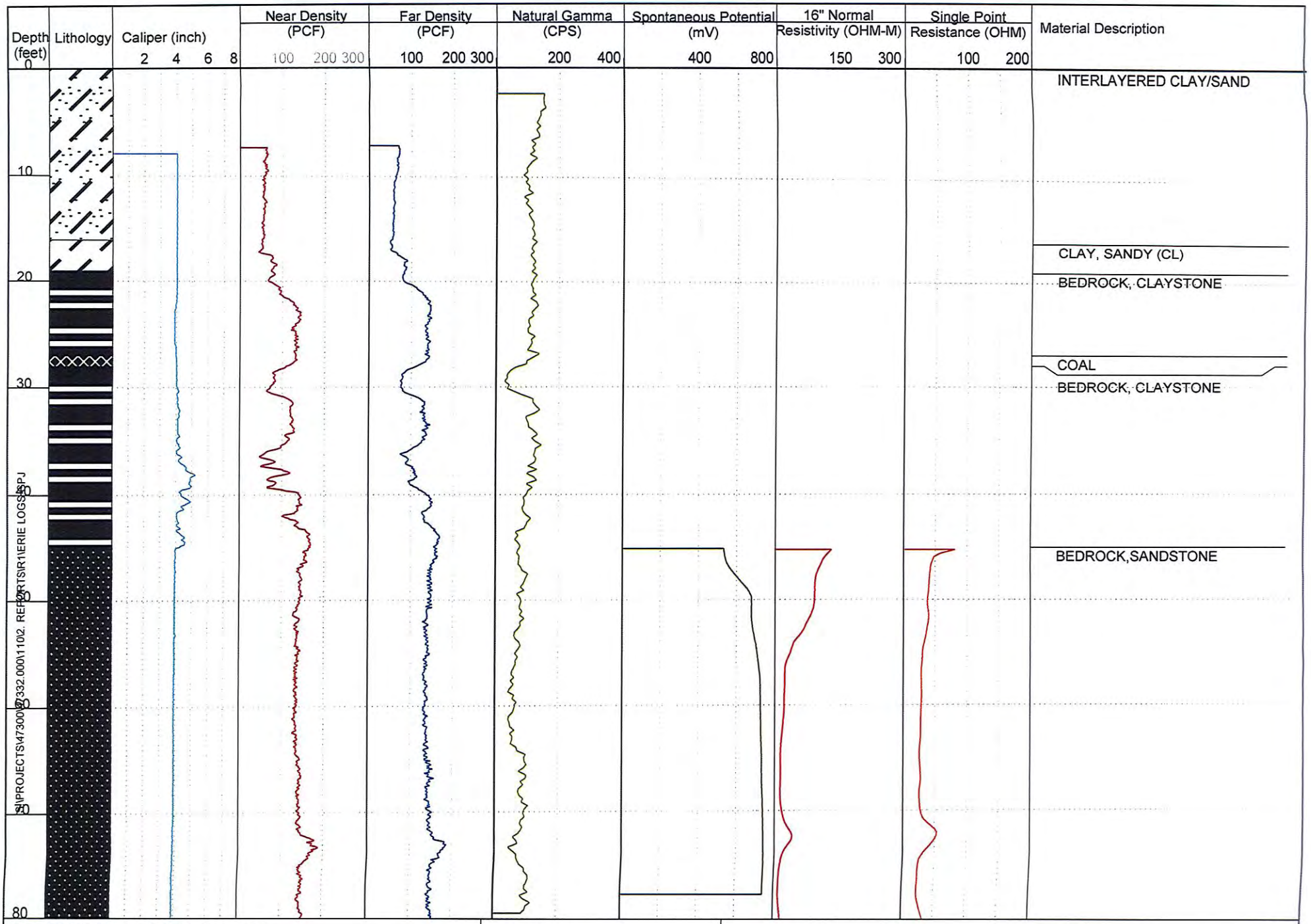


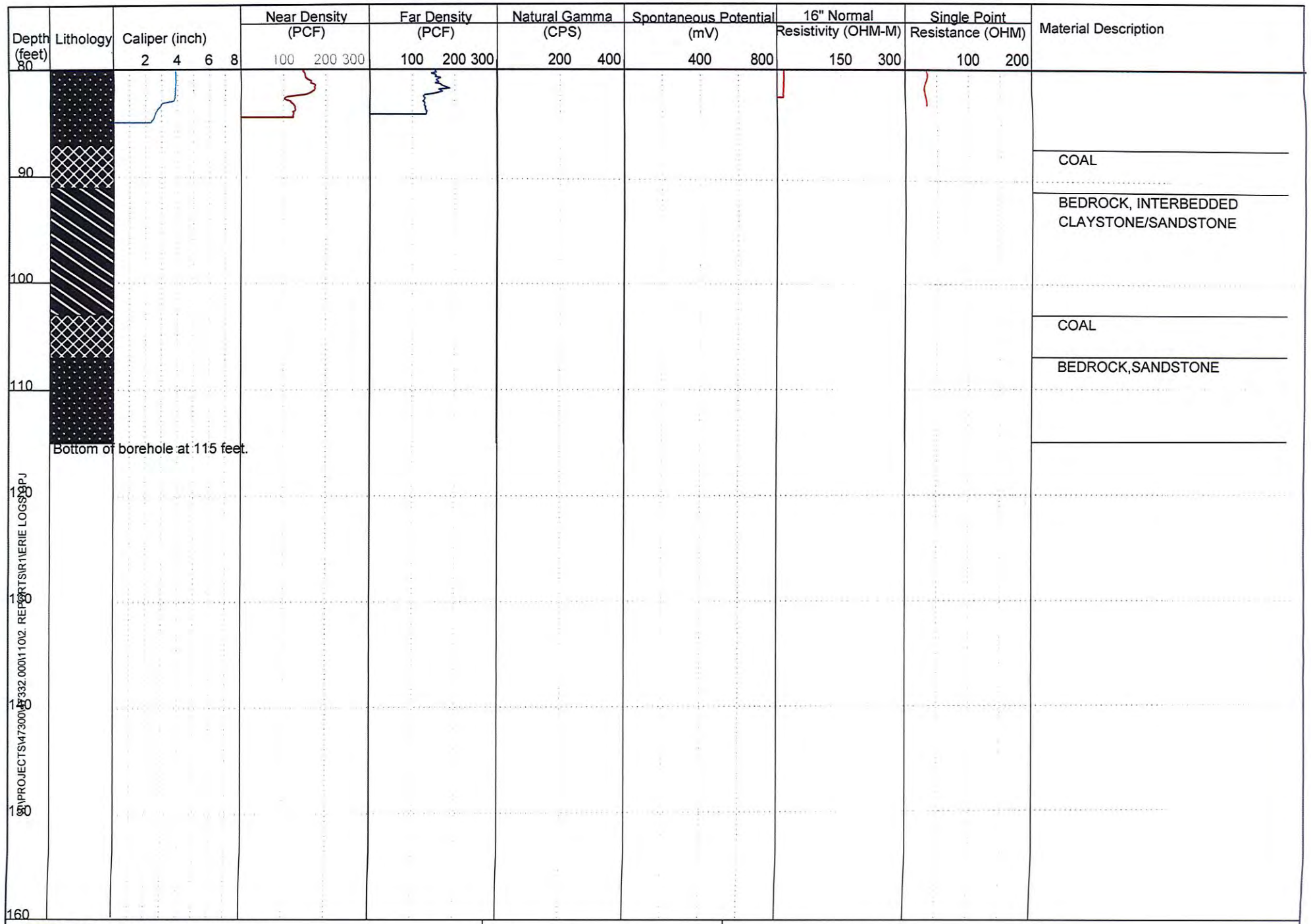
GEOPHYSICAL TEST LOG: B-5

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-5

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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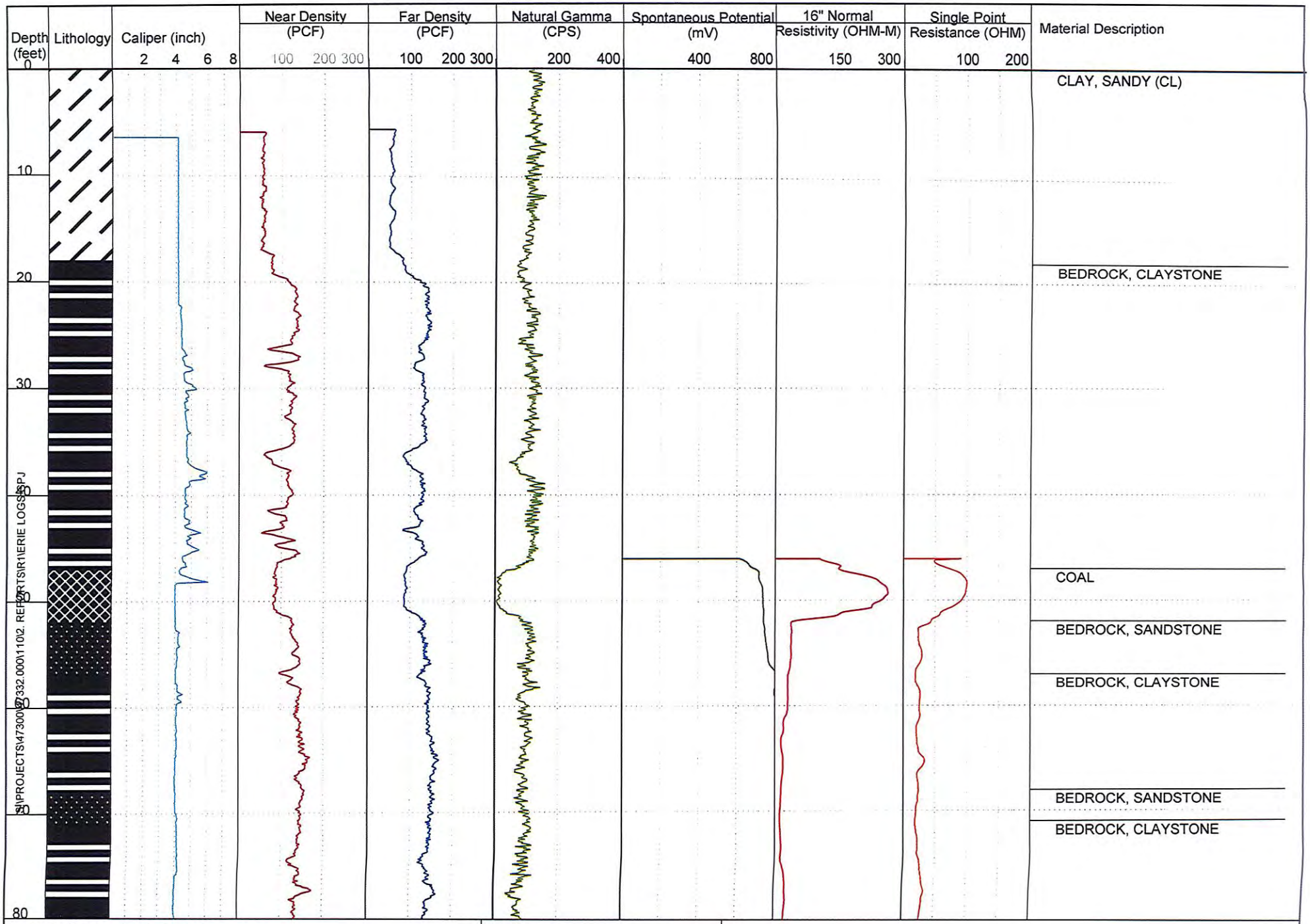

GEOPHYSICAL TEST LOG: B-6

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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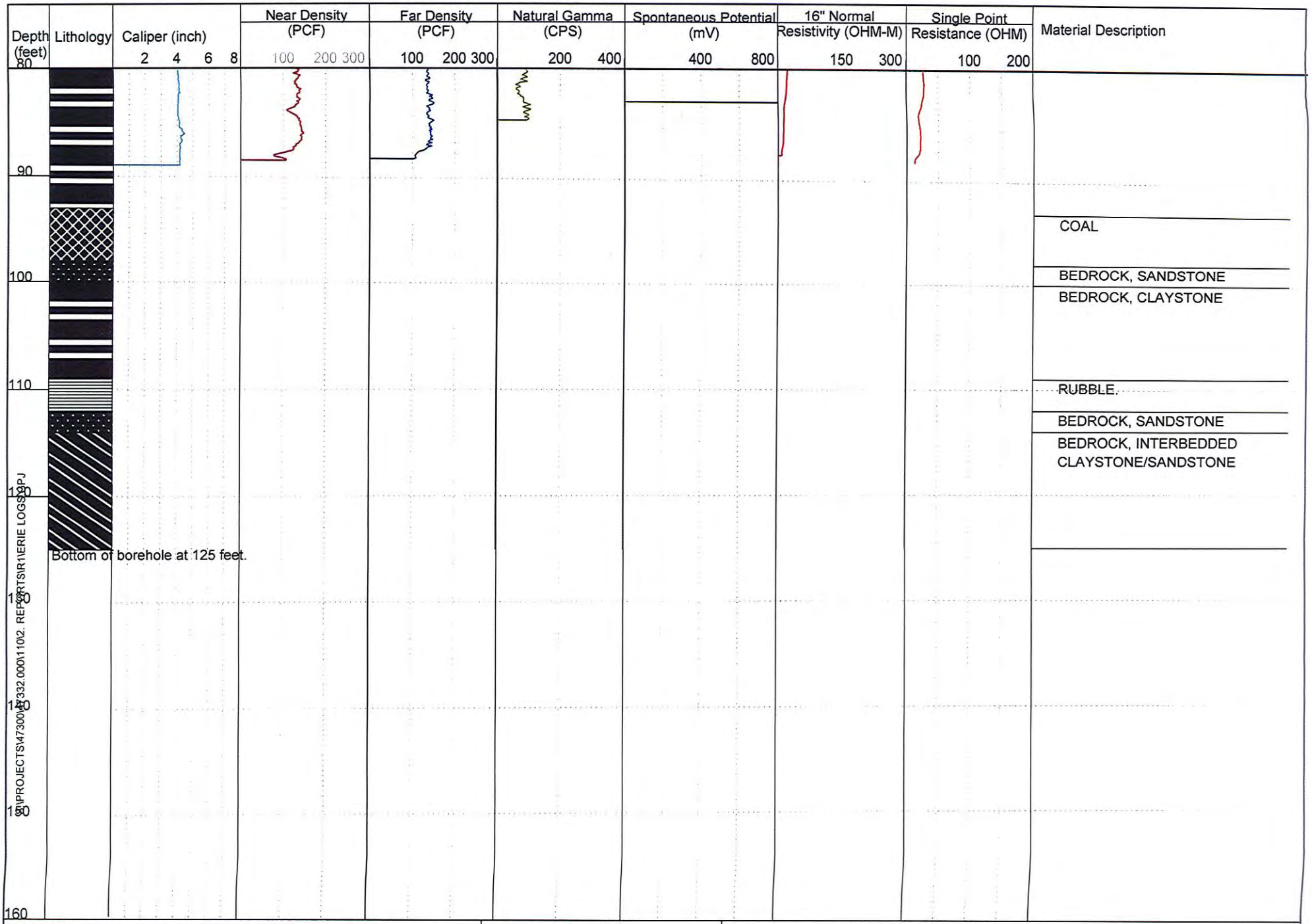

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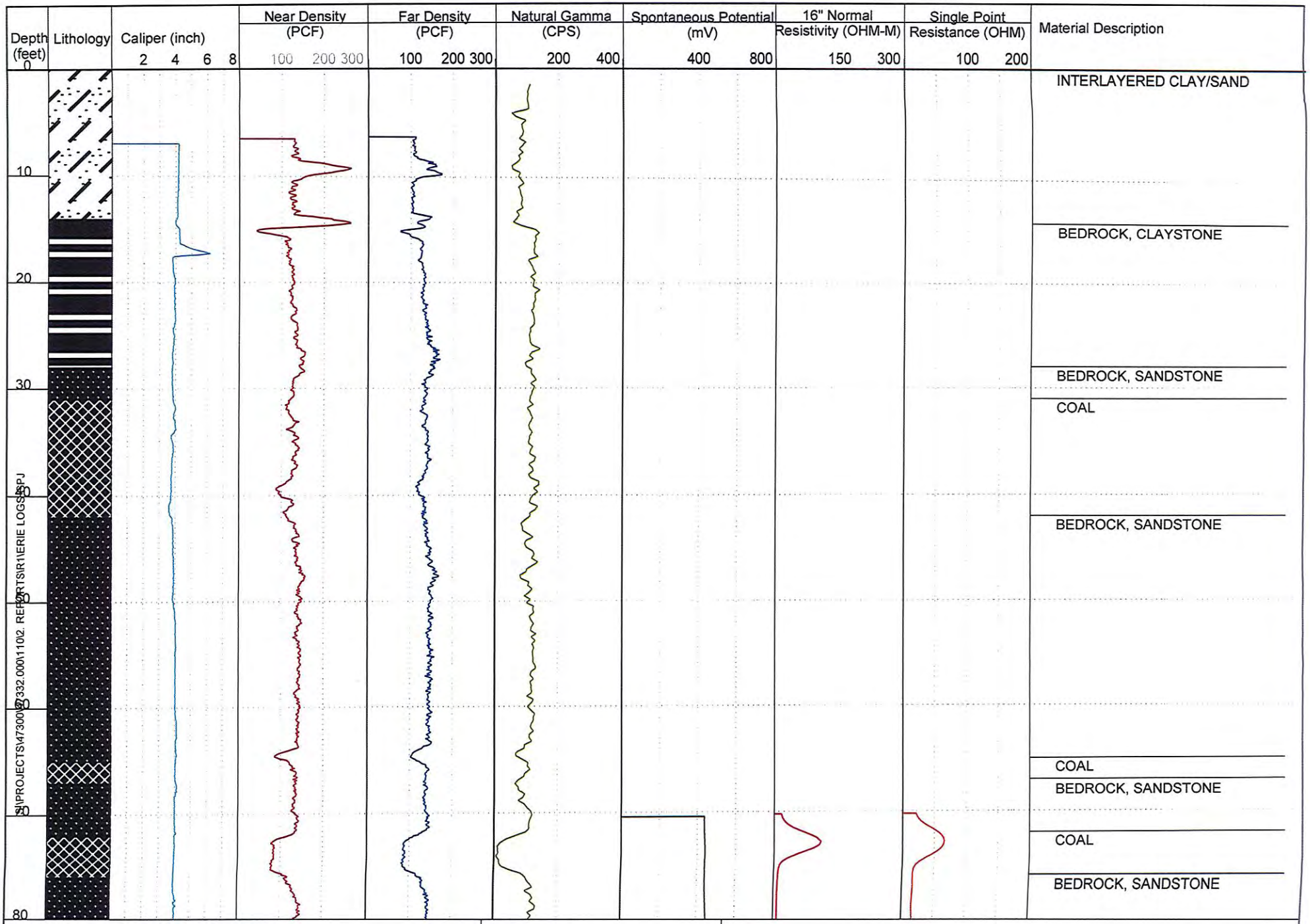
GEOPHYSICAL TEST LOG: B-6

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-7

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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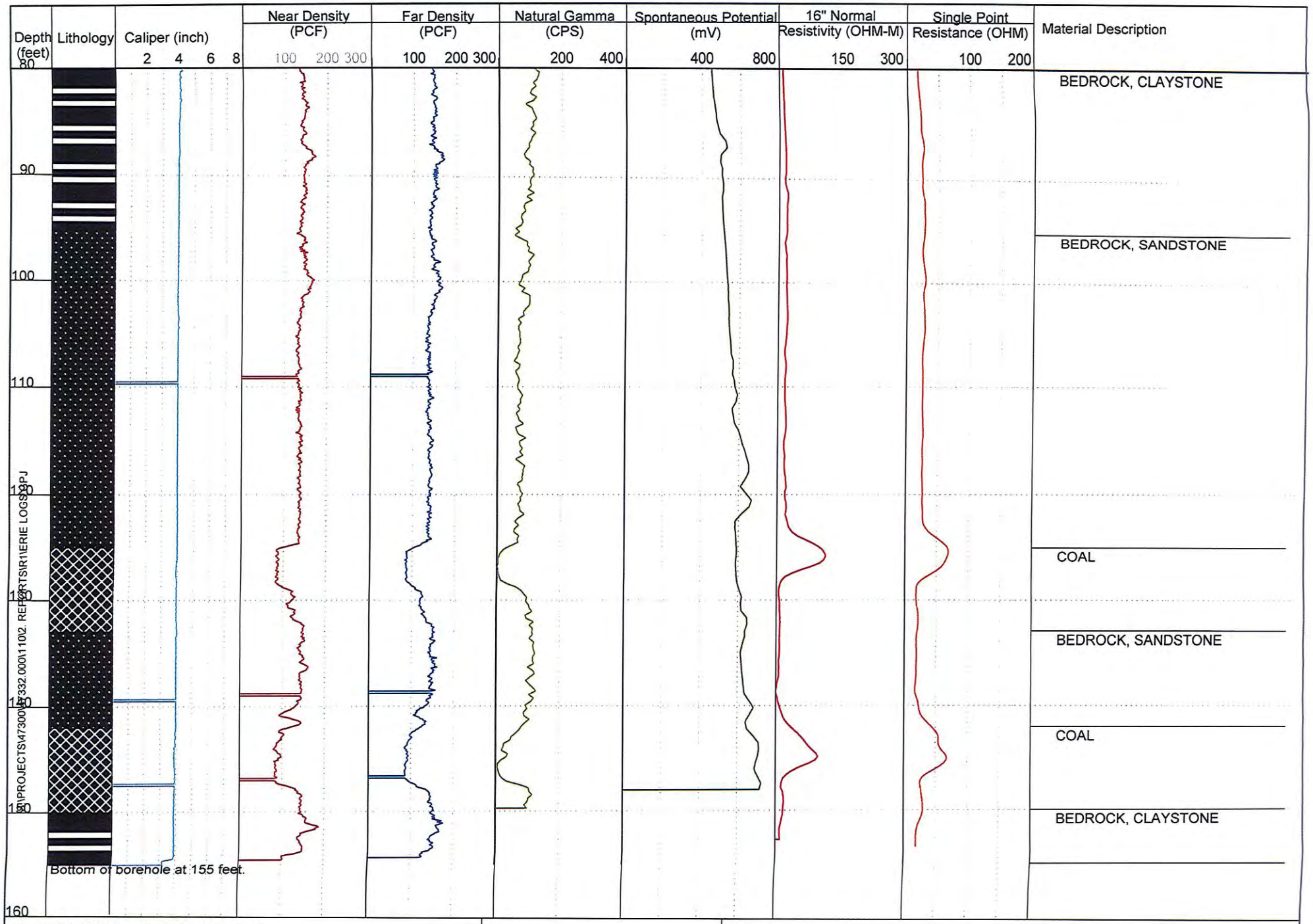


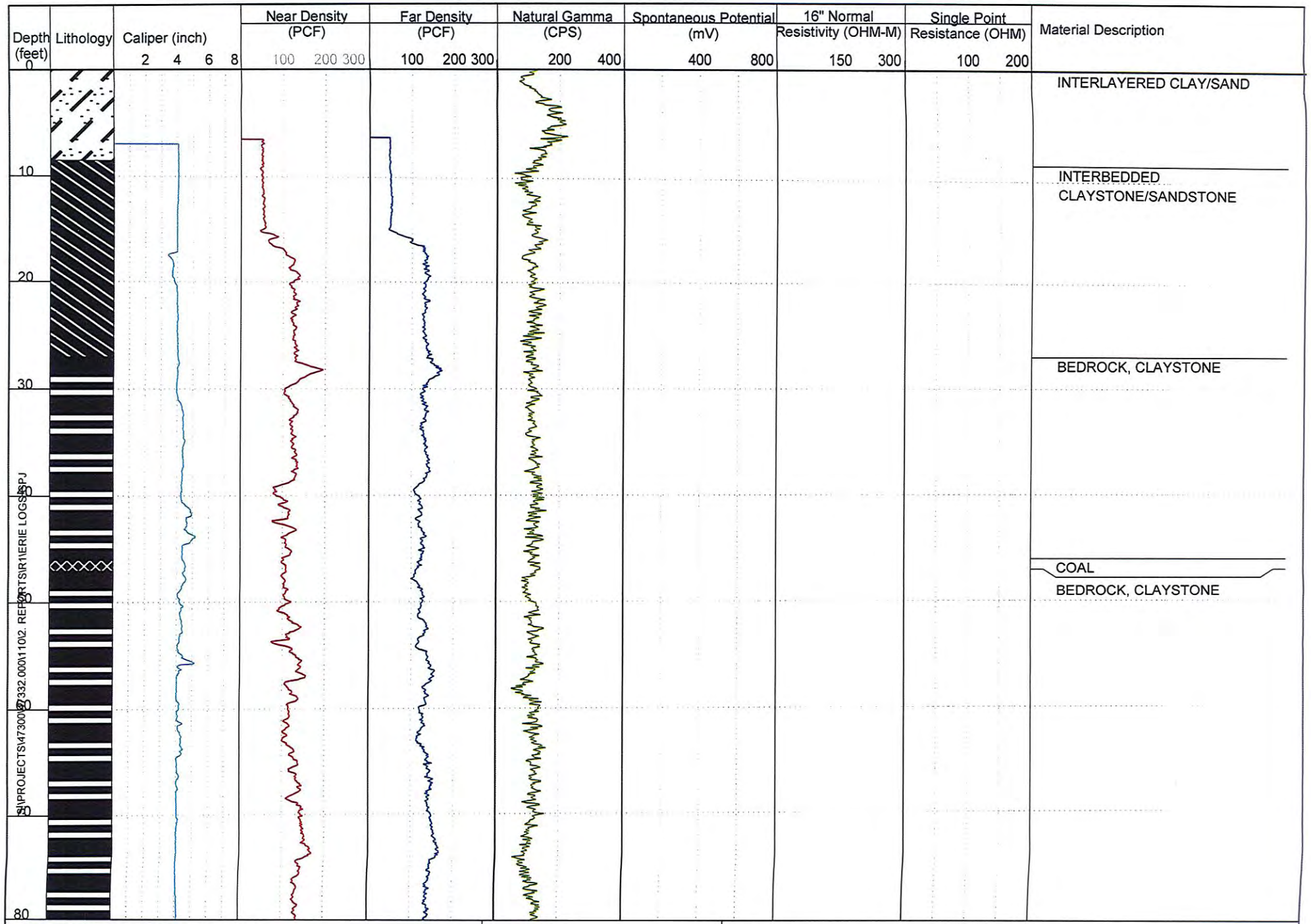
GEOPHYSICAL TEST LOG: B-7

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-8

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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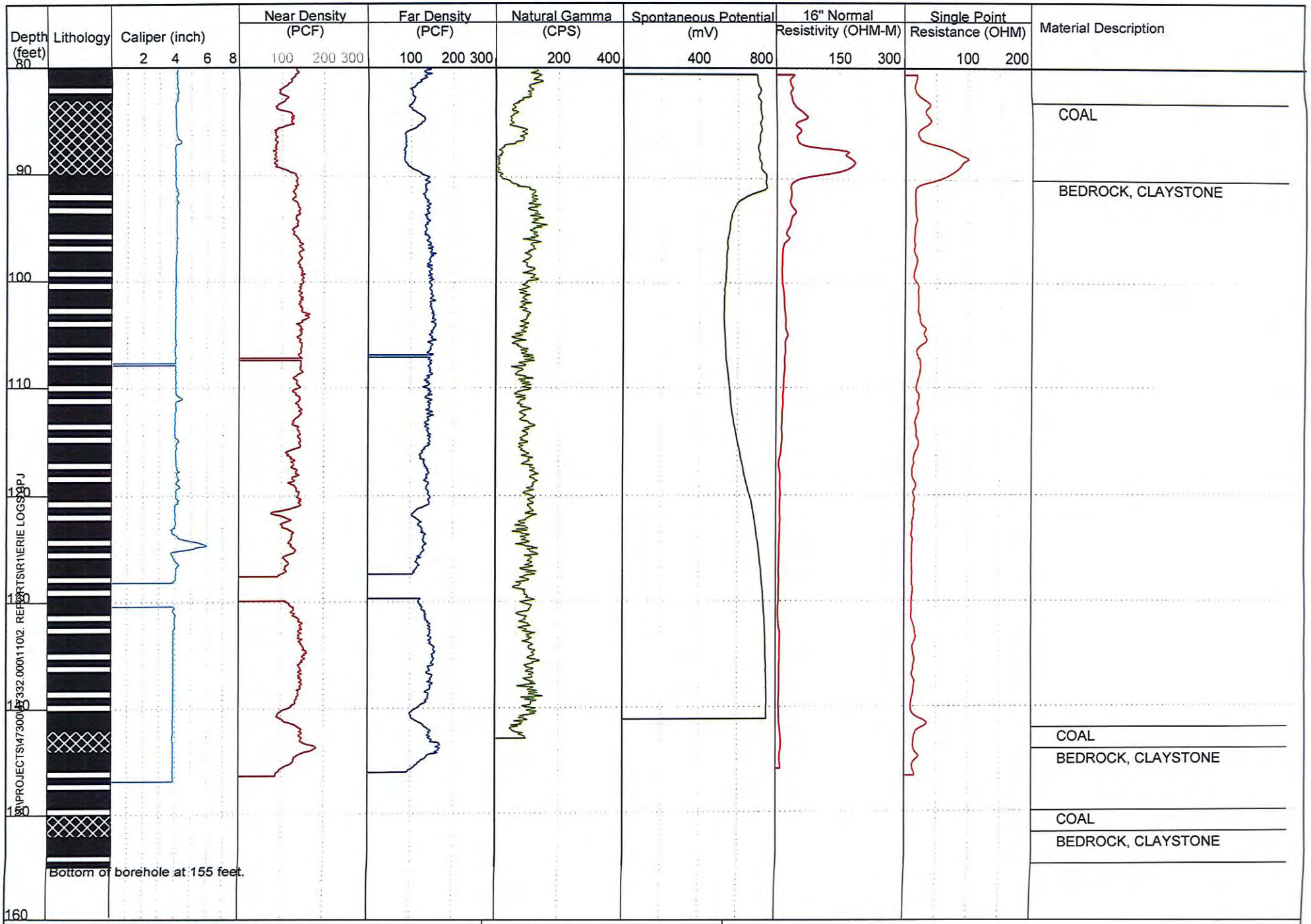


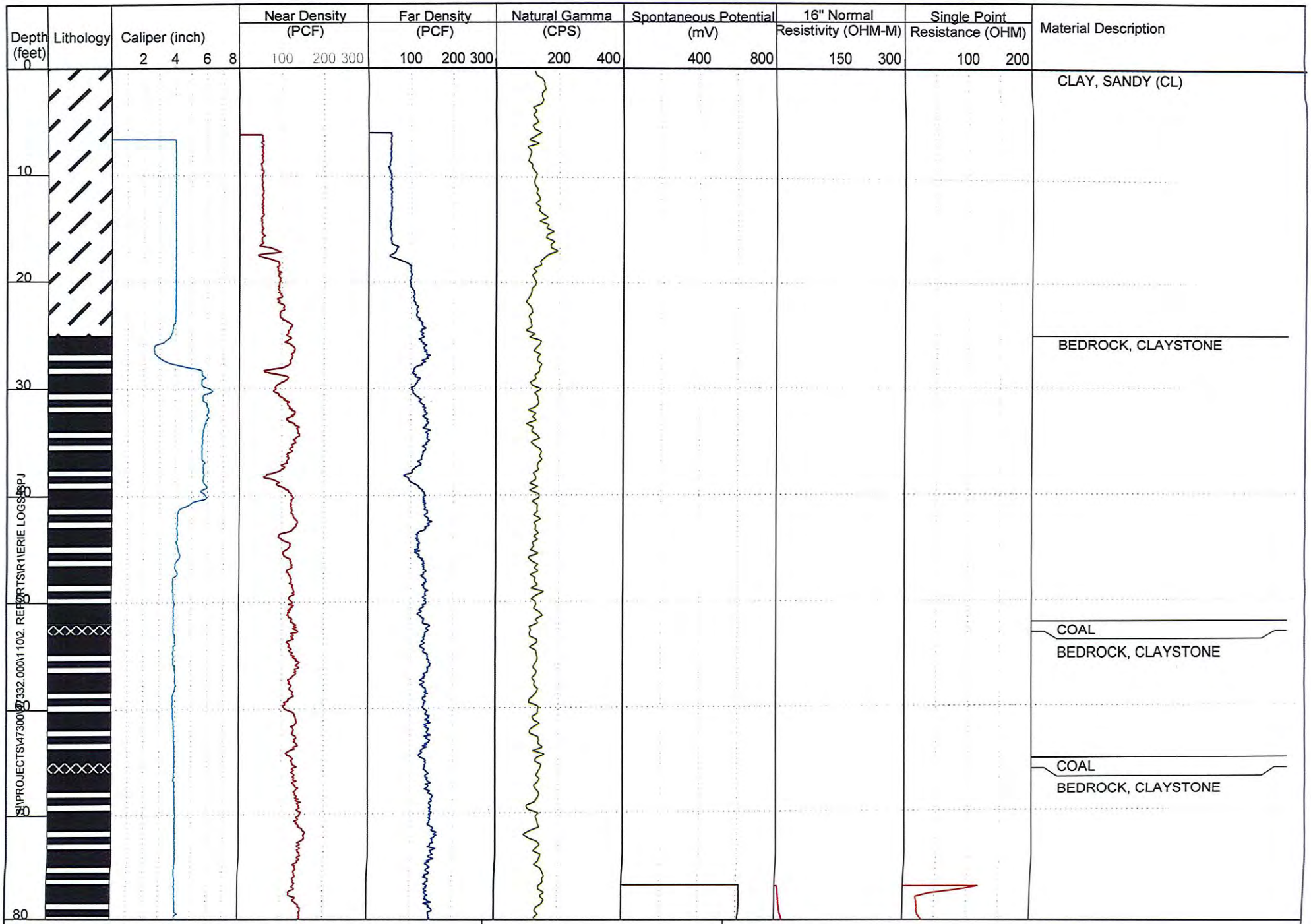
GEOPHYSICAL TEST LOG: B-8

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



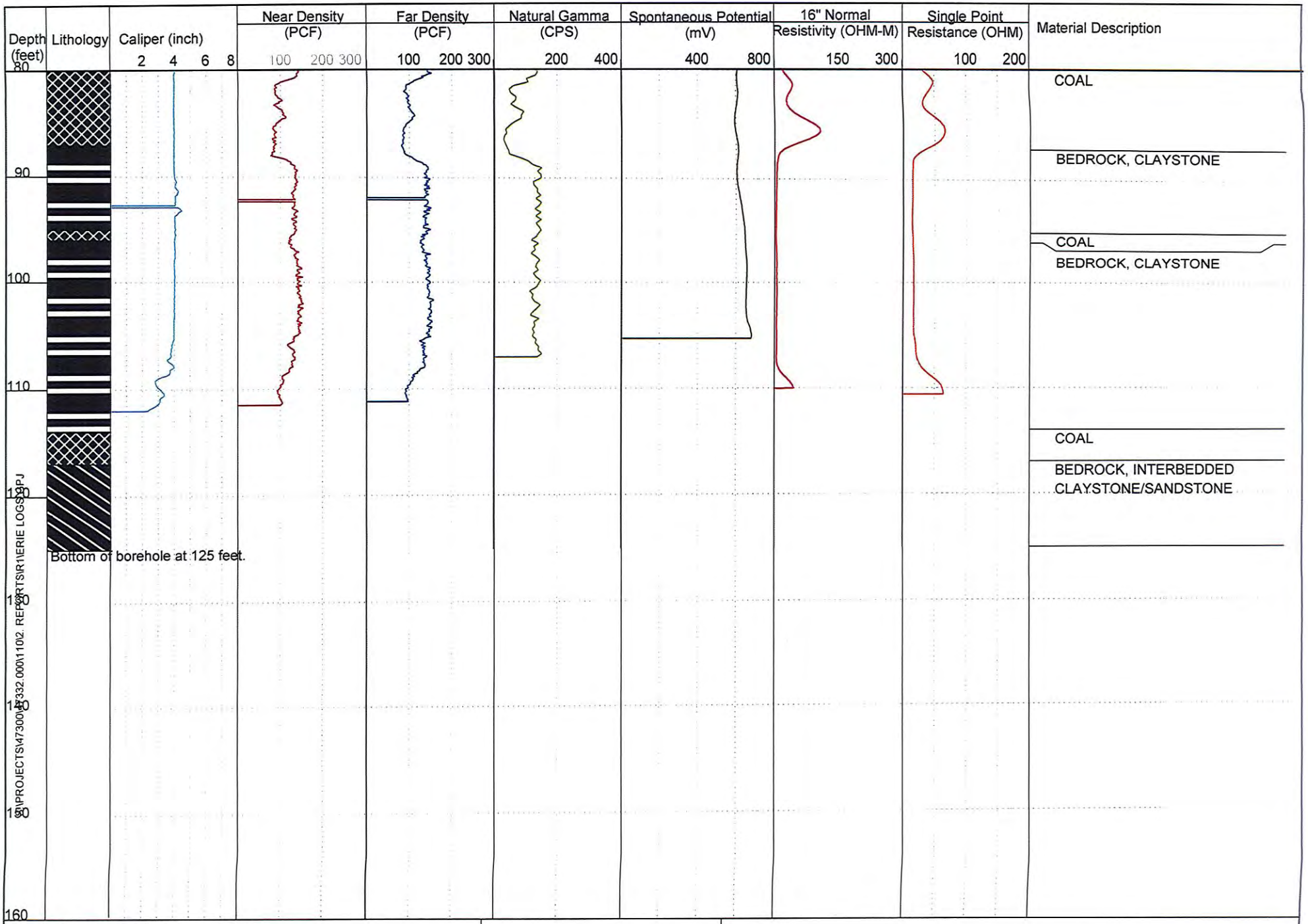
GEOPHYSICAL TEST LOG: B-9

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110



GEOPHYSICAL TEST LOG: B-9

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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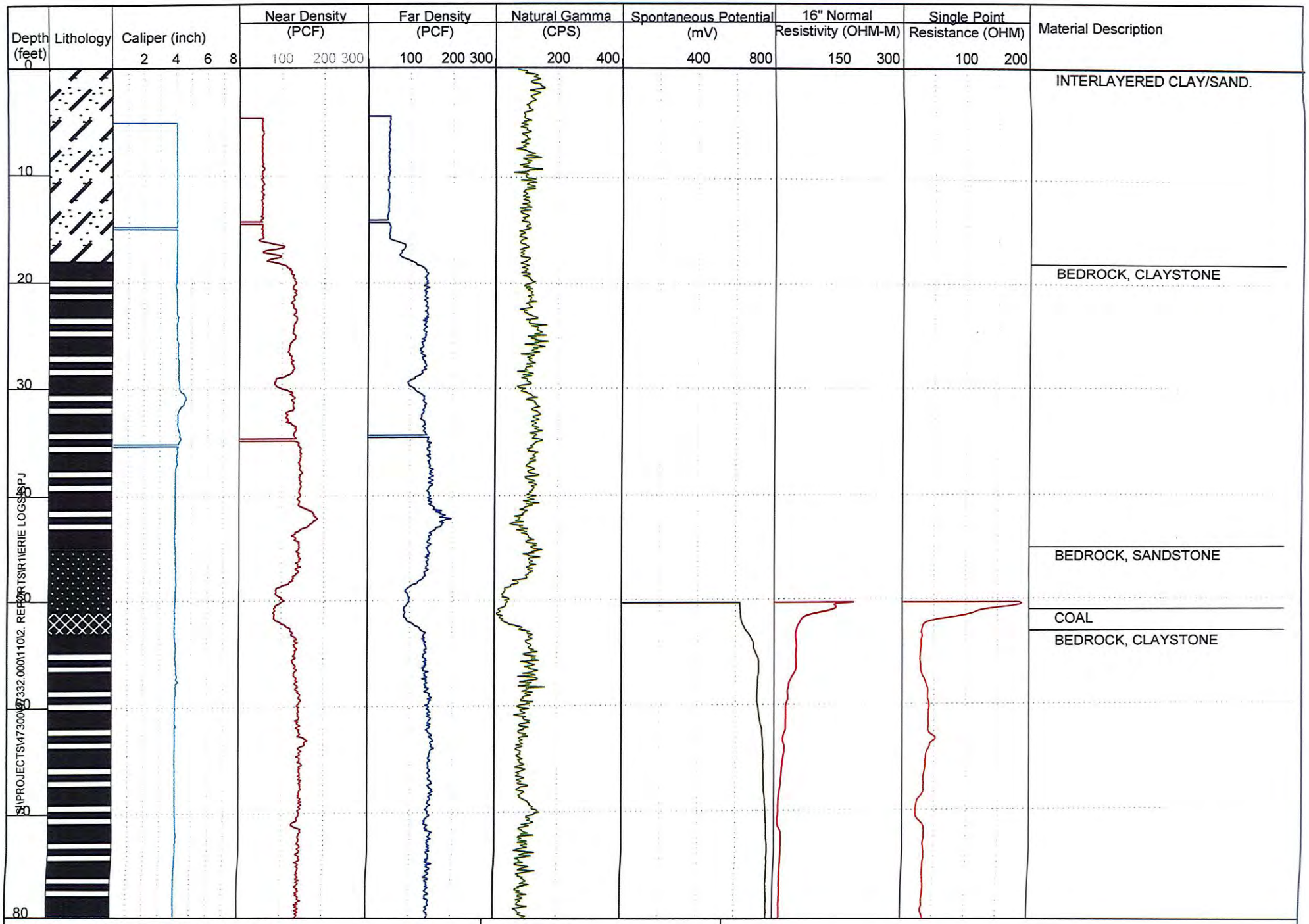

GEOPHYSICAL TEST LOG: B-10

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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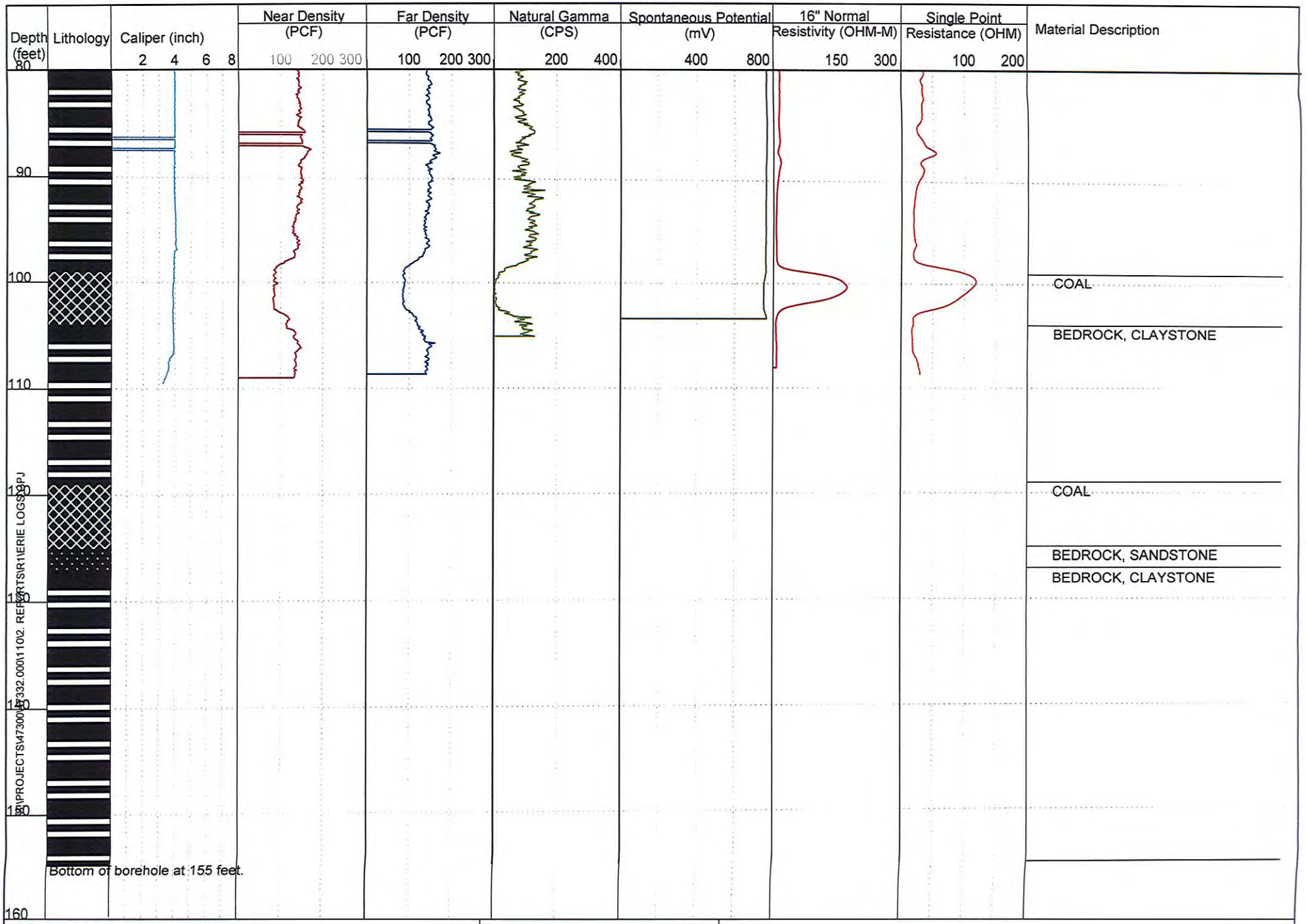

GEOPHYSICAL TEST LOG: B-10

CTL/THOMPSON, INC.
1971 W. 12th Avenue
Denver, CO 80204
Phone: 303-825-0777

GEOPHYSICAL CONTRACTOR:
IDS- COLOG

Erie Parcel

Project No.DN47,332-110

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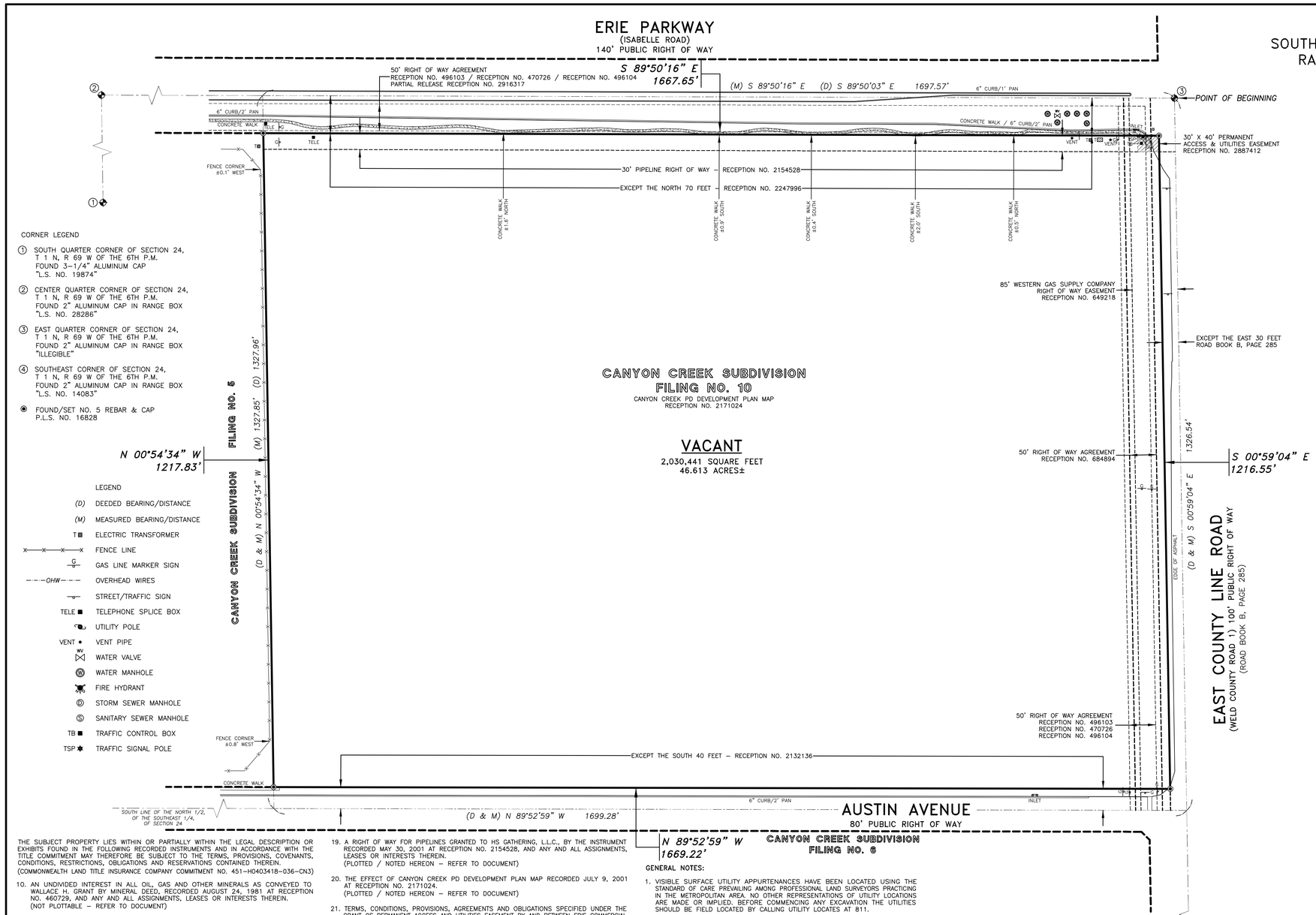
ALTA/ACSM LAND TITLE SURVEY

SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN COUNTY OF BOULDER, STATE OF COLORADO



VICINITY MAP – NOT TO SCALE

PARCEL DESCRIPTION

A PARCEL OF LAND IN THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH P.M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE EAST 1/4 CORNER OF SECTION 24, WHICH IS ALSO THE TRUE POINT OF BEGINNING; THENCE SOUTH 0°59'04" EAST 1326.54 FEET; THENCE NORTH 89°52'59" WEST 1699.28 FEET; THENCE NORTH 0°54'34" WEST 1327.96 FEET; THENCE SOUTH 89°50'03" EAST 1697.57 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THAT PORTION CONVEYED TO THE TOWN OF ERIE IN DEED RECORDED JANUARY 29, 2002 AT RECEPTION NO. 2247996, COUNTY OF BOULDER, STATE OF COLORADO.

EXCEPT THE EAST 30 FEET IN ROAD BOOK B, PAGE 285, AND THE SOUTH 40 FEET AS CONVEYED TO THE TOWN OF ERIE BY SPECIAL WARRANTY DEED RECORDED MARCH 28, 2001 AT RECEPTION NO. 2132136, COUNTY OF BOULDER, STATE OF COLORADO.

CONTAINING 2,030,441 SQUARE FEET OR 46.613 ACRES MORE OR LESS.

CERTIFICATION

TO: RMCS, LLC, A COLORADO LIMITED LIABILITY COMPANY, ERIE COMMERCIAL VENTURE, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, COMMONWEALTH LAND TITLE INSURANCE COMPANY AND HERITAGE TITLE COMPANY.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 3, 4, 6(b), 8, 11(a), 16, 17 AND 18 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JUNE 11, 2014.

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
(C.R.S. 13-80-105)

NOTICE: THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY BELL SURVEYING COMPANY TO DETERMINE THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS, OWNERSHIP, OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS OF WAY, OR TITLE OF RECORD, BELL SURVEYING COMPANY RELIED UPON TITLE COMMITMENT NO. 451-H0403418-036-CN3, DATED MAY 29, 2014, ISSUED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY.

CERTIFICATION DEFINED

THE USE OF THE WORD "CERTIFY" OR "CERTIFICATION" BY A REGISTERED PROFESSIONAL SURVEYOR IN THE PRACTICE OF LAND SURVEYING, CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OF FINDINGS WHICH ARE THE SUBJECT OF THE CERTIFICATION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

COPIES OF THIS DOCUMENT MAY BE MADE AND DISTRIBUTED TO OTHER PARTIES FOR REFERENCE PURPOSES AND REVIEW, HOWEVER, ONLY PRINTS OF THIS SURVEY BEARING ORIGINAL SIGNATURE AND WET SEAL BY THE SURVEYOR NAMED HEREON SHALL BE CONSIDERED VALID CERTIFIED DOCUMENTS.

DEAN O. DANIELSON,
P.L.S. NO. 16828
DATE OF SURVEY: 6/11/2014

DEAN O. DANIELSON REGISTERED 16828 LAND SURVEYOR STATE OF COLORADO

THE SUBJECT PROPERTY LIES WITHIN OR PARTIALLY WITHIN THE LEGAL DESCRIPTION OR EXHIBITS FOUND IN THE FOLLOWING RECORDED INSTRUMENTS AND IN ACCORDANCE WITH THE TITLE COMMITMENT MAY THEREFORE BE SUBJECT TO THE TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, OBLIGATIONS AND RESERVATIONS CONTAINED THEREIN.
(COMMONWEALTH LAND TITLE INSURANCE COMPANY COMMITMENT NO. 451-H0403418-036-CN3)

10. AN UNDIVIDED INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS CONVEYED TO WALLACE H. GRANT BY MINERAL DEED, RECORDED AUGUST 24, 1981 AT RECEPTION NO. 460729, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

11. AN UNDIVIDED INTEREST IN ALL OIL, GAS AND OTHER MINERALS CONVEYED TO DOUGLAS GRANT BY MINERAL DEED, RECORDED AUGUST 24, 1981 AT RECEPTION NO. 460730, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

12. AN UNDIVIDED 1/4 INTEREST IN ALL OIL, GAS AND OTHER MINERALS CONVEYED TO SUSAN J. TROUDT, MARIAN J. BOTINELLI AND CARLA JOHNSON HOBBS DBA JOHNSON FARMS BY MINERAL DEED, RECORDED SEPTEMBER 23, 1981 AT RECEPTION NO. 465242, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(NOT PLOTTABLE – REFER TO DOCUMENT)

13. A RIGHT OF WAY FOR PIPELINES AND APPURTENANCES GRANTED TO PANHANDLE EASTERN PIPELINE COMPANY BY THE INSTRUMENT RECORDED MAY 26, 1982 AT RECEPTION NO. 496103, AND RECORDED SEPTEMBER 21, 1981 AT RECEPTION NO. 470726, PARTIAL RELEASE OF RIGHT OF WAY RECORDED MARCH 13, 2008 AT RECEPTION NO. 2916317, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

14. A RIGHT OF WAY FOR PIPELINES AND APPURTENANCES GRANTED TO PANHANDLE EASTERN PIPELINE COMPANY BY THE INSTRUMENT RECORDED MAY 26, 1982 AT RECEPTION NO. 496104, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

15. A RIGHT OF WAY FOR PIPELINES GRANTED TO WESTERN GAS SUPPLY COMPANY BY THE INSTRUMENT RECORDED SEPTEMBER 28, 1984 AT RECEPTION NO. 649218, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

16. ANY ASSESSMENT OR LIEN OF THE ERIE WATER AND SANITATION DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED JANUARY 17, 1985 AT RECEPTION NO. 667325.
(NOT PLOTTABLE – REFER TO DOCUMENT)

17. ANY ASSESSMENT OR LIEN OF THE NORTHERN COLORADO WATER CONSERVANCY DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED SEPTEMBER 24, 1997 AT RECEPTION NO. 1733175.
(NOT PLOTTABLE – REFER TO DOCUMENT)

18. A RIGHT OF WAY FOR PIPELINES GRANTED TO VESSELS OIL AND GAS COMPANY BY THE INSTRUMENT RECORDED APRIL 25, 1985 AT RECEPTION NO. 684894, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

19. A RIGHT OF WAY FOR PIPELINES GRANTED TO HS GATHERING, L.L.C., BY THE INSTRUMENT RECORDED MAY 30, 2001 AT RECEPTION NO. 2154528, AND ANY AND ALL ASSIGNMENTS, LEASES OR INTERESTS THEREIN.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

20. THE EFFECT OF CANYON CREEK PD DEVELOPMENT PLAN MAP RECORDED JULY 9, 2001 AT RECEPTION NO. 2171024.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

21. TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS SPECIFIED UNDER THE GRANT OF PERMANENT ACCESS AND UTILITIES EASEMENT BY AND BETWEEN ERIE COMMERCIAL VENTURES, LLLP, A COLORADO LIMITED LIABILITY LIMITED PARTNERSHIP, AND TOWN OF ERIE, A COLORADO MUNICIPAL CORPORATION, RECORDED OCTOBER 3, 2007 AT RECEPTION NO. 2887412.
(PLOTTED / NOTED HEREON – REFER TO DOCUMENT)

22. ASSIGNMENTS AND CONVEYANCES OF MINERAL INTERESTS TO JOHNSON DEVELOPMENT COMPANY IN INSTRUMENTS RECORDED JULY 13, 2001 AT RECEPTION NO. 2173368 AND INSTRUMENTS RECORDED APRIL 3, 2001 AT RECEPTION NOS. 2134267 THROUGH 2134284 INCLUSIVE, INCLUSIVE, AND MINERAL DEED RECORDED MAY 1, 2008 AT RECEPTION NO. 2927263.
(NOT PLOTTABLE – REFER TO DOCUMENT)

23. QUIT CLAIM, ASSIGNMENT, BILL OF SALE AND CONVEYANCE OF INTERESTS AS RECORDED OCTOBER 17, 2002 AT RECEPTION NO. 2344511, AND ANY AND ALL ASSIGNMENTS OR LEASES THERETO.
(NOT PLOTTABLE – REFER TO DOCUMENT)

24. MINERAL RIGHTS AS CONVEYED TO ECV MINERALS, LLC IN MINERAL DEED RECORDED MAY 1, 2008 AT RECEPTION NO. 2927263.
(NOT PLOTTABLE – REFER TO DOCUMENT)

25. TERMS CONDITIONS PROVISIONS AS SET FORTH IN THE WELL ABANDONMENT AGREEMENT AS RECORDED MAY 1, 2008 AT RECEPTION NO. 2927262.
(NOT PLOTTABLE – REFER TO DOCUMENT)

26. TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS CONTAINED IN THE RESTRICTIVE COVENANT AND NON-DISTURBANCE AGREEMENT RECORDED MAY 29, 2008 AT RECEPTION NO. 2932960.
(NOT PLOTTABLE – REFER TO DOCUMENT)

27. OIL AND GAS LEASE FROM ECV MINERALS, LLC TO ENCANA OIL & GAS USA INC. AS RECORDED JULY 2, 2008 AT RECEPTION NO. 2941006.
(NOT PLOTTABLE – REFER TO DOCUMENT)

28. ALL OF THE FOLLOWING DOCUMENTS AS THEY RELATE TO MINERAL INTERESTS, WELLBORE SPECIFIC DECLARATION OF POOLING AS RECORDED SEPTEMBER 22, 2009 AT RECEPTION NO. 3031124, OPERATING AGREEMENT AND FINANCING STATEMENT AS RECORDED JUNE 16, 2010 AT RECEPTION NO. 03080637, QUITCLAIM DEED AS TO OIL GAS AND MINERAL INTERESTS AS RECORDED FEBRUARY 11, 2011 AT RECEPTION NO. 3132655, ASSIGNMENT, BILL OF SALE AND CONVEYANCE FROM ENCANA OIL & GAS TO KERR -MCGEE GATHERING LLC AS RECORDED APRIL 14, 2011 AT RECEPTION NO. 3143701.
(NOT PLOTTABLE – REFER TO DOCUMENT)

GENERAL NOTES:

1. VISIBLE SURFACE UTILITY APPURTENANCES HAVE BEEN LOCATED USING THE STANDARD OF CARE PREVAILING AMONG PROFESSIONAL LAND SURVEYORS PRACTICING IN THE METROPOLITAN AREA. NO OTHER REPRESENTATIONS OF UTILITY LOCATIONS ARE MADE OR IMPLIED. BEFORE COMMENCING ANY EXCAVATION THE UTILITIES SHOULD BE FIELD LOCATED BY CALLING UTILITY LOCATES AT 811.

2. THE SUBJECT PROPERTY LIES WITHIN THE FLOOD HAZARD AREA DESIGNATED AS "ZONE X" IN ACCORDANCE WITH F.E.M.A. PANEL 441 OF 615, MAP NUMBER 08013C0441J, DATED DECEMBER 18, 2012.

   ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

3. BEARINGS BASED ON THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN AS BEARING S 00°59'04" E (MONUMENTS DESCRIBED ON PLAT).

4. NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

5. NO OBSERVABLE EVIDENCE OR KNOWLEDGE OF ANY CHANGES IN STREET RIGHT OF WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION. NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.

6. NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

7. CANYON CREEK PD DEVELOPMENT PLAN – FILING NO. 10

   PRINCIPAL LAND USES:
   COMMERCIAL / BUSINESS / RETAIL (CBR)
   OPEN SPACE, PARKS & RECREATION FACILITIES (OS)

   MINIMUM SET BACK TO PRINCIPAL BUILDINGS:
   FRONT – 20 FEET
   SIDE (INTERIOR LOT) – 10 FEET
   SIDE (ALONG STREET) – 20 FEET
   REAR – 20 FEET
   BUILDING HEIGHT – 35 FEET

   MINIMUM SET BACK TO ACCESSORY BUILDINGS:
   FRONT – 30 FEET
   SIDE (INTERIOR LOT) – 5 FEET
   SIDE (ALONG STREET) – 20 FEET
   REAR – 5 FEET
   BUILDING HEIGHT – 25 FEET

   ZONING COMPLIANCE AND REQUIREMENTS NOT PROVIDED TO SURVEYOR.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

COUNTY SURVEYORS CERTIFICATE

DEPOSITED THIS____DAY OF_____20____
AT____.M., IN BOOK_____ OF THE COUNTY SURVEYOR'S LAND SURVEY/RIGHT OF WAY SURVEYS AT PAGE _____, RECEPTION NUMBER _____

COUNTY SURVEYOR BY DEPUTY COUNTY SURVEYOR

ALTA/ACSM LAND TITLE SURVEY		
ORDERED BY: OVERTON & ASSOCIATES, LLC 6950 EAST BELLEVIEW AVENUE #202 GREENWOOD VILLAGE, COLORADO 80111	REVISION: PREV: 0710-113	DRAWN: WB
BELL SURVEYING COMPANY 500 KALAMATH STREET DENVER, COLORADO 80204 303-629-0165 FAX 303-629-0168 www.BELLSURVEYING.com	SCALE: 1"=100'	
	DATE: 6/11/2014	
	DRAWING NO.: 1406-102	

TOWN OF ERIE
1874

Department of Community Development
Planning and Building

The Town of Erie
645 Holbrook St.
P.O. Box 750
Erie, CO 80516
(303) 926-2775
FAX (303) 926-2706

Memo

To: Justin McClure

From: Deborah Bachelder

Date: March 24, 2015

Re: **SK-000206-2015:** Canyon Creek Filing No. 10 Sketch Plan

Development Review Team Meeting (3/19/2015) – Community Development Comments

cc: Paul Shoukas, Marty Ostholthoff, Russell Pennington, Matt Wiederspahn, Farrell Buller, Paula Mehle

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Comments:

Staff reviewed the Canyon Creek Filing No. 10 Sketch Plan applications at our March 19th Development Review Team meeting.

Community Development is forwarding the other staff comments and referral agency responses that have been received. Those referral comments received by the Town after the date of this memo shall be forwarded on to the applicant.

Community Development Review Comments:

1. Sketch Plan:
   a. Please provide a separate PDF for each of the separate sections in the notebook; and, each report separately. When we get to hearings, the public sometimes requests specific information that we send by PDF and we eliminate some of the information from the PDF files we prepare for hearings.
2. Residential Land Uses:
   a. Housing Diversity (MC 10.6.7 D.1):
      ii. Housing diversity is based on the number of acres that are zoned for residential uses as required in the Municipal Code. The Sketch Plan has 29 acres of residentially zoned property. The MC requires only one housing type for this size property and you have proposed three types in the Sketch Plan (apartment, duplex, and single family) of dwelling units.
   b. HR Density: In order for you to request 480 dwelling units in HR with a higher density than allowed by our MC; you need to illustrate in the Sketch Plan how you can layout the site with the maximum number of units requested while meeting setback, parking, and landscaping area requirements within the zone district.

c. Sketch Plan Sheet 3: Please label the buildings and lots on the sheet. Single Family; Duplex (2 per lot); Apartment; and Commercial.

3. Commercial Land Uses:
   a.
4. Roads and Alleys:
   a. Erie Parkway:
      ii. Align drive access with Ranchwood for full movement traffic light. Applicant would be responsible for their share of installation of the light; Public Works will advise.
      iii. You may want to consider a right-in/right-out access into the grocery parking lot since the new entry with the traffic light will be moved west.
      iv. Existing median will need to be reconfigured to accommodate full movement traffic light. Median will need to be planted in similar style to existing median landscaping to the west.
      v. Reimbursements may be due to the Town; Public Works will advise.
   b. County Line Road:
      ii. Additional right of way dedication shown appears to be adequate for a major arterial.
      iii. Street improvements will be required; the transportation report with Preliminary Plat will help better identify the improvements.
      iv. Staff may not support the southern entry into parking from County Line.
      v. The intersection with Austin Avenue will have a traffic light installed by the Town; you will be responsible for a portion of the cost; Public Works will advise.
      vi. Reimbursements may be due to the Town; Public Works will advise.
   c. Austin Avenue:
      ii. Reimbursements may be due for street improvements.
      iii. The street intersection with Austin should align with Graham Way.
      iv. The setback to lots and parking should be 30 feet to be consistent with the existing setbacks of adjacent properties.
      v. You currently are showing several residential lots fronting onto Austin Avenue. Austin Avenue was constructed as a major collector street without parking. Public Works has stated that they would entertain the idea of you adding on street parking on your side of the street if improvements, such as bump outs, were installed.
   d. Internal Streets:
      ii. The internal street classifications are typically based on the transportation report submitted with the Preliminary Plat. It is difficult for staff to comment in detail at Sketch Plan.
      iii. The PDA shows a 60 foot right of way and the Sketch Plan shows a 54 foot right of way; staff supports the Town standard road standards.
      iv. An 8 foot tree lawn is required on streets adjacent to multifamily residential.
   e. Alleys:
      ii. Pavement width is adequate for both cross sections.

iii. Provide clarification on Sheet 3 that the 20 foot alley cross-section and easement is not inclusive of Town main lines.
iv. The Public Improvement main lines need to be in 30 foot easements and should not be located in residential lots; exception to this may be multiple residential structures on one lot (apartments).
v. Staff is concerned about conflicts of residential and commercial traffic due to the intersection of the duplex alley and the commercial service alley. You may want to reconsider this area. Additionally, Public Works does not support the alley access directly onto Austin Avenue (major collector).

f. Sidewalks:
   ii. Existing 5 foot sidewalk, on Erie Parkway, will need to be expanded or replaced to meet 8 foot width requirement.
   iii. Sidewalk on County Line Road needs to be 8' in width (MC 10.6.2 D).
   iv. Sidewalk on Austin Avenue will need to be constructed to connect to the existing sidewalk.
   v. Street Section A-A and B-B shows the sidewalk outside the right of way on both sides of the street. Staff is concerned about the sidewalks outside of the right of way adjacent to single family and duplex lots. Staff will not support sidewalks that encroach into a single family, duplex or townhome lot.
   vi. Single Family lots: Please add the walk connections from the street to each the front of each single family lots.
   vii. Duplex lots:
      1. The sidewalks that go to the front doors should connect to the sidewalks on Austin Avenue.
      2. Show sidewalks to Block 11 Lots 3-7.

5. Oil/Gas Pipelines:
   a. Applicant has shown several improvements over the oil/gas lines along County Line Road and Erie Parkway. Applicant will need to enter an agreement for improvements over the facilities and in the existing easements.
6. Mine Shafts:
   a. Mine shafts are appropriately located in a parking area and park area. Both have shown recommended shaft setback to structures. If the applicant wants Town park credit for the park, the shaft setback area will have to be deducted from the dedication total.
7. Parks and Open Space:
   a. The Sketch Plan does not indicate how the parks and open space dedication requirements are being met. See PD Amendment comments above. Please add a parks and open space dedication table that is similar to the example below. The "Acres Required" is calculated based upon the maximum number of dwelling units allowed by the PD. The "Acres to be Provided" indicates the minimum acreage that you anticipate being provided within the development toward the requirement or payment of fee in lieu for the dedication requirement.

PARKS & OPEN SPACE		
PARK AREA	ACRES REQUIRED	ACRES TO BE PROVIDED
COMMUNITY PARK	13.87	FEE IN LIEU
NEIGHBORHOOD PARK	8.32	8.32
POCKET PARK	1.39	1.97
OPEN SPACE (PUBLIC)	47.15	32.65 + FEE IN LIEU

Staff has calculated the parks and open space dedications required (MC 10.6.3) based on the proposed 530 dwelling units and the Town's standard people per dwelling unit of 2.79 (based on US Census). If the applicant amends the number of units then the table will need to be adjusted to address the new dedication requirement. Once the dwelling unit types are finalized, during plat and site plan application review, we can look at modifying the people per unit in the PD for the calculation of parks and open space which also may modify the dedication requirement.

Filing 10	**Acres Required**
Pocket Park	0.74
Neighborhood Park	4.44
Community Park	7.39
Open Space	25.14

b. Pocket Park: The applicant needs to add a location for the pocket park and meet the minimum size requirement on site. Pocket parks are owned/maintained by an HOA/Metro District and have a public access easement. The requirement for facilities in a pocket park can be found in the Parks, Recreation, Open Space and Trails (PROST) Master Plan.
c. Neighborhood Park: During our review meeting, the Parks and Recreation Director stated that she would consider recommending the GS be considered toward the Neighborhood Park dedication only if it is owned and maintained by an HOA/Metro District and not the Town. The GS Park does not meet the minimum neighborhood park dedication requirement of 7 acre minimum size.
d. Community Park and Open Space: Staff will support fee-in-lieu payment for the community park and open space dedication requirements.
e. Trails: Erie is known for its trail systems and they are always brought up in hearings. Please illustrate on the Sketch Plan how you are connecting to the trails to the south of the property and how people can walk through the proposed neighborhood to access the commercial on your property and the Community Center/Library site to the northeast of the site.

8. Sheet 1:
   a. Please remove "Lucky's Market" from the illustration of the grocery store. We don't want a brand name on the illustrations unless you are under contract with them.
   b. Outlot Summary Chart:

ii. Outlot A and B are right of way dedications for County Line Road. Please remove from the Outlot table and add to the Land Use Summary Chart as Public ROW.
iii. The Town does not use Outlots; we only use lots and tracts. Please convert Outlot C into a tract and add it to the Tract Summary Chart and revise the Land Use Summary Chart.

c. Tract Summary Chart:
   ii. Change all "Green Space" references to Landscaping or Park, as appropriate. Our Planning Commission and Board of Trustees will not relate to "Green Space".
   iii. Change all "Private Lane" references to Alley; our PC and BOT will not relate to "Private Lane".

d. Land Use Summary Chart:
   ii. Modify the HR and MR land use areas based on staff comments for including the duplex area into MR.
   iii. Change "Green Space" to Landscaping or Park, as appropriate.
   iv. Change "Private Lane" references to Alley.

e. Add a Chart that reports the number of units and commercial square footage represented on the Sketch Plan:
   ii. The number of dwelling units by unit type (single family, duplex, apartment); by district; with gross density in the district.
   iii. The square footage of commercial.

9. Sheet 3:
   a. Change the outlots to right of way and tracts as requested above for Sheet 1.
   b. The Sketch Plan should represent the maximum density requested in the PDA with appropriate parking, landscaping, and park dedication shown on the plan. All elements should be labeled on the plan.
   c. Add labels to the Sketch Plan that call out the single family residential lots; duplex lots (2 units on each lot); apartments; and, commercial buildings. Additionally, label a pocket park, and potentially the neighborhood park.
   d. Add traffic light locations on Erie Parkway and County Line Road.

Community Development Services
Planning and Building

Town of Erie, Colorado
Development Referral

___Town of Erie Community Development
___Town of Erie Parks & Recreation
___Town of Erie OSTAB
___Erie Airport Manager
___St. Vrain Valley School District
___Coal Creek Center Lot Owners Assoc.
___Sunwest HOA
___EnCana Oil & Gas (USA) Inc.
___Western Gas Supply Company
___Town of Erie Engineering
X Town of Erie Economic Development
___Public Review
___Mountain View Fire Protection District
___Felsburg Holt & Ullevig
___Country Meadows Filing 4,5,& 6 HOA
___Vessel Oil & Gas Company
___ECV Minerals, LLC
___HS Gathering, LLC & Panhandle Eastern Pipeline Company

Planner: Deborah Bachelder **Date: February 24, 2015**

Project: Canyon Creek Filing 10 **Applicant: RMCS, Inc.**

Description: Canyon Creek PD Amendment No. 9 & Canyon Creek F. 10 – 4 Corners – Sketch Plan

Location: SW Corner of Erie Parkway and WCR 1

Legal Description: See Attached Materials

This application is submitted to you for review and comment. Please reply by **Tuesday, March 17, 2015,** so that we may give full consideration to your comments. Any response not received by this date may be deemed to be a positive response to the Town of Erie. Email responses can be sent to dbach@erieco.gov. If you have any questions about this application, please call 303-926-2775.

X We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

X See comments below or attached letter.

Comments: Recommend Removing "Lucky's Market" sign from Sheet 1 of 3 of sketch plan exhibit.
Please forward future submittals

Signature: Paula Mehle **Date:** 3.19.15

Name (Please Print) Paula Mehle

Community Development Services
Planning and Building

Town of Erie, Colorado
Development Referral

___Town of Erie Community Development
___Town of Erie Parks & Recreation
___Town of Erie OSTAB
___Erie Airport Manager
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X We have reviewed this application and find no conflicts with our interests
___We have reviewed this application and find conflicts with our interests.
___See comments below or attached letter.

Comments: Please refer future submittals

Signature: Paula Mehle **Date:** 3.19.15
Name (Please Print) Paula Mehle

Community Development Services
Planning and Building

Town of Erie, Colorado
Development Referral

___Town of Erie Community Development
X Town of Erie Parks & Recreation
___Town of Erie OSTAB
___Erie Airport Manager
___St. Vrain Valley School District
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Planner: Deborah Bachelder **Date: February 24, 2015**

Project: Canyon Creek Filing 10 **Applicant: RMCS, Inc.**

Description: Canyon Creek PD Amendment No. 9 & Canyon Creek F. 10 – 4 Corners – Sketch Plan

Location: SW Corner of Erie Parkway and WCR 1

Legal Description: See Attached Materials

This application is submitted to you for review and comment. Please reply by **Tuesday, March 17, 2015,** so that we may give full consideration to your comments. Any response not received by this date may be deemed to be a positive response to the Town of Erie. Email responses can be sent to dbach@erieco.gov. If you have any questions about this application, please call 303-926-2775.

___We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

X See comments below or attached letter.

Comments: We recommend to have neighborhood park be owned & responsibility of HOA. It does not meet size requirements of neighborhood park. Willing to give credit toward fee-in-lieu.

Signature: [signature] **Date:** March 20, 2015

Name (Please Print) Rob Crabb

TOWN OF ERIE
1874

Memo

To: Deb Bachelder
From: Matt Wiederspahn, P.E., CFM, Development Engineer
Date: March 24, 2015
Subject: **Four Corners Sketch Plan**
CC: Russell Pennington
Wendi Palmer

Comments for Sketch Plan:

1. The proposed ¾ access on Erie Parkway needs to be lined up with the proposed full movement access for the Ranchwood Property on the north side of Erie Parkway.
2. The main residential full movement access on Austin Avenue needs to align with Graham Way to the south.
3. The proposed alley intersection to Austin Avenue will not be allowed. It already has two connections to lower classification local streets.
4. Town Standards require the proposed commercial full movement access on Austin Avenue to be 400 feet east of County Line Road.
5. The proposed right-in/right-out just north of Austin Avenue does not meet the Town's access spacing standards for arterial roadways.
6. The Town's standard local street cross-section is 60 feet of right-of-way.
7. The local street cross-section is only applicable to roadways with less than 1,000 vehicles per day (vpd). A residential collector cross-section (70 foot right-of-way) needs to be used for roadways with 1,000 to 2,000 vpd and a collector cross-section (80 foot right-of-way) needs to be used for roadways with greater than 2,000 vpd. Determining actual roadway classifications will be done with the Preliminary Plat and a more in depth traffic study.
8. The following reimbursements for existing Public Improvements will be due at the first Final Plat of the development:
    a. 25% of the cost of the signal at Erie Parkway and County Line Road; $57,507 to the Town
    b. Erie Parkway construction along frontage; $913,546 to the Town
    c. Erie Parkway & County Line Road Intersection Improvements; $75,000 to the owner of the Coal Creek Center (Erie Commercial LLC)
    d. Austin Avenue Improvements; Final costs to be determined by and paid to the owner of Canyon Creek Filing 5/6 (Johnson Development Company)
    e. 15 inch and 30 inch Coal Creek Sewer Interceptor; $177.66 per single-family equivalent (SFE) to the Town
    f. NWRF Sewer Interceptor; $410.00 per SFE to the Town

Comments for Phase I Drainage Report:

1. The Full Spectrum Detention Volume Worksheet includes a water quality capture volume (WQCV) in the 100-year detention volume. The Town does not require

any additional WQCV as the EURV is already included in the 100 year detention volume (see note 5 on the worksheet).

Comments for PD Amendment:

1. Access points need to be removed from the PD Amendment as they will be finalized through the preliminary plat process.

TOWN OF ERIE
1874

Department of Community Development
Planning and Building

The Town of Erie
645 Holbrook St.
P.O. Box 750
Erie, CO 80516
(303) 926-2775
FAX (303) 926-2706

Memo

To: Justin McClure

From: Deborah Bachelder

Date: June 3, 2015

Re: **SK-000206-2015:** Canyon Creek Filing No. 10 Sketch Plan

Development Review Team Meeting (5/28/2015) – Community Development Comments

cc: Paul Shoukas, Marty Ostholthoff, Russell Pennington, Matt Wiederspahn, Farrell Buller, Paula Mehle

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Comments:

Staff reviewed the Canyon Creek Filing No. 10 Sketch Plan applications at our May 28th Development Review Team meeting.

Community Development is forwarding our department comments, the other department comments, and the Felsburg, Holt & Ullevig (FHU) referral agency response. As we move into public hearings you will need to address the staff revision requests but not the FHU comments. The FHU comments will need to be more fully addressed as you move into the Preliminary Plat application process.

Community Development Review Comments:

1. General Comment:
   a. The PDF and Paper Copies of the Sketch Plan are different but have the same revision date on the plans. Sheet 3 of the paper copy has text on the right side of the sheet and Sheet 3 of the PDF has street sections. Community Development has commented on the paper copy of the submittal.
2. Sheet 1:
   a. Unit and SF FAR Summary Chart: Remove "FAR" from the table header.
3. Sheet 3:
   a. Sketch Plan Illustration:
      i. Sunwest Subdivision label: You have the wrong zoning referenced for this property. Please change "Planned Development (PD)" to "Low Density Residential (LR)".
      ii. Note on Erie Parkway "Future Full Signalization By the Town of Erie". Please remove "By the Town of Erie" from the note.

iii. Parks and Open Space: You have not noted where a pocket park would be located; and you have stated that you will be requesting a modification of people per unit. Our comments are:
    1. Parks and open space dedication requirements shall be made in conformance with MC 10.6.3. Staff supports the requirement for a pocket park within the development and fee in lieu for the other park/open space dedication requirements. Design of the pocket park shall be in conformance with the Parks, Recreation, Open Space and Trails (PROST) Master Plan that includes a large list of alternative design elements.
    2. The Municipal Code allows modification of people per unit and defines dedication options. We will consider the appropriate modification based on the actual residential dwelling units that are proposed for development of the site.

b. General Notes for HR & MR:
    i. Note 3: Delete "Administratively"; the Sketch Plan review process is for comment only and will not grant any approvals for review types in the future.
    ii. Note 4:
        1. This note is very confusing because in the Town Municipal Code the definition of "Parking Structure" includes parking garages and parking decks where the principal use of this use is parking. I don't think that's what you are trying to address. We will review detached carports/garages as an accessory use to the primary use of residential. Attached carports, garages, under housing parking will all be a part of the principal structure. I would suggest that you eliminate this note so that the Planning Commission and Board of Trustees don't get drawn into a detail item.
        2. In the last line of this note you state that "Parking garages shall be permitted as a principal use." I'm not sure what you mean by parking garage; if it is a part of the residential housing then you are correct; if you mean a stand-alone parking garage, then you are not correct. Modification of the note may be necessary based on your intent.
    iii. Note 7: This note is not accurate. You are subject to required 30 foot landscape buffers along County Line Road and Erie Parkway; these are not setbacks. Please remove note.
    iv. Note 8:
        1. Please add "The location of" at the front of the 1st sentence.
        2. You misspelled "Erie Parkway".

4. Sheet 4:
    a. Signage will be regulated as specified in MC 10.6.12. You can request modifications to the sign code through the process specified in this section at the time of platting/site plan application.
5. Sheet 5:
    a. Street Section A: Please modify so that the illustration and dimension lines match up better.
5. Sheet 6:

a. Lighting is regulated as specified in MC 10.6.10. No action necessary at this time.

6. Supplemental Graphic:
   a. Please note that at the time of Site Plan application all residential primary and guest parking needs to be within 200 feet of the primary building entrance that is serves; and all non-residential parking within 600 feet. MC10.6.6 D. No action necessary at this time.
7. Parks and Open Space:
   a. Previous Comment: The Sketch Plan does not indicate how the parks and open space dedication requirements are being met. See PD Amendment comments above. Please add a parks and open space dedication table that is similar to the example below. The "Acres Required" is calculated based upon the maximum number of dwelling units allowed by the PD. The "Acres to be Provided" indicates the minimum acreage that you anticipate being provided within the development toward the requirement or payment of fee in lieu for the dedication requirement.

PARKS & OPEN SPACE		
PARK AREA	ACRES REQUIRED	ACRES TO BE PROVIDED
COMMUNITY PARK	13.87	FEE IN LIEU
NEIGHBORHOOD PARK	8.32	8.32
POCKET PARK	1.39	1.97
OPEN SPACE (PUBLIC)	47.15	32.65 + FEE IN LIEU

Staff has calculated the parks and open space dedications required (MC 10.6.3) based on the proposed 530 dwelling units and the Town's standard people per dwelling unit of 2.79 (based on US Census). If the applicant amends the number of units then the table will need to be adjusted to address the new dedication requirement. Once the dwelling unit types are finalized, during plat and site plan application review, we can look at modifying the people per unit in the PD for the calculation of parks and open space which also may modify the dedication requirement.

Filing 10	**Acres Required**
Pocket Park	0.74
Neighborhood Park	4.44
Community Park	7.39
Open Space	25.14

   i. Although you have responded that you will be requesting modification of the 2.79 people/du staff will be reporting the parks/open space dedication requirement in our staff report to the Planning Commission and Board of Trustees.

   b. Previous Staff Review Comment. Pocket Park: The applicant needs to add a location for the pocket park and meet the minimum size requirement on site. Pocket parks are owned/maintained by an HOA/Metro District and have a public access easement.

The requirement for facilities in a pocket park can be found in the Parks, Recreation, Open Space and Trails (PROST) Master Plan.

i. You have responded that they have not provided a pocket park on the new sketch plan; why wouldn't you provide the linear park as a pocket park. Staff recommends that you identify the linear park on the sketch plan as the location you would meet your pocket park requirement.

TOWN OF ERIE
1874

Memo

To: Deb Bachelder
From: Matt Wiederspahn, P.E., CFM, Development Engineer
Date: June 3, 2015
Subject: **Four Corners Sketch Plan**
CC: Russell Pennington
Wendi Palmer

Previous (March 2015) Comments for Sketch Plan:

1. The proposed ¾ access on Erie Parkway needs to be lined up with the proposed full movement access for the Ranchwood Property on the north side of Erie Parkway.
   RESPONSE: The north south road has been realigned pending an agreement with Ranchwood to shift access to the east. This has been discussed and it is our understanding that Staff supports the access location as shown; contingent upon cooperation from the property owners to the north. It is pertinent to note that the commercial portion of this project is dependent on securing the access location as shown.

   While the Town is acceptable to the location of the full movement access contingent on neighboring property approval and engineering feasibility, the additional right-in movement is not supported given the proximity to both the County Line Road intersection and the proposed full movement. Also, the applicant should be aware that there will be significant improvements required to Erie Parkway and potentially County Line Road to allow for the full movement access which will be the applicant's responsibility to construct.

It appears that the electronic version provided of the Sketch Plan does not match the hard copy versions provided; therefore comments are split up based on the version.

New Comments for Electronic Version of Sketch Plan:

1. The 75 foot Street A cross-section on sheets 3 and 5 do not match. The Town is supportive of the cross-section on sheet 3, but not of the one on sheet 5.

New Comments for Hard Copy of Sketch Plan:

1. On sheet 3, for the future full signalization please remove "By the Town of Erie" from the label. A sketch plan is a non-binding review document that doesn't determine obligations. However, it is current Town Policy that traffic signals necessary for a development is that developments obligation to construct.
2. On sheet 5, the 75 foot Street A cross-section is not acceptable to the Town but as stated above, the cross-section shown on Sheet 3 of the electronic version of the Sketch Plan is acceptable.

Community Development Services
Planning and Building

Town of Erie, Colorado
Development Referral

RECEIVED
MAY 12 2015
FELSBURG, HOLT & ULLEVIG

___Town of Erie Community Development

___Town of Erie Engineering

___Town of Erie Parks & Recreation

X Felsburg Holt & Ullevig

Planner: Deborah Bachelder

Date: May 11, 2015

Project: Canyon Creek Filing 10

Applicant: RMCS, Inc.

Description: Canyon Creek PD Amendment No. 9 & Canyon Creek F. 10 – 4 Corners – Sketch Plan

Location: SW Corner of Erie Parkway and WCR 1

Legal Description: See Attached Materials

This application is submitted to you for review and comment. Please reply by **Thursday, May 28, 2015,** so that we may give full consideration to your comments. Any response not received by this date may be deemed to be a positive response to the Town of Erie. Email responses can be sent to dbach@erieco.gov. If you have any questions about this application, please call 303-926-2775.

___We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

X See comments below or attached letter.

Comments:_____

Signature: _____ **Date:** 05/27/15

Name (Please Print) CHARLES M. BUCK

FELSBURG
HOLT &
ULLEVIG

connecting and enhancing communities

May 27, 2015

MEMORANDUM

TO: Deborah Bachelder

FROM: Charles M. Buck, PE, PTOE

SUBJECT: Review of Sketch Plan

PROJECT: Canyon Creek PD Amendment No. 9 & Canyon Creek Filing No. 10 – 4 Corners
FHU # 95-190

I have reviewed the materials provided relative to the PD Amendment and Sketch Plan for Canyon Creek PD Amendment No. 9 & Canyon Creek Filing No. 10 – 4 Corners. The materials included the applicant's response to comments (RMCS, Inc. May 1, 2015), Narrative and Comparative Chart, PD – DP Plan (undated), drainage report (May 1, 2015) and Sketch Plan (May 1, 2015). I have reviewed the materials provided from the perspective of traffic engineering and transportation planning but not general civil or utility engineering. The following are my review comments:

Per the applicant's responses to our March 13, 2015 comments, proposed access to 4 Corners is under review and coordination with Town staff. The future access to Erie Parkway (previously identified as a right-in/right-out access in the traffic study), is now proposed to be a full-movement access, aligning with a future full-movement access on the north side of Erie Parkway, and would be a signalized intersection in the future (an additional right-in-only access is also shown). This condition is depicted on Sheet 3 of 7 of the Sketch Plan. The traffic study, previously submitted, did not address this condition. Our concern is that a traffic signal at this location, in close proximity to the existing signalized intersection at County Line Road, could impact progressive movement along Erie Parkway.

The proposed full-movement access to Austin Avenue has been moved west to align with the south side access (Saint Luke Church access). The alley access, previously proposed, has been eliminated. These changes are an improvement from a traffic engineering perspective.

We understand that the revised internal street cross sections shown on Sheet 5 of 7 of the Sketch Plan were developed in coordination with Town staff.

The above comments constitute our review of the materials provided. Please call if you have any questions or need additional information.

6300 South Syracuse Way, Suite 600 Centennial, CO 80111 tel 303.721.1440 fax 303.721.0832
www.fhueng.com info@fhueng.com

From: Ken Martin
Sent: Thursday, March 19, 2015 11:16 PM
To: Deb Bachelder
Cc: Monica Kash
Subject: Canyon Creek Filing 10, Sketch Plan

Deb,

I have very recently learned from Monica that she was not able to prepare OSTAB's response to the Canyon Creek Filing 10 Sketch Plan, due to a "tidal wave" of work responsibilities. I cannot be a substitute this week, since my daughter just arrived from out of state for a visit, plus I have an all-day commitment Friday. Lastly, all the documents and my notes are at Monica's house.

However, I thought it would be useful to provide a short recap of what OSTAB had planned to submit. Our primary concern is to provide safe passageways, for both the new residents of this development (500+ DU's) and the hundreds of DU's in other sections of Canyon Creek to the west and south, to access town and school facilities immediately east – Erie Community Center, High Plains Library, and the Austin Ridge Preparatory School.

Thus we are recommending the following:

1. Adding an 8 foot sidewalk the along the south side on Austin Ave.;
2. Expanding the existing sidewalk along the north side on Erie Parkway from 5 to 8 feet;
3. Adding an 8 foot concrete trail along the western border of the proposal, with open space on each side as defined in the UDC.

We realize that the application includes a sidewalk along County line Road between Erie Parkway and Austin Ave. However, there are multiple (3?) entrances into the commercial section of the proposal from County Line Road, so we believe that sidewalk would NOT be a safe option for children, nor desirable for adults

I would be able to prepare a formal response this weekend, if that would be useful to you. Please advise.

Thanks,

Ken Martin,
Chair, OSTAB

Town of Erie
Planning Commission Regular Meeting
Wednesday, July 15, 2015
6:30 p.m.
Board Room, Erie Town Hall, 645 Holbrook, Erie, Co 80516

I. CALL MEETING TO ORDER & PLEDGE OF ALLEGIANCE

Chairman Bottenhorn called the Regular Meeting of the Erie Planning Commission to order at 6:30 p.m.

II. ROLL CALL

Commissioner Bottenhorn - Present
Commissioner Burgard – Arrived 6:32
Commissioner Campbell - Present
Commissioner Kemp - Present
Commissioner Fraser -
Commissioner Gippe - Excused
Commissioner Harrison - Present

Staff Present: R. Martin Ostholthoff, Community Development Director;
Deborah Bachelder, Senior Planner;
Todd Bjerkaas, Senior Planner;
A.J. Krieger, Town Administrator;
Paula Mehle, Economic Development; and
Hallie Sawyer, Secretary to the Commission

III. APPROVAL OF THE AGENDA

Commissioner Campbell moved to amend the agenda by moving item VI.6. Public Hearing – Comprehensive Plan Amendment to the first business item, and approve the July 15, 2015, Regular Meeting Agenda as amended. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

IV. APPROVAL OF MINUTES

a. Minutes from the May 20, 2015, Regular Meeting.
Commissioner Harrison moved to approve the May 20, 2015, Minutes as submitted. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

V. PUBLIC COMMENTS (This agenda item provides the public an opportunity to discuss items other than items that are on the agenda. The Planning Commission is not prepared to decide on matters brought up at this time, but it warranted, will place them on a future agenda.)

Comment was taken from Ken Martin, Chairman of the Town of Erie Open Space and Trails Advisory Board, regarding OSTAB's concerns about the proposed Sketch Plan for Canyon Creek Filing 10 Four Corners development that will be considered later in the meeting.

VI. RESOLUTIONS (This agenda item is for all matters that should be decided by resolutions.)

1. Public Hearing – Comprehensive Plan Amendment - TO BE CONTINUED TO AUGUST 19TH, 2015

Purpose: Consideration of a Comprehensive Plan Amendment
Project File #: CPA-000195-2015
Request: Consideration of Resolution P15-__,
Location: N/A
Applicants: N/A
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 6:35 p.m., and continued the hearing to August 19, 2015.

2. Public Hearing – Vista Ridge F-14 Minor Subdivision Plat

Purpose: Consideration of Minor Subdivision Plat
Project File #: MS-14-00049
Request: Consideration of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Chairman Bottenhorn opened the public hearing at 6:35 p.m. Mr. Bjerkaas presented the applications for the Vista Ridge Filing 14 Minor Subdivision Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions. Chairman Bottenhorn swore in the audience.

Drew Warot and Brandon McClary, 65 Tejon Street, Denver, represented Kings Soopers, the project anchor, and were present to address questions and concerns.

Public Comment was taken from Betty Jo Booth, Chairman of the Board for the Vista Ridge Academy; Monica Wernick of Vista Ridge; and Stephen Weddig, 1265 Graham Circle. Comments covered Vista Academy's concerns about the rear of the King Soopers Store being so close to the school; store deliveries impacting school drop offs; loosing fields and open space; impact on area homes and traffic; with Erie's Safeway being in Lafayette and King Soopers in Broomfield, folks in the middle had nowhere close to shop.

Commissioner questions and concerns covered store deliveries vs. school drop-offs; blending of architectural detail with the surrounding community; entryway coverings to provide protection from weather; Highway 7/Sheridan expansion time frames; estimated completion time; why 3' shorter parking spaces; parking lot safety; location of existing cottonwood trees; what determined size of fueling bay; why no drive-thru like for Starbucks; how will current topography be changed; will perimeter walks be extended to existing walks; are the sign size changes unique to Erie; is the property to the west future multifamily; explain process of evaluating future store sites; and will three pad sites be sold or leased to future users.

Chairman Bottenhorn closed the public hearings at 7:51 p.m.

Commissioner comments covered general excitement to welcome King Soopers to Erie, citing the huge need that will be filled; appreciation for delivery times occurring during evening hours; thanks for well written reports and submittal and for answering all of the questions and concerns; good presentation; and all commissioners noted agreement with all of the proposed Alternative Compliance requests.

Commissioner Campbell moved approval of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

3. Public Hearing – Vista Ridge F-14 Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-14-00050
Request: Consideration of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Commissioner Harrison moved approval of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

Chairman Bottenhorn called for a short recess at 8:00 p.m. The meeting was called back to order at 8:03p.m.

4. Public Hearing – Vista Ridge F-2, 1st Amendment Preliminary Plat

Purpose: Consideration of Preliminary Plat
Project File #: PP-000055-2014
Request: Consideration of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 8:04 p.m. Mr. Ostholthoff presented the applications for the Vista Ridge Filing 2, 1st Amendment Preliminary Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions.
Chairman Bottenhorn swore in the audience.
Ward Ritter, Chartered Homes, 3160 Village Vista Drive, Erie, was present to address any questions and concerns.
There was no public comment.
Commissioner questions and concerns covered will this be more upscale than Latitude; will the homes backing to the golf course have walkouts; soils/foundation issues – are there guarantees in place; street tops; and estimated HOA costs.
Chairman Bottenhorn closed the public hearing at 8:27p.m.
The Commission had no further comments.
Commissioner Kemp moved approval of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

5. Public Hearing – Vista Ridge F-2, 1st Amendment Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-000054-2014
Request: Consideration of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Commissioner Kemp moved approval of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

6. Public Hearing – Canyon Creek Planned Development Amendment No. 9

Purpose: Consideration of Planned Development Amendment No. 9 for Canyon Creek
Project File #: PDA-000544-2015

Request: Consideration of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment.
Location: SW Corner of Erie Parkway & County Line Road
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Chairman Bottenhorn opened the public hearing at 8:29 p.m. Mrs. Bachelder presented the applications for the Canyon Creek PD Amendment No. 9 and Sketch Plan for Canyon Creek Filing 10, entered the documents into evidence and presented the staff recommendations for approval of the resolution. Chairman Bottenhorn swore in the audience, and disclosed that the architect for this project had been a client of his firm in the past. They were no longer doing business, and his judgment would not be swayed by the acquaintance.

Justin McClure, RMCS, LLC, 21 S. Sunset Street, would present details of the Sketch Plan and was available to address questions and concerns.

Public Comment was taken from Douglas Luers, 600 Mathews Circle; and Vladimir Dixy, 409 Graham Way. Concerns covered view from back yards; need for a view corridor and or open space between developments; construction noise and dirt; light pollution; home values; traffic signal at Austin Avenue & County Line; need for a small grocer like Sprouts; and will the Town be financing infrastructure.

Commissioner question and concerns included traffic; impact of this added density on existing Town facilities; plug for splash parks; strategy for leasing/owning retail pad sites; how has McStain done with their alley loaded Single Family; market study; will they partner with preferred builders; and will the multifamily be serviced by elevators of walkups.

Commissioner Bottenhorn closed the public hearing at 9:21 p.m.

Commissioner Comments covered excitement to see this plan; nice to see plans for a desperately needed grocery store in this specific area; this is a better compromise then big box development; likes linear park idea; tonight has been mind-blowing, seeing this type of growth presented after 16 years; excitement about the possibilities; appreciation for park alternatives; fascinating concept that looks neat; appreciation for an appropriate plan that should be in this location; and the 45' height will be appropriate.

Commissioner Campbell moved approval of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

VII. GENERAL BUSINESS (This agenda item is reserved for matters that are ready for Commission action, and do not fit into other categories, i.e. resolutions)

1. Canyon Creek F-10 Sketch Plan

Purpose: Consider proposed sketch plan
Project File #: SK-000206-2015
Request: Consider and comment on proposed sketch plan
Location: SW Corner of Erie Parkway & County Line Road
Zoning: Canyon Creek Planned Development
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Comments were made during the public hearing portion of the meeting.

VIII. STAFF REPORTS (This agenda items is reserved for specific items from Staff requiring Commission direction or just relaying important information.)

The Stakeholders meeting next Tuesday, July 21st will begin at 6 p.m.

IX. COMMISSIONER REPORTS AND DISCUSSION ITEMS (This agenda item is for all Planning Commission reports and items of information as well as Commission discussion items, not listed on the agenda)

None.

X. ADJOURNMENT

There being no further business to come before the Commission, Chairman Bottenhorn adjourned the July 15, 2015, Regular Meeting of the Planning Commission at 9:33 p.m.

Respectfully Submitted,

By: _____
Hallie S. Sawyer, Secretary

Town of Erie Planning Commission

By: _____
J. Eric Bottenhorn, Chair

TOWN OF ERIE
BOARD OF TRUSTEES AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**RESOLUTIONS:** **CONSIDERATION OF RESOLUTION 15-92** (Continued from July 28th): A Resolution By The Board Of Trustees Of The Town Of Erie, Colorado Approving The Vista Ridge Filing No. 14 Minor Subdivision Plat With Conditions; Accepting Dedications As Shown On The Minor Subdivision Plat Filing No. 14 Minor Subdivision Plat; Authorizing The Appropriate Town Official To Sign The Vista Ridge Filing No. 14 Avigation Easement Agreement; Adopting Certain Findings Of Fact And Conclusions Favorable To The Approval, Acceptance Of The Dedications and the Avigation Easement Agreement; And, Setting Forth Details In Relation Thereto.
CODE REVIEW:	Erie Municipal Code, Title 10
PURPOSE:	Board of Trustees to consider the approval of the Vista Ridge Filing No. 14 Minor Subdivision Plat; the acceptance of dedications on the Vista Ridge Filing No. 14 Minor Subdivision Plat; and authorization to sign the Vista Ridge Filing No. 14 Avigation Easement Agreement.
DEPARTMENT:	Community Development
PRESENTER:	Todd Bjerkaas PLA, Senior Planner
FISCAL INFORMATION:	Cost as Recommended: na Balance Available: na Budget Line Item Number: 000 . 00 . 000 . 000000 . 000000 New Appropriation Required: ☐ Yes ☒ No
STAFF RECOMMENDATION:	Staff recommends the Board of Trustees authorize the Mayor to accept the dedications, authorize signature of the Avigation Easement Agreement, and to approve the Vista Ridge Filing No. 14 Minor Subdivision Plat with the following conditions by approving Resolution 15-92: 1. The Vista Ridge Filing No. 14 Minor Subdivision Plat shall not be recorded until a development agreement for the Vista Ridge Filing No. 14 Minor Subdivision Plat is signed and recorded. 2. The Vista Ridge Filing No. 14 Minor Subdivision Plat shall not be recorded until a Shared Parking Agreement is signed and recorded. 3. If site development and disturbance of trees occurs between March 1 and July 31, a survey for active migratory bird nests shall be conducted. Trees with an active nest shall not be removed until the

nest is abandoned for the season.

4. Prior to recordation of the minor subdivision plat, technical corrections to the plat and associated construction plans shall be made to the Town's satisfaction.

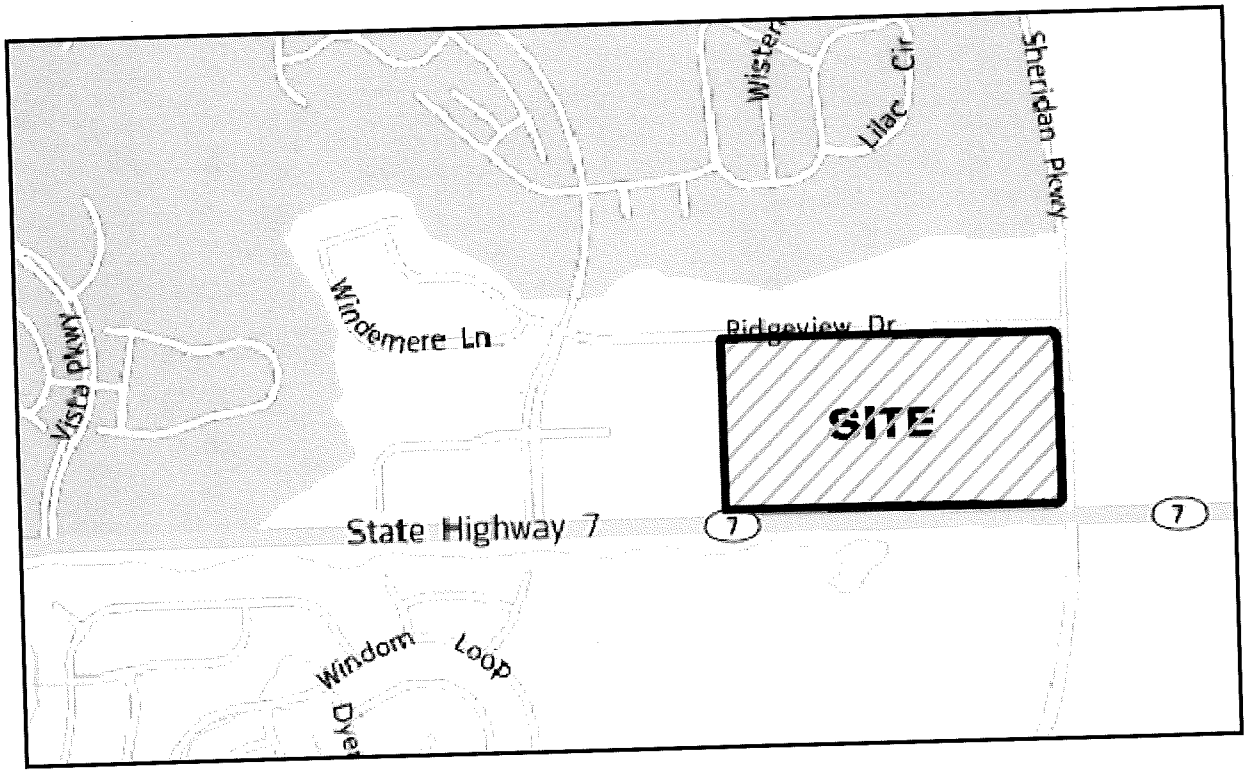
PLANNING COMMISSION RECOMMENDATION: On July 15, 2015 the Planning Commission held a Public Hearing and unanimously approved Resolution P15-19, a resolution recommending that the Board of Trustees approve the Vista Ridge Filing No. 14 Minor Subdivision Plat with conditions.

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Applicant: King Soopers
Drew Warot
65 Tejon Street
Denver, Colorado, 80223

Owner: Montex (Brownlee) LLC
Montex (Vista Ridge) LLC
Andy Chaikovsky

Location: The property is located on the northwest corner of State Highway 7 and Sheridan Boulevard.



Project Process and Summary:
Minor subdivision plats for non-residential lots require Board of Trustee approval with public hearings before the Planning Commission and Board of Trustees. Town staff has reviewed the Vista Ridge Filing No. 14 Minor Subdivision Plat and Construction Drawings for Vista Ridge Filing No. 14 and have found them to be in compliance with the Town Municipal Code and the Standards and Specifications for the Design and Construction of Public Improvements.

Project Description:
The Vista Ridge Filing No. 14 minor subdivision plat consists of 6 commercial lots and 3 future development tracts. The plat includes the unplatted Parcels 1 & 2 of Subdivision Exemption No. 977 (Brownlee) and a replat of Parcels 33 & 34 of the Vista Ridge Master Final Plat. Approximately 13 acres of the western portion of this filing will be further subdivided.

Site Specific Information:

- Minor Subdivision Plat Size: 33.30 acres
- Number of Commercial Lots: 6 lots
- Number of Future Development Tracts: 3 tracts

Current Land Use and Zoning:
Current Land Use: Vacant Land
Current Zoning: PD – Vista Ridge Planned Development

Adjacent Land Use and Zoning:

	ZONING	LAND USE
NORTH	Vista Ridge PD – Planned Development	Institutional (Vista Ridge Academy)
EAST	Broomfield PUD – Planned Unit Development	Single Family Residential /Vacant
SOUTH	Broomfield PUD – Planned Unit Development	Single Family Residential /Vacant
WEST	Vista Ridge PD – Planned Development	Vacant

STAFF REVIEW AND ANALYSIS

Staff finds the application is consistent with the Minor Subdivision Plat – Non-Residential Parcels approval criteria in Municipal Code, Section 10.7.7.F.10, as outlined below

a. **The Minor Subdivision is generally consistent with the Town's Comprehensive Master Plan;**

   Staff comment: The application is in Compliance with the Land Use designations on the 2005 Comprehensive Plan, Land Use Plan Map. The layout and size of lots, access, circulation, and utilities is consistent with commercial developments as identified in the RC – Regional Commercial land use designation of the Comprehensive Plan.

b. **The Minor Subdivision is generally consistent with and implements the intent of the specific zoning district in which it is located;**

Staff comment: The commercial lots proposed fall within Planning Areas 7-3 and 7-5 of the Vista Ridge Development Plan. Planning Areas 7-3 and 7-5 are designated as Commercial and the proposed subdivision layout meets the requirements for commercial subdivisions.

c. **As applicable, the Minor Subdivision is generally consistent with the terms and conditions of any previously approved development Plan;**

Staff comment: The commercial lots proposed fall within Planning Areas 7-3 and 7-5 of the Vista Ridge Development Plan. Planning Areas 7-3 and 7-5 are designated as Commercial and the proposed subdivision layout meets the requirements for commercial subdivisions.

d. **The Minor Subdivision complies with all applicable use, development, and design standards set forth in Chapters 3, 5 and 6 of this UDC that have not otherwise been modified or waived pursuant to this Chapter. Applicants shall refer to the Development Standards in Chapter 5 of this UDC and shall consider them in the layout of the subdivision in order to avoid creating lots or patterns of lots in the subdivision that will make compliance with such development and design standards difficult or infeasible;**

Staff comment: The design of the minor subdivision plat takes into account applicable use, Development and Design Standards of Chapters 3, 5, and 6 of Municipal Code Title 10.

e. **The Minor Subdivision complies with all applicable regulations, standards, requirements, or plans of the Federal or State governments and other relevant jurisdictions, including but not limited to wetlands, water quality, erosion control, and wastewater regulations;**

Staff comment: The minor subdivision plat complies with applicable regulations, standards and requirements of Federal, State and local governments and agencies.

f. **The Minor Subdivision will not result in significant adverse impacts on the natural environment, including air, water, noise, storm water management, wildlife, and vegetation, or such impacts will be substantially mitigated;**

Staff comment: Significant impacts are not anticipated for the natural environment that cannot be substantially mitigated.

g. **The Minor Subdivision shall be integrated and connected, where appropriate, with adjacent development through street connections, sidewalks, trails, and similar features;**

Staff comment: The minor subdivision plat provides vehicular and pedestrian connections to adjacent roadways and properties and future filings within the proposed development.

h. **The Minor Subdivision will not result in significant adverse impacts on adjacent properties, or such impacts will be substantially mitigated;**

Staff comment: The minor subdivision plat will not have significant adverse impacts on adjacent properties.

i. **Adequate and sufficient public safety, transportation, utility facilities and services, recreation facilities, parks, and schools are available to serve the subject property, while maintaining sufficient levels of service to existing development;**

Staff comment: Adequate services and facilities currently exist.

j. **As applicable, the proposed phasing plan for development of the subdivision is rational in terms of available infrastructure capacity.**

Staff comment: Adequate infrastructure capacity is available for the phasing of development for Vista Ridge Filing No. 14.

Neighborhood Meeting:
As required by the Municipal Code a Neighborhood Meeting was held on April 22, 2015 at 5:30 p.m. at the Vista Ridge Community Center. The required notice for the Neighborhood Meeting was provided and a copy of the minutes and sign-in sheet are attached.

Public Notice
Notice of this Public Hearing continued from the July 28th meeting has been provided as follows:

Published in the Colorado Hometown Weekly:	July 8, 2015
Property Posted as required:	June 30, 2015
Letters to Adjacent Property Owners:	July 10, 2015

Staff Recommendation:
Staff recommends approval of the Vista Ridge Filing No. 14 Minor Subdivision Plat application. Staff has provided Resolution P15-19, for the Planning Commission consideration, recommending approval of the application to the Board of Trustees with the following conditions:

a. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until an avigation easement for the Brownlee portion of the property is signed and recorded.

b. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until a Shared Parking Agreement is signed and recorded.

c. If site development and disturbance of trees occurs between March 1 and July 31, a survey for active nests shall be conducted. Trees with an active nest shall not be removed until the nest is abandoned for the season.

d. Prior to recordation of the minor subdivision plat, technical corrections to the plat and associated construction plans shall be made to the Town's satisfaction.

Staff Recommendation:
Staff recommends the Board of Trustees authorize the Mayor to accept the dedications, authorize signature of the Avigation Easement Agreement, and to approve the Vista Ridge Filing No. 14 Minor Subdivision Plat with the following conditions by approving Resolution 15-92:

1. The Vista Ridge Filing No. 14 Minor Subdivision Plat shall not be recorded until a development agreement for the Vista Ridge Filing No. 14 Minor Subdivision Plat is signed and recorded.

2. The Vista Ridge Filing No. 14 Minor Subdivision Plat shall not be recorded until a Shared Parking Agreement is signed and recorded.

3. If site development and disturbance of trees occurs between March 1 and July 31, a survey for active migratory bird nests shall be conducted. Trees with an active nest shall not be removed until the nest is abandoned for the season.

4. Prior to recordation of the minor subdivision plat, technical corrections to the plat and associated construction plans shall be made to the Town's satisfaction.

Staff Review:

____Town Attorney
____Town Clerk
DW Community Development Director
____Finance Director
____Police Chief
____Public Works Director

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:

a. Resolution 15-92
b. PC Resolution P15-19
c. Vista Ridge Filing No. 14 Minor Subdivision Plat
d. Vista Ridge Filing No. 14 Avigation Easement Agreement
e. Vista Ridge Filing No. 14 application materials
f. Vista Ridge Development Plan – Planning Areas Map

ATTACHMENT A

RESOLUTION NO. 15-92

A RESOLUTION BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO APPROVING THE VISTA RIDGE FILING NO. 14 MINOR SUBDIVISION PLAT WITH CONDITIONS; ACCEPTING DEDICATIONS AS SHOWN ON THE VISTA RIDGE FILING NO. 14 MINOR SUBDIVISION PLAT; AUTHORIZING THE APPROPRIATE TOWN OFFICIAL TO SIGN THE VISTA RIDGE FILING NO. 14 AVIGATION EASEMENT AGREEMENT; ADOPTING CERTAIN FINDINGS OF FACT AND CONCLUSIONS FAVORABLE TO THE APPROVAL, ACCEPTANCE OF THE DEDICATIONS CONTAINED THEREIN; AND, SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, the Board of Trustees of the Town of Erie, Colorado, following a public hearing noticed in accordance with the Town Code and held on July 28, 2015 and continued to August 11, 2015, considered the approval of the Minor Subdivision Plat, acceptance of the dedications contained therein, pursuant to the application of King Soopers, 65 Tejon Street, Denver, Colorado, 80223 representing the owners, Montex (Brownlee), LLC and Montex (Vista Ridge), LLC, for the Vista Ridge Filing No. 14 Minor Subdivision Plat, Town of Erie, County of Weld, State of Colorado; and,

WHEREAS, the Board of Trustees of the Town of Erie, Colorado, desires to approve the Vista Ridge Filing No. 14 Minor Subdivision Plat with conditions; and,

WHEREAS, the Board of Trustees of the Town of Erie, desires to accept the dedications contained in the minor subdivision plat; and,

WHEREAS, the Board of Trustees of the Town of Erie, Colorado, desires to approve the Vista Ridge Filing No. 14 Avigation Easement Agreement; and,

WHEREAS, the Board of Trustees of the Town of Erie, believes it is in the best interest of the Town and its citizens to approve the Vista Ridge Filing No. 14 Minor Subdivision Plat Avigation Easement Agreement as provided for herein below.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. The Board of Trustees of the Town of Erie hereby approves the Vista Ridge Filing No. 14 Minor Subdivision Plat with the following conditions:

1. The Vista Ridge Filing No. 14 Minor Subdivision Plat shall not be recorded until a development agreement for the Vista Ridge Filing No. 14 Minor Subdivision Plat is signed and recorded.

2. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until a Shared Parking Agreement is signed and recorded.

3. If site development and disturbance of trees occurs between March 1 and July 31, a survey for active migratory bird nests shall be conducted. Trees with an active nest shall not be removed until the nest is abandoned for the season.

4. Prior to recordation of the minor subdivision plat, technical corrections to the plat and associated construction plans shall be made to the Town's satisfaction.

Section 2. The Board of Trustees of the Town of Erie hereby accepts the dedications as set forth on the Vista Ridge Filing No. 14 Minor Subdivision Plat.

Section 3. The Board of Trustees of the Town of Erie hereby approves the Vista Ridge Filing No. 14 Avigation Easement Agreement, and authorizes the appropriate Town Official to sign and bind the Town to the Avigation Easement Agreement.

INTRODUCED, READ, SIGNED AND APPROVED this 11th day of August 2015.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy J. Parker, CMC, Town Clerk

ATTACHMENT B

RESOLUTION NO. P15-19

A RESOLUTION REGARDING THE MINOR SUBDIVISION PLAT OF VISTA RIDGE FILING NO. 14, ADOPTING CERTAIN FINDINGS OF FACT AND CONCLUSIONS FAVORABLE TO THE MINOR SUBDIVISION PLAT.

WHEREAS, the Planning Commission of the Town of Erie, Colorado, considered the Minor Subdivision Plat of Vista Ridge Filing No. 14 on Wednesday, July 15, 2015, on the application of King Soopers, 65 Tejon Street, Denver, Colorado, 80223 representing the owner of the following real property; to wit:

Parcels 1 & 2, Subdivision Exemption No. 977; Parcels 33 & 34, Vista Ridge Master Final Plat.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE TOWN OF ERIE, COLORADO, as follows:

Section 1. Findings of Fact.

1. The applicant's application and supporting documents are in substantial compliance with Section 7.7.F.10 (Minor Subdivision Plat – Non-Residential Parcels) of Title 10, Town of Erie Municipal Code.

2. The Minor Subdivision Plat as proposed, subject to the following conditions, will preserve the health, safety, welfare and interest of the citizens of the Town of Erie, Colorado.

    a. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until an avigation easement for the Brownlee portion of the property is signed and recorded.

    b. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until a Shared Parking Agreement is signed and recorded.

    c. If site development and disturbance of trees occurs between March 1 and July 31, a survey for active nests shall be conducted. Trees with an active nest shall not be removed until the nest is abandoned for the season.

    d. Prior to recordation of the minor subdivision plat, technical corrections to the plat and associated construction plans shall be made to the Town's satisfaction.

Section 2. Conclusions and Order Recommending Approval of the Minor Subdivision Plat of Vista Ridge Filing No. 14.

1. The applicant's application and supporting documents are in substantial compliance with Section 7.7.F.10 (Minor Subdivision Plat – Non-Residential Parcels) of Title 10, Town of Erie Municipal Code.

2. The Minor Subdivision Plat as proposed, subject to the following conditions, will preserve the health, safety, welfare and interest of the citizens of the Town of Erie, Colorado.

   a. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until an avigation easement for the Brownlee portion of the property is signed and recorded.

   b. The Vista Ridge Filing No. 14 minor subdivision plat shall not be recorded until a Shared Parking Agreement is signed and recorded.

   c. If site development and disturbance of trees occurs between March 1 and July 31, a survey for active nests shall be conducted. Trees with an active nest shall not be removed until the nest is abandoned for the season.

   d. Prior to recordation of the minor subdivision plat, technical corrections to the plat and associated construction plans shall be made to the Town's satisfaction.

INTRODUCED, READ, SIGNED AND APPROVED this 15th day of July, 2015.

TOWN OF ERIE, PLANNING COMMISSION

By: _____
J. Eric Bottenhorn, Chair

ATTEST:

By: _____
Hallie S. Sawyer, Secretary

Town of Erie
Planning Commission Regular Meeting
Wednesday, July 15, 2015
6:30 p.m.
Board Room, Erie Town Hall, 645 Holbrook, Erie, Co 80516

I. CALL MEETING TO ORDER & PLEDGE OF ALLEGIANCE

Chairman Bottenhorn called the Regular Meeting of the Erie Planning Commission to order at 6:30 p.m.

II. ROLL CALL

Commissioner Bottenhorn - Present
Commissioner Burgard – Arrived 6:32
Commissioner Campbell - Present
Commissioner Kemp - Present
Commissioner Fraser -
Commissioner Gippe - Excused
Commissioner Harrison - Present

Staff Present: R. Martin Ostholthoff, Community Development Director;
Deborah Bachelder, Senior Planner;
Todd Bjerkaas, Senior Planner;
A.J. Krieger, Town Administrator;
Paula Mehle, Economic Development; and
Hallie Sawyer, Secretary to the Commission

III. APPROVAL OF THE AGENDA

Commissioner Campbell moved to amend the agenda by moving item VI.6. Public Hearing – Comprehensive Plan Amendment to the first business item, and approve the July 15, 2015, Regular Meeting Agenda as amended. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

IV. APPROVAL OF MINUTES

a. Minutes from the May 20, 2015, Regular Meeting.
Commissioner Harrison moved to approve the May 20, 2015, Minutes as submitted. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

V. PUBLIC COMMENTS (This agenda item provides the public an opportunity to discuss items other than items that are on the agenda. The Planning Commission is not prepared to decide on matters brought up at this time, but it warranted, will place them on a future agenda.)

Comment was taken from Ken Martin, Chairman of the Town of Erie Open Space and Trails Advisory Board, regarding OSTAB's concerns about the proposed Sketch Plan for Canyon Creek Filing 10 Four Corners development that will be considered later in the meeting.

VI. RESOLUTIONS (This agenda item is for all matters that should be decided by resolutions.)

1. Public Hearing – Comprehensive Plan Amendment - TO BE CONTINUED TO AUGUST 19TH, 2015

Purpose: Consideration of a Comprehensive Plan Amendment
Project File #: CPA-000195-2015
Request: Consideration of Resolution P15-__,
Location: N/A
Applicants: N/A
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 6:35 p.m., and continued the hearing to August 19, 2015.

2. Public Hearing – Vista Ridge F-14 Minor Subdivision Plat

Purpose: Consideration of Minor Subdivision Plat
Project File #: MS-14-00049
Request: Consideration of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Chairman Bottenhorn opened the public hearing at 6:35 p.m. Mr. Bjerkaas presented the applications for the Vista Ridge Filing 14 Minor Subdivision Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions. Chairman Bottenhorn swore in the audience.

Drew Warot and Brandon McClary, 65 Tejon Street, Denver, represented Kings Soopers, the project anchor, and were present to address questions and concerns.

Public Comment was taken from Betty Jo Booth, Chairman of the Board for the Vista Ridge Academy; Monica Wernick of Vista Ridge; and Stephen Weddig, 1265 Graham Circle. Comments covered Vista Academy's concerns about the rear of the King Soopers Store being so close to the school; store deliveries impacting school drop offs; loosing fields and open space; impact on area homes and traffic; with Erie's Safeway being in Lafayette and King Soopers in Broomfield, folks in the middle had nowhere close to shop.

Commissioner questions and concerns covered store deliveries vs. school drop-offs; blending of architectural detail with the surrounding community; entryway coverings to provide protection from weather; Highway 7/Sheridan expansion time frames; estimated completion time; why 3' shorter parking spaces; parking lot safety; location of existing cottonwood trees; what determined size of fueling bay; why no drive-thru like for Starbucks; how will current topography be changed; will perimeter walks be extended to existing walks; are the sign size changes unique to Erie; is the property to the west future multifamily; explain process of evaluating future store sites; and will three pad sites be sold or leased to future users.

Chairman Bottenhorn closed the public hearings at 7:51 p.m.

Commissioner comments covered general excitement to welcome King Soopers to Erie, citing the huge need that will be filled; appreciation for delivery times occurring during evening hours; thanks for well written reports and submittal and for answering all of the questions and concerns; good presentation; and all commissioners noted agreement with all of the proposed Alternative Compliance requests.

Commissioner Campbell moved approval of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

3. Public Hearing – Vista Ridge F-14 Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-14-00050
Request: Consideration of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Commissioner Harrison moved approval of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

Chairman Bottenhorn called for a short recess at 8:00 p.m. The meeting was called back to order at 8:03p.m.

4. Public Hearing – Vista Ridge F-2, 1st Amendment Preliminary Plat

Purpose: Consideration of Preliminary Plat
Project File #: PP-000055-2014
Request: Consideration of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 8:04 p.m. Mr. Ostholthoff presented the applications for the Vista Ridge Filing 2, 1st Amendment Preliminary Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions.
Chairman Bottenhorn swore in the audience.
Ward Ritter, Chartered Homes, 3160 Village Vista Drive, Erie, was present to address any questions and concerns.
There was no public comment.
Commissioner questions and concerns covered will this be more upscale than Latitude; will the homes backing to the golf course have walkouts; soils/foundation issues – are there guarantees in place; street tops; and estimated HOA costs.
Chairman Bottenhorn closed the public hearing at 8:27p.m.
The Commission had no further comments.
Commissioner Kemp moved approval of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

5. Public Hearing – Vista Ridge F-2, 1st Amendment Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-000054-2014
Request: Consideration of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Commissioner Kemp moved approval of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

6. Public Hearing – Canyon Creek Planned Development Amendment No. 9

Purpose: Consideration of Planned Development Amendment No. 9 for Canyon Creek
Project File #: PDA-000544-2015

Request: Consideration of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment.
Location: SW Corner of Erie Parkway & County Line Road
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Chairman Bottenhorn opened the public hearing at 8:29 p.m. Mrs. Bachelder presented the applications for the Canyon Creek PD Amendment No. 9 and Sketch Plan for Canyon Creek Filing 10, entered the documents into evidence and presented the staff recommendations for approval of the resolution. Chairman Bottenhorn swore in the audience, and disclosed that the architect for this project had been a client of his firm in the past. They were no longer doing business, and his judgment would not be swayed by the acquaintance.

Justin McClure, RMCS, LLC, 21 S. Sunset Street, would present details of the Sketch Plan and was available to address questions and concerns.

Public Comment was taken from Douglas Luers, 600 Mathews Circle; and Vladimir Dixy, 409 Graham Way. Concerns covered view from back yards; need for a view corridor and or open space between developments; construction noise and dirt; light pollution; home values; traffic signal at Austin Avenue & County Line; need for a small grocer like Sprouts; and will the Town be financing infrastructure.

Commissioner question and concerns included traffic; impact of this added density on existing Town facilities; plug for splash parks; strategy for leasing/owning retail pad sites; how has McStain done with their alley loaded Single Family; market study; will they partner with preferred builders; and will the multifamily be serviced by elevators of walkups.

Commissioner Bottenhorn closed the public hearing at 9:21 p.m.

Commissioner Comments covered excitement to see this plan; nice to see plans for a desperately needed grocery store in this specific area; this is a better compromise then big box development; likes linear park idea; tonight has been mind-blowing, seeing this type of growth presented after 16 years; excitement about the possibilities; appreciation for park alternatives; fascinating concept that looks neat; appreciation for an appropriate plan that should be in this location; and the 45' height will be appropriate.

Commissioner Campbell moved approval of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

VII. GENERAL BUSINESS (This agenda item is reserved for matters that are ready for Commission action, and do not fit into other categories, i.e. resolutions)

1. Canyon Creek F-10 Sketch Plan

Purpose: Consider proposed sketch plan
Project File #: SK-000206-2015
Request: Consider and comment on proposed sketch plan
Location: SW Corner of Erie Parkway & County Line Road
Zoning: Canyon Creek Planned Development
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Comments were made during the public hearing portion of the meeting.

VIII. STAFF REPORTS (This agenda items is reserved for specific items from Staff requiring Commission direction or just relaying important information.)

The Stakeholders meeting next Tuesday, July 21st will begin at 6 p.m.

IX. COMMISSIONER REPORTS AND DISCUSSION ITEMS (This agenda item is for all Planning Commission reports and items of information as well as Commission discussion items, not listed on the agenda)

None.

X. **ADJOURNMENT**

There being no further business to come before the Commission, Chairman Bottenhorn adjourned the July 15, 2015, Regular Meeting of the Planning Commission at 9:33 p.m.

Respectfully Submitted,

By: _____
Hallie S. Sawyer, Secretary

Town of Erie Planning Commission

By: _____
J. Eric Bottenhorn, Chair

ATTACHMENT C

VISTA RIDGE FILING NO. 14

A REPLAT OF PARCELS 1 & 2 OF SUBDIVISION EXEMPTION NO. 977 AND PARCELS 33 & 34, VISTA RIDGE MASTER FINAL PLAT
SITUATED IN THE S 1/2 OF SECTION 33, T.1N., R.68W., OF THE 6TH P.M.
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO
33.3018 ACRES - 6 COMMERICAL LOTS & 2 TRACTS
FP-000051-2014

DEDICATION STATEMENT

KNOW BY ALL MEN THESE PRESENTS THAT THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, OR LIEN HOLDERS OF CERTAIN LANDS IN THE TOWN OF ERIE, COUNTY OF WELD, COLORADO, DESCRIBED AS FOLLOWS:

A PARCEL OF LAND SITUATED IN THE S 1/2 OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., BEING PARCELS 1 AND 2 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070524 AND PARCELS 33 & 34, VISTA RIDGE, MASTER FINAL PLAT RECORDED NOVEMBER 26, 2001 AT RECEPTION NO. 2903870, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE S ¼ CORNER OF SAID SECTION 33;
THENCE N00°06'16"E ALONG THE EAST LINE OF THE SW ¼ OF SAID SECTION 33 A DISTANCE OF 75.00 FEET TO THE NORTH RIGHT OF WAY LINE OF COLORADO STATE HIGHWAY 7, SAID POINT BEING THE POINT OF BEGINNING;
THENCE N88°38'37"W ALONG THE SAID NORTH RIGHT OF WAY LINE A DISTANCE OF 1580.79 FEET TO THE SOUTHEAST CORNER OF TRACT A, VISTA RIDGE FILING NO. 12;
THENCE N30°12'01"W ALONG THE EASTERLY LINE OF SAID TRACT A, A DISTANCE OF 809.01 FEET TO THE NORTHEAST CORNER OF SAID TRACT A, SAID POINT LYING ON THE SOUTHERLY RIGHT OF WAY LINE OF RIDGE VIEW DRIVE; THENCE N88°50'35"E ALONG SAID SOUTHERLY RIGHT OF WAY LINE A DISTANCE OF 310.22 FEET; THENCE S89°31'49"E CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY LINE A DISTANCE OF 1328.14 FEET TO A POINT OF CURVE;
THENCE ALONG A CURVE TO THE RIGHT WHOSE CHORD BEARS S45°03'17"E A DISTANCE OF 42.04 FEET, SAID CURVE HAVING A CENTRAL ANGLE OF 88°57'03", A RADIUS OF 30.00 FEET, AN ARC LENGTH OF 46.57 FEET TO A POINT OF TANGENT ON THE WESTERLY RIGHT OF WAY LINE OF SHERIDAN BOULEVARD;
THENCE S00°34'40"E ALONG SAID WESTERLY RIGHT OF WAY LINE A DISTANCE OF 804.79 FEET TO A POINT OF CURVE;
THENCE ALONG A CURVE TO THE RIGHT WHOSE CHORD BEARS S44°53'10"W A DISTANCE OF 42.77 FEET, SAID CURVE HAVING A CENTRAL ANGLE OF 90°55'52", A RADIUS OF 30.00 FEET, AN ARC LENGTH OF 47.61 FEET TO A POINT OF TANGENT ON SAID NORTH RIGHT OF WAY LINE OF STATE HIGHWAY 7;
THENCE N89°38'54"W ALONG SAID NORTH RIGHT OF WAY LINE A DISTANCE OF 62.23 FEET TO THE POINT OF BEGINNING. CONTAINING (1,450,627 SQUARE FEET) 33.3018 ACRES.

HAVE BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS, TRACTS AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF VISTA RIDGE FILING NO. 14. THE EASEMENTS SHOWN HEREON ARE DEDICATED AND CONVEYED TO THE TOWN OF ERIE, COLORADO, IN FEE SIMPLE ABSOLUTE, WITH MARKETABLE TITLE, FOR PUBLIC USES AND PURPOSES AS SHOWN HEREON.

OWNER

____

BY: ______________________________

ATTEST: ______________________________
SECRETARY/TREASURER

STATE OF ____________)
) ss.
COUNTY OF ____________)

ACKNOWLEDGED BEFORE ME THIS ________ DAY OF ______________, 20 ___
BY ______________ AS ______________,

WITNESS MY HAND AND OFFICIAL SEAL

____
NOTARY PUBLIC

MY COMMISSION EXPIRES: ____________

TITLE VERIFICATION CERTIFICATE:

WE HERITAGE TITLE COMPANY AS AGENT FOR COMMONWEALTH LAND TITLE INSURANCE COMPANY, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF ALL LAND PLATTED HEREON AND THAT TITLE TO SUCH LANDS IS IN THE DEDICATOR FREE AND CLEAR OF ALL LIENS, TAXES AND ENCUMBRANCES, EXCEPT AS FOLLOWS:

HERITAGE TITLE COMPANY

BY: ______________________________ ______________ DATE

____
NAME:

TITLE: ______________________________

STATE OF ____________)
) ss.
COUNTY OF ____________)

ACKNOWLEDGED BEFORE ME THIS ________ DAY OF ______________, 20 ___
BY ______________ AS ______________,

WITNESS MY HAND AND OFFICIAL SEAL

____
NOTARY PUBLIC

MY COMMISSION EXPIRES: ____________

VICINITY MAP
SCALE: 1"=NTS

LAND SUMMARY CHART		
TYPE	AREA	% OF TOTAL AREA
COMMERICAL LOTS	882,212 SQ. FT.	60.8%
TRACTS	568,415 SQ. FT.	39.2%
TOTAL	1,450,627 SQ. FT.	100.0%

TRACT SUMMARY CHART				
TRACT	AREA	USE	OWNERSHIP	MAINTENANCE
A	420,169 SQ. FT.	FUTURE COMMERCIAL	OWNER	OWNER
B	105,339 SQ. FT.	FUTURE COMMERCIAL	OWNER	OWNER
C	42,908 SQ. FT.	FUTURE COMMERCIAL	OWNER	OWNER

GENERAL NOTES:

1. THIS SURVEY WAS BASED ON TITLE COMMITMENT NUMBER 481-H0411791-266-ES4 AMENDMENT NO. 6 PREPARED BY HERITAGE TITLE COMPANY AS AGENT FOR COMMONWEALTH LAND TITLE INSURANCE COMPANY, WITH AN EFFECTIVE DATE OF JUNE 12, 2016 AT 7:00 A.M., AND DOES NOT CONSTITUTE A TITLE SEARCH BY THIS SURVEYOR FOR OTHER EASEMENTS AND/OR EXCEPTIONS OF RECORD.
2. BY GRAPHIC PLOTTING ONLY THE SUBJECT PROPERTY IS SITUATED IN FLOOD ZONE "X" AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN ACCORDING TO FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 08013C444J (PANEL NOT PRINTED). NO OFFICE CALCULATIONS OR FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS INFORMATION.
3. BEARINGS ARE BASED ON THE NORTH RIGHT-OF-WAY LINE OF STATE HIGHWAY NO. 7 BEARING N88°38'37"W AS REFERENCED AND BOUNDED BY THE MONUMENTS SHOWN HEREON.
4. DUE TO THE PROXIMITY OF THE PROPERTY TO THE ERIE MUNICIPAL AIRPORT, THERE WILL BE AIRCRAFT PASSING OVER THE PROPERTY. AIRCRAFT PASSAGE MAY RESULT IN NOISE AND OTHER IMPACTS ON THE PROPERTY. AIRCRAFT MAY CROSS PROPERTY AT LOW ALTITUDE IN ACCORDANCE WITH FAA REGULATIONS. THE FREQUENCY OF AIRCRAFT PASSING OVER THE PROPERTY MAY INCREASE IN THE FUTURE. THE OWNERS, THEIR HEIRS, SUCCESSORS AND ASSIGNS SPECIFICALLY ACKNOWLEDGE THE RIGHT OF PASSAGE OVER THE PROPERTY FOR AIRCRAFT AND AGREE TO HOLD HARMLESS THE TOWN OF ERIE FOR AIRCRAFT OPERATIONS.
5. ALL UNITS ARE U.S. SURVEY FEET.
6. LOTS 3 THROUGH 6 DO NOT HAVE DIRECT ACCESS TO STATE HIGHWAY 7 OR SHERIDAN PARKWAY.
7. MAINTENANCE DEFINITION: MAINTENANCE IS THE PROCESS OF PRESERVING CAPITAL IMPROVEMENTS, STRUCTURES, DEVELOPMENT, OR SYSTEMS TO MEET ITS FUNCTION OR ORIGINAL INTENT OF THE FACILITY. THIS IS THE PRESERVATION, CONSERVATION, KEEPING IN GOOD CONDITIONS, OPERATING SAFELY, OPERATING EFFICIENTLY, TESTING, INSPECTION, SERVICING, REPAIRING, GRADING, CLEANING, PICKING UP TRASH AND DEBRIS, PEST CONTROL, PAINTING, MOWING, PRUNING, AND PROLONGING OF THESE FACILITIES. MAINTENANCE ALSO INCLUDES THE PROVISION OF FINANCIAL SUPPORT TO MAINTAIN THE FACILITIES. FACILITIES INCLUDE BUT ARE NOT LIMITED TO: LANDSCAPING, OPEN AREAS, GRASS, SHRUBS, TREES, PLAYGROUNDS, SITE FURNITURE AND FIXTURES, RETAINING WALLS, SIGNS, SIDEWALKS, DRAINAGE STRUCTURES SUCH AS PONDS, SWALES, DRAIN PANS, INLETS, AND OUTLET STRUCTURES.

SURVEYOR'S CERTIFICATE

I, CHARLES N. BECKSTROM, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON SEPTEMBER 20, 2014, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:50,000 (SECOND ORDER); AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISIONS OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE TOWN OF ERIE UNIFIED DEVELOPMENT CODE.

I ATTEST THE ABOVE ON THIS ________ DAY OF ______________, 20 ___

COLORADO REGISTERED CHARLES N. BECKSTROM 33202 PROFESSIONAL LAND SURVEYOR

____
CHARLES N. BECKSTROM
COLORADO REGISTERED PROFESSIONAL
LAND SURVEYOR NO. 33202

NOTICE:

ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

ANY PERSON WHO KNOWINGLY REMOVES, ALTERS, OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT, LAND BOUNDARY MONUMENT, OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR, PURSUANT TO STATE STATUTE 18-4-508 OF THE COLORADO REVISED STATUTES.

BOARD OF TRUSTEES APPROVAL CERTIFICATE

THIS PLAT IS TO BE KNOWN AS VISTA RIDGE FILING NO. 14 AND IS APPROVED AND ACCEPTED BY RESOLUTION NO. ____________, PASSED AND ADOPTED AT THE REGULAR MEETING OF THE BOARD OF TRUSTEES OR ERIE, COLORADO.

HELD ON THE ________ DAY OF ______________ 20 ___,

____
MAYOR

ATTEST: ______________________________
TOWN CLERK

COMMUNITY DEVELOPMENT AND PUBLIC WORKS APPROVAL CERTIFICATE

THIS PLAT IS HEREBY APPROVED BY THE TOWN OF ERIE COMMUNITY DEVELOPMENT DIRECTOR AND PUBLIC WORKS DIRECTOR ON THIS ___ DAY OF ______________ 20 ___.

____
COMMUNITY DEVELOPMENT DIRECTOR

____
PUBLIC WORKS DIRECTOR

CLERK & RECORDER CERTIFICATE

STATE OF COLORADO)
) ss.
COUNTY OF WELD)

I HEREBY CERTIFY THAT THIS PLAT WAS FILLED IN MY OFFICE ON THIS _____ DAY OF ______________, 20 ___ A.D. AND WAS RECORDED AT RECEPTION NUMBER ______________.

____
COUNTY CLERK AND RECORDER

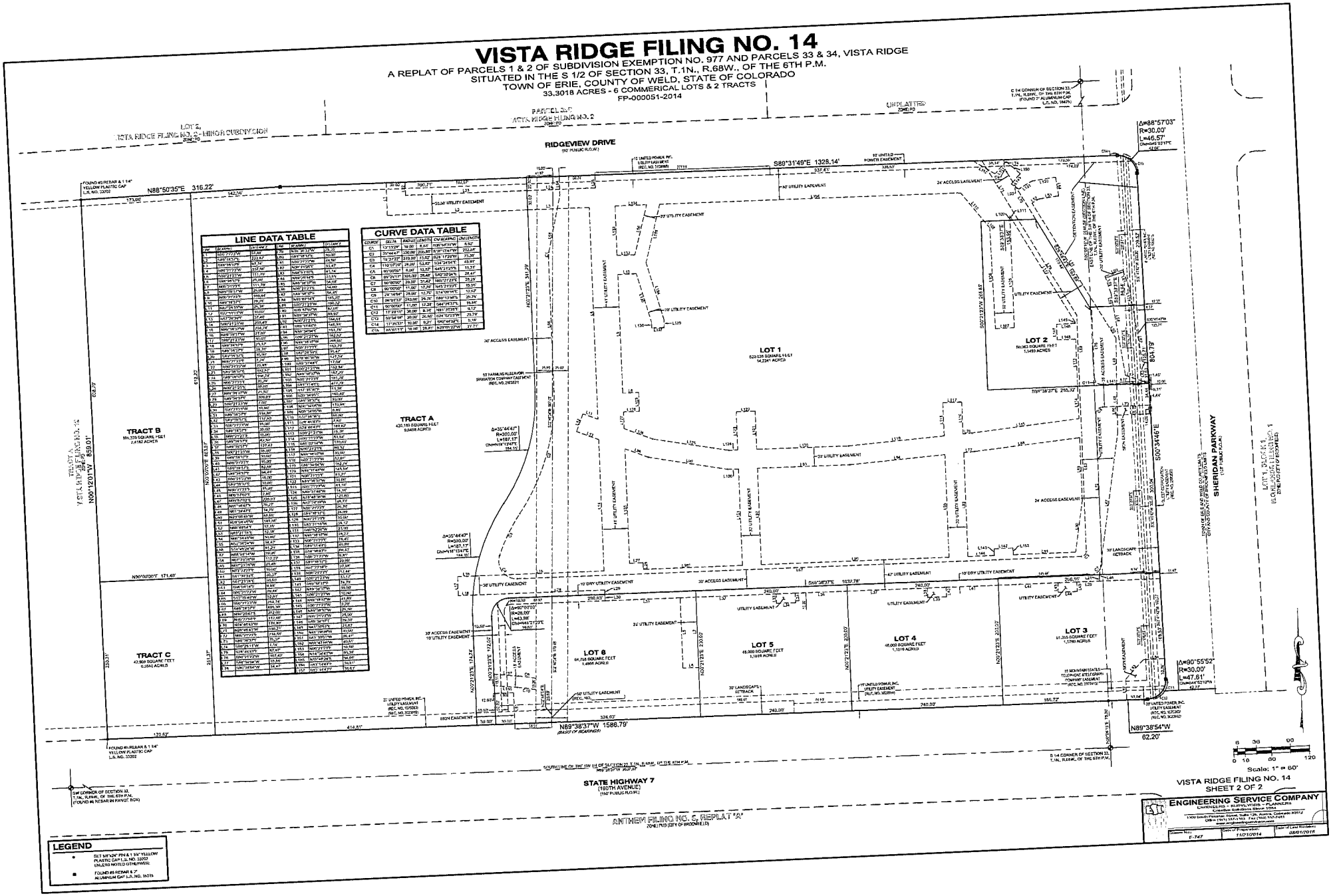
VISTA RIDGE FILING NO. 14
SHEET 1 OF 2

ENGINEERING SERVICE COMPANY
ENGINEERS ~ SURVEYORS ~ PLANNERS
Creative Solutions Since 1954
1300 South Potomac Street, Suite 126, Aurora, Colorado 80012
Office (303) 337-1393 Fax (303) 337-7481
www.engineeringservice.com

Drawn No.:	Date of Preparation:	Date of Last Revision:
E-747	11/21/2014	08/01/2016

VISTA RIDGE FILING NO. 14

A REPLAT OF PARCELS 1 & 2 OF SUBDIVISION EXEMPTION NO. 977 AND PARCELS 33 & 34, VISTA RIDGE
SITUATED IN THE S 1/2 OF SECTION 33, T.1N., R.68W., OF THE 6TH P.M.
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO
33.3018 ACRES - 6 COMMERICAL LOTS & 2 TRACTS
FP-000051-2014



LINE DATA TABLE

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L1	S00°27'03"W	30.64'	L76	N89°38'37"W	176.10'
L2	S89°31'57"E	222.67'	L77	S89°38'37"E	50.00'
L3	S89°38'37"E	84.74'	L78	N00°27'03"W	44.94'
L4	N00°27'03"W	337.06'	L79	N00°27'03"W	51.47'
L5	S00°27'03"W	111.19'	L80	N44°31'57"E	41.74'
L6	N89°38'37"W	20.00'	L81	N44°31'57"E	33.85'
L7	N00°27'03"W	111.19'	L82	N89°38'37"W	54.08'
L8	N89°38'37"W	20.00'	L83	N44°31'57"E	14.08'
L9	N00°27'03"W	337.06'	L84	N00°27'03"W	54.08'
L10	N89°38'37"W	29.24'	L85	N89°38'37"W	198.02'
L11	N00°27'03"W	25.00'	L86	N00°27'03"W	198.02'
L12	S00°31'11"W	30.00'	L87	N00°43'00"W	54.08'
L13	S89°31'49"E	37.40'	L88	N89°38'37"W	198.02'
L14	S89°31'49"E	203.42'	L89	N00°27'03"W	198.02'
L15	N89°38'37"W	258.24'	L90	N89°31'49"W	148.55'
L16	S89°38'37"E	27.00'	L91	N00°31'49"W	153.78'
L17	S89°31'49"E	30.00'	L92	N00°27'03"W	162.02'
L18	S89°31'49"E	29.12'	L93	N89°38'37"W	198.02'
L19	S89°38'37"E	28.70'	L94	N00°27'03"W	162.02'
L20	S89°38'37"E	35.00'	L95	N89°38'37"W	198.02'
L21	N00°27'03"W	12.00'	L96	N78°46'30"W	147.53'
L22	N00°27'03"W	20.44'	L97	S00°27'03"E	17.04'
L23	S89°38'37"E	192.24'	L98	S00°27'03"E	132.54'
L24	S89°38'37"E	194.74'	L99	N00°27'03"W	187.20'
L25	N00°27'03"W	20.24'	L100	N00°27'03"W	183.28'
L26	N00°31'11"E	20.00'	L101	S89°31'49"E	147.78'
L27	S89°38'37"W	21.50'	L102	S89°31'49"E	11.00'
L28	S89°38'37"W	200.07'	L103	S00°38'05"E	160.40'
L29	S00°27'03"E	27.00'	L104	S00°27'03"E	30.00'
L30	S00°27'03"W	30.00'	L105	N00°38'05"W	170.96'
L31	S89°38'37"E	116.39'	L106	N89°38'05"W	0.80'
L32	S89°38'37"E	117.00'	L107	S00°38'05"E	160.40'
L33	S00°27'03"W	30.00'	L108	S89°38'05"E	7.40'
L34	S89°38'37"E	30.00'	L109	S00°27'03"E	180.42'
L35	S00°27'03"W	30.00'	L110	S00°27'03"E	26.30'
L36	S89°38'37"E	42.50'	L111	S00°27'03"E	83.94'
L37	S89°38'37"E	197.43'	L112	S00°27'03"E	170.00'
L38	S00°27'03"W	30.00'	L113	S00°27'03"E	90.70'
L39	S89°38'37"E	30.00'	L114	S00°38'05"E	90.00'
L40	S00°27'03"E	30.00'	L115	S00°27'03"W	53.00'
L41	S00°27'03"E	30.00'	L116	S00°27'03"W	162.24'
L42	S89°38'37"E	30.49'	L117	N89°38'37"W	143.34'
L43	S00°27'03"W	19.00'	L118	N00°27'03"W	41.27'
L44	S89°38'37"E	30.00'	L119	N89°38'37"W	30.00'
L45	S00°27'03"E	19.00'	L120	S00°27'03"W	41.27'
L46	N89°38'37"E	12.00'	L121	N89°38'37"W	14.00'
L47	N00°27'03"E	220.07'	L122	N89°38'37"W	121.00'
L48	N00°38'47"E	14.70'	L123	N00°27'03"W	45.70'
L49	N00°38'47"E	14.70'	L124	N00°27'03"W	20.00'
L50	N00°38'47"W	30.00'	L125	N89°38'37"E	24.00'
L51	N00°38'47"W	197.34'	L126	N00°27'03"W	30.00'
L52	N00°38'47"W	12.15'	L127	N00°27'03"W	20.12'
L53	N00°27'03"E	12.15'	L128	N89°38'37"W	23.00'
L54	N00°38'47"W	30.00'	L129	N00°27'03"W	25.23'
L55	N00°38'47"W	34.47'	L130	N00°27'03"W	78.40'
L56	S00°38'47"E	41.27'	L131	S89°31'49"E	40.00'
L57	N89°38'47"W	39.00'	L132	S89°31'49"E	69.67'
L58	N00°27'03"W	17.27'	L133	S89°31'49"E	9.67'
L59	N00°27'03"W	21.49'	L134	S89°38'37"E	22.00'
L60	N00°27'03"W	30.00'	L135	N00°27'03"W	22.00'
L61	N00°27'03"W	20.37'	L136	N00°27'03"W	12.44'
L62	S89°38'37"E	30.00'	L137	N00°27'03"W	13.17'
L63	N00°27'03"W	30.00'	L138	N00°27'03"W	24.79'
L64	N89°38'37"E	9.00'	L139	N00°27'03"W	20.00'
L65	N00°27'03"W	29.44'	L140	N89°38'37"W	10.00'
L66	N00°27'03"W	32.24'	L141	N89°38'37"W	41.00'
L67	N00°27'03"W	29.74'	L142	N89°38'37"W	5.00'
L68	N00°27'03"W	60.30'	L143	N00°27'03"W	25.00'
L69	N00°27'03"W	29.00'	L144	N89°38'37"W	25.00'
L70	N00°27'03"W	112.48'	L145	N89°38'37"W	25.00'
L71	N00°38'47"W	116.80'	L146	N89°38'37"W	21.67'
L72	N00°38'47"W	160.27'	L147	N00°27'03"W	40.00'
L73	N00°38'47"W	114.00'	L148	N00°27'03"W	26.47'
L74	N00°38'47"W	26.37'	L149	N00°27'03"W	40.67'
L75	S00°38'47"E	4.74'	L150	N00°27'03"W	50.00'
L76	S00°38'47"E	107.47'	L151	N00°27'03"W	50.00'
L77	S00°27'03"W	10.34'	L152	N89°38'37"W	94.00'
L78	N00°38'47"W	14.47'	L153	N89°38'37"W	94.00'
L79	S00°38'47"W		L154	N89°38'37"W	70.67'
			L155	N00°27'03"W	70.67'

CURVE DATA TABLE

COURSE	DELTA	RADIUS	LENGTH	CHORDBEARING	CHORDLENGTH
C1	13°11'29"	30.00'	6.91'	S89°38'37"W	6.90'
C2	75°44'47"	230.00'	303.87'	S51°31'54"W	282.28'
C3	19°37'27"	270.00'	92.47'	S29°17'20"W	92.07'
C4	110°07'00"	25.00'	53.60'	S34°34'34"E	45.84'
C5	90°00'00"	6.00'	10.60'	N45°31'49"E	9.54'
C6	85°31'11"	300.00'	26.60'	S82°33'54"E	26.61'
C7	90°00'00"	20.00'	31.42'	N45°31'49"E	28.28'
C8	90°00'00"	11.00'	17.28'	N45°31'49"E	15.55'
C9	29°46'44"	25.00'	12.70'	S14°06'19"E	12.62'
C10	34°05'53"	25.00'	29.78'	S86°13'48"E	29.78'
C11	90°00'00"	11.00'	17.28'	S44°28'37"E	15.55'
C12	17°20'15"	30.00'	9.18'	N81°37'28"E	9.17'
C13	50°54'44"	20.00'	26.40'	S34°10'33"W	25.79'
C14	17°20'33"	30.00'	9.21'	S82°44'08"E	9.18'
C15	84°51'11"	30.00'	26.41'	N39°06'22"W	27.77'

LEGEND

- SET 18"x24" PIN & 1 1/4" YELLOW PLASTIC CAP L.S. NO. 32002 UNLESS NOTED OTHERWISE
- FOUND #5 REBAR & 2" ALUMINUM CAP L.S. NO. 16515

ATTACHMENT D

GRANT OF PERMANENT AVIGATION EASEMENT AGREEMENT

THIS GRANT OF PERMANENT AVIGATION EASEMENT AGREEMENT is made and entered into this _____day of _____, 2015, by and between **MONTEX (BROWNLEE), LLC,** a Colorado limited liability company, whose address is 4915 South Gaylord Street, Englewood, CO 80113, hereinafter called "Grantor" and the **TOWN OF ERIE**, COLORADO, a Colorado municipal corporation, whose address is P.O. Box 750, Erie, CO 80516, hereinafter called "Grantee";

WITNESSETH:

WHEREAS, Grantor owns the real property (hereinafter referred to as the "Property") over, across and through which the Grantee wishes to acquire a permanent, perpetual non-exclusive easement for avigation and aviation purposes, as described in paragraph 1, below;

WHEREAS, the Grantor and the Grantee have agreed to terms and conditions for the grant of the easement to the Grantee and the Grantee's use and operation of the easement; and,

WHEREAS, the Grantor and the Grantee hereby wish to set forth their agreement and enter into this Grant of Permanent Avigation Easement Agreement.

NOW, THEREFORE, in consideration of the foregoing recitals and the obligations, covenants and agreements herein set forth, the legal sufficiency of which the parties due hereby acknowledge, the parties hereto agree as follows:

1. **Grant of Easement**. The Grantor hereby grants to the Grantee an easement and right-of-way for the use and benefit of the Grantee and of the public appurtenant to, over, across and through the Property described on "Exhibit A," which exhibit is attached hereto and incorporated herein by this reference (herein referred to as the "Property"), for the passage of all aircraft ("aircraft" being defined for the purposes of this instrument as any device now know or hereinafter invented, used or designated for navigation of or flight in the air) by whomsoever owned and operated, in the airspace above the surface of Grantor's Property to an infinite height above said Grantor's Property, together with the right to cause in said airspace such noise, vibration, and all other effects that may be caused by the operation of aircraft using said airspace for landing at, taking off from, or operating at the Erie Municipal Airport and/or the Parkland Estates airport (herein after referred to as the "Avigation Easement"); and Grantor hereby waives, remises and releases the Grantee from any and all rights or causes of action which Grantor now has or which Grantor may have in the future against the Grantee, its successors and assigns, due to such noise, vibration, and other effects that may be caused by

the operation of aircraft landing at, taking off from, or operating at the Erie Municipal Tri-County Airport and/or the Parkland Estates airport, or the use in general of the Avigation Easement as granted herein.

2. **No Structure to Interfere with the Avigation Easement**. This Avigation Easement grants and conveys unto the Grantee, its agents, servants and employees, a continuing right and easement to take any action necessary to prevent the erection or growth of any structure, tree or other object into the airspace, or to mark or light as obstructions to air navigation any and all structures, trees or other objects, that may interfere with the use of the Erie Municipal Airport and/or the Parkland Estates airport, together with the right of ingress to, egress from, and passage over the Grantor's Property for such purpose.

3. **No Electrical Interference**. The Grantor further agrees that this Avigation Easement and the Property described hereon is subject to a covenant whereby the Property will not hereafter be used or permitted or suffered to use in such a manner as to create electrical interference with navigational signals or radio communications at the Erie Municipal Airport and/or the Parkland Estates airport and aircraft, or which mimics airport lights, or which results in glare affecting aircraft using the Erie Municipal Airport and/or the Parkland Estates airport, or which otherwise endangers the landing, take-off, and passage of aircraft in the vicinity of the Grantor's Property.

4. **Grantor's Warranty**. Grantor warrants that he has full right and lawful authority to make the Grant of Easement herein contained, and promises and agrees to defend against any defect in title to the Property or the right to make the Grant of Easement as herein contained.

5. **Inurement**. Each and everyone of the benefits and burdens of this Permanent Grant of Avigation Easement shall inure to and be binding upon the respective legal representatives, heirs, executors, administrators, successors and assigns of the parties hereto.

6. **Complete Agreement**. This Permanent Grant of Avigation Easement represents the complete agreement between the parties hereto, and supersedes any and all other prior agreements, written and oral, between the parties.

7. **Headings for Convenience Only**. The paragraph headings are for convenience only and the substantive portions hereof control without regard to the headings.

8. **Modification**. This Permanent Grant of Avigation Easement shall be modified by a writing only, which writing must be only executed by the parties hereto in order to be effective.

9. **Controlling Law**. This Permanent Grant of Avigation Easement shall be governed under, and construed pursuant to, the laws of the State of Colorado, and the parties hereto agree to jurisdiction in the Courts of Weld County, Colorado.

IN WITNESS WHEREOF, the parties hereto have executed this PERMANENT GRANT OF AVIGATION EASEMENT as of the day and year first above written.

GRANTOR:
MONTEX (BROWNLEE), LLC, a Colorado limited liability company

By:_____
Andy Chaikovsky, Manager

STATE OF COLORADO)
) ss.
COUNTY OF WELD)

The foregoing instrument was acknowledged before me this _____ day of _____, 2015, by Andy Chaikovsky, the Manager of Montex (Brownlee) LLC, a Colorado limited liability company, on behalf of the company, as Seller.

WITNESS my hand and official seal.

My commission expires: _____.

_____
Notary Public

GRANTEE:
TOWN OF ERIE, a Colorado municipal corporation

By:_____
Tina Harris, Mayor

ATTEST:

By:_____
Nancy J. Parker, Town Clerk

EXHIBIT "A"

(Legal Description of Real Property)

LEGAL DESCRIPTION:

PARCEL 1:

PARCELS 1 AND 2 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624 AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PARCEL OF LAND LOCATED IN THE SOUTH HALF OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SAID SECTION 33;

THENCE NORTH 00° 06' 16" EAST, 75.00 FEET ALONG THE WEST LINE OF THE SOUTHEAST QUARTER TO THE POINT OF BEGINNING;

THENCE NORTH 89° 38' 37" WEST, 498.22 FEET ALONG THE NORTH RIGHT OF WAY LINE OF COLORADO STATE HIGHWAY 7;

THENCE NORTH 00° 06'16" EAST, 865.79 FEET ALONG THE EASTERLY LINE OF VISTA RIDGE MASTER PLAT PARCEL 34;

THENCE ALONG THE SOUTHERLY RIGHT OF WAY OF RIDGE VIEW DRIVE THE FOLLOWING TWO COURSES:

1) S89°31'49"E, 551.15 FEET;
2) 46.57 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 30.00 FEET, A CENTRAL ANGLE OF 88°57'03" AND A CHORD BEARING S45°03'17"E, 42.04 FEET; THENCE ALONG THE WESTERLY RIGHT OF WAY LINE OF SHERIDAN BOULEVARD THE FOLLOWING TWO COURSES:

1) S00°34'46"B, 804.80 FEET;
2) 47.61 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 30.00 FEET, A CENTRAL ANGLE OF 90°55'52" AND A CHORD BEARING S44°53'10"W, 42.77 FEET;

THENCE NORTH 89° 38' 54" W, 62.20 FEET ALONG THE NORTH RIGHT OF WAY OF COLORADO STATE HIGHWAY 7 TO THE POINT OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

ATTACHMENT E

Print Form

TOWN OF ERIE
Community Development Department – Planning Division
645 Holbrook Street – PO Box 750 – Erie, CO 80516
Tel: 303.926.2770 – Fax: 303.926.2706 – Web: www.erieco.gov

LAND USE APPLICATION

Please fill in this form completely. Incomplete applications will not be processed.

STAFF USE ONLY

FILE NAME:
FILE NO: DATE SUBMITTED: FEES PAID:

PROJECT/BUSINESS NAME: King Soopers #129

PROJECT ADDRESS: NWC of Sheridan Pkwy & Hwy 7

PROJECT DESCRIPTION: Approximately 30 acre parcel to be subdivided into various lots for commercial development. Lots 1-6 will be part of the initial phase and will include a 123K SF King Soopers Marketplace, a 12,100 SF retail building next to the King Soopers, and a 9 MPD King Soopers fueling station.

LEGAL DESCRIPTION *(attach legal description if Metes & Bounds)*
Subdivision Name: Vista Ridge Filing No. 13
Filing #: 13 Lot #: 1-6 Block #: Section: 33 Township: 1N Range: 68W

OWNER *(attach separate sheets if multiple)*
Name/Company: Montex(Brownlee) LLC & Montex (Vista Ridge) LLC
Contact Person: Andy Chaikovsky
Address:
City/State/Zip:
Phone: Fax:
E-mail:

AUTHORIZED REPRESENTATIVE
Company/Firm: King Soopers
Contact Person: Drew Warot
Address: 65 Tejon Street
City/State/Zip: Denver, CO 80223
Phone: (303) 778-2052 Fax:
E-mail: Drew.Warot@kingsoopers.com

MINERAL RIGHTS OWNER *(attach separate sheets if multiple)*
Name/Company: See Title Commitment
Address:
City/State/Zip:

MINERAL LEASE HOLDER *(attach separate sheets if multiple)*
Name/Company:
Address:
City/State/Zip:

LAND-USE & SUMMARY INFORMATION
Present Zoning: PD
Proposed Zoning: PD
Gross Acreage: ~ 29.85 acres (both phases), 20.25 (Phase 1)
Gross Site Density (du/ac):
Lots/Units Proposed: 9 (both phases), 1-6 (Phase 1)
Gross Floor Area: Lot 1-123Ksf, Lot 2-12,100sf, Lot 5-175sf

SERVICE PROVIDERS
Electric: United Power
Metro District: Vista Ridge
Water *(if other than Town)*:
Gas: Xcel
Fire District: Mountain View Fire Rescue
Sewer *(if other than Town)*:

PAGE TWO MUST BE SIGNED AND NOTARIZED

DEVELOPMENT REVIEW FEES

ANNEXATION		**SUBDIVISION**	
☐ Major (10+ acres)	$ 4000.00	☐ Sketch Plan	$ 1000.00 + 10.00 per lot
☐ Minor (less than 10 acres)	$ 2000.00	☐ Preliminary Plat	$ 2000.00 + 40.00 per lot
☐ Deannexation	$ 1000.00	☑ Final Plat	$ 2000.00 + 20.00 per lot
COMPREHENSIVE PLAN AMENDMENT		☐ Minor Subdivision Plat	$ 2000.00
☐ Major	$ 3000.00	☐ Minor Amendment Plat	$ 1000.00 + 10.00 per lot
☐ Minor	$ 1200.00	☐ Road Vacation (constructed)	$ 1000.00
ZONING/REZONING		☐ Road Vacation (paper)	$ 100.00
☐ Rezoning	$ 1700.00 + 10.00 per acre	**SITE PLAN**	
☐ PUD Rezoning	$ 1700.00 + 10.00 per acre	☐ Residential	$ 1400.00 + 10.00 per unit
☐ PUD Amendment	$ 1700.00 + 10.00 per acre	☑ Non-Resi. (>10,000 sq. ft.)	$ 2200.00
☐ Major PD Amendment	$ 3700.00 + 10.00 per acre	☐ Non-Resi. (>2,000 sq. ft.)	$ 1000.00
☐ Minor PD Amendment	$ 500.00	☐ Non-Resi. (<2,000 sq. ft.)	$ 200.00
SPECIAL REVIEW USE		☐ Amendment (major)	$ 1100.00
☐ Major	$ 1000.00	☐ Amendment (minor)	$ 350.00
☐ Minor	$ 400.00	**VARIANCE**	$ 600.00
☐ Oil & Gas	$ 1200.00	**SERVICE PLAN**	$ 10,000.00

*All fees **include** both Town of Erie Planning & Engineering review. These fees **do not include** referral agency review fees, outside consultant review fees, or review fees incurred by consultants acting on behalf of staff. See Town of Erie Municipal Code, Title 2-10-5 for all COMMUNITY DEVELOPMENT FEES.*

The undersigned is fully aware of the request/proposal being made and the actions being initiated on the referenced property. The undersigned understand that the application must be found to be complete by the Town of Erie before the request can officially be accepted and the development review process initiated. The undersigned is aware that the applicant is fully responsible for all reasonable costs associated with the review of the application/request being made to the Town of Erie. Pursuant to Chapter 7 (Section 7.2.B.5) of the Unified Development Code (UDC) of the Town of Erie, applicants shall pay all costs billed by the Town for legal, engineering and planning costs incurred by staff, including consultants acting on behalf of staff, necessary for project review. By this acknowledgement, the undersigned hereby certify that the above information is true and correct.

Owner: _____ Date: _____

Owner: _____ Date: _____

Applicant: _____ Date: 11-26-14

STATE OF COLORADO)
) ss.
County of Denver)

The foregoing instrument was acknowledged before me this 26 day of November, 2014, by Rhonda Remy.

My commission expires: 10-27-18

Witness my hand and official seal.

RHONDA REMY
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144041674
MY COMMISSION EXPIRES OCTOBER 27, 2018

Notary Public

November 26, 2014

Mr. Marty Ostholthoff,
Community Development Director
Town of Erie
PO Box 750
Erie, CO 80516

Re: Letter of Authorization for Vista Ridge Montex and Brownlee Properties – Minor Subdivision and Site Development Plan

Dear Mr. Ostholthoff,

The attached Statement of Authority authorizes Mr. Drew Warot, Real Estate Specialist King Soopers/City Market, 65 Tejon Street, Denver, CO 80223 or such other designated representative of King Soopers/City Market to represent the various land owner's interest with respect to the Land Use Applications to the Town of Erie for Minor Subdivision and Site Development Plan for the properties described below.

Said Land Use Applications shall apply to the following described properties, located west of Sheridan Boulevard and north of Highway 7 (Baseline):

Parcel 1:
Legal Description
Parcels 1 and 2 of Subdivision Exemption No. 977 recorded June 9, 2003 at Reception No. 3070624 and more particularly described as follows:
A parcel of land located in the South Half of Section 33, Township 1 North, Range 68 West of the 6th P.M., more particularly described as follows:
Commencing at the South Quarter Corner of said Section 33;
Thence North 00° 06' 16" East, 75.00 feet along the West line of the Southeast Quarter to the Point of Beginning; Thence North 89° 38'37" West, 498.22 feet along the North right of way line of Colorado State Highway 7; Thence North 00° 06' 16" East, 865.79 feet along the Easterly line of Vista Ridge Master Plat Parcel 34; Thence along the Southerly right of way of Ridge View Drive the following two courses: 1)S89°31'49"E, 551.15 feet; 2)46.57 feet along the arc of a tangent curve to the right, said arc subtended by a radius of 30.00 feet, a central angle of 88° 57'03" and a chord bearing S45° 03'17"E, 42.04 feet; Thence along the Westerly right of way line of Sheridan Boulevard the following two courses: 1) S00° 34'46" B, 804.80 feet, 2)47.61 feet along the arc of a tangent curve to the right, said arc subtended by a radius of 30.00 feet, a central angle of 90° 55'52" and a chord bearing S44° 53' 10"W, 42.77 feet; Thence North 89° 38'54"W 62.20 feet along the North right of way of Colorado State Highway 7 to the Point of Beginning, County of Weld, State of Colorado.

Parcel 2:
Legal Description:
Parcels 33 and 34, Vista Ridge Master Final Flat, County of Weld, State of Colorado

Sincerely,

Andy Chajkovsky, Manager
Montex (Brownlee) LLC
Montex (Vista Ridge) LLC

Enclosures:
Statement of Authority, Montex (Brownlee) LLC
Statement of Authority, Montex (Vista Ridge) LLC

After Recording Return to:

_____

_____

_____

STATEMENT OF AUTHORITY

Pursuant to C.R.S. §38-30-172, the undersigned hereby executes this Statement of Authority on behalf of MONTEX (VISTA RIDGE), LLC, a Colorado limited liability company an entity other than an individual, capable of holding title to real property (the "Entity"), and states as follows:

The name of the Entity is: DILLON COMPANIES, INC

The Entity is a: Kansas corporation
(state type of entity and state, country or other government authority under whose laws such entity was formed)

The mailing address for the Entity is: 65 Tejon Street, Denver, Colorado 80223

The name or position of the person(s) authorized to execute instruments conveying, encumbering, or otherwise affecting title to real property on behalf of the Entity is:

Drew Warot, Real Estate Specialist - King Soopers/City Market or such other designated representative

The limitations upon the authority of the person named above or holding the position described above to bind the Entity are as follows: NONE
(if no limitations insert "NONE")

The instrument and recording information, including the County, of the document by which title was acquired is:

Parcels 1 and 2 of Subdivision Exemption No. 977 recorded June 9, 2003 at Reception No. 3070824; and a part of parcels 33 and 34, Vista Ridge Master Final Plat, County of Weld, State of Colorado.

Other matters concerning the manner in which the Entity deals with any interest in real property are:

(if no matters, leave this section blank)

EXECUTED this 26th Day of November, 2014

By: _____

Andy Chalkovsky, Manager
Name/Title

STATE OF ~~COLORADO~~ Florida }ss:
COUNTY OF Sarasota

The foregoing instrument was acknowledged before me this 26th day of November, 2014
By Andy Chalkovsky as Manager of Montex (Vista Ridge), LLC, a Colorado limited liability company

Witness my hand and official seal.
My commission expires: 06/09/2018

_____

Alexander Poland
State of Florida
My Commission Expires 06/09/2018
Commission No. FF 130873
Bonded through Western Surety Company

After Recording Return to:

_____

_____

_____

STATEMENT OF AUTHORITY

Pursuant to C.R.S. §38-30-172, the undersigned hereby executes this Statement of Authority on behalf of MONTEX (BROWNLEE), LLC, a Colorado limited liability company an entity other than an individual, capable of holding title to real property (the "Entity"), and states as follows:

The name of the Entity is: DILLON COMPANIES, INC

The Entity is a: Kansas corporation
(state type of entity and state, country or other government authority under whose laws such entity was formed)

The mailing address for the Entity is: 65 Tejon Street, Denver, Colorado 80223

The name or position of the person(s) authorized to execute instruments conveying, encumbering, or otherwise affecting title to real property on behalf of the Entity is:

Drew Warot, Real Estate Specialist - King Soopers/City Market or such other designated representative

The limitations upon the authority of the person named above or holding the position described above to bind the Entity are as follows: NONE
(if no limitations insert "NONE")

The instrument and recording information, including the County, of the document by which title was acquired is:

Parcels 1 and 2 of Subdivision Exemption No. 977 recorded June 9, 2003 at Reception No. 3070624; and a part of parcels 33 and 34, Vista Ridge Master Final Plat, County of Weld, State of Colorado.

Other matters concerning the manner in which the Entity deals with any interest in real property are:

(if no matters, leave this section blank)

EXECUTED this 26th day of November, 2014

By: _____

Andy Chaikovsky, Manager
Name/Title

STATE OF ~~COLORADO~~ Florida }ss:
COUNTY OF Sarasota

The foregoing instrument was acknowledged before me this 26th day of November, 2014
By Andy Chaikovsky as Manager of Montex (Brownlee), LLC, a Colorado limited liability company

Witness my hand and official seal.

My commission expires: 06/09/2018

Alexander Poland

Alexander Poland
State of Florida
My Commission Expires 06/09/2018
Commission No. FF 130873
Bonded through Western Surety Company

Heritage Title Company
Making Transactions Personal
Commonwealth

4582 South Ulster St Pkwy,
Denver, CO 80237
Phone: (303) 476-5800
Fax: (303) 628-1671

DATE: November 25, 2014
FILE NUMBER: 451-H0411791-266-ES4, Amendment No. 1
PROPERTY ADDRESS: Vista Ridge, Erie, CO 99999
BUYER/BORROWER:
OWNER(S):
YOUR REFERENCE NUMBER:
ASSESSOR PARCEL NUMBER:

PLEASE TAKE NOTE OF THE FOLLOWING REVISED TERMS CONTAINED HEREIN:

None.

WIRED FUNDS ARE REQUIRED ON ALL CASH PURCHASE TRANSACTIONS. FOR WIRING INSTRUCTIONS, PLEASE CONTACT YOUR ESCROW OFFICE AS NOTED ON THE TRANSMITTAL PAGE OF THIS COMMITMENT.

TO:	**King Soopers** **65 Tejon Street** **Denver, CO 80223**	**ATTN:** **PHONE:** **FAX:** **E-MAIL:**	**Drew Warot** **(303) 778-2052** **(303) 715-4546** **drew.warot@kingsoopers.com**
TO:	**Denver Title-Commercial Title Only Escrow** **4582 South Ulster St Pkwy** **Denver, CO 80237**	**ATTN:** **PHONE:** **FAX:** **E-MAIL:**	**Eric Stearns** **(303) 476-5800** **(303) 628-1671** **estearns@heritagetco.com**

END OF TRANSMITTAL

Commonwealth Land Title Insurance Company
COMMITMENT
SCHEDULE A

Commitment No: 451-H0411791-266-ES4, Amendment No. 1

1. **Effective Date:** November 18, 2014 at 7:00 A.M.

2. **Policy or policies to be issued:**

Proposed Insured	Policy Amount
(a) ALTA Owners Policy 6-17-06	$0.00
(b) None	$0.00
	$

3. **The estate or interest in the land described or referred to in this Commitment is:**

   A Fee Simple

4. **Title to the estate or interest in the land is at the Effective Date vested in:**

   Montex (Brownlee), LLC, a Colorado limited liability company as to Parcel 1

   And

   Montex (Vista Ridge), LLC, a Colorado limited liability company as to Parcel 2

5. **The land referred to in this Commitment is described as follows:**

   See Attached Legal Description

(for informational purposes only) Vista Ridge, Erie, CO 99999

PREMIUMS:

Informational Commitment : $ 550.00
Owners Policy : $ TBD

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Attached Legal Description

Parcel 1:

Legal Description

Parcels 1 and 2 of Subdivision Exemption No. 977 recorded June 9, 2003 at Reception No. 3070624 and more particularly described as follows:

A parcel of land located in the South Half of Section 33, Township 1 North, Range 68 West of the 6th P.M., more particularly described as follows:

Commencing at the South Quarter Corner of said Section 33;

Thence North 00° 06' 16" East, 75.00 feet along the West line of the Southeast Quarter to the Point of Beginning;

Thence North 89° 38'37" West, 498.22 feet along the North right of way line of Colorado State Highway 7;

Thence North 00° 06' 16" East, 865.79 feet along the Easterly line of Vista Ridge Master Plat Parcel 34;

Thence along the Southerly right of way of Ridge View Drive the following two courses:
1)S89°31'49"E, 551.15 feet;

2)46.57 feet along the arc of a tangent curve to the right, said arc subtended by a radius of 30.00 feet, a central angle of 88° 57'03" and a chord bearing S45° 03'17"E, 42.04 feet; Thence along the Westerly right of way line of Sheridan Boulevard the following two courses:

1) S00° 34'46" B, 804.80 feet,

2)47.61 feet along the arc of a tangent curve to the right, said arc subtended by a radius of 30.00 feet, a central angle of 90° 55'52" and a chord bearing S44° 53' 10"W, 42.77 feet;

Thence North 89° 38'54"W 62.20 feet along the North right of way of Colorado State Highway 7 to the Point of Beginning, County of Weld, State of Colorado.

Parcel 2:

Legal Description:

Parcels 33 and 34, Vista Ridge Master Final Flat, County of Weld, State of Colorado

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AMERICAN LAND TITLE ASSOCIATION

SCHEDULE B – Section 1

Requirements

The following requirements must be met:

a. Pay the agreed amounts for the interest in the land and/or for the mortgage to be insured.

b. Pay us the premiums, fees and charges for the policy.

c. Obtain a certificate of taxes due from the county treasurer or the county treasurer's authorized agent.

d. Deed sufficient to convey the fee simple estate or interest in the Land described or referred to herein, to the Proposed Insured Purchaser.

e. The Company will require that an Owner's Affidavit be completed by the party(s) named below before the issuance of any policy of title insurance.

Party(s): Montex (Brownlee), LLC, a Colorado limited liability company and
Montex (Vista Ridge), LLC, a Colorado limited liability company

The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit.

f. Furnish to the Company an ALTA/ACSM Land Title Survey in form, content and certification to Commonwealth Land Title Insurance Company and Heritage Title Company, Inc..

Note: Exception may be made to any adverse matters disclosed by the ALTA/ACSM Land Title Survey.

END OF REQUIREMENTS

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SCHEDULE B – Section 2

Exceptions

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction:

1. Any facts, rights, interests or claims that are not shown by the Public Records but which could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

3. Any encroachments, encumbrances, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by Public Records.

4. Any lien or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquires of record for the value the estate or interest or mortgage thereon covered by this Commitment.

   NOTE: The above exception will not appear on policies where closing and settlement has been performed by the Company.

6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof, (c) water rights, claims of title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

7. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

8. All taxes and assessments, now or heretofore assessed, due or payable.

9. Any existing leases or tenancies, and any and all parties claiming by, through or under said lessees.

10. Any boundary discrepancy due to the location of fence lines and the effect of any right, title or interest that may be claimed due to any said discrepancy.

11. Reservations by the Union Pacific Railroad Company (now known as Union Pacific Resources Company) of (1) oil, coal and other minerals underlying the land, (2) the exclusive right to prospect for, mine and remove oil, coal and other minerals, and (3) the right of ingress and egress and regress to prospect for, mine and remove oil, coal and other minerals, all as contained in Deed recorded June 4, 1902 in Book 201 at Page 16.

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12. Mineral Deed to Champlin Petroleum Company recorded November 30, 1972 in Book 681 at Reception No. 1602712.

13. Relinquishment and Quit Claim as to the surface entry only, for minerals exclusive of oil, gas and associated liquid hydrocarbons, to Vista Ridge Development Corporation, recorded August 21, 2000 at Reception No. 2788395.

14. Surface Use Agreement by and between Union Pacific Resources Company and Vista Ridge Development Corporation recorded August 21, 2000 at Reception No. 2788394 and amendment recorded November 15, 2004 at Reception No. 3235488.

15. Request for Notification of Surface Development by RME Petroleum and RME Land Corp. recorded May 28, 2002 at Reception No. 2954455.

16. Excluding and excepting from the transfer by these presents "All Mineral Lands" should any such be found to exist in the tracts described in the foregoing, but this exclusion and exception, according to the terms of the statute,. "shall not be construed to include coal and iron land" by the Patent recorded July 9, 1902 in Book 201 at Page 66.

17. Terms, conditions, provisions, agreements and obligations specified under the Oil and Gas Lease, executed by Champlin Petroleum Company nka Union Pacific Railroad Company and Pan American Petroleum Corporation recorded November 30, 1972 in Book 681 at Reception No. 1602713. Notice recorded December 7, 2000 at Reception No. 2811882.

18. An easement for right of way and incidental purposes granted to Mountain States Telephone and Telegraph Company by the instrument recorded November 18, 1986 in Book 1135 at Reception No. 2077413.

19. The effect of a document entitled "Certificate of Organization for the Northwest Parkway Public Highway Authority" recorded June 30, 1999 at Reception No. 2703636 and re-recorded November 19, 1999 at Reception No. 2733705.

20. Any tax fee lien or assessment by reason of inclusion in of Vista Ridge Metropolitan District, as disclosed by the instrument recorded January 8, 2001 at Reception No. 2817763.

21. Any tax fee lien or assessment by reason of inclusion in North Metro Fire Protection District by Order recorded October 30, 2001 at Reception No. 2895963.

22. Any tax fee lien or assessment by reason of inclusion of subject property within Northern Colorado Water Conservancy District by Order recorded December 14, 2001 at Reception No. 2908972, 2908971, 2908970 and 2908969.

23. The effect of Vista Ridge Development Plan recorded September 15, 2000 at Reception No. 2793940.

24. General Development Plan Minor Amendment No. 1 recorded February 27, 2002 at Reception No. 2928673.

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25. An easement for electric and communication facilities and incidental purposes granted to United Power, Inc. by the instrument recorded in Adams County December 20, 2002 at Reception No. 1070363 and in Weld County January 15, 2003 at Reception No. 3023992.

26. An easement for electric facilities and incidental purposes granted to United Power, Inc. by the instrument recorded January 15, 2003 at Reception No. 3023994.

27. The effect, if any, of Subdivision Exemption No. 977 recorded June 9, 2003 at Reception No. 3070624.

28. An easement for right of way and incidental purposes granted to United Power, Inc. by the instrument recorded May 22, 2003 at Reception No. 3065313.

29. The effect of Request for Notification (Mineral Estate Owner) recorded December 21, 2007 at Reception No. 3525268.

30. Terms, agreements, provisions, conditions and obligations of a Oil and Gas Lease (Paid Up), executed by United States Exploration, Inc., a Colorado corporation, as Lessee(s), recorded December 4, 2007 at Reception No. 3521379.

31. An easement granted to Qwest Corporation by the instrument recorded October 10, 2001 at Reception No. 2890895.

32. An easement granted to United Power by the instrument recorded September 4, 2002 at Reception No. 2984585.

33. An easement granted to Public Service Company by the instrument recorded October 8, 2002 at Reception No. 2994217.

34. Ordinance Zoning the Vista Ridge Annexation to Planned Development (PD), recorded August 30, 2000 at Reception No. 2790549.

35. The effect of a document entitled "Certificate of Organization for the Northwest Parkway Public Highway Authority" recorded June 30, 1999 at Reception No. 2703636 and re-recorded November 19, 1999 at Reception No. 2733705.

36. Ordinance Annexing Vista Ridge into the Town of Erie recorded August 30, 2000 at Reception No. 2790550.

37. Terms, conditions, provisions, agreements and obligations specified under the Vista Ridge Annexation Agreement by and between Vista Ridge Development Corporation, et al and The Town of Erie, Colorado recorded September 15, 2000 at Reception No. 2793930 and re-recorded December 8, 2000 at Reception No. 2812291.

38. Easement and Right-of-Way granted to Farmers Reservoir and Irrigation Company for a non-exclusive easement for an underground water pipeline and appurtenances recorded October 22, 2001 at Reception No. 2893921.

39. Terms, Conditions and Provisions of Master Declaration of Covenants, Conditions and Restrictions for Vista Ridge recorded December 14, 2001 at Reception No. 2909244 and amended January 28, 2003 at Reception No. 3027600.

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40. Terms, Conditions, Provisions and obligations as set forth in Development Agreement between the Town of Erie, Vista Ridge Metropolitan District and Vista Ridge Development Corporation, a Colorado Corporation recorded December 4, 2001 at Reception No. 2905896.

    Note: Notice in connection with the above District and Development Fees recorded June 14, 2006 at Reception No. 3396125.

41. Easements, Notes, Conditions, as shown on the plat of Vista Ridge Master Final Plat recorded September 06, 2001 at Reception No. 2903870 as Subdivision No. 12220.

42. The effect of Vista Ridge Development Plan recorded September 15, 2000 at Reception No. 2793940 and the General Development Plan Minor Amendment No. 1 recorded February 27, 2002 at Reception No. 2928673.

43. Terms, conditions, provisions, agreements and obligations specified under the Declaration of Golf Play Covenants by Vista Ridge Development Corporation recorded July 7, 2003 at Reception No. 3080606.

44. An easement for electrical facilities and incidental purposes granted to United Power, Inc. by the instrument recorded September 22, 2003 at Reception No. 3108688.

45. Terms, conditions, provisions, agreements and obligations contained in the Title Companies and other Interested Parties: Please be on Notice That: recorded June 14, 2006 at Reception No. 3396125, and as also recorded September 20, 2010 at Reception No. 3719463, and also recorded March 16, 2012 at Reception No. 3832301, and as also recorded May 21, 2013 at Reception No. 3933756, and as also recorded March 18 2014 at Reception No. 4002991, and as also recorded August 20, 2014 at Reception No. 4039682, and Recorded November 14, 2014 at Reception No. 4061805.

46. Covenants, conditions and restrictions, which do not include a forfeiture or reverter clause, set forth in the instrument recorded November 19, 2008 at Reception No. 3590556. Provisions regarding race, color, creed, and national origin, if any, are deleted.

47. The effect of Annexation Map recorded September 15, 2000 at Reception No. 2793937.

48. Deed of Easement granted to the Town of Erie, for passage of aircraft in the airspace above subject property as recorded November 28, 2001 at Reception No. 2903864.

49. Terms, agreements, provisions, conditions and obligations of a Oil and Gas Lease (Paid Up), executed by United States Exploration, Inc., a Colorado corporation, as Lessee(s), recorded December 4, 2007 at Reception No. 3521379.

50. ALTA / ACSM Survey Vista Ridge Commercial East Recorded January 28, 2010 at Reception No. 3672682.

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51. Terms, agreements, provisions, conditions and obligations of Sheridan – Highway 7 Commercial Center Annextion Agreement Recorded March 3, 2011 at Reception No. 3753953, and Annexation Map Recorded March 3, 2011 at Reception No. 3753952, Ordinance No. 30.2010 in connection to said Annexation Recorded March 3, 2011 at Reception No. 3753954, and Ordinance No. 31.2010 in connection to said Annexation Recorded March 3, 2011 at Reception No. 3753955.

52. Terms, agreements, provisions, conditions and obligations of the Vista Ridge Development Plan Amendment No. 5 as Recorded November 26, 2012 at Reception No. 3890727 and Vista Ridge Development Plan Amendment No. 6 as Recorded November 25, 2013 at Reception No. 3980214.

END OF EXCEPTIONS

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AMERICAN LAND TITLE ASSOCIATION

PROJECT NARRATIVE
November 28, 2014

KINGS SOOPERS #129 - VISTA RIDGE MARKETPLACE
VISTA RIDGE FILING NO. 13,
ERIE, COLORADO

A. General Project Concept

King Soopers, Inc., located at 65 Tejon Street, Denver, CO 80223, is proposing to develop a 20.25 acre parcel of vacant land located at the NWC of Sheridan Parkway and Hwy 7, in Erie, CO. Galloway and Company, Inc. is the authorized representative and design consultant for King Soopers for the purpose of obtaining Town of Erie Site Plan approval and permits for construction of the proposed grocery anchored development.

An overall property boundary of approximately 33.3018 acres encompassing portions of the existing Parcel 33 and 34 of the Vista Ridge Final Plat the existing Brownlee property will be subdivided into various lots and tracts. Of that proposed subdivision, approximately 20.25 acres will contain the first phase of the commercial development of which the proposed site plan has been prepared. The site plan contains a total of 6 lots and a water quality/detention Tract. The Site Plans include a King Soopers Marketplace on Lot 1 with a building footprint of ~119,459 S.F., plus a second floor mezzanine, for a total of 123,000SF. A drive-thru pharmacy, Fred Meyer Jewelry store, Little Clinic and Starbucks Coffee are also included within the proposed building footprint. Lot 2 will be a 12,000 SF retail building adjacent to the King Soopers. The parking for the retail uses on Lot 2 will be constructed along with the parking required for the King Soopers on Lot 1. Lot 5 is proposed to be a 9 dispenser fuel site for the King Soopers. Lots 3, 4, and 6 will be overlot graded with utilities stubbed into them for future commercial development.

The development will be served by five major access points, two along Hwy 7, one along Sheridan Parkway, and two along Ridge View Road. A Traffic Impact Study prepared by Kimley-Horn & Associates has been included with the submittal packet.

Pedestrian access has been provided to the proposed development from both Sheridan Parkway via connection to the existing sidewalk along the west side of Sheridan. Sidewalks area also planned to be constructed along Ridge View and Hwy 7 along the frontage of the property.

Town of Erie public works will serve the proposed lot for water and sewer. United Power is the service provider for electric and Xcel Energy is the service provider for natural gas. All utilities are available and currently serving the site. Mountain View Fire Protection District will also serve this proposed development.

A conceptual drainage plan and report has been included in this submittal package for Town review. The plan proposes a water quality and detention pond located at the northeast corner of the proposed King Soopers site, within Tract A of the proposed Final Plat.

B. Compliance with Five Approval Criteria of MC Title 10-UDC

1. *Meets land use designation for commercial use. The project will also be integrated into the existing and proposed roadway network outlined in the comp. plan.*
2. *The site plan and final plat are consistent with the boundaries outlined for this general commercial portion of the Vista Ridge master plan. The proposed site plan has been designed to coordinate internal drive lanes and access points that will work with the remaining undeveloped portions of this retail area to the west of the property. Thus creating the ability to establish an overall cohesive commercial center from Mountain View Blvd. to Sheridan Parkway.*
3. *The site plan has been prepared in general conformance with the Town of Erie Zoning regulations and design standards. Setbacks, landscape %'s, parking layouts, etc. have been evaluated. Parking quantities may require a variance for the King Soopers Lot 1.*
4. *No adverse impacts from the proposed development are anticipated.*
5. *The proposed development will be compatible with the surrounding land uses as this site is bound on both the west and east by future commercial areas and on the north by a school, which provides a buffer from the residential development further north.*

C. Architecture

By utilizing the craftsman style of architecture as well as materials and finishes similar to surrounding buildings, the King Soopers Marketplace store and adjacent retail will provide a visually interesting addition to the Town of Erie and the Vista Ridge commercial district. Exposed wood framing and trellises have been incorporated into the design, and canopies and awnings have been used to provide visual interest at the scale of the pedestrian. Changes in wall height and pilasters have been utilized to reduce the monolithic appearance of the walls.

D. Project Schedule

Construction of the proposed development is anticipated to begin in the Spring of 2015 with construction completing in the Spring of 2016. The full 20.25 acres of on-site improvements and all related short term off-site improvements are intended to be construction in a single phase.

E. Business Data

- *The King Soopers Marketplace size is approximately 119,459 S.F., plus a second floor mezzanine, for a total of 123,000SF.*
- *The Store will employ a total of 150 to 170 employees. We expect to have 70 to 90 employees on-site per day.*
- *The King Soopers Marketplace site will be open 24 hours per day, 7 days per week. Employees will be present 24 hours as well.*
- *Typical Vehicles - 67' tractor/trailers; panel/delivery vans/customer cars from small economy care to large SUV's will access the site. 2-5 primary deliveries with a WB67 truck are anticipated daily, along with additional vendor truck traffic.*
- *Lot 1 – KS Building – 13.1679 Ac, Lot 2 – Retail – 1.4749 Ac, Lot 5 – Fuel Facility – 0.9839 Ac.*

F. Residential Units (N/A)

G. Ownership/Maintenance of public/common areas

King Soopers will own all 20.25 acres initially including Tract A. A separate Common Area Maintenance Agreement will be established by King Soopers and future Lot owners and tenant space leases. All necessary easements are shown on the proposed plat and will be granted by plat or separate documents for utilities, signs, drainage tracts, etc.

Covenants and Restrictions – King Soopers will be developing at Real Estate Covenants and Restrictions agreement that will cover the proposed entire subdivided property.

H. Mineral Rights Status

Mineral rights are currently encumbering the site per the latest Title Commitment. King Soopers is currently working with the seller and the sellers representative to clean up the title in order to relinquish these mineral rights.

NOTES CORRESPONDING TO SCHEDULE B – SECTION 2 OF TITLE COMMITMENT

(9) ANY EXISTING LEASES OR TENANCIES, AND ANY AND ALL PARTIES CLAIMING BY, THROUGH OR UNDER SAID LESSEES. (THIS ITEM IS NOT ADDRESSED BY THIS SURVEYOR)

(10) ANY BOUNDARY DISCREPANCY DUE TO THE LOCATION OF FENCE LINES AND THE EFFECT OF ANY RIGHT, TITLE OR INTEREST THAT MAY BE CLAIMED DUE TO ANY SAID DISCREPANCY. (ALL FENCE LINES ARE SHOWN AS LOCATED BY SURVEY)

(11) RESERVATIONS BY THE UNION PACIFIC RAILROAD COMPANY (NOW KNOWN AS UNION PACIFIC RESOURCES COMPANY) OF (1) OIL, COAL AND OTHER MINERALS UNDERLYING THE LAND, (2) THE EXCLUSIVE RIGHT TO PROSPECT FOR, MINE AND REMOVE OIL, COAL AND OTHER MINERALS, AND (3) THE RIGHT OF INGRESS AND EGRESS AND REGRESS TO PROSPECT FOR, MINE AND REMOVE OIL, COAL AND OTHER MINERALS, ALL AS CONTAINED IN DEED RECORDED JUNE 4, 1907 IN BOOK 201 AT PAGE 16. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(12) MINERAL DEED TO CHAMPLIN PETROLEUM COMPANY RECORDED NOVEMBER 30, 1972 IN BOOK 681 AT RECEPTION NO. 1602712. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(13) RELINQUISHMENT AND QUIT CLAIM AS TO THE SURFACE ENTRY ONLY, FOR MINERALS EXCLUSIVE OF OIL, GAS AND ASSOCIATED LIQUID HYDROCARBONS, TO VISTA RIDGE DEVELOPMENT CORPORATION, RECORDED AUGUST 21, 2000 AT RECEPTION NO. 2788306. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY WITH THE EXCEPTION OF PARCEL 2 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(14) SURFACE USE AGREEMENT BY AND BETWEEN UNION PACIFIC RESOURCES COMPANY AND VISTA RIDGE DEVELOPMENT CORPORATION RECORDED AUGUST 21, 2000 AT RECEPTION NO. 2788304 AND AMENDMENT RECORDED NOVEMBER 16, 2004 AT RECEPTION NO. 3236466. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. A DRILL SITE IS SHOWN WITHIN THE BOUNDARY OF PARCEL 34, VISTA RIDGE MASTER FINAL PLAT, COUNTY OF WELD, STATE OF COLORADO. HOWEVER, IT IS NOT PLOTTABLE)

(15) REQUEST FOR NOTIFICATION OF SURFACE DEVELOPMENT BY RME PETROLEUM AND RME LAND CORP. RECORDED MAY 28, 2002 AT RECEPTION NO. 2954466. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(16) EXCLUDING AND EXCEPTING FROM THE TRANSFER BY THESE PRESENTS "ALL MINERAL LANDS" SHOULD ANY SUCH BE FOUND TO EXIST IN THE TRACTS DESCRIBED IN THE FOREGOING, BUT THIS EXCLUSION AND EXCEPTION, ACCORDING TO THE TERMS OF THE STATUTE, "SHALL NOT BE CONSTRUED TO INCLUDE COAL AND IRON LAND" BY THE PATENT RECORDED JULY 9, 1932 IN BOOK 201 AT PAGE 66. (THIS ITEM DOES NOT APPEAR TO AFFECT THE SUBJECT PROPERTY)

(17) TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS SPECIFIED UNDER THE OIL AND GAS LEASE, EXECUTED BY CHAMPLIN PETROLEUM COMPANY NKA UNION PACIFIC RAILROAD COMPANY AND PAN AMERICAN PETROLEUM CORPORATION RECORDED NOVEMBER 30, 1972 IN BOOK 681 AT RECEPTION NO. 1602713. NOTICE RECORDED DECEMBER 7, 2000 AT RECEPTION NO. 2811882. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(18) AN EASEMENT FOR RIGHT OF WAY AND INCIDENTAL PURPOSES GRANTED TO MOUNTAIN STATES TELEPHONE AND TELEGRAPH COMPANY BY THE INSTRUMENT RECORDED NOVEMBER 18, 1980 IN BOOK 1135 AT RECEPTION NO. 2077413. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON)

(19) THE EFFECT OF A DOCUMENT ENTITLED "CERTIFICATE OF ORGANIZATION FOR THE NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY" RECORDED JUNE 30, 1999 AT RECEPTION NO. 2703036 AND RE-RECORDED NOVEMBER 19, 1999 AT RECEPTION NO. 2733705. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(20) ANY TAX FEE LIEN OR ASSESSMENT BY REASON OF INCLUSION IN OF VISTA RIDGE METROPOLITAN DISTRICT, AS DISCLOSED BY THE INSTRUMENT RECORDED JANUARY 8, 2001 AT RECEPTION NO. 2817783. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(21) ANY TAX FEE LIEN OR ASSESSMENT BY REASON OF INCLUSION IN NORTH METRO FIRE PROTECTION DISTRICT BY ORDER RECORDED OCTOBER 30, 2001 AT RECEPTION NO. 2896903. (THIS ITEM DOES NOT APPEAR TO AFFECT THE SUBJECT PROPERTY)

(22) ANY TAX FEE LIEN OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY WITHIN NORTHERN COLORADO WATER CONSERVANCY DISTRICT BY ORDER RECORDED DECEMBER 14, 2001 AT RECEPTION NO. 2908072, 2908071, 2908070 AND 2908069. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624 SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(23) THE EFFECT OF VISTA RIDGE DEVELOPMENT PLAN RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793040. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(24) GENERAL DEVELOPMENT PLAN MINOR AMENDMENT NO. 1 RECORDED FEBRUARY 27, 2002 AT RECEPTION NO. 2928073. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(25) AN EASEMENT FOR ELECTRIC AND COMMUNICATION FACILITIES AND INCIDENTAL PURPOSES GRANTED TO UNITED POWER, INC. BY THE INSTRUMENT RECORDED IN ADAMS COUNTY DECEMBER 20, 2002 AT RECEPTION NO. 1070363 AND IN WELD COUNTY JANUARY 16, 2003 AT RECEPTION NO. 3023992. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON)

(26) AN EASEMENT FOR ELECTRIC FACILITIES AND INCIDENTAL PURPOSES GRANTED TO UNITED POWER, INC. BY THE INSTRUMENT RECORDED JANUARY 15, 2003 AT RECEPTION NO. 3023994. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON)

(27) THE EFFECT, IF ANY, OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. (THIS ITEM DOES AFFECT PARCEL 1 AND PARCEL 2 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624 AS SHOWN HEREON. HOWEVER, IT CONTAINS NO OTHER PLOTTABLE ITEMS)

(28) ANY EASEMENT FOR RIGHT OF WAY AND INCIDENTAL PURPOSES GRANTED TO UNITED POWER, INC. BY THE INSTRUMENT RECORDED MAY 22, 2003 AT RECEPTION NO. 3065313. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON)

(29) THE EFFECT OF REQUEST FOR NOTIFICATION (MINERAL ESTATE OWNER) RECORDED DECEMBER 21, 2007 AT RECEPTION NO. 3525268. (THIS ITEM DOES AFFECT PARCEL 2 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624 AS SHOWN HEREON. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(30) TERMS, AGREEMENTS, PROVISIONS, CONDITIONS AND OBLIGATIONS OF A OIL AND GAS LEASE (PAID UP), EXECUTED BY UNITED STATES EXPLORATION, INC., A COLORADO CORPORATION, AS LESSEE(S), RECORDED DECEMBER 4, 2007 AT RECEPTION NO. 3521370. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(31) AN EASEMENT GRANTED TO QWEST CORPORATION BY THE INSTRUMENT RECORDED OCTOBER 10, 2001 AT RECEPTION NO. 2890886. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON)

(32) AN EASEMENT GRANTED TO UNITED POWER BY THE INSTRUMENT RECORDED SEPTEMBER 4, 2002 AT RECEPTION NO. 2984585. (THIS ITEM DOES NOT AFFECT THE SUBJECT PROPERTY AS IT IS SITUATED IN PUBLIC RIGHT-OF-WAY. HOWEVER IT IS PLOTTED HEREON FOR REFERENCE)

(33) AN EASEMENT GRANTED TO PUBLIC SERVICE COMPANY BY THE INSTRUMENT RECORDED OCTOBER 8, 2002 AT RECEPTION NO. 7904217. (THIS ITEM DOES NOT AFFECT THE SUBJECT PROPERTY AS IT IS SITUATED IN PUBLIC RIGHT-OF-WAY, HOWEVER IT IS PLOTTED HEREON FOR REFERENCE)

(34) ORDINANCE ZONING THE VISTA RIDGE ANNEXATION TO PLANNED DEVELOPMENT (PD), RECORDED AUGUST 30, 2000 AT RECEPTION NO. 2793049. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(35) THE EFFECT OF A DOCUMENT ENTITLED "CERTIFICATE OF ORGANIZATION FOR THE NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY" RECORDED JUNE 30, 1999 AT RECEPTION NO. 2703036 AND RE-RECORDED NOVEMBER 19, 1999 AT RECEPTION NO. 2733705. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(36) ORDINANCE ANNEXING VISTA RIDGE INTO THE TOWN OF ERIE RECORDED AUGUST 30, 2000 AT RECEPTION NO. 2793550. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(37) TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS SPECIFIED UNDER THE VISTA RIDGE ANNEXATION AGREEMENT BY AND BETWEEN VISTA RIDGE DEVELOPMENT CORPORATION, ET AL AND THE TOWN OF ERIE, COLORADO RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793930 AND RE-RECORDED DECEMBER 8, 2000 AT RECEPTION NO. 2812291. (THIS ITEM AFFECTS PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(38) EASEMENT AND RIGHT-OF-WAY GRANTED TO FARMERS RESERVOIR AND IRRIGATION COMPANY FOR A NON-EXCLUSIVE EASEMENT FOR AN UNDERGROUND WATER PIPELINE AND APPURTENANCES RECORDED OCTOBER 22, 2001 AT RECEPTION NO. 2893921. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND IS PLOTTED HEREON)

(39) TERMS, CONDITIONS AND PROVISIONS OF MASTER DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR VISTA RIDGE RECORDED DECEMBER 14, 2001 AT RECEPTION NO. 2909244 AND AMENDED JANUARY 28, 2003 AT RECEPTION NO. 3327600. (THIS ITEM DOES AFFECT PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(40) TERMS, CONDITIONS, PROVISIONS AND OBLIGATIONS AS SET FORTH IN DEVELOPMENT AGREEMENT BETWEEN THE TOWN OF ERIE, VISTA RIDGE METROPOLITAN DISTRICT AND VISTA RIDGE DEVELOPMENT CORPORATION, A COLORADO CORPORATION RECORDED DECEMBER 4, 2001 AT RECEPTION NO. 2905090. NOTE: NOTICE IN CONNECTION WITH THE ABOVE DISTRICT AND DEVELOPMENT FEES RECORDED JUNE 14, 2006 AT RECEPTION NO. 3396126. (THIS ITEM DOES AFFECT PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(41) EASEMENTS, NOTES, CONDITIONS, AS SHOWN ON THE PLAT IF VISTA RIDGE MASTER FINAL PLAT RECORDED SEPTEMBER 06, 2001 AT RECEPTION NO. 2903870 AS SUBDIVISION NO. 12220. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(42) THE EFFECT OF VISTA RIDGE DEVELOPMENT PLAN RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793940 AND THE GENERAL DEVELOPMENT PLAN MINOR AMENDMENT NO. 1 RECORDED FEBRUARY 27, 2002 AT RECEPTION NO. 2928073. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PROPERTY EXCEPT PARCEL 1 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(43) TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS SPECIFIED UNDER THE DECLARATION OF GOLF PLAY COVENANTS BY VISTA RIDGE DEVELOPMENT CORPORATION RECORDED JULY 7, 2003 AT RECEPTION NO. 3080600. (THIS ITEM AFFECTS PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(44) AN EASEMENT FOR ELECTRICAL FACILITIES AND INCIDENTAL PURPOSES GRANTED TO UNITED POWER, INC. BY THE INSTRUMENT RECORDED SEPTEMBER 22, 2003 AT RECEPTION NO. 3108080. (THIS ITEM DOES AFFECT THE SUBJECT PROPERTY AND ITS APPROXIMATE LOCATION IS PLOTTED HEREON DUE TO ITS LOCATION IS NOT FULLY DEFINED)

(45) TERMS, CONDITIONS, PROVISIONS, AGREEMENTS AND OBLIGATIONS CONTAINED IN THE TITLE COMPANIES AND OTHER INTERESTED PARTIES: PLEASE BE ON NOTICE THAT: RECORDED JUNE 14, 2006 AT RECEPTION NO. 3396126, AND AS ALSO RECORDED SEPTEMBER 20, 2010 AT RECEPTION NO. 3719463, AND ALSO RECORDED MARCH 16, 2012 AT RECEPTION NO. 3832301, AND AS ALSO RECORDED MAY 21, 2013 AT RECEPTION NO. 3933760, AND AS ALSO RECORDED MARCH 18, 2014 AT RECEPTION NO. 4002901, AND AS ALSO RECORDED AUGUST 20, 2014 AT RECEPTION NO. 4030682. (THIS ITEM DOES AFFECT PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(46) COVENANTS, CONDITIONS AND RESTRICTIONS, WHICH DO NOT INCLUDE A FORFEITURE OR REVERTER CLAUSE, SET FORTH IN THE INSTRUMENT RECORDED NOVEMBER 10, 2008 AT RECEPTION NO. 3590556. PROVISIONS REGARDING RACE, COLOR, CREED, AND NATIONAL ORIGIN, IF ANY, ARE DELETED. (THIS ITEM DOES AFFECT PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(47) THE EFFECT OF ANNEXATION MAP RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793937. (THIS ITEM DOES AFFECT PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

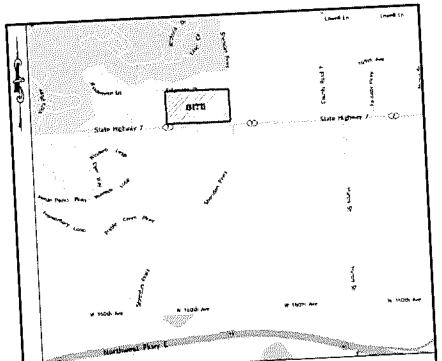
(48) DEED OF EASEMENT GRANTED TO THE TOWN OF ERIE, FOR PASSAGE OF AIRCRAFT IN THE AIRSPACE ABOVE SUBJECT PROPERTY AS RECORDED NOVEMBER 26, 2001 AT RECEPTION NO. 2903864. (THIS ITEM DOES AFFECT PARCEL 2 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(49) TERMS, AGREEMENTS, PROVISIONS, CONDITIONS AND OBLIGATIONS OF A OIL AND GAS LEASE (PAID UP), EXECUTED BY UNITED STATES EXPLORATION, INC., A COLORADO CORPORATION, AS LESSEE(S), RECORDED DECEMBER 4, 2007 AT RECEPTION NO. 3521370. (THIS ITEM DOES AFFECT THE ENTIRE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(50) ALTA / ACSM SURVEY VISTA RIDGE COMMERCIAL EAST RECORDED JANUARY 28, 2010 AT RECEPTION NO. 3672682. (THIS ITEM AFFECTS PARCEL 1 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(51) TERMS, AGREEMENTS, PROVISIONS, CONDITIONS AND OBLIGATIONS OF SHERIDAN – HIGHWAY 7 COMMERCIAL CENTER ANNEXATION AGREEMENT RECORDED MARCH 3, 2011 AT RECEPTION NO. 3753953, AND ANNEXATION MAP RECORDED MARCH 3, 2011 AT RECEPTION NO. 3753957, ORDINANCE NO. 30,2010 IN CONNECTION TO SAID ANNEXATION RECORDED MARCH 3, 2011 AT RECEPTION NO. 2753954, AND ORDINANCE NO. 31,2010 IN CONNECTION TO SAID ANNEXATION RECORDED MARCH 3, 2011 AT RECEPTION NO. 3753955. (THIS ITEM DOES AFFECT PARCEL 1 OF THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)

(52) TERMS, AGREEMENTS, PROVISIONS, CONDITIONS AND OBLIGATIONS OF THE VISTA RIDGE DEVELOPMENT PLAN AMENDMENT NO. 8 AS RECORDED NOVEMBER 28, 2012 AT RECEPTION NO. 3890727 AND VISTA RIDGE DEVELOPMENT PLAN AMENDMENT NO. 8 AS RECORDED NOVEMBER 25, 2013 AT RECEPTION NO. 3980214. (THIS ITEM DOES AFFECT THE SUBJECT PREMISES. HOWEVER, IT CONTAINS NO PLOTTABLE ITEMS)



VICINITY MAP
SCALE: 1"=500'

LEGAL DESCRIPTION

PARCEL 1:

PARCELS 1 AND 2 OF SUBDIVISION EXEMPTION NO. 977 RECORDED JUNE 9, 2003 AT RECEPTION NO. 3070624 AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PARCEL OF LAND LOCATED IN THE SOUTH HALF OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SAID SECTION 33;

THENCE NORTH 00° 06' 16" EAST, 75.00 FEET ALONG THE WEST LINE OF THE SOUTHEAST QUARTER TO THE POINT OF BEGINNING;

THENCE NORTH 89° 38' 37" WEST, 498.22 FEET ALONG THE NORTH RIGHT OF WAY LINE OF COLORADO STATE HIGHWAY 7;

THENCE NORTH 00° 06'16" EAST, 868.79 FEET ALONG THE EASTERLY LINE OF VISTA RIDGE MASTER PLAT PARCEL 34;

THENCE ALONG THE SOUTHERLY RIGHT OF WAY OF RIDGE VIEW DRIVE THE FOLLOWING TWO COURSES:

1) S89°31'48"E, 551.16 FEET;
2) 46.67 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 30.00 FEET, A CENTRAL ANGLE OF 89°07'03" AND A CHORD BEARING S45°03'17"E, 42.04 FEET; THENCE ALONG THE WESTERLY RIGHT OF WAY LINE OF SHERIDAN BOULEVARD THE FOLLOWING TWO COURSES:

1) S00°34'46"E, 804.80 FEET;
2) 47.61 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 30.00 FEET, A CENTRAL ANGLE OF 90°55'52" AND A CHORD BEARING S44°53'10"W, 42.77 FEET;

THENCE NORTH 89° 38' 54" W, 62.20 FEET ALONG THE NORTH RIGHT OF WAY OF COLORADO STATE HIGHWAY 7 TO THE POINT OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

PARCEL 2:

PARCELS 33 AND 34, VISTA RIDGE MASTER FINAL PLAT, COUNTY OF WELD, STATE OF COLORADO.

SURVEYOR'S CERTIFICATION

TO MONTEX (BROWNLEE), LLC, MONTEX (VISTA RIDGE), LLC, DILLON COMPANIES, INC., AND HERITAGE TITLE COMPANY AS AGENT FOR COMMONWEALTH LAND TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(A), 7(A), 7(B,1), 7(C), 8, 9, AND 11(B) OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON SEPTEMBER 29, 2014.

CHARLES N. BECKSTROM
PROFESSIONAL L.S. NO. 33202

Email: cbeckstrom@engineeringserviceco.com

COLORADO REGISTERED
CHARLES N. BECKSTROM
33202
PROFESSIONAL LAND SURVEYOR

NOTICE:

ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

ANY PERSON WHO KNOWINGLY REMOVES, ALTERS, OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT, LAND BOUNDARY MONUMENT, OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR, PURSUANT TO STATE STATUTE 18-4-508 OF THE COLORADO REVISED STATUTES.

GENERAL NOTES:

1. THIS SURVEY WAS BASED ON TITLE COMMITMENT NUMBER 451-H0411701-266-CS4 PREPARED BY HERITAGE TITLE COMPANY AS AGENT FOR COMMONWEALTH LAND TITLE INSURANCE COMPANY, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2014 AT 7:00 A.M., AND DOES NOT CONSTITUTE A TITLE SEARCH BY THIS SURVEYOR FOR OTHER EASEMENTS AND/OR EXCEPTIONS OF RECORD.
2. BY GRAPHIC PLOTTING ONLY THE SUBJECT PROPERTY IS SITUATED IN FLOOD ZONE "X" AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN ACCORDING TO FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 08013C444J (PANEL NOT PRINTED). NO OFFICE CALCULATIONS OR FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS INFORMATION.
3. BEARINGS ARE BASED ON THE NORTH RIGHT-OF-WAY LINE OF STATE HIGHWAY NO. 7 BEARING N89°38'37"W AS REFERENCED AND BOUNDED BY THE MONUMENTS SHOWN HEREON.
4. THE LOCATION OF ALL UNDERGROUND UTILITY LINES, IF SHOWN HEREON, ARE BASED ON FIELD LOCATION OF VISIBLE EVIDENCE AND MARKINGS AND MAPPING PROVIDED BY A UTILITY LOCATION SERVICE AND ARE TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. ALL UNDERGROUND UTILITIES SHOULD BE FIELD VERIFIED PRIOR TO ANY CONSTRUCTION.
5. BENCHMARK: CITY OF AND COUNTY OF BROOMFIELD BM "LUCY" ELEVATION: 5207.00 FEET (NAVD 1988 DATUM)
6. THERE 0 PARKING SPACES ON THE SURVEYED PROPERTY.
7. NO BUILDINGS EXISTING ON THE SURVEYED PROPERTY.
8. THERE WAS NO VISIBLE EVIDENCE OF CEMETERIES, GRAVESITES OR BURIAL GROUNDS LOCATED ON THE SUBJECT PROPERTY.
9. ALL UNITS ARE U.S. SURVEY FEET.

ALTA/ACSM LAND TITLE SURVEY

PARCELS 33 & 34, VISTA RIDGE AND BEING A PART OF AND SITUATED IN THE SW 1/4 OF SECTION 33, T.1N., R.68W., OF THE 6TH P.M. TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

NW CORNER OF STATE HIGHWAY 7 & SHERIDAN PARKWAY

Prepared For:

Galloway
Planning. Architecture. Engineering.

5300 DTC Parkway, Suite 100
Greenwood Village, CO 80111
Tel. (303) 770-8884
Fax. (303) 770-3636
www.gallowayUS.com

ENGINEERING SERVICE COMPANY
ENGINEERS – SURVEYORS – PLANNERS
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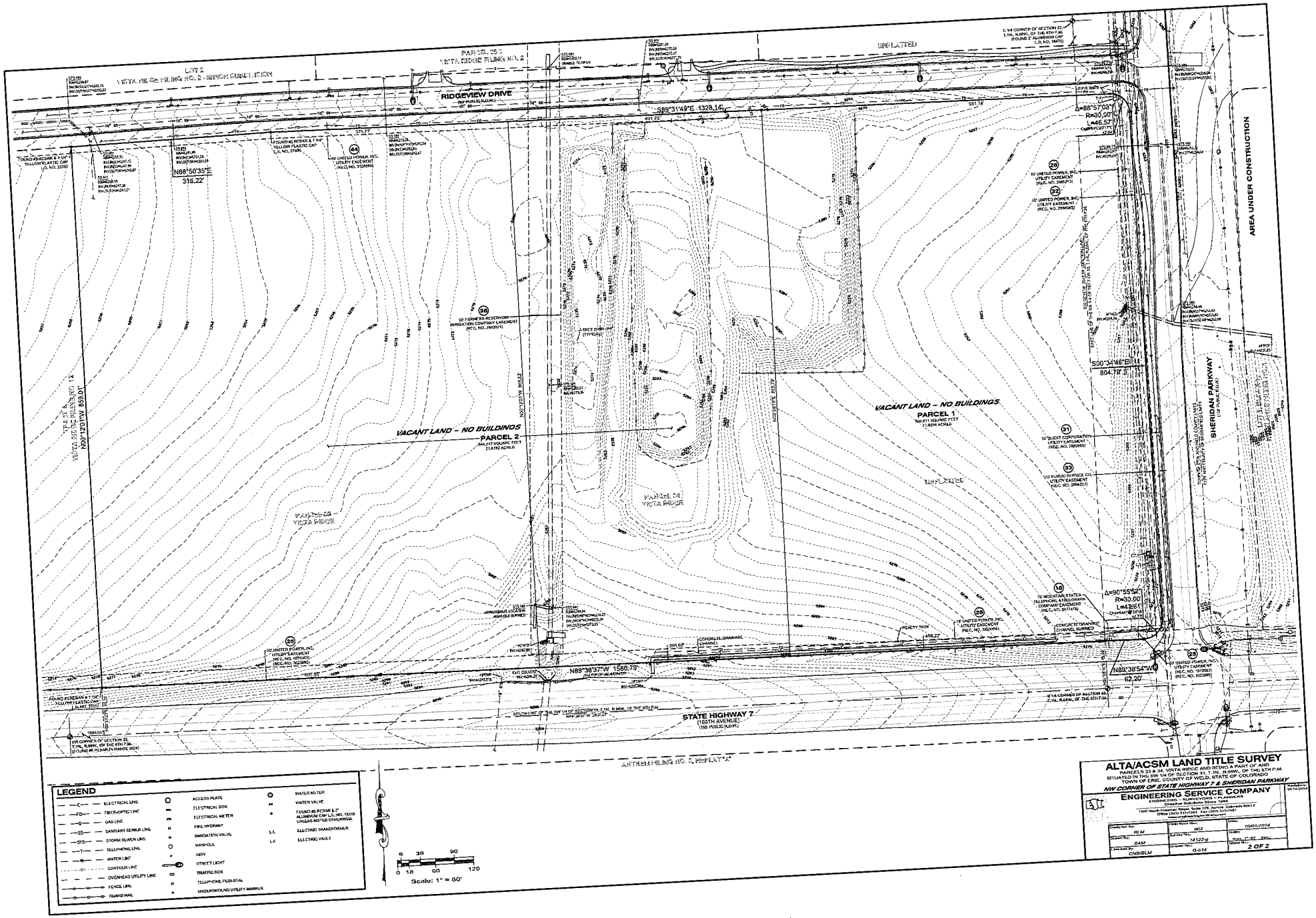
1300 South Potomac Street, Suite 126 Aurora, Colorado 80012
Office (303) 337-1393 Fax (303) 337-7481

Designed By: BLM	Field Book No.: 803	Date: 10/01/2014
Drawn By: SAM	Survey No.: 14122-0	Scale: Horiz.: 1"=60' Vert.:
Checked By: BLM/CNB	Drawing No.: G-014	Sheet No.: 1 OF 2

Revisions: 10/14/2014


RIDGEVIEW DRIVE
(80' PUBLIC R.O.W.)
S89°31'49"E 1328.14'
N88°50'35"E
316.22'
VACANT LAND – NO BUILDINGS
PARCEL 2
544,217 SQUARE FEET
12.4952 ACRES
VACANT LAND – NO BUILDINGS
PARCEL 1
560,411 SQUARE FEET
12.8706 ACRES
UNPLATTED
AREA UNDER CONSTRUCTION
SHERIDAN PARKWAY
(12' PUBLIC R.O.W.)
S00°34'46"E 804.78'
Δ=88°57'03"
R=30.00'
L=46.57'
Δ=90°55'52"
R=30.00'
L=42.61'
N89°38'37"W 1586.79'
N89°38'54"W
62.20'
STATE HIGHWAY 7
(160TH AVENUE)
(100' PUBLIC R.O.W.)
ANTHEM FILING NO. 2, REPLAT "A"
LEGEND
ELECTRICAL LINE
FIBER-OPTIC LINE
GAS LINE
SANITARY SEWER LINE
STORM SEWER LINE
TELEPHONE LINE
WATER LINE
CONTOUR LINE
OVERHEAD UTILITY LINE
FENCE LINE
CHAINLINK FENCE
ACCESS PLATE
ELECTRICAL BOX
ELECTRICAL METER
FIRE HYDRANT
INSERTION VALVE
MANHOLE
GRIN
STREET LIGHT
TRAFFIC BOX
TELEPHONE PEDESTAL
UNDERGROUND UTILITY MARKER
WATER METER
WATER VALVE
FOUND #5 REBAR & 2" ALUMINUM CAP L.S. NO. 15318 UNLESS NOTED OTHERWISE
ELECTRIC TRANSFORMER
ELECTRIC VAULT
Scale: 1" = 60'
ALTA/ACSM LAND TITLE SURVEY
PARCELS 33 & 34, VISTA RIDGE AND BEING A PART OF AND SITUATED IN THE SW 1/4 OF SECTION 33, T. 1N., R.68W., OF THE 6TH P.M.
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO
NW CORNER OF STATE HIGHWAY 7 & SHERIDAN PARKWAY
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Drawn By: RJM
Checked By: SAM
Licensed By: CNB/BLM
Field Work Date: 903
Survey No.: 14122-g
Drawing No.: G-014
Date: 10/01/2014
Scale: 1"=60' Vert.
Sheet No.: 2 OF 2

ATTACHMENT F

3896214 Pages: 3 of 3
11/29/2013 12:46 PM R Fee:$31.00
Steve Moreno, Clerk & Recorder, Weld County, CO

VISTA RIDGE

Development Plan Amendment No. 6

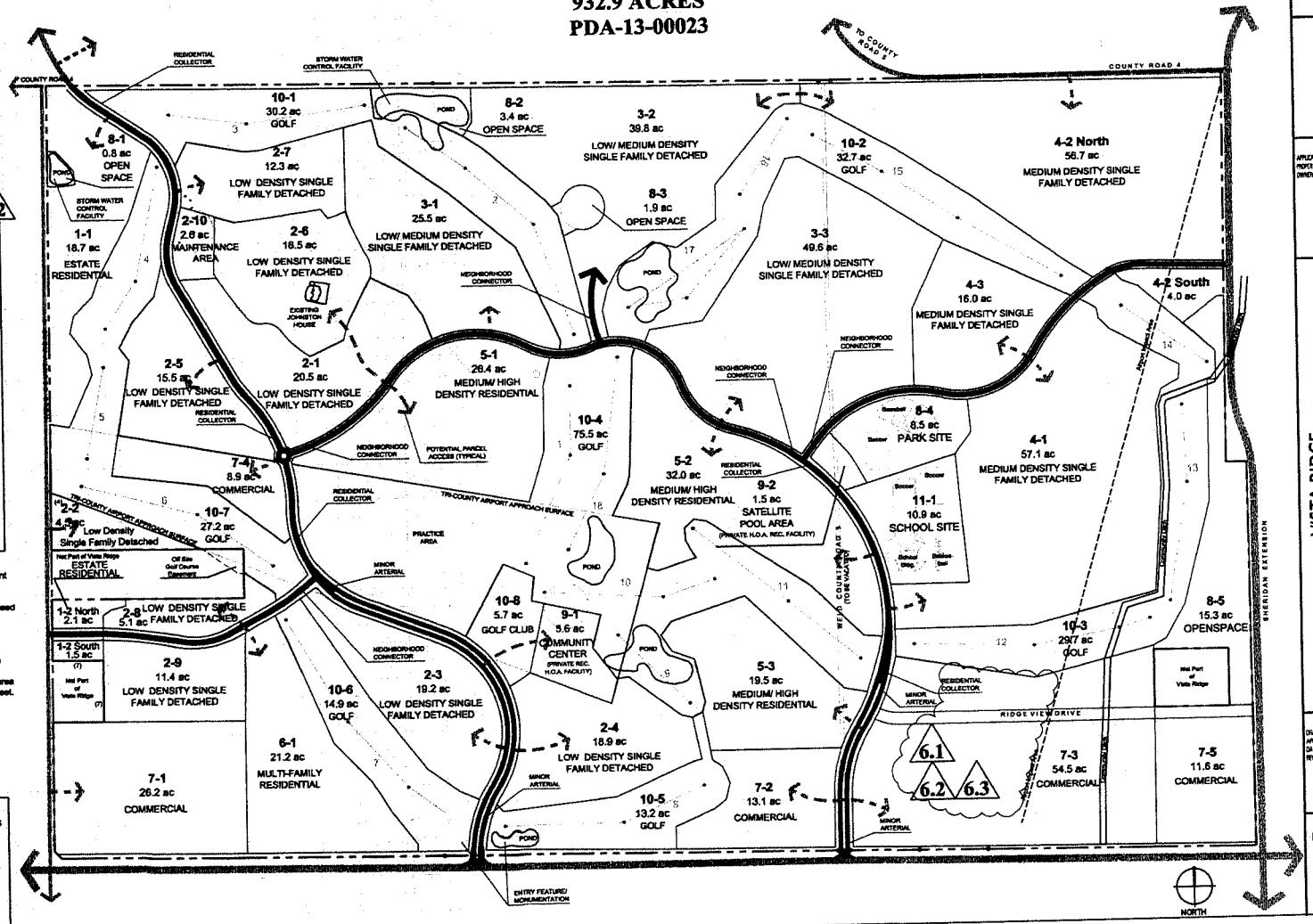
PORTIONS OF SECTIONS 32 & 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH PRINCIPLE MERIDIAN
TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO
932.9 ACRES
PDA-13-00023

LAND USE	Net Acre	Du/Ac	Units
Estate Residential			(1)
1-1	18.7	2	33(8)
1-2 North	2.1	2	4
1-2 South	1.5	2	3
Total	22.3		40
Low Single Family Detached			
2-1	20.5	3	72(8)
2-2 (see note 4 below re: units)	4.5	3	14
2-3	19.2	3	46(8)
2-4	18.9	3	46(8)
2-5	15.5	3	34(8)
2-6	16.5	3	50
2-7	12.3	3	43(8)
2-8	5.1	3	16
2-9	11.4	3	41(8)
Total	126.5		346
Low / Medium Single Family Detached			
3-1	25.5	4	100(8)
3-2	39.8	4	143(8)
3-3	49.6	4	199(8)
Total	114.9		442
Medium Single Family Detached			
4-1	57.1	5	236(8)
4-2 North	56.7	5	213(8)
4-2 South	4.0	5	10 (8)
4-3	16.0	5	52(8)
Total	133.8		511
Medium / High Residential			
5-1	26.4	8	90(8)
5-2	32.0	8	152(8)
5-3	19.5	8	124(8)
Total	77.9		376
Multi-Family Residential			
6-1	21.2	16	408
Commercial			
7-1	26.2		
7-2	13.1		
7-3	54.5		200(9) 6.2
7-4	8.9		
7-5	14.4		
Total	117.1		200
Development Totals	811.1		(3) (6)
Open Space			
8-1	0.8		
8-2	3.4		
8-3	1.9		
8-4	6.5		
8-5	15.5		
Total	30.1		
9-1 Community Center (H.O.A.)	5.6		
9-2 Satellite Pool (H.O.A.)	1.5		
Total	7.1		
Golf			
10-1	30.2		
10-2	32.7		
10-3	29.7		
10-4	75.5		
10-5	13.2		
10-6	14.9		
10-7	27.2		
10-8 (Golf Club)	5.7		
Total	229.1		
11-1 School Site	10.9		
R.O.W. / Infrastructure	43.0		
Other Acreage	328.1		
Property Total	932.9		

(1) Units based on Net Area of Planning Area.
(2) Golf Layout is preliminary, location may require minor realignment at the time of final development plans.
(3) Maximum number of units is 2494
(4) This parcel includes one additional residential unit plus 14 proposed units.
(5) Layout of school and park sites are illustrative and subject to change.
(6) The neighborhood connector roadway within planning area 1-2 shall be located a minimum of 150 feet north of the subject area southerly boundary.
(7) The minimum building setback of the southerly property line of area 1-2 and the westerly property line of area 2-9 shall be fifty (50) feet.
(8) Units approved on recorded final plat for each Planning Area.
(9) 200 units total for Planning Area 7-3.

REVISION BLOCK

6.1 1 - Added Medium/High Residential, High Density Residential and Multi-family Residential Uses as a Permitted Use to Planning Area 7-3 in two areas.
6.2 2 - Added 200 dwelling units to Planning Area 7-3.
6.3 3 - Medium/High Residential setbacks modified to Planning Area 7-3.
4 - Single Family Detached setbacks modified to Planning Area 7-3.



CIVIL ENGINEERING
PLANNING
SURVEYING
HURST
2500 Broadway
Suite B
Boulder, CO 80304
303.449.9125
www.hurst-assoc.com

APPLICANT/ PROPERTY OWNER: Vista Ridge Development Corporation, 2750 Vista Parkway, Suite 100, Erie, CO 80516, (303) 833-9400, (303) 833-9440 fax, Contact: James Sparacino

VISTA RIDGE
DEVELOPMENT PLAN AMENDMENT #6
Erie, Colorado

DRAWN BY: BSD
APPROVED BY: BSD
DATE: 11/07/2013
REVISIONS:

SHEET TITLE
DEVELOPMENT PLAN

SHEET NUMBER
SHEET 3 OF 3

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**RESOLUTIONS** **Consideration of Resolution 15-102**: A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat; Imposing Conditions Of Approval; Approving Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat With Conditions; And Setting Forth Details In Relation Thereto.
PURPOSE:	Consideration of a preliminary plat that includes 25 single-family detached lots and three tracts on approximately 4 acres.
PROJECT NO.:	PP-14-00017
CODE:	Erie Municipal Code, Title 10
DEPARTMENT:	Community Development
PRESENTER:	R. Martin Ostholthoff, Director

FISCAL INFORMATION:	Cost as Recommended:	n/a
	Balance Available:	n/a
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☒ No

STAFF RECOMMENDATION:	Staff finds the application consistent with the Preliminary Plat approval criteria in Municipal Code, Section 10.7.7.C.10, and recommends approval of the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat application. Staff has provided Resolution 15-102, for Board of Trustee consideration, approving the application with the following conditions: 1. The proposed utility easement to be dedicated to the Town of Erie within Tract B shall meet the Town of Erie Standards and Specifications for Design and Construction of Public Improvements. 2. Technical corrections to Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat shall be made to the Town's satisfaction.
PLANNING COMMISSION RECOMMENDATION:	The Planning Commission held a public hearing for the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat application on July 15, 2015. The Planning Commission recommended conditional approval to the Board of Trustees, for the Vista Ridge Filing No. 2, 1st Amendment by approving Resolution P15-21 with the following conditions: 1. The proposed utility easement to be dedicated to the Town of Erie within Tract B shall meet the Town of Erie Standards and Specifications for Design and Construction of Public Improvements. 2. Technical corrections to Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat shall be made to the Town's satisfaction.

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Applicant

Chartered Development Corporation
Ward Ritter
3160 Vista Village Drive, Suite 104
Erie, Colorado, 80516

Owners

Montex (Vista Ridge, LLC)
Andy Chaikovsky
4915 Gaylord Street
Englewood, CO 80113

Location

Vista Ridge Filing No. 2, 1st Amendment is located on the north side of Ridge View Drive between Mountain View Boulevard and Sheridan Boulevard and is highlighted in red on the below map.

Existing Conditions

Zoning:	Vista Ridge PD – Planned Development
Project Size:	4.036 acres
Existing Use:	Vacant Land

Adjacent Land-Use/Zoning

	ZONING	LAND USE
NORTH	PD – Planned Development (Vista Ridge)	Golf course
EAST	PD – Planned Development (Vista Ridge)	Private school
SOUTH	PD – Planned Development (Vista Ridge)	Vacant Land (future residential and commercial)
WEST	PD – Planned Development (Vista Ridge)	Private school

Compliance with Town of Erie Comprehensive Plan

The residential uses and density proposed are in compliance with the Land Use designations on the Comprehensive Plan Land Use Plan Map. This particular property allows High Density Residential, Medium Density Residential and Regional Commercial land uses.

Compliance with Canyon Creek PD Amendment

The residential uses and density proposed are in compliance with the Vista Ridge PD Development Plan for Planning Area 7-3.

SITE SPECIFIC DEVELOPMENT INFORMATION

The applicant proposal includes 25 single family residential lots in Vista Ridge Filing No. 2, 1st Amendment. The proposed lots are less than 5,000 square feet in size which requires separate Site Plan approval. A Site Plan application is being processed concurrent with this preliminary plat and has been conditionally approved by the Planning Commission.

Development Data

- Preliminary Plat Size: 4.036 acres
- Number of Residential Lots Proposed: 25 lots
- Number of Tracts: 3 tracts
- Gross Residential Density Proposed: 6.2 dwelling units per acre

Roadways

The roads and private drives serving the propose subdivision are in compliance with the standards permitted by the Vista Ridge Planned Development - Development Plan. All roads and private drives proposed will be owned and maintained by a sub homeowners association that will be formed as part of final plat approvals.

An emergency access easement is provided as the secondary access point into the proposed subdivision via Ridge View Drive.

Utilities

The property will be served by the Town of Erie for water and sanitary sewer service.

An existing detention pond located west of the subject property was sized to accommodate the storm water from the proposed development of this site.

Utility service providers for the property are United Power for electric, Source Gas for natural gas, Century Link Communications for telephone services and Comcast for cable television. Utility easements for these providers will be established at the time of final plat.

Natural Areas Inventory

The Town of Erie Natural Areas Inventory does not identify any natural areas within and immediately adjacent to the subject property.

Threatened and Endangered Species and Significant Habitats

A site specific General Ecological Resources Survey, completed by Western Environmental and Ecology, Inc. was submitted to assess threatened and endangered species and significant habitats.

The report concludes that no threatened or endangered species or obvious habitats were seen on the subject property.

Landscaping, Parks, Trails and Open Space

Landscape buffers are provided along Ridge View Drive. Sidewalks will be added in addition to landscaping within the right of way.

Park and open space dedications have been previously satisfied for Vista Ridge.

Schools

The proposed development is located in the St. Vrain Valley School District.

Police Services

The Erie Police Department will provide service to the property.

Fire Protection

The Mountain View Fire Protection District will provide fire and emergency medical services.

Oil/Gas Facilities

No above ground oil and gas facilities are located within 350-feet of the propose subdivision.

Soils and Geology

The Geotechnical Investigation report provided by the applicant addresses subsidence risks and soil conditions for the property. The report states that the site is not undermined, and that expansive soils exist. The expansive soil issue will be mitigated in that prior to the issuance of a building permit; site specific soil tests are required for each lot that will be the basis for foundations design that mitigates expansive soil issues.

STAFF REVIEW AND ANALYSIS

The Preliminary Plat for the single family detached patio home and townhome development within Canyon Creek Filing No. 9, 1st Amendment was reviewed for conformance with Municipal Code, Title 10, UDC Section 10.7.7 C.10. Approval Criteria. Staff finds the Preliminary Plat in compliance with the Preliminary Plat Approval Criteria as listed below.

a. **The subdivision is generally consistent with the Town's Comprehensive Master Plan.**

   Staff: The proposed subdivision is generally consistent with the 2005 Comprehensive Plan Land Use Plan Map land use designation of MDR-Medium Density Residential.

b. **The subdivision is generally consistent with and implements the intent of the specific zoning district in which it is located.**

   Staff: The proposed subdivision is in compliance with the Vista Ridge Planned Development zoning.

c. **The general layout of lots, streets, driveways, utilities, drainage facilities, and other services within the proposed subdivision is designed to meet the Town's standards related to health and**

safety and in a way that minimizes the amount of land disturbance, maximizes the amount of open space in the development, preserves existing trees/vegetation and riparian areas, protects critical wildlife habitat, and otherwise accomplishes the purposes and intent of this UDC.

Staff: The proposed subdivision meets the applicable Town standards.

d. **The subdivision complies with all applicable use, development, and design standards set forth in Chapters 3, 5 and 6 of this UDC that have not otherwise been modified or waived pursuant to this Chapter or this UDC. Applicants shall refer to the Development Standards in Chapter 5 of this UDC and shall consider them in the layout of the subdivision in order to avoid creating lots or patterns of lots in the subdivision that will make compliance with such development and design standards difficult or infeasible.**

Staff: The proposed subdivision meets the Town's UDC standards.

e. **The subdivision complies with all applicable regulations, standards, requirements, or plans of the Federal or State governments and other relevant jurisdictions, including but not limited to wetlands, water quality, erosion control, and wastewater regulations.**

Staff: The proposed subdivision will meet applicable Federal and State standards.

f. **The subdivision will not result in significant adverse impacts on the natural environment, including air, water, noise, storm water management, wildlife, and vegetation, or such impacts will be substantially mitigated.**

Staff: No significant adverse impacts are anticipated with the proposed subdivision.

g. **The subdivision shall be integrated and connected, where appropriate, with adjacent development through street connections, sidewalks, trails, and similar features.**

Staff: The proposed subdivision will be integrated into the existing road and pedestrian network.

h. **The subdivision will not result in significant adverse impacts on adjacent properties, or such impacts will be substantially mitigated.**

Staff: No significant adverse impacts are anticipated with the proposed subdivision.

i. **Adequate and sufficient public safety, transportation, utility facilities and services, recreation facilities, parks, and schools are available to serve the subject property, while maintaining sufficient levels of service to existing development.**

Staff: Adequate facilities are available to serve the proposed subdivision.

j. **As applicable, the proposed phasing plan for development of the subdivision is rational in terms of available infrastructure capacity.**

Staff: Adequate infrastructure is available to serve the proposed subdivision.

STAFF RECOMMENDATION:

Staff finds the application consistent with the Preliminary Plat approval criteria in Municipal Code, Section 10.7.7.C.10, and recommends approval of the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat application. Staff has provided Resolution 15-102, for Board of Trustee consideration, approving the application with the following conditions:

1. The proposed utility easement to be dedicated to the Town of Erie within Tract B shall meet the Town of Erie Standards and Specifications for Design and Construction of Public Improvements.
2. Technical corrections to Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat shall be made to the Town's satisfaction.

Public Notice

Notice of this Public Hearing has been provided as follows:

Published in the Colorado Hometown Weekly Newspaper:	July 22, 2015
Property Posted as required:	July 24, 2015
Letters to adjacent property owners mailed:	July 24, 2015

Neighborhood Meeting:

As required by the Municipal Code a Neighborhood Meeting was held on April 22, 2015 at 6:00 p.m. at the Vista Ridge Community Center. The required notice for the Neighborhood Meeting was provided.

Staff Review:

____Town Attorney
____Town Clerk
DM Community Development Director
____Finance Director
____Police Chief
____Public Works Director

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:

A. Resolution 15-102
B. Planning Commission Meeting Minutes and Resolution P15-21
C. Application Materials
D. Referral Comments/Responses

ATTACHMENT A

RESOLUTION NO. 15-102

A RESOLUTION MAKING CERTAIN FINDINGS OF FACT AND CONCLUSIONS FAVORABLE TO THE VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT; IMPOSING CONDITIONS OF APPROVAL; APPROVING THE VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT WITH CONDITIONS; AND SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, the Board of Trustees of the Town of Erie, Colorado, held a Public Hearing for the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat on Tuesday, August 11, 2015, on the application of Montex (Vista Ridge, LLC), 4915 Gaylord Street, Englewood, Colorado 80113, such Preliminary Plat being a plat of the following real property; to wit:

LOT 2, VISTA RIDGE FILING NO. 2, MINOR SUBDIVISION, A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33 TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, and;

WHEREAS, the Planning Commission of the Town of Erie, Colorado, conducted a Public Hearing for the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat on July 15, 2015, and;

WHEREAS, the application for Preliminary Plat is detailed on Exhibit A: Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, dated January 8, 2015, and;

WHEREAS, said Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat is incorporated herein and made part hereof by this reference.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. Findings of Fact.

1. That the applicant's application and supporting documents are in substantial compliance with Municipal Code 10.7.7 C.
2. The Preliminary Plat has met Municipal Code Title 10, Section 10.7.7 C.10. Approval Criteria:
   a. The subdivision is generally consistent with the Town's Comprehensive Master Plan.
   b. The subdivision is generally consistent with and implements the intent of the specific zoning district in which it is located.
   c. The general layout of lots, streets, driveways, utilities, drainage facilities, and other services within the proposed subdivision is designed to meet the Town's standards related to health and safety and in a way that minimizes the amount of land disturbance, maximizes the amount of open space in the development, preserves existing trees/vegetation and riparian areas, protects critical wildlife habitat, and otherwise accomplishes the purposes and intent of this UDC.
   d. The subdivision complies with all applicable use, development, and design standards set forth in Chapters 3, 5 and 6 of this UDC that have not otherwise been modified or waived

pursuant to this Chapter or this UDC. Applicants shall refer to the Development Standards in Chapter 5 of this UDC and shall consider them in the layout of the subdivision in order to avoid creating lots or patterns of lots in the subdivision that will make compliance with such development and design standards difficult or infeasible.

e. The subdivision complies with all applicable regulations, standards, requirements, or plans of the Federal or State governments and other relevant jurisdictions, including but not limited to wetlands, water quality, erosion control, and wastewater regulations.

f. The subdivision will not result in significant adverse impacts on the natural environment, including air, water, noise, storm water management, wildlife, and vegetation, or such impacts will be substantially mitigated.

g. The subdivision shall be integrated and connected, where appropriate, with adjacent development through street connections, sidewalks, trails, and similar features.

h. The subdivision will not result in significant adverse impacts on adjacent properties, or such impacts will be substantially mitigated.

i. Adequate and sufficient public safety, transportation, utility facilities and services, recreation facilities, parks, and schools are available to serve the subject property, while maintaining sufficient levels of service to existing development.

j. As applicable, the proposed phasing plan for development of the subdivision is rational in terms of available infrastructure capacity.

3. That a detailed Development Agreement (DA) will be required at such time as the property is approved for a final plat.

4. That the following conditions shall be imposed as a condition of approval:

   a. The proposed utility easement to be dedicated to the Town of Erie within Tract B shall meet the Town of Erie Standards and Specifications for Design and Construction of Public Improvements.

   b. Technical corrections to Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat shall be made to the Town's satisfaction.

5. That the Preliminary as proposed, subject to the conditions set forth herein, will preserve the health, safety, welfare and interest of the citizens of the Town of Erie, Colorado.

Section 2. Conclusions and Order Approving Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat.

1. Based on the above Findings of Fact, the Board of Trustees hereby approves the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat application with the conditions listed above.

ADOPTED AND APPROVED THIS 11th DAY OF AUGUST 2015 BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy Parker, Town Clerk

Exhibit A

(Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat)

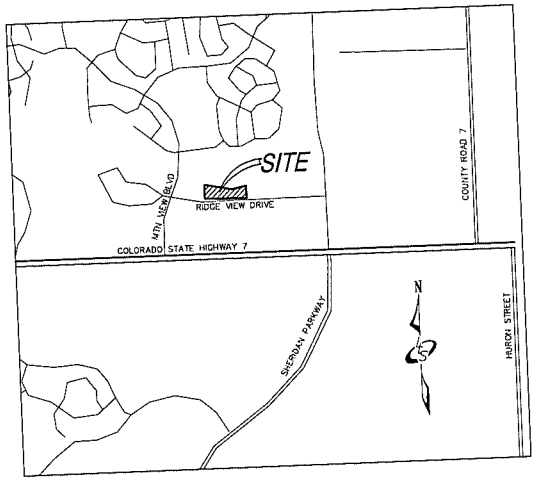
VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 1 OF 4

LEGAL DESCRIPTION

LOT 2 OF "VISTA RIDGE FILING NO. 2 – MINOR SUBDIVISION", A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

CONTAINING 175,823 SQUARE FEET OR 4.036 ACRES, MORE OR LESS.



VICINITY MAP
1"=1000'

LAND SUMMARY CHART		
TYPE	AREA	% OF TOTAL AREA
RESIDENTIAL LOTS (25)	102,984 S.F.	59%
TRACTS (3)	72,839 S.F.	41%
PUBLIC ROW	0 S.F.	0%
TOTAL	175,823 S.F.	100%

TRACT SUMMARY CHART				
TRACT	AREA	USE	OWNERSHIP	MAINTENANCE
TRACT A	41,101 S.F.	PRIVATE ACCESS DRIVE EMERGENCY ACCESS DRAINAGE/UTILITY	HOA	HOA
TRACT B	20,842 S.F.	OPEN SPACE DRAINAGE/UTILITY	HOA	HOA
TRACT C	10,896 S.F.	OPEN SPACE DRAINAGE/UTILITY	HOA	HOA

GENERAL NOTES

1. THE PLAT CONSISTS OF FURTHER SUBDIVIDING LOT 2, VISTA RIDGE FILING NO. 2, AS RECORDED 11/15/2007 AT RECEPTION NO. 3517715, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO. THIS PLAT WILL CONTAIN 25 SINGLE FAMILY RESIDENTIAL LOTS. ONLY ONE RESIDENTIAL DWELLING IS PERMITTED ON EACH SINGLE FAMILY LOT.

2. ALL GENERAL NOTES, DEDICATIONS, AND PLAT RESTRICTIONS AS SHOWN ON THE PLAT OF VISTA RIDGE FILING NO. 2, A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, SHALL APPLY UNLESS SPECIFICALLY AMENDED AND SUPERCEDED HEREBY.

3. TRACT A IS FOR UTILITY, DRAINAGE, PRIVATE ACCESS DRIVES AND EMERGENCY ACCESS PURPOSES AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA. TRACT B IS FOR DRAINAGE AND LANDSCAPING AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA. TRACT C IS FOR DRAINAGE, LANDSCAPING AND EMERGENCY ACCESS FROM RIDGE VIEW DRIVE TO RIDGE VIEW COURT AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA.

4. UTILITY AND DRAINAGE EASEMENTS, LABELED HEREON, SHALL BE GRANTED FOR THE INSTALLATION AND MAINTENANCE OF SANITARY SEWER LINES, WATER LINES, STORM DRAINAGE FACILITIES, SURFACE DRAINAGE AND FOR THE BENEFIT OF THE APPLICABLE UTILITY PROVIDERS FOR THE INSTALLATION, MAINTENANCE, AND REPLACEMENT OF ELECTRIC, GAS, TELEVISION, CABLE, AND TELECOMMUNICATIONS FACILITIES (DRY UTILITIES) AND ALL NECESSARY AND CONVENIENT APPURTENANCES THERETO, TOGETHER WITH A PERPETUAL RIGHT OF INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF SUCH LINES AND APPURTENANCES. SAID EASEMENTS AND RIGHTS ARE TO BE UTILIZED IN A RESPONSIBLE AND PRUDENT MANNER.

5. DRAINAGE EASEMENTS, LABELED HEREON, SHALL BE GRANTED FOR THE INSTALLATION AND MAINTENANCE OF DRAINAGE LINES AND ALL NECESSARY AND CONVENIENT APPURTENANCES THERETO, AS WELL AS SURFACE DRAINAGE, TOGETHER WITH A PERPETUAL RIGHT OF INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF SUCH LINES AND APPURTENANCES. SAID EASEMENTS AND RIGHTS ARE TO BE UTILIZED IN A RESPONSIBLE AND PRUDENT MANNER.

6. A BLANKET DRAINAGE EASEMENT SHALL BE GRANTED ALONG ALL COMMON LOT LINES FOR DOWNSPOUT DISCHARGE, DRAINAGE SWALES AND APPURTENANCES REQUIRED FOR PROPER LOT DRAINAGE.

7. BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 33, WHICH BEARS NORTH 00°12'01" WEST ACCORDING TO THE VISTA RIDGE MASTER FINAL PLAT AND IS MONUMENTED AS SHOWN HEREON.

8. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

9. BASED UPON THE INSURANCE RATE MAP COMMUNITY PANEL NO. 08013C 044J, THIS PANEL IS NOT PRINTED AND THERE IS NO SPECIAL FLOOD INFORMATION.

10. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, OF THE COLORADO REVISED STATUTE.

11. DISTANCES ON THIS PLAT ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DESCRIBED AS EXACTLY 1200/3937 METERS.

APPLICANT

CHARTERED DEVELOPMENT CORP.
3100 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
CONTACT: WARD RITTER
(303) 545-2254

ENGINEER

ENERTIA CONSULTING GROUP, LLC
1520 MARKET STREET, SUITE 200
DENVER, COLORADO 80202
CONTACT: SHAWN MERZ, P.E., LEED AP
PHONE: (720) 502-6574

SURVEYOR

LANGE LAND SURVEYS, LLC
6475 WADSWORTH BLVD., SUITE 102
ARVADA, COLORADO 80003
CONTACT: JON LANGE, PLS
PHONE: (720) 242-9732

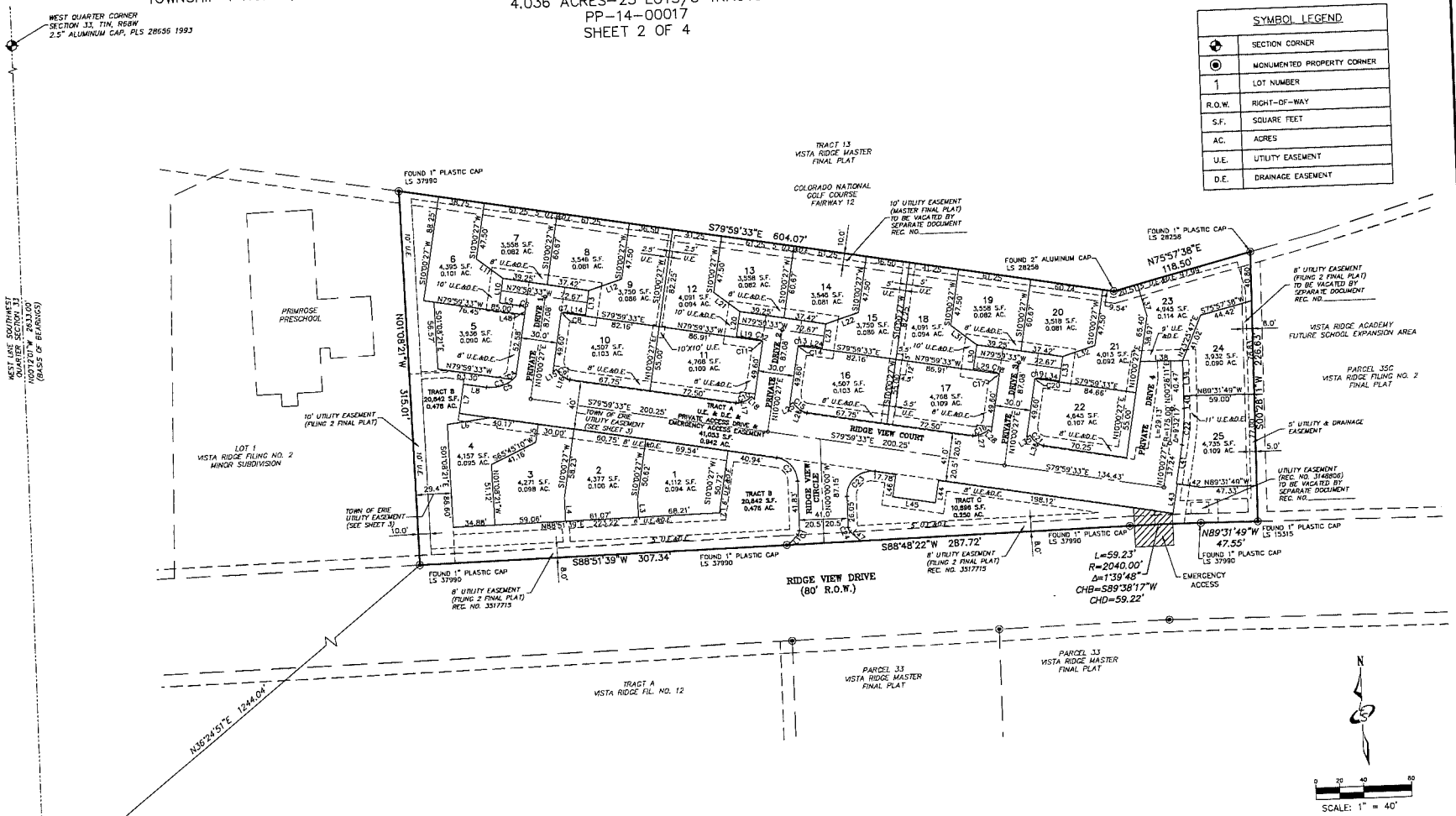
Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-9732 F:(720) 242-9654

DRAWN BY: LC	#	REVISIONS:	DATE:	BY:
	1	TOWN COMMENTS	11/19/14	LC
CHECKED BY: JRL	2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
	3			
SCALE: N/A	4			
	5			
DATE: 10/31/14	6			
	7			
FILE NO. PRELIM PLAT	8			
	JOB NUMBER: 947-825		SHEET: 1 OF 4	

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 2 OF 4

SYMBOL LEGEND	
⊕	SECTION CORNER
◉	MONUMENTED PROPERTY CORNER
1	LOT NUMBER
R.O.W.	RIGHT-OF-WAY
S.F.	SQUARE FEET
AC.	ACRES
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT



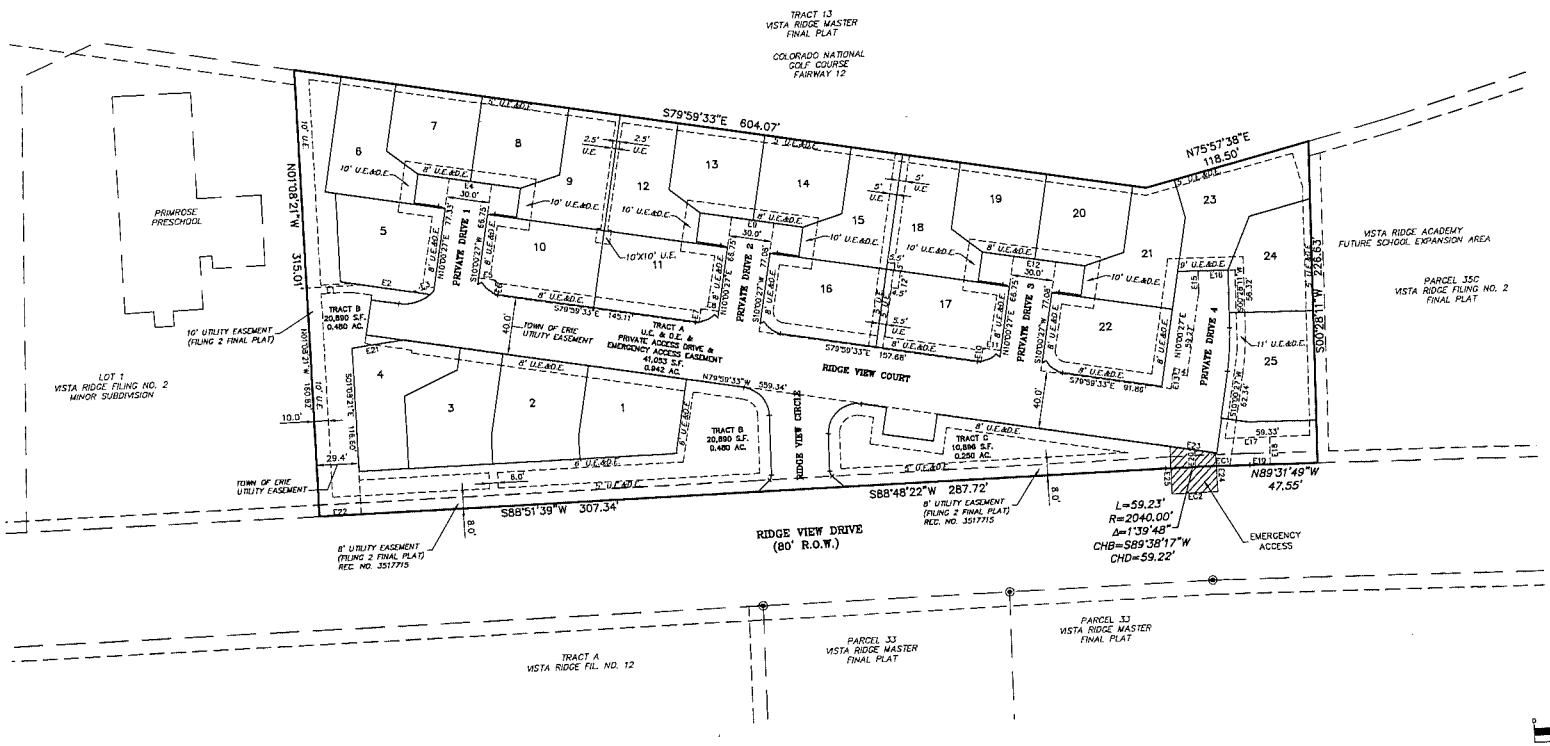
Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-9732 F:(720) 242-9654

DRAWN BY: LC	#	REVISIONS:	DATE:	BY:
CHECKED BY: JRL	1	TOWN COMMENTS	11/19/14	LC
SCALE: 1"=40'	2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
DATE: 10/31/14	3	TOWN COMMENTS/ENGINEER CHANGES	04/01/15	LC
FILE NO. PRELIM PLAT	4			
	5			
	6			
	7			
	8			
	JOB NUMBER: 047-825		SHEET: 2 OF 4	

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 3 OF 4

EASEMENT DETAIL



Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-9732 F:(720) 242-9654

DRAWN BY: LC	#	REVISIONS:	DATE:	BY:
	1	TOWN COMMENTS	11/18/14	LC
CHECKED BY: JRL	2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
SCALE: 1"=40'	3	TOWN COMMENTS/ENGINEER CHANGES	04/01/15	LC
	4			
DATE: 10/31/14	5			
	6			
	7			
FILE NO. PRELIM PLAT	8			
		JOB NUMBER: 647-625	SHEET: 3 OF 4	

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 4 OF 4

LINE TABLE

LINE	BEARING	DISTANCE
L1	N46°06'03"E	11.47'
L2	S01°08'21"E	1.85'
L3	N01°08'21"W	15.38'
L4	S01°08'21"E	19.67'
L5	S10°00'27"W	15.62'
L6	S82°56'43"W	36.55'
L7	S10°00'27"W	25.00'
L8	S79°59'33"E	19.50'
L9	N79°59'33"W	17.25'
L10	S10°00'27"W	20.50'
L11	N51°14'34"W	27.37'
L12	N73°00'03"E	29.00'
L13	N10°00'27"E	20.50'
L14	S79°59'33"E	15.42'
L15	N63°36'07"E	3.28'
L16	S24°14'03"W	0.50'
L17	N04°13'08"W	0.50'
L18	S43°35'12"E	3.28'
L19	S79°59'33"E	17.50'
L20	S10°00'27"W	20.50'
L21	N51°14'34"W	27.37'
L22	N73°00'03"E	29.00'
L23	N10°00'27"E	20.50'
L24	S79°59'33"E	15.42'
L25	N63°36'07"E	3.28'
L26	N24°14'03"E	0.50'
L27	S04°13'08"E	0.50'
L28	N43°35'12"W	3.28'
L29	S79°59'33"E	17.25'
L30	N10°00'27"E	20.50'
L31	N51°14'34"W	27.37'
L32	N72°32'10"E	28.54'
L33	S10°00'27"W	20.50'
L34	N79°59'33"W	15.42'
L35	N63°36'07"E	3.28'
L36	N24°14'03"E	0.50'
L37	S14°02'22"E	27.60'
L38	N89°31'49"W	35.41'
L39	N00°28'11"E	31.44'
L40	S00°28'11"W	10.53'
L41	N10°00'27"E	32.98'
L42	S79°59'33"E	19.96'
L43	S10°00'27"W	24.78'
L44	N10°00'27"E	19.00'
L45	S79°59'33"E	36.00'
L46	S10°00'27"W	19.00'
L47	N47°14'04"W	11.67'
L48	N10°00'27"E	5.66'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	5.00'	4.02'	3.92'	S23°03'02"W	46°06'03"
C2	20.50'	28.62'	26.35'	S39°59'46"E	79°59'33"
C3	27.50'	23.57'	22.86'	N75°27'03"E	49°06'35"
C4	27.50'	3.67'	3.66'	S47°04'34"W	7°38'23"
C5	27.50'	27.24'	26.14'	N71°37'52"E	58°44'58"
C6	9.50'	5.27'	5.20'	S64°06'50"E	31°45'25"
C7	9.50'	4.58'	4.54'	N86°11'34"E	27°37'46"
C8	9.50'	0.68'	0.68'	S70°18'52"W	4°07'39"
C9	15.00'	10.81'	10.57'	N45°07'38"W	41°16'41"
C10	15.00'	10.81'	10.57'	N65°08'31"E	41°16'41"
C11	9.50'	0.68'	0.68'	S50°17'57"E	4°07'39"
C12	9.50'	4.58'	4.54'	N66°10'39"W	27°37'46"
C13	9.50'	4.58'	4.54'	N86°11'34"E	27°37'46"
C14	9.50'	0.68'	0.68'	S70°18'52"W	4°07'39"
C15	15.00'	10.81'	10.57'	S45°07'38"E	41°16'41"
C16	15.00'	10.81'	10.57'	S65°08'31"W	41°16'41"
C17	9.50'	0.68'	0.68'	S50°17'57"E	4°07'39"
C18	9.50'	4.58'	4.54'	S66°10'39"E	27°37'46"
C19	9.50'	4.58'	4.54'	N86°11'34"E	27°37'46"
C20	9.50'	0.68'	0.68'	S70°18'52"W	4°07'39"
C21	15.00'	10.81'	10.57'	N45°07'38"W	41°16'41"
C22	185.00'	30.80'	30.76'	S05°14'19"W	9°32'17"
C23	20.50'	35.78'	31.41'	S50°00'14"W	100°00'27"
C24	5.00'	4.12'	4.01'	N23°37'02"W	47°14'04"

EASEMENT LINE TABLE

E1	N88°45'27"E	38.58'
E2	S79°59'33"E	36.76'
E3	N77°30'27"E	15.03'
E4	S79°59'33"E	30.00'
E5	S79°59'33"E	12.57'
E6	S10°00'27"W	10.33'
E7	N10°00'27"E	10.33'
E8	S79°59'33"E	12.57'
E9	S79°59'33"E	30.00'
E10	N10°00'27"E	10.33'
E11	S79°59'33"E	12.57'
E12	S79°59'33"E	30.00'
E13	N10°00'27"E	10.33'
E14	S79°59'33"E	10.07'
E15	N00°28'11"E	14.92'
E16	S89°31'49"E	28.00'
E17	S89°49'01"E	31.16'
E18	S00°10'59"W	19.30'
E19	N89°31'49"W	14.48'
E20	N00°10'59"E	12.22'
E21	S82°56'43"W	38.25'
E22	S85°51'39"W	29.43'
E23	S79°59'33"E	32.53'
E24	S00°20'54"E	27.01'
E25	N00°20'54"W	33.02'

EASEMENT CURVE TABLE

EC1	2040.00'	38.31'	38.31'	S89°55'54"W	1°04'33"
EC2	2022.00'	32.00'	32.00'	S89°21'33"W	0°54'24"

Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-9732 F:(720) 242-9654

DRAWN BY: LC
CHECKED BY: JRL
SCALE: N/A
DATE: 10/31/14
FILE NO. PRELIM PLAT

#	REVISIONS:	DATE:	BY:
1	TOWN COMMENTS	11/19/14	LC
2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
3			
4			
5			
6			
7			
8			

JOB NUMBER: 947-625
SHEET: 4 OF 4

ATTACHMENT B

Town of Erie
Planning Commission Regular Meeting
Wednesday, July 15, 2015
6:30 p.m.
Board Room, Erie Town Hall, 645 Holbrook, Erie, Co 80516

I. CALL MEETING TO ORDER & PLEDGE OF ALLEGIANCE

Chairman Bottenhorn called the Regular Meeting of the Erie Planning Commission to order at 6:30 p.m.

II. ROLL CALL

Commissioner Bottenhorn - Present
Commissioner Burgard – Arrived 6:32
Commissioner Campbell - Present
Commissioner Kemp - Present
Commissioner Fraser -
Commissioner Gippe - Excused
Commissioner Harrison - Present

Staff Present: R. Martin Ostholthoff, Community Development Director;
Deborah Bachelder, Senior Planner;
Todd Bjerkaas, Senior Planner;
A.J. Krieger, Town Administrator;
Paula Mehle, Economic Development; and
Hallie Sawyer, Secretary to the Commission

III. APPROVAL OF THE AGENDA

Commissioner Campbell moved to amend the agenda by moving item VI.6. Public Hearing – Comprehensive Plan Amendment to the first business item, and approve the July 15, 2015, Regular Meeting Agenda as amended. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

IV. APPROVAL OF MINUTES

a. Minutes from the May 20, 2015, Regular Meeting.

Commissioner Harrison moved to approve the May 20, 2015, Minutes as submitted. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

V. PUBLIC COMMENTS (This agenda item provides the public an opportunity to discuss items other than items that are on the agenda. The Planning Commission is not prepared to decide on matters brought up at this time, but it warranted, will place them on a future agenda.)

Comment was taken from Ken Martin, Chairman of the Town of Erie Open Space and Trails Advisory Board, regarding OSTAB's concerns about the proposed Sketch Plan for Canyon Creek Filing 10 Four Corners development that will be considered later in the meeting.

VI. RESOLUTIONS (This agenda item is for all matters that should be decided by resolutions.)

1. Public Hearing – Comprehensive Plan Amendment - TO BE CONTINUED TO AUGUST 19TH, 2015

Purpose: Consideration of a Comprehensive Plan Amendment
Project File #: CPA-000195-2015
Request: Consideration of Resolution P15-__,
Location: N/A
Applicants: N/A
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 6:35 p.m., and continued the hearing to August 19, 2015.

2. Public Hearing – Vista Ridge F-14 Minor Subdivision Plat

Purpose: Consideration of Minor Subdivision Plat
Project File #: MS-14-00049
Request: Consideration of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Chairman Bottenhorn opened the public hearing at 6:35 p.m. Mr. Bjerkaas presented the applications for the Vista Ridge Filing 14 Minor Subdivision Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions. Chairman Bottenhorn swore in the audience.

Drew Warot and Brandon McClary, 65 Tejon Street, Denver, represented Kings Soopers, the project anchor, and were present to address questions and concerns.

Public Comment was taken from Betty Jo Booth, Chairman of the Board for the Vista Ridge Academy; Monica Wernick of Vista Ridge; and Stephen Weddig, 1265 Graham Circle. Comments covered Vista Academy's concerns about the rear of the King Soopers Store being so close to the school; store deliveries impacting school drop offs; loosing fields and open space; impact on area homes and traffic; with Erie's Safeway being in Lafayette and King Soopers in Broomfield, folks in the middle had nowhere close to shop.

Commissioner questions and concerns covered store deliveries vs. school drop-offs; blending of architectural detail with the surrounding community; entryway coverings to provide protection from weather; Highway 7/Sheridan expansion time frames; estimated completion time; why 3' shorter parking spaces; parking lot safety; location of existing cottonwood trees; what determined size of fueling bay; why no drive-thru like for Starbucks; how will current topography be changed; will perimeter walks be extended to existing walks; are the sign size changes unique to Erie; is the property to the west future multifamily; explain process of evaluating future store sites; and will three pad sites be sold or leased to future users.

Chairman Bottenhorn closed the public hearings at 7:51 p.m.

Commissioner comments covered general excitement to welcome King Soopers to Erie, citing the huge need that will be filled; appreciation for delivery times occurring during evening hours; thanks for well written reports and submittal and for answering all of the questions and concerns; good presentation; and all commissioners noted agreement with all of the proposed Alternative Compliance requests.

Commissioner Campbell moved approval of Resolution P15-19, A Resolution Regarding The Minor Subdivision Plat Of Vista Ridge Filing No. 14, Adopting Certain Findings Of Fact And Conclusions Favorable To The Minor Subdivision Plat. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

3. Public Hearing – Vista Ridge F-14 Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-14-00050
Request: Consideration of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado.
Location: NW Corner of Sheridan Blvd. and CO Highway 7
Applicants: Montex (Brownlee)
(Staff Planner: Todd Bjerkaas)

Commissioner Harrison moved approval of Resolution P15-20, A Resolution making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing no. 14, Town of Erie, County of Weld, State of Colorado. The motion, seconded by Commissioner Campbell, carried with all voting in favor thereof.

Chairman Bottenhorn called for a short recess at 8:00 p.m. The meeting was called back to order at 8:03p.m.

4. Public Hearing – Vista Ridge F-2, 1st Amendment Preliminary Plat

Purpose: Consideration of Preliminary Plat
Project File #: PP-000055-2014
Request: Consideration of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Chairman Bottenhorn opened the public hearing at 8:04 p.m. Mr. Ostholthoff presented the applications for the Vista Ridge Filing 2, 1st Amendment Preliminary Plat and Site Plan, entered the documents into evidence and presented the staff recommendations for approval of the two resolutions.
Chairman Bottenhorn swore in the audience.
Ward Ritter, Chartered Homes, 3160 Village Vista Drive, Erie, was present to address any questions and concerns.
There was no public comment.
Commissioner questions and concerns covered will this be more upscale than Latitude; will the homes backing to the golf course have walkouts; soils/foundation issues – are there guarantees in place; street tops; and estimated HOA costs.
Chairman Bottenhorn closed the public hearing at 8:27p.m.
The Commission had no further comments.
Commissioner Kemp moved approval of Resolution P15-21, A Resolution Regarding The Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat, Adopting Certain Findings Of Fact And Conclusions Favorable To The Preliminary Plat. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

5. Public Hearing – Vista Ridge F-2, 1st Amendment Site Plan

Purpose: Consideration of Site Plan
Project File #: SP-000054-2014
Request: Consideration of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado.
Location: North of Ridge View Drive between the Primrose School and Vista Academy
Applicants: Montex (Vista Ridge, LLC)
(Staff Planner: Marty Ostholthoff)

Commissioner Kemp moved approval of Resolution P15-22, A Resolution Making Certain Findings Of Fact And Conclusions Favorable To The Site Plan For Vista Ridge Filing No. 2, 1st Amendment, Town Of Erie, County Of Weld, State Of Colorado. The motion, seconded by Commissioner Harrison, carried with all voting in favor thereof.

6. Public Hearing – Canyon Creek Planned Development Amendment No. 9

Purpose: Consideration of Planned Development Amendment No. 9 for Canyon Creek
Project File #: PDA-000544-2015

Request: Consideration of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment.
Location: SW Corner of Erie Parkway & County Line Road
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Chairman Bottenhorn opened the public hearing at 8:29 p.m. Mrs. Bachelder presented the applications for the Canyon Creek PD Amendment No. 9 and Sketch Plan for Canyon Creek Filing 10, entered the documents into evidence and presented the staff recommendations for approval of the resolution. Chairman Bottenhorn swore in the audience, and disclosed that the architect for this project had been a client of his firm in the past. They were no longer doing business, and his judgment would not be swayed by the acquaintance.

Justin McClure, RMCS, LLC, 21 S. Sunset Street, would present details of the Sketch Plan and was available to address questions and concerns.

Public Comment was taken from Douglas Luers, 600 Mathews Circle; and Vladimir Dixy, 409 Graham Way. Concerns covered view from back yards; need for a view corridor and or open space between developments; construction noise and dirt; light pollution; home values; traffic signal at Austin Avenue & County Line; need for a small grocer like Sprouts; and will the Town be financing infrastructure.

Commissioner question and concerns included traffic; impact of this added density on existing Town facilities; plug for splash parks; strategy for leasing/owning retail pad sites; how has McStain done with their alley loaded Single Family; market study; will they partner with preferred builders; and will the multifamily be serviced by elevators of walkups.

Commissioner Bottenhorn closed the public hearing at 9:21 p.m.

Commissioner Comments covered excitement to see this plan; nice to see plans for a desperately needed grocery store in this specific area; this is a better compromise then big box development; likes linear park idea; tonight has been mind-blowing, seeing this type of growth presented after 16 years; excitement about the possibilities; appreciation for park alternatives; fascinating concept that looks neat; appreciation for an appropriate plan that should be in this location; and the 45' height will be appropriate.

Commissioner Campbell moved approval of Resolution P15-23, A Resolution Regarding The Hearing On Canyon Creek PD Amendment No. 9, Adopting Certain Findings Of Fact And Conclusions Favorable To The PD Amendment. The motion, seconded by Commissioner Kemp, carried with all voting in favor thereof.

VII. GENERAL BUSINESS (This agenda item is reserved for matters that are ready for Commission action, and do not fit into other categories, i.e. resolutions)

1. Canyon Creek F-10 Sketch Plan

Purpose: Consider proposed sketch plan
Project File #: SK-000206-2015
Request: Consider and comment on proposed sketch plan
Location: SW Corner of Erie Parkway & County Line Road
Zoning: Canyon Creek Planned Development
Applicants: Erie Commercial Ventures, LLLP
(Staff Planner: Deborah Bachelder)

Comments were made during the public hearing portion of the meeting.

VIII. STAFF REPORTS (This agenda items is reserved for specific items from Staff requiring Commission direction or just relaying important information.)

The Stakeholders meeting next Tuesday, July 21st will begin at 6 p.m.

IX. COMMISSIONER REPORTS AND DISCUSSION ITEMS (This agenda item is for all Planning Commission reports and items of information as well as Commission discussion items, not listed on the agenda)

None.

X. ADJOURNMENT

There being no further business to come before the Commission, Chairman Bottenhorn adjourned the July 15, 2015, Regular Meeting of the Planning Commission at 9:33 p.m.

Respectfully Submitted,

By: _____
Hallie S. Sawyer, Secretary

Town of Erie Planning Commission

By: _____
J. Eric Bottenhorn, Chair

RESOLUTION NO. P15-21

A RESOLUTION REGARDING THE VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT, ADOPTING CERTAIN FINDINGS OF FACT AND CONCLUSIONS FAVORABLE TO THE PRELIMINARY PLAT.

WHEREAS, the Planning Commission of the Town of Erie, Colorado, considered the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat on Wednesday, July 15, 2015 on the application of Montex (Vista Ridge, LLC), 4915 Gaylord Street, Englewood, CO 80113, such Preliminary Plat being a plat of the following real property; to wit:

> LOT 2, VISTA RIDGE FILING NO. 2, MINOR SUBDIVISION, A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33 TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

WHEREAS, the Preliminary Plat is detailed on the attached "Exhibit A" Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat; and

WHEREAS, said Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat is incorporated herein and made part hereof by this reference.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE TOWN OF ERIE, COLORADO, as follows:

Section 1. Findings of Fact.

1. The applicant's application and supporting documents are in substantial compliance with Section 7.7.C of Title 10, Town of Erie Municipal Code.
2. The Town of Erie Municipal Code shall be followed in the development of the property.
3. A development agreement will be required at such time as the property is approved for the final plat.
4. The Preliminary Plat as proposed, subject to the following conditions, will preserve the health, safety, welfare and interest of the citizens of the Town of Erie, Colorado.
   a. The proposed utility easement to be dedicated to the Town of Erie within Tract B shall meet the Town of Erie Standards and Specifications for Design and Construction of Public Improvements.
   b. Technical corrections to Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat shall be made to the Town's satisfaction.

Section 2. Conclusions and Order Recommending Approval of the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat to the Board of Trustees.

1. Based on the above Findings of Fact, the Planning Commission hereby forwards the Vista Ridge Filing No. 2, 1st Amendment Preliminary Plat application to the Board of Trustees with the Planning Commission's recommendation for approval with the conditions of approval listed above.

INTRODUCED, READ, SIGNED AND APPROVED this 15th day of July 2015.

TOWN OF ERIE, PLANNING COMMISSION

J. Eric Bottenhorn, Chairman

ATTEST:

Hallie S. Sawyer, Secretary

EXHIBIT A

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

4.036 ACRES–25 LOTS/3 TRACTS

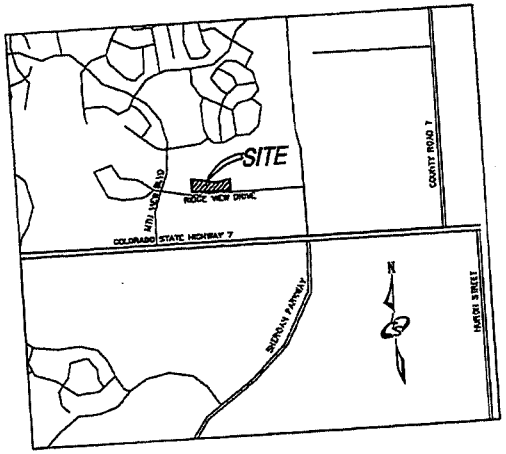
PP–14–00017

SHEET 1 OF 4

LEGAL DESCRIPTION

LOT 2 OF "VISTA RIDGE FILING NO. 2 – MINOR SUBDIVISION", A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3317715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

CONTAINING 175,823 SQUARE FEET OR 4.036 ACRES, MORE OR LESS.



VICINITY MAP
1"=1000'

LAND SUMMARY CHART		
TYPE	AREA	% OF TOTAL AREA
RESIDENTIAL LOTS (25)	102,984 S.F.	58%
TRACTS (3)	72,839 S.F.	41%
PUBLIC ROW	0 S.F.	0%
TOTAL	175,823 S.F.	100%

TRACT SUMMARY CHART				
TRACT	AREA	USE	OWNERSHIP	MAINTENANCE
TRACT A	41,101 S.F.	PRIVATE ACCESS, DRIVE, EMERGENCY ACCESS, DRAINAGE/UTILITY	HOA	HOA
TRACT B	20,042 S.F.	OPEN SPACE, DRAINAGE/UTILITY	HOA	HOA
TRACT C	10,696 S.F.	OPEN SPACE, DRAINAGE/UTILITY	HOA	HOA

GENERAL NOTES

1. THE PLAT CONSISTS OF FURTHER SUBDIVIDING LOT 2, VISTA RIDGE FILING NO. 2, AS RECORDED 11/15/2007 AT RECEPTION NO. 3317715, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO. THIS PLAT WILL CONTAIN 25 SINGLE FAMILY RESIDENTIAL LOTS. ONLY ONE RESIDENTIAL DWELLING IS PERMITTED ON EACH SINGLE FAMILY LOT.

2. ALL GENERAL NOTES, DEDICATIONS, AND PLAT RESTRICTIONS AS SHOWN ON THE PLAT OF VISTA RIDGE FILING NO. 2, A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3317715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, SHALL APPLY UNLESS SPECIFICALLY AMENDED AND SUPERSEDED HEREIN.

3. TRACT A IS FOR UTILITY, DRAINAGE, PRIVATE ACCESS DRIVES AND EMERGENCY ACCESS PURPOSES AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA. TRACT B IS FOR DRAINAGE AND LANDSCAPING AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA. TRACT C IS FOR DRAINAGE, LANDSCAPING AND EMERGENCY ACCESS FROM RIDGE VIEW DRIVE TO RIDGE VIEW COURT AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA.

4. UTILITY AND DRAINAGE EASEMENTS, LABELED HEREON, SHALL BE GRANTED FOR THE INSTALLATION AND MAINTENANCE OF SANITARY SEWER LINES, WATER LINES, STORM DRAINAGE FACILITIES, SURFACE DRAINAGE AND FOR THE BENEFIT OF THE APPLICABLE UTILITY PROVIDERS FOR THE INSTALLATION, MAINTENANCE, AND REPLACEMENT OF ELECTRIC, GAS, TELEVISION, CABLE, AND TELECOMMUNICATIONS FACILITIES (DRY UTILITIES) AND ALL NECESSARY AND CONVENIENT APPURTENANCES THERETO, TOGETHER WITH A PERPETUAL RIGHT OF INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF SUCH LINES AND APPURTENANCES. SAID EASEMENTS AND RIGHTS ARE TO BE UTILIZED IN A RESPONSIBLE AND PRUDENT MANNER.

5. DRAINAGE EASEMENTS, LABELED HEREON, SHALL BE GRANTED FOR THE INSTALLATION AND MAINTENANCE OF DRAINAGE LINES AND ALL NECESSARY AND CONVENIENT APPURTENANCES THERETO, AS WELL AS SURFACE DRAINAGE, TOGETHER WITH A PERPETUAL RIGHT OF INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF SUCH LINES AND APPURTENANCES. SAID EASEMENTS AND RIGHTS ARE TO BE UTILIZED IN A RESPONSIBLE AND PRUDENT MANNER.

6. A BLANKET DRAINAGE EASEMENT SHALL BE GRANTED ALONG ALL COMMON LOT LINES FOR DOWNSPOUT DISCHARGE, DRAINAGE SWALES AND APPURTENANCES REQUIRED FOR PROPER LOT DRAINAGE.

7. BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 33, WHICH BEARS NORTH 00°12'01" WEST ACCORDING TO THE VISTA RIDGE MASTER FINAL PLAT AND IS MONUMENTED AS SHOWN HEREON.

8. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

9. BASED UPON THE INSURANCE RATE MAP COMMUNITY PANEL NO. 08123C 0441, THIS PANEL IS NOT PRINTED AND THERE IS NO SPECIAL FLOOD INFORMATION.

10. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, OF THE COLORADO REVISED STATUTE.

11. DISTANCES ON THIS PLAT ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DESCRIBED AS EXACTLY 1200/3937 METERS.

APPLICANT
DAVENCO DEVELOPMENT CORP.
2397 VILLAGE VIEW DRIVE, SUITE 104
ERIE, COLORADO 80516
CONTACT: MARK RITTER
(303) 845-2324

ENGINEER
CHOPRA CONSULTING GROUP, LLC
7220 WINDY CREEK, SUITE 300
BOWLER, COLORADO 80503
CONTACT: SHAWN WEBB, P.E., LEED AP
PHONE: (720) 985-4374

SURVEYOR
LANGE LAND SURVEYS, LLC
9473 WADSWORTH BLVD., SUITE 102
ARVADA, COLORADO 80003
CONTACT: JIM LANGE, PLS
PHONE: (720) 242-9732

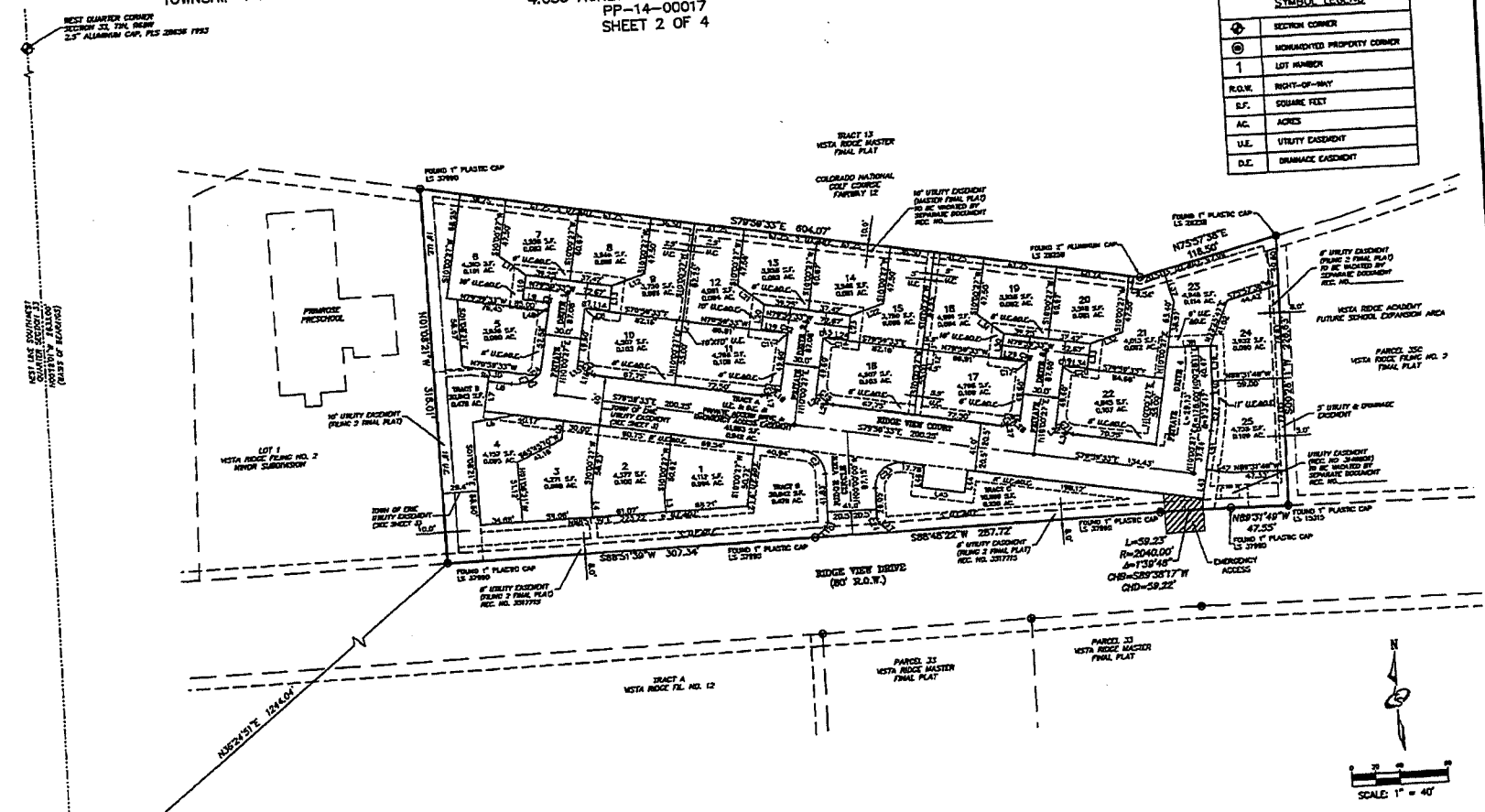
Lange Land Surveys
9473 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-9732 F:(720) 242-9654

DRAWN BY: LC	0	ORIGINAL	10/31/14 LC
CHECKED BY: JRL	1	TOWN COMMENTS	11/12/14 LC
SCALE: N/A	2	HOAA COMMENTS/MINOR CHANGES	01/20/15 LC
DATE: 10/31/14	3		
	4		
	5		
	6		
FILE NO. PRELIM PLAT	7		
	8	JOB NUMBER: 0417-0173	SHEET: 1 OF 4

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP-14-00017
SHEET 2 OF 4

SYMBOL LEGEND	
	SECTION CORNER
	MONUMENTED PROPERTY CORNER
1	LOT NUMBER
R.O.W.	RIGHT-OF-WAY
S.F.	SQUARE FEET
AC.	ACRES
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT



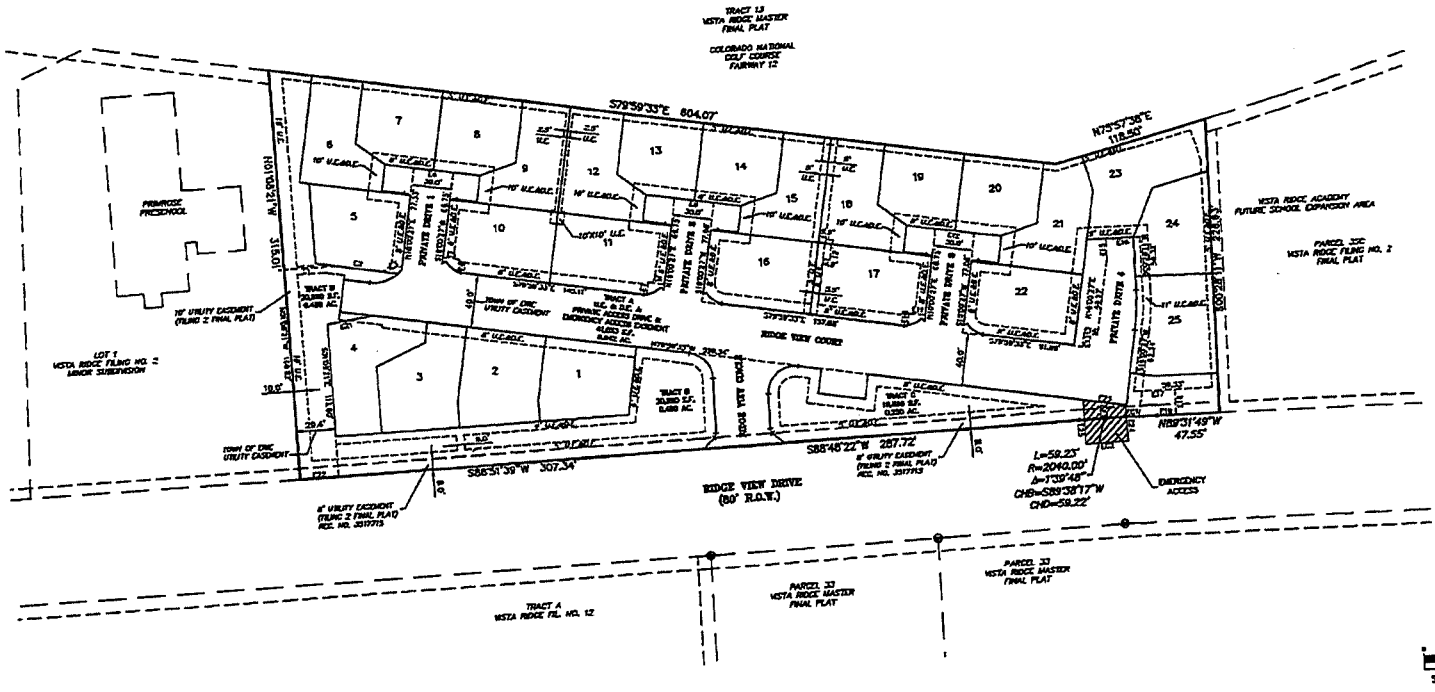
Longe Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-9732 F:(720) 242-9834

DRAWN BY: LC	#	REVISIONS	BY/ID	BY
	1	TOWN COMMENTS	11/18/14	LC
CHECKED BY: JRL	2	TOWN COMMENTS/DRAINAGE CHANGES	03/20/15	LC
	3	TOWN COMMENTS/DRAINAGE CHANGES	04/08/15	LC
SCALE: 1"=40'	4			
	5			
DATE: 10/31/14	6			
	7			
FILE NO. PRELIM PLAT	8			

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 3 OF 4

EASEMENT DETAIL



Lange Land Surveys
8495 TENNYSON BLVD., SUITE 102
ARVADA, CO 80003
Ph(720) 242-9732 Fx(720) 242-9834

DRAWN BY: LC
CHECKED BY: JRL
SCALE: 1"=40'
DATE: 10/31/14
FILE NO. PRELIM PLAT

	REVISIONS	DATE	BY
2			
1	TOWN COMMENTS	11/19/14	LC
2	TOWN COMMENTS/ENGINEER CHANGES	02/26/15	LC
3	TOWN COMMENTS/ENGINEER CHANGES	04/09/15	LC
4			
5			
6			
7			
8			

JOB NUMBER: 1412-079

SHEET: 3 OF 4

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 4 OF 4

LINE TABLE

LINE	BEARING	DISTANCE
L1	N68°06'03"E	11.67'
L2	S01°08'31"E	1.80'
L3	N01°08'31"W	13.38'
L4	S01°08'31"E	18.87'
L5	S10°00'27"W	15.84'
L6	S40°14'00"E	34.83'
L7	S10°00'27"W	25.00'
L8	S74°59'33"E	18.00'
L9	N74°59'33"W	17.72'
L10	S10°00'27"W	20.00'
L11	N01°14'34"E	37.53'
L12	N73°00'03"E	20.00'
L13	N10°00'27"E	20.00'
L14	S74°59'33"E	18.45'
L15	N83°00'03"E	3.28'
L16	S04°14'00"E	0.90'
L17	N04°13'38"E	9.30'
L18	S47°28'13"E	9.30'
L19	S74°59'33"E	17.38'
L20	S10°00'27"W	20.00'
L21	N01°14'34"E	37.53'
L22	N73°00'03"E	20.00'
L23	N10°00'27"E	20.00'
L24	S74°59'33"E	18.45'
L25	N83°00'03"E	3.28'
L26	N04°14'00"E	0.90'
L27	S04°13'38"W	9.30'
L28	N83°00'03"E	3.28'
L29	S74°59'33"E	17.38'
L30	N10°00'27"E	20.00'
L31	N01°14'34"E	37.53'
L32	N73°00'03"E	20.00'
L33	S10°00'27"W	20.00'
L34	N74°59'33"W	13.45'
L35	N83°00'03"E	3.28'
L36	N04°14'00"E	0.90'
L37	S14°00'24"E	27.80'
L38	N88°31'46"W	33.41'
L39	N00°28'11"E	31.44'
L40	S00°28'11"W	18.53'
L41	N10°00'27"E	32.86'
L42	S74°59'33"E	19.96'
L43	S10°00'27"W	34.38'
L44	N10°00'27"E	15.00'
L45	S74°59'33"E	39.00'
L46	S10°00'27"W	15.00'
L47	N43°14'00"W	51.87'
L48	N10°00'27"E	3.40'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	3.00'	4.03'	3.81'	S33°03'09"W	44°06'03"
C2	20.00'	25.13'	23.70'	S38°08'34"E	71°59'33"
C3	37.00'	33.37'	32.28'	N73°00'03"E	51°41'00"
C4	37.00'	3.81'	3.68'	N71°13'34"E	5°54'00"
C5	37.00'	30.24'	29.14'	N37°13'34"E	46°49'00"
C6	4.50'	3.31'	3.30'	S64°08'30"E	42°13'48"
C7	4.50'	4.38'	4.34'	N88°11'34"E	97°37'48"
C8	4.00'	0.68'	0.68'	S70°14'33"W	9°43'38"
C9	9.50'	0.68'	0.67'	N63°09'55"W	4°18'41"
C10	15.00'	10.81'	10.59'	N63°08'31"E	41°18'41"
C11	15.00'	10.81'	10.59'	S20°17'33"E	41°18'41"
C12	9.50'	0.68'	0.68'	S68°10'39"E	4°18'41"
C13	4.50'	4.38'	4.34'	N88°11'34"E	97°37'48"
C14	4.50'	4.06'	4.04'	S70°18'32"W	43°07'38"
C15	9.50'	0.68'	0.68'	S70°07'38"E	4°18'41"
C16	15.00'	10.81'	10.59'	S63°08'31"W	41°18'41"
C17	15.00'	10.81'	10.59'	S20°17'33"E	41°18'41"
C18	9.50'	0.68'	0.68'	S68°10'39"E	4°18'41"
C19	4.50'	4.38'	4.34'	N88°11'34"E	97°37'48"
C20	4.50'	4.06'	4.04'	S70°18'32"W	43°07'38"
C21	9.50'	0.68'	0.68'	S70°07'38"E	4°18'41"
C22	15.00'	10.81'	10.59'	N63°07'38"W	41°18'41"
C23	15.00'	10.81'	10.59'	S20°17'33"E	41°18'41"
C24	185.00'	30.88'	30.74'	S00°00'14"W	10°00'33"
C25	20.00'	25.79'	24.14'	S00°00'14"W	73°52'26"
C26	3.50'	4.12'	4.01'	N23°33'00"W	67°10'04"

EASEMENT LINE TABLE

LINE	BEARING	DISTANCE
[illegible]	[illegible]	[illegible]

EASEMENT CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C21	2040.00'	38.31'	38.31'	S89°20'34"W	1°04'33"
C22	2002.00'	32.00'	32.00'	N89°21'33"W	0°54'52"

Lange Land Surveys
8405 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242-8732 F:(720) 242-8854

DRAWN BY: LC	4			
	1	REVISIONS: TOWN COMMENTS	11/18/14	LC
CHECKED BY: JRL	2	TOWN COMMENTS/ENGINEER CHANGES	01/20/15	LC
SCALE: N/A	3			
	4			
DATE: 10/31/14	5			
	6			
FILE NO. PREUM PLAT		JOB NUMBER: 947-029	SHEET 4 OF 4	

ATTACHMENT C

Print Form

TOWN OF ERIE
Community Development Department – Planning Division
645 Holbrook Street – PO Box 750 – Erie, CO 80516
Tel: 303.926.2770 – Fax: 303.926.2706 – Web: www.erieco.gov

LAND USE APPLICATION

Please fill in this form completely. Incomplete applications will not be processed.

STAFF USE ONLY

FILE NAME: VISTA RIDGE FIL. NO. 2, 1ST AMDT PRELIMINARY PLAT
FILE NO: PP-14-00017 DATE SUBMITTED: 11/4/14 FEES PAID: $3040.-

PROJECT/BUSINESS NAME: Montex North at Vista Ridge

PROJECT ADDRESS: Vista Ridge Filing 2 Lot 2

PROJECT DESCRIPTION: Residential development, providing 26 single family, ranch style patio homes.

LEGAL DESCRIPTION *(attach legal description if Metes & Bounds)*

Subdivision Name: Vista Ridge

Filing #: 2 Lot #: 2 Block #: Section: 33 Township: 1 North Range: 68 West

OWNER *(attach separate sheets if multiple)*

Name/Company: Montex (Vista Ridge, LLC)
Contact Person: Andy Chaikovsky
Address: 4915 Gaylord St
City/State/Zip: Englewood, CO 80113
Phone: 303.783.8425 Fax:
E-mail: achaikovsky@comcast.net

AUTHORIZED REPRESENTATIVE

Company/Firm: Chartered Development Corporation
Contact Person: Ward Ritter
Address: 3160 Village Vista Drive, #104
City/State/Zip: Erie, CO 80516
Phone: 303.545.2554 Fax:
E-mail: ward@charteredhomes.com

MINERAL RIGHTS OWNER *(attach separate sheets if multiple)*

Name/Company: N/A
Address:
City/State/Zip:

MINERAL LEASE HOLDER *(attach separate sheets if multiple)*

Name/Company: N/A
Address:
City/State/Zip:

LAND-USE & SUMMARY INFORMATION

Present Zoning: PD
Proposed Zoning: PD
Gross Acreage: 4.04
Gross Site Density (du/ac): 6.43/ac
Lots/Units Proposed: 26/26
Gross Floor Area:

SERVICE PROVIDERS

Electric: United Power
Metro District: Vista Ridge Metro District
Water *(if other than Town)*:
Gas: Excel Energy
Fire District: Mountain View Fire Protection District
Sewer *(if other than Town)*: Town of Erie

PAGE TWO MUST BE SIGNED AND NOTARIZED

DEVELOPMENT REVIEW FEES			
ANNEXATION		**SUBDIVISION**	
☐ Major (10+ acres)	$ 4000.00	☐ Sketch Plan	$ 1000.00 + 10.00 per lot
☐ Minor (less than 10 acres)	$ 2000.00	☑ Preliminary Plat	$ 2000.00 + 40.00 per lot
☐ Deannexation	$ 1000.00	☐ Final Plat	$ 2000.00 + 20.00 per lot
COMPREHENSIVE PLAN AMENDMENT		☐ Minor Subdivision Plat	$ 2000.00
☐ Major	$ 3000.00	☐ Minor Amendment Plat	$ 1000.00 + 10.00 per lot
☐ Minor	$ 1200.00	☐ Road Vacation (constructed)	$ 1000.00
ZONING/REZONING		☐ Road Vacation (paper)	$ 100.00
☐ Rezoning	$ 1700.00 + 10.00 per acre	**SITE PLAN**	
☐ PUD Rezoning	$ 1700.00 + 10.00 per acre	☑ Residential	$ 1400.00 + 10.00 per unit
☐ PUD Amendment	$ 1700.00 + 10.00 per acre	☐ Non-Resi. (>10,000 sq. ft.)	$ 2200.00
☐ Major PD Amendment	$ 3700.00 + 10.00 per acre	☐ Non-Resi. (>2,000 sq. ft.)	$ 1000.00
☐ Minor PD Amendment	$ 500.00	☐ Non-Resi. (<2,000 sq. ft.)	$ 200.00
SPECIAL REVIEW USE		☐ Amendment (major)	$ 1100.00
☐ Major	$ 1000.00	☐ Amendment (minor)	$ 350.00
☐ Minor	$ 400.00	**VARIANCE**	$ 600.00
☐ Oil & Gas	$ 1200.00	**SERVICE PLAN**	$ 10,000.00

*All fees **include** both Town of Erie Planning & Engineering review. These fees **do not include** referral agency review fees, outside consultant review fees, or review fees incurred by consultants acting on behalf of staff. See Town of Erie Municipal Code, Title 2-10-5 for all COMMUNITY DEVELOPMENT FEES.*

The undersigned is fully aware of the request/proposal being made and the actions being initiated on the referenced property. The undersigned understand that the application must be found to be complete by the Town of Erie before the request can officially be accepted and the development review process initiated. The undersigned is aware that the applicant is fully responsible for all reasonable costs associated with the review of the application/request being made to the Town of Erie. Pursuant to Chapter 7 (Section 7.2.B.5) of the Unified Development Code (UDC) of the Town of Erie, applicants shall pay all costs billed by the Town for legal, engineering and planning costs incurred by staff, including consultants acting on behalf of staff, necessary for project review. By this acknowledgement, the undersigned hereby certify that the above information is true and correct.

Owner: _____ Date: _____

Owner _____ Date: 10-28-14

Applicant: _____ Date: _____

STATE OF ~~COLORADO~~ FLORIDA)
) ss.
County of Sarasota)

The foregoing instrument was acknowledged before me this 28th day of October, 2014, by Andrew Chilkovsky.

My commission expires: May 23, 2015
Witness my hand and official seal.

Notary Public

R. CHRISTOPHER KNICELEY
Notary Public - State of Florida
My Comm. Expires May 23, 2015
Commission # EE 96510

DEVELOPMENT REVIEW FEES			
ANNEXATION		**SUBDIVISION**	
☐ Major (10+ acres)	$ 4000.00	☐ Sketch Plan	$ 1000.00 + 10.00 per lot
☐ Minor (less than 10 acres)	$ 2000.00	☒ Preliminary Plat	$ 2000.00 + 40.00 per lot
☐ Deannexation	$ 1000.00	☐ Final Plat	$ 2000.00 + 20.00 per lot
COMPREHENSIVE PLAN AMENDMENT		☐ Minor Subdivision Plat	$ 2000.00
☐ Major	$ 3000.00	☐ Minor Amendment Plat	$ 1000.00 + 10.00 per lot
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ZONING/REZONING		☐ Road Vacation (paper)	$ 100.00
☐ Rezoning	$ 1700.00 + 10.00 per acre	**SITE PLAN**	
☐ PUD Rezoning	$ 1700.00 + 10.00 per acre	☒ Residential	$ 1400.00 + 10.00 per unit
☐ PUD Amendment	$ 1700.00 + 10.00 per acre	☐ Non-Resi. (>10,000 sq. ft.)	$ 2200.00
☐ Major PD Amendment	$ 3700.00 + 10.00 per acre	☐ Non-Resi. (>2,000 sq. ft.)	$ 1000.00
☐ Minor PD Amendment	$ 500.00	☐ Non-Resi. (<2,000 sq. ft.)	$ 200.00
SPECIAL REVIEW USE		☐ Amendment (major)	$ 1100.00
☐ Major	$ 1000.00	☐ Amendment (minor)	$ 350.00
☐ Minor	$ 400.00	**VARIANCE**	$ 600.00
☐ Oil & Gas	$ 1200.00	**SERVICE PLAN**	$ 10,000.00

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Owner: _____ Date: _____

Owner: _____ Date: _____

Applicant: _____ president Date: 10/28/14

STATE OF COLORADO)
) ss.
County of Weld)

The foregoing instrument was acknowledged before me this 28 day of October, 2014, by Ward Ritter, president.

My commission expires: 1/29/18.
Witness my hand and official seal.

BRANDON CHANDLER
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144004192
MY COMMISSION EXPIRES JANUARY 29, 2018

_____
Notary Public

1437 Larimer St.
Denver, CO 80202
303•875•7131
bonner.gilmore@enertiacg.com

Mr. Marty Ostholthoff, Director of Community Development
Town of Erie
645 Holbrook Street
Erie, CO 80516

April 17, 2015

RE: Montex North – Preliminary Plat Section 3 Written Narrative (North Parcel)

Dear Mr. Ostholthoff:

General project concept and purpose of the request:

Montex North at Vista Ridge is within Vista Ridge's Planning area 7-3 and is proposing 25 single-family detached home units. The proposed project is to provide ranch style patio homes with optional finished basements within the mixed use planning area. The project site is made up of 4.04 acres and is described as Lot 2 of Filing 2 of the Vista Ridge Planned Development. The project is bounded to the north by the 12th hole of Colorado National Golf Course, Vista Ridge Academy the east, Primrose Preschool to the west and Ridge View Drive to the south. Ridge View Drive to the south will provide access and egress to the site.

Vista Ridge Development Plan Amendment #6 permits up to 200 residential units within Planning Area 7-3. Article V, Section F (Medium/High Density Planning Area) Subsections 5.d, 5.e and 5.f of the Vista Ridge Development Plan have been amended to accommodate various encroachments into the setbacks.

Compliance with Vista Ridge Development Plan Amendment #6, Vista Ridge Development Guide and Uniform Development Code compliance:

- The land use, density, setbacks, building heights, encroachments, patio/terraces and additional provisions comply with Vista Ridge Development Plan Amendment #6 for a high density planning area.
- The local street complies with Vista Ridge Development Guide Article VII-G Private Street section. The street section with attached walks on both sides is currently used in Filings 5 and 9.
- A second access point is provided for emergency access to Ridge View Road.
- Two residents are anticipated per unit = 50 residents. Required park area = 0.4 acres. A pocket park is proposed south of Ridge View Drive. Required open space = 0.85 acres. Open space obligation was met previously by Vista Ridge Development Corporation.
- Off-street and on-street parking spaces exceed the resident and guest parking requirement. Each single family detached unit has a two car garage and two parking spaces in front of the garage satisfying the parking needs on each lot.

Site Data:

Total land area to be divided: 4.04 acres

Total number of lots, and if residential, the proposed density: 25 single-family detached lots. Proposed density = 6.2 du/ac

If non-residential, the total square footage of floor area proposed: N/A

Total land area to be preserved as open space: 0.49 acres (12.1%)

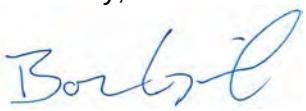
Brief description regarding the phasing of the proposed subdivision: The project will be constructed as a single phase and homes will be constructed as sales allow.

Brief description regarding the availability and adequacy of existing infrastructure and other necessary services including schools, fire protection, water/sewer service and utility providers: Montex is part of the constructed masterplan of Vista Ridge and fits within the design criteria set by the approved PUD. Existing infrastructure includes water, sewer and storm sewer, all of which are stubbed to the property boundary; dry utilities such as power, gas and telephone are also adjacent at the properties border; The applicant has met with Mountain View Fire District and the District has preliminarily approved the site plan due to the AutoTURN analysis and utility layout that was provided to them; The Vista Ridge PUD, including the addition of Montex will fall under the approved residential maximum that was also approved by the St. Vrain Valley School District. Although the school impact is anticipated to be minimal, as this age targeted product is directed toward empty nesters looking to downsize.

Brief description regarding the location, function and ownership/maintenance of public and private open space, parks, trails, common areas, common buildings: Passive open space is provided within Tracts B and C totaling 0.73 acres. In addition, a planned 0.25 acre pocket park will be provided interior to the proposed Montex South (adjacent, south of Ridge View Drive). The intent of the Montex South park is to meet the needs of the future residents providing possible amenities such as seating, barbeque grills, lawn and enhanced landscape areas. The pocket park will be privately owned and maintained as in Filing 5. No open space is provided. Detention and water quality will occur west of the site in a regional, off-site detention basin. No trails are proposed. Common areas are to be landscaped and privately owned and maintained. No common buildings are proposed.

Brief description regarding the substance of any existing or proposed covenants, special conditions, grants of easements, or other restrictions applying to the proposed subdivision: The proposed covenants will be consistent with PUD's in this marketplace and will govern private streets, architectural control, landscape maintenance, snow removal and common areas.

Sincerely,



Bonner Gilmore
Managing Partner

Land Title
GUARANTEE COMPANY
WWW.LTGC.COM

Customer Distribution

Our Order Number: ABB25121037-4

Date: 10-30-2014

Property Address: VISTA RIDGE ERIE

For Closing Assistance
Tom Blake
3033 E 1ST AVE #600
DENVER, CO 80206
303-331-6237 (phone)
303-393-4959 (fax)
tblake@ltgc.com

Closer's Assistant
Marshall Ray
3033 E 1ST AVE #600
DENVER, CO 80206
303-331-6218 (phone)
303-393-4704 (fax)
mray@ltgc.com

For Title Assistance
Bruce Rosellen
5975 GREENWOOD PLAZA BLVD
GREENWOOD VILLAGE, CO 80111
303-850-4130 (phone)
303-393-4842 (fax)
brosellen@ltgc.com

Buyer/Borrower
CHARTERED DEVELOPMENT CORP.
Attention: WARD RITTER
2705 DUNDEE PLACE
ERIE, CO 80516
805-284-6152 (home)
303-545-2554 (work)
ward@charteredhomes.com
Delivered via: Electronic Mail

LAND TITLE GUARANTEE COMPANY
Attention: PETER TOBIN
3033 E 1ST AVE #600
DENVER, CO 80206
303-321-1880 (work)
303-322-7603 (work fax)
ptobin@ltgc.com
Delivered via: Electronic Mail

Seller/Owner
MONTEX (VISTA RIDGE), LLC
Attention: ANDY CHAIKOVSKY
4915 SOUTH GAYLORD STREET
ENGLEWOOD, CO 80113
303-783-9425 (work)
303-783-9427 (work fax)
achaikovsky@comcast.net
Delivered via: Electronic Mail

BONNER GILMORE, SURVEYOR
Attention: BONNER GILMORE, SURVEYOR
720-502-6573 (work)
Delivered via: Electronic Mail

Agent for Seller
VISTA RIDGE DEVELOPMENT CORP
Attention: JAMES SPEHALSKI
4950 S YOSEMITE ST #F2-503
GREENWOOD VILLAGE, CO 80112
303-920-9400 (work)
303-920-9440 (work fax)
jaspehalski@marathonlc.com
Delivered via: Linked Commitment Delivery

BROWNSTEIN HYATT FARBER & SCHRECK PC
Attention: KATHY OSTER
410 17TH ST 22ND FL
DENVER, CO 80202
303-223-1323 (work)
303-223-0323 (work fax)
koster@bhfs.com
Delivered via: Linked Commitment Delivery

Attorney for Seller
BROWNSTEIN HYATT FARBER & SCHRECK PC
Attention: GREGORY VALLIN
410 17TH ST 22ND FL
DENVER, CO 80202
303-223-1100 (work)
303-223-1111 (work fax)
gvallin@bhfs.com
Delivered via: Electronic Mail

BROWNSTEIN HYATT FARBER SCHRECK, LLP
Attention: KATHY OSTER
410 SEVENTEENTH STREET, #2200
DENVER, CO 80202
303-223-1343 (work)
koster@bhfs.com
Delivered via: Electronic Mail

Attorney for Buyer
SHARI BAKER LLC
Attention: SHARI BAKER
1630A 30TH STREET
BOULDER, CO 80301
303-442-3751 (work)
303-957-2643 (work fax)
shari@sbakerlaw.com
Delivered via: Electronic Mail

Land Title Guarantee Company

Estimate of Title Fees

Order Number: ABB25121037-4 Date: 10-30-2014

Property Address: VISTA RIDGE ERIE

Buyer/Borrower: CHARTERED DEVELOPMENT CORP., A NEVADA CORPORATION

Seller: MONTEX (VISTA RIDGE), LLC, A COLORADO LIMITED LIABILITY COMPANY

Wire Instructions	
Bank:	FIRSTBANK OF COLORADO
Address:	10403 W COLFAX AVENUE LAKEWOOD, CO 80215
Phone:	303-237-5000
Credit:	LAND TITLE GUARANTEE COMPANY
ABA No:	107005047
Account:	2160521825
Attention:	Tom Blake
Please note: We do not accept ACH electronic transfers.	

Visit Land Title's website at www.ltgc.com for directions to any of our offices.

Estimate of Title Insurance Fees	
ALTA Owners Policy 06-17-06 (Builder Rate)	$2,730.00
Deletion of Exceptions 1-3	$60.00
Deletion of General Exception 4	$25.00
Endorsement 100.31-06 (MODIFIED LIMITED TO HARD MINERALS NOT OIL AND GAS RIGHTS)	$521.00
Tax Certificate (will be ordered prior to closing)	$75.00
Additional Parcel	$150.00
If Land Title Guarantee Company will be closing this transaction, the fees listed above will be collected at closing.	
Total	$3,561.00
THANK YOU FOR YOUR ORDER!	

ALTA COMMITMENT
First American Title Insurance Company
Schedule A

Order Number: ABB25121037-4

Customer Ref-Loan No.:

Property Address:

VISTA RIDGE ERIE

1. Effective Date:

10-23-2014 at 05:00PM

2. Policy to be Issued and Proposed Insured:

"ALTA" Owner's Policy 06-17-06 $2,700,000.00
Proposed Insured:
CHARTERED DEVELOPMENT CORP., A NEVADA CORPORATION

3. The estate or interest in the land described or referred to in this Commitment and covered herein is:

A FEE SIMPLE

4. Title to the estate or interest covered herein is at the effective date hereof vested in:

MONTEX (VISTA RIDGE), LLC, A COLORADO LIMITED LIABILITY COMPANY

5. The Land referred to in this Commitment is described as follows:

PARCEL A:

A PORTION OF TRACT A OF "VISTA RIDGE FILING NO 12 MINOR SUBDIVISION" LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEASTERLY CORNER OF SAID TRACT A: THENCE S 00° 12' 01" E, 608.49 FEET ALONG THE EASTERLY LINE OF SAID TRACT A (BASIS OF BEARINGS);
THENCE S 90° 00' 00" W, 332.94 FEET;
THENCE 78.54 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 45° 00' 00", AND A CHORD BEARING OF N 67° 30' 00" W, 76.54 FEET;
THENCE N 45° 00' 00" W, 182.11 FEET;
THENCE 117.81 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 45° 00' 00", AND A CHORD BEARING N 67° 30' 00" W, 114.81 FEET;
THENCE N 90° 00' 00" W, 19.93 FEET;
THENCE N00°00'00"W, 16.05 FEET;
THENCE 56.06 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 173.00 FEET, A CENTRAL ANGLE OF 18°34' 05", AND A CHORD BEARING N09°17'02"E, 55.82 FEET;
THENCE N18°34'05"E, 342.47 FEET TO THE NORTHERLY LINE OF SAID TRACT A;
THENCE N88° 51' 39"E, 538.34 FEET ALONG THE SAID NORTHERLY LINE OF TRACT A TO THE POINT OF BEGINNING.

PARCEL B:

ALTA COMMITMENT
First American Title Insurance Company
Schedule A

Order Number: ABB25121037-4

Customer Ref-Loan No.:

A PORTION OF PARCEL 33 OF "VISTA RIDGE MASTER FINAL PLAT" LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M. TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF SAID PARCEL 33;
THENCE N 88° 48' 22" E, 173.66 FEET ALONG THE NORTHERLY LINE OF SAID PARCEL 33 (BASIS OF BEARINGS);
THENCE S00°00'00"E 612.10 FEET;
THENCE N90°00'00"W, 171.49 FEET TO THE WESTERLY LINE OF SAID PARCEL 33;
THENCE N00°12'01"W, 608.49 FEET ALONG SAID WESTERLY LINE OF PARCEL 33 TO THE POINT OF BEGINNING.

PARCEL C:

LOT 2 OF "VISTA RIDGE FILING NO 2 - MINOR SUBDIVISION" (PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715), TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

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ALTA COMMITMENT
First American Title Insurance Company
Schedule B Section 1

(Requirements)

Order Number: ABB25121037-4

The following are the requirements to be complied with:

Payment to or for the account of the grantors or mortgagors of the full consideration for the estate or interest to be insured.

Proper instrument(s) creating the estate or interest to be insured must be executed and duly filed for record, to-wit:

1. RECORD RELEASE OR PROOF OF PAYMENT OF NOTICES RECORDED MARCH 16, 2012 AT RECEPTION NO. 3832301 AND MAY 21, 2013 AT RECEPTION NO. 3933756.

2. A FULL COPY OF THE FULLY EXECUTED OPERATING AGREEMENT AND ANY AND ALL AMENDMENTS THERETO FOR MONTEX (VISTA RIDGE), LLC, A COLORADO LIMITED LIABILITY COMPANY MUST BE FURNISHED TO LAND TITLE GUARANTEE COMPANY. SAID AGREEMENT MUST DISCLOSE WHO MAY CONVEY, ACQUIRE, ENCUMBER, LEASE OR OTHERWISE DEAL WITH INTERESTS IN REAL PROPERTY FOR SAID ENTITY.

   NOTE: ADDITIONAL REQUIREMENTS MAY BE NECESSARY UPON REVIEW OF THIS DOCUMENTATION.

3. DULY EXECUTED AND ACKNOWLEDGED STATEMENT OF AUTHORITY SETTING FORTH THE NAME OF MONTEX (VISTA RIDGE), LLC, A COLORADO LIMITED LIABILITY COMPANY AS A LLC. THE STATEMENT OF AUTHORITY MUST STATE UNDER WHICH LAWS THE ENTITY WAS CREATED, THE MAILING ADDRESS OF THE ENTITY, AND THE NAME AND POSITION OF THE PERSON(S) AUTHORIZED TO EXECUTE INSTRUMENTS CONVEYING, ENCUMBERING, OR OTHERWISE AFFECTING TITLE TO REAL PROPERTY ON BEHALF OF THE ENTITY AND OTHERWISE COMPLYING WITH THE PROVISIONS OF SECTION 38-30-172, CRS.

   NOTE: THE STATEMENT OF AUTHORITY MUST BE RECORDED WITH THE CLERK AND RECORDER.

4. WARRANTY DEED FROM MONTEX (VISTA RIDGE), LLC, A COLORADO LIMITED LIABILITY COMPANY TO CHARTERED DEVELOPMENT CORP., A NEVADA CORPORATION CONVEYING SUBJECT PROPERTY.

5. PROVIDE LAND TITLE GUARANTEE COMPANY WITH A CURRENT SURVEY OF SUBJECT PROPERTY. UPON REVIEW, ADDITIONAL REQUIREMENTS AND/OR EXCEPTIONS MAY BE NECESSARY.

   LAND TITLE IS NOT RESPONSIBLE FOR ORDERING SAID SURVEY.

   SAID SURVEY MUST BE CERTIFIED TO LAND TITLE GUARANTEE COMPANY AND OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY.

   NOTE: ITEMS 1-3 OF THE STANDARD EXCEPTIONS WILL BE DELETED UPON RECEIPT OF AN APPROVED SURVEY. MATTERS DISCLOSED BY SAID SURVEY MAY BE ADDED TO SCHEDULE B-2 HEREOF.

   UPON THE APPROVAL OF THE COMPANY AND THE RECEIPT OF A NOTARIZED FINAL LIEN AFFIDAVIT, ITEM NO. 4 OF THE STANDARD EXCEPTIONS ON THE OWNER'S POLICY, WILL BE AMENDED AS FOLLOWS:

   ITEM NO. 4 OF THE STANDARD EXCEPTIONS IS DELETED AS TO ANY LIENS OR FUTURE LIENS

ALTA COMMITMENT
First American Title Insurance Company
Schedule B Section 1

(Requirements)

Order Number: ABB25121037-4

The following are the requirements to be complied with:

RESULTING FROM WORK OR MATERIAL FURNISHED AT THE REQUEST OF MONTEX (VISTA RIDGE), LLC, A COLORADO LIMITED LIABILITY COMPANY.
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY SHALL HAVE NO LIABILITY FOR ANY LIENS ARISING FROM WORK OR MATERIAL FURNISHED AT THE REQUEST OF CHARTERED DEVELOPMENT CORP., A NEVADA CORPORATION.

NOTE: ITEM 5 OF THE STANDARD EXCEPTIONS WILL BE DELETED IF LAND TITLE GUARANTEE COMPANY CONDUCTS THE CLOSING OF THE CONTEMPLATED TRANSACTION(S) AND RECORDS THE DOCUMENTS IN CONNECTION THEREWITH.

NOTE: UPON PROOF OF PAYMENT OF 2013 TAXES, ITEM 6 WILL BE AMENDED TO READ:

TAXES AND ASSESSMENTS FOR THE YEAR 2014 AND SUBSEQUENT YEARS.

First American Title Insurance Company
Schedule B Section 2

(Exceptions)

Order Number: ABB25121037-4

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

1. **Any facts, rights, interests, or claims thereof, not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.**

2. **Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.**

3. **Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.**

4. **Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.**

5. **Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date of the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.**

6. **(a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.**

7. **(a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water.**

8. RESERVATIONS BY THE UNION PACIFIC RAILROAD COMPANY COMPANY OF:
(1) ALL OIL, COAL AND OTHER MINERALS UNDERLYING SUBJECT PROPERTY,
(2) THE EXCLUSIVE RIGHT TO PROSPECT FOR, MINE AND REMOVE OIL, COAL AND OTHER MINERALS, AND
(3) THE RIGHT OF INGRESS AND EGRESS AND REGRESS TO PROSPECT FOR, MINE AND REMOVE OIL, COAL AND OTHER MINERALS, ALL AS CONTAINED IN DEED RECORDED JUNE 04, 1902, IN BOOK 201 AT PAGE 16.

   MINERAL DEED RECORDED NOVEMBER 3, 1972 AT RECEPTION NO. 1602712 IN BOOK 681
   AND
   RELINQUISHMENT AND QUIT CLAIM RECORDED AUGUST 21, 2000 AT RECEPTION NO. 2788395 .

9. OIL AND GAS LEASE RECORDED NOVEMBER 30, 1972 UNDER RECEPTION NO. 1602713 IN BOOK 681 AND ANY AND ALL ASSIGNMENTS THEREOF, OR INTEREST THEREIN.

   NOTE: EXTENSION OF THE ABOVE LEASE AS CLAIMED BY AFFIDAVIT OF PRODUCTION WAS RECORDED DECEMBER 07, 2000 UNDER RECEPTION NO. 2811882.AND
   SURFACE USE AGREEMENT RECORDED AUGUST 21, 2000 AT RECEPTION NO. 2788394 AND AMENDED NOVEMBER 15, 2004 AT RECEPTION NO. 3235488
   AND
   REQUEST FOR NOTIFICATION RECORDED MAY 28, 2002 AT RECEPTION NO. 2954455

10. TERMS, CONDITIONS AND PROVISIONS OF CERTIFICATE OF ORGANIZATION FOR THE NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY RECORDED JUNE 30, 1999 AT RECEPTION

First American Title Insurance Company
Schedule B Section 2

(Exceptions)

Order Number: ABB25121037-4

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

NO. 2703636 AND RE-RECORDED NOVEMBER 19, 1999 AT RECEPTION NO. 2733705.

11. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE RECORDED AUGUST 30, 2000 AT RECEPTION NO. 2790549.

12. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE RECORDED AUGUST 30, 2000 AT RECEPTION NO. 2790550.

13. TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION AGREEMENT RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793930 AND RE-RECORDED DECEMBER 8, 2000 AT RECEPTION NO. 2812291.

14. TERMS, CONDITIONS AND PROVISIONS OF ORDER AND DECREE RECORDED JANUARY 08, 2001 AT RECEPTION NO. 2817763 AND NOTICE RECORDED JUNE 14, 2006 AT RECEPTION NO. 3396125.

15. RIGHT OF WAY EASEMENT AS GRANTED TO FARMERS RESERVOIR AND IRRIGATION COMPANY IN INSTRUMENT RECORDED OCTOBER 22, 2001, UNDER RECEPTION NO. 2893921.

16. TERMS, CONDITIONS AND PROVISIONS OF MASTER DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED DECEMBER 14, 2001 AT RECEPTION NO. 2909244 AND AMENDED JANUARY 28, 2003 AT RECEPTION NO. 3027600.

17. TERMS, CONDITIONS AND PROVISIONS OF DEVELOPMENT AGREEMENT RECORDED DECEMBER 04, 2001 AT RECEPTION NO. 2905896.

    NOTICE RECORDED JUNE 14, 2006 AT RECEPTION NO. 3396125

18. EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE RECORDED PLAT OF VISTA RIDGE MASTER FINAL PLAT RECORDED SEPTEMBER 6, 2001 AT RECEPTION NO. 2903870.

19. TERMS, CONDITIONS AND PROVISIONS OF DEVELOPMENT PLAN RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793940 AND AMENDMENT RECORDED FEBRUARY 27, 2002 AT RECEPTION NO. 2928673.

20. TERMS, CONDITIONS AND PROVISIONS OF DECLARATION OF GOLF PLAY COVENANTS RECORDED JULY 07, 2003 AT RECEPTION NO. 3080606.

21. RIGHT OF WAY EASEMENT AS GRANTED TO UNITED POWER INC IN INSTRUMENT RECORDED APRIL 17, 2002, UNDER RECEPTION NO. 2943714.

22. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT RECORDED JULY 22, 2003 AT RECEPTION NO. 3086574.

23. RIGHT OF WAY EASEMENT AS GRANTED TO UNITED POWER INC IN INSTRUMENT RECORDED SEPTEMBER 22, 2003, UNDER RECEPTION NO. 3108688.

24. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP,

First American Title Insurance Company
Schedule B Section 2

(Exceptions)

Order Number: ABB25121037-4

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED NOVEMBER 19, 2008, UNDER RECEPTION NO. 3590556.

25. TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION MAPS RECORDED AUGUST 25, 2000 AT RECEPTION NO. 2789487 AND RECORDED SEPTEMBER 15, 2000 AT RECEPTION NO. 2793937 AND 2793938 AND 2793939

26. EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE PLAT OF VISTA RIDGE FILING NO 2 RECORDED NOVEMBER 15, 2007 AT RECEPTION NO. 3517715.

27. TERMS, CONDITIONS AND PROVISIONS OF DEVELOPMENT AGREEMENT RECORDED JUNE 06, 2003 AT RECEPTION NO. 3070386.

28. TERMS, CONDITIONS AND PROVISIONS OF STORM PIPE AGREEMENT RECORDED JANUARY 07, 2008 AT RECEPTION NO. 3527519.

29. TERMS, CONDITIONS AND PROVISIONS OF ORDER RECORDED DECEMBER 14, 2001 AT RECEPTION NO. 2908969 AND 2908970 AND 2908971 AND 2908972.

30. EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE PLAT OF VISTA RIDGE FILING NO 12 RECORDED NOVEMBER 19, 2008 AT RECEPTION NO. 3590554.

31. TERMS, CONDITIONS AND PROVISIONS OF DEVELOPMENT AGREEMENT RECORDED NOVEMBER 19, 2008 AT RECEPTION NO. 3590555.

32. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED NOVEMBER 19, 2008, UNDER RECEPTION NO. 3590557.

33. (ITEM INTENTIONALLY DELETED)

34. TERMS, CONDITIONS AND PROVISIONS OF DEED OF EASEMENT RECORDED NOVEMBER 28, 2001 AT RECEPTION NO. 2903864.

35. RIGHT OF WAY EASEMENT AS GRANTED TO TOWN OF ERIE IN INSTRUMENT RECORDED JANUARY 28, 2004, UNDER RECEPTION NO. 3148806.

36. TERMS, CONDITIONS AND PROVISIONS OF DEVELOPMENT PLAN RECORDED MARCH 03, 2011 AT RECEPTION NO. 3753956.

37. TERMS, CONDITIONS AND PROVISIONS OF TITLE COMPANIES AND OTHER INTERESTED PARTIES: PLEASE BE ON NOTICE THAT: RECORDED MARCH 16, 2012 AT RECEPTION NO. 3832301.

38. TERMS, CONDITIONS AND PROVISIONS OF NOTICE TO TITLE COMPANIES AND OTHER

First American Title Insurance Company
Schedule B Section 2

(Exceptions)

Order Number: ABB25121037-4

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

INTERESTED PARTIES RECORDED MAY 21, 2013 AT RECEPTION NO. 3933756 AND RERECORDED AUGUST 20, 2014 UNDER RECEPTION NO. 4039682.

39. TERMS, CONDITIONS AND PROVISIONS OF DEVELOPMENT PLAN AMENDMENT NO 6 RECORDED NOVEMBER 25, 2013 AT RECEPTION NO. 3980214.

40. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE RECORDED NOVEMBER 25, 2013 AT RECEPTION NO. 3980215.

41. TERMS, CONDITIONS AND PROVISIONS OF NOTICE TO TITLE COMPANIES AND OTHER INTERESTED PARTIES RECORDED MARCH 18, 2014 AT RECEPTION NO. 4002991.

JOINT NOTICE OF PRIVACY POLICY OF

LAND TITLE GUARANTEE COMPANY,
LAND TITLE GUARANTEE COMPANY - GRAND JUNCTION,
LAND TITLE INSURANCE CORPORATION AND
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

This Statement is provided to you as a customer of Land Title Guarantee Company and Meridian Land Title, LLC, as agents for Land Title Insurance Corporation and Old Republic National Title Insurance Company.

We want you to know that we recognize and respect your privacy expectations and the requirements of federal and state privacy laws. Information security is one of our highest priorities. We recognize that maintaining your trust and confidence is the bedrock of our business. We maintain and regularly review internal and external safeguards against unauthorized access to non-public personal information ("Personal Information").

In the course of our business, we may collect Personal Information about you from:

- applications or other forms we receive from you, including communications sent through TMX, our web-based transaction management system;
- your transactions with, or from the services being performed by, us, our affiliates, or others;
- a consumer reporting agency, if such information is provided to us in connection with your transaction;

  and
- the public records maintained by governmental entities that we either obtain directly from those entities, or from our affiliates and non-affiliates.

Our policies regarding the protection of the confidentiality and security of your Personal Information are as follows:

- We restrict access to all Personal Information about you to those employees who need to know that information in order to provide products and services to you.
- We maintain physical, electronic and procedural safeguards that comply with federal standards to protect your Personal Information from unauthorized access or intrusion.
- Employees who violate our strict policies and procedures regarding privacy are subject to disciplinary action.
- We regularly access security standards and procedures to protect against unauthorized access to Personal Information.

WE DO NOT DISCLOSE ANY PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT PERMITTED BY LAW.

Consistent with applicable privacy laws, there are some situations in which Personal Information may be disclosed. We may disclose your Personal Information when you direct or give us permission; when we are required by law to do so, for example, if we are served a subpoena; or when we suspect fraudulent or criminal activities. We also may disclose your Personal Information when otherwise permitted by applicable privacy laws such as, for example, when disclosure is needed to enforce our rights arising out of any agreement, transaction or relationship with you.

Our policy regarding dispute resolution is as follows. Any controversy or claim arising out of or relating to our privacy policy, or the breach thereof, shall be settled by arbitration in accordance with the rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

LAND TITLE GUARANTEE COMPANY

LAND TITLE GUARANTEE COMPANY - GRAND JUNCTION

DISCLOSURE STATEMENTS

Note: Pursuant to CRS 10-11-122, notice is hereby given that:

A) The Subject real property may be located in a special taxing district.
B) A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.
C) The information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note: Effective September 1, 1997, CRS 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one half of an inch. The clerk and recorder may refuse to record or file any document that does not conform, except that, the requirement for the top margin shall not apply to documents using forms on which space is provided for recording or filing information at the top margin of the document.

Note: Colorado Division of Insurance Regulations 3-5-1, Paragraph C of Article VII requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed". Provided that Land Title Guarantee Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 5 will not appear on the Owner's Title Policy and the Lenders Policy when issued.

Note: Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

A) The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.
B) No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.
C) The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.
D) The Company must receive payment of the appropriate premium.
E) If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of the Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

Note: Pursuant to CRS 10-11-123, notice is hereby given:

This notice applies to owner's policy commitments containing a mineral severance instrument exception, or exceptions, in Schedule B, Section 2.

A) That there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and
B) That such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Pursuant to CRS 10-1-128(6)(a), It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance, and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado division of insurance within the department of regulatory agencies.

Nothing herein contained will be deemed to obligate the company to provide any of the coverages referred to herein unless the above conditions are fully satisfied.

Commitment to Insure

ALTA Commitment - 2006 Rev.

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, a Minnesota corporation, (Company) for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the requirements; all subject to the provisions of Schedule A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company. All liability and obligation under this commitment shall cease and terminate six months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue such policy or policies is not the fault of the Company.

CONDITIONS AND STIPULATIONS

1. The term "mortgage", when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquires actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions and Stipulations.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and the Conditions and Stipulations and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is $2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at www.alta.org.

STANDARD EXCEPTIONS

In addition to the matters contained in the Conditions and Stipulations and Exclusions from Coverage above referred to, this Commitment is also subject to the following:

1. Rights or claims of parties in possession not shown by the Public Records.
2. Easements, or claims of easements, not shown by the Public Records.
3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct survey or inspection of the Land would disclose and which are not shown by the Public Records.
4. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.

IN WITNESS WHEREOF, Old Republic National Title Insurance Company has caused its corporate name and seal to be affixed by its duly authorized officers on the date shown in Schedule A to be valid when countersigned by a validating officer or other authorized signatory.

Issued by:
Land Title Guarantee Company
3033 East First Avenue
Suite 600
Denver, Colorado 80206
303-850-4165

John E. Freyer
President

Authorized Officer or Agent

Old Republic National Title Insurance Company
a Stock Company
400 Second Avenue South
Minneapolis, Minnesota 55401
(612)371-1111

Mark Bilbrey
President

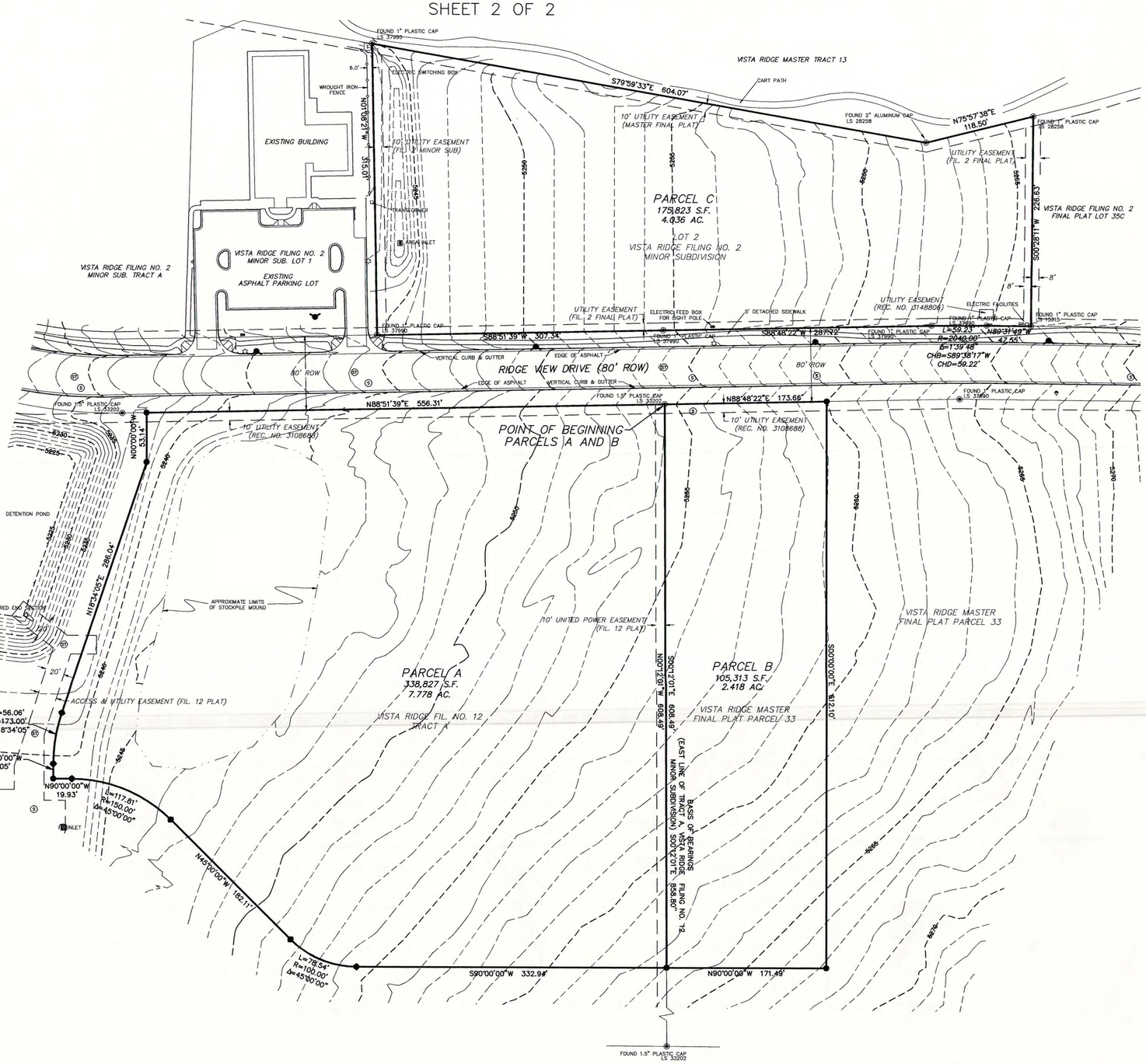
Rande Yeager
Secretary

AMERICAN LAND TITLE ASSOCIATION

ALTA / ACSM LAND TITLE SURVEY
VISTA RIDGE COMMERCIAL AREA

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

SHEET 2 OF 2



SYMBOL LEGEND	
	MONUMENTED PROPERTY CORNER
	SET #5 REBAR WITH PLASTIC CAP PLS 37908
S	SANITARY SEWER MANHOLE
ST	STORM SEWER MANHOLE
	FIRE HYDRANT
	6' TYPE"R" INLET
	FIBER OPTIC WARNING SIGN
T	TELEPHONE PEDESTAL
	HANDICAP RAMP
	LIGHT POLE
	CONTOUR-MAJOR
	CONTOUR-MINOR

N

0 30 60 120

SCALE: 1" = 60'

#	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			
6			
7			
8			

DRAWN BY: LC
CHECKED BY: JRL
SCALE: 1" = 60'
DATE: 03/18/14
FILE NO. ALTA

JOB NUMBER: 1057-556

SHEET: 2 OF 2

ALTA / ACSM LAND TITLE SURVEY
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

PREPARED FOR:
CHARTERED DEVELOPMENT

Lange Land Surveys
9572 W. 58TH AVE. ARVADA, CO 80002
P:(720) 242-9732 F:(720) 242-9654

ALTA / ACSM LAND TITLE SURVEY
VISTA RIDGE COMMERCIAL AREA

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO
SHEET 1 OF 2

LEGAL DESCRIPTION (FROM COMMITMENT):

PARCEL A:

A PORTION OF TRACT A OF "VISTA RIDGE FILING NO 12 MINOR SUBDIVISION" LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEASTERLY CORNER OF SAID TRACT A: THENCE S00°12'01"E, 608.49 FEET ALONG THE EASTERLY LINE OF SAID TRACT A (BASIS OF BEARINGS);
THENCE S90°00'00"W, 332.94 FEET;
THENCE 78.54 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 45°00'00", AND A CHORD BEARING OF N67°30'00"W, 76.54 FEET;
THENCE N45°00'00"W, 182.11 FEET;
THENCE 117.81 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 45°00'00", AND A CHORD BEARING N67°30'00"W, 114.81 FEET;
THENCE N90°00'00"W, 19.93 FEET;
THENCE N00°00'00"W, 16.05 FEET;
THENCE 56.06 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 173.00 FEET, A CENTRAL ANGLE OF 18°34'05", AND A CHORD BEARING N09°17'02"E, 55.82 FEET;
THENCE N18°34'05"E, 286.04 FEET;
THENCE N00°00'00"W, 53.14' TO THE NORTHERLY LINE OF SAID TRACT A;
THENCE N88°51'39"E, 556.31 FEET ALONG THE SAID NORTHERLY LINE OF TRACT A TO THE **POINT OF BEGINNING.**

SAID PARCEL CONTAINS 338,827 SQUARE FEET OR 7.778 ACRES, MORE OR LESS.

PARCEL B:

A PORTION OF PARCEL 33 OF "VISTA RIDGE MASTER FINAL PLAT" LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M. TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF SAID PARCEL 33;
THENCE N 88° 48' 22" E, 173.66 FEET ALONG THE NORTHERLY LINE OF SAID PARCEL 33;
THENCE S00°00'00"E 612.10 FEET;
THENCE N90°00'00"W, 171.49 FEET TO THE WESTERLY LINE OF SAID PARCEL 33;
THENCE N00°12'01"W, 608.49 FEET ALONG SAID WESTERLY LINE OF PARCEL 33 TO THE **POINT OF BEGINNING.**

SAID PARCEL CONTAINS 105,313 SQUARE FEET OR 2.418 ACRES, MORE OR LESS.

PARCEL C:

LOT 2 OF "VISTA RIDGE FILING NO 2 – MINOR SUBDIVISION" (PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715), TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

SAID PARCEL CONTAINS 175,823 SQUARE FEET OR 4.036 ACRES, MORE OR LESS.

SURVEY CERTIFICATION:

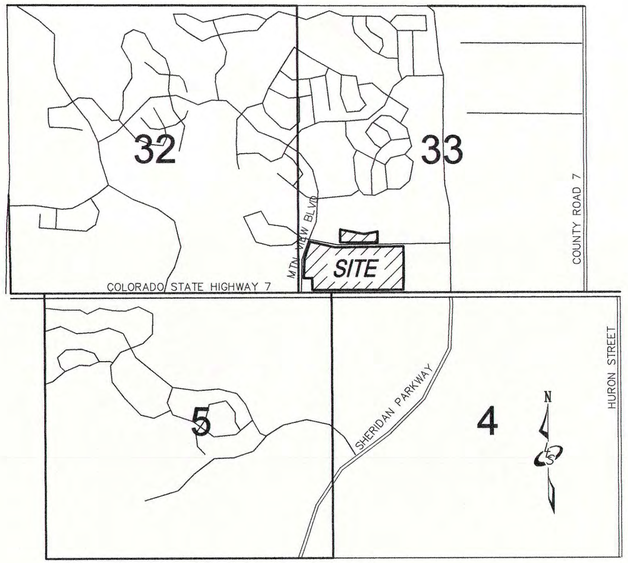
CERTIFIED TO:

CHARTERED DEVELOPMENT CORP.

FOR AND ON BEHALF OF LANGE LAND SURVEYS, LLC, I CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 2005, AND INCLUDES ITEMS 1–5 & 11A OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR LICENSED IN THE STATE OF COLORADO, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

DATE: 8/28/14

COLORADO REGISTERED
SHANNON K. LANGE
37908
PROFESSIONAL LAND SURVEYOR



VICINTY MAP
N.T.S.

GENERAL NOTES:

1. NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

2. BASIS OF BEARINGS: THE EASTERLY LINE OF TRACT A OF VISTA RIDGE FILING NO. 12 MINOR SUBDIVISION, ASSUMED TO BEAR S00°12'01"E, TO MATCH RECORDED PLATS. MONUMENTS DESCRIBED ON DRAWING.

3. FOUND PROPERTY CORNERS ARE DESCRIBED HEREON.

4. NO BUILDINGS ARE PRESENTLY LOCATED ON THIS PROPERTY.

6. THIS PROPERTY IS LOCATED IN ZONE C (AREAS OF MINIMAL FLOODING) ACCORDING TO FIRM COMMUNITY PANEL NUMBER 0802660970 D WITH A REVISION DATE OF 09/28/1990.

7. THE SUBJECT PROPERTY ABUTS UPON AND HAS INGRESS TO AND EGRESS FROM DULY DEDICATED AND ACCEPTED PUBLIC STREETS KNOWN AS RIDGE VIEW DRIVE.

8. PROPERTY IS CURRENTLY ZONED PD (PLANNED DEVELOPMENT).

9. TOTAL AREA OF THREE THE PARCELS IS 14.232 ACRES.

10. THE RECORD DESCRIPTION OF THE SUBJECT PROPERTY FORMS A MATHEMATICALLY CLOSED FIGURE AND, TO THE EXTENT ANY EASEMENT CANNOT BE LOCATED FROM ITS RECORD DESCRIPTION, A NOTATION IS MADE HEREON.

11. TWO PLATS HAVE BEEN RECORDED THAT AFFECT PARCELS: "VISTA RIDGE FILING NO. 2 FINAL PLAT", RECORDED 06/06/2003 AT RECEPTION NO. 3070387 AND "VISTA RIDGE FILING NO. 2 MINOR SUBDIVISION", RECORDED 11/15/2007 AT RECEPTION NO. 3517715, WHICH IS A REPLAT OF PARCEL 35B OF FILING NO. 2.

TITLE COMMITMENT NOTES:

THIS LAND SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY LANGE LAND SURVEYS, LLC. TO DETERMINE OWNERSHIP OF THIS PARCEL OF LAND, VERIFY THE DESCRIPTION SHOWN, VERIFY THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF THE ADJACENT PARCELS OF LAND, OR VERIFY EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHT-OF-WAY OR TITLE OF RECORD, LANGE LAND SURVEYS, LLC RELIED UPON ORDER NO. 25121037, WITH A DATE OF APRIL 11, 2014, PREPARED BY LAND TITLE GUARANTEE COMPANY.

THE FOLLOWING COMMENTS ARE IN REGARDS TO THE ABOVE REFERENCED ORDER NO.'S

SCHEDULE A

ITEM # **COMMENT**

1. NOTED ABOVE.

2., 3., 4. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

5. THE LEGAL DESCRIPTION OF THE LAND SURVEYED IS SHOWN HEREON, TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

SCHEDULE B – SECTION 1 (REQUIREMENTS)

ITEM # **COMMENT**

1.–5. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS. THIS ALTA/ACSM LAND TITLE SURVEY IS A RESPONSE TO THE REQUEST FOR A SURVEY.

SCHEDULE B – SECTION 2 (EXCEPTIONS)

ITEM # **COMMENT**

1.–14. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

15. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

16.–17. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

18. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

19.–20. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

21. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

22. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

23. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

24.–25. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

26. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

27.–29. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

30. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

31.–32. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

33. ITEM INTENTIONALLY DELETED.

34. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

35. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

36.–41. LANGE LAND SURVEYS DID NOT EXAMINE OR ADDRESS THESE ITEMS.

#	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			
6			
7			
8			

JOB NUMBER: 1057-556

SHEET: 1 OF 2

DRAWN BY: LC
CHECKED BY: JRL
SCALE: 1" = 60'
DATE: 03/18/14
FILE NO. ALTA

ALTA / ACSM LAND TITLE SURVEY
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

PREPARED FOR:
CHARTERED DEVELOPMENT

Lange Land Surveys
9572 W. 58TH AVE. ARVADA, CO 80002
P:(720) 242-9732 F:(720) 242-9654

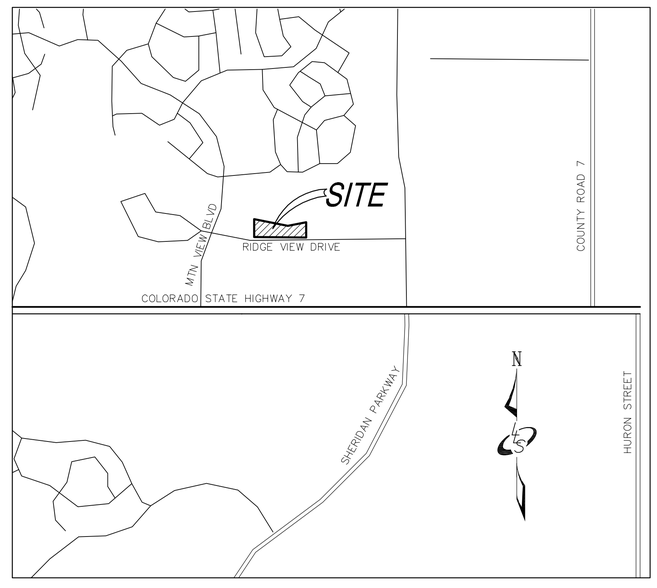
VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 1 OF 4

LEGAL DESCRIPTION

LOT 2 OF "VISTA RIDGE FILING NO. 2 – MINOR SUBDIVISION", A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

CONTAINING 175,823 SQUARE FEET OR 4.036 ACRES, MORE OR LESS.



VICINITY MAP
1"=1000'

LAND SUMMARY CHART		
TYPE	AREA	% OF TOTAL AREA
RESIDENTIAL LOTS (25)	102,984 S.F.	59%
TRACTS (3)	72,839 S.F.	41%
PUBLIC ROW	0 S.F.	0%
TOTAL	175,823 S.F.	100%

TRACT SUMMARY CHART				
TRACT	AREA	USE	OWNERSHIP	MAINTENANCE
TRACT A	41,101 S.F.	PRIVATE ACCESS DRIVE EMERGENCY ACCESS DRAINAGE/UTILITY	HOA	HOA
TRACT B	20,842 S.F.	OPEN SPACE DRAINAGE/UTILITY	HOA	HOA
TRACT C	10,896 S.F.	OPEN SPACE DRAINAGE/UTILITY	HOA	HOA

GENERAL NOTES

1. THE PLAT CONSISTS OF FURTHER SUBDIVIDING LOT 2, VISTA RIDGE FILING NO. 2, AS RECORDED 11/15/2007 AT RECEPTION NO. 3517715, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO. THIS PLAT WILL CONTAIN 25 SINGLE FAMILY RESIDENTIAL LOTS. ONLY ONE RESIDENTIAL DWELLING IS PERMITTED ON EACH SINGLE FAMILY LOT.

2. ALL GENERAL NOTES, DEDICATIONS, AND PLAT RESTRICTIONS AS SHOWN ON THE PLAT OF VISTA RIDGE FILING NO. 2, A SUBDIVISION PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715 OF THE RECORDS OF THE WELD COUNTY CLERK AND RECORDER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, SHALL APPLY UNLESS SPECIFICALLY AMENDED AND SUPERCEDED HEREBY.

3. TRACT A IS FOR UTILITY, DRAINAGE, PRIVATE ACCESS DRIVES AND EMERGENCY ACCESS PURPOSES AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA. TRACT B IS FOR DRAINAGE AND LANDSCAPING AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA. TRACT C IS FOR DRAINAGE, LANDSCAPING AND EMERGENCY ACCESS FROM RIDGE VIEW DRIVE TO RIDGE VIEW COURT AND SHALL BE MAINTAINED BY THE SUBDIVIDER, ITS SUCCESSOR OR ASSIGNS, UNTIL SUCH TIME AS THIS TRACT IS CONVEYED TO THE HOA.

4. UTILITY AND DRAINAGE EASEMENTS, LABELED HEREON, SHALL BE GRANTED FOR THE INSTALLATION AND MAINTENANCE OF SANITARY SEWER LINES, WATER LINES, STORM DRAINAGE FACILITIES, SURFACE DRAINAGE AND FOR THE BENEFIT OF THE APPLICABLE UTILITY PROVIDERS FOR THE INSTALLATION, MAINTENANCE, AND REPLACEMENT OF ELECTRIC, GAS, TELEVISION, CABLE, AND TELECOMMUNICATIONS FACILITIES (DRY UTILITIES) AND ALL NECESSARY AND CONVENIENT APPURTENANCES THERETO, TOGETHER WITH A PERPETUAL RIGHT OF INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF SUCH LINES AND APPURTENANCES. SAID EASEMENTS AND RIGHTS ARE TO BE UTILIZED IN A RESPONSIBLE AND PRUDENT MANNER.

5. DRAINAGE EASEMENTS, LABELED HEREON, SHALL BE GRANTED FOR THE INSTALLATION AND MAINTENANCE OF DRAINAGE LINES AND ALL NECESSARY AND CONVENIENT APPURTENANCES THERETO, AS WELL AS SURFACE DRAINAGE, TOGETHER WITH A PERPETUAL RIGHT OF INGRESS AND EGRESS FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF SUCH LINES AND APPURTENANCES. SAID EASEMENTS AND RIGHTS ARE TO BE UTILIZED IN A RESPONSIBLE AND PRUDENT MANNER.

6. A BLANKET DRAINAGE EASEMENT SHALL BE GRANTED ALONG ALL COMMON LOT LINES FOR DOWNSPOUT DISCHARGE, DRAINAGE SWALES AND APPURTENANCES REQUIRED FOR PROPER LOT DRAINAGE.

7. BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 33, WHICH BEARS NORTH 00°12'01" WEST ACCORDING TO THE VISTA RIDGE MASTER FINAL PLAT AND IS MONUMENTED AS SHOWN HEREON.

8. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

9. BASED UPON THE INSURANCE RATE MAP COMMUNITY PANEL NO. 08013C 044J, THIS PANEL IS NOT PRINTED AND THERE IS NO SPECIAL FLOOD INFORMATION.

10. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18–4–508, OF THE COLORADO REVISED STATUTE.

11. DISTANCES ON THIS PLAT ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DESCRIBED AS EXACTLY 1200/3937 METERS.

APPLICANT

CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
CONTACT: WARD RITTER
(303) 545–2554

ENGINEER

ENERTIA CONSULTING GROUP, LLC
1529 MARKET STREET, SUITE 200
DENVER, COLORADO 80202
CONTACT: SHAWN MERZ, P.E., LEED AP
PHONE: (720) 502–6574

SURVEYOR

LANGE LAND SURVEYS, LLC
6475 WADSWORTH BLVD., SUITE 102
ARVADA, COLORADO 80003
CONTACT: JON LANGE, PLS
PHONE: (720) 242–9732

Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242–9732 F:(720) 242–9654

DRAWN BY: LC
CHECKED BY: JRL
SCALE: N/A
DATE: 10/31/14
FILE NO. PRELIM PLAT

#	REVISIONS:	DATE:	BY:
1	TOWN COMMENTS	11/19/14	LC
2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
3			
4			
5			
6			
7			
8			

JOB NUMBER: 947–625
SHEET: 1 OF 4

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

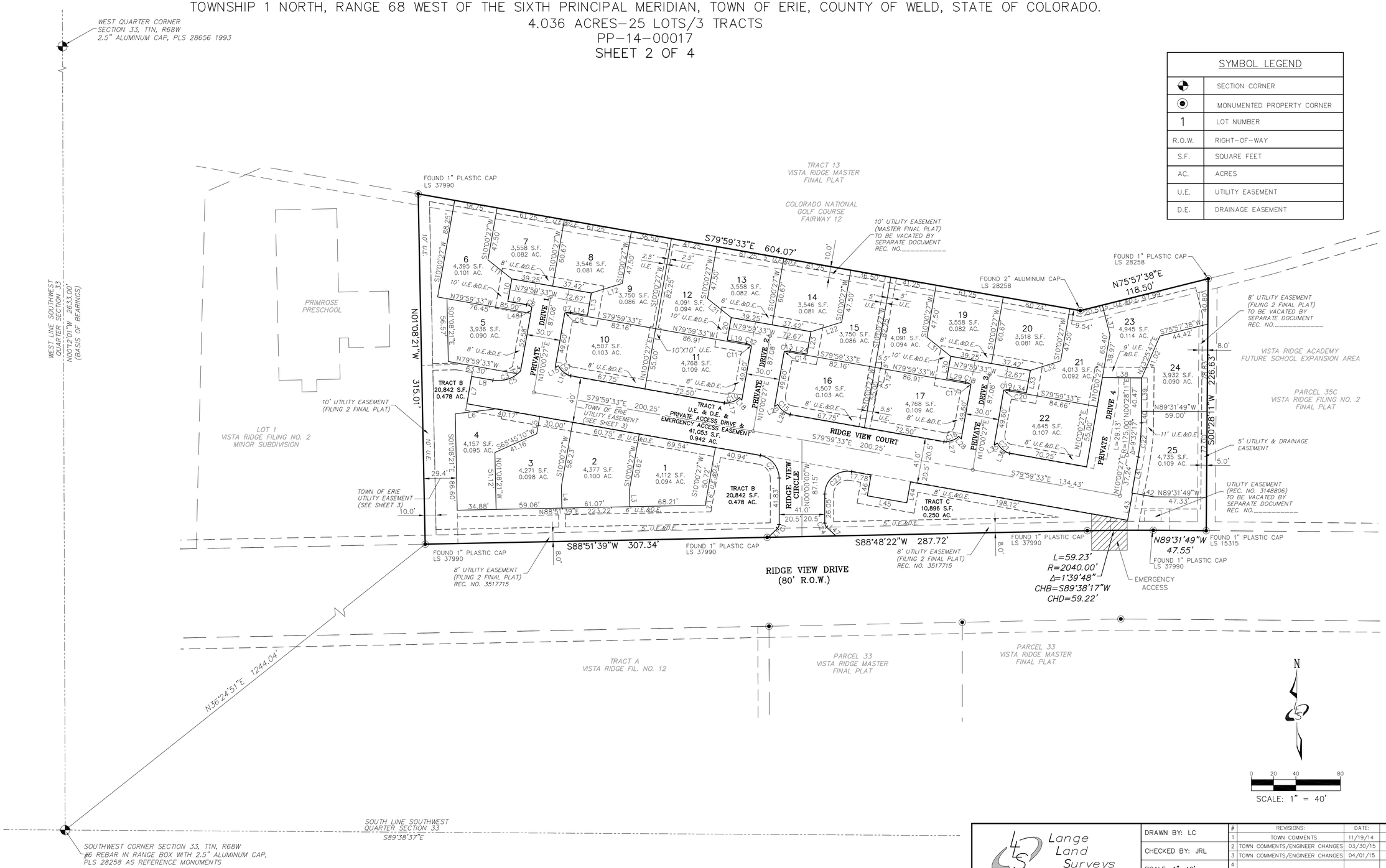
A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

4.036 ACRES–25 LOTS/3 TRACTS

PP–14–00017

SHEET 2 OF 4

SYMBOL LEGEND	
⊕	SECTION CORNER
⊙	MONUMENTED PROPERTY CORNER
1	LOT NUMBER
R.O.W.	RIGHT–OF–WAY
S.F.	SQUARE FEET
AC.	ACRES
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT



Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242–9732 F:(720) 242–9654

DRAWN BY: LC

CHECKED BY: JRL

SCALE: 1"=40'

DATE: 10/31/14

FILE NO. PRELIM PLAT

#	REVISIONS:	DATE:	BY:
1	TOWN COMMENTS	11/19/14	LC
2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
3	TOWN COMMENTS/ENGINEER CHANGES	04/01/15	LC
4			
5			
6			
7			
8			

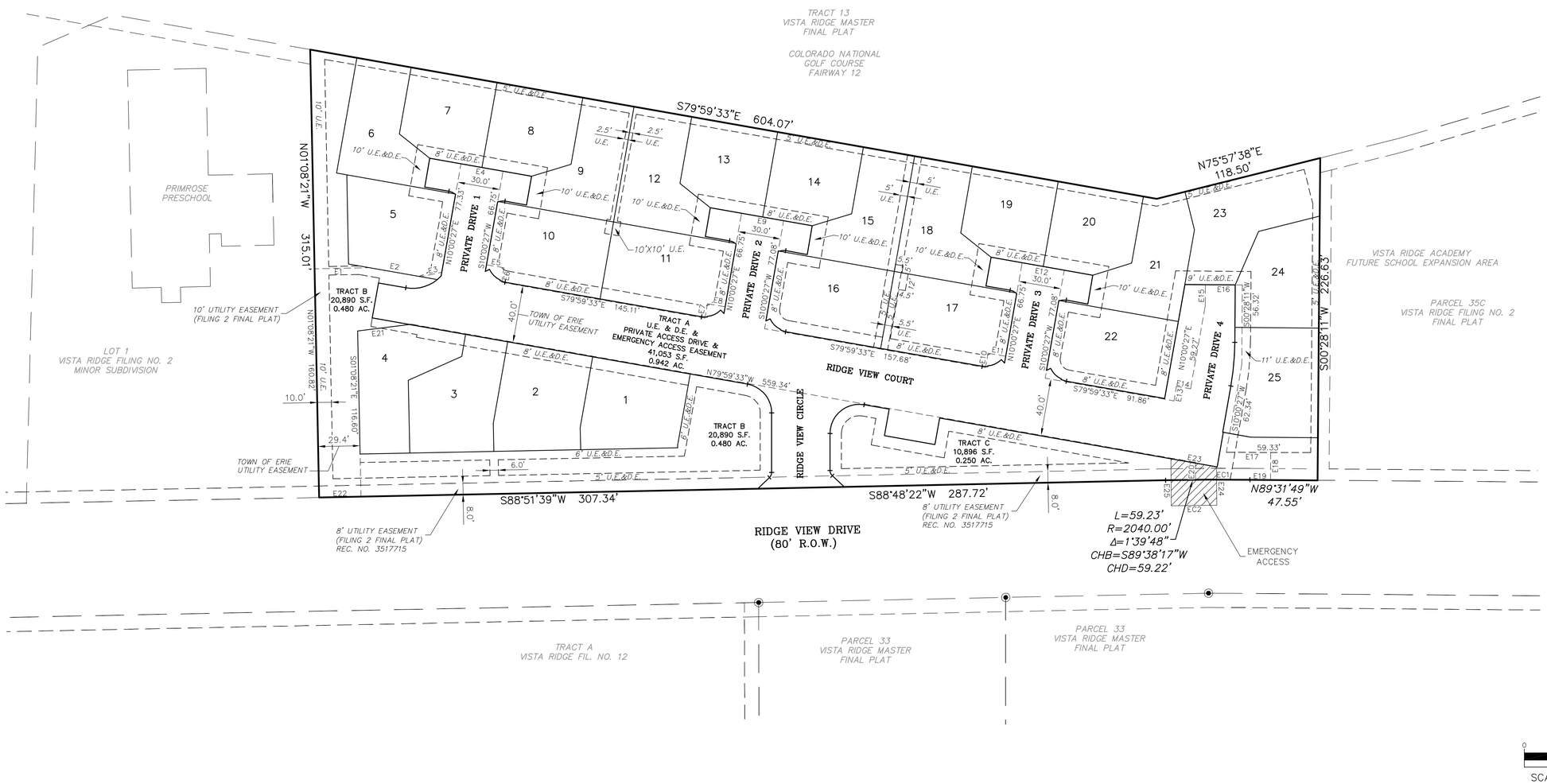
JOB NUMBER: 947–625

SHEET: 2 OF 4

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 3 OF 4

EASEMENT DETAIL



Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242–9732 F:(720) 242–9654

DRAWN BY: LC
CHECKED BY: JRL
SCALE: 1"=40'
DATE: 10/31/14
FILE NO. PRELIM PLAT

#	REVISIONS:	DATE:	BY:
1	TOWN COMMENTS	11/19/14	LC
2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
3	TOWN COMMENTS/ENGINEER CHANGES	04/01/15	LC
4			
5			
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8			

JOB NUMBER: 947–625 SHEET: 3 OF 4

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT PRELIMINARY PLAT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.
4.036 ACRES–25 LOTS/3 TRACTS
PP–14–00017
SHEET 4 OF 4

LINE TABLE

LINE	BEARING	DISTANCE
L1	N46°06'03"E	11.47'
L2	S01°08'21"E	1.85'
L3	N01°08'21"W	15.39'
L4	S01°08'21"E	19.67'
L5	S10°00'27"W	15.62'
L6	S82°56'43"W	36.55'
L7	S10°00'27"W	25.00'
L8	S79°59'33"E	19.50'
L9	N79°59'33"W	17.25'
L10	S10°00'27"W	20.50'
L11	N51°14'34"W	27.37'
L12	N73°00'03"E	29.00'
L13	N10°00'27"E	20.50'
L14	S79°59'33"E	15.42'
L15	N63°36'07"E	3.28'
L16	S24°14'03"W	0.50'
L17	N04°13'08"W	0.50'
L18	S43°35'12"E	3.28'
L19	S79°59'33"E	17.50'
L20	S10°00'27"W	20.50'
L21	N51°14'34"W	27.37'
L22	N73°00'03"E	29.00'
L23	N10°00'27"E	20.50'
L24	S79°59'33"E	15.42'
L25	N63°36'07"E	3.28'
L26	N24°14'03"E	0.50'
L27	S04°13'08"E	0.50'
L28	N43°35'12"W	3.28'
L29	S79°59'33"E	17.25'
L30	N10°00'27"E	20.50'
L31	N51°14'34"W	27.37'
L32	N72°32'10"E	28.54'
L33	S10°00'27"W	20.50'
L34	N79°59'33"W	15.42'
L35	N63°36'07"E	3.28'
L36	N24°14'03"E	0.50'
L37	S14°02'22"E	27.60'
L38	N89°31'49"W	35.41'
L39	N00°28'11"E	31.44'
L40	S00°28'11"W	10.53'
L41	N10°00'27"E	32.96'
L42	S79°59'33"E	19.96'
L43	S10°00'27"W	24.78'
L44	N10°00'27"E	19.00'
L45	S79°59'33"E	36.00'
L46	S10°00'27"W	19.00'
L47	N47°14'04"W	11.67'
L48	N10°00'27"E	5.66'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	5.00'	4.02'	3.92'	S23°03'02"W	46°06'03"
C2	20.50'	28.62'	26.35'	S39°59'46"E	79°59'33"
C3	27.50'	23.57'	22.86'	N75°27'03"E	49°06'35"
C4	27.50'	3.67'	3.66'	S47°04'34"W	7°38'23"
C5	27.50'	27.24'	26.14'	N71°37'52"E	56°44'58"
C6	9.50'	5.27'	5.20'	S64°06'50"E	31°45'25"
C7	9.50'	4.58'	4.54'	N86°11'34"E	27°37'46"
C8	9.50'	0.68'	0.68'	S70°18'52"W	4°07'39"
C9	15.00'	10.81'	10.57'	N45°07'36"W	41°16'41"
C10	15.00'	10.81'	10.57'	N65°08'31"E	41°16'41"
C11	9.50'	0.68'	0.68'	S50°17'57"E	4°07'39"
C12	9.50'	4.58'	4.54'	N66°10'39"W	27°37'46"
C13	9.50'	4.58'	4.54'	N86°11'34"E	27°37'46"
C14	9.50'	0.68'	0.68'	S70°18'52"W	4°07'39"
C15	15.00'	10.81'	10.57'	S45°07'36"E	41°16'41"
C16	15.00'	10.81'	10.57'	S65°08'31"W	41°16'41"
C17	9.50'	0.68'	0.68'	S50°17'57"E	4°07'39"
C18	9.50'	4.58'	4.54'	S66°10'39"E	27°37'46"
C19	9.50'	4.58'	4.54'	N86°11'34"E	27°37'46"
C20	9.50'	0.68'	0.68'	S70°18'52"W	4°07'39"
C21	15.00'	10.81'	10.57'	N45°07'36"W	41°16'41"
C22	185.00'	30.80'	30.76'	S05°14'19"W	9°32'17"
C23	20.50'	35.78'	31.41'	S50°00'14"W	100°00'27"
C24	5.00'	4.12'	4.01'	N23°37'02"W	47°14'04"

EASEMENT LINE TABLE

E1	N88°45'27"E	38.58'
E2	S79°59'33"E	36.76'
E3	N77°30'27"E	15.03'
E4	S79°59'33"E	30.00'
E5	S79°59'33"E	12.57'
E6	S10°00'27"W	10.33'
E7	N10°00'27"E	10.33'
E8	S79°59'33"E	12.57'
E9	S79°59'33"E	30.00'
E10	N10°00'27"E	10.33'
E11	S79°59'33"E	12.57'
E12	S79°59'33"E	30.00'
E13	N10°00'27"E	10.33'
E14	S79°59'33"E	10.07'
E15	N00°28'11"E	14.92'
E16	S89°31'49"E	26.00'
E17	S89°49'01"E	31.16'
E18	S00°10'59"W	19.30'
E19	N89°31'49"W	14.48'
E20	N00°10'59"E	12.22'
E21	S82°56'43"W	38.25'
E22	S88°51'39"W	29.43'
E23	S79°59'33"E	32.53'
E24	S00°20'54"E	27.01'
E25	N00°20'54"W	33.02'

EASEMENT CURVE TABLE

EC1	2040.00'	38.31'	38.31'	S89°55'54"W	1°04'33"
EC2	2022.00'	32.00'	32.00'	S89°21'33"W	0°54'24"

Lange Land Surveys
6475 WADSWORTH BLVD., SUITE 102
ARVADA, CO 80003
P:(720) 242–9732 F:(720) 242–9654

DRAWN BY: LC
CHECKED BY: JRL
SCALE: N/A
DATE: 10/31/14
FILE NO. PRELIM PLAT

#	REVISIONS:	DATE:	BY:
1	TOWN COMMENTS	11/19/14	LC
2	TOWN COMMENTS/ENGINEER CHANGES	03/30/15	LC
3			
4			
5			
6			
7			
8			

JOB NUMBER: 947–625
SHEET: 4 OF 4

prepared by
Enertia Consulting Group, LLC
1529 Market Street, Suite 200
Denver, CO 80202

Phase III Drainage Report

Montex North at Vista Ridge, Erie, Colorado

prepared for

Chartered Development Corp
3160 Village Vista Drive
Erie, CO 80516

LAND • ENERGY • INFRASTRUCTURE

ENGINEER'S CERTIFICATION

"I hereby certify that this Phase II Drainage Report for the design of Montex North at Vista Ridge was prepared by me (or under my direct supervision) in accordance with the provisions of the *Town of Erie Standards and Specifications for Design and Construction* for the owners thereof. I understand that the Town of Erie does not and will not assume liability for drainage facilities designed by others, including the designs presented in this report."

_____

Shawn C. Merz, PE
State of Colorado Registration No. 41241
For and on Behalf of Enertia Consulting Group

TOWN ACCEPTANCE

This report has been reviewed and found to be in general compliance with the *Town of Erie Standards and Specifications for Design and Construction* and other Town requirements. **THE ACCURACY AND VALIDITY OF THE ENGINEERING DESIGN, DETAILS, DIMENSIONS, QUANTITIES, AND CONCEPTS IN THIS REPORT REMAINS THE SOLE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON.**

Accepted by: _____ Date: _____
Deputy Public Works Director

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- Drainage Swale Capacity Calcs

APPENDIX C – REFERENCE DOCUMENTS

- Erie Criteria Sheets
- FIRM Map
- ALTA SURVEY
- Primrose School Final Drainage Report
- Primrose School Grading and Drainage Plan

1. GENERAL LOCATION AND DESCRIPTION

A. Site Location

The project site is a re-subdivision of Lot 2, Vista Ridge Filing No. 2 and is located in the Southwest Quarter of Section 33, Township 1 North, Range 68 West of the 6th Principle Meridian. The project is bounded to the north by Colorado National Golf Course, Vista Ridge Academy the east, Primrose Preschool to the west and Ridge View Drive to the south. The adjacent major roadways are Mountain View Boulevard to the west, Sheridan Parkway to the east and East Baseline Road to the south.

Montex at Vista Ridge Vicinity Map

B. Description of Property

The proposed site consists of 4.04 acres. The site is gently sloping from east to west with an existing slope of roughly 2.8%. Existing ground cover consists of natural grasses. There is a drainage swale along the western property line that collects runoff from the site and conveys the water to an inlet which drains to the detention pond west of Primrose Preschool (A3). To the east of the site, on the Vista Ridge Academy property, a retention pond has been constructed to capture runoff from the Vista Ridge Academy Site. There are no wetlands on the proposed site. The developed parcel will consist of 25 single-family homes with a density of 6.2 dwelling units/acre. There is an existing 10' utility easement along the north, west property line and an existing 8' utility easement along the east and south property line. There is also a pocket utility easement at the southeast corner of the site for a water stub to the site. The ALTA Survey for the site has been included in Appendix C.

The utility easement along the east, west and north property line will be reduced in size and pocket easements will be provided for transformers as part of this development.

2. DRAINAGE BASINS

A. Major Basin Description

Pond A3

The project is located within the FEMA Floodplain Panel 08013C0444J. This panel was not printed by FEMA. The FIRM Index notes this panel as having "*NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED". Therefore the project is clear of any floodplain hazards. The project will discharge to a regional detention pond (Pond A3) west of Primrose Preschool where detention and water quality will be provided. This detention pond has a 100-year water surface elevation of 5232.89. The lowest elevation of the site is 5240.55 at the existing Type C inlet on the west side of the property. The pond is owned and maintained by the Vista Ridge Metro District. The existing site is not irrigated. However there is irrigation on the golf course to the north and the right-of-way to the south. Currently, the proposed site is vacant. This project will develop the infrastructure for 25 single-family residential homes.

B. Sub-Basin Description

<u>Basin S1</u>

Basin S1 consists of 0.93 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units, roadway/drive/sidewalk paving and landscaped open space areas. The imperviousness is 69% which results in Q_2=1.54 cfs and Q_{100}=5.75 cfs. This water will be collected with a 10' Type R on-grade inlet between lots 116 and 17 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

<u>Basin S2</u>

Basin S2 consists of 0.33 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units, roadway/drive/sidewalk paving and landscaped open space areas. The imperviousness is 43% which results in Q_2=0.34 cfs and Q_{100}=1.77 cfs. This water will be collected with a 10' Type R on-grade inlet at the southeast corner of Ridge View Court and Ridge View Circle and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

<u>Basin S3</u>

Basin S3 consists of 0.67 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units, roadway/drive/sidewalk paving and

landscaped open space areas. The imperviousness is 74% which results in Q_2=1.21 cfs and Q_{100}=4.29 cfs. This water will be collected with a 10' Type R on-grade inlet near lot 10 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin S4

Basin S4 consists of 0.41 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units, roadway/drive/sidewalk paving and landscaped open space areas. The imperviousness is 78% which results in Q_2=0.81 cfs and Q_{100}=2.75 cfs. This water will be collected with a 10' Type R sump inlet between lots 4 and 5 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin S5

Basin S5 consists of 0.45 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units, roadway/drive/sidewalk paving and landscaped open space areas. The imperviousness is anticipated to be 77% which results in Q_2=0.87 cfs and Q_{100}=2.98 cfs. This water will be collected with a 10' Type R sump inlet between lots 4 and 5 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin S6

Basin S6 consists of 0.41 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units and landscaped open space areas. The imperviousness is anticipated to be 21% which results in Q_2=0.25 cfs and Q_{100}=2.09 cfs. This water will be collected with a Type 13 sump inlet near lot 4 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin S7

Basin S7 consists of 0.23 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units and landscaped open space areas. The imperviousness is anticipated to be 29% which results in Q_2=0.21 cfs and Q_{100}=1.48 cfs. This water will be collected with a Type D sump inlet behind lot 4 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin S8

Basin S8 consists of 0.23 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units and landscaped open space area. The imperviousness is anticipated to be 53% which results in Q_2=0.28 cfs and Q_{100}=1.28 cfs. This basin will combine with basin OS4 & OS5 runoff. The combined water will be collected with a Type 13 sump inlet between lots 15 and 18 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin S9

Basin S9 consists of 0.09 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of single-family units and landscaped open space area. The imperviousness is anticipated to be 50% which results in Q_2=0.26 cfs and Q_{100}=1.26 cfs. This water will drain onto the golf course.

Basin S10
Basin S10 consists of 0.19 acres and currently is comprised of native grasses. In the developed condition, this basin will consist of roadway/drive/sidewalk paving and landscaped open space areas. The imperviousness is anticipated to be 42% which results in Q_2=0.09 cfs and Q_{100}=0.48 cfs. This water will drain onto Ridge View Drive.

Basin OS1
Basin OS1 is on the Vista Ridge Academy site and consists of 0.19 acres of native grasses. The imperviousness is 5% which results in Q_2=0.05 cfs and Q_{100}=0.92 cfs. This basin will drain between the houses and combine with basin S1 runoff.

Basin OS2
Basin OS2 is on the Vista Ridge Academy site and consists of 0.11 acres of native grasses. The imperviousness is 5% which results in Q_2=0.03 cfs and Q_{100}=0.54 cfs. This basin will drain between the houses and combine with basin S2 runoff.

Basin OS3
Basin OS3 is on the Vista Ridge Academy site and consists of 2.37 acres of native grasses and a small parking area. This area in anticipated to be developed in the future and an imperviousness of 95% has been assumed which results in Q_2=6.51 cfs and Q_{100}=19.36 cfs. This basin currently drains to a retention pond constructed within the basin.

Basin OS4
Basin OS2 is on the Vista Ridge Academy site and consists of 0.07 acres of native grasses. The imperviousness is 5% which results in Q_2=0.02 cfs and Q_{100}=0.35 cfs. This basin will combine with basin S8 & OS5 runoff. The combined water will be collected with a Type 13 sump inlet between lots 15 and 18 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

Basin OS5
Basin OS5 is on the Colorado National Golf Course. It is currently comprised of native grasses and irrigated grass turf. The basin is 0.57 acres. The imperviousness is 5% which results in Q_2=0.15 cfs and Q_{100}=2.68 cfs. This basin will drain to a grass swale along the north property line where it will combine with basin S8 & OS4 runoff. The combined water will be collected with a Type 13 sump inlet between lots 15 and 18 and conveyed in a storm sewer system to Detention Pond A3 west of Primrose Preschool.

A conservative time of concentration of 5 minutes has been assumed for all basins.

3. DRAINAGE DESIGN CRITERIA

A. Development Criteria Reference and Constraints

The site parcel is identified as Lot 2 in the Primrose Drainage Report. A 36-inch diameter pipe with a Type C Inlet was extended to the site to capture runoff. The anticipated 100-year runoff was determined to be 59.58 cfs. A drainage swale was constructed with the Primrose

Preschool construction which directs runoff to the inlet. The Vista Ridge Academy Site drainage east of the proposed development is divided in the middle by a high point. The eastern portion of Vista Ridge Academy drains east to an onsite detention pond and the western portion drains to the west. The western portion of the site consists of parking lot and undeveloped land. Runoff from the western basin drains to a retention pond which was constructed onsite restricting discharge from the project. A pipe stub and emergency swale will be constructed with the Montex North Development to convey future development to the detention pond. Vista Ridge Academy will need to control the emergency overflow from the retention pond and future development and convey it to the provided swale location. The Final Primrose Drainage Report has been included in Appendix C for reference.

B. Hydrological Criteria

Basin Runoff has been calculated using criteria from the Town of Erie *"STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS, 2014 Edition"*. The design storm return periods for residential land use are 2-year for the initial storm and 100-year for the major storm. Imperviousness values were selected using Table 800-3. One-hour rainfall depths of 1.01 for the 2-year design storm and 2.70 for the 100-year design storm were used to calculate the intensities using Urban Drainage equation RA-3. Using the rational method, runoffs for each basin were determined. Due to the small basin sizes the time of concentration was assumed to be 5 minutes for each basin. The hydrologic calculations are located in Appendix B.

C. Hydraulic Criteria

The maximum allowable runoff from the Project and Vista Ridge Academy may not exceed 59.6 cfs as outlined in the Primrose Preschool Final Drainage Report. During the 2-year event, the depth of flow for local roads may not overtop the curb and may extend to the crown of the road. Residential buildings are required to be no less than 12-inches above the 100-year water surface elevation and the water depth may not exceed 18-inches at the gutter flow line. A "Hollywood Monolithic Integral Curbwalk" will be used on this site. Therefore, the initial flow line depth will be limited to 4" and the major storm runoff has been limited to the back of the utility easement. Additional capacity will be required at the 10' type R inlet located at the low point at the west end of Ridge View Court, therefore 6" vertical curb will be provided in this area. This allows the flow to pond to 6" before spilling to the west.

D. Adaptations from Criteria

No adaptions are requested at this time.

4. DRAINAGE FACILITY DESIGN

A. General Concept

The site has been graded to drain from east to west which follows the historic drainage patterns. The Private Drives drain to Ridge View Court. Residential downspouts will discharge to the ground surface. The majority of onsite runoff drains to Ridge View Court and is captured in Type R inlets and conveyed to the detention facility via RCP piping.

Basin S9 cannot be captured and will discharge to Colorado National Golf Course, however this flow is small (Q_2=0.26 cfs, Q_{100}=1.26 cfs) and has been minimized. Additionally, there is a small basin from the golf course (Basin OS5) which drains onto the Montex North Site. Flow from the golf course (Q_2=0.15 cfs, Q_{100}=2.68 cfs) exceeds the flow from Basin S9. The golf course runoff is captured in an area inlet between Buildings 15 and 18 and routed through the pond west of Primrose Preschool where detention and water quality is provided. This offsets the runoff to the golf course from Basin S9. Basin S9 water quality and detention will be provided in downstream ponds. Ultimately both basins end up in the same location.

Basin S10 will not be collected in the Montex North storm drainage system. This is a small area from the high point in Ridge View Circle which cannot be captured and will discharge flow (Q_2=0.09 cfs, Q_{100}=0.48 cfs) to Ridge View Drive.

An existing retention pond is located on the Vista Ridge Academy site. This pond currently prevents the majority of water from draining onto the Montex North Site. A storm drain stub will be provided to the Vista Ridge Academy south of lot 25 for future development. This pipe has been sized to accommodate a 95% impervious development. A swale has also been provided at this location to accommodate any potential emergency overflow. The retention pond should be modified to control the emergency overflow location and prevent overflow from discharging to the proposed homes.

An emergency overflow has been provided at the 10’ Type R inlet between lots 4 and 5 (Design Point 4). This emergency overflow has been sized to pass all tributary flow (Basin OS1-OS-3, S1-S5). Should this inlet plug, water will be conveyed to a Type D sump area inlet west of lot 4 (Design Point 5). An additional emergency overflow has been provided at this location to convey water to the Primrose Preschool parking lot.

Additional area inlets have been provided to capture onsite flow from swales between lots 15 and 18 and behind lot 4.

B. Specific Details

The inlet and street capacities were sized using Urban Drainage and Flood Control District Street Capacity and Inlet Sizing spreadsheet. Two 10’ Type R on grade inlets have been located at the east side of the Ridge View Court and Ridge View Circle intersection. An additional 10’ Type R inlet has been provided near lot 10 and a 10’ Type R sump inlet has been provided at the Ridge View Court low point (Design Point 4) near the fire department turnaround between lots 4 and 5 at the western edge of the site.

The inlets have been provided to capture runoff and maintain street capacities at allowable depths during the initial and major storm event and have been spaced to meet the Town of Erie Design Criteria. The storm sewer system has been designed to capture and convey the 100-year storm event. The curb near the fire department turn-around at the west end of Ridge View Court has been transitioned from a 4” Hollywood Curb to a 6” vertical curb. 6-inches of ponding depth enables the 10’ type R sump inlet to capture the 100-year storm. Should this inlet plug, water will spill over and into the drainage swale along the west property line.

The existing Type C inlet onsite near the west property line will be removed and replaced closer to the property with a close mesh grate Type D Inlet to accommodate the site layout. An emergency overflow spillway has been designed at this location to provide 1.2' of depth. Assuming a clogging factor of 0.5, this inlet has a capacity of 20.5 cfs with 1.2' of ponding. Basin S7 has 1.48 cfs during the major design storm. Should this inlet plug, water will spill out into the Primrose Preschool parking lot and drain to pond A3. A capacity chart for the Type D inlet has been provided in Appendix B.

A Type 13 sump inlet has been provided between lots 15 and 18. This sump was set to a depth of 9" to capture the 100-year runoff from basins S8, OS4 and OS5. Should this inlet plug water will be conveyed onto the golf course.

Hydraulic Analysis was performed using the Hydraflow software within AutoCAD to size pipes and determine HGL's and EGL's. The pipes have been sized to keep the HGL and the EGL below the proposed ground surface.

Language has been included in the Final Plat to allow for drainage runoff and maintenance on all tracts and individual lots.

All hydrologic and hydraulic calculations are provided in Appendix B.

5. SUMMARY

The proposed Montex North Residential Development will fall within the drainage guidelines outlined in the Town of Erie Standards and Specification as well as the previous drainage studies. The proposed development will construct a storm sewer system to convey runoff to the provided 36-inch storm drainage stub and ultimately to the existing Pond A3 detention facility. No adverse impacts are anticipated to the existing detention facilities.

6. REFERENCES

STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS, Town of Erie, Colorado, 2014 Edition.

URBAN STORM DRAINAGE CRITERIA MANUAL, VOLUME 1, 2 & 3., UDFCD, Denver, Colorado, Revised April 2008.

FINAL DRAINAGE REPORT – PRIMROSE SCHOOL, Hurst and Associates, Inc, May 8, 2007.

APPENDIX A

Drainage Map

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF 33, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPLE MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

4.036 ACRES - 25 LOTS / 3 TRACTS

SK-14-00020

DESIGN POINT SUMMARY TABLE

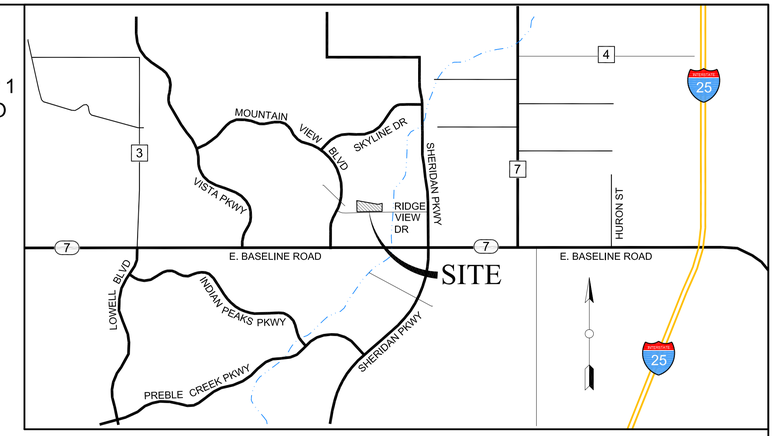
DESIGN POINT	Q_5 (CFS)	Q_{100} (CFS)	TRIBUTARY BASINS
1	1.54	10.88	S8, OS4, OS 5, S1, OS1
2	6.61	31.96	S8, OS4, OS 5, S1, OS1, S2, OS2
3	7.07	35.38	S8, OS4, OS 5, S1, OS1, S2, OS2, S3
4	8.07	40.58	S8, OS4, OS 5, S1, OS1, S2, OS2, S3, S4, S5
5	8.22	43.65	S8, OS4, OS 5, S1, OS1, S2, OS2, S3, S4, S5, S6, S7

BASIN RUNOFF SUMMARY TABLE

BASIN	AREA (AC)	Q_5 (CFS)	Q_{100} (CFS)
S1	0.93	1.54	5.75
S2	0.33	0.34	1.77
S3	0.67	1.21	4.29
S4	0.41	0.81	2.75
S5	0.45	0.87	2.98
S6	0.41	0.25	2.09
S7	0.29	0.21	1.48
S8	0.23	0.28	1.28
S9	0.23	0.26	1.26
S10	0.09	0.09	0.48
OS1	0.19	0.05	0.92
OS2	0.11	0.03	0.54
OS3	2.37	6.51	19.36
OS4	0.07	0.02	0.35
OS5	0.57	0.15	2.68

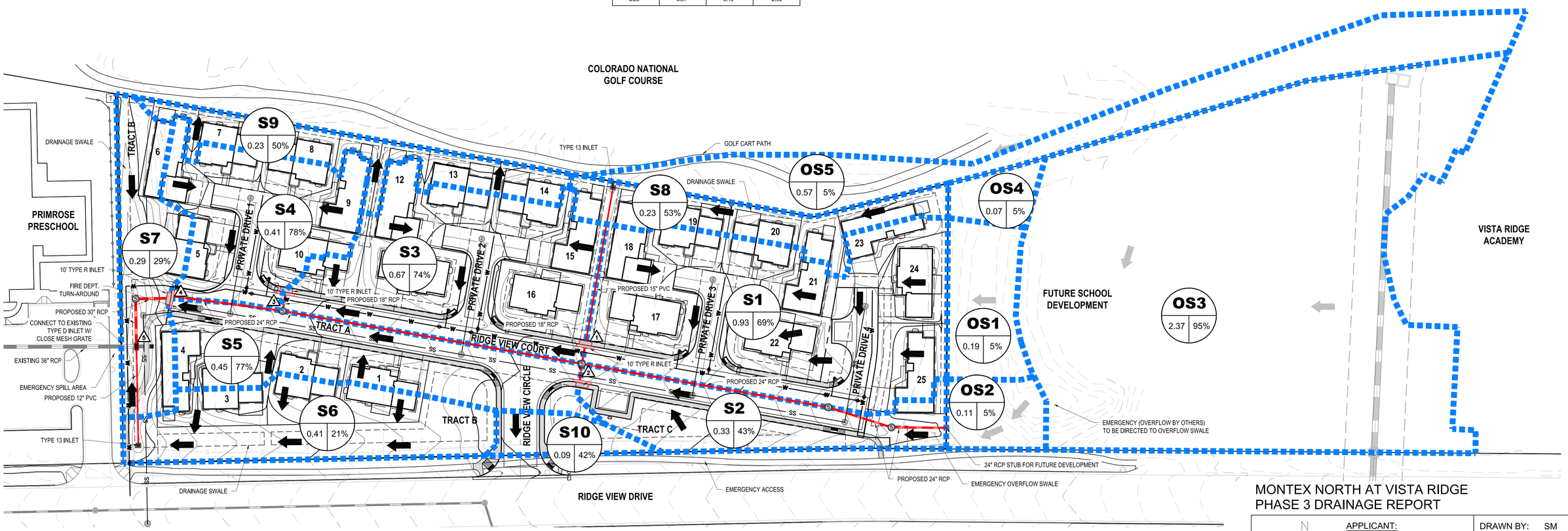
LEGEND

- PROPOSED CONDITION DRAINAGE BOUNDARY
- 5525 — EXISTING CONTOUR
- 5525 — PROPOSED CONTOUR
- EXISTING STORM DRAIN SYSTEM
- PROPOSED STORM DRAIN SYSTEM
- EXISTING DRAINAGE FLOW ARROW
- PROPOSED DRAINAGE FLOW ARROW
- XX — BASIN IDENTIFICATION
- XX.X — AREA (ACRES)
- XX% — IMPERVIOUSNESS



GENERAL LOCATION MAP

SCALE 1"=2000'



MONTEX NORTH AT VISTA RIDGE
PHASE 3 DRAINAGE REPORT

N

0' 20' 40' 80'

SCALE: 1"=40'

APPLICANT:
CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
303-545-2554

ENGINEER:
ENERTIA CONSULTING GROUP
1437 LARIMER STREET
DENVER, COLORADO 80202
303-875-7131

DRAWN BY: SM

APRVD BY: SM

DATE: 10/31/2014

REVISED: 4/2/2015

SHEET 1 OF 1

APPENDIX B

Calculations

CALCULATED BY: SCM
DATE: 31-Mar-15

Montex North at Vista Ridge
Proposed Conditions Imperviousness Calculations

		Impervious Area			
Basin ID	**Total Basin Area (sf)**	**Building (sf)**	**Drives, Pvmt, Swk (sf)**	**Total Imp. (sf)**	**Imperviousness (%)**
S1	40,602			12,523	**69%**
S2	14,319			8,093	**43%**
S3	29,110			7,601	**74%**
S4	18,012			4,008	**78%**
S5	19,676			4,538	**77%**
S6	17,954			14,247	**21%**
S7	12,427			8,870	**29%**
S8	9,947			4,666	**53%**
S9	9,921			4,933	**50%**
S10	3,855			2,231	**42%**
OS1	8,430			422	**5%**
OS2	4,995			250	**5%**
OS3	103,340			98,173	**95%**
OS4	3,245			162	**5%**
OS5	24,624			1,231	**5%**

Total Site Imperviousness (%) = ***59%***

STANDARD FORM SF-2
TIME OF CONCENTRATION

CALCULATED BY: SCM
DATE: 31-Mar-15
CHECKED BY: JMM

PROJECT: Montex North at Vista Ridge
JOB NUMBER:

SUB-BASIN DATA					INITIAL/OVERLAND TIME (T_i)			TRAVEL TIME (T_t)					Tc CHECK (URBANIZED BASINS)			FINAL T_c	REMARKS							
DESIGN: (1)	AREA SF	AREA IMP. SF	AREA Ac (2)	C_5 (3)	LENGTH Ft (4)	SLOPE % (5)	T_i (6)	LENGTH Ft (7)	SLOPE % (8)	C_V (9)	VEL. FPS (10)	T_t (11)	COMP. T_c (12)	TOTAL LENGTH (13)	T_c=(L/180)+10 MIN (14)	MIN (15)		C_2	C_5	C_{100}	K_2	K_5	K_{100}	Imperv. %
S1	40,602	28,079	0.93	0.52												5.0		0.48	0.52	0.67	0.00	0.04	0.19	69%
S2	14,319	6,226	0.33	0.36												5.0		0.30	0.36	0.59	0.00	0.07	0.29	43%
S3	29,110	21,509	0.67	0.57												5.0		0.53	0.57	0.70	0.00	0.04	0.17	74%
S4	18,012	14,004	0.41	0.60												5.0		0.57	0.60	0.73	0.00	0.03	0.16	78%
S5	19,676	15,138	0.45	0.59												5.0		0.56	0.59	0.72	0.00	0.03	0.16	77%
S6	17,954	3,707	0.41	0.26												5.0		0.17	0.26	0.55	0.00	0.09	0.38	21%
S7	12,427	3,557	0.29	0.30												5.0		0.22	0.30	0.57	0.00	0.08	0.35	29%
S8	9,947	5,281	0.23	0.41												5.0		0.36	0.41	0.61	0.00	0.06	0.25	53%
S9	9,921	4,988	0.23	0.40												5.0		0.34	0.40	0.60	0.00	0.06	0.26	50%
S10	3,855	1,624	0.09	0.36												5.0		0.29	0.36	0.59	0.00	0.07	0.30	42%
OS1	8,430	422	0.19	0.18												5.0		0.08	0.18	0.52	0.00	0.11	0.44	5%
OS2	4,995	250	0.11	0.18												5.0		0.08	0.18	0.52	0.00	0.11	0.44	5%
OS3	103,340	98,173	2.37	0.82												5.0		0.80	0.82	0.89	0.00	0.02	0.09	95%
OS4	3,245	162	0.07	0.18												5.0		0.08	0.18	0.52	0.00	0.11	0.44	5%
OS5	24,624	1,231	0.57	0.18												5.0		0.08	0.18	0.52	0.00	0.11	0.44	5%
																	Total							

STANDARD FORM SF-3
STORM DRAINAGE SYSTEM DESIGN
(RATIONAL METHOD PROCEDURE)

CALCULATED BY: SCM
DATE: 31-Mar-15
CHECKED BY: JMM

P_1= 1.01

PROJECT: Montex North at Vista Ridge
JOB NUMBER:
DESIGN STORM: 2-Year

* Negative flows indicate flow in storm sewer.

STREET	DIRECT RUNOFF								TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
	DESIGN POINT	AREA DESIG.	AREA (Ac)	RUNOFF COEFF.	tc (min)	CA (Ac)	I (in/hr)	Q (cfs)	tc (min)	CA (Ac)	I (in/hr)	Q (cfs)	Slope (%)	Flow (cfs)	Flow (cfs)	Slope (%)	Size (in)	Length (ft)	Velocity (fps)	tt (min)	
		S1	0.93	0.48	5.0	0.45	3.43	1.54													
		S2	0.33	0.30	5.0	0.10	3.43	0.34													
		S3	0.67	0.53	5.0	0.35	3.43	1.21													
		S4	0.41	0.57	5.0	0.24	3.43	0.81													
		S5	0.45	0.56	5.0	0.25	3.43	0.87	5.0	0.49	3.43	1.68									Basin S4 & S5 C2=0.57, A=0.86 ac
		S6	0.41	0.17	5.0	0.07	3.43	0.25													
		S7	0.29	0.22	5.0	0.06	3.43	0.21													
		S8	0.23	0.36	5.0	0.08	3.43	0.28													
		S9	0.23	0.34	5.0	0.08	3.43	0.26													Offsite Flow
		S10	0.09	0.29	5.0	0.03	3.43	0.09													Offsite Flow
		OS1	0.19	0.08	5.0	0.01	3.43	0.05	5.0	0.47	3.43	1.59									Basin S1 & OS1 C2=0.42, A=1.12ac
		OS2	0.11	0.08	5.0	0.01	3.43	0.03	5.0	0.11	3.43	0.37									Basin S2 & OS2 C2=0.25, A=0.44ac
		OS3	2.37	0.80	5.0	1.90	3.43	6.51													Offsite Flow (Retention Pond)
		OS4	0.07	0.08	5.0	0.01	3.43	0.02													
		OS5	0.57	0.08	5.0	0.04	3.43	0.15	5.0	0.13	3.43	0.45									Basin S8, OS4 & OS5 C2=0.15, A=0.87

STANDARD FORM SF-3
STORM DRAINAGE SYSTEM DESIGN
(RATIONAL METHOD PROCEDURE)

CALCULATED BY: SCM
DATE: 31-Mar-15
CHECKED BY: JMM

P_1= 2.70

PROJECT: Montex North at Vista Ridge
JOB NUMBER:
DESIGN STORM: 100-Year

* Negative flows indicate flow in storm sewer.

STREET	DIRECT RUNOFF								TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			REMARKS
	DESIGN POINT	AREA DESIG.	AREA (Ac)	RUNOFF COEFF.	tc (min)	CA (Ac)	I (in/hr)	Q (cfs)	tc (min)	CA (Ac)	I (in/hr)	Q (cfs)	Slope (%)	Flow (cfs)	Flow (cfs)	Slope (%)	Size (in)	Length (ft)	Velocity (fps)	tt (min)	
		S1	0.93	0.67	5.0	0.63	9.16	5.75													
		S2	0.33	0.59	5.0	0.19	9.16	1.77													
		S3	0.67	0.70	5.0	0.47	9.16	4.29													
		S4	0.41	0.73	5.0	0.30	9.16	2.75													
		S5	0.45	0.72	5.0	0.33	9.16	2.98	5.0	0.63	9.16	5.73									Basin S4 & S5 C100=0.73, A=0.86 ac
		S6	0.41	0.55	5.0	0.23	9.16	2.09													
		S7	0.29	0.57	5.0	0.16	9.16	1.48													
		S8	0.23	0.61	5.0	0.14	9.16	1.28													
		S9	0.23	0.60	5.0	0.14	9.16	1.26													Offsite Flow
		S10	0.09	0.59	5.0	0.05	9.16	0.48													Offsite Flow
		OS1	0.19	0.52	5.0	0.10	9.16	0.92	5.0	0.73	9.16	6.67									Basin S1 & OS1 C100=0.65, A=1.12ac
		OS2	0.11	0.52	5.0	0.06	9.16	0.54	5.0	0.25	9.16	2.32									Basin S2 & OS2 C100=0.57, A=0.44ac
		OS3	2.37	0.89	5.0	2.11	9.16	19.36													Offsite Flow (Retention Pond)
		OS4	0.07	0.52	5.0	0.04	9.16	0.35													
		OS5	0.57	0.52	5.0	0.29	9.16	2.68	5.0	0.47	9.16	4.31									Basin S8, OS4 & OS5 C100=0.54, A=0.87

Inlet Capcity Summary

Basin S1 & OS1

Q_2 =	1.59 cfs	
Q_{100} =	6.67 cfs	
Q_2 (Carryover from other basins)=	0 cfs	
Q_{100} (Carryover from other basins)=	0 cfs	
Q_2 (Total)=	**1.59 cfs**	
Q_{100} (Total)=	**6.67 cfs**	
Inlet Type:	**10' Type R**	
Capture Per UDFCD Inlet Spreadsheet:	**6.12 cfs**	
Carryover (2-yr):	**0.00 cfs**	
Carryover (100-yr):	**0.55 cfs**	**to Basin S3**

Basin S2 & OS2

Q_2 =	0.37 cfs
Q_{100} =	2.32 cfs
Q_2 (Carryover from other basins)=	0.00 cfs
Q_{100} (Carryover from other basins)=	0.00 cfs
Q_2 (Total)=	**0.37 cfs**
Q_{100} (Total)=	**2.32 cfs**
Inlet Type:	**10' Type R**
Capture Per UDFCD Inlet Spreadsheet:	**2.32 cfs**
Carryover (2-yr):	**0.00 cfs**
Carryover (100-yr):	**0.00 cfs**

Basin S6

Q_2 =	0.25 cfs
Q_{100} =	2.09 cfs
Q_2 (Carryover from other basins)=	0.00 cfs
Q_{100} (Carryover from other basins)=	0.00 cfs
Q_2 (Total)=	**0.25 cfs**
Q_{100} (Total)=	**2.09 cfs**
Inlet Type:	**Type 13**
Max Sump Depth	6"
Capture Per UDFCD Inlet Spreadsheet:	**2.64 cfs**
Carryover (2-yr):	**0.00 cfs**
Carryover (100-yr):	**0.00 cfs**

Basin S7

Q_2 =	0.21 cfs
Q_{100} =	1.48 cfs
Q_2 (Carryover from other basins)=	0.00 cfs
Q_{100} (Carryover from other basins)=	0.00 cfs
Q_2 (Total)=	**0.21 cfs**
Q_{100} (Total)=	**1.48 cfs**
Inlet Type:	**Type D**
Max Sump Depth	1.7'
Capture Per UDFCD Chart:	**30.00 cfs**
Carryover (2-yr):	**0.00 cfs**
Carryover (100-yr):	**0.00 cfs**

Basin S3

Q_2 =	1.21 cfs
Q_{100} =	4.29 cfs
Q_2 (Carryover from other basins)=	0.00 cfs
Q_{100} (Carryover from other basins)=	0.55 cfs
Q_2 (Total)=	**1.21 cfs**
Q_{100} (Total)=	**4.84 cfs**
Inlet Type:	**10' Type R**
Capture Per UDFCD Inlet Spreadsheet:	**4.81 cfs**
Carryover (2-yr):	**0.00 cfs**
Carryover (100-yr):	**0.03 cfs** **to Basin S4 & S5**

Basin S4 & S5

Q_2 =	1.68 cfs
Q_{100} =	5.73 cfs
Q_2 (Carryover from other basins)=	0.00 cfs
Q_{100} (Carryover from other basins)=	0.03 cfs
Q_2 (Total)=	**1.68 cfs**
Q_{100} (Total)=	**5.76 cfs**
Inlet Type:	**10' Type R**
Max Sump Depth	6"
Capture Per UDFCD Inlet Spreadsheet:	**5.76 cfs**
Carryover (2-yr):	**0.00 cfs**
Carryover (100-yr):	**0.00 cfs**

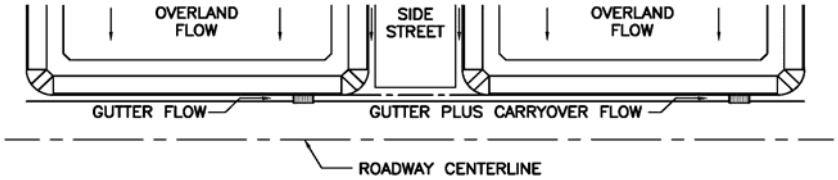
Basin S8, OS4 & OS5

Q_2 =	0.45 cfs
Q_{100} =	4.31 cfs
Q_2 (Carryover from other basins)=	0.00 cfs
Q_{100} (Carryover from other basins)=	0.00 cfs
Q_2 (Total)=	**0.45 cfs**
Q_{100} (Total)=	**4.31 cfs**
Inlet Type:	**Type 13**
Max Sump Depth	9"
Capture Per UDFCD Inlet Spreadsheet:	**4.55 cfs**
Carryover (2-yr):	**0.00 cfs**
Carryover (100-yr):	**0.00 cfs**

Worksheet Protected

DESIGN PEAK FLOW FOR ONE-HALF OF STREET OR GRASS-LINED CHANNEL BY THE RATIONAL METHOD

Project: Montex North
Inlet ID: Basin S1 & OS1



Show Details

Design Flow: ONLY if already determined through other methods:
(local peak flow for 1/2 of street OR grass-lined channel):

	Minor Storm	Major Storm	
$*Q_{Known}$ =	1.59	6.67	cfs

<---
FILL IN THIS SECTION OR...

*** If you enter values in Row 14, skip the rest of this sheet and proceed to sheet Q-Allow or Area Inlet.**

Geographic Information: (Enter data in the blue cells):

FILL IN THE SECTIONS BELOW.
<---

You cannot enter values for Q and use the Q calculator at the same time

Site Type:
- ● Site is Urban
- ○ Site is Non-Urban

Flows Developed For:
- ● Street Inlets
- ○ Area Inlets in a Median

Subcatchment Area =		Acres
Percent Imperviousness =		%
NRCS Soil Type =		A, B, C, or D

	Slope (ft/ft)	Length (ft)
Overland Flow =		
Gutter Flow =		

Rainfall Information: Intensity I (inch/hr) = $C_1 * P_1 / (C_2 + T_c) ^ C_3$

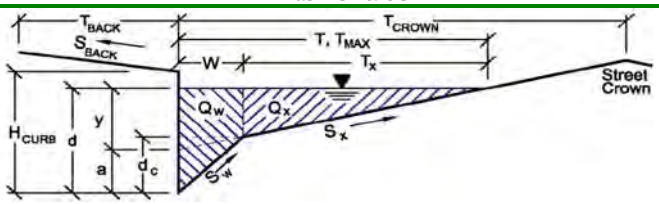
	Minor Storm	Major Storm	
Design Storm Return Period, T_r =			years
Return Period One-Hour Precipitation, P_1 =			inches
C_1 =			
C_2 =			
C_3 =			
User-Defined Storm Runoff Coefficient (leave this blank to accept a calculated value), C =			
User-Defined 5-yr. Runoff Coefficient (leave this blank to accept a calculated value), C_5 =			
Bypass (Carry-Over) Flow from upstream Subcatchments, Q_b =	0.00	0.00	cfs
Total Design Peak Flow, Q =	1.59	6.67	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: **Montex North**

Inlet ID: **Basin S1 & OS1**



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.0	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	16.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.022	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	16.0	16.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	6.0	inches
Allow Flow Depth at Street Crown (leave blank for no)		☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion

		Minor Storm	Major Storm	
MAJOR STORM Allowable Capacity is based on Spread Criterion	Q_{allow} =	**5.06**	**14.62**	**cfs**

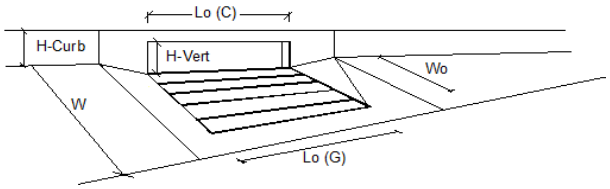
Minor storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

Major storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

INLET ON A CONTINUOUS GRADE

Project: **Montex North**

Inlet ID: **Basin S1 & OS1**

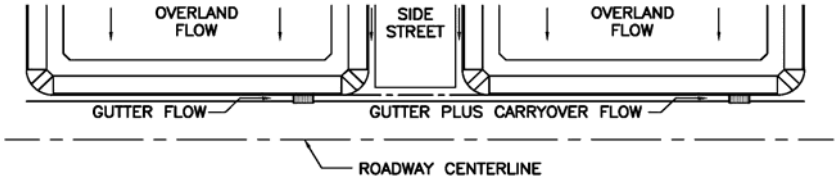


Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from 'Q-Allow')	a_{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W from Q-Allow)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f-G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f-C =	0.10	0.10	
Street Hydraulics: OK - Q < maximum allowable from sheet 'Q-Allow'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q =**	**1.59**	**6.12**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.00**	**0.55**	**cfs**
Capture Percentage = Q_a/Q_o =	**C% =**	**100**	**92**	**%**

Worksheet Protected

DESIGN PEAK FLOW FOR ONE-HALF OF STREET OR GRASS-LINED CHANNEL BY THE RATIONAL METHOD

Project: Montex North
Inlet ID: Basin S2 & OS2



Show Details

Design Flow: ONLY if already determined through other methods:
(local peak flow for 1/2 of street OR grass-lined channel):

	Minor Storm	Major Storm	
$*Q_{Known}$ =	0.37	2.32	cfs

<---
FILL IN THIS SECTION OR...

*** If you enter values in Row 14, skip the rest of this sheet and proceed to sheet Q-Allow or Area Inlet.**

Geographic Information: (Enter data in the blue cells):

FILL IN THE SECTIONS BELOW.
<---

You cannot enter values for Q and use the Q calculator at the same time

Site Type:
- ● Site is Urban
- ○ Site is Non-Urban

Flows Developed For:
- ● Street Inlets
- ○ Area Inlets in a Median

Subcatchment Area =		Acres
Percent Imperviousness =		%
NRCS Soil Type =		A, B, C, or D

	Slope (ft/ft)	Length (ft)
Overland Flow =		
Gutter Flow =		

Rainfall Information: Intensity I (inch/hr) = $C_1 * P_1 / (C_2 + T_c) ^ C_3$

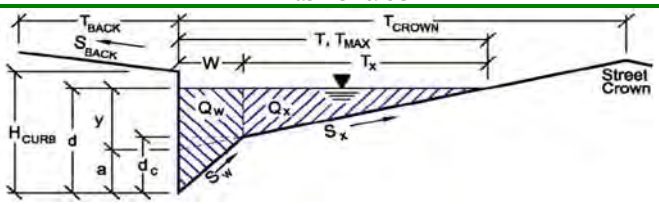
	Minor Storm	Major Storm	
Design Storm Return Period, T_r =			years
Return Period One-Hour Precipitation, P_1 =			inches
C_1 =			
C_2 =			
C_3 =			
User-Defined Storm Runoff Coefficient (leave this blank to accept a calculated value), C =			
User-Defined 5-yr. Runoff Coefficient (leave this blank to accept a calculated value), C_5 =			
Bypass (Carry-Over) Flow from upstream Subcatchments, Q_b =	0.00	0.00	cfs
Total Design Peak Flow, Q =	0.37	2.32	cfs

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: **Montex North**

Inlet ID: **Basin S2 & OS2**



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.0	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	16.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.022	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	16.0	16.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	6.0	inches
Allow Flow Depth at Street Crown (leave blank for no)		☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion

		Minor Storm	Major Storm	
MAJOR STORM Allowable Capacity is based on Spread Criterion	Q_{allow} =	**5.06**	**14.62**	**cfs**

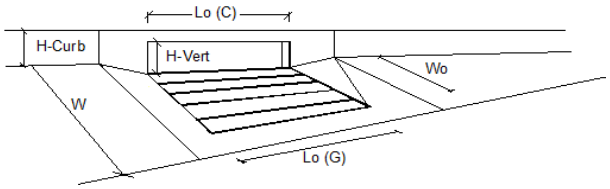
Minor storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

Major storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

INLET ON A CONTINUOUS GRADE

Project: **Montex North**

Inlet ID: **Basin S2 & OS2**

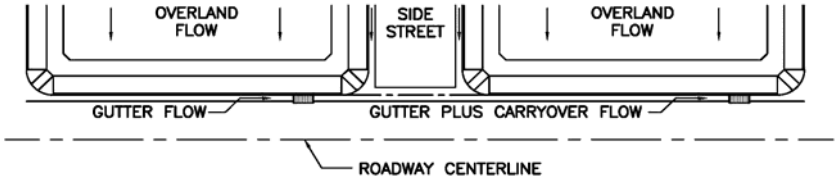


Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from 'Q-Allow')	a_{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W from Q-Allow)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f-G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f-C =	0.10	0.10	
Street Hydraulics: OK - Q < maximum allowable from sheet 'Q-Allow'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q =**	**0.37**	**2.32**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.00**	**0.00**	**cfs**
Capture Percentage = Q_a/Q_o =	**C% =**	**100**	**100**	**%**

Worksheet Protected

DESIGN PEAK FLOW FOR ONE-HALF OF STREET OR GRASS-LINED CHANNEL BY THE RATIONAL METHOD

Project: Montex North
Inlet ID: Basin S3



Show Details

Design Flow: ONLY if already determined through other methods:
(local peak flow for 1/2 of street OR grass-lined channel):

	Minor Storm	Major Storm	
$*Q_{Known}$ =	1.21	4.29	cfs

<---
FILL IN THIS SECTION OR...

*** If you enter values in Row 14, skip the rest of this sheet and proceed to sheet Q-Allow or Area Inlet.**

Geographic Information: (Enter data in the blue cells):

FILL IN THE SECTIONS BELOW.
<---

You cannot enter values for Q and use the Q calculator at the same time

Site Type:
- ● Site is Urban
- ○ Site is Non-Urban

Flows Developed For:
- ● Street Inlets
- ○ Area Inlets in a Median

Subcatchment Area =		Acres
Percent Imperviousness =		%
NRCS Soil Type =		A, B, C, or D

	Slope (ft/ft)	Length (ft)
Overland Flow =		
Gutter Flow =		

Rainfall Information: Intensity I (inch/hr) = $C_1 * P_1 / (C_2 + T_c) ^ C_3$

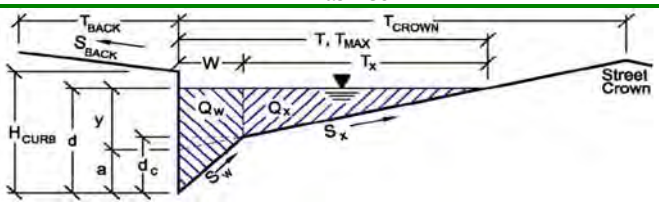
	Minor Storm	Major Storm	
Design Storm Return Period, T_r =			years
Return Period One-Hour Precipitation, P_1 =			inches
C_1 =			
C_2 =			
C_3 =			
User-Defined Storm Runoff Coefficient (leave this blank to accept a calculated value), C =			
User-Defined 5-yr. Runoff Coefficient (leave this blank to accept a calculated value), C_5 =			
Bypass (Carry-Over) Flow from upstream Subcatchments, Q_b =	**0.00**	**0.55**	**cfs**
Total Design Peak Flow, Q =	**1.21**	**4.84**	**cfs**

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: **Montex North**

Inlet ID: **Basin S3**



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.0	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	16.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.030	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	16.0	16.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	6.0	inches
Allow Flow Depth at Street Crown (leave blank for no)		☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion

		Minor Storm	Major Storm	
MAJOR STORM Allowable Capacity is based on Depth Criterion	Q_{allow} =	**5.86**	**15.54**	**cfs**

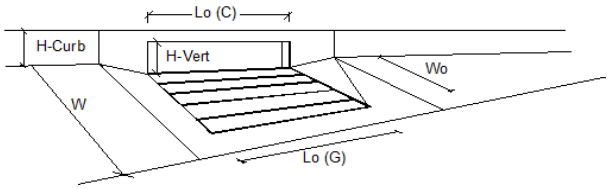
Minor storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

Major storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

INLET ON A CONTINUOUS GRADE

Project: **Montex North**

Inlet ID: **Basin S3**

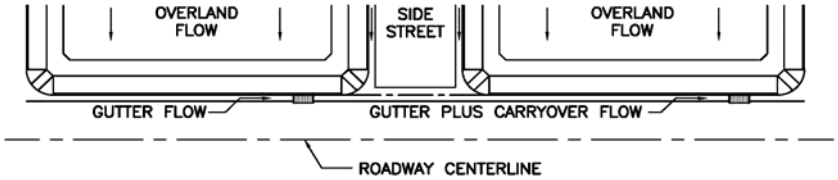


Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from 'Q-Allow')	a_{LOCAL} =	5.0	5.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W from Q-Allow)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f-G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f-C =	0.10	0.10	
Street Hydraulics: OK - Q < maximum allowable from sheet 'Q-Allow'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q =**	**1.21**	**4.81**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.00**	**0.03**	**cfs**
Capture Percentage = Q_a/Q_o =	**C% =**	**100**	**99**	**%**

Worksheet Protected

DESIGN PEAK FLOW FOR ONE-HALF OF STREET OR GRASS-LINED CHANNEL BY THE RATIONAL METHOD

Project: Montex North
Inlet ID: Basin S4 & S5



Show Details

Design Flow: ONLY if already determined through other methods:
(local peak flow for 1/2 of street OR grass-lined channel):

	Minor Storm	Major Storm	
$*Q_{Known}$ =	1.68	5.73	cfs

<---
FILL IN THIS SECTION OR...

*** If you enter values in Row 14, skip the rest of this sheet and proceed to sheet Q-Allow or Area Inlet.**

Geographic Information: (Enter data in the blue cells):

FILL IN THE SECTIONS BELOW.
<---

You cannot enter values for Q and use the Q calculator at the same time

Site Type:
- ● Site is Urban
- ○ Site is Non-Urban

Flows Developed For:
- ● Street Inlets
- ○ Area Inlets in a Median

Subcatchment Area =		Acres
Percent Imperviousness =		%
NRCS Soil Type =		A, B, C, or D

	Slope (ft/ft)	Length (ft)
Overland Flow =		
Gutter Flow =		

Rainfall Information: Intensity I (inch/hr) = $C_1 * P_1 / (C_2 + T_c) ^ C_3$

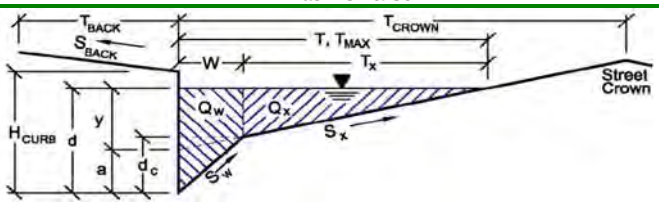
	Minor Storm	Major Storm	
Design Storm Return Period, T_r =			years
Return Period One-Hour Precipitation, P_1 =			inches
C_1 =			
C_2 =			
C_3 =			
User-Defined Storm Runoff Coefficient (leave this blank to accept a calculated value), C =			
User-Defined 5-yr. Runoff Coefficient (leave this blank to accept a calculated value), C_5 =			
Bypass (Carry-Over) Flow from upstream Subcatchments, Q_b =	**0.00**	**0.03**	**cfs**
Total Design Peak Flow, Q =	**1.68**	**5.76**	**cfs**

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: **Montex North**

Inlet ID: **Basin S4 & S5**



Gutter Geometry (Enter data in the blue cells)

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	12.0	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	4.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	16.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.030	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	16.0	16.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	4.0	6.0	inches
Allow Flow Depth at Street Crown (leave blank for no)		☐	☐	check = yes

MINOR STORM Allowable Capacity is based on Depth Criterion

		Minor Storm	Major Storm	
MAJOR STORM Allowable Capacity is based on Depth Criterion	Q_{allow} =	**5.86**	**15.54**	**cfs**

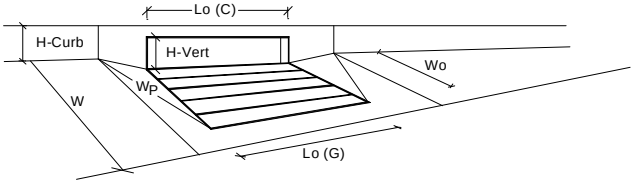
Minor storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

Major storm max. allowable capacity GOOD - greater than flow given on sheet 'Q-Peak'

INLET IN A SUMP OR SAG LOCATION

Project = **Montex North**

Inlet ID = **Basin S4 & S5**

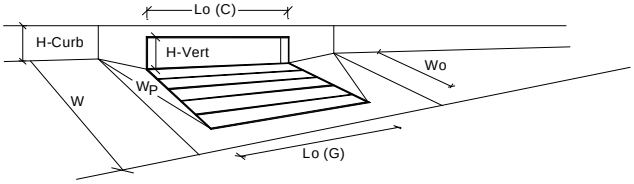


Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Inlet Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from 'Q-Allow')	a_{local} =	5.00	5.00	inches
Number of Unit Inlets (Grate or Curb Opening)	No =	1	1	
Water Depth at Flowline (outside of local depression)	Ponding Depth =	6.0	6.0	inches
				☑ Override Depths
Grate Information		MINOR	MAJOR	
Length of a Unit Grate	L_o (G) =	N/A	N/A	feet
Width of a Unit Grate	W_o =	N/A	N/A	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)	A_{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	C_f (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)	C_w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	C_o (G) =	N/A	N/A	
Curb Opening Information		MINOR	MAJOR	
Length of a Unit Curb Opening	L_o (C) =	10.00	10.00	feet
Height of Vertical Curb Opening in Inches	H_{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches	H_{throat} =	6.00	6.00	inches
Angle of Throat (see USDCM Figure ST-5)	Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	W_p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	C_f (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	C_w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	C_o (C) =	0.67	0.67	
		MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)	**Q_a =**	**8.28**	**8.28**	**cfs**
Inlet Capacity IS GOOD for Minor and Major Storms (>Q PEAK)	$Q_{PEAK\ REQUIRED}$ =	1.68	5.76	cfs

INLET IN A SUMP OR SAG LOCATION

Project = **Montex North**

Inlet ID = **Basin S6**



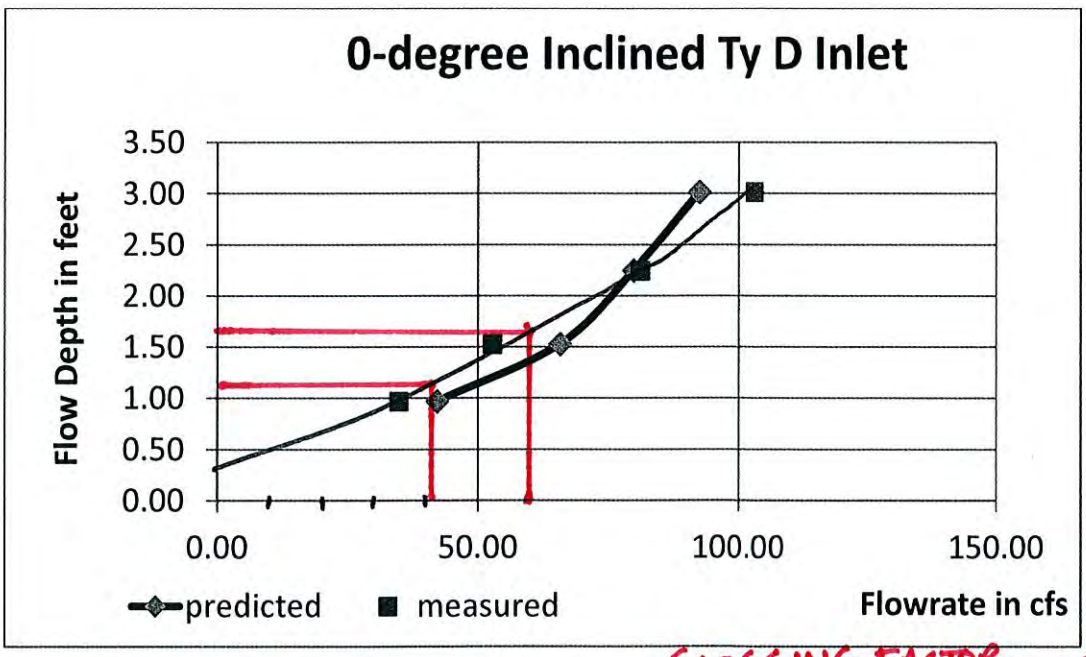
Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Inlet Type =	CDOT/Denver 13 Valley Grate		
Local Depression (additional to continuous gutter depression 'a' from 'Q-Allow')	a_{local} =	2.00	2.00	inches
Number of Unit Inlets (Grate or Curb Opening)	No =	1	1	
Water Depth at Flowline (outside of local depression)	Ponding Depth =	6.0	6.0	inches
				☑ Override Depths
Grate Information		MINOR	MAJOR	
Length of a Unit Grate	L_o (G) =	3.00	3.00	feet
Width of a Unit Grate	W_o =	1.73	1.73	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)	A_{ratio} =	0.43	0.43	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	C_f (G) =	0.50	0.50	
Grate Weir Coefficient (typical value 2.15 - 3.60)	C_w (G) =	3.30	3.30	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	C_o (G) =	0.60	0.60	
Curb Opening Information		MINOR	MAJOR	
Length of a Unit Curb Opening	L_o (C) =	N/A	N/A	feet
Height of Vertical Curb Opening in Inches	H_{vert} =	N/A	N/A	inches
Height of Curb Orifice Throat in Inches	H_{throat} =	N/A	N/A	inches
Angle of Throat (see USDCM Figure ST-5)	Theta =	N/A	N/A	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	W_p =	N/A	N/A	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	C_f (C) =	N/A	N/A	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	C_w (C) =	N/A	N/A	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	C_o (C) =	N/A	N/A	
		MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)	**Q_a =**	**2.64**	**2.64**	**cfs**
Inlet Capacity IS GOOD for Minor and Major Storms (>Q PEAK)	$Q_{PEAK\ REQUIRED}$ =	0.25	2.09	cfs

PAGE 30 OF URBAN DRAINAGE HYDRAULIC CAPACITY OF CDOT TYPE C AND D AREA INLETS

Width of Grate	B	3.00		(input)
Inclined Length of Grate	L	6.00	ft	
Opening Ratio of Grate	n	0.70		(input)
Grate Discharge Coeff	Cd	0.79		(input)
Height of Box	Hb=	0.00	ft	
Inclined Angle	@	0.00	degree	(input)
Orifice/ Weir Coeff	Co=	0.53	Cw=	1.69
Orientation	Ko=	0		

BASIN S7

Water Depth H ft	ubmerged Si Weir Length ft (X)	Inclined Left S Weir cfs	Inclined Right S Weir cfs	Base Weir cfs	Total Weir cfs	Total Orifice cfs	Predcited Flow cfs	Observed Flow cfs	Error %	Sq error cfs^2
0.97	6.00	16.89	16.89	8.44	42.22	52.28	**42.22**	**34.9**	-20.97%	53.58
1.53	6.00	33.41	33.41	16.70	83.52	65.63	**65.63**	**52.8**	-24.27%	164.26
2.25	6.00	59.63	59.63	29.82	149.08	79.62	**79.62**	**81.0**	1.73%	1.96
3.02	6.00	92.69	92.69	46.34	231.71	92.22	**92.22**	**103.3**	10.72%	122.57
										342.37

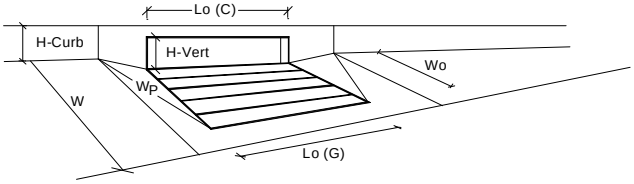


	CLOGGING FACTOR	CAPACITY
1.2' DEPTH → 41 CFS	0.5	20.5 CFS
1.7' DEPTH → 60 CFS	0.5	30 CFS

INLET IN A SUMP OR SAG LOCATION

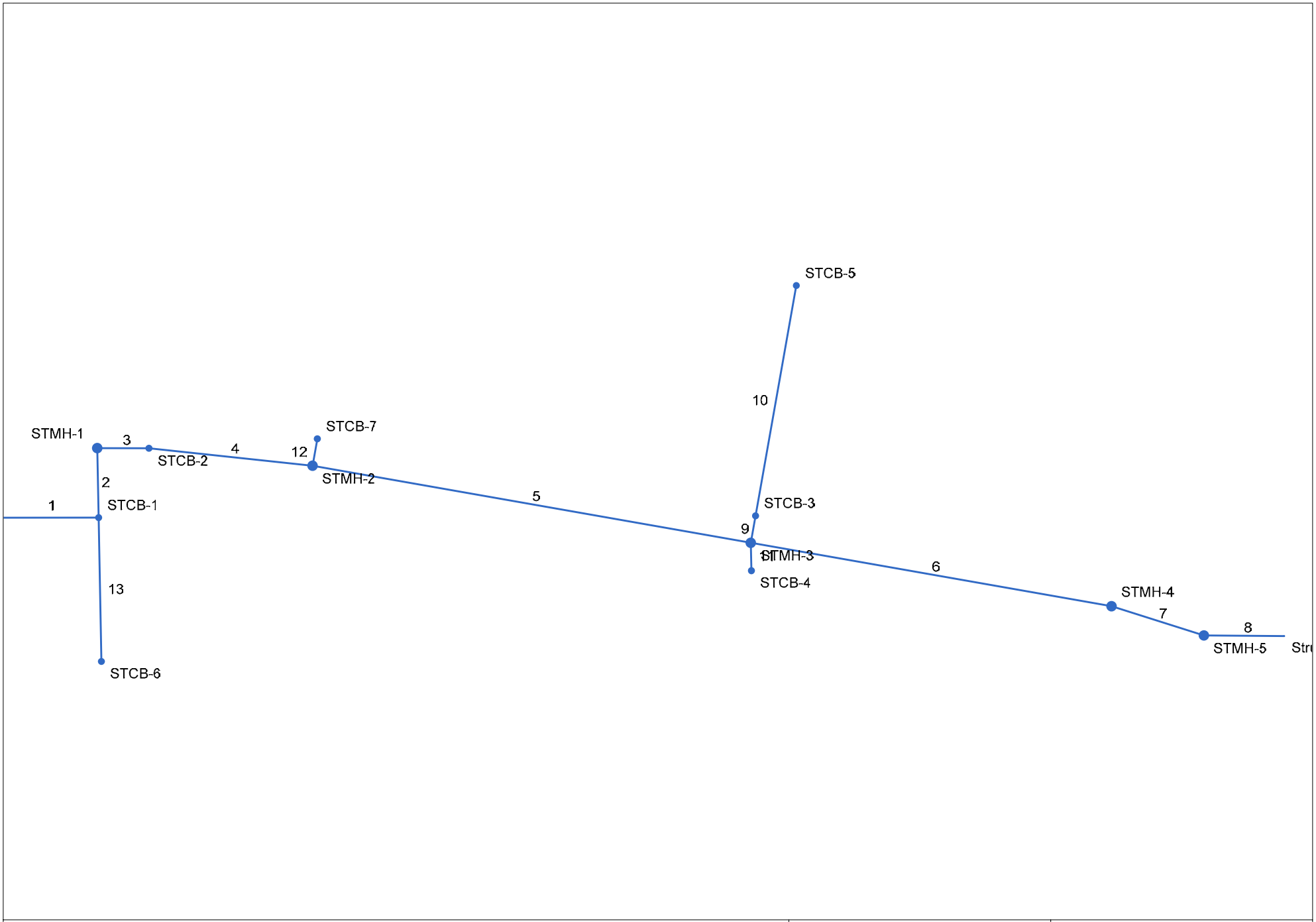
Project = **Montex North**

Inlet ID = **Basin S8, OS4, OS5**



Design Information (Input)		MINOR	MAJOR	
Type of Inlet	Inlet Type =	CDOT/Denver 13 Valley Grate		
Local Depression (additional to continuous gutter depression 'a' from 'Q-Allow')	a_{local} =	2.00	2.00	inches
Number of Unit Inlets (Grate or Curb Opening)	No =	1	1	
Water Depth at Flowline (outside of local depression)	Ponding Depth =	6.0	9.0	inches
				☑ Override Depths
Grate Information		MINOR	MAJOR	
Length of a Unit Grate	L_o (G) =	3.00	3.00	feet
Width of a Unit Grate	W_o =	1.73	1.73	feet
Area Opening Ratio for a Grate (typical values 0.15-0.90)	A_{ratio} =	0.43	0.43	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)	C_f (G) =	0.50	0.50	
Grate Weir Coefficient (typical value 2.15 - 3.60)	C_w (G) =	3.30	3.30	
Grate Orifice Coefficient (typical value 0.60 - 0.80)	C_o (G) =	0.60	0.60	
Curb Opening Information		MINOR	MAJOR	
Length of a Unit Curb Opening	L_o (C) =	N/A	N/A	feet
Height of Vertical Curb Opening in Inches	H_{vert} =	N/A	N/A	inches
Height of Curb Orifice Throat in Inches	H_{throat} =	N/A	N/A	inches
Angle of Throat (see USDCM Figure ST-5)	Theta =	N/A	N/A	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)	W_p =	N/A	N/A	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)	C_f (C) =	N/A	N/A	
Curb Opening Weir Coefficient (typical value 2.3-3.7)	C_w (C) =	N/A	N/A	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)	C_o (C) =	N/A	N/A	
		MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)	**Q_a =**	**2.64**	**4.55**	**cfs**
Inlet Capacity IS GOOD for Minor and Major Storms (>Q PEAK)	$Q_{PEAK\ REQUIRED}$ =	0.45	4.31	cfs

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2013 Plan



Project File: NORTH-2-YEAR.stm	Number of lines: 13	Date: 4/1/2015

Storm Sewers v10.00

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	59.298	-0.056	MH	0.00	0.29	0.22	5.0	5233.65	1.52	5234.55	36	Cir	0.013	1.00	5241.11	Pipe - (33)
2	1	40.657	-91.081	MH	0.00	0.00	0.00	0.0	5235.25	1.99	5236.06	30	Cir	0.013	1.00	5242.07	Pipe - (30)
3	2	30.112	91.284	MH	0.00	0.86	0.57	5.0	5236.16	6.01	5237.97	30	Cir	0.013	0.15	5246.13	Pipe - (29)
4	3	95.906	5.974	MH	0.00	0.00	0.00	0.0	5239.47	3.60	5242.92	24	Cir	0.013	1.00	5249.32	Pipe - (28)
5	4	259.315	3.886	MH	0.00	0.00	0.00	0.0	5243.12	3.00	5250.90	24	Cir	0.013	1.00	5256.46	Pipe - (27)
6	5	213.461	0.000	MH	0.00	0.00	0.00	0.0	5250.90	3.00	5257.30	24	Cir	0.013	0.16	5262.53	Pipe - (81)
7	6	56.501	7.587	MH	0.00	0.00	0.00	0.0	5257.53	2.00	5258.66	24	Cir	0.013	0.34	5264.15	Pipe - (80)
8	7	46.737	-17.125	None	0.00	2.37	0.80	5.0	5258.86	1.99	5259.79	24	Cir	0.013	1.00	5262.21	Pipe - (79)
9	5	16.000	-90.000	MH	0.00	1.12	0.42	5.0	5251.69	2.00	5252.01	18	Cir	0.013	0.15	5256.01	Pipe - (25)
10	9	136.750	0.000	MH	0.00	0.87	0.15	5.0	5252.32	0.99	5253.68	15	Cir	0.013	1.00	5257.80	Pipe - (78)
11	5	16.316	78.686	MH	0.00	0.44	0.25	5.0	5251.69	2.02	5252.02	18	Cir	0.013	1.00	5256.08	Pipe - (31)
12	4	16.001	-86.114	MH	0.00	0.67	0.53	5.0	5243.62	2.00	5243.94	18	Cir	0.013	1.00	5248.87	Pipe - (93)
13	1	84.126	88.953	MH	0.00	0.41	0.17	5.0	5236.75	2.00	5238.43	12	Cir	0.013	1.00	5243.46	Pipe - (82)

Project File: NORTH-2-YEAR.stm | Number of lines: 13 | Date: 4/1/2015

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	Pipe - (33)	8.22	36	Cir	59.298	5233.65	5234.55	1.518	5234.56	5235.19	n/a	5235.19	End	Manhole
2	Pipe - (30)	8.01	30	Cir	40.657	5235.25	5236.06	1.992	5235.88	5236.69	n/a	5236.69	1	Manhole
3	Pipe - (29)	8.07	30	Cir	30.112	5236.16	5237.97	6.011	5236.69	5238.45	n/a	5238.45	2	Manhole
4	Pipe - (28)	7.07	24	Cir	95.906	5239.47	5242.92	3.597	5240.02	5243.47	n/a	5243.47	3	Manhole
5	Pipe - (27)	6.61	24	Cir	259.315	5243.12	5250.90	3.000	5243.68	5251.46	n/a	5251.46	4	Manhole
6	Pipe - (81)	6.16	24	Cir	213.461	5250.90	5257.30	2.998	5251.46	5257.84	n/a	5257.84	5	Manhole
7	Pipe - (80)	6.31	24	Cir	56.501	5257.53	5258.66	2.001	5258.13	5259.26	n/a	5259.26	6	Manhole
8	Pipe - (79)	6.44	24	Cir	46.737	5258.86	5259.79	1.990	5259.47	5260.40	n/a	5260.40	7	None
9	Pipe - (25)	1.54	18	Cir	16.000	5251.69	5252.01	1.999	5252.02	5252.34	n/a	5252.34	5	Manhole
10	Pipe - (78)	0.44	15	Cir	136.750	5252.32	5253.68	0.995	5252.54	5253.90	n/a	5253.90	9	Manhole
11	Pipe - (31)	0.37	18	Cir	16.316	5251.69	5252.02	2.023	5251.85	5252.18	n/a	5252.18	5	Manhole
12	Pipe - (93)	1.21	18	Cir	16.001	5243.62	5243.94	1.999	5243.91	5244.23	n/a	5244.23	4	Manhole
13	Pipe - (82)	0.24	12	Cir	84.126	5236.75	5238.43	1.997	5236.90	5238.58	n/a	5238.58	1	Manhole

Project File: NORTH-2-YEAR.stm | Number of lines: 13 | Run Date: 4/1/2015

NOTES: Return period = 2 Yrs.

Hydraulic Grade Line Computations

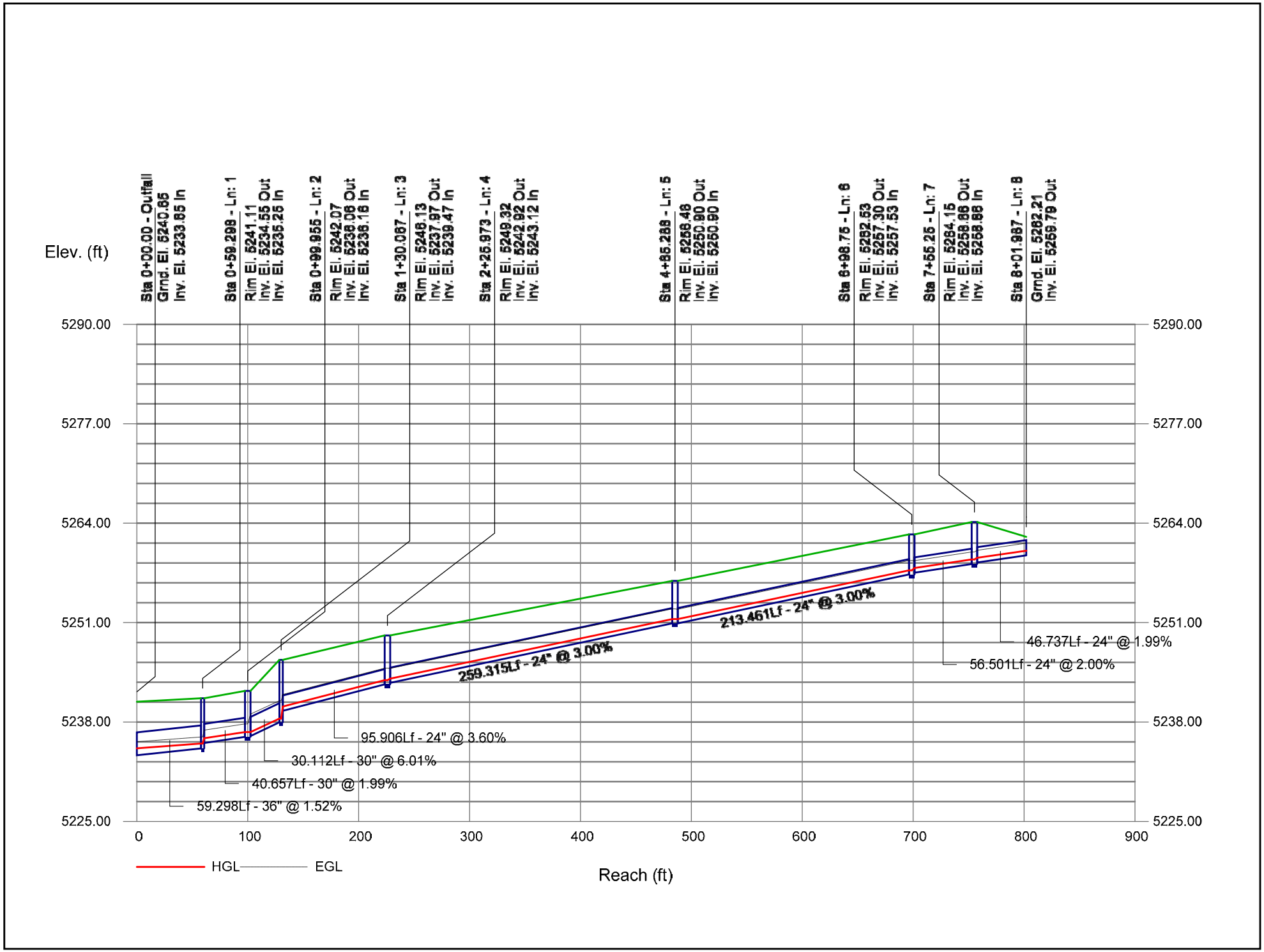
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
	(in)	(cfs)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	(ft)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)	(K)	(ft)
1	36	8.22	5233.65	5234.56	0.91	1.11	0.00	0.86	5235.42	0.000	59.298	5234.55	5235.19	0.64	1.11	7.43	0.86	5236.05	0.000	0.000	0.000	1.00	n/a
2	30	8.01	5235.25	5235.88	0.63*	0.97	0.00	1.06	5236.94	0.000	40.657	5236.06	5236.69	0.63	0.97	8.28	1.06	5237.75	0.000	0.000	0.000	1.00	n/a
3	30	8.07	5236.16	5236.69	0.53	0.66	0.00	2.34	5239.03	0.000	30.112	5237.97	5238.45	0.48	0.66	12.27	2.34	5240.79	0.000	0.000	0.000	0.15	n/a
4	24	7.07	5239.47	5240.02	0.55*	0.70	0.00	1.58	5241.60	0.000	95.906	5242.92	5243.47	0.55	0.70	10.08	1.58	5245.05	0.000	0.000	0.000	1.00	n/a
5	24	6.61	5243.12	5243.68	0.56*	0.71	0.00	1.34	5245.01	0.000	259.315	5250.90	5251.46	0.56	0.71	9.27	1.34	5252.79	0.000	0.000	0.000	1.00	n/a
6	24	6.16	5250.90	5251.46	0.56	0.68	0.00	1.28	5252.74	0.000	213.461	5257.30	5257.84	0.54	0.68	9.08	1.28	5259.12	0.000	0.000	0.000	0.16	n/a
7	24	6.31	5257.53	5258.13	0.60*	0.80	0.00	0.97	5259.11	0.000	56.501	5258.66	5259.26	0.60	0.80	7.92	0.97	5260.24	0.000	0.000	0.000	0.34	n/a
8	24	6.44	5258.86	5259.47	0.61*	0.81	0.00	0.98	5260.45	0.000	46.737	5259.79	5260.40	0.61	0.81	7.95	0.98	5261.38	0.000	0.000	0.000	1.00	n/a
9	18	1.54	5251.69	5252.02	0.33*	0.28	0.00	0.46	5252.47	0.000	16.000	5252.01	5252.34	0.33	0.28	5.42	0.46	5252.79	0.000	0.000	0.000	0.15	n/a
10	15	0.44	5252.32	5252.54	0.22*	0.15	0.00	0.14	5252.68	0.000	136.750	5253.68	5253.90	0.22	0.15	3.01	0.14	5254.04	0.000	0.000	0.000	1.00	n/a
11	18	0.37	5251.69	5251.85	0.16*	0.10	0.00	0.20	5252.05	0.000	16.316	5252.02	5252.18	0.16	0.10	3.57	0.20	5252.38	0.000	0.000	0.000	1.00	n/a
12	18	1.21	5243.62	5243.91	0.29*	0.24	0.00	0.40	5244.31	0.000	16.001	5243.94	5244.23	0.29	0.24	5.05	0.40	5244.63	0.000	0.000	0.000	1.00	n/a
13	12	0.24	5236.75	5236.90	0.15*	0.07	0.00	0.17	5237.07	0.000	84.126	5238.43	5238.58	0.15	0.07	3.28	0.17	5238.75	0.000	0.000	0.000	1.00	n/a

Project File: NORTH-2-YEAR.stm | Number of lines: 13 | Run Date: 4/1/2015

Notes: * depth assumed. ; c = cir e = ellip b = box

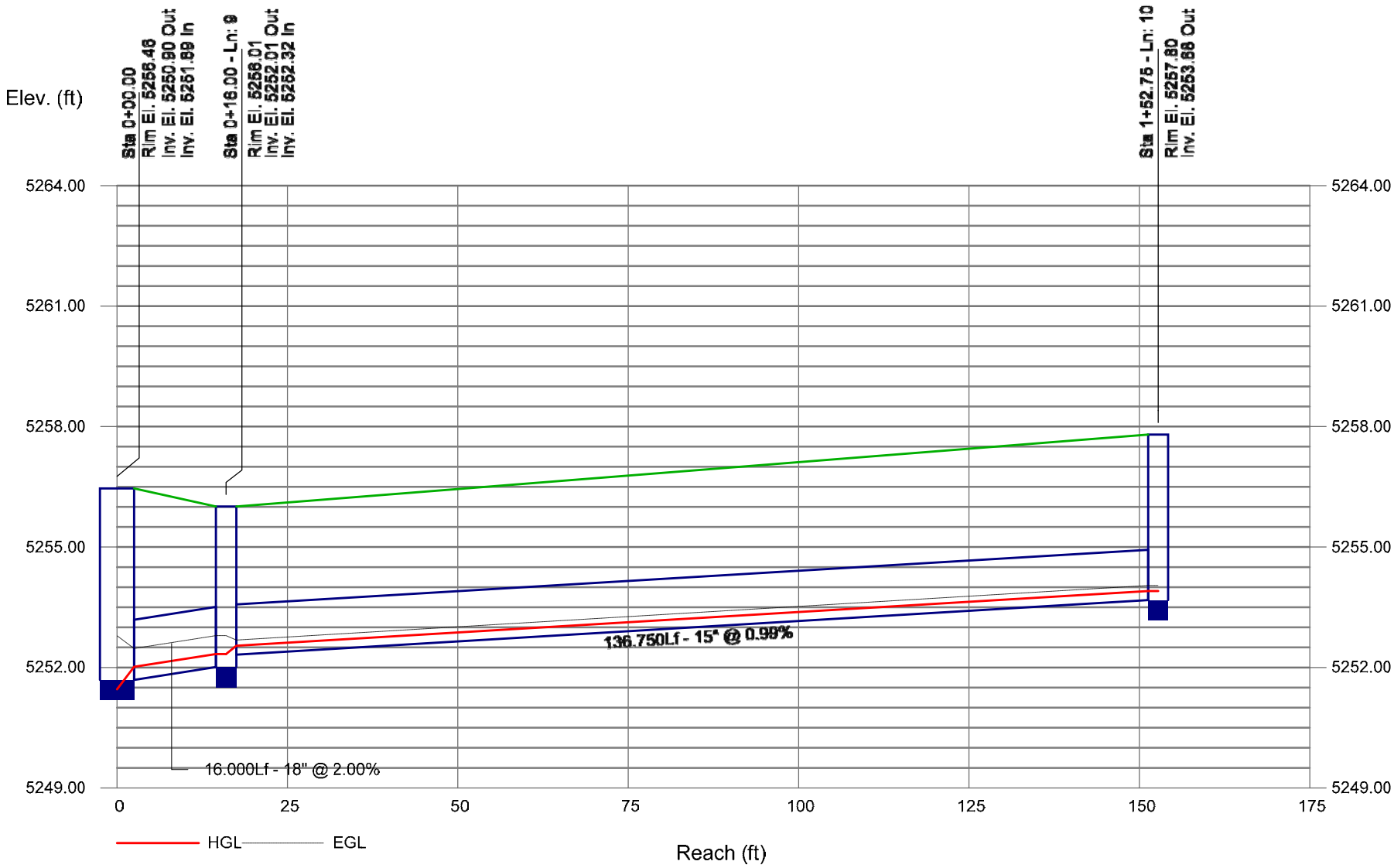
Storm Sewer Profile

Proj. file: NORTH-2-YEAR.stm



Storm Sewer Profile

Proj. file: NORTH-2-YEAR.stm



Storm Sewer Profile

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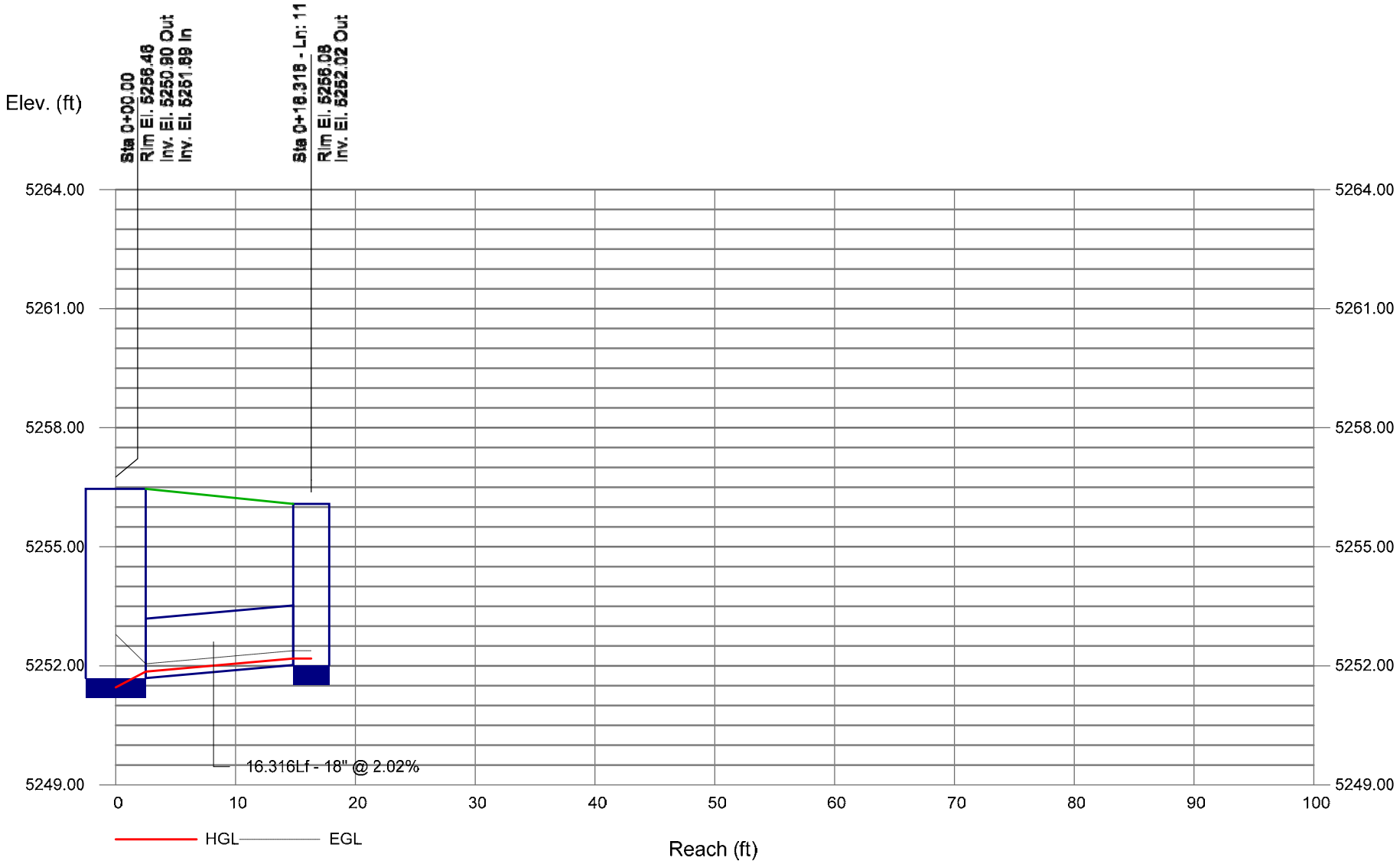
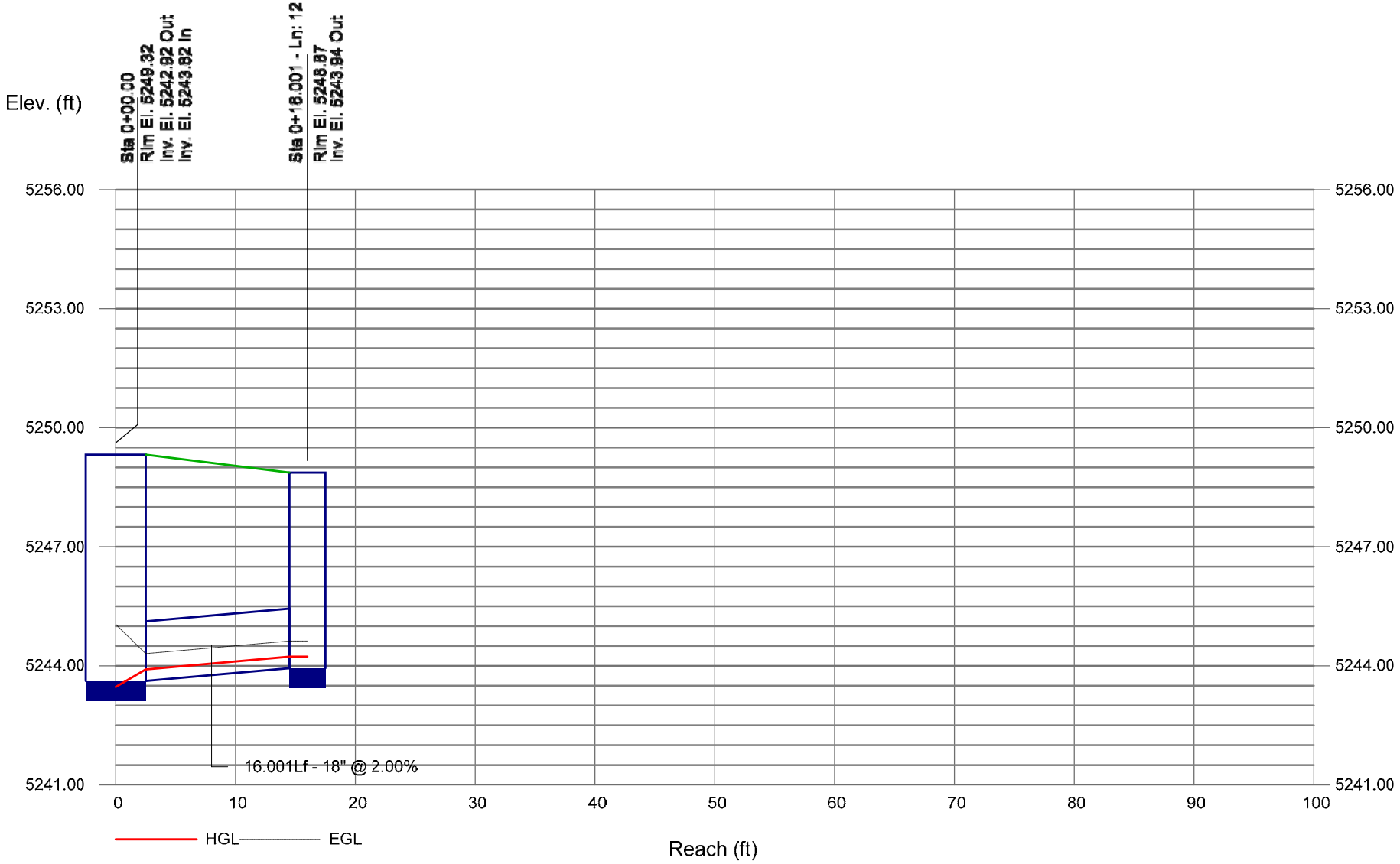


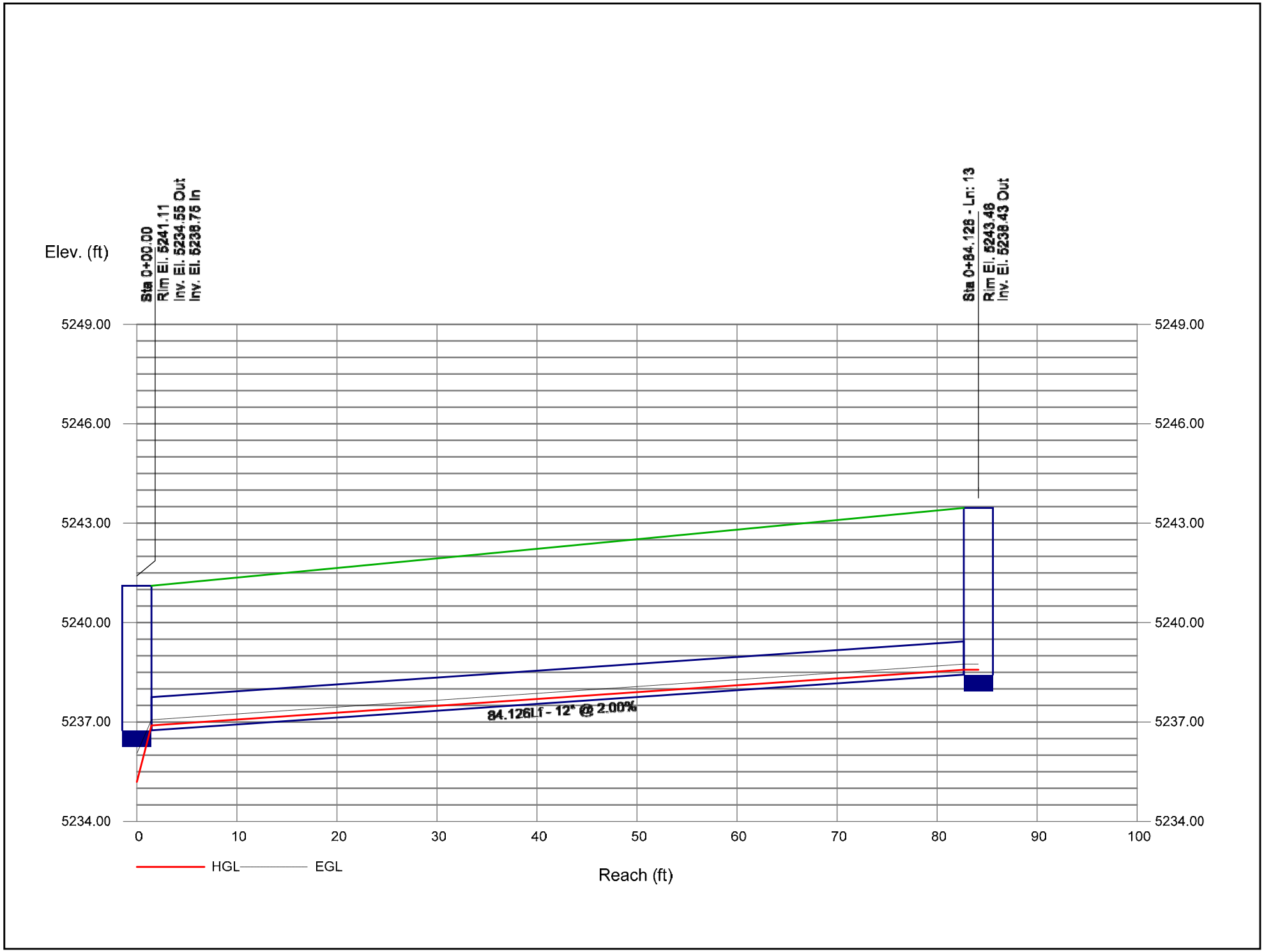
Storm Sewer Profile

Proj. file: NORTH-2-YEAR.stm

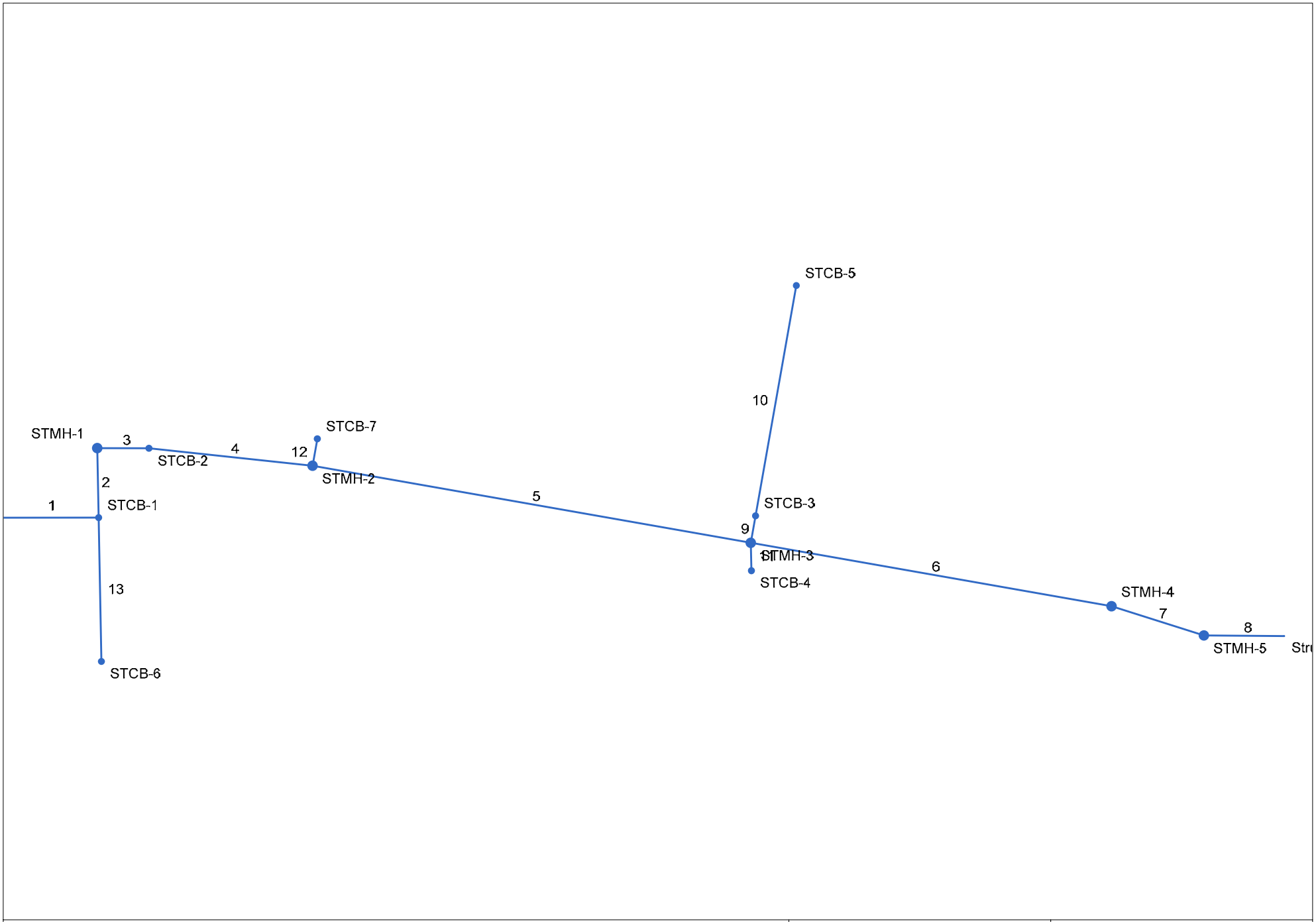


Storm Sewer Profile

Proj. file: NORTH-2-YEAR.stm



Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2013 Plan



Project File: NORTH-100-YEAR.stm	Number of lines: 13	Date: 4/1/2015

Storm Sewers v10.00

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	59.298	-0.056	MH	0.00	0.29	0.57	5.0	5233.65	1.52	5234.55	36	Cir	0.013	1.00	5241.11	Pipe - (33)
2	1	40.657	-91.081	MH	0.00	0.00	0.00	0.0	5235.25	1.99	5236.06	30	Cir	0.013	1.00	5242.07	Pipe - (30)
3	2	30.112	91.284	MH	0.00	0.86	0.73	5.0	5236.16	6.01	5237.97	30	Cir	0.013	0.15	5246.13	Pipe - (29)
4	3	95.906	5.974	MH	0.00	0.00	0.00	0.0	5239.47	3.60	5242.92	24	Cir	0.013	1.00	5249.32	Pipe - (28)
5	4	259.315	3.886	MH	0.00	0.00	0.00	0.0	5243.12	3.00	5250.90	24	Cir	0.013	1.00	5256.46	Pipe - (27)
6	5	213.461	0.000	MH	0.00	0.00	0.00	0.0	5250.90	3.00	5257.30	24	Cir	0.013	0.16	5262.53	Pipe - (81)
7	6	56.501	7.587	MH	0.00	0.00	0.00	0.0	5257.53	2.00	5258.66	24	Cir	0.013	0.34	5264.15	Pipe - (80)
8	7	46.737	-17.125	None	0.00	2.37	0.89	5.0	5258.86	1.99	5259.79	24	Cir	0.013	1.00	5262.21	Pipe - (79)
9	5	16.000	-90.000	MH	0.00	1.12	0.65	5.0	5251.69	2.00	5252.01	18	Cir	0.013	0.15	5256.01	Pipe - (25)
10	9	136.750	0.000	MH	0.00	0.87	0.54	5.0	5252.32	0.99	5253.68	15	Cir	0.013	1.00	5257.80	Pipe - (78)
11	5	16.316	78.686	MH	0.00	0.44	0.57	5.0	5251.69	2.02	5252.02	18	Cir	0.013	1.00	5256.08	Pipe - (31)
12	4	16.001	-86.114	MH	0.00	0.67	0.70	5.0	5243.62	2.00	5243.94	18	Cir	0.013	1.00	5248.87	Pipe - (93)
13	1	84.126	88.953	MH	0.00	0.41	0.55	5.0	5236.75	2.00	5238.43	12	Cir	0.013	1.00	5243.46	Pipe - (82)

Project File: NORTH-100-YEAR.stm | Number of lines: 13 | Date: 4/1/2015

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	Pipe - (33)	43.65	36	Cir	59.298	5233.65	5234.55	1.518	5235.76	5236.11	n/a	5236.11	End	Manhole
2	Pipe - (30)	40.45	30	Cir	40.657	5235.25	5236.06	1.992	5236.79	5237.60	n/a	5237.60	1	Manhole
3	Pipe - (29)	40.58	30	Cir	30.112	5236.16	5237.97	6.011	5237.60	5239.08	n/a	5239.08	2	Manhole
4	Pipe - (28)	35.38	24	Cir	95.906	5239.47	5242.92	3.597	5240.85	5244.30	n/a	5244.30	3	Manhole
5	Pipe - (27)	31.96	24	Cir	259.315	5243.12	5250.90	3.000	5244.49	5252.27	n/a	5252.27	4	Manhole
6	Pipe - (81)	19.53	24	Cir	213.461	5250.90	5257.30	2.998	5252.27	5258.30	n/a	5258.30	5	Manhole
7	Pipe - (80)	19.69	24	Cir	56.501	5257.53	5258.66	2.001	5258.67	5259.80	n/a	5259.80	6	Manhole
8	Pipe - (79)	19.82	24	Cir	46.737	5258.86	5259.79	1.990	5260.00	5260.93	n/a	5260.93	7	None
9	Pipe - (25)	10.88	18	Cir	16.000	5251.69	5252.01	1.999	5252.64	5252.96	n/a	5252.96	5	Manhole
10	Pipe - (78)	4.41	15	Cir	136.750	5252.32	5253.68	0.995	5253.08	5254.44	n/a	5254.44	9	Manhole
11	Pipe - (31)	2.36	18	Cir	16.316	5251.69	5252.02	2.023	5252.27	5252.42	n/a	5252.42	5	Manhole
12	Pipe - (93)	4.41	18	Cir	16.001	5243.62	5243.94	1.999	5244.30	5244.50	n/a	5244.50	4	Manhole
13	Pipe - (82)	2.12	12	Cir	84.126	5236.75	5238.43	1.997	5237.20	5238.88	n/a	5238.88	1	Manhole

Project File: NORTH-100-YEAR.stm | Number of lines: 13 | Run Date: 4/1/2015

NOTES: Return period = 100 Yrs.

Hydraulic Grade Line Computations

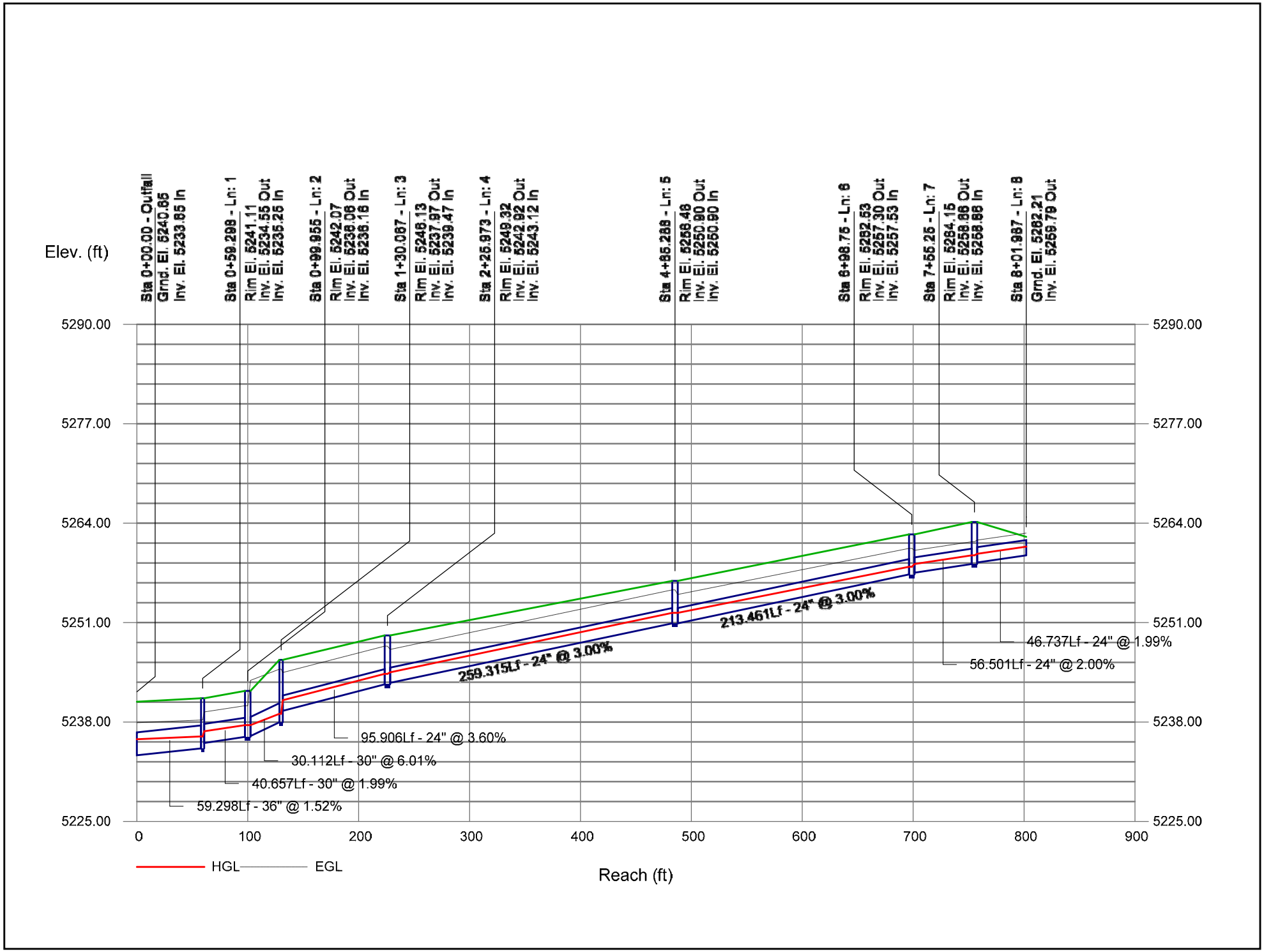
Line	Size (in)	Q (cfs)	Downstream Invert elev (ft)	Downstream HGL elev (ft)	Downstream Depth (ft)	Downstream Area (sqft)	Downstream Vel (ft/s)	Downstream Vel head (ft)	Downstream EGL elev (ft)	Downstream Sf (%)	Len (ft)	Upstream Invert elev (ft)	Upstream HGL elev (ft)	Upstream Depth (ft)	Upstream Area (sqft)	Upstream Vel (ft/s)	Upstream Vel head (ft)	Upstream EGL elev (ft)	Upstream Sf (%)	Check Ave Sf (%)	Check Enrgy loss (ft)	JL coeff (K)	Minor loss (ft)
1	36	43.65	5233.65	5235.76	2.11	3.70	0.00	2.16	5237.92	0.000	59.298	5234.55	5236.11	1.56	3.70	11.79	2.16	5238.27	0.000	0.000	0.000	1.00	n/a
2	30	40.45	5235.25	5236.79	1.54*	3.17	0.00	2.53	5239.32	0.000	40.657	5236.06	5237.60	1.54	3.17	12.75	2.53	5240.13	0.000	0.000	0.000	1.00	n/a
3	30	40.58	5236.16	5237.60	1.44	2.09	0.00	5.84	5243.44	0.000	30.112	5237.97	5239.08	1.11	2.09	19.38	5.84	5244.92	0.000	0.000	0.000	0.15	n/a
4	24	35.38	5239.47	5240.85	1.38*	2.32	0.00	3.61	5244.47	0.000	95.906	5242.92	5244.30	1.38	2.32	15.25	3.61	5247.92	0.000	0.000	0.000	1.00	n/a
5	24	31.96	5243.12	5244.49	1.37*	2.30	0.00	3.00	5247.50	0.000	259.315	5250.90	5252.27	1.37	2.30	13.90	3.00	5255.28	0.000	0.000	0.000	1.00	n/a
6	24	19.53	5250.90	5252.27	1.37	1.57	0.00	2.41	5254.69	0.000	213.461	5257.30	5258.30	1.00	1.57	12.45	2.41	5260.71	0.000	0.000	0.000	0.16	n/a
7	24	19.69	5257.53	5258.67	1.13*	1.84	0.00	1.78	5260.45	0.000	56.501	5258.66	5259.80	1.13	1.84	10.70	1.78	5261.58	0.000	0.000	0.000	0.34	n/a
8	24	19.82	5258.86	5260.00	1.14*	1.85	0.00	1.78	5261.78	0.000	46.737	5259.79	5260.93	1.14	1.85	10.70	1.78	5262.71	0.000	0.000	0.000	1.00	n/a
9	18	10.88	5251.69	5252.64	0.95*	1.19	0.00	1.31	5253.95	0.000	16.000	5252.01	5252.96	0.95	1.19	9.18	1.31	5254.27	0.000	0.000	0.000	0.15	n/a
10	15	4.41	5252.32	5253.08	0.76*	0.78	0.00	0.50	5253.58	0.000	136.750	5253.68	5254.44	0.76	0.78	5.65	0.50	5254.94	0.000	0.000	0.000	1.00	n/a
11	18	2.36	5251.69	5252.27	0.58	0.38	0.00	0.59	5252.86	0.000	16.316	5252.02	5252.42	0.40	0.38	6.16	0.59	5253.01	0.000	0.000	0.000	1.00	n/a
12	18	4.41	5243.62	5244.30	0.68	0.60	0.00	0.83	5245.14	0.000	16.001	5243.94	5244.50	0.56	0.60	7.32	0.83	5245.33	0.000	0.000	0.000	1.00	n/a
13	12	2.12	5236.75	5237.20	0.45*	0.35	0.00	0.58	5237.79	0.000	84.126	5238.43	5238.88	0.45	0.35	6.13	0.58	5239.47	0.000	0.000	0.000	1.00	n/a

Project File: NORTH-100-YEAR.stm | Number of lines: 13 | Run Date: 4/1/2015

Notes: * depth assumed. ; c = cir e = ellip b = box

Storm Sewer Profile

Proj. file: NORTH-100-YEAR.stm



Storm Sewer Profile

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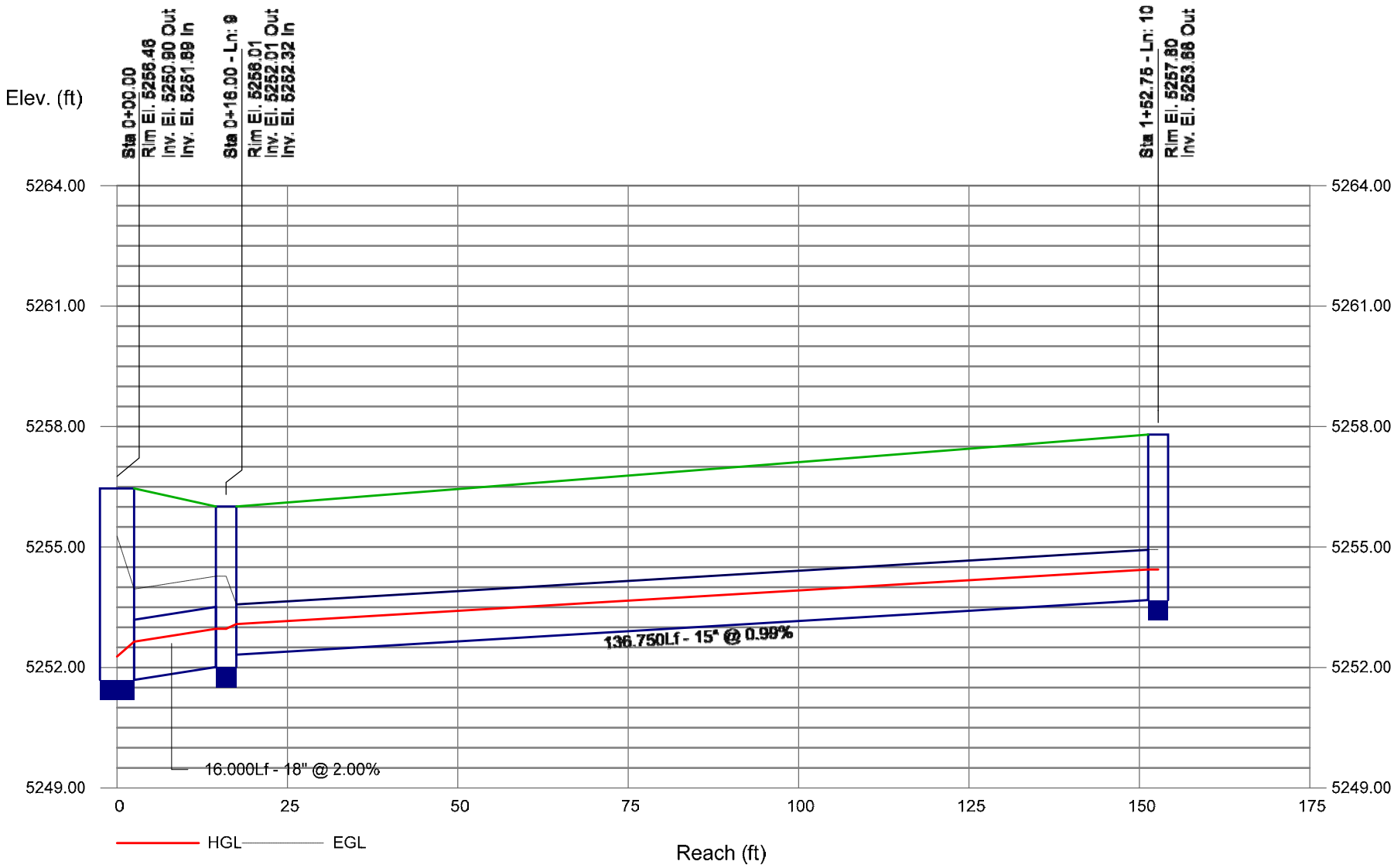

Storm Sewer Profile

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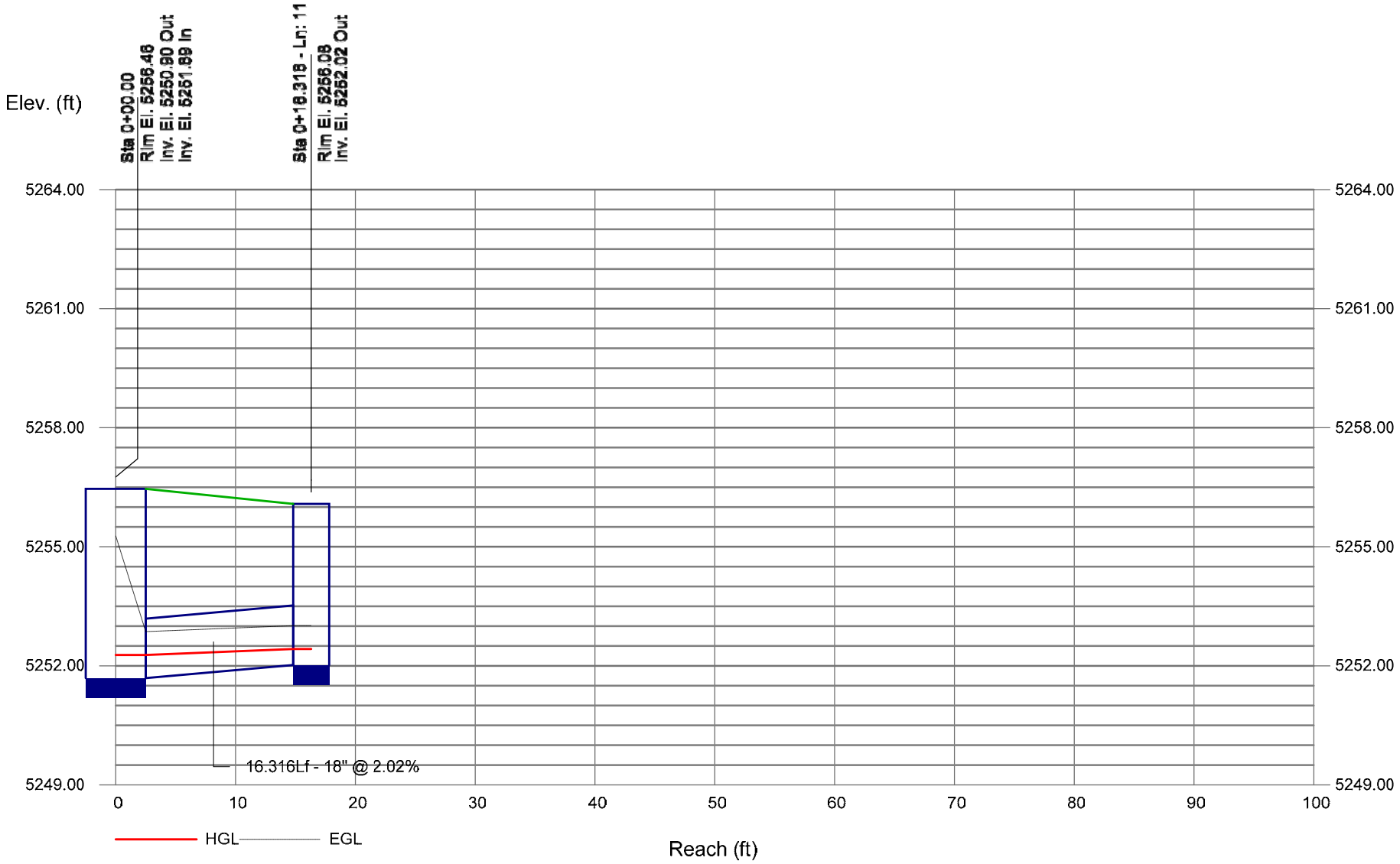

Storm Sewer Profile

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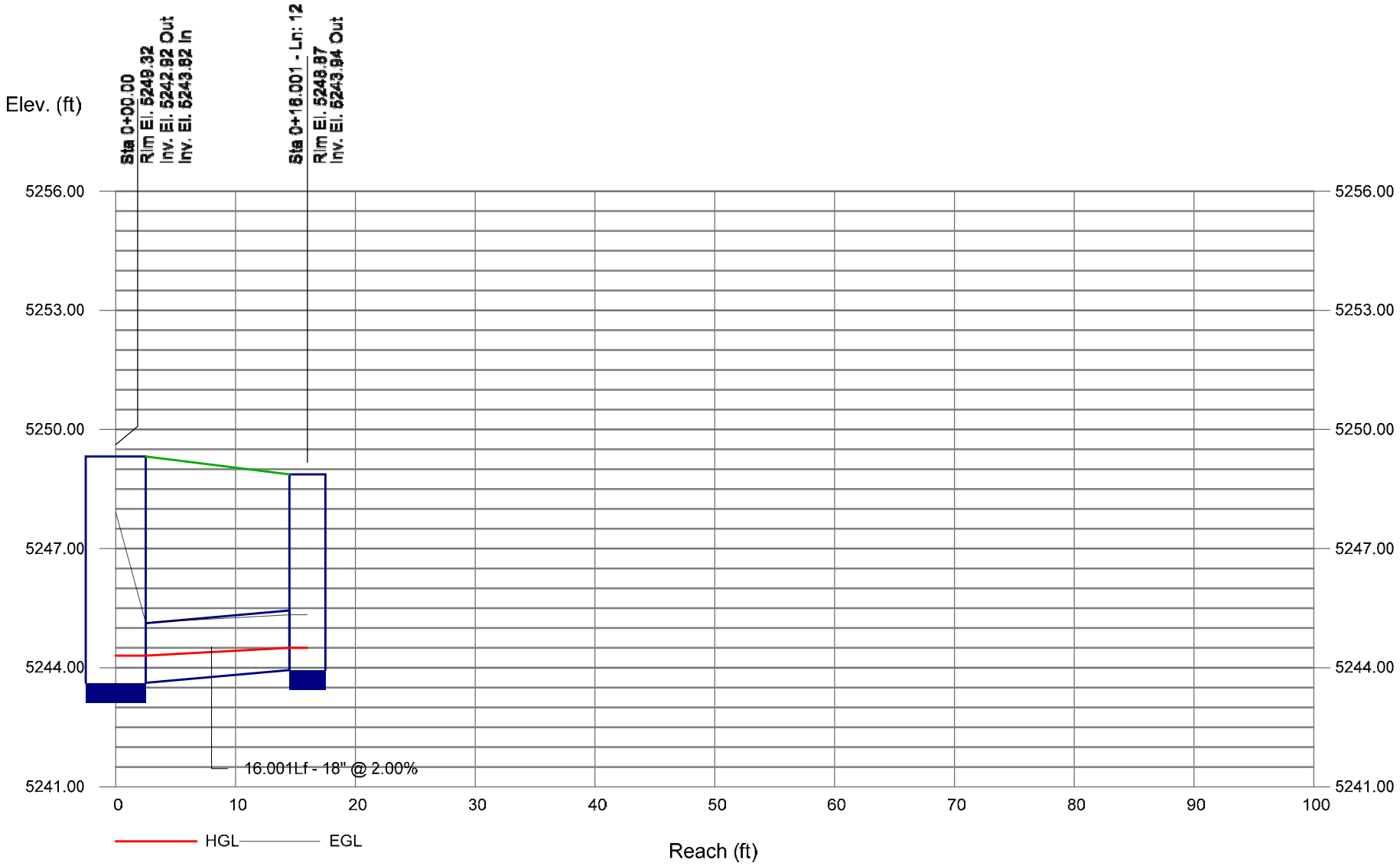

Storm Sewer Profile

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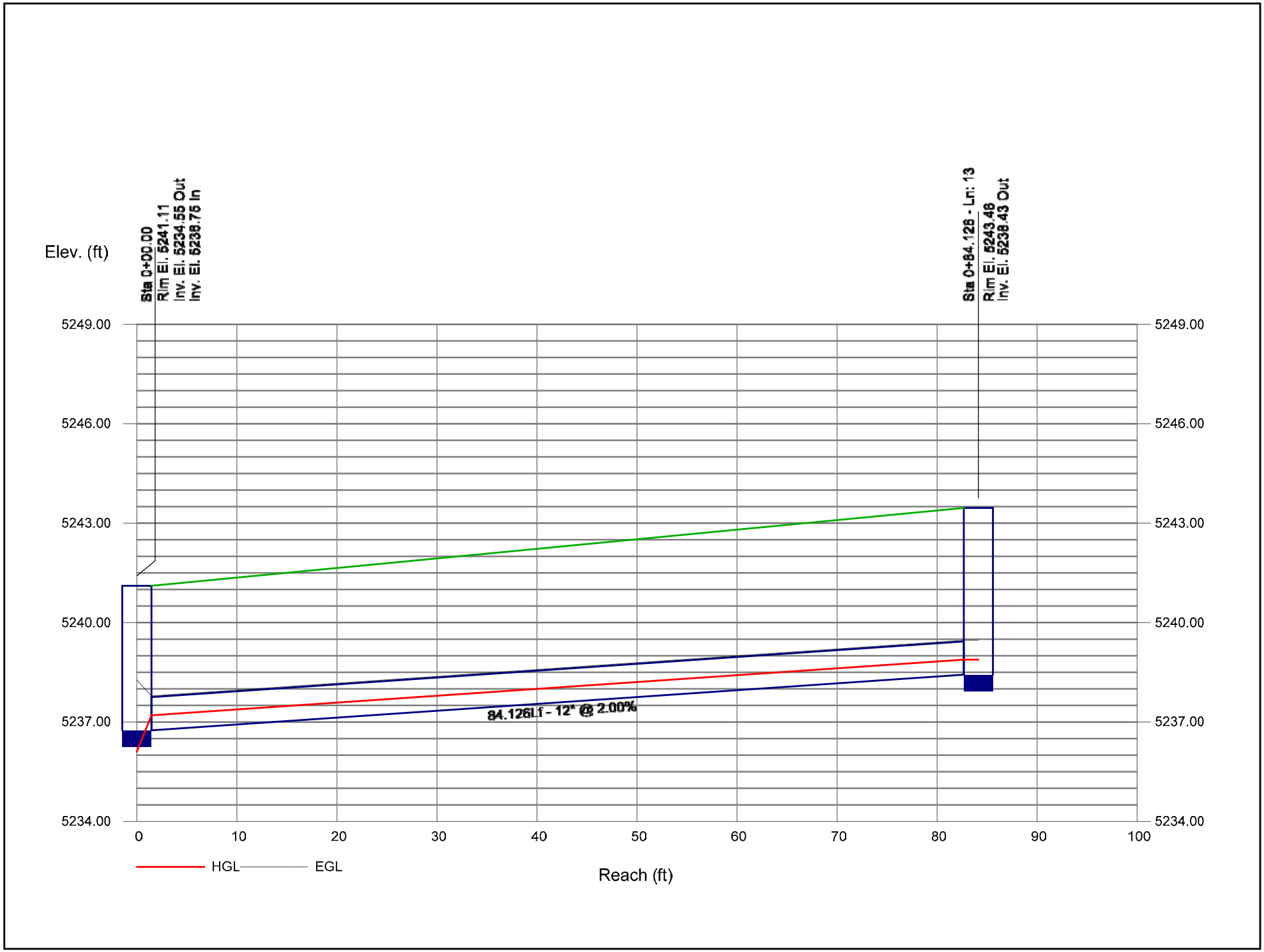


Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Saturday, Apr 4 2015

Swale Capacity Check Between House

Triangular

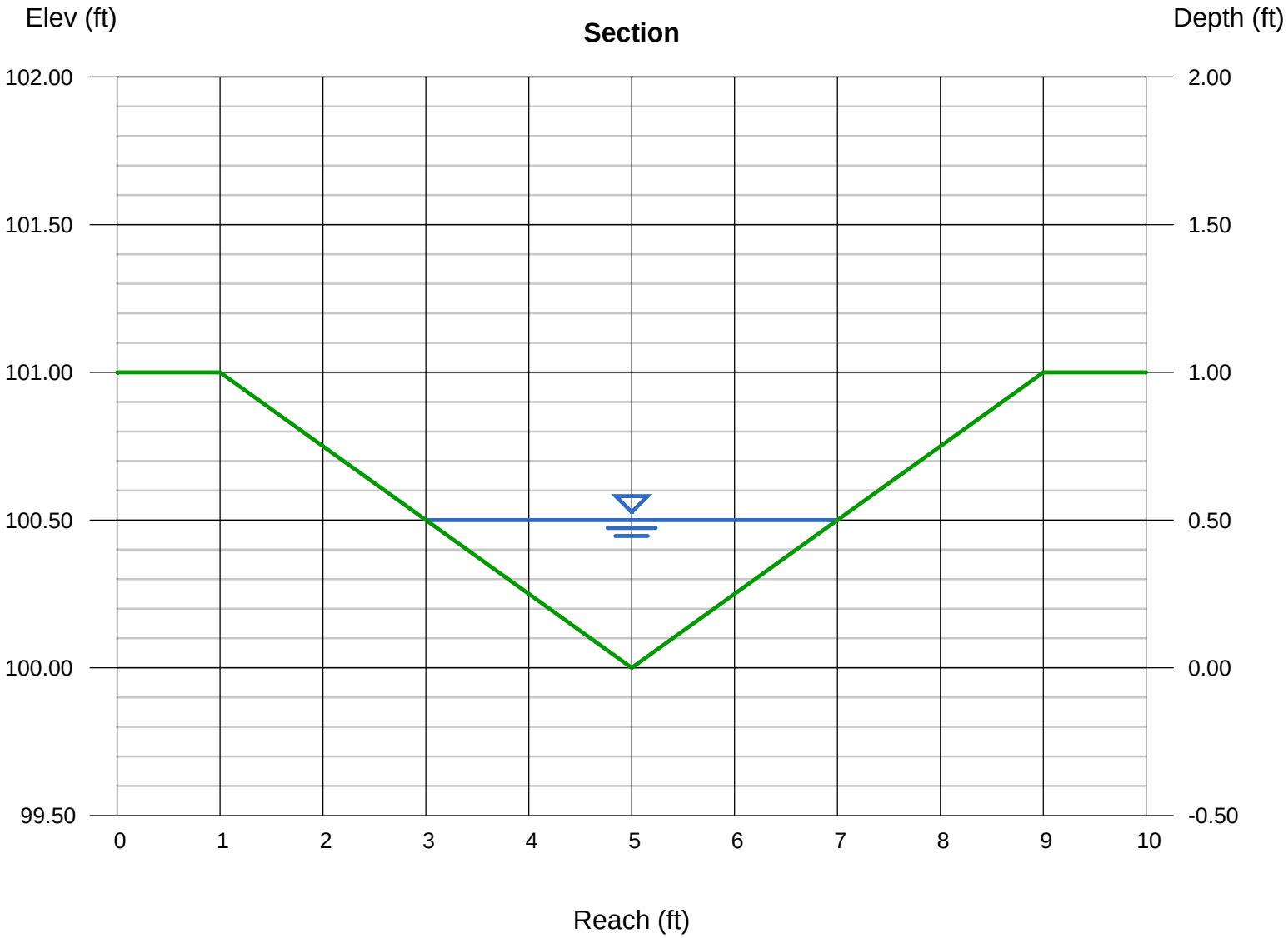
Side Slopes (z:1)	=	4.00, 4.00
Total Depth (ft)	=	1.00
Invert Elev (ft)	=	100.00
Slope (%)	=	2.00
N-Value	=	0.024

Calculations

Compute by:		Q vs Depth
No. Increments	=	10

Highlighted

Depth (ft)	=	0.50
Q (cfs)	=	3.404
Area (sqft)	=	1.00
Velocity (ft/s)	=	3.40
Wetted Perim (ft)	=	4.12
Crit Depth, Yc (ft)	=	0.54
Top Width (ft)	=	4.00
EGL (ft)	=	0.68



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Thursday, Apr 2 2015

Vista Ridge Academy Overflow Swale

Trapezoidal

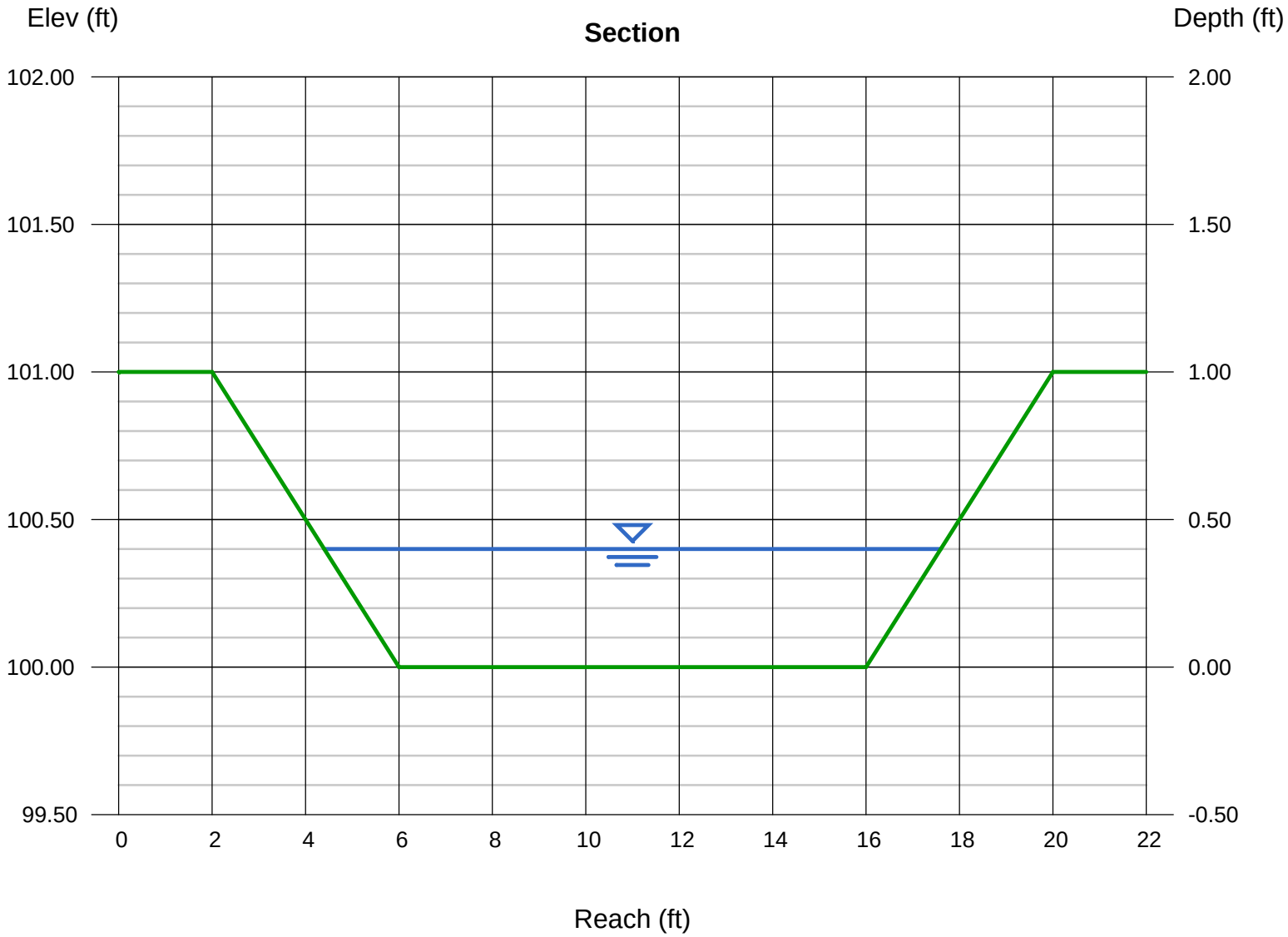
Bottom Width (ft)	=	10.00
Side Slopes (z:1)	=	4.00, 4.00
Total Depth (ft)	=	1.00
Invert Elev (ft)	=	100.00
Slope (%)	=	2.20
N-Value	=	0.024

Calculations

Compute by:		Known Q
Known Q (cfs)	=	20.82

Highlighted

Depth (ft)	=	0.40
Q (cfs)	=	20.82
Area (sqft)	=	4.64
Velocity (ft/s)	=	4.49
Wetted Perim (ft)	=	13.30
Crit Depth, Yc (ft)	=	0.48
Top Width (ft)	=	13.20
EGL (ft)	=	0.71



Weir Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Thursday, Apr 2 2015

DESIGN POINT 4 EMERGENCY OVERFLOW

Rectangular Weir

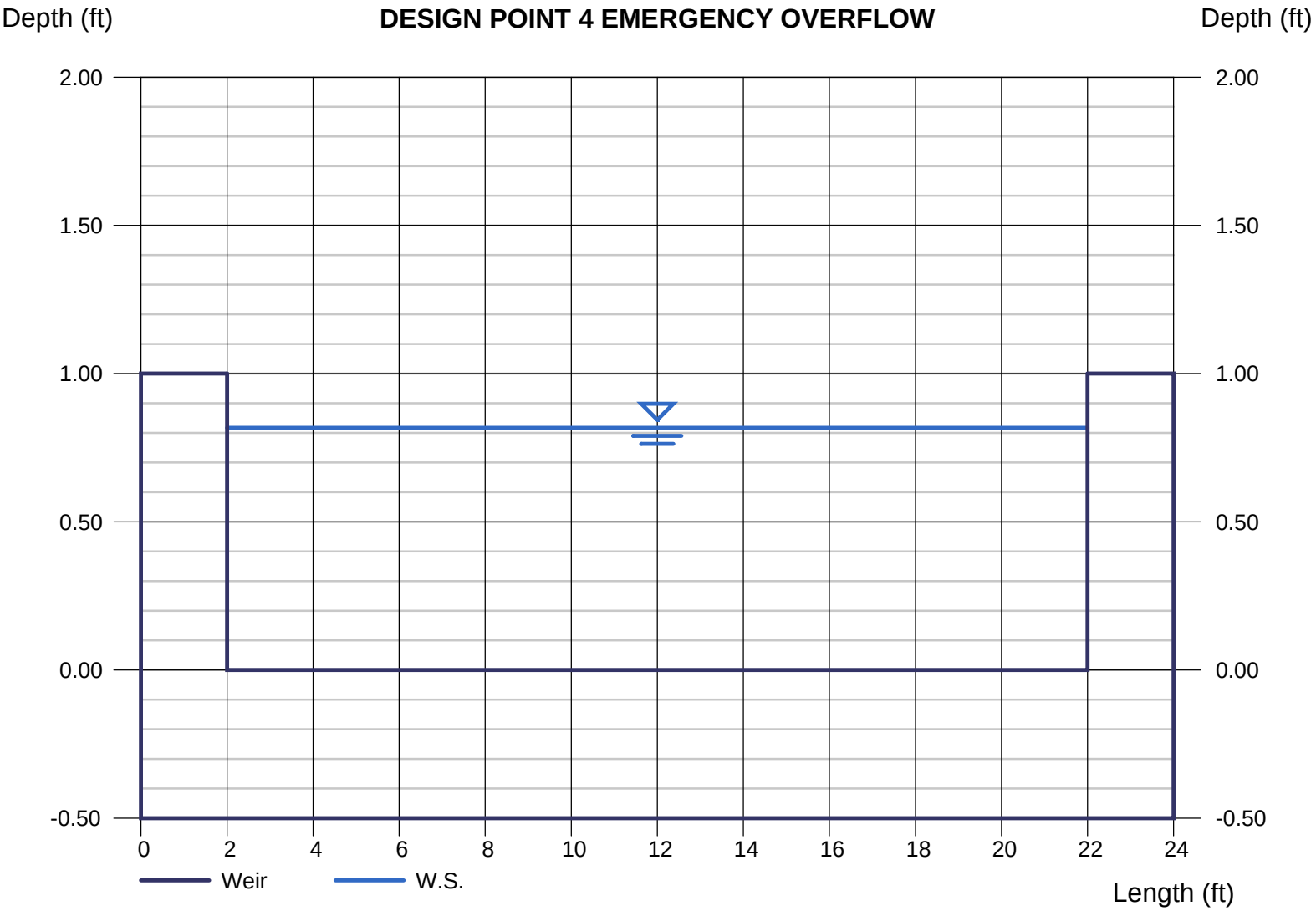
Crest	=	Broad
Bottom Length (ft)	=	20.00
Total Depth (ft)	=	1.00

Calculations

Weir Coeff. Cw	=	2.60
Compute by:		Known Q
Known Q (cfs)	=	38.40

Highlighted

Depth (ft)	=	0.82
Q (cfs)	=	38.40
Area (sqft)	=	16.34
Velocity (ft/s)	=	2.35
Top Width (ft)	=	20.00



Weir Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Thursday, Apr 2 2015

DESIGN POINT 5 EMERGENCY OVERFLOW

Rectangular Weir

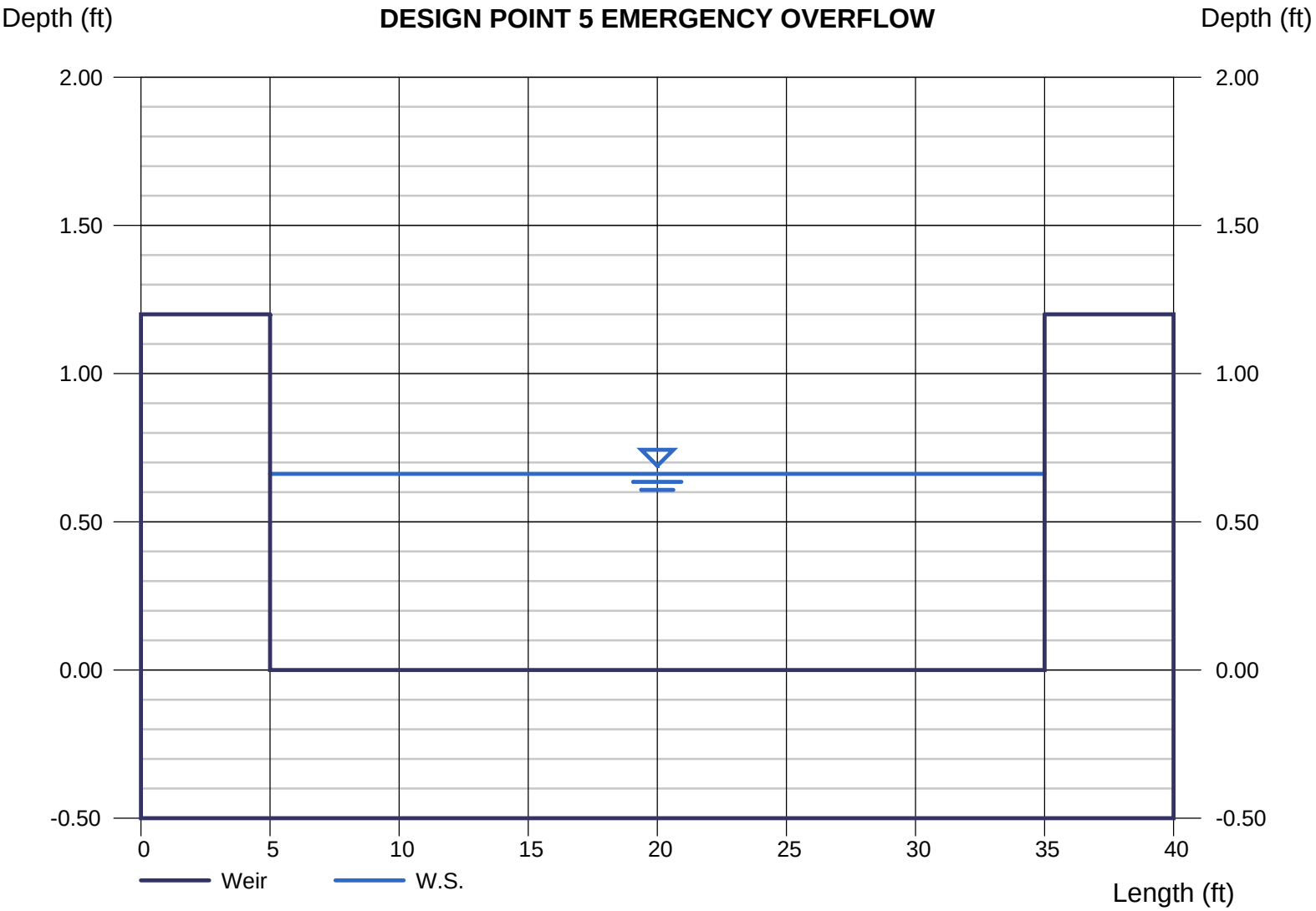
Crest	=	Broad
Bottom Length (ft)	=	30.00
Total Depth (ft)	=	1.20

Calculations

Weir Coeff. Cw	=	2.60
Compute by:		Known Q
Known Q (cfs)	=	42.00

Highlighted

Depth (ft)	=	0.66
Q (cfs)	=	42.00
Area (sqft)	=	19.85
Velocity (ft/s)	=	2.12
Top Width (ft)	=	30.00



APPENDIX C

Reference Documents

DESIGN STORM RETURN PERIODS

Land Use or Zoning	Design Storm Return Period	
	Initial Storm	Major Storm
Residential	2-year	100-year
Business	5-year	100-year
Public Building Areas	5-year	100-year
Parks, Greenbelts, etc.	2-year	100-year
Open Channels and Drainage ways	10 year	100-year
Detention Facilities	Water Quality and 10 year	100-year

TABLE 800-3

PERCENT IMPERVIOUS FOR RATIONAL METHOD

LAND USE OR SURFACE CHARACTERISTICS	PERCENT IMPERVIOUS
Business	
Commercial Areas	95
Neighborhood Areas	85
Residential	
Single-Family	*
Multi-Unit (detached)	60
Multi-Unit (attached)	75
1/2 Acre Lot or Larger	*
Apartments	80
Industrial	
Light Areas	80
Heavy Areas	90
Parks, Cemeteries	5
Playgrounds	10
Schools	50
Railroad Yard Areas	15
Undeveloped Areas	
Historic Flow Analysis	2
Greenbelts, Agricultural	2
Offsite Flow Analysis	
(when land use not defined)	45
Streets	
Paved	100
Gravel	40
Drives and Walks	90
Roofs	90
Lawns, Sandy Soil	0
Lawns, Clay Soil	0

Note: These Rational Formula coefficients may not be valid for large basins.

* Refer to Urban Storm Drainage Criteria Manual for percent impervious values.

813.06 Rainfall Intensities

The rainfall intensities to be used in the computation of runoff using the Rational Method shall be obtained from the Rainfall Intensity Duration Curves for the Town of Erie, included in these STANDARDS AND SPECIFICATIONS.

813.03 Runoff Computations, Colorado Urban Hydrograph Procedure (CUHP)

The CUHP method is generally applicable to basins greater than 90 acres. However, the CUHP is required for watershed areas larger than 160-acres. The procedures for the CUHP, as explained in the Urban Storm Drainage Criteria Manual, shall be followed in the preparation of drainage reports and storm drainage facility designs in the Town. The CUHP program requires the input of a design storm, either as a detailed hyetograph or as a 1-hour rainfall depth. The program for the latter using the 2-hour storm distribution recommended in the Urban Storm Drainage Criteria Manual generates a detailed hyetograph distribution. The 1-hour rainfall depths for the Town of Erie are presented in Table 800-2.

Table 800-2
TOWN OF ERIE
ONE-HOUR RAINFALL DEPTH

Design Storm	Rainfall Depth (in.)
2-Year	1.01
5-Year	1.43
10-Year	1.73
50-Year	2.40
100-Year	2.70

The hydrograph from the CUHP program must be routed through any proposed conveyance facility using UDSWM or a similar method.

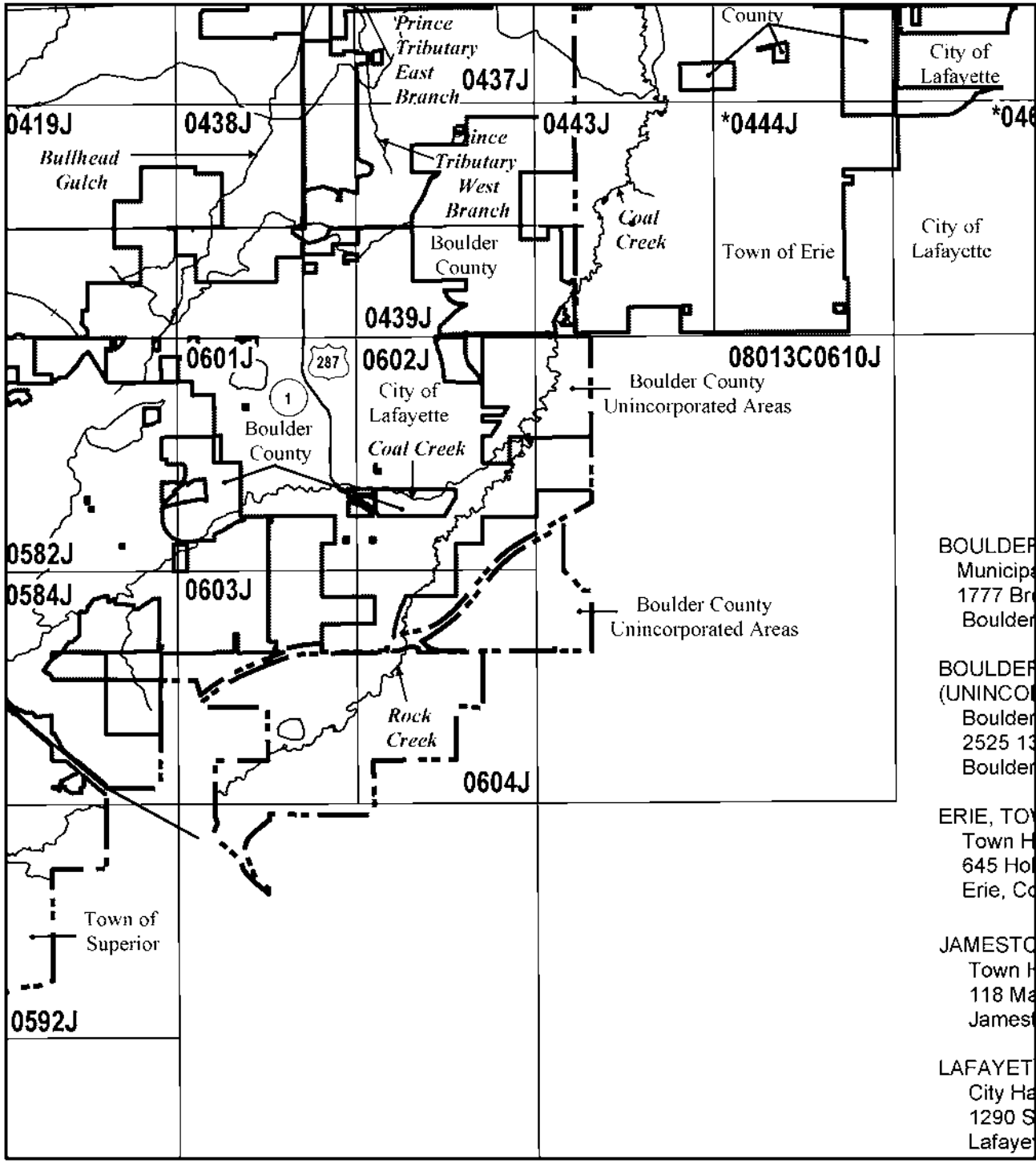
813.04 Runoff Computations, Rational Method

The Rational Method will be utilized for sizing storm sewers and for determining runoff magnitude from un-sewered areas. The limit of application of the Rational Method is approximately 160 acres. When the drainage basin exceeds 160 acres, the CUHP method shall be used.

The procedures for the Rational Method, as explained in the Urban Storm Drainage Criteria Manual, shall be followed in the preparation of drainage reports in the Town.

813.05 Runoff Coefficients

Rational method runoff coefficients: The runoff coefficient (C) to be used in conjunction with the Rational Method will be calculated using the percent imperviousness shown in Table 800-3 as explained in the Urban Storm Drainage Criteria Manual.



BOULDER
Municipa
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BOULDER
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Boulder
2525 13
Boulder

ERIE, TO
Town H
645 Ho
Erie, Co

JAMESTO
Town H
118 Ma
James

LAFAYET
City Ha
1290 S
Lafaye

NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

BOULDER COUNTY, COLORADO

AND INCORPORATED AREAS

(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

SHEET 2 OF 2

PANELS PRINTED: 334, 342, 355, 357, 360, 365, 370, 376, 377, 378, 379, 385, 390, 391, 392, 393, 394, 401, 402, 403, 404, 407, 410, 411, 412, 413, 414, 416, 417, 418, 419, 429, 430, 435, 436, 437, 438, 439, 441, 443, 509, 530, 535, 557, 559, 560, 566, 567, 576, 577, 578, 579, 582, 583, 584, 586, 587, 591, 592, 601, 602, 603, 604, 610

(SEE SHEET 1 FOR ADDITIONAL PANELS PRINTED)

MAP NUMBER
08013CIND2B

MAP REVISED
DECEMBER 18, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

08013C0394J	December 18, 20
08013C0401J	December 18, 20
08013C0402J	December 18, 20
08013C0403J	December 18, 20
08013C0404J	December 18, 20
08013C0407J	December 18, 20

COMMUNITY NAME	COMMUNITY NUMBER	
BOULDER, CITY OF	080024	0385, 0391, 0392, 0393, 0394, 040
BOULDER COUNTY UNINCORPORATED AREAS	080023	**0025, **0050, **0075, **0100, 0125, **0230, 0231, 0232, 0233, 0234, 024 0269, 0278, 0286, 0287, 0288, 0289, 0360, 0365, 0370, 0376, 0377, 03 0404, 0407, 0410, 0411, 0412, 0413, 0438, 0439, 0441, 0443, **0500, 050 **0575, 0576, 0577, 0578, 0579
ERIE, TOWN OF	080181	0429, 0435, 0436, 0437, 0438,
JAMESTOWN, TOWN OF	080216	
LAFAYETTE, CITY OF	080026	0418, 0419, 04
LONGMONT, CITY OF	080027	**0260, 0266, 0267, 0268, 02
LOUISVILLE, CITY OF	085076	0579, **0
LYONS, TOWN OF	080029	
NEDERLAND, TOWN OF	080255	
SUPERIOR, TOWN OF	080203	057
*WARD, TOWN OF	080292	

*NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED

**PANEL NOT PRINTED

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

BOULDER COUNTY, COLORADO

AND INCORPORATED AREAS

(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

SHEET 2 OF 2

PANELS PRINTED: 334, 342, 355, 357, 360, 365, 370, 376, 377, 378, 379, 385, 390, 391, 392, 393, 394, 401, 402, 403, 404, 407, 410, 411, 412, 413, 414, 416, 417, 418, 419, 429, 430, 435, 436, 437, 438, 439, 441, 443, 509, 530, 535, 557, 559, 560, 566, 567, 576, 577, 578, 579, 582, 583, 584, 586, 587, 591, 592, 601, 602, 603, 604, 610

(SEE SHEET 1 FOR ADDITIONAL PANELS PRINTED)

MAP NUMBER
08013CIND2B

MAP REVISED
DECEMBER 18, 2012

Federal Emergency Management Agency

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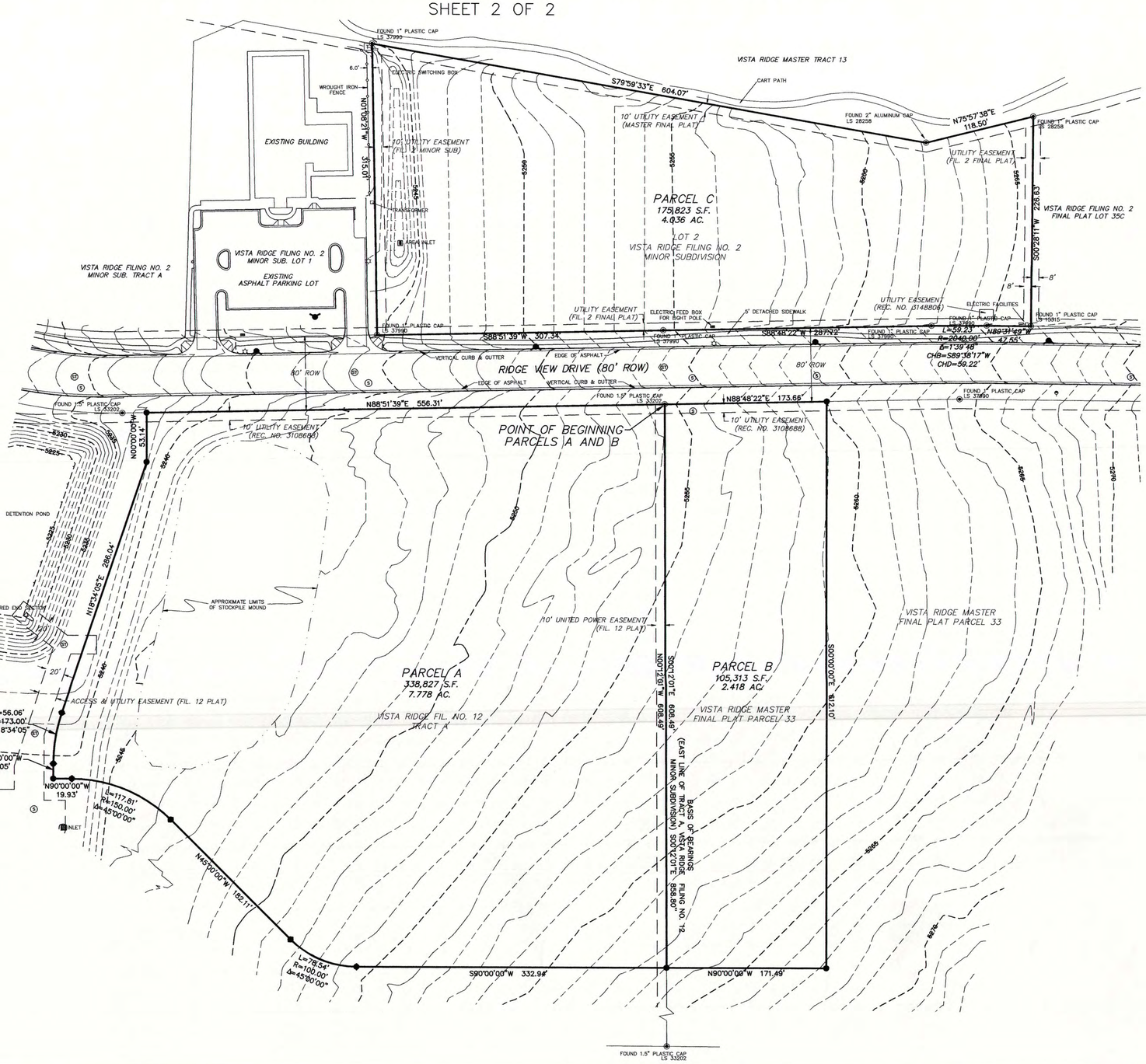
ALTA / ACSM LAND TITLE SURVEY
VISTA RIDGE COMMERCIAL AREA

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

SHEET 2 OF 2



SYMBOL LEGEND	
	MONUMENTED PROPERTY CORNER
	SET #5 REBAR WITH PLASTIC CAP PLS 37908
S	SANITARY SEWER MANHOLE
ST	STORM SEWER MANHOLE
	FIRE HYDRANT
	6' TYPE"R" INLET
	FIBER OPTIC WARNING SIGN
T	TELEPHONE PEDESTAL
	HANDICAP RAMP
	LIGHT POLE
	CONTOUR-MAJOR
	CONTOUR-MINOR

N

0 30 60 120

SCALE: 1" = 60'

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DRAWN BY: LC
CHECKED BY: JRL
SCALE: 1" = 60'
DATE: 03/18/14
FILE NO. ALTA

JOB NUMBER: 1057-556

SHEET: 2 OF 2

ALTA / ACSM LAND TITLE SURVEY
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

PREPARED FOR:
CHARTERED DEVELOPMENT

Lange Land Surveys
9572 W. 58TH AVE. ARVADA, CO 80002
P:(720) 242-9732 F:(720) 242-9654

ALTA / ACSM LAND TITLE SURVEY
VISTA RIDGE COMMERCIAL AREA

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO
SHEET 1 OF 2

LEGAL DESCRIPTION (FROM COMMITMENT):

PARCEL A:

A PORTION OF TRACT A OF "VISTA RIDGE FILING NO 12 MINOR SUBDIVISION" LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEASTERLY CORNER OF SAID TRACT A: THENCE S00°12'01"E, 608.49 FEET ALONG THE EASTERLY LINE OF SAID TRACT A (BASIS OF BEARINGS);
THENCE S90°00'00"W, 332.94 FEET;
THENCE 78.54 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 45°00'00", AND A CHORD BEARING OF N67°30'00"W, 76.54 FEET;
THENCE N45°00'00"W, 182.11 FEET;
THENCE 117.81 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 45°00'00", AND A CHORD BEARING N67°30'00"W, 114.81 FEET;
THENCE N90°00'00"W, 19.93 FEET;
THENCE N00°00'00"W, 16.05 FEET;
THENCE 56.06 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 173.00 FEET, A CENTRAL ANGLE OF 18°34'05", AND A CHORD BEARING N09°17'02"E, 55.82 FEET;
THENCE N18°34'05"E, 286.04 FEET;
THENCE N00°00'00"W, 53.14' TO THE NORTHERLY LINE OF SAID TRACT A;
THENCE N88°51'39"E, 556.31 FEET ALONG THE SAID NORTHERLY LINE OF TRACT A TO THE **POINT OF BEGINNING.**

SAID PARCEL CONTAINS 338,827 SQUARE FEET OR 7.778 ACRES, MORE OR LESS.

PARCEL B:

A PORTION OF PARCEL 33 OF "VISTA RIDGE MASTER FINAL PLAT" LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M. TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF SAID PARCEL 33;
THENCE N 88° 48' 22" E, 173.66 FEET ALONG THE NORTHERLY LINE OF SAID PARCEL 33;
THENCE S00°00'00"E 612.10 FEET;
THENCE N90°00'00"W, 171.49 FEET TO THE WESTERLY LINE OF SAID PARCEL 33;
THENCE N00°12'01"W, 608.49 FEET ALONG SAID WESTERLY LINE OF PARCEL 33 TO THE **POINT OF BEGINNING.**

SAID PARCEL CONTAINS 105,313 SQUARE FEET OR 2.418 ACRES, MORE OR LESS.

PARCEL C:

LOT 2 OF "VISTA RIDGE FILING NO 2 – MINOR SUBDIVISION" (PLAT RECORDED 11/15/2007 AT RECEPTION NO. 3517715), TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO.

SAID PARCEL CONTAINS 175,823 SQUARE FEET OR 4.036 ACRES, MORE OR LESS.

SURVEY CERTIFICATION:

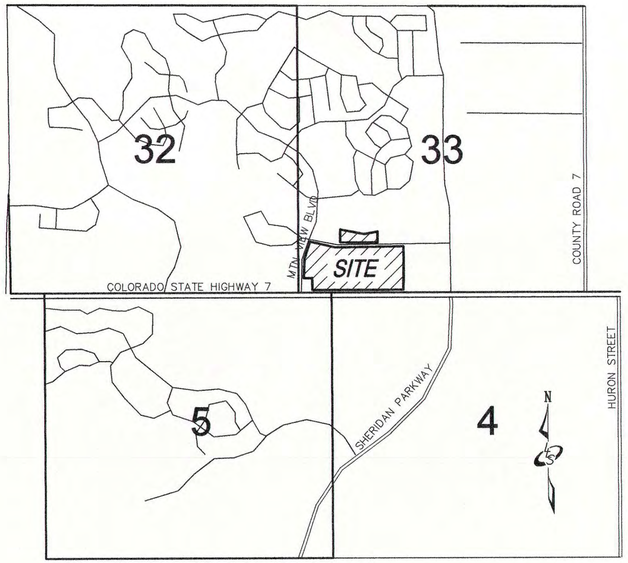
CERTIFIED TO:

CHARTERED DEVELOPMENT CORP.

FOR AND ON BEHALF OF LANGE LAND SURVEYS, LLC, I CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 2005, AND INCLUDES ITEMS 1–5 & 11A OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR LICENSED IN THE STATE OF COLORADO, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

DATE: 8/28/14

COLORADO REGISTERED
SHANNON K. LANGE
37908
PROFESSIONAL LAND SURVEYOR



VICINTY MAP
N.T.S.

GENERAL NOTES:

1. NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

2. BASIS OF BEARINGS: THE EASTERLY LINE OF TRACT A OF VISTA RIDGE FILING NO. 12 MINOR SUBDIVISION, ASSUMED TO BEAR S00°12'01"E, TO MATCH RECORDED PLATS. MONUMENTS DESCRIBED ON DRAWING.

3. FOUND PROPERTY CORNERS ARE DESCRIBED HEREON.

4. NO BUILDINGS ARE PRESENTLY LOCATED ON THIS PROPERTY.

6. THIS PROPERTY IS LOCATED IN ZONE C (AREAS OF MINIMAL FLOODING) ACCORDING TO FIRM COMMUNITY PANEL NUMBER 0802660970 D WITH A REVISION DATE OF 09/28/1990.

7. THE SUBJECT PROPERTY ABUTS UPON AND HAS INGRESS TO AND EGRESS FROM DULY DEDICATED AND ACCEPTED PUBLIC STREETS KNOWN AS RIDGE VIEW DRIVE.

8. PROPERTY IS CURRENTLY ZONED PD (PLANNED DEVELOPMENT).

9. TOTAL AREA OF THREE THE PARCELS IS 14.232 ACRES.

10. THE RECORD DESCRIPTION OF THE SUBJECT PROPERTY FORMS A MATHEMATICALLY CLOSED FIGURE AND, TO THE EXTENT ANY EASEMENT CANNOT BE LOCATED FROM ITS RECORD DESCRIPTION, A NOTATION IS MADE HEREON.

11. TWO PLATS HAVE BEEN RECORDED THAT AFFECT PARCELS: "VISTA RIDGE FILING NO. 2 FINAL PLAT", RECORDED 06/06/2003 AT RECEPTION NO. 3070387 AND "VISTA RIDGE FILING NO. 2 MINOR SUBDIVISION", RECORDED 11/15/2007 AT RECEPTION NO. 3517715, WHICH IS A REPLAT OF PARCEL 35B OF FILING NO. 2.

TITLE COMMITMENT NOTES:

THIS LAND SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY LANGE LAND SURVEYS, LLC. TO DETERMINE OWNERSHIP OF THIS PARCEL OF LAND, VERIFY THE DESCRIPTION SHOWN, VERIFY THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF THE ADJACENT PARCELS OF LAND, OR VERIFY EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHT-OF-WAY OR TITLE OF RECORD, LANGE LAND SURVEYS, LLC RELIED UPON ORDER NO. 25121037, WITH A DATE OF APRIL 11, 2014, PREPARED BY LAND TITLE GUARANTEE COMPANY.

THE FOLLOWING COMMENTS ARE IN REGARDS TO THE ABOVE REFERENCED ORDER NO.'S

SCHEDULE A

ITEM # **COMMENT**

1. NOTED ABOVE.

2., 3., 4. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

5. THE LEGAL DESCRIPTION OF THE LAND SURVEYED IS SHOWN HEREON, TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

SCHEDULE B – SECTION 1 (REQUIREMENTS)

ITEM # **COMMENT**

1.–5. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS. THIS ALTA/ACSM LAND TITLE SURVEY IS A RESPONSE TO THE REQUEST FOR A SURVEY.

SCHEDULE B – SECTION 2 (EXCEPTIONS)

ITEM # **COMMENT**

1.–14. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

15. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

16.–17. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

18. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

19.–20. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

21. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

22. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

23. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

24.–25. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

26. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

27.–29. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

30. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

31.–32. LANGE LAND SURVEYS, LLC DID NOT EXAMINE OR ADDRESS THESE ITEMS.

33. ITEM INTENTIONALLY DELETED.

34. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND DETERMINED IT DOES NOT AFFECT SUBJECT PROPERTY.

35. LANGE LAND SURVEYS, LLC EXAMINED THIS ITEM AND IT IS LOCATED AS SHOWN ON THIS SURVEY.

36.–41. LANGE LAND SURVEYS DID NOT EXAMINE OR ADDRESS THESE ITEMS.

#	REVISIONS:	DATE:	BY:
1			
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8			

JOB NUMBER: 1057-556

SHEET: 1 OF 2

DRAWN BY: LC
CHECKED BY: JRL
SCALE: 1" = 60'
DATE: 03/18/14
FILE NO. ALTA

ALTA / ACSM LAND TITLE SURVEY
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST
WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

PREPARED FOR:
CHARTERED DEVELOPMENT

Lange Land Surveys
9572 W. 58TH AVE. ARVADA, CO 80002
P:(720) 242-9732 F:(720) 242-9654

FINAL DRAINAGE REPORT
PRIMROSE SCHOOL
ERIE, COLORADO

Prepared For:
Children's Design Group
71 Market Place
Montgomery, AL 36117

Prepared By:
Hurst & Associates, Inc.
4999 Pearl East Circle
Suite 106
Boulder, CO 80301

Job No. 2410-01
May 8, 2007

TABLE OF CONTENTS

Introduction

Hydrologic/Hydraulic Analysis

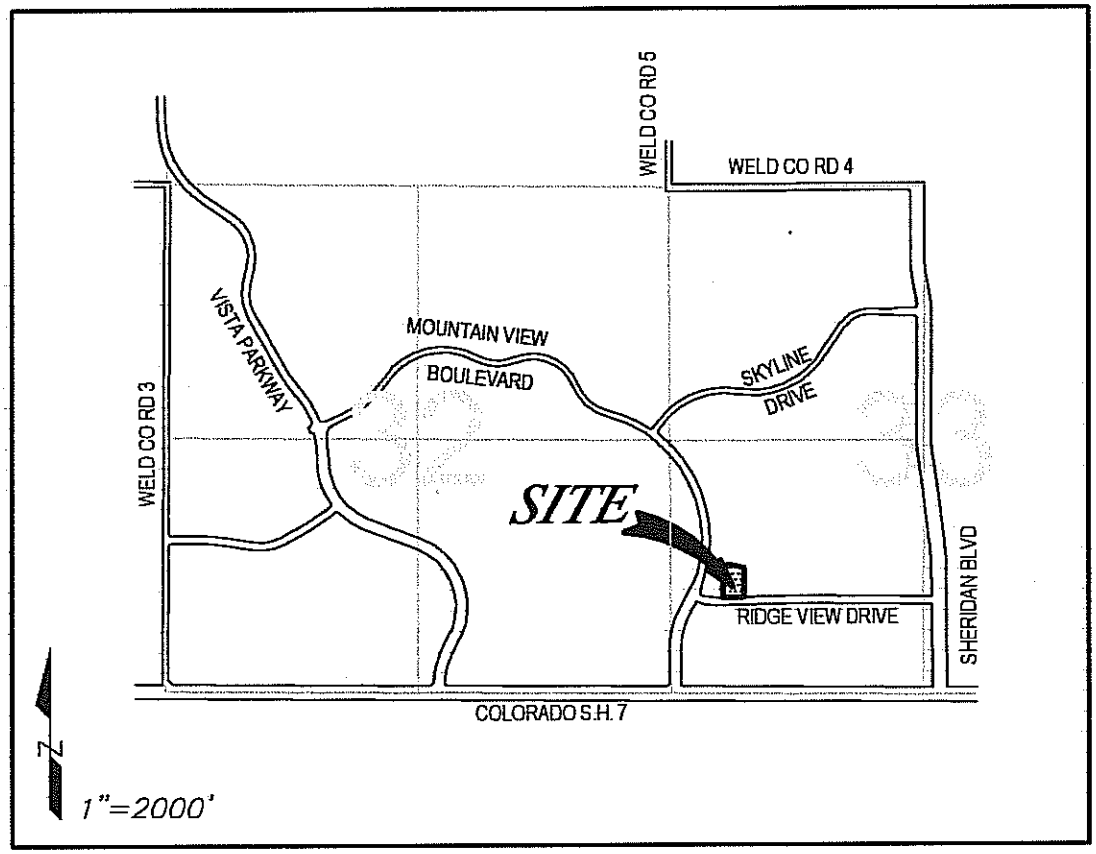
Drainage Facility Design

Erosion Control

Runoff Calculations . . . . . **Appendix A**

Storm Sewer Pipe Sizing & Inlet Analysis . . . . . **Appendix B**

Map Pocket - **Primrose School Drainage Plan**
Primrose School Grading Plan



VICINITY MAP

INTRODUCTION

This report presents the drainage concept and design of the drainage facilities of the proposed Primrose School. The Primrose School is to be built on Lot 2 of Vista Ridge Filing No. 2, Replat A. Lot 2 is located in the southwest one-quarter of Section 33, Township 1 North, Range 68 West of the Sixth Principal Meridian, Town of Erie, County of Weld, State of Colorado. The site is currently vacant. Runoff drains westerly to existing Vista Ridge Detention Pond A3. Runoff from Lot 3 of Vista Ridge Filing No. 2, Replat A and the western portion of the Vista Ridge Academy drains westerly across the Primrose School.

HYDROLOGIC/HYDRAULIC ANALYSIS

The stormwater runoff was determined using the Rational Method as presented in the *Urban Drainage and Flood Control District Manual*. Drainage basins were defined by the proposed grading and the locations of the proposed inlets and storm sewers. Times of concentration were developed for each basin. These times and the Time-Intensity-Frequency Curves from the Town of Erie's *Standards and Specifications for Design and Construction of Public Improvements* were used to determine the minor and major storm intensities and the corresponding runoff rates for each basin. According to the Town of Erie's *Standards and Specifications for Design and Construction of Public Improvements* the drainage facilities for the site must be designed using at least a 5-year initial storm return period and a 100-year major storm return period. Runoff calculations are located in **Appendix A**.

DRAINAGE CONCEPT

The drainage concept for the Primrose School is to convey the offsite flows from Lot 3 of Vista Ridge Filing No. 2, Replat A and the western portion of the Vista Ridge Academy along with

the runoff from the Primrose School to the existing Vista Ridge Detention Pond A3. Pond A3 was designed to detain flows from the Primrose School.

To avoid offsite flows from crossing the Primrose School during 100-year storm event, a 36 inch reinforced pipe is being extend to Lot 3. This pipe has the capacity to convey the developed 100-year flows from Lot 3 and the western portion of the Vista Ridge Academy. A Type 'C' inlet will be temporarily placed on the 36 inch pipe until Lot 3 is developed. **See Appendix B.**

APPENDIX A

RUNOFF CALCULATIONS

Primrose School
Job No.: 2410-1

Land Use	C_5	C_{100}
Roof	0.85	0.90
Grass	0.15	0.50
Walks	0.87	0.89
Pavement	0.88	0.93
Commercial	0.87	0.89

Basin	Total	Roof	Grass	Walks	Pavement	Comm.	C_5	C_{100}
	acres	*acres*	*acres*	*acres*	*acres*	*acres*		
A3A	1.13	0.25	0.37	0.08	0.43	0.00	**0.63**	**0.78**
A3B	2.95	0.00	0.00	0.00	0.00	2.95	**0.87**	**0.89**
A3C	4.92	0.00	0.88	0.12	0.00	3.92	**0.74**	**0.82**

Basin	Overland Flow			Travel Time in Channel				T_c (mins)	T_c Check		Final T_c (min = 5 mins)
	Length (ft)	Slope (%)	T_i (Fig. 2) (mins)	Length (ft)	Slope	Velocity (ft/sec) (fig.3-2)	T_t (mins)		Total Length (ft)	T_c = (L/180) +10 (mins)	
A3A	-	-	-	-	-	-	-	-	-	-	**5.0**
A3B	-	-	-	-	-	-	-	-	-	-	**5.0**
A3C	120	4.2	4.4	675	PIPE	5.0	2.3	6.6	795	14.4	**6.6**

Basin	Runoff		T_c (min)	Intensity		Design Flow	
	C5	C100		I_5 (in/hr)	I_{100} (in/hr)	Q_5 (cfs)	Q_{100} (cfs)
A3A	**0.63**	**0.78**	**5.0**	*5.00*	*9.40*	**3.58**	**8.29**
A3B	**0.87**	**0.89**	**5.0**	*5.00*	*9.40*	**12.83**	**24.68**
A3C	**0.74**	**0.82**	**6.6**	*4.60*	*8.65*	**16.77**	**34.90**

TABLE 800-3
RUNOFF COEFFICIENTS (C) FOR RATIONAL METHOD

		FREQUENCY			
LAND USE OR SURFACE CHARACTERISTICS	PERCENT IMPERVIOUS	2	5	10	100
Business					
Commercial Areas	95	.87	.87	.88	.89
Neighborhood Areas	70	.60	.65	.70	.80
Residential					
Single-Family	*	.40	.45	.50	.60
Multi-Unit (detached)	50	.45	.50	.60	.70
Multi-Unit (attached)	70	.60	.65	.70	.80
1/2 Acre Lot or Larger	*	.30	.35	.40	.60
Apartments	70	.65	.70	.70	.80
Industrial					
Light Areas	80	.71	.72	.76	.82
Heavy Areas	90	.80	.80	.85	.90
Parks, Cemeteries	7	.10	.18	.25	.45
Playgrounds	13	.15	.20	.30	.50
Schools	50	.45	.50	.60	.70
Railroad Yard Areas	20	.20	.25	.35	.45
Undeveloped Areas					
Historic Flow Analysis	2	(See "Lawns")			
Greenbelts, Agricultural					
Offsite Flow Analysis					
(when land use not defined)	45	.43	.47	.55	.65
Streets					
Paved	100	.87	.88	.90	.93
Gravel	40	.40	.45	.50	.60
Drives and Walks	96	.87	.87	.88	.89
Roofs	90	.80	.85	.90	.90
Lawns, Sandy Soil	0	.00	.01	.05	.20
Lawns, Clay Soil	0	.05	.15	.25	.50

Note: These Rational Formula coefficients may not be valid for large basins.

* Refer to Urban Storm Drainage Criteria Manual for percent impervious values.

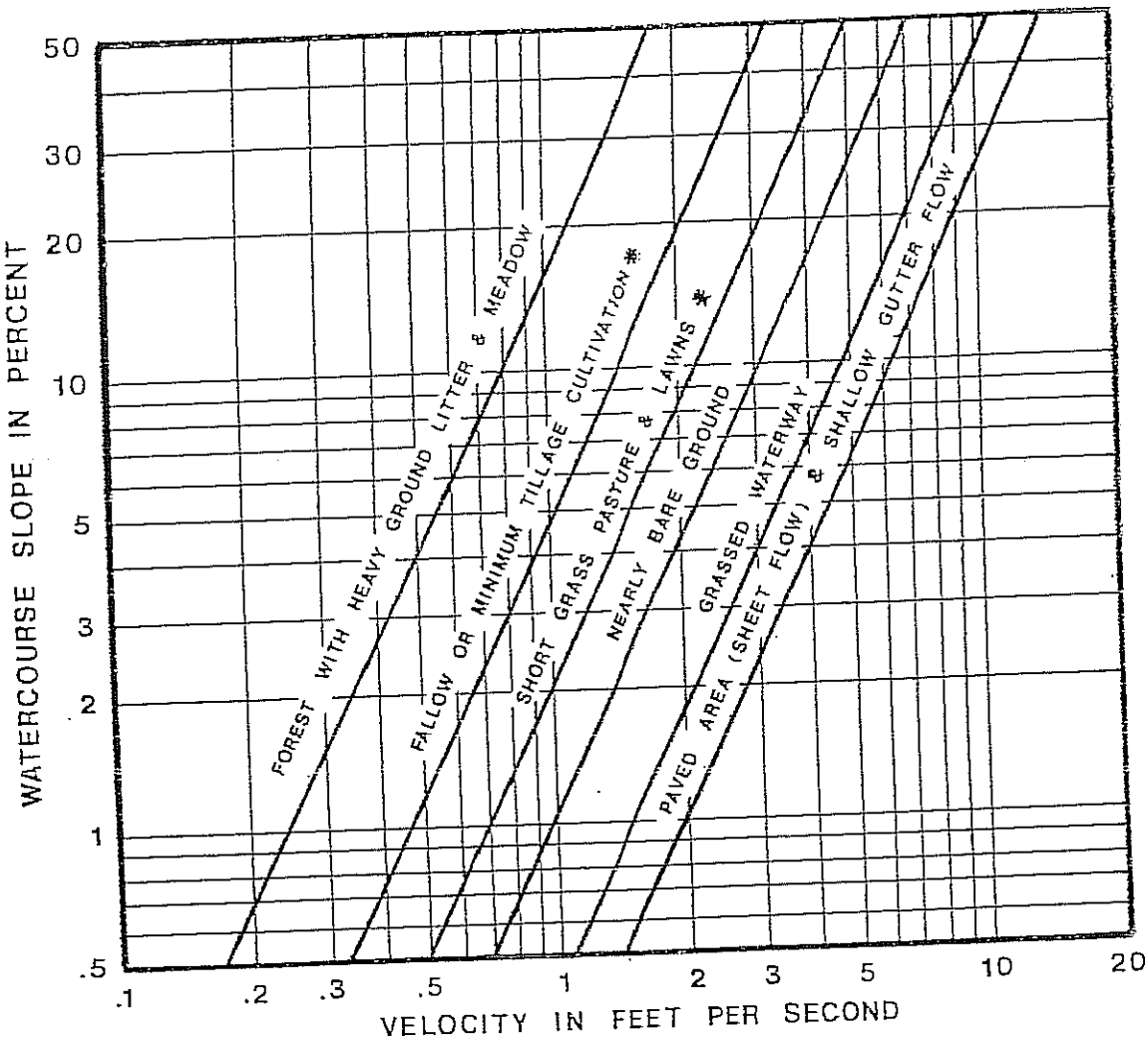


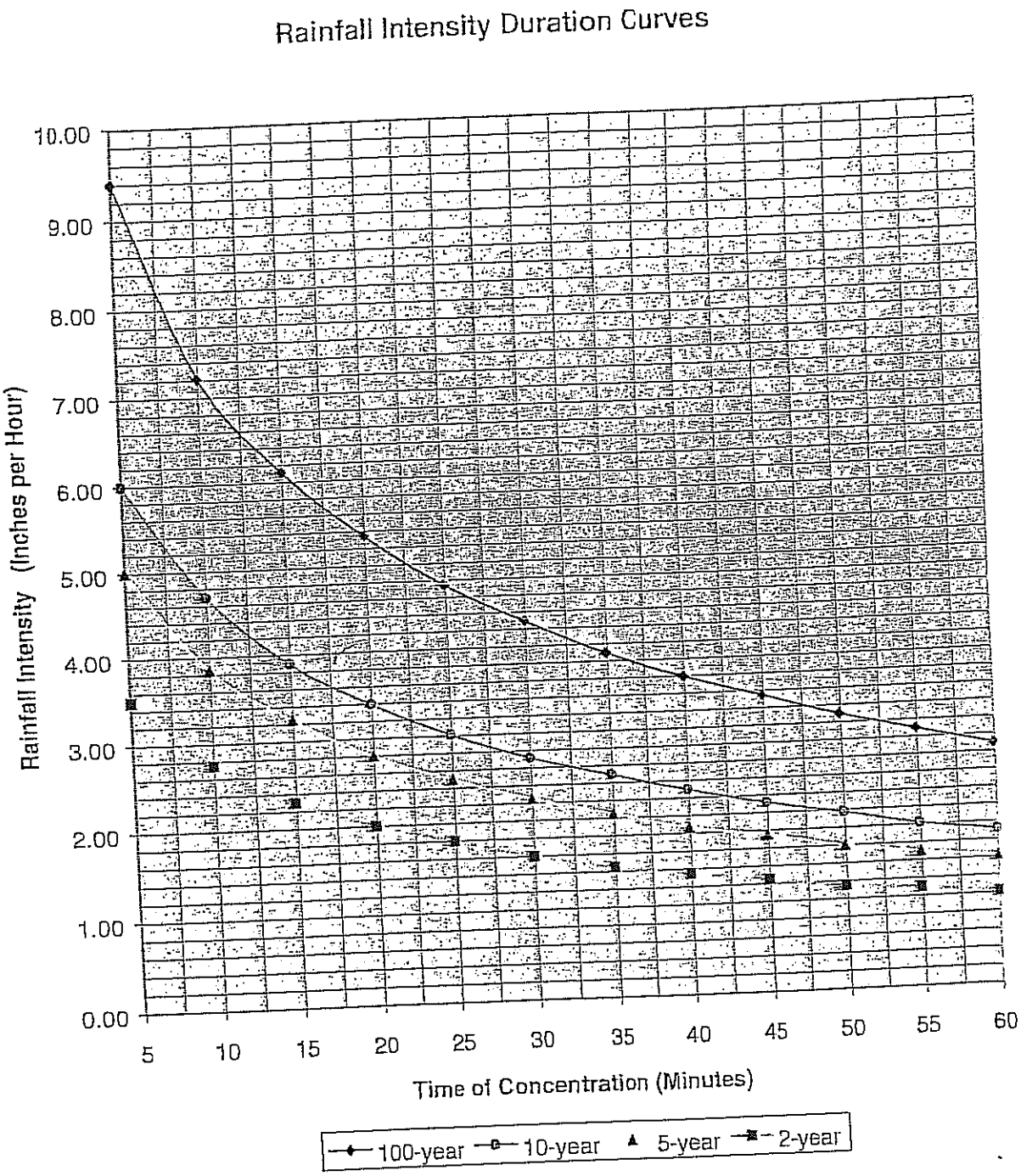
FIGURE 3-2. ESTIMATE OF AVERAGE FLOW VELOCITY FOR USE WITH THE RATIONAL FORMULA.

* MOST FREQUENTLY OCCURRING "UNDEVELOPED" LAND SURFACES IN THE DENVER REGION.

REFERENCE: "Urban Hydrology For Small Watersheds" Technical Release No. 55, USDA, SCS Jan. 1975.

813.06 Rainfall Intensities

The rainfall intensities to be used in the computation of runoff using the Rational Method shall be obtained from the Rainfall Intensity Duration Curves for the Town of Erie, included in these STANDARDS AND SPECIFICATIONS.



APPENDIX B

STORM SEWER PIPE SIZING & INLET ANALYSIS

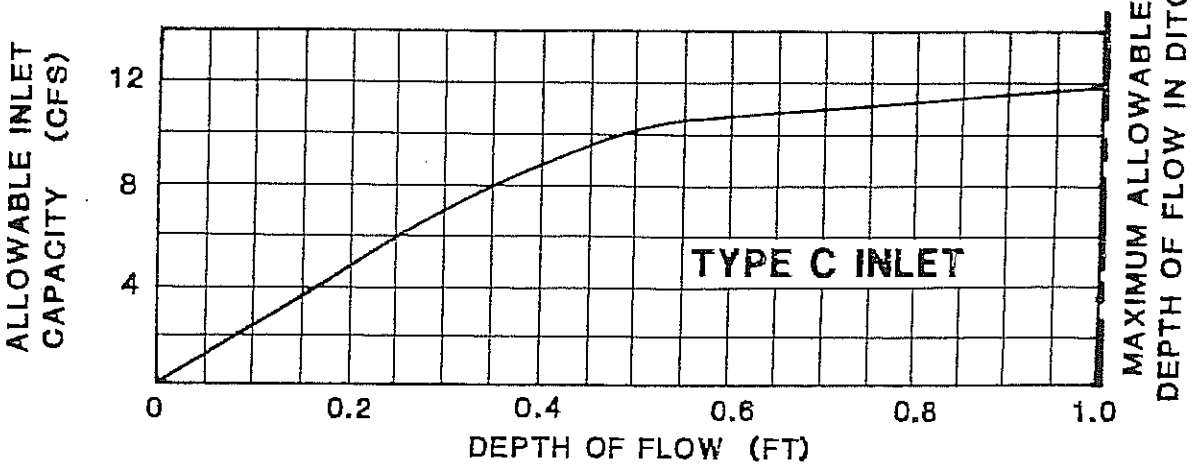
Primrose School
Job No.: 2410-1

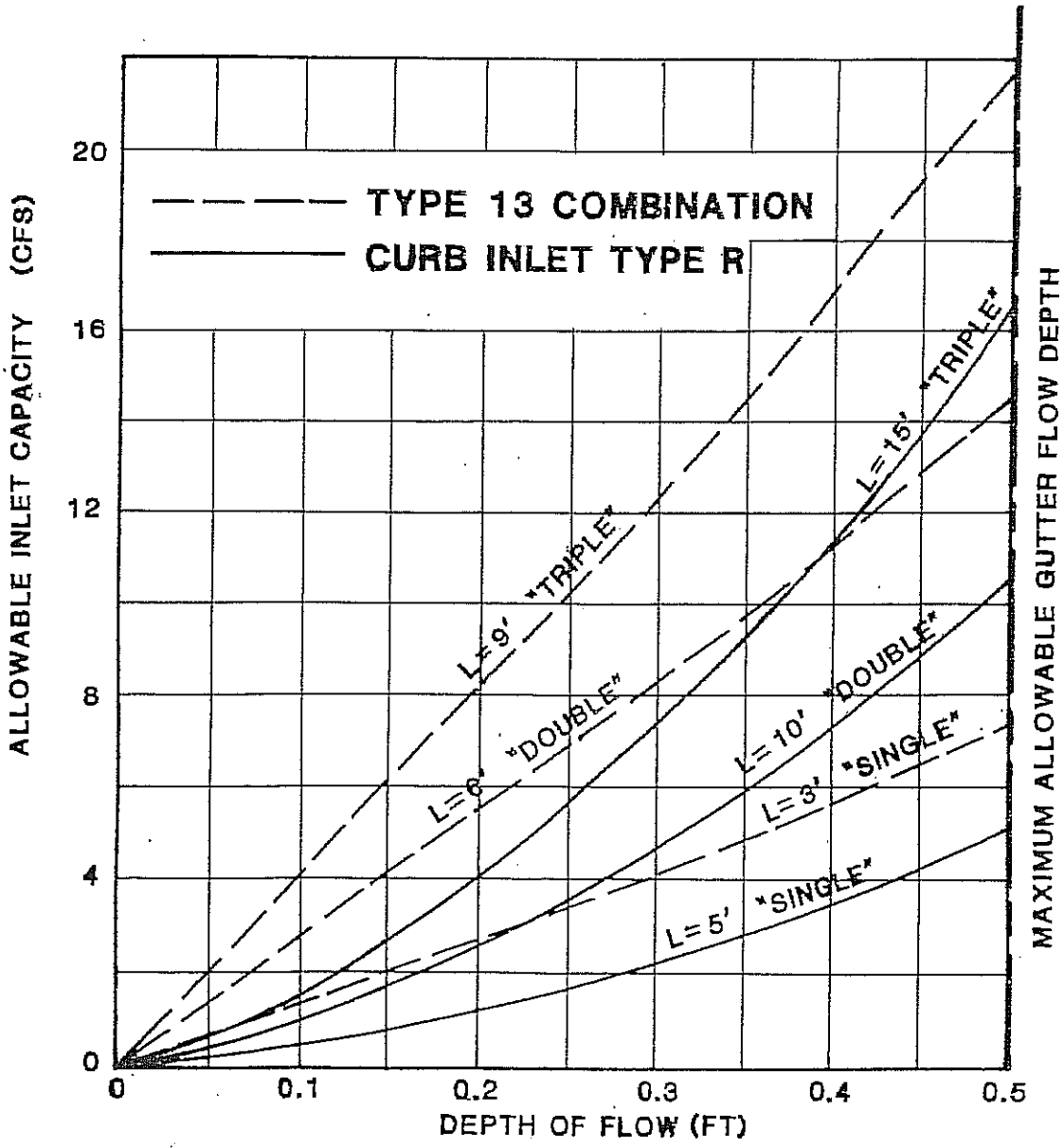
Type 'R' Inlets

Structure Number	Contributing Basins	Q_5 (cfs)	Q_{100} (cfs)	Condition	Depth of Flow (ft) (ft)	Inlet Type	Capacity (cfs) (cfs)
SP-2	A3A	**3.58**	**8.29**	Sump	0.50	**5 Foot Single**	5.0

ALLOWABLE INLET CAPACITY

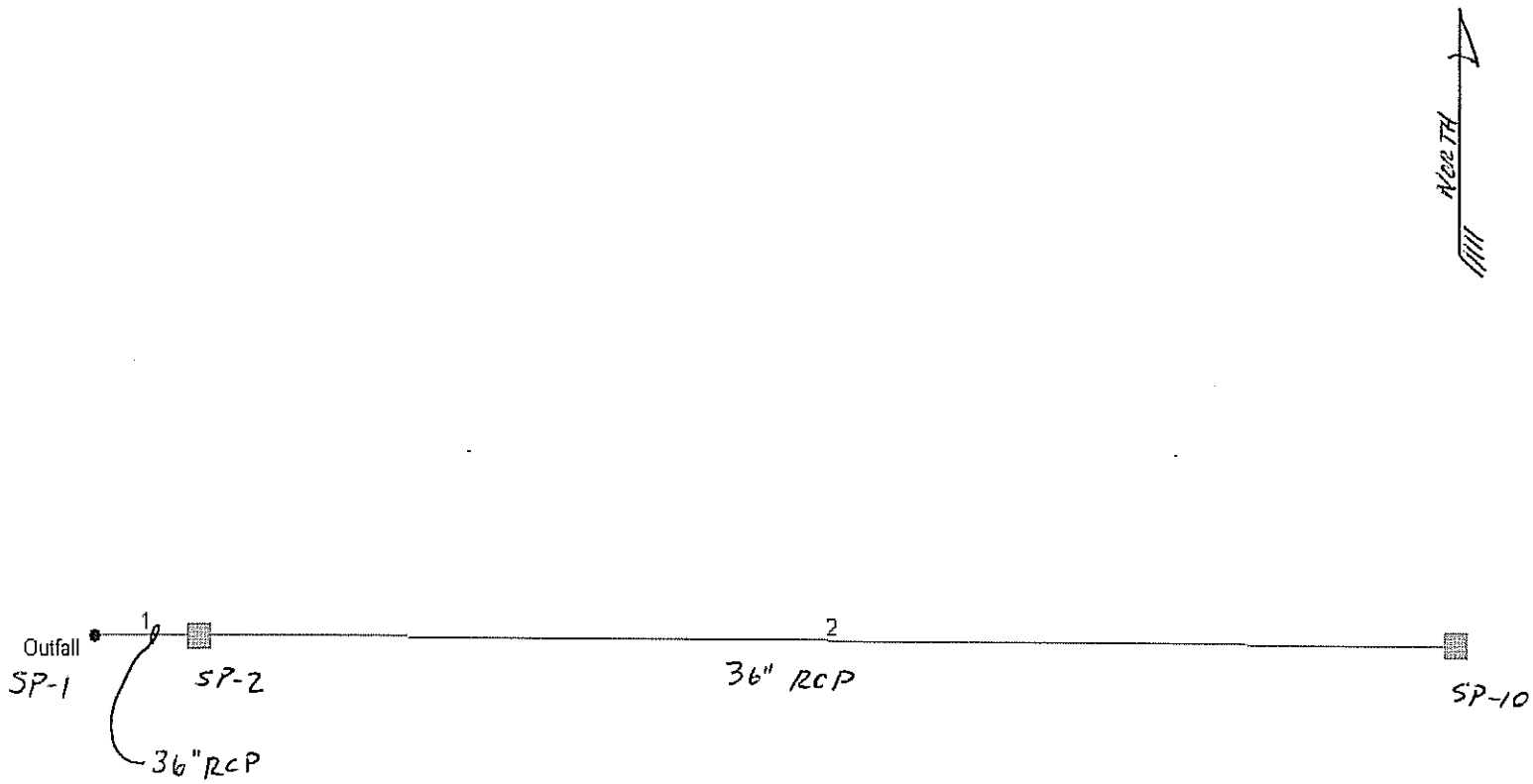
SUMP CONDITIONS - ALL INLETS





REFERENCE: WRC ENGINEERING, INC., TM-2 FEB 1984

Hydraflow Plan View



Project File: 241001B.stm

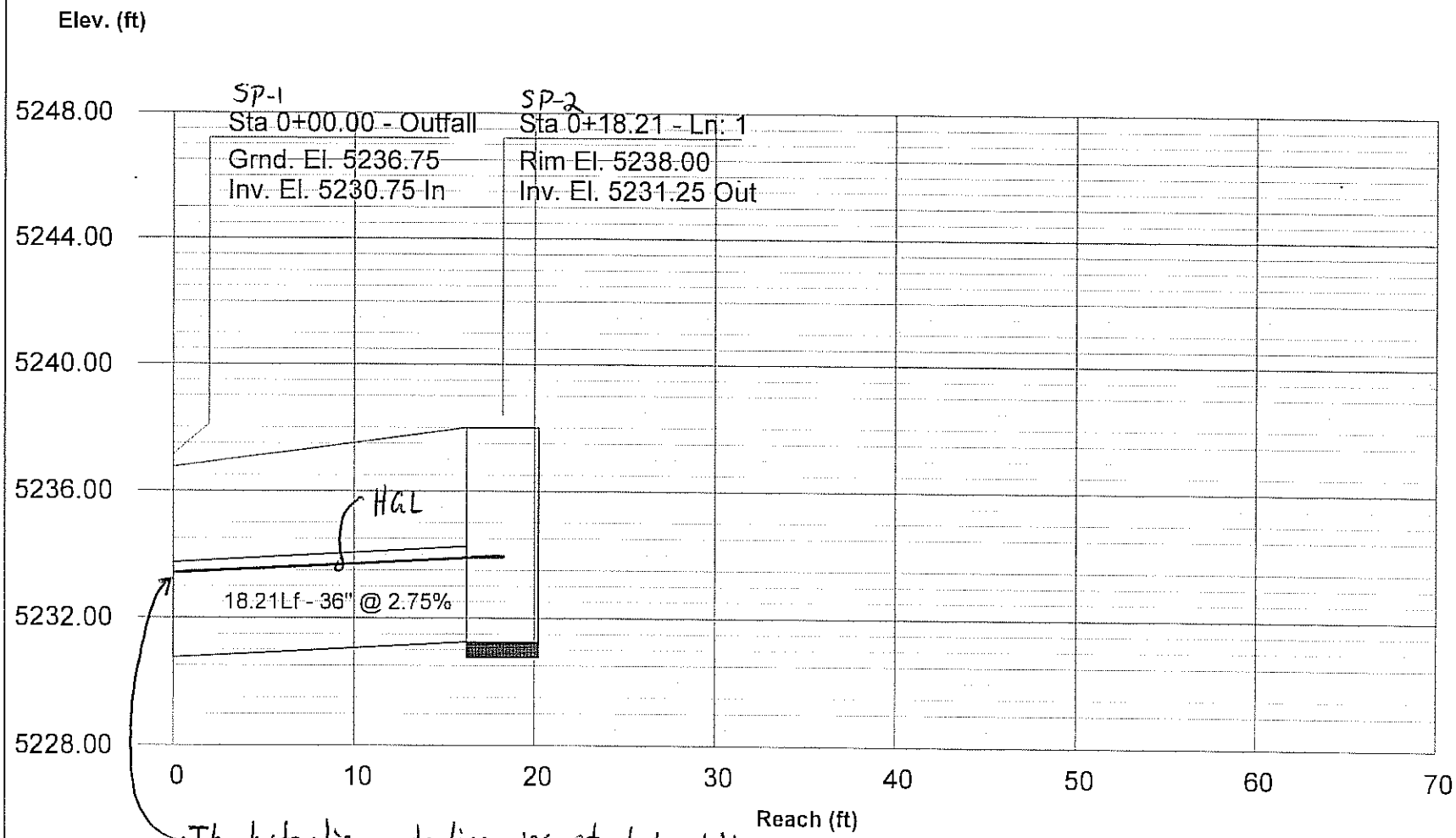
No. Lines: 2

05-03-2007

Hydraflow Storm Sewers 2005

Storm Sewer Profile

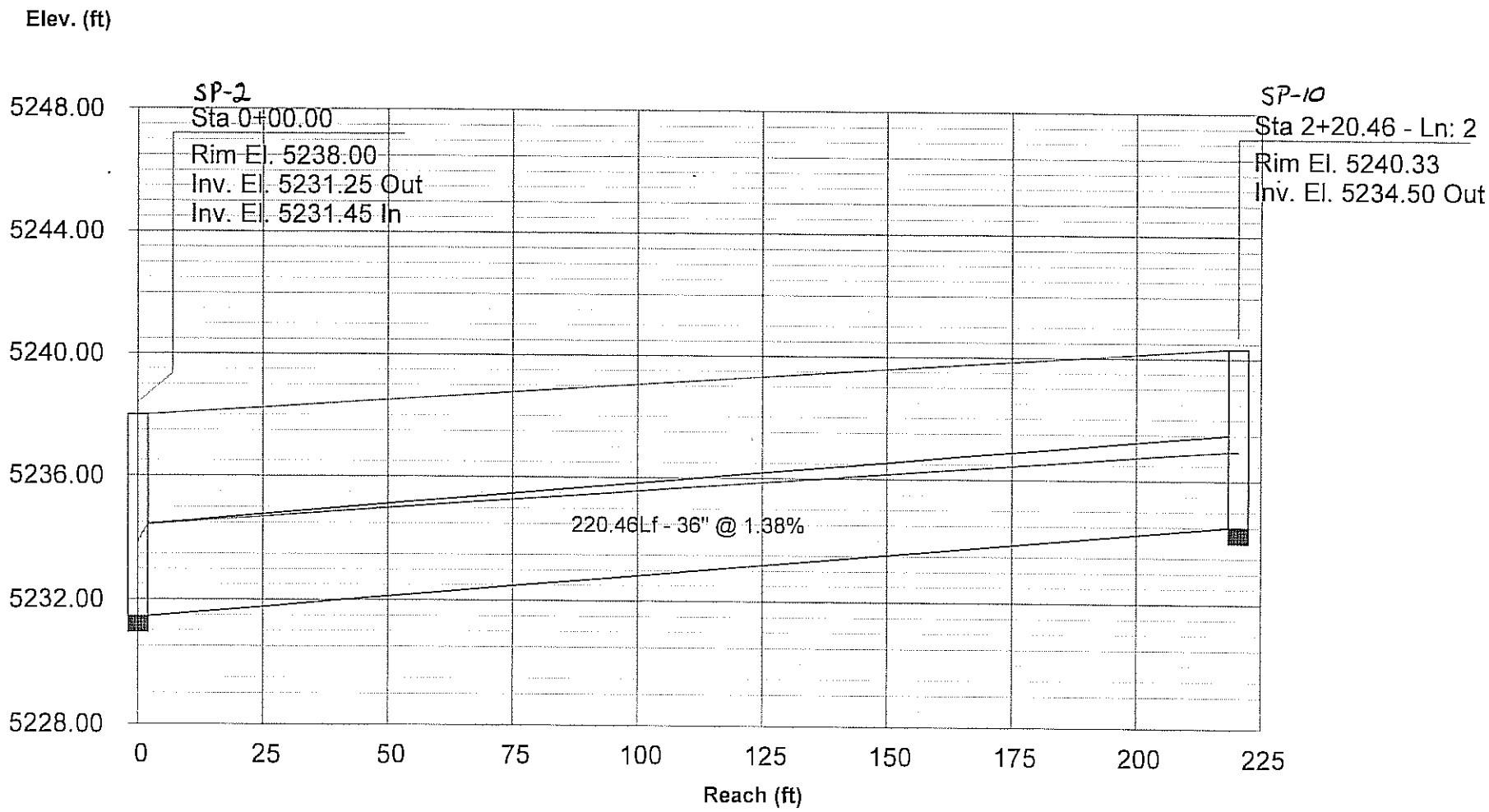
Proj. file: 241001B.stm



The hydraulic grade line was started at the 100-year W.S.E. of the detention pond. (5232.89)

Storm Sewer Profile

Proj. file: 241001B.stm



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	18.2	0.0	Curb	67.87	0.00	0.00	0.0	5230.75	2.75	5231.25	36	Cir	0.013	0.50	5238.00	SP-1 TO SP-2
2	1	220.5	0.2	Grate	59.58	0.00	0.00	0.0	5231.45	1.38	5234.50	36	Cir	0.013	1.00	5240.33	SP-2 TO SP-10

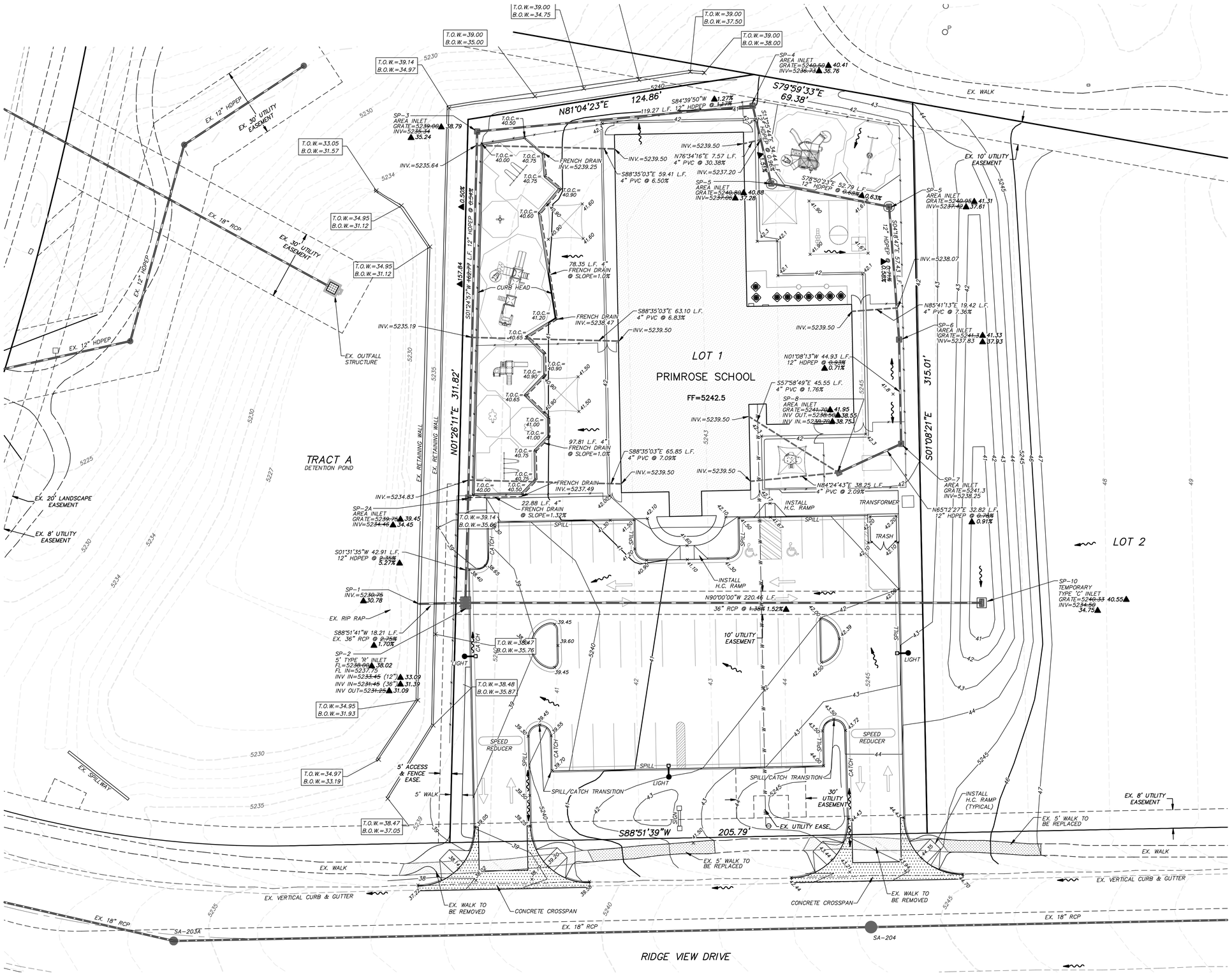
Project File: 241001B.stm | Number of lines: 2 | Date: 05-03-2007

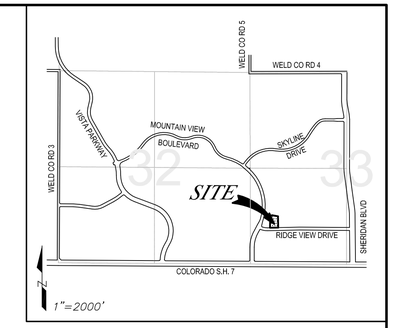
Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
	(in)	(cfs)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	(ft)	Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)	(K)	(ft)
1	36	67.87	5230.75	5233.38	2.63	6.57	10.33	1.66	5235.04	0.935	18.2	5231.25	5233.88	2.63**	6.57	10.33	1.66	5235.54	0.935	0.935	n/a	0.50	n/a
2	36	59.58	5231.45	5234.44	2.98	7.06	8.43	1.11	5235.54	0.751	220	5234.50	5236.96	2.46**	6.20	9.60	1.43	5238.39	0.797	0.774	n/a	1.00	1.43

Project File: 241001B.stm | Number of lines: 2 | Run Date: 05-03-2007

Notes: ; ** Critical depth.





VICINITY MAP

THIS PLAN AND THE INFORMATION CONTAINED HEREON ACCURATELY REPRESENT THE "AS BUILT" CONDITION OF THE IMPROVEMENTS AS SHOWN AS OF 07/14/08.

▲ AS-BUILT BY
HURST & ASSOCIATES, INC.
CONSULTING ENGINEERS
4999 Pearl East Circle, Suite 106
Boulder, Colorado 80301 (303) 449-9105
07/14/08

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

LEGEND

- Manhole
- Existing Manhole
- Thrust Block
- Proposed Water Valve
- Existing Water Valve
- Proposed Fire Hydrant
- Existing Fire Hydrant
- Plug
- Blowoff
- Proposed Water Line
- Existing Wate Line
- Proposed Sewer Line
- Existing Sewer Line
- Proposed Storm Line
- Existing Storm Line
- 10' Type 'R' Inlet
- 5' Type 'R' Inlet

ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED

72 HOURS BEFORE YOU DIG
CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (U.N.C.C.)
1-800-922-1987
GAS, ELECTRIC, TELEPHONE, CATV AND PANHANDLE EASTERN PIPELINE LOCATIONS

PRIMROSE SCHOOL
VISTA RIDGE FILING NO. 2
MINOR SUBDIVISION, LOT 1
GRADING & DRAINAGE PLAN

SCALE	HOR. 1"=20' VERT. N/A
DESIGN/APPR.	JJ
DRAWN BY	GLG
DATE	11/14/07

HURST & ASSOCIATES, INC.
CONSULTING ENGINEERS
4999 Pearl East Circle, Suite 106
Boulder, Colorado 80301 (303) 449-9105

FILE G:\21423\PARCEL 35B-2\CONST\24101-GG SHEET 3 OF 8

prepared by
Enertia Consulting Group, LLC
1437 Larimer Street
Denver, CO 80202

Storm Water Management Plan

Montex North at Vista Ridge, Erie, Colorado

prepared for

Chartered Development Corp
3160 Village Vista Drive
Erie, CO 80516

LAND • ENERGY • INFRASTRUCTURE

SWMP PLAN ACKNOWLEDGEMENT

SWMP Administrator Acknowledgement

This SWMP for the Montex North project described herein was prepared by me or under my direct supervision in accordance with the provisions of the Colorado Department of Public Health and Environment (CDPHE) guidelines. The SWMP has been prepared in accordance with good engineering, hydrologic and pollution control practices. I acknowledge responsibility for preparation of this SWMP Plan.

_____

J. Sean O'Hearn, PE, PG
Registered Professional Engineer
State of Colorado No. 33568

Date _____

For and on behalf of Enertia Consulting Group

Local Facility Acknowledgement

Chartered Development Corporation certifies that the grading, erosion, and sediment control measures for Montex North, shall be constructed, inspected and maintained according to this SWMP.

Chartered Development Corporation

_____
Name

_____
Date

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APPENDIX A BMP Inspection and Maintenance Report Form
Construction & Stabilization Report Form

1.0 INTRODUCTION

The following Storm Water Management Plan (SWMP) has been prepared on behalf of Chartered Development Corporation for land development activities including: clearing, grubbing and grading; constructing roads and infrastructure improvements; and constructing 26 single family residential units within a 4 acre area north of Ridge View Drive in Erie Colorado (the Project). The goal of this SWMP is to identify possible pollutant sources that may contribute pollutants to storm water, and identify Best Management Practices (BMP's) that, when implemented, will reduce or eliminate any possible water quality impacts. The SWMP shall be implemented at the time the Project breaks ground, and revised as construction proceeds, to accurately reflect the conditions and practices at the Project site. This SWMP has been prepared in general accordance with CDPHE Water Quality Control Division, Storm Water Program requirements.

1.1 Name, Address and Telephone Number of General Permit Applicant

Ward Ritter
Chartered Development Corporation
3160 Village Vista Drive, Suite 104
Erie, CO 80516
(303) 545-2554

1.2 Name, Address and Telephone Number of SWMP Preparer

J. Sean O'Hearn, PE, PG (CO PE No. 33568)
Enertia Consulting Group, LLC
1437 Larimer Street, Denver, CO 80202
(720) 473-3131

1.3 Name, Address and Telephone Number of Local Facility/SWMP Manager

Chartered Development Corporation
3160 Village Vista Drive, Suite 104
Erie, CO 80516
(303) 545-2554

2.0 PROJECT DESCRIPTION AND LOCATION

The Project consists of developing 26 single-family homes and appurtenant infrastructure on a +/- 4 acre site, which is identified as a re-subdivision of Lot 2, Vista Ridge Filing No. 2. The site is gently sloping from east to west with an existing slope of approximately 2.8%. Existing ground cover consists of upland grasses. There is a drainage swale along the western property line that collects runoff from the site and conveys it to an inlet which drains to the detention pond west of Primrose Preschool. To the east of the site on the Vista Ridge Academy property, a retention pond has been constructed to capture runoff from this adjacent property which effectively reduces off-site runoff toward the site. There are no wetlands or other sensitive resource areas on the 4 acre Project site.

The project is bounded to the north by Colorado National Golf Course, the Vista Ridge Academy to the east, Primrose Preschool to the west and Ridge View Drive to the south. The adjacent major roadways are Mountain View Boulevard to the west, Sheridan Parkway to the east and East Baseline Road to the south.

The Project is located in the southwest quarter of Section 33, Township 1 North, Range 68 West of the 6th Principle Meridian. The assigned latitude and longitude of the Project is 40.0024^{0} and -105.0141^{0}, respectively.

Additional Project information and anticipated construction activities are described in Sections 2.1 and 2.2 below.

2.1 Project Purpose, Area of Disturbance and Total Construction Area

The primary purpose of the Project is to construct roads, infrastructure and building pads required for 26 new homes in Vista Ridge. In order to complete the Project, an area of approximately 4 acres will be disturbed. For the purposes of this SWMP, this area is considered the total construction area. This area is currently unimproved and generally covered with native vegetation (approx. 70-80% coverage).

2.2 Construction Description and Sequence

Project construction activities generally include: installation of storm water BMP's; clearing, grubbing and grading; installation of wet utilities (water, sanitary and storm) and road subgrade; concrete work including curb & gutter and sidewalks; installation of dry utilities (gas, electric, data/communications); asphalt paving; and fine grading & landscaping open space areas. A general description of these construction activities is as follows.

2.2.1 Installation of BMP's

Erosion and sediment control BMP's shown on Figure 1 including vehicle tracking control at Ridge View Drive, inlet protection (west side of site) and silt fence along the limit of grading will be installed prior to any clearing and grubbing. Additional inlet protection, a concrete wash out area, and permanent seeding/mulching and other landscaping will be installed during the construction process. Figure 2 illustrates the final BMP condition.

2.2.2 Clearing, Grubbing and Grading

The entire 4 acre area will be cleared, grubbed and rough graded. Organics and other excess materials shall be stockpiled adjacent to Ridge View Drive. This designated stockpile area is illustrated on Figure 1.

2.2.3 Overexcavation of Project Site

Based on geotechnical requirements, the majority of the 4 acre area will be overexcavated to a maximum depth of 3' below roads, sidewalks and driveways and 22' below housing unit finished floor elevations. The excavated soils will be removed, stockpiled, reconditioned and reinstalled as part of this Project.

2.2.4 Installation of Wet Utilities and Ridge View Court Construction

Ridge View Court, the Project access road will be rough graded prior to water, sanitary sewer and storm sewer installation. Excess trench materials will be placed as engineered fill in the Ridge View Court alignment. Once utilities have been installed, curb & gutter and sidewalks will be installed prior to road surface compaction, fine grading and asphalt paving.

2.2.5 Concrete Work

Once wet utilities are installed and road subsurface materials installed and compacted, concrete curb & gutter and adjacent sidewalks will be constructed. As shown on Figure 2, a concrete wash out area will be located adjacent to the vehicle tracking control prior to concrete work.

2.2.6 Dry Utility Installation

Natural gas lines will be installed off the back of curb and electric/data communication lines will be installed in the Xcel trench located in the Ridge View Court right of way.

2.2.7 Landscaping/Seeding & Mulching Open Space Areas

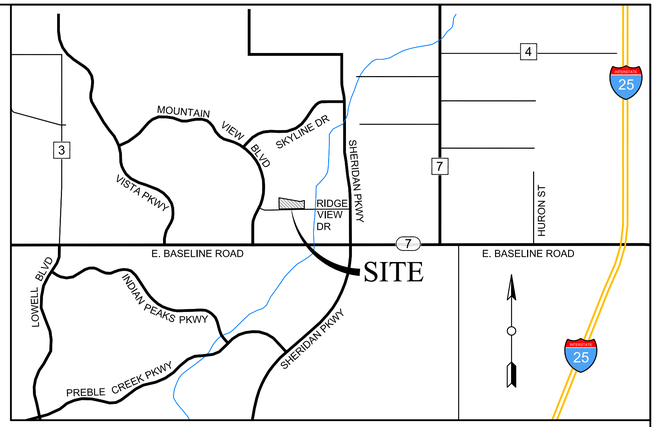
Stockpiled topsoil (if any) will be spread as needed over the graded ground surface in designated open space areas shown on Figure 2. These areas will be landscaped or seeded and mulched in accordance with the Project landscape design plans to achieve stabilization requirements described in Section 5.4 of this SWMP.

2.3 Potential Sources of Pollution

Soils within the construction area are classified as Type C and the primary potential pollutant source is exposed sediment. Secondary potential sources of pollution include concrete wash activities (e.g., sidewalks, curb & gutter construction) and uncontained releases from construction vehicles or heavy equipment or stored hazardous materials (if any). It is understood that the Project Contractor will implement a Spill Prevention, Control and Countermeasure (SPCC) Plan for the Project. It is anticipated that information including: on-site vehicle fueling procedures; temporary storage of fuel, hydraulic fluids, lubricants or other hazardous materials (if any); available emergency response materials and equipment; and emergency response contact information and procedures will be included in the SPCC Plan.

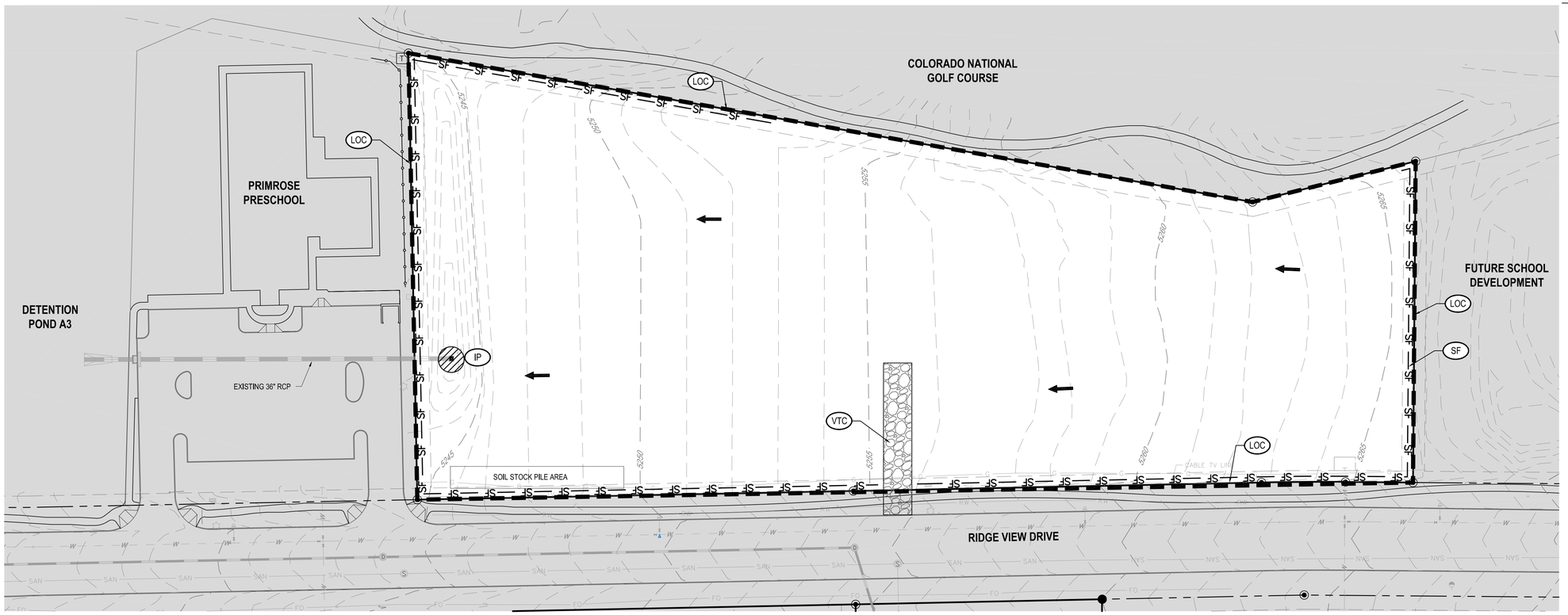
MONTEX NORTH AT VISTA RIDGE
INITIAL STORMWATER BMP INSTALLATION

FIGURE 1



GENERAL LOCATION MAP

SCALE 1"=2000'



GENERAL LEGEND:

EXISTING 5' CONTOUR
EXISTING 1' CONTOUR

DIRECTION OF FLOW

AREA OUTSIDE LIMIT OF CONSTRUCTION

BMP LEGEND:

VTC — VEHICLE TRACKING CONTROL

LOC — LIMITS OF CONSTRUCTION

SF — SILT FENCE

PS — PERMANENT SEEDING

IP — INLET PROTECTION

N

0' 20' 40' 80'

SCALE: 1"=40'

MONTEX NORTH AT VISTA RIDGE
STORM WATER MANAGEMENT PLAN

APPLICANT:
CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
303-545-2554

ENGINEER:
ENERTIA CONSULTING GROUP
1437 LARIMER STREET
DENVER, COLORADO 80202
303-875-7131

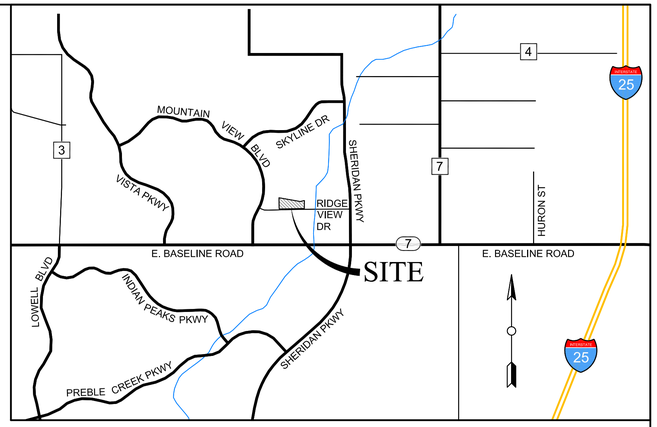
PLANNER:
HURST & ASSOCIATES
2500 BROADWAY STREET, SUITE 110
BOULDER, COLORADO 80304
303-449-9105

DATE: 11/14/2014

REVISED:

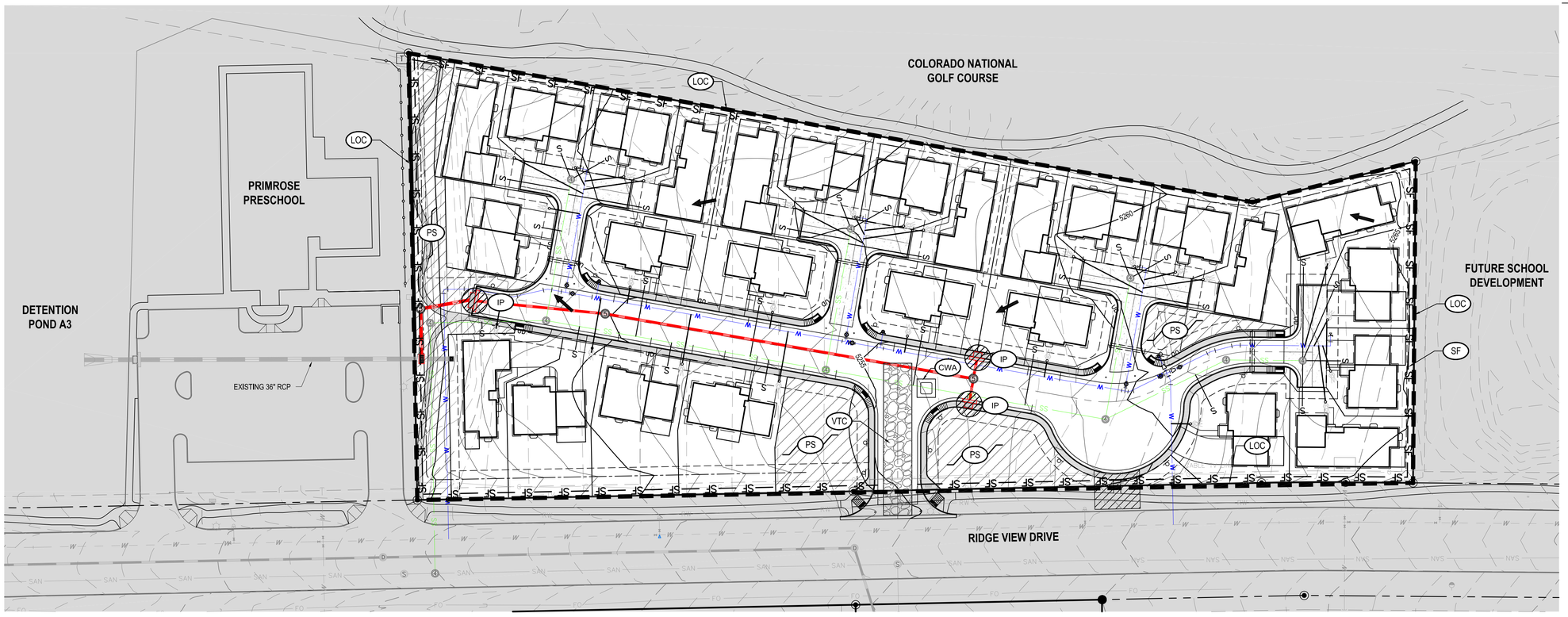
MONTEX NORTH AT VISTA RIDGE
FINAL STORMWATER BMP INSTALLATION

FIGURE 2



GENERAL LOCATION MAP

SCALE 1"=2000'



GENERAL LEGEND:

- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- DIRECTION OF FLOW
- AREAS TO BE LANDSCAPED
- AREA OUTSIDE LIMIT OF CONSTRUCTION

BMP LEGEND:

- VTC — VEHICLE TRACKING CONTROL
- LOC — LIMITS OF CONSTRUCTION
- SF — SILT FENCE
- PS — PERMANENT SEEDING
- CWA — CONCRETE WASHOUT AREA
- IP — INLET PROTECTION

N

0' 20' 40' 80'

SCALE: 1"=40'

MONTEX NORTH AT VISTA RIDGE
STORM WATER MANAGEMENT PLAN

APPLICANT:
CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
303-545-2554

ENGINEER:
ENERTIA CONSULTING GROUP
1437 LARIMER STREET
DENVER, COLORADO 80202
303-875-7131

PLANNER:
HURST & ASSOCIATES
2500 BROADWAY STREET, SUITE 110
BOULDER, COLORADO 80304
303-449-9105

DATE: 11/14/2014

REVISED:

3.0 EXISTING SITE CONDITIONS AND ADJACENT AREAS

The Project site is generally unimproved and the existing ground surface is vegetated and slopes from east to west at an average grade of about 2.8 percent. In general, the vegetative cover over the Project site is approximately 70-80 percent. Existing soils are classified as Type C. There are no wetland resource areas or other unique features on or near the Project site. Surface water flows overland and is ultimately conveyed via storm sewer toward the regional detention pond to the west. This pond currently retains storm water and discharge toward a water feature within the Vista Ridge golf course. Ultimately, treated storm water from these developed areas flows toward Coal Creek.

The Project is located within a mixed use area in the Vista Ridge Planned Development. Currently, there are residential, institutional (school) and recreational (golf) developments adjacent to or surrounding Project. There are no streams or lakes adjacent to or surrounding the Project site. There are no anticipated allowable sources of non-storm water discharges at the Project Site.

4.0 EROSION AND SEDIMENT CONTROL MEASURES

The Project will be developed on unimproved land within Vista Ridge. Prior to clearing and grubbing the Project site, BMP's will be installed. As shown on Figure 1, proposed sediment controls to be installed prior to and during construction include: vehicle tracking control; inlet protection; silt fence; and soil stockpile area. BMP construction details are shown on Figure 3.

4.1 Vehicular Access

Construction related vehicles will enter and exit the Project site via Ridge View Drive. Vehicle tracking control will be installed as shown on Figure 1. Vehicle access will be controlled with construction markers (orange traffic cones). Since the construction area is not open to the public, non-construction related traffic will be minimal. The construction markers will direct non-construction related vehicles away from any construction areas.

Earth moving equipment will likely remain at the Project site through project completion. Delivery vehicles (e.g., trucks entering with wet utility pipe and appurtenances, concrete, asphalt) may be exposed to soil but given the vehicle tracking control located at Ridge View Drive, sediment tracking shall be significantly reduced. However, it is the contractor's responsibility to ensure that:

- Public streets shall be free of sediment and debris throughout Project construction;
- Any sediment tracked onto public streets shall be cleaned by using a vacuum type street sweeper, a brush type street sweeper with dust control, or manually using shovels and brooms;
- Public streets shall not be washed with water at any time; and
- The SWMP Manager shall inspect streets on a regular basis. The SWMP Manager shall complete inspections as soon as practical after a storm event and direct the cleanup sediment by the Contractor as necessary.

4.2 Concrete Trucks

Concrete trucks will enter and exit the Project site via Ridge View Drive. Prior to leaving the construction site, the concrete truck trough shall be cleaned (if necessary) in the designated concrete wash area adjacent to the vehicle tracking control (shown on Figure 2).

MONTEX NORTH AT VISTA RIDGE
STORMWATER BMP INSTALLATION DETAILS

FIGURE 3

Eco-Pan Specification sheet

Eco-Pan objective
Allows for easy concrete pump washout, ready mix trucks, and other equipment associated with cement on site and easy off site recycling of the same concrete materials

Eco-Pan Application
Construction projects where concrete, stucco, mortar, grout and cement are used as a construction material or where cementitious wastewater is created.

Eco-Pan Maintenance
Inspect and clean out when ¾ full, not allowing the Eco-Pan to overflow.
Inspect wastewater level and request service. Replace with empty Eco-Pan, as needed.
Inspect Eco-Pan's to ensure that proper housekeeping are employed when washing out equipment.

Description
A self-contained and watertight eco-pan with added fork channels for portability captures and contains concrete wastewater and washout material. Our eco-pan's come in two sizes to accommodate every size pour, 1 yard /2 ton or 2.5 yard /4.5 ton.

SPECIFICATIONS
The eco-pan must be portable and temporary, watertight, equipped with fork channels and have a holding capacity to accept washout from approximately 260 yds - 2.5 yard /4.5ton, Or, 150yards-1yard /2 ton of poured concrete.

2.5 YARD / 4.5 TON

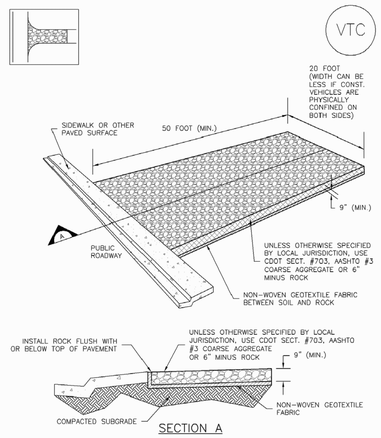
600 Gallon Capacity
20 to 30 Mixer Wash Outs *
7' x 7' x 26"

1 YARD / 2 TON

300 Gallon Capacity
10 to 15 Mixer Wash Outs *
7'x 7' x 14" (Enough to contain material from Pump Hopper)

CONCRETE WASHOUT DETAIL
NOT TO SCALE

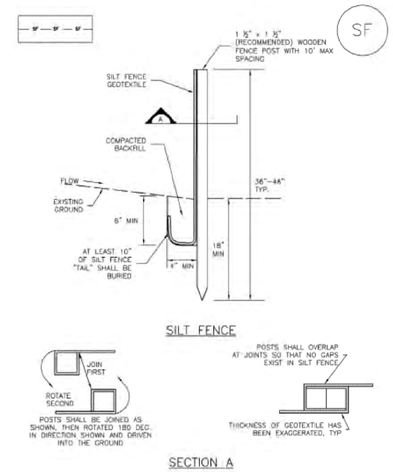
Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

VEHICLE TRACKING CONTROL DETAIL
NOT TO SCALE

Silt Fence (SF) SC-1



SF-1. SILT FENCE

SILT FENCE DETAIL
NOT TO SCALE

SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

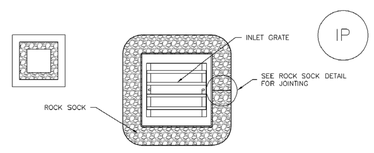
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SILT FENCE DETAIL DETAIL
NOT TO SCALE

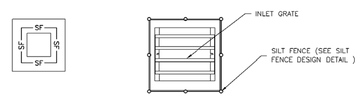
Inlet Protection (IP) SC-6



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP-4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

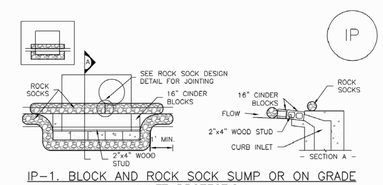
1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

TYPE 13 SEDIMENT CONTROL DETAIL
NOT TO SCALE

SC-6 Inlet Protection (IP)



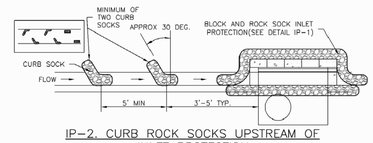
IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.

3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.

2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.

3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.

4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

TYPE R SEDIMENT CONTROL DETAIL
NOT TO SCALE

MONTEX NORTH AT VISTA RIDGE
STORM WATER MANAGEMENT PLAN

APPLICANT:
CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
303-545-2554

ENGINEER:
ENERTIA CONSULTING GROUP
1437 LARIMER STREET
DENVER, COLORADO 80202
303-875-7131

PLANNER:
HURST & ASSOCIATES
2500 BROADWAY STREET, SUITE 110
BOULDER, COLORADO 80304
303-449-9105

DATE: 11/14/2014

REVISED:

5.0 INSPECTIONS AND RECORDKEEPING

The Project area shall be routinely inspected by the Contractor's SWMP Manager to ensure that installed erosion and sediment control measures are maintained in effective condition. Maintenance needs or additional controls identified during inspections shall be completed immediately or as soon as practical.

5.1 Inspections

Erosion and sediment control measures shall be inspected on a regular basis, at least one inspection every 2 weeks, to ensure that they are operating correctly. Areas used for storage of construction materials and equipment; inlets, the vehicle tracking pad, and the entire perimeter of the disturbed area shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Windblown litter will be policed on a daily basis. Locations where vehicles enter or exit the Project construction area (Ridge View Drive) will be inspected for evidence of off-site sediment tracking as described in Section 4.1 of this SWMP.

5.2 Timing of Inspections

During construction, inspections will be performed at least once every two weeks, and within 24 hours of the end of a storm event that can cause erosion. Where areas have been stabilized (as described in Section 5.4), inspections will be performed at least once every month until the CDPHE Storm Water Permit is terminated.

"Winter Waiver" - During the winter when the ground is frozen for more than one month, and land disturbances activities have been suspended, inspections are not required until one month before thawing conditions. The beginning and ending dates of the waiver period must be documented on the inspection report.

5.3 Inspection Reports

An inspection report (Appendix A of this SWMP) will be prepared and signed by the assigned individual after the completion of each inspection. Any noted deficiencies shall be corrected as soon as practical after the inspection. The reports shall be retained as part of this SWMP for at least three years from the date of final stabilization.

5.4 Stabilization Reports

Pictorial records shall be used to establish initial and final stabilization. These records will kept on file with other construction records. A stabilization report (Appendix A of this SWMP) will be completed to document beginning and end dates of construction and ground surface stabilization/revegetation activities. In disturbed areas, stabilization goals will be accomplished when all soil-disturbing activities have been completed and perennial vegetation has been established that is greater than or equal to 70% basal cover. Establishment success must occur within two growing seasons in order to meet the standard. A visual estimate of basal cover class using plots (such as the Daubenmire or Braun-Blanquet system) is the simplest monitoring protocol to perform. Monitoring is recommended at one year and two years following seeding so as to capture germination/growth of both cool and warm season species that are already present or were seeded. Monitoring will be performed by qualified personnel trained in monitoring protocol implementation and plant identification. Once stabilization is achieved, a Notice of Termination will be sent to the CDPHE removing this construction project for the SWMP permit requirements.

5.5 Permit Requirements

A copy of the applicable CDPHE General Permit for Storm Water Discharge from Construction Activities will be available from the Local Facility Contact/SWMP Manager or Contractor onsite. The general permit number is _____.

5.6 Compliance with State & Local Regulations

The Local Facility/SWMP Manager shall ensure compliance with applicable State, and/or local storm water permit and other regulatory requirements.

6.0 NON STORM WATER EVENTS

This Project will generally involve earthwork, concrete work, wet and dry utility installation, road construction and open space landscaping/seeding & mulching. Possible non-storm water discharges resulting from the Project include dust suppression water, fire suppression water and air conditioning condensate from vehicles or construction trailers.

Although bulk chemical or petroleum storage will not occur at the Project site, any such storage area would include secondary containment to prevent migration of a release. Potential chemical or petroleum leaks may occur from an onsite portable latrine, refueling of equipment, and leaks of lube oil or hydraulic fluid from construction equipment.

The Project area shall be maintained in a neat, orderly condition during construction. Waste materials at the Project site shall be collected and disposed of promptly at appropriate waste disposal site. A portable latrine may be used on site. Any sanitary waste that is present at the site will be collected and disposed by a designated, licensed operator. All waste from materials imported to the construction site area are to be removed by the contractor for appropriate disposal. No wastes of imported materials shall be buried, dumped or improperly disposed of.

All equipment refueling shall occur in designated locations during daylight hours in accordance with the Project SPCC plan. It is anticipated that the refueling protocol requires that the operator constantly monitor the refueling process. Each fuel truck shall be equipped with a complete spill kit (including materials such as a shovel, containers for contaminated soils, sorbent socks and pads). All spills are to be addresses immediately and reported in accordance with the Project SPCC plan. In addition the Project area shall be visually inspected as a part of the standard 14 day inspection for any signs of spills.

Visual observation of leaks of equipment lube oils may be noted in the SWMP inspection report and corrected before daily operations begin. As required, any spills will be contained and contaminated soils removed from Project area in accordance with SPCC Plan requirements. Efforts to immediately repair any leaking equipment will be initiated. If the construction site experiences a spill of any hazardous substance, oil, or condensate in an amount which exceeds a federal or state reportable quantity, the spill must be reported. Note: if a release of over 25 gallons to the surface soils or any amount that could potentially impact storm water runoff is recognized, the Town of Erie Storm Water Compliance Manager and CDPHE will be notified as described in the Project SPCC plan.

prepared by
Enertia Consulting Group, LLC
1437 Larimer Street
Denver, CO 80202

Storm Water Management Plan

Montex North at Vista Ridge, Erie, Colorado

Appendix A

Inspection Report

Stabilization Report

LAND • ENERGY • INFRASTRUCTURE

INSPECTION AND MAINTENANCE REPORT

PROJECT NAME: Montex North Residential Development DATE:

During construction, inspections will be performed at least once every 14 calendar days, and within 24 hours of the end of a storm event of 1 inch or greater. Where areas have been stabilized, or when runoff is unlikely due to winter or drought conditions, inspections will be performed at least once every month. "Winter Waiver" - During the winter when the ground is frozen for more than one month, and land disturbances activities have been suspended, inspections are not required until one month before thawing conditions. The beginning and ending dates of the waiver period must be documented here.

Beginning date: Ending Date:

	Y	N	N/A	COMMENTS
1) In the disturbed areas of the construction site that have not been finally stabilized, is there evidence of, or potential for sediment entering the drainage system?				
2) Are the sediment control measures (silt fences, hay bales, VTC, Inlet and Outlet Protection, etc) operating correctly? 2A) Have sediment controls been repaired or replaced where problems were noted?				
3) If applicable, in the areas used for storage of construction debris and construction chemicals, is there evidence of, or the potential for, pollutants to enter the drainage system?				
4) In locations where vehicles enter or exit the site, does sediment get tracked onto the road?				
5) If applicable, at discharge locations (where accessible) are the erosion control measures effective in preventing significant impacts to receiving waters?				
6) Were there any indications of spills from fueling trucks, equipment oil pans, or port-a-potties? Were measures taken to clean up these sites?				
7) Any other issues to note?				

I hereby certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:_____ Date:_____

STORM WATER MANAGEMENT PLAN
CONSTRUCTION & STABILIZATION REPORT

PROJECT NAME: Montex North Residential Development

ESTIMATED TOTAL ACERAGE TO BE DISTURBED: 4 ACRES
(Length of Project X Width of R.O.W. ÷ 43,560)

LIST ALL POTENTIAL DRAINAGES AND WATER CROSSINGS:
DATES WHEN MAJOR CONSTRUCTION ACTIVITIES OCCUR:

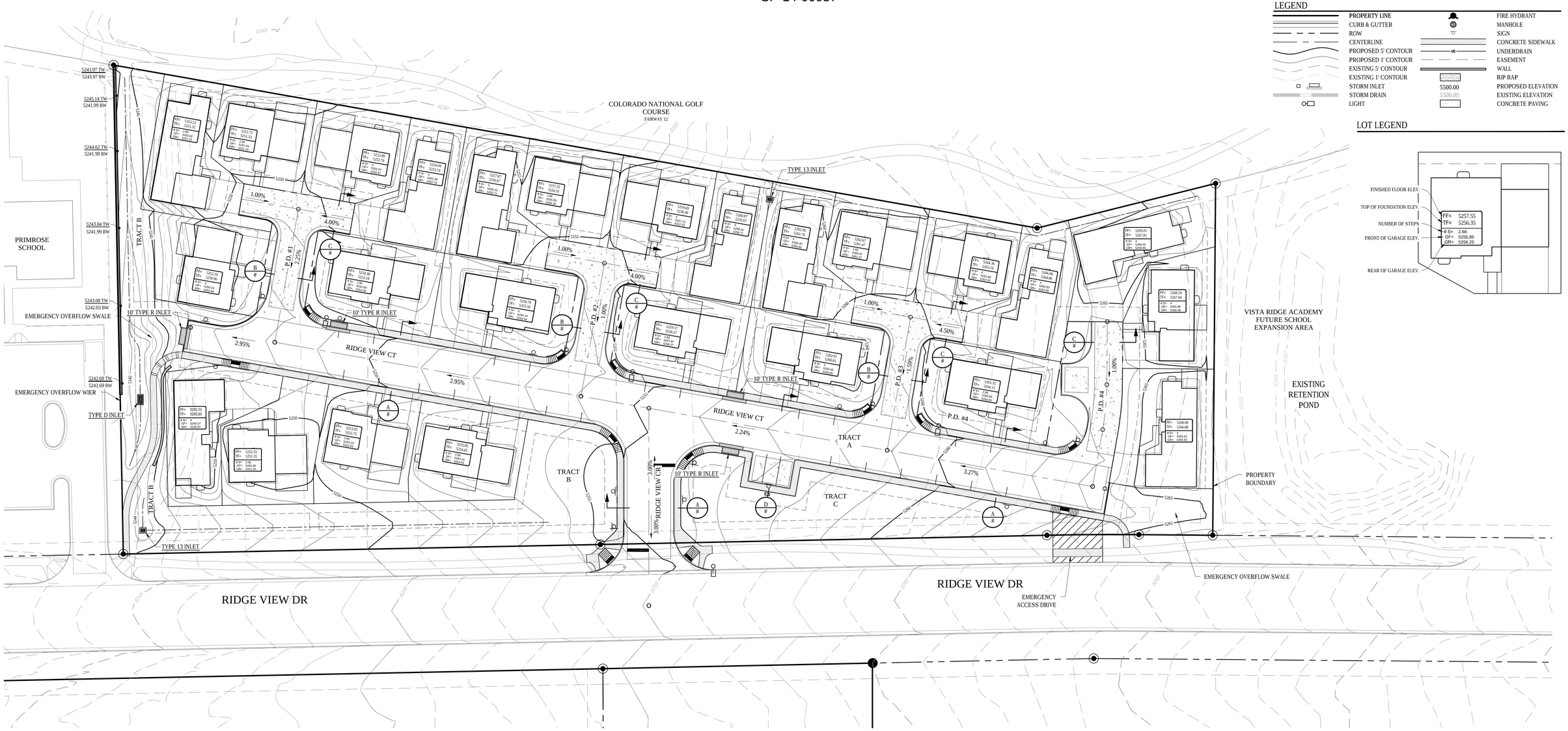
Surveying & Staking	Date:		
Type of Vegetation:	Dry Land	Irrigated Land	
Estimated Vegetative Cover (%)	Picture Taken	Yes	No
ROW Clearing	Date:		
Describe Activity:			
Initiate Construction	Date:		
Describe Activity:			
Drainage Crossing	Date:		
Describe Activity:			
Drainage Crossing	Date:		
Describe Activity:			
Final Grading	Date:		
Describe Activity:			
Reseeding	Date:		
Type of Seed Applied:	Dry Land Seed Mix	Irrigated Land Seed Mix	
Final Stabilization	Date:		
Estimated Vegetative Cover (%)	Picture Taken	Y	N
Controls/BMP's Removed	Date:		

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH PRINCIPLE MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

4.036 ACRES - 25 LOTS / 3 TRACTS

SP-14-00037

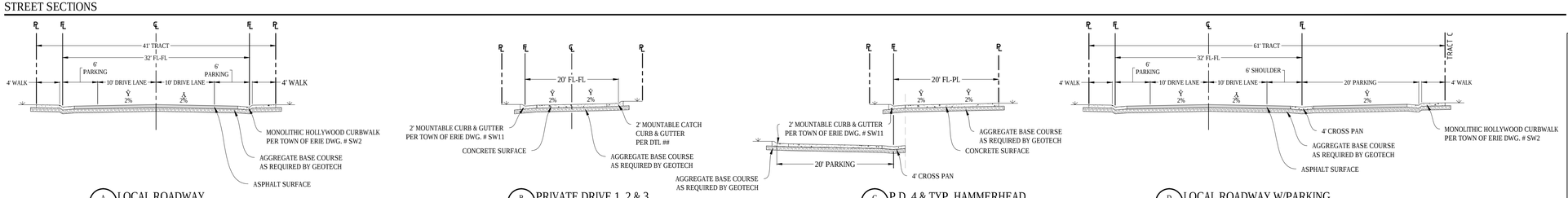


LEGEND

PROPERTY LINE			FIRE HYDRANT
CURB & GUTTER			MANHOLE
ROW			SIGN
CENTERLINE			CONCRETE SIDEWALK
PROPOSED 5' CONTOUR			UNDERDRAIN
PROPOSED 1' CONTOUR			EASEMENT
EXISTING 5' CONTOUR			WALL
EXISTING 1' CONTOUR			RIP RAP
STORM INLET		5500.00	PROPOSED ELEVATION
STORM DRAIN		5500.00	EXISTING ELEVATION
LIGHT			CONCRETE PAVING

LOT LEGEND

STREET SECTIONS



A/3 LOCAL ROADWAY SECTION N.T.S.

B/3 PRIVATE DRIVE 1, 2 & 3 SECTION N.T.S.

C/3 P.D. 4 & TYP. HAMMERHEAD SECTION N.T.S.

D/3 LOCAL ROADWAY W/PARKING SECTION N.T.S.

GRADING PLAN

APPLICANT:
CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
303-545-2554

ENGINEER:
ENERTIA CONSULTING GROUP
1437 LARIMER STREET
DENVER, COLORADO 80202
303-875-7131

SCALE: 1"=##'

DRAWN BY:	BC
APRVD BY:	SM
DATE:	11/20/2014
REVISED:	04/17/2015

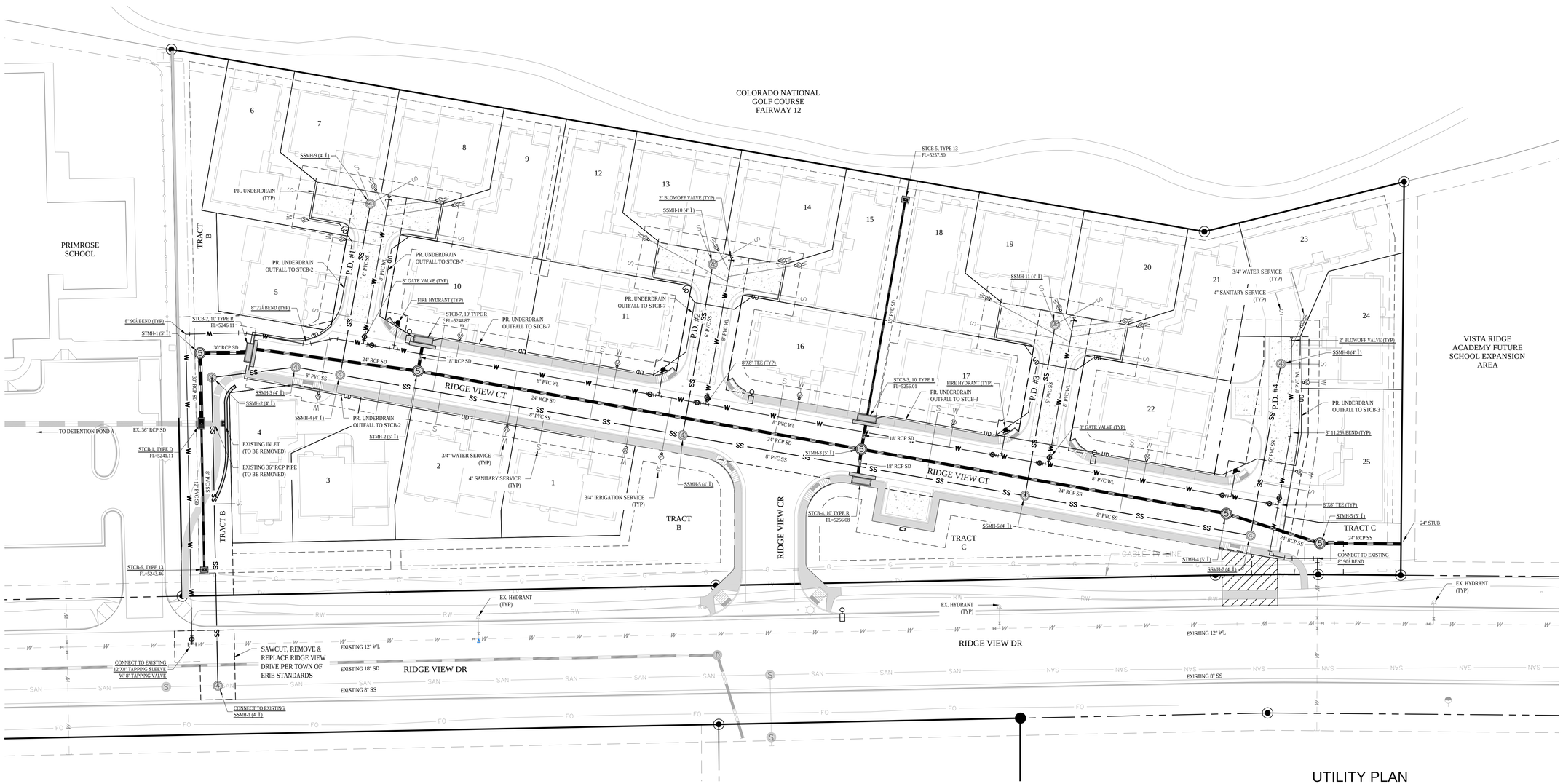
C4

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; A PORTION OF THE SOUTHWEST QUARTER OF 33, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH PRINCIPLE MERIDIAN, TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

4.036 ACRES - 25 LOTS / 3 TRACTS

SP-14-00037



UTILITY PLAN

LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR	UD	UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

N

0' 15 30 60

SCALE: 1"=30'

APPLICANT:
CHARTERED DEVELOPMENT CORP.
3160 VILLAGE VISTA DRIVE, SUITE 104
ERIE, COLORADO 80516
303-545-2554

ENGINEER:
ENERTIA CONSULTING GROUP
1437 LARIMER STREET
DENVER, COLORADO 80202
303-875-7131

DRAWN BY:	BC
APRVD BY:	SM
DATE:	11/20/2014
REVISED:	04/17/2015

C3

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT

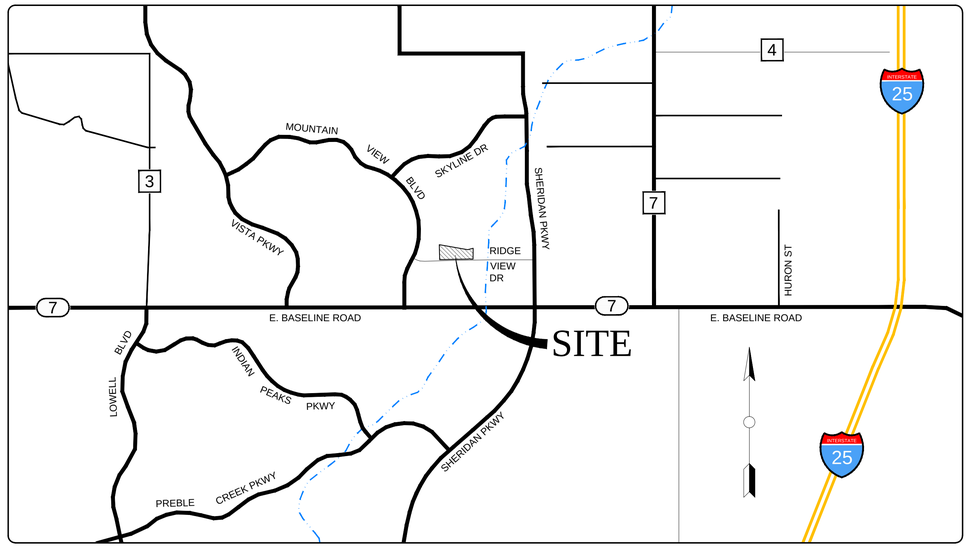
CIVIL CONSTRUCTION DOCUMENTS

A RESUBDIVISION OF: LOT 2, VISTA RIDGE FILING NO. 2; LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

SHEET INDEX

SHEET INDEX

SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION	SUBMITTAL 1 (NOVEMBER. 03, 2014)	SUBMITTAL 2 (APRIL 17, 2015)		REV
1	CVR-1.0	COVER SHEET	●	●		
2	GEN-2.0	GENERAL NOTES	●	●		
3	SIT-3.0	SITE PLAN	●	●		
4	OGP-4.0	OVERALL GRADING PLAN	●	●		
5	DGP-4.1	DETAIL GRADING PLAN 1	●	●		
6	DGP-4.2	DETAIL GRADING PLAN 2	●	●		
7	GDT-4.3	GRADING DETAILS		●		
8	OUP-5.0	OVERALL UTILITY PLAN	●	●		
9	RDW-6.1	RIDGE VIEW CT STA: 0+50 TO 7+25	●	●		
10	RDW-6.2	RIDGE VIEW CR & P.D. #2	●	●		
11	RDW-6.3	PRIVATE DRIVES #1, #3 & #4		●		
12	STM-7.1	STORM DRAIN STA: 0+00 TO 5+00	●	●		
13	STM-7.2	STORM DRAIN STA: 5+00 TO 9+00		●		
14	SAN-8.1	SANITARY - MAIN STA: -0+25 TO 8+25	●	●		
15	SAN-8.2	SANITARY LATERALS	●	●		
16	WAT-9.0	WATER PLAN	●	●		
17	WAT-9.1	WATER CROSSING PROFILES		●		
18	DTL-10.0	GENERAL DETAILS		●		



VICINITY MAP

SCALE 1" = 1500'

PROJECT TEAM

OWNER
CHARTERED DEVELOPMENT CORP .
3160 VILLAGE VISTA DR, STE. 104
ERIE, CO 80516
CONTACT: WARD RITTER
(303) 545-2554

ENGINEER
ENERTIA CONSULTING GROUP, LLC
1437 LARIMER STREET
DENVER, COLORADO 80202
CONTACT: SHAWN MERZ, PE
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ARCHITECT
WOODLEY ARCHITECTURAL GROUP
731 SOUTH PARK DR, STE. B
LITTLETON, COLORADO 80120

PLANNER
HURST & ASSOCIATES
2500 BROADWAY STREET, STE. 110
BOULDER, COLORADO 80304
(303) 449-9105

SURVEYOR
LANGE LAND SURVEYS
9572 W. 58TH AVE.
ARVADA, CO 80002
(720) 242-9732

ELECTRICAL ENGINEER
RG ENGINEERING CONSULTANTS INC.
2555 WALNUT ST, SUITE B.,
DENVER, CO 80205

LEGEND

PROPERTY LINE	FIRE HYDRANT
CURB & GUTTER	MANHOLE
ROW	SIGN
CENTERLINE	CONCRETE SIDEWALK
PROPOSED 5' CONTOUR	EXISTING TREE
PROPOSED 1' CONTOUR	EASEMENT
EXISTING 5' CONTOUR	WALL
EXISTING 1' CONTOUR	RIP RAP
STORM INLET	5500.00 PROPOSED ELEVATION
STORM DRAIN	5500.00 EXISTING ELEVATION

LIST OF ABBREVIATIONS

R.O.W.	= RIGHT OF WAY	SW	= SWALE	FL	= FLOW LINE
S/W	= SIDEWALK	TC	= TOP OF CURB	PI	= POINT OF INFLECTION
FL	= FLOWLINE	NTS	= NOT TO SCALE	LT	= LEFT
CB	= CATCH BASIN	HP	= HIGH POINT	RT	= RIGHT
FF	= FINISHED FLOOR	LP	= LOW POINT	MH	= MANHOLE
TF	= TOP OF FOOTING ELEVATION	INV	= INVERT	PC	= POINT OF CURVATURE
FG	= FINISH GRADE ELEVATION	LF	= LINEAR FEET	PT	= POINT OF TANGENCY
EOC	= EDGE OF CONCRETE	STA	= STATION	PVC	= POLYVINYL CHLORINE PIPE
EL	= ELEVATION	TOP	= TOP OF PIPE	RCP	= REINFORCED CONCRETE PIPE
FH	= FIRE HYDRANT	BOP	= BOTTOM OF PIPE	SF	= SILT FENCE
HP	= HIGH POINT	SD	= STORM DRAIN	BW	= BACK OF WALK
LP	= LOW POINT	SS	= SANITARY SEWER	EX	= EXISTING
PD	= PRIVATE DRIVE	WL	= WATER LINE	PROP	= PROPOSED
HH	= HAMMER HEAD	CL	= CENTERLINE	CY	= CUBIC YARDS

BENCHMARK

- GEODETIC COORDINATES ARE BASED ON NAD 83 (1992)
- ORTHOMETRIC HEIGHTS ARE BASED ON NAVD 88
- STATE PLANE COORDINATES ARE BASED ON THE COLORADO NORTH ZONE (501)
- UNITS ARE US SURVEY FEET (SFT)

- PROJECT (GROUND) COORDINATES ARE MODIFIED STATE PLANE
- PROJECT COMBINED FACTOR = 0.999716267

- PROJECT COORDINATES WERE MODIFIED TO GROUND AT NGS 1ST ORDER HORIZONTAL CONTROL MARK "LUCY". THE MARK IS A CITY OF BROOMFIELD 3 1/4" BRASS DISK SET INTO 18" ROUND CONCRETE POST, FLUSH WITH THE GROUND. THE LOCATION OF THE MARK MATCHES THE NGS DATA SHEET "STATION DESCRIPTION".

- DESIGNATION = LUCY
- NGS PID - A13578
- NAD 83 (1992) COORDINATES
- LATITUDE = 40ì00'00.35831" (N)
- LONGITUDE = 105ì00'41.28278" (W)
- ELLP. HEIGHT - 5240.15 SFT
- NAVD 88 ELEVATION - 5297.00 SFT

- STATE PLANE COORDINATES NORTH ZONE (501)
- N=1,243,260.09 SFT
- E=3,136,862.48 SFT

- MODIFIED STATE PLANE COORDINATES (GROUND)
- N=1,243,612.94 SFT
- E=3,137,752.76 SFT

- PROJECT BENCHMARK:
- "LUCY" AS DESCRIBED ABOVE
- NAVD 88 ELEVATION = 5297.00 SFT

BASIS OF BEARING

THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 1 NORTH, RANGE 68 WEST, OF THE 6TH P.M. WHICH BEARS NORTH 00Ì12'01"

ENGINEER CERTIFICATION

ALL WORK SHALL BE CONSTRUCTED TO THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS. THIS DRAWING HAS BEEN REVIEWED AND FOUND TO BE IN GENERAL COMPLIANCE WITH THESE STANDARDS AND OTHER TOWN REQUIREMENTS. THE ENGINEERING DESIGN AND CONCEPTS REMAINS THE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON.

ACCEPTED BY: _____
DIRECTOR OF PUBLIC WORKS DATE

I HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS FOR MONTEX - NORTH AT VISTA RIDGE WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

ENGINEER: _____
SHAWN MERZ, P.E. 41241 DATE

FOR AND ON BEHALF OF
ENERTIA CONSULTING GROUP, LLC.

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	BC	CHK	BG	APVD	SM
DSGN	SM							

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

COVER SHEET

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	1 CVR-1.0.DWG
DWG	CVR-1.0
SHEET	1 OF 18

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF ENERTIA CONSULTING GROUP AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF ENERTIA CONSULTING GROUP

GENERAL NOTES – CONSTRUCTION

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST "STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS" BY THE TOWN OF ERIE. COPIES OF THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS MAY BE OBTAINED FROM THE TOWN OF ERIE WEB SITE. CONTRACTOR SHALL HAVE A SET ON SITE AT ALL TIMES.

2. THE OWNER SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE TOWN OF ERIE ENGINEERING STAFF AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. THOSE IN ATTENDANCE SHALL INCLUDE THE OWNER, HIS ENGINEER, THE TOWN OF ERIE ENGINEERING STAFF, REPRESENTATIVES OF THE CONTRACTORS AND OTHER AFFECTED AGENCIES. PLANS SIGNED AND ACCEPTED BY THE TOWN OF ERIE WILL BE DISTRIBUTED AT THE PRE-CONSTRUCTION MEETING. CONTRACTOR SHALL HAVE (1) COPY OF THE SIGNED PLANS ON SITE AT ALL TIMES.

3. THE TOWN OF ERIE, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES
NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT. THE OWNER AND DESIGN ENGINEER UNDERSTAND THAT THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE ARE AFFIXED TO THIS DOCUMENT. REPORT ALL DISCREPANCIES TO THE DESIGN ENGINEER IMMEDIATELY.

4. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL OBTAIN ANY/ALL WRITTEN AGREEMENTS FOR INGRESS AND EGRESS TO THE WORK SITE FROM ADJACENT PRIVATE PROPERTY OWNERS. A COPY OF ALL AGREEMENTS SHALL BE PROVIDED TO THE TOWN. ACCESS TO ANY ADJACENT PRIVATE PROPERTY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

5. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE TOWN OF ERIE ENGINEERING STAFF. THE TOWN RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO TOWN STANDARDS AND SPECIFICATIONS. INSPECTIONS AND ONSITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY THE TOWN ENGINEERING STAFF OF THE CONTRACTORSöì CONTRACTUAL COMMITMENT. REQUESTS FOR INSPECTION BY THE TOWN OF ERIE SHALL BE MADE BY THE CONTRACTOR A MINIMUM OF TWENTYFOUR (24) HOURS IN ADVANCE.

6. CONSTRUCTION WATER IS AVAILABLE TO THE CONTRACTOR AS ESTABLISHED IN THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE TOWN OF ERIE REGARDING CURRENT REGULATIONS, FEES AND REQUIRED AGREEMENTS RELATED TO THE PROVISION OF CONSTRUCTION WATER.

7. THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE AFFECTED UTILITY COMPANIES AND SHALL NOTIFY THE UTILITY NOTIFICATION CENTER, PHONE NUMBER 811, FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.

8. UTILITIES IN THE AREA OF CONSTRUCTION ARE APPROXIMATE ONLY. THEY HAVE BEEN LOCATED FROM FIELD INVESTIGATION AND THE BEST AVAILABLE UTILITY RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR OF ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL CONTACT ALL RESPECTIVE UTILITIES AND HAVE ALL UTILITIES FIELD-LOCATED PRIOR TO CONSTRUCTION. IF ANY UNKNOWN SUBSURFACE STRUCTURES ARE ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE TOWN OF ERIE ENGINEERING STAFF AND DESIGN ENGINEER PRIOR TO PROCEEDING.

9. THE CONTRACTOR SHALL NOTIFY TOWN OF ERIE ENGINEERING STAFF OF ANY PROBLEM IMPACTING WATER AND WASTE WATER FACILITIES THAT WOULD POTENTIALLY REQUIRE A VARIANCE FROM THE APPROVED PLANS AND SPECIFICATIONS. ANY VARIANCE FROM THE APPROVED DOCUMENTS SHALL BE AT THE SOLE DISCRETION OF THE TOWN OF ERIE ENGINEERING STAFF.

10. CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE SPECIFICATIONS AND PERMITS NECESSARY TO PERFORM THE PROPOSED WORK.

11. AS-BUILT DRAWINGS AND A CD INCLUDING AUTOCAD AND PDF FILES, AS REQUIRED IN THE SPECIFICATIONS, ARE TO BE SUBMITTED BY THE OWNER/DEVELOPER PRIOR TO SUBSTANTIAL COMPLETION/CONSTRUCTION ACCEPTANCE OF THE CONSTRUCTION.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY EXISTING SIGNS, STRUCTURES, FENCES, ETC., ENCOUNTERED ON THE JOB AND RESTORING THEM TO THEIR ORIGINAL CONDITION.

13. THE CONTRACTOR IS RESPONSIBLE FOR:
A. NOTIFYING THE TOWN OF ERIE UTILITY CUSTOMERS OF POTENTIAL SERVICE OUTAGES, AND COORDINATE WITH THE TOWN OF ERIE FOR DETERMINATION OF MINIMUM TIME REQUIREMENT.

B. NOTIFYING THE TOWN OF ERIE ENGINEERING STAFF IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START-UP. THE CONTRACTOR SHALL NOTIFY THE TOWN OF ERIE FORTY-EIGHT (48) HOURS PRIOR TO RESTART.

C. IN THE EVENT OF AN AFTER HOURS EMERGENCY, CALL 303-441-4444.

D. NOTIFYING THE MOUNTAIN VIEW FIRE PROTECTION DISTRICT OF ALL STREET CLOSURES AND EXISTING FIRE HYDRANTS TAKEN OUT OF SERVICE A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.

14. PRIOR TO INSTALLATION OF UTILITY MAINS, ROAD CONSTRUCTION MUST HAVE PROGRESSED TO AT LEAST THE "SUB-GRADE" STAGE.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. A CONSTRUCTION DEWATERING PERMIT MUST BE OBTAINED FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE). GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS OR EROSION OF ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. THE USE OF ANY SANITARY SEWER TO DISPOSE OF TRENCH WATER WILL NOT BE PERMITTED. NO CONCRETE SHALL BE PLACED WHERE GROUNDWATER IS VISIBLE OR UNTIL THE GROUNDWATER TABLE HAS BEEN LOWERED BELOW THE PROPOSED IMPROVEMENTS. ANY UNSTABLE AREAS, AS A RESULT OF GROUNDWATER, ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE STABILIZED AS AGREED UPON BY THE CONTRACTOR, THE TOWN OF ERIE, AND THE DESIGN ENGINEER AT THE TIME OF THE OCCURRENCE

16. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO RESOLVE CONSTRUCTION PROBLEMS WITH THE TOWN OF ERIE DUE TO CHANGED CONDITIONS ENCOUNTERED BY THE CONTRACTOR DURING THE PROGRESS OF ANY PORTION OF THE PROPOSED WORK. IF, IN THE OPINION OF THE TOWN OF ERIE, PROPOSED ALTERATIONS TO THE SIGNED CONSTRUCTION PLANS INVOLVES SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK, OR TO THE FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR SUBMITTING REVISED PLANS TO THE TOWN OF ERIE FOR REVIEW, PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK.

17. DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS. THE TOWN OF ERIE OR THE DESIGN ENGINEER EXERCISE NO CONTROLS OVER THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS OR OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ANY AND ALL LIABILITY, REAL AND ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE DESIGN ENGINEER OR THE TOWN. THE TOWN OF ERIE ENGINEERING STAFF, OR ANY CONTRACTED ENGINEER, ARE NOT RESPONSIBLE FOR SAFETY IN, ON OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.

18. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE PROSECUTED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE
TRAVELING PUBLIC.

19. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STORMWATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES FOR ANY PROJECT DISTURBING OVER ONE ACRE FROM BOTH THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND THE TOWN OF ERIE.

20. EACH TYPE OF CONSTRUCTION SHALL BE COMPLETED BY A CONTRACTOR THAT HAS DEMONSTRATED ACCEPTABLE QUALIFICATIONS TO THE TOWN AND IS A LICENSED CONTRACTOR IN THE TOWN OF ERIE.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL DURING CONSTRUCTION. ALL TRAFFIC CONTROLS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD) LATEST EDITION. A PLAN SHALL BE SUBMITTED TO THE TOWN FOR REVIEW AND APPROVAL PRIOR TO THE PRE-CONSTRUCTION MEETING.

22. ALL BACKFILL SHALL CONFORM TO THE TRENCH DETAIL LOCATED IN THE TOWN OF ERIE STANDARDS & SPECIFICATIONS.

23. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ANY CONSTRUCTION DEBRIS OR MUD TRACKED ONTO EXISTING ROADWAYS.

24. THE CONTRACTOR SHALL REPAIR ANY EXCAVATION OR PAVEMENT FAILURES CAUSED BY HIS CONSTRUCTION.

25. THE CONTRACTOR SHALL RENEW OR REPLACE ANY EXISTING TRAFFIC STRIPING AND/OR PAVEMENT MARKINGS, WHICH HAVE BEEN EITHER REMOVED OR THE EFFECTIVENESS OF WHICH HAS BEEN REDUCED DURING HIS OPERATION. RENEWAL OF PAVEMENT STRIPING AND MARKING SHALL BE DONE IN CONFORMANCE WITH THE TOWN OF ERIE STANDARD SPECIFICATIONS.

26. IT SHALL BE THE CONTRACTORíS RESPONSIBILITY TO TAKE EVERY MEASURE NECESSARY TO COMPLY WITH ANY STATE, COUNTY OR TOWN DUST CONTROL ORDINANCE.

27. CONSTRUCTION VEHICLES SHALL USE TRUCK ROUTES DESIGNATED BY THE
TOWN.

28. THE OWNER/DEVELOPER WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF THE IMPROVEMENTS FOR A MINIMUM OF TWO (2) YEARS FROM THE DATE OF SUBSTANTIAL COMPLETION/ CONSTRUCTION ACCEPTANCE OF THE IMPROVEMENTS BY THE TOWN OF ERIE. ANY FAILURE DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE OWNER/CONTRACTOR TO THE SATISFACTION OF THE TOWN OF ERIE AT NO EXPENSE TO THE TOWN.

29. THE DESIGN ENGINEER SHALL PERFORM SUFFICIENT INSPECTIONS AND SURVEYS DURING GRADING AND CONSTRUCTION SO THAT AN OPINION CAN BE RENDERED AND VERIFIED IN WRITING AS TO COMPLIANCE WITH THE PLANS AND CODES WITHIN THE DESIGN ENGINEERíS PURVIEW.

30. THE SOILS ENGINEER SHALL PERFORM SUFFICIENT INSPECTIONS DURING GRADING AND CONSTRUCTION SO THAT AN OPINION CAN BE RENDERED AND VERIFIED IN WRITING AS TO COMPLIANCE WITH THE PLANS AND CODES WITHIN THE SOILS ENGINEERíS PURVIEW.

GENERAL NOTES – GRADING

1. ALL CONSTRUCTION ACTIVITIES THAT DISTURBS ONE OR MORE ACRES OF LAND, AS WELL AS ACTIVITIES THAT DISTURB LESS THAN ONE ACRE OF LAND, BUT IS PART OF A LARGER COMMON PLAN OF DEVELOPMENT, MUST COMPLY WITH BOTH LOCAL AND STATE REGULATIONS REGARDING STORMWATER DRAINAGE ON CONSTRUCTION SITES. OWNERS OR CONTRACTORS MUST OBTAIN A COLORADO STORMWATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) AND EITHER A PUBLIC IMPROVEMENT PERMIT OR A GRADING AND STORMWATER QUALITY PERMIT FROM THE TOWN OF ERIE. CONTRACTOR SHALL:

A. MAINTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) ONSITE AT ALL TIMES. THE SWMP MUST BE MAINTAINED AND MADE AVAILABLE TO TOWN OF ERIE INSPECTORS UPON REQUEST.

B. INSTALL AND MAINTAIN EROSION, SEDIMENT, AND MATERIALS MANAGEMENT CONTROL BMPS AS SPECIFIED IN THE SWMP.

C. INSPECT ALL BEST MANAGEMENT PRACTICES (BMPS) AT LEAST EVERY FOURTEEN (14) DAYS AND WITHIN TWENTY FOUR (24) HOURS AFTER ANY PRECIPITATION OR SNOWMELT EVENT THAT CAUSES SURFACE RUNOFF.

D. MAINTAIN INSPECTION AND MAINTENANCE RECORDS OF BMPS ONSITE WITH THE SWMP. COPIES OF THESE REPORTS SHALL BE PROVIDED TO THE TOWN OF ERIE ENGINEERING STAFF.

E. BASED ON INSPECTIONS PERFORMED BY THE PERMIT HOLDER OR BY TOWN PERSONNEL, MODIFICATIONS TO THE SWMP WILL BE NECESSARY IF AT ANY TIME THE SPECIFIED BMPS DO NOT MEET THE OBJECTIVES OF THE PERMIT. ALL MODIFICATIONS SHALL BE COMPLETED AS SOON AS PRACTICABLE AFTER THE REFERENCED INSPECTION, AND SHALL BE RECORDED ON THE OWNER'S COPY OF THE SWMP.

F. THE OPERATOR SHALL AMEND THE SWMP WHENEVER THERE IS A SIGNIFICANT CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR DISCHARGE OF POLLUTANTS TO THE RECEIVING WATERS, OR IF THE SWMP PROVES TO BE INEFFECTIVE IN ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES.

G. INSTALLATION AND MAINTENANCE OF BMPS SHALL BE SUPERVISED BY PERSONNEL CERTIFIED IN EROSION AND SEDIMENT CONTROL.

2. ALL SITE GRADING (EXCAVATION, EMBANKMENT, AND COMPACTION) SHALL CONFORM TO THE RECOMMENDATIONS OF THE LATEST SOILS INVESTIGATION FOR THIS PROPERTY AND SHALL FURTHER BE IN CONFORMANCE WITH THE TOWN OF ERIE "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS", LATEST EDITION.

3. ALL GRADING AND FILLING OPERATIONS SHALL BE OBSERVED, INSPECTED AND TESTED BY A LICENSED SOILS ENGINEER. ALL TEST RESULTS SHALL BE SUBMITTED TO THE TOWN OF ERIE ENGINEERING STAFF.

4. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO AVOID ANY DAMAGE TO EXISTING FOLIAGE THAT LIES IN THE PROJECT AREA UNLESS DESIGNATED FOR REMOVAL AND SHALL BE LIABLE FOR SUCH DAMAGE AT HIS/HER EXPENSE.

5. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE RE-VEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS.

6. TEMPORARY VEGETATION SHALL BE INSTALLED ON ALL DISTURBED AREAS WHERE PERMANENT SURFACE IMPROVEMENTS ARE NOT SCHEDULED FOR IMMEDIATE INSTALLATION. SEEDING WILL BE DONE ACROSS THE SLOPE FOLLOWING THE CONTOURS. VEGETATION SHALL CONFORM TO THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS. PROJECT SCHEDULING SHOULD TAKE ADVANTAGE OF SPRING OR FALL PLANTING SEASONS FOR NATURAL GERMINATION. SEEDED AREAS SHALL BE IRRIGATED IN ACCORDANCE WITH THE TOWN OF ERIEíS STANDARDS AND SPECIFICATIONS.

7. AT ALL TIMES, A WATER TRUCK SHALL BE ON-SITE AND THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND-CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN FUGITIVE DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE OWNER/DEVELOPER SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.

8. FILL SLOPES SHALL BE COMPACTED BY MEANS OF SHEEPSFOOT COMPACTOR OR OTHER SUITABLE EQUIPMENT. COMPACTING SHALL CONTINUE UNTIL SLOPES ARE STABLE AND THERE IS NOT AN APPRECIABLE AMOUNT OF LOOSE SOIL ON THE SLOPES.

9. TEMPORARY CUT/FILL SLOPES SHALL ABIDE BY THE SOILS REPORT. PERMANENT SLOPES SHALL BE AS SHOWN ON PLANS.

10. DEPTH OF MOISTURE-DENSITY CONTROL SHALL BE FULL DEPTH ON ALL EMBANKMENT AND SIX (6) INCHES ON THE BASE OF CUTS AND FILLS.

11. OUTLET SIDES OF ALL STORM PIPES SHALL BE GRADED TO DRAIN AND SHALL HAVE SUFFICIENT EROSION PROTECTION.

12. THE PERMITTEE OR HIS AGENT SHALL NOTIFY THE SITE GEOTECHNICAL ENGINEER WHEN THE GRADING OPERATION IS READY FOR EACH OF THE FOLLOWING INSPECTIONS:

A. INITIAL INSPECTION WHEN THE PERMITTEE IS READY TO BEGIN WORK, BUT NOT LESS THAN TWO (2) DAYS BEFORE ANY GRADING
OR GRUBBING IS STARTED.

B. AFTER THE NATURAL GROUND OR BEDROCK IS EXPOSED AND PREPARED TO RECEIVE FILL, BUT BEFORE FILL IS PLACED.

C. EXCAVATION INSPECTION AFTER THE EXCAVATION IS STARTED BUT BEFORE THE VERTICAL DEPTH OF THE EXCAVATION EXCEEDS TEN (10) FEET.

D. FILL INSPECTION AFTER THE FILL PLACEMENT IS STARTED, BUT BEFORE THE FILL EXCEEDS TEN (10) FEET.

GENERAL NOTES – ROADWAY

1. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL PREPARE THE SUBGRADE BY SCARIFYING THE UPPER ONE (1) FOOT OF THE SUBGRADE IN CUT AREAS OR AREAS WITH LITTLE OR NO FILL, UNLESS SPECIFIED IN THE SOILS REPORT. THE WORK SHALL CONFORM TO THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
3. PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL ALL UNDERGROUND UTILITIES HAVE BEEN INSTALLED, TESTED AND ACCEPTED BY THE TOWN OF ERIE ENGINEERING STAFF.
4. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO SUPERVISE AND CERTIFY THAT PROPER COMPACTION HAS BEEN OBTAINED BY SUBCONTRACTORS AND AGENCIES CONCERNING UTILITY LINE BACKFILL INCLUDING, BUT NOT LIMITED TO, SEWER, WATER, ELECTRICAL, GAS AND LANDSCAPE IRRIGATION LINES AND ACCEPTED BY THE TOWN OF ERIE ENGINEERING STAFF AND THE SOILS ENGINEER.
5. STREET PAVING SHALL NOT START UNTIL:
   A. A SOILS REPORT AND PAVEMENT DESIGN IS ACCEPTED BY THE TOWN OF ERIE ENGINEERING STAFF.
   B. ALL STREETS ARE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND THE TOWN OF ERIE SPECIFICATIONS.
   C. ALL COMPACTION TEST REPORTS HAVE BEEN SUBMITTED TO THE TOWN ENGINEERING STAFF PRIOR TO PROOF ROLLS.
   D. PROOF ROLLS ARE PERFORMED USING SINGLE AXLE, FIVE (5) TON TRUCK AND MONITORED BY THE TOWN OF ERIE ENGINEERING STAFF.
6. THE OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL UTILITY MANHOLE COVERS AND ACCESS LIDS TO GRADE.
7. ALL CONCRETE SHALL BE A MINIMUM OF CLASS B, IN CONFORMANCE WITH CDOT STANDARDS.
8. ALL CONCRETE EDGES MUST BE ROUNDED TO A FOURTH (1/4) INCH RADIUS, EXCEPT WHERE SHOWN OTHERWISE ON DRAWINGS.
9. ONE HALF (1/2) INCH EXPANSION JOINTS SHALL BE INSTALLED AT ALL CURB RETURNS, CURB CUTS AND EXISTING STRUCTURES. CONTROL JOINTS SHALL BE INSTALLED AT TEN (10) FOOT INTERVALS, HALF STONES ARE NOT ALLOWED.
10. BEFORE PLACING OF ASPHALT THE SUBGRADE SHALL RECEIVE A GROUND STERILANT APPLIED AT A RATE IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS.
11. TACK COAT SHALL BE USED PRIOR TO OVERLAY, (CSS-1H), 50:50 DILUTION, 0.10 GAL/SY. ALL EDGES ABUTTING NEW PAVEMENT SHALL BE TACKED.
12. WHEN IT IS REQUIRED TO MATCH EXISTING PAVEMENT, EXISTING PAVEMENT SHALL BE SAW CUT IN A MANNER TO AFFECT A SMOOTH, VERTICAL STRAIGHT CUT EDGE.
13. ALL SAWCUT EDGES OF EXISTING PAVEMENT SHALL BE CLEAN AND COATED WITH TACK COAT PRIOR TO PLACING NEW PAVEMENT ADJACENT TO THE EXISTING PAVEMENT.
14. ALL ASPHALT SHALL BE ONE FOURTH (1/4) INCH ABOVE CONCRETE EDGES, MANHOLE COVERS AND ACCESS LIDS.
15. SIGNAGE AND STRIPING SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, THE COLORADO DEPARTMENT OF TRANSPORTATION M&S STANDARDS, AND THE TOWN OF ERIE STANDARD DESIGN CRITERIA AND STANDARD CONSTRUCTION REQUIREMENTS.
16. THE PURCHASE AND INSTALLATION OF STREET NAME SIGNS SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR. THE OWNER/CONTRACTOR SHALL SECURE THE APPROVAL OF THE TOWN OF ERIE ENGINEERING STAFF FOR TYPE AND LOCATION OF THE STREET NAME SIGNS PRIOR TO INSTALLATION.
17. ALL NEW ROADWAY SECTIONS SHALL HAVE SUBGRADE PREPARATION AND INITIAL ASPHALT PAVEMENT PLACED WITH A 1% CROWN. FINAL OVERLAY IS TO BE PLACED WITH A 2% CROWN. SEE DETAIL ST7 IN THE ìSTANDARD DETAILS-STREETò FOR MORE INFORMATION.
18. DETERMINATION OF CROWN FOR CUL DE SAC PAVING SHALL BE EVALUATED ON A CASE BY CASE BASIS.

GENERAL NOTES – STORM DRAIN

1. EXCEPT WHERE NOTED, ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE, CLASS III AND SHALL CONFORM TO REQUIREMENTS OF ASTM C76. ALL RCP SHALL HAVE RUBBER GASKETED JOINTS AND SHALL CONFORM TO REQUIREMENTS OF ASTM C443, AND SHALL PROVIDE WATERTIGHT PERFORMANCE CHARACTERISTICS.
2. TONGUE AND GROOVE JOINTS SHALL NOT BE ALLOWED.
3. THE MINIMUM COVERAGE FOR ALL STORM DRAINAGE PIPES SHALL BE 1.5 FEET FOR CLASS III PIPE AND 1 FOOT FOR CLASS IV PIPE.
4. BEDDING MATERIAL SHALL CONFORM TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
5. ALL MANHOLES SHALL BE CONCRETE AND CONFORM TO CDOT STANDARD M-604-20.
6. THE MINIMUM MANHOLE DIAMETER SHALL BE AS SPECIFIED BELOW:

PIPE DIAMETER	MANHOLE SIZE
15" TO 18"	4' DIAMETER
21" TO 42"	5' DIAMETER
48" TO 54"	6' DIAMETER
60" AND LARGER	BOX BASE MANHOLE

7. ALL STREET INLETS SHALL BE CURB OPENING TYPE R, CONFORMING TO CDOT STANDARD M-604-12, EXCEPT WHERE OTHERWISE NOTED.
8. ALL INLET ACCESS COVERS SHALL HAVE THE WORDS ìNO DUMPING ïDRAINS TO RIVERSò AND ìSTORM SEWERò CAST INTO THE COVER PER TOWN OF ERIE STANDARD DETAIL.
9. ALL END SECTIONS SHALL CONFORM TO CDOT STANDARD M-603-10.
10. WHERE RIPRAP IS CALLED FOR ON THE PLANS FOR EROSION CONTROL, IT SHALL CONFORM TO THE URBAN STORM DRAINAGE CRITERIA MANUAL SPECIFICATIONS (LATEST REVISION).

GENERAL NOTES – SEWER

1. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING SEWERS TO BE CONNECTED TO PRIOR TO CONSTRUCTION STAKING.
2. CONNECTION TO EXISTING TOWN OF ERIE LINES WILL BE PERMITTED UPON SUBSTANTIAL COMPLETION/CONSTRUCTION ACCEPTANCE OF THE NEW SANITARY SEWER SYSTEM. EXISTING PIPE AT THE POINT OF CONNECTION SHALL NOT BE "BROKEN OUT" UNTIL THE NEW SYSTEM IS ACCEPTED. IF CONNECTING TO AN EXISTING MANHOLE, THE NEW LINE SHALL BE PLUGGED UNTIL THE NEW SYSTEM IS ACCEPTED.
3. MINIMUM VERTICAL SEPARATIONS BETWEEN ALL UTILITY PIPES SHALL BE EIGHTEEN (18) INCHES. IF VERTICAL SEPARATIONS ARE LESS THAN EIGHTEEN (18) INCHES, THE UTILITY PIPES SHALL BE REINFORCED AND PROTECTED AS REQUIRED BY CURRENT TOWN STANDARD SPECIFICATIONS.
4. WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS WATER LINES WITH LESS THAN ONE AND ONE-HALF (1 İ) FEET OF VERTICAL SEPARATION, SEWER LINE JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE WATER LINE IN BOTH DIRECTIONS.
5. ALL SANITARY SEWER SERVICES AND WATER SERVICES ARE TO BE TEN (10) FEET APART.
6. SERVICE LATERALS SHALL EXTEND FIVE (5) FEET BEYOND RIGHTS OF WAY OR UTILITY EASEMENTS, WHICHEVER IS GREATER. THE ENDS SHALL BE MARKED BY A GREEN PAINTED WOOD POST UNTIL CURB AND GUTTER IS IN PLACE. WHEN CURB AND GUTTER IS IN PLACE THE LATERALS SHALL BE MARKED ON THE CONCRETE CURB FACE WITH AN ìSò or "X".
7. THE LENGTH OF SANITARY SEWER LINE IS THE HORIZONTAL DISTANCE BETWEEN CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, THE DISTANCES INDICATED ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND MANHOLE DIMENSIONS.
8. SERVICE LINE CONNECTIONS TO DEAD END MANHOLES THAT HAVE NO FURTHER POSSIBILITY OF EXTENSION SHALL BE ALLOWED AND SHALL HAVE A MINIMUM DROP OF 0.75 X MAIN DIAMETER. SERVICE LINE CONNECTINGS TO IN-LINE MANHOLES ARE NOT PERMITTED. MINIMUM SERVICE LINE SLOPE; 4 INCHES=2%; 6 INCHES= 1%; 8 INCHES=0.4%.
9. ALL FOUR (4) THROUGH FIFTEEN (15) INCH SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) AND SHALL BE IN ACCORDANCE WITH ASTM D-3034-SDR35, "STANDARD SPECIFICATION FOR PVC SEWER PIPE AND FITTINGS". ANY SANITARY SEWER HAVING A DEPTH IN EXCESS OF FIFTEEN (15) FEET SHALL BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
10. BEDDING MATERIAL SHALL CONFORM TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
11. WARNING TAPE SHALL BE INSTALLED 12ò MINIMUM AND 18ò MAXIMUM ABOVE SEWER PIPE.
12. PRECAST CONCRETE MANHOLE SECTIONS SHALL BE IN ACCORDANCE WITH ASTM C0478. MANHOLE STEPS SHALL BE POLYPROPYLENE COVERED STEEL CONFORMING TO ASTM. D-4101 AND ASTMA-615. CAST IRON RING AND COVER SHALL CONFORM TO ASTM A-48.
13. MANHOLES SHALL BE A MINIMUM FOUR (4) FOOT DIAMETER AND CONSTRUCTED PER THE STANDARDS AND SPECIFICATIONS.
14. THE CONTRACTOR SHALL TAKE CARE TO PROPERLY SHAPE ALL MANHOLE INVERTS AND BENCHES IN ACCORDANCE WITH THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS, TO PROMOTE SMOOTH FLOW THROUGH THE MANHOLE. INVERTS OF LINES INTERSECTING AT 90 DEGREES AND AT HIGHLY DIVERGENT OR FLAT SLOPES ARE ESPECIALLY CRITICAL. MANHOLE INVERTS SHALL BE CONSTRUCTED WITH A SMOOTH TROWEL FINISH, AND BENCH FINISHED WITH A LIGHT BROOMED, NON-SKID, FINISH.
15. SEWER TEES AND/OR WYES SHALL BE STAKED BY A SURVEY CREW. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER "AS-CONSTRUCTED" LOCATION OF TEES AND WYES. ALL SERVICE LINES ARE FOUR (4) INCH UNLESS OTHERWISE NOTED.
16. THE CONTRACTOR, AT THE OWNER'S EXPENSE, WILL MAKE ALL SEWER SERVICE TAPS.
17. PRIOR TO BACKFILL THE TOWN OF ERIE ENGINEERING STAFF SHALL INSPECT ALL SANITARY SEWER MAINS AND SERVICE EXTENSIONS.
18. MANHOLE RIMS SHALL BE SET AT AN ELEVATION RELATIVE TO THE PAVEMENT, IN ACCORDANCE WITH THE TOWN OF ERIE STANDARDS. WHETHER THE MANHOLE IS AT PAVED OR UNPAVED GRADE, A MINIMUM OF ONE (1) AND A MAXIMUM OF FOUR (4) CONCRETE RINGS SHALL BE USED TO ADJUST THE RIM ELEVATION TO FINAL GRADE. THE MAXIMUM ACCEPTABLE VERTICAL ADJUSTMENT UTILIZING CONCRETE RINGS IS EIGHTEEN (18) INCHES.
19. A SUBSTANTIAL COMPLETION/CONSTRUCTION ACCEPTANCE OF THE NEW SANITARY SEWER MAINS IS CONTINGENT UPON THE RECEIPT OF COPIES OF:
   A. SANITARY SEWER TRENCH COMPACTION TEST RESULT.
   B. RECORD DRAWINGS, BOTH MYLAR AND ELECTRONIC FILES.
   AND THE SANITARY SEWER SYSTEM BEING TESTED IN ACCORDANCE WITH THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS WHICH INCLUDES:
   A. LOW PRESSURE AIR TEST 100% OF THE NEW SYSTEM.
   B. VACUUM TEST 100% OF THE NEW SYSTEM MANHOLES.
   C. JET VACUUM 100% OF THE NEW SYSTEM.

GENERAL NOTES – WATER

1. AT ALL POINTS OF CONNECTION OF NEW WATER MAINS TO EXISTING MAINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATING AND VERIFYING LOCATION OF THE EXISTING LINES PRIOR TO ANY CONSTRUCTION.
2. EXCEPT IN CASE OF AN EMERGENCY, VALVES ON THE TOWN OF ERIE WATER SYSTEM SHALL BE OPERATED BY OR UNDER THE DIRECTION OF THE APPROPRIATE TOWN OF ERIE PERSONNEL. THE CONTRACTOR SHALL GIVE THE TOWN OF ERIE ENGINEERING STAFF 48 HOURS NOTICE TO ARRANGE FOR OPERATING VALVES. BOTH THE CONTRACTOR AND THE APPROPRIATE TOWN OF ERIE PERSONNEL SHALL BE PRESENT WHEN THE VALVES ARE OPERATED.
3. WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS WATER LINES WITH LESS THAN ONE AND ONE-HALF (1 İ) FEET OF VERTICAL SEPARATION, SEWER LINE JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE WATER LINE IN BOTH DIRECTIONS.
4. ALL WATER LINES SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4 İ) FEET OF COVER AND BE LOCATED A MINIMUM OF TEN (10) FEET FROM THE SANITARY SEWER AND THREE (3) FEET FROM THE EDGE OF CONCRETE CURB AND GUTTER PAN.
5. ANY DEFLECTION REQUIRED UNDER (VERTICALLY) OR AROUND (HORIZONTALLY) EXISTING UTILITIES SHALL BE MADE USING BENDS. HORIZONTAL BENDS SHALL REQUIRE THRUST BLOCKS AND VERTICAL BENDS SHALL REQUIRE HARNESS RODS. ANY ABRUPT CHANGE IN LINE OR GRADE SHALL REQUIRE FITTINGS.
6. WHEN IT IS NECESSARY TO DEPRESS WATER LINES AT UTILITY CROSSINGS, A MINIMUM CLEARANCE OF ONE AND ONE-HALF (1-1/2) FEET SHALL BE MAINTAINED BETWEEN OUTSIDES OF PIPE.
7. DEFLECTION OF PIPE SHALL CONFORM TO AMERICAN WATER WORKS ASSOCIATION (AWWA) AND/OR EIGHTY (80%) PERCENT OF MANUFACTURERS RECOMMENDED MAXIMUM DEFLECTION, WHICH EVER IS MORE STRINGENT. A COPY OF THE MANUFACTURES RECOMMENDATIONS SHALL BE SUBMITTED TO THE TOWN.
8. DISTANCES FOR WATER LINES ARE THE HORIZONTAL DISTANCE BETWEEN THE CENTERS OF THE FITTINGS. THEREFORE, DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND FITTING DIMENSIONS.
9. ALL WATER LINE VALVES SHALL BE SET ADJACENT TO THE TEE, EXCEPT FOR POINTS THAT FALL IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN WHICH CASE, THE VALVE SHALL BE LOCATED SO THAT SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH TOWN PAVING REQUIREMENTS.
10. ALL WATER MAINS SHALL BE POLYVINYL CHLORIDE (PVC) PRESSURE PIPE UNLESS SPECIFIED OTHERWISE. NOMINAL PVC PIPE SIZES 6-INCH THROUGH 12-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-900, PRESSURE CLASS 150 (DR18). NOMINAL PVC PIPE SIZES 16-INCH THROUGH 24-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-905, PRESSURE CLASS 165 (DR25). ALL PVC PIPES SHALL HAVE OUTSIDE DIAMETERS EQUIVALENT TO CAST IRON PIPE.
11. FIRE HYDRANT ASSEMBLY INCLUDES THE FIRE HYDRANT, SIX (6) INCH VALVE, AND SIX (6) INCH PIPE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
12. ALL FITTINGS SHALL BE MADE FROM DUCTILE IRON, FURNISHED WITH MECHANICAL JOINT ENDS OR INTEGRAL RESTRAINED JOINTS, AND SHALL HAVE A PRESSURE RATING OF 350 PSI.
13. POLYETHYLENE WRAPPING SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPES, FITTINGS, VALVES, FIRE HYDRANT BARRELS AND ROD AND CLAMPS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS, IN ACCORDANCE WITH AWWA STANDARD C-105.
14. ALL WATER LINE PIPE SHALL BE PROVIDED WITH A MINIMUM GAGE SIZE OF #14 AWG INSULATED; MULTI-STRAND COPPER WIRE. SPLICES IN TRACER WIRE SHALL BE CAPPED IN WATER PROOF GEL CAP TYPE CONNECTORS SUITED FOR DIRECT BURY APPLICATION (3M TYPE DBY-6 LOW VOLTAGE OR EQUAL). WIRE SHALL BE ATTACHED TO TOP OF WATER LINE WITH 2-INCH WIDE PVC TAPE @ 5-FT INTERVALS ALONG PIPE. TRACER WIRE SHALL EXTEND TO THE SURFACE AND BE COILED IN A LOCATE BOX AT THE BACKSIDE OF EITHER EACH FIRE HYDRANT OR VALVE. UNDER THE SUPERVISION OF TOWN OF ERIE ENGINEERING STAFF, TEST SHALL BE MADE BY THE CONTRACTOR @ THE COMPLETION OF CONSTRUCTION TO INSURE THAT THE TRACER WIRES CARRY A CONTINUOUS CURRENT BETWEEN ALL ACCESS POINTS.
15. WARNING TAPE SHALL BE INSTALLED 12ò MINIMUM AND 18ò MAXIMUM ABOVE WATER PIPE.
16. BEDDING MATERIAL SHALL CONFORM TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
17. VALVES SHALL OPEN COUNTER CLOCKWISE. VALVES 12-INCH AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. LARGER VALVES SHALL BE BUTTERFLY VALVES.
18. VALVE BOXES SHALL BE RAISED TO ONE-FOURTH (1/4) INCH BELOW GRADE AFTER COMPLETION OF SURFACE PAVING OR FINAL GRADING. VALVE BOXES IN NON-PAVED AREAS SHALL HAVE A CONCRETE COLLAR AROUND THE VALVE LID IN ACCORDANCE WITH THE DETAIL.
19. ALL SERVICE LINE TAPS SHALL HAVE DOUBLE STRAP BRASS TAPPING SADDLES. (ROMAC 202B OR APPROVED EQUAL).
20. ALL RESIDENTIAL WATER TAPS SHALL BE THREE-QUARTER (3/4) INCH OR AS REQUIRED BY THE CURRENT BUILDING CODE.
21. ALL WATER SERVICE LATERALS SHALL EXTEND FIVE (5) FEET BEYOND RIGHT OF WAY OR UTILITY EASEMENTS, WHICHEVER IS GREATER. THE ENDS SHALL BE MARKED BY A BLUE PAINTED WOOD POST UNTIL CURB AND GUTTER IS IN PLACE. WHEN CURB AND GUTTER IS IN PLACE THE LATERALS SHALL BE MARKED ON THE CONCRETE CURB FACE WITH A ìV" or ìWò.
22. CONCRETE THRUST BLOCKS AND/OR "MEGA-LUG" MECHANICAL RESTRAINTS ARE REQUIRED AT ALL MECHANICAL FITTINGS. THRUST BLOCKS MAY NOT BE REQUIRED IF PIPE RESTRAINT IS PROVIDED IN ACCORDANCE WITH RESTRAINED PIPE DETAIL.
23. NO WORK SHALL BE BACKFILLED (INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE) UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE TOWN OF ERIE ENGINEERING STAFF.
24. ONLY ONE CONNECTION TO THE EXISTING WATER DISTRIBUTION SYSTEM SHALL BE MADE UNTIL ALL HYDROSTATIC TESTING, CHLORINATION AND FLUSHING HAS BEEN COMPLETED.
25. DISINFECTION AND HYDROSTATIC TESTING SHALL BE DONE IN THE PRESENCE OF A TOWN OF ERIE ENGINEERING STAFF. CONTACT THE TOWN OF ERIE DEPARTMENT OF PUBLIC WORKS, FORTY-EIGHT (48) HOURS PRIOR TO DISINFECTING AND/OR TESTING.
26. DISINFECTION AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE COLORADO DEPARTMENT OF HEALTH AND THE PROCEDURE SET FORTH IN AWWA C651, "STANDARD FOR DISINFECTING WATER MAINS". THE CHLORINATION OF THE WATER LINE SHALL BE PERFORMED PRIOR TO THE HYDROSTATIC TESTING. ALL VALVES, FIRE HYDRANTS AND OTHER APPURTANCES SHALL BE OPERATED WHILE PIPELINE IS FILLED WITH THE CHLORINATING AGENT TO INSURE THAT HIGH CHLORINE CONTACT IS MADE WITH ALL INTERNAL SURFACES.
27. ALL WATER LINES SHALL BE HYDROSTATIC TESTED. PRESSURE AND LEAKAGE TESTS SHALL BE CONDUCTED ACCORDING TO THE APPLICABLE SECTIONS OF AWWA C600/605 TO A MINIMUM PRESSURE OF ONE HUNDRED AND FIFTY (150) POUNDS PER SQUARE (PSI) INCH AT THE LOW POINT OF THE SECTION BEING TESTED FOR THE DURATION OF TWO (2) HOURS. THE MAXIMUM LENGTH OF LINE TO BE TESTED SHALL BE ONE THOUSAND (1,000) FEET. ALL JOINTS IN CONNECTIONS ARE TO BE WATERTIGHT WITHIN TOLERANCES ALLOWED BY THE SPECIFICATIONS IN AWWA C600/605. ANY LEAKAGE THAT IS DISCOVERED BY OBSERVATION OR TESTS SHALL BE LOCATED AND MADE WATERTIGHT BY THE CONTRACTOR. PRESSURE AND LEAKAGE TESTS SHALL NOT BE CONDUCTED UNTIL THE LINE HAS PASSED ALL REQUIRED DISINFECTION TESTS.
28. SUBSTANTIAL COMPLETION/CONSTRUCTION ACCEPTANCE OF THE NEW WATER LINES ARE CONTINGENT UPON RECEIVING COPIES OF:
   A. WATER TRENCH COMPACTION TEST RESULTS
   B. HYDRO STATIC TESTING OF 100% OF THE SYSTEM
   C. HEALTH DEPARTMENT TESTS. (CHLORINE AND/OR CLEAR WATER AS REQUIRED)
29. ALL METER PITS AND CURB STOPS SHALL BE PROTECTED AT THE TIME OF INSTALLATION WITH A MINIMUM OF THREE (3) T-POSTS AND ORANGE SAFETY FENCE. THE T-POST AND SAFETY FENCE SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL THE LANDSCAPING IS INSTALLED.

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ENERTIA CONSULTING GROUP
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CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

GENERAL NOTES

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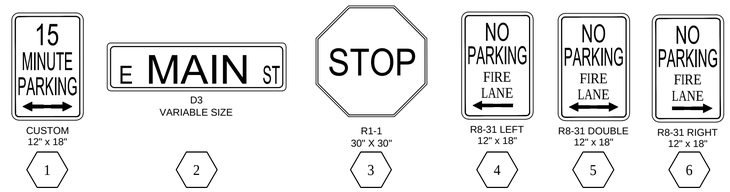
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 ▬ 1"

DATE	APRIL 17, 2014
FILE	2 GEN-2.0.DWG
DWG	GEN-2.0
SHEET	2 OF18

LEGEND

PROPERTY LINE	FIRE HYDRANT
CURB & GUTTER	MANHOLE
ROW	SIGN
CENTERLINE	CONCRETE SIDEWALK
PROPOSED 5' CONTOUR	UNDERDRAIN
PROPOSED 1' CONTOUR	EASEMENT
EXISTING 5' CONTOUR	WALL
EXISTING 1' CONTOUR	RIP RAP
STORM INLET	5500.00 PROPOSED ELEVATION
STORM DRAIN	5500.00 EXISTING ELEVATION
LIGHT	CONCRETE PAVING

SIGNAGE LEGEND

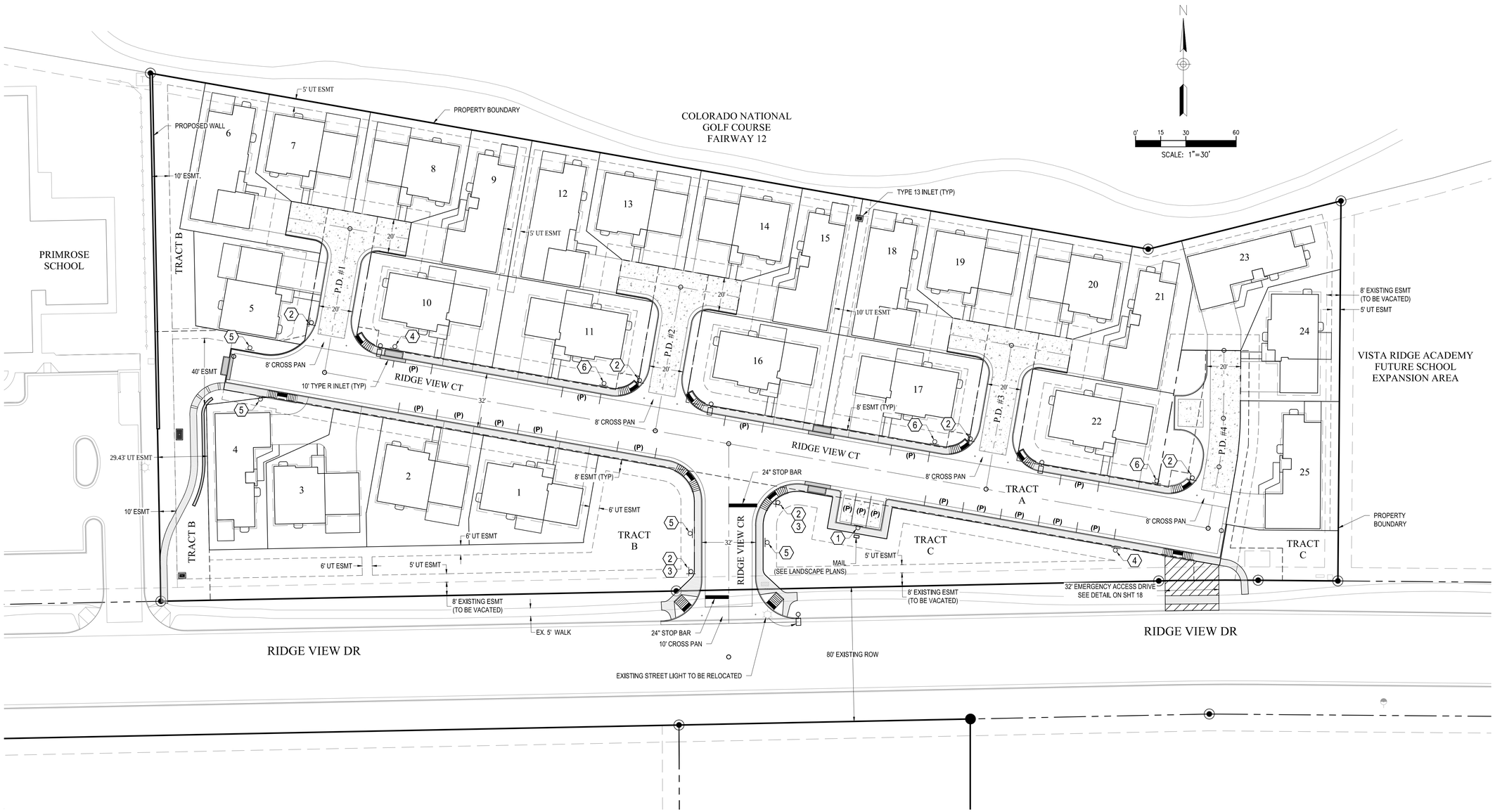


SIGNAGE NOTES:

1. ALL SIGNS AND POSTS AND BASES SHALL BE PER TOWN OF ERIE STANDARDS.
2. STOP SIGNS SHOULD BE PLACED BETWEEN PC AND 6' FROM PC FOLLOWING M.U.T.C.D. STANDARDS.

GENERAL NOTES

1. SEE PHOTOMETRIC PLAN FOR LOCATION, SIZE AND HEIGHT OF PROPOSED LIGHT FIXTURES.
2. ALL SIDEWALKS ARE 4' UNLESS OTHERWISE NOTED.
3. INTERIOR ROADWAYS ARE PRIVATE AND SHALL BE MAINTAINED BY THE OWNER.
4. RAILING AND FENCE LOCATIONS ARE SHOWN ON THE LANDSCAPE PLAN.
5. ALL STORM DRAINS ARE PRIVATE AND SHALL BE MAINTAINED BY THE OWNER.
6. (P) DESIGNATES PARKING SPACES. ON STREET PARKING IS NOT STRIPED.



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SITE PLAN

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DWG	SIT-3.0
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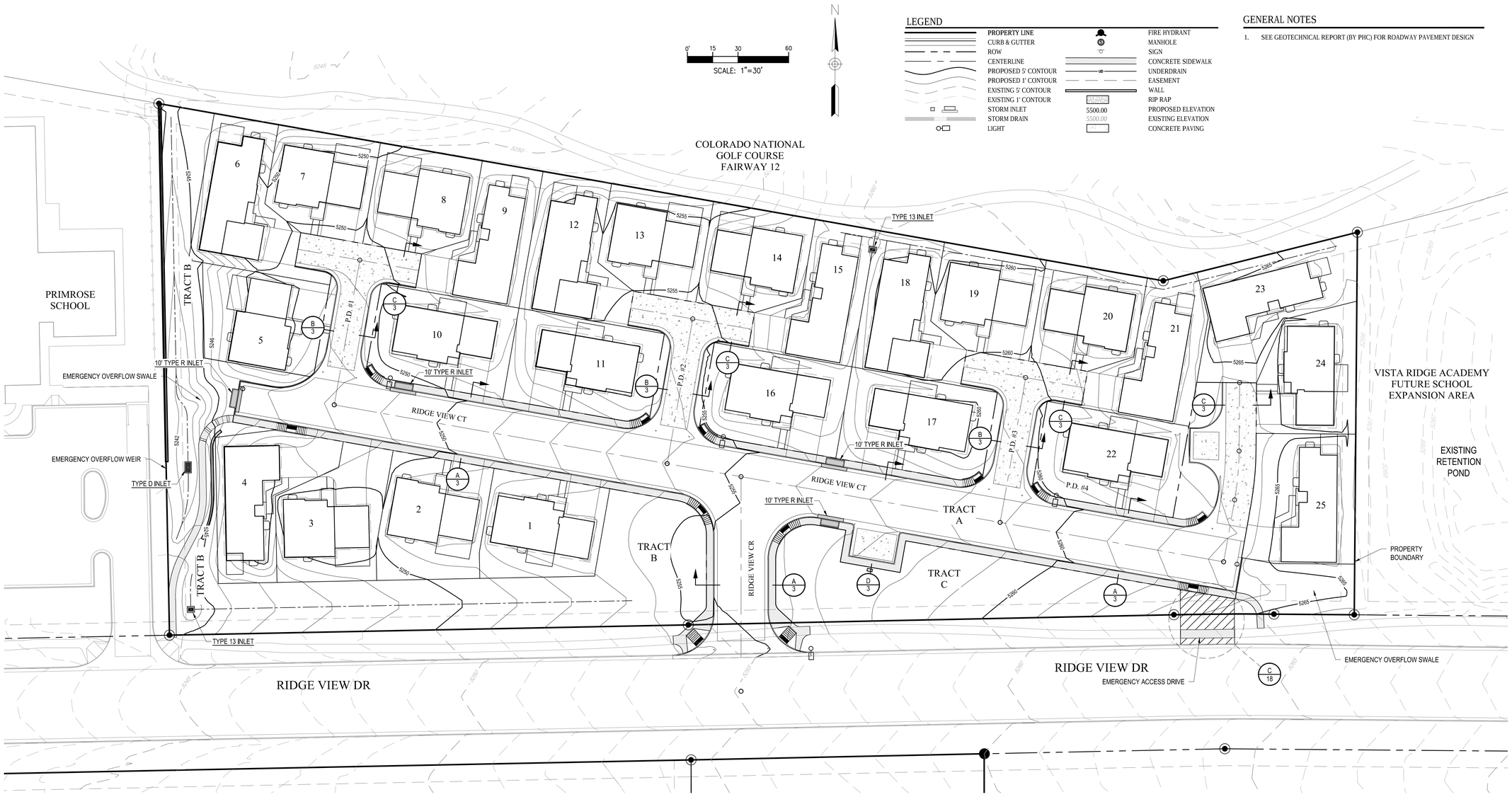
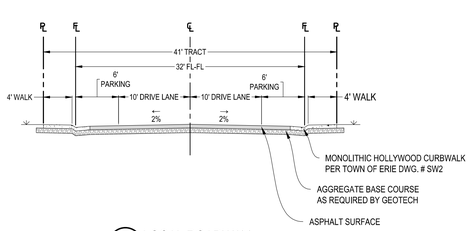
LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

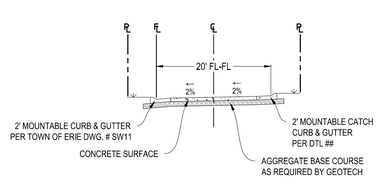
GENERAL NOTES

1. SEE GEOTECHNICAL REPORT (BY PHC) FOR ROADWAY PAVEMENT DESIGN





A/3 LOCAL ROADWAY SECTION
N.T.S.



B/3 PRIVATE DRIVE 1, 2 & 3 SECTION
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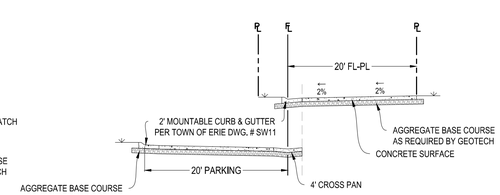
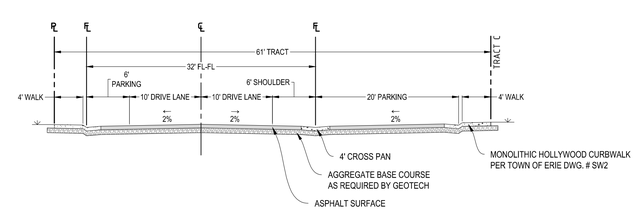


C/3 P.D. 4 & TYP. HAMMERHEAD SECTION
N.T.S.



D/3 LOCAL ROADWAY W/PARKING SECTION
N.T.S.

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OVERALL GRADING PLAN

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

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DWG	OGP-4.0
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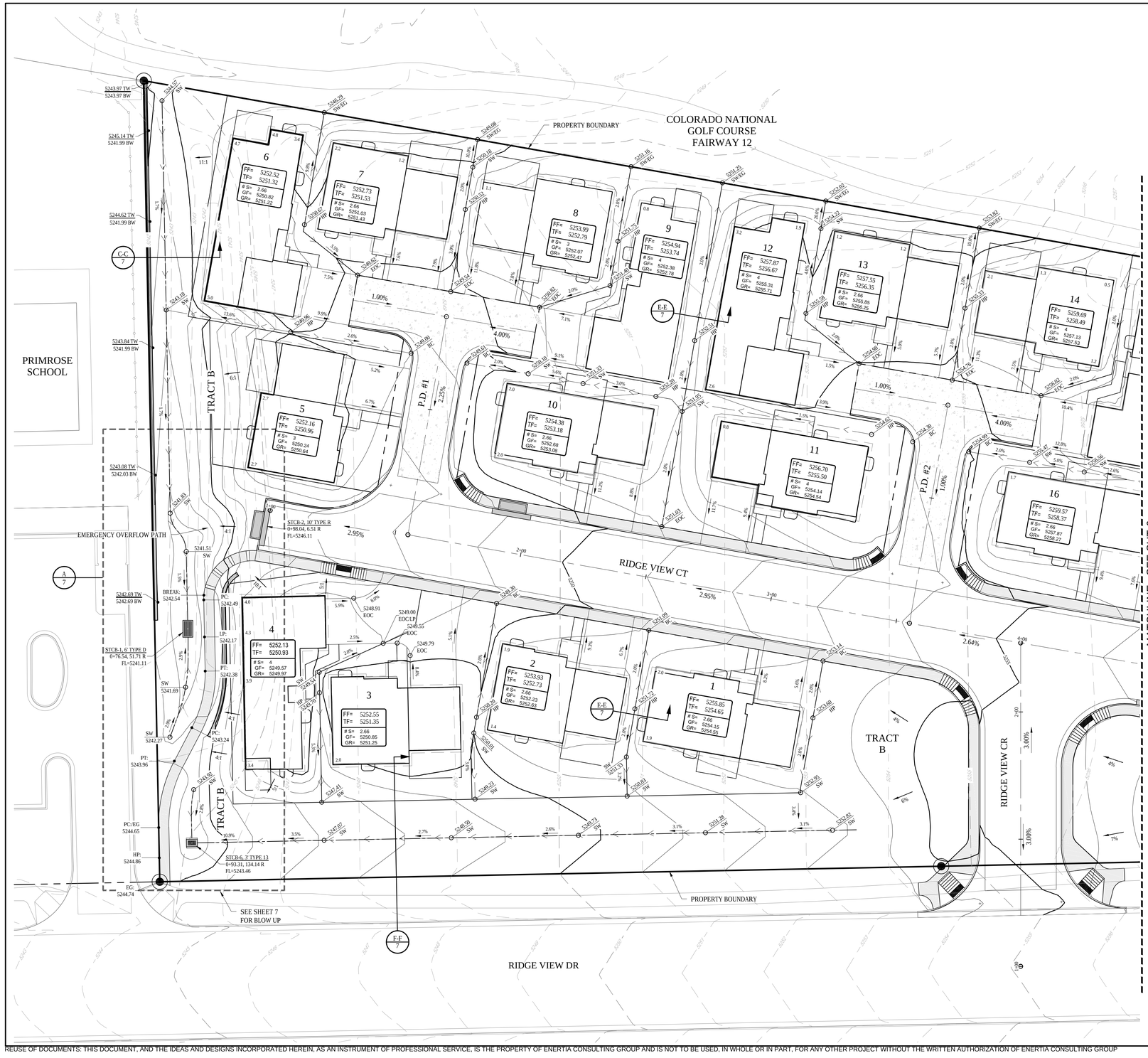
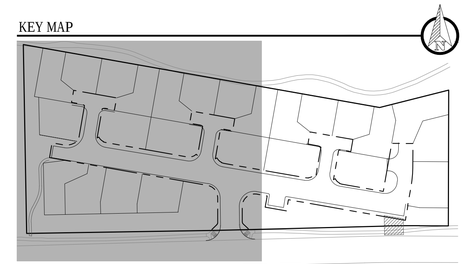


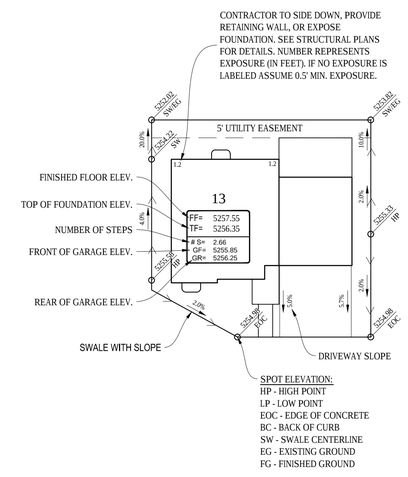
KEY MAP



LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

TYPICAL LOT LEGEND



0' 10 20 40

SCALE: 1"=20'

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DETAIL GRADING PLAN 1

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	6 DGP-4.2.DWG
DWG	DGP-4.1
SHEET	5 OF18

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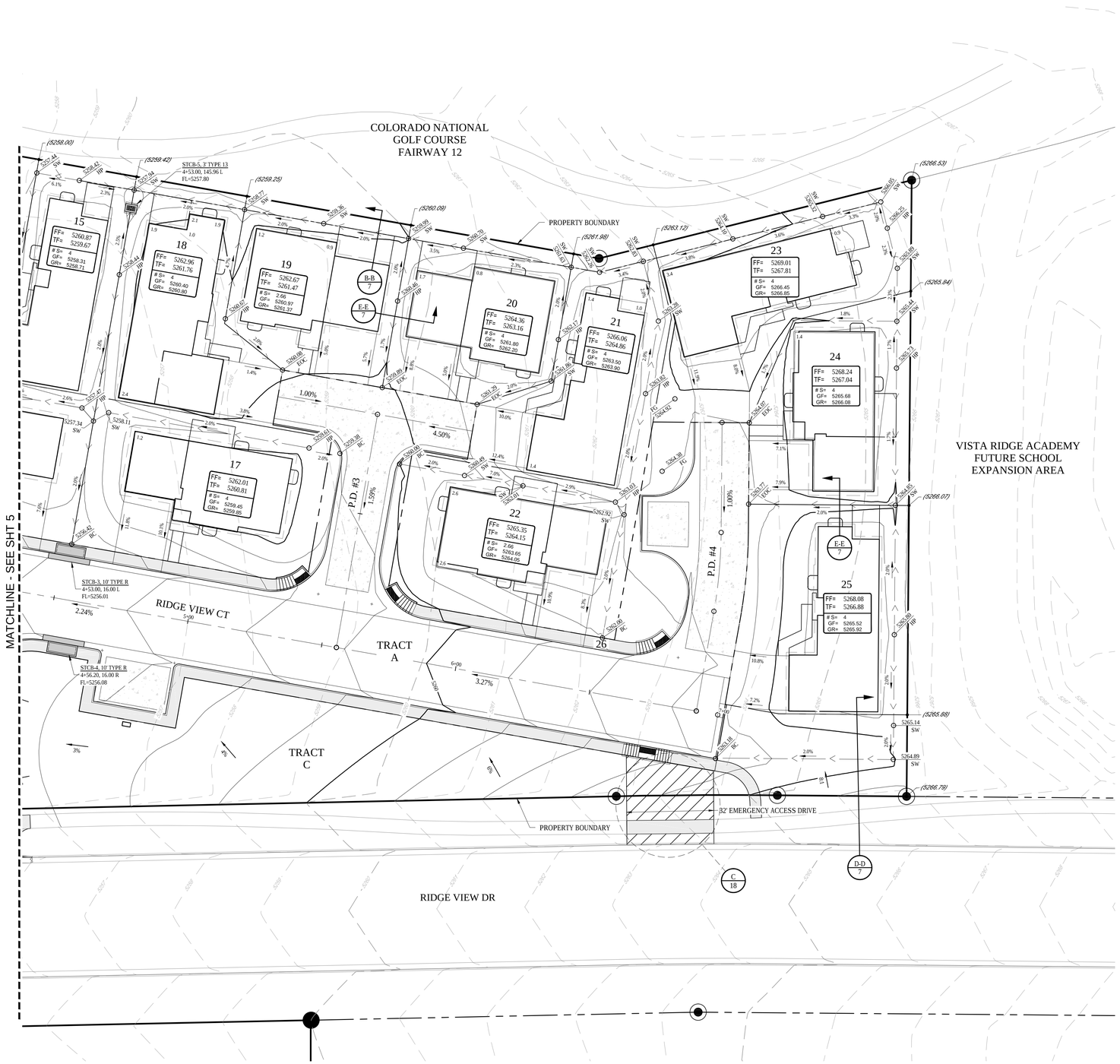
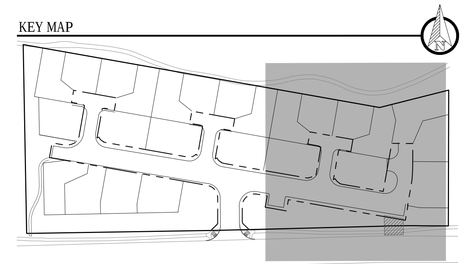


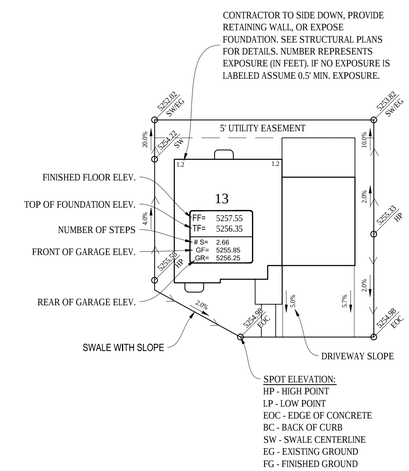
KEY MAP



LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

TYPICAL LOT LEGEND



N

0' 10 20 40

SCALE: 1"=20'

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
DSGN	SM		BC	BG	SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR. STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

DETAIL GRADING PLAN 2

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	6 DGP-4.2.DWG
DWG	DGP-4.2
SHEET	6 OF18

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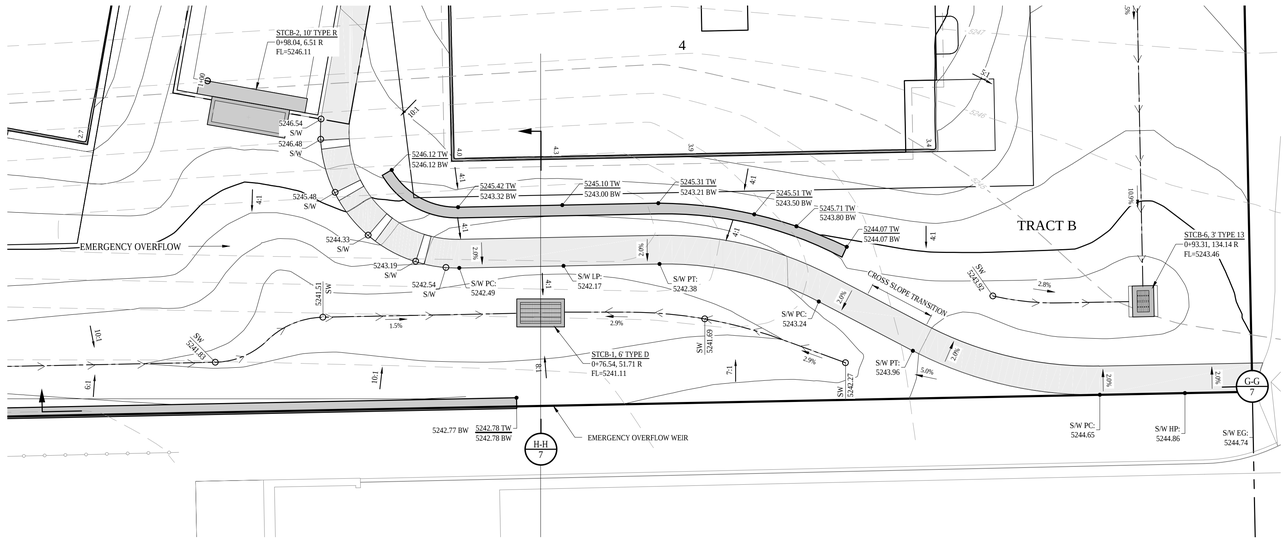
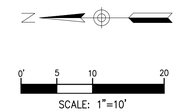
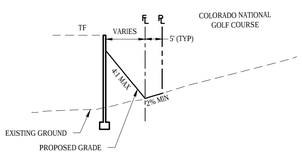
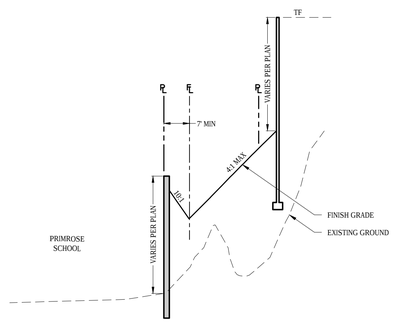




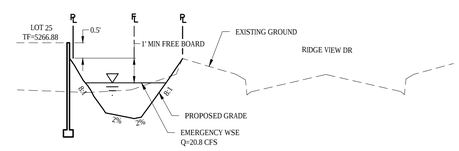
A/7 TRACT B BLOW-UP
H:1"=20'
V: 1"=2'



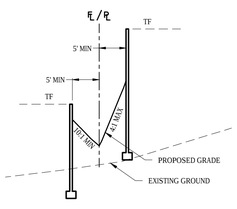
B-B/7 NORTH SWALE SECTION
H:1"=20'
V: 1"=2'



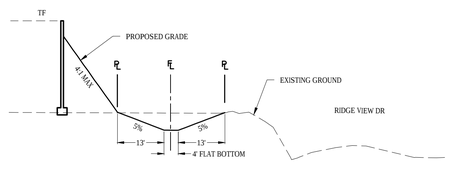
C-C/7 WEST SWALE/WALL SECTION
H:1"=20'
V: 1"=2'



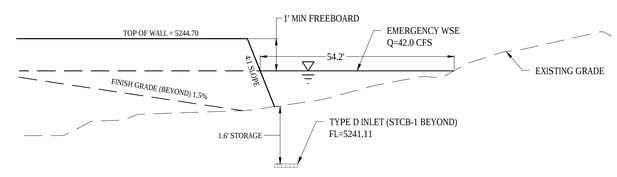
D-D/7 EMERGENCY OVERFLOW SWALE SECTION
H:1"=20'
V: 1"=2'



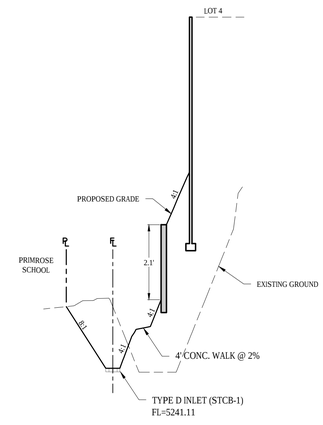
E-E/7 TYPICAL SIDE LOT SWALE SECTION
H:1"=20'
V: 1"=2'



F-F/7 SOUTH SWALE SECTION
H:1"=20'
V: 1"=2'



G-G/7 EMERGENCY OVERFLOW WIER SECTION
H:1"=20'
V: 1"=2'



H-H/7 STCB-1 SUMP SECTION
H:1"=20'

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	

DSGN	SM	DR	BC	CHK	BG	APVD	SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

GRADING DETAILS

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	7 GDT-4.3.DWG
DWG	GDT-4.3
SHEET	7 OF18

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NOTES

1. ALL UNDERDRAIN TO BE 4" PVC WITH A MINIMUM DEPTH OF 2.5' AND A MINIMUM SLOPE OF 2%.

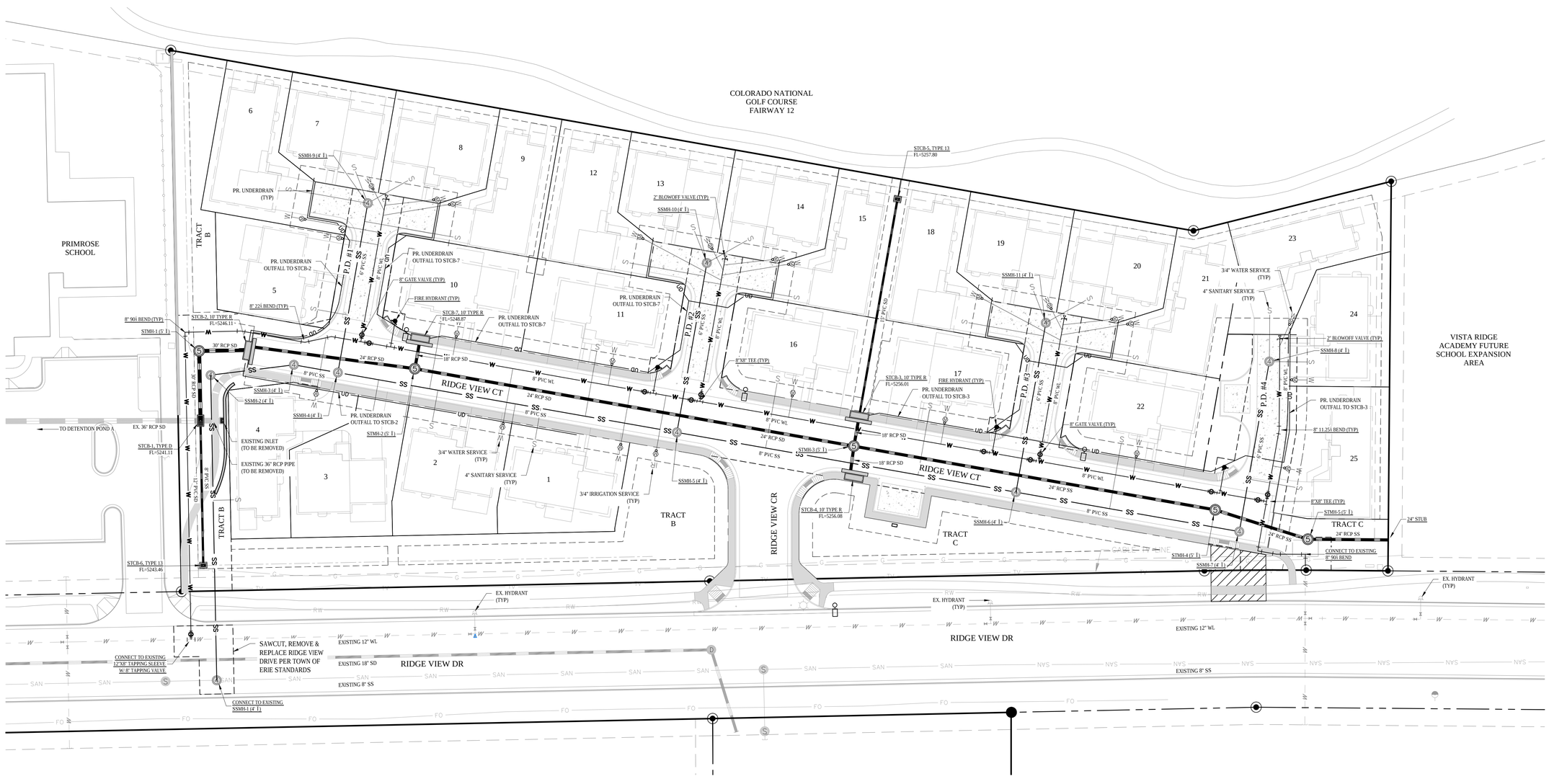
LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

N

0' 15 30 60

SCALE: 1"=30'



PRELIMINARY
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NO.	DATE	REVISION	DR	CHK	APVD
DSGN	SM		BC	BG	SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

OVERALL UTILITY PLAN

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	8 OUP-5.0.DWG
DWG	OUP-5.0
SHEET	8 OF 18

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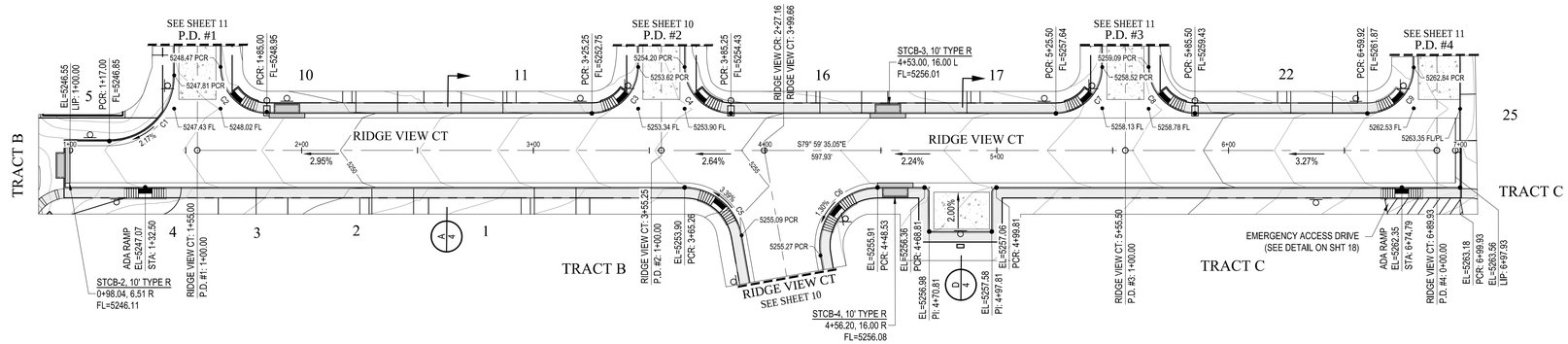
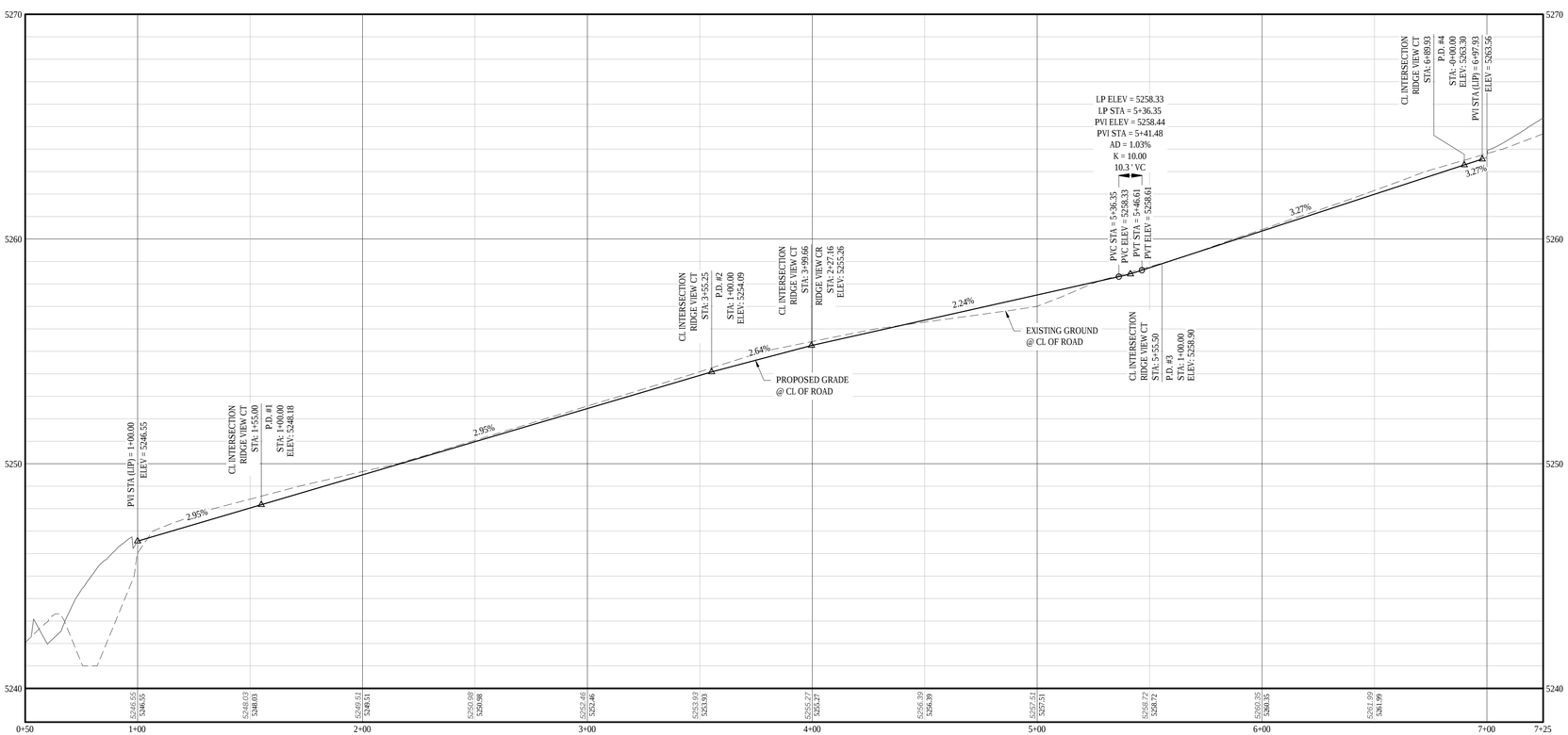


PLAN: RIDGE VIEW CT STA: 0+50 TO 7+25

HORIZONTAL SCALE: 1" = 30'

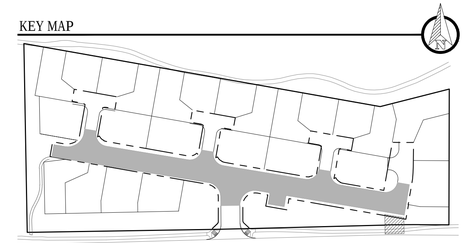


PROFILE: RIDGE VIEW CT STA: 0+50 TO 7+25

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 3

KEY MAP

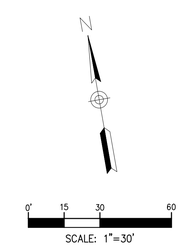


LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

CURVE TABLE

CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	44.35'	28.00'	90\44'08"	N54\38'17"E	39.86'
C2	31.42'	20.00'	90\00'00"	S34\59'33"E	28.28'
C3	31.42'	20.00'	90\00'00"	N55\00'27"E	28.28'
C4	31.42'	20.00'	90\00'00"	S34\59'33"E	28.28'
C5	34.90'	25.00'	79\59'33"	N39\59'46"W	32.14'
C6	43.64'	25.00'	100\00'27"	S50\00'14"W	38.31'
C7	31.42'	20.00'	90\00'00"	N55\00'27"E	28.28'
C8	31.42'	20.00'	90\00'00"	S34\59'33"E	28.28'
C9	31.24'	20.00'	89\30'36"	N55\15'10"E	28.16'



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NO.	DATE	REVISION	DR	BC	CHK	BG	APVD	SM
DSGN	SM							

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1529 MARKET STREET
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RIDGE VIEW CT STA: 0+50 TO 7+25
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	9 RDW-6.1.DWG
DWG	RDW-6.1
SHEET	9 OF18

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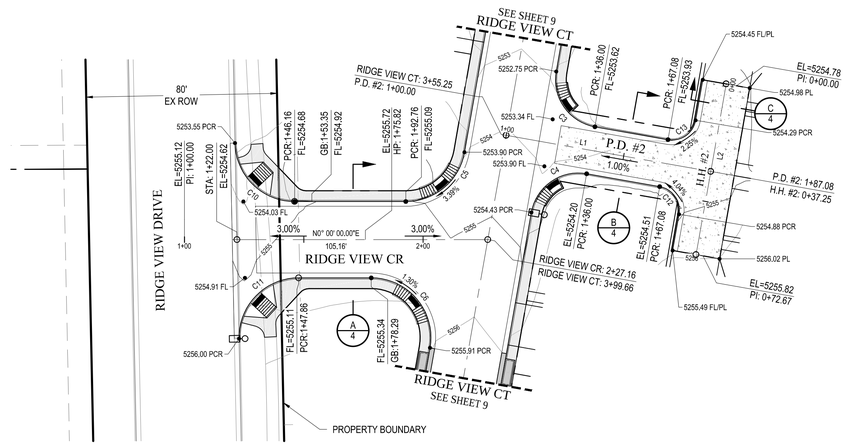
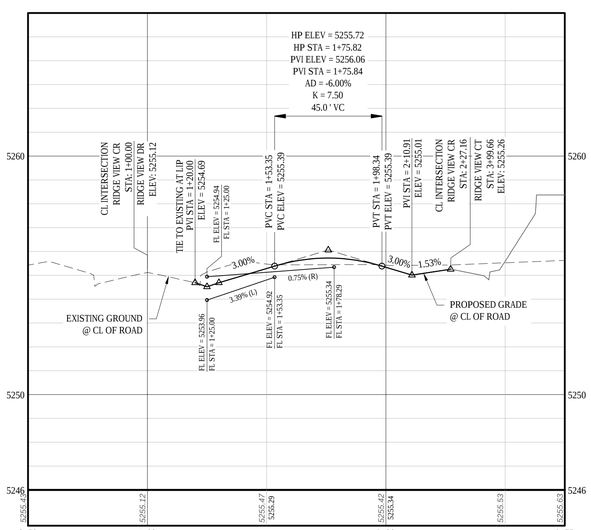


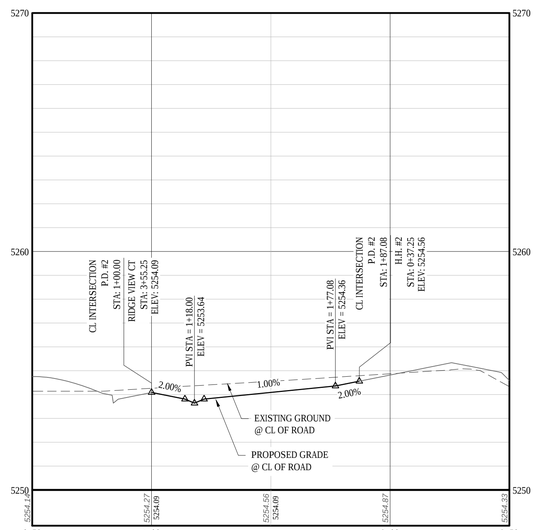
PLAN: RIDGE VIEW CR & P.D. #2

HORIZONTAL SCALE: 1" = 30'



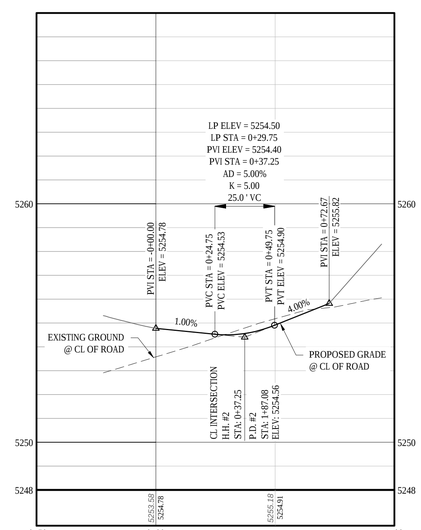
PROFILE: RIDGE VIEW CR STA: 0+50 TO 2+75

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



PROFILE: P.D. #2 STA: 0+50 TO 2+50

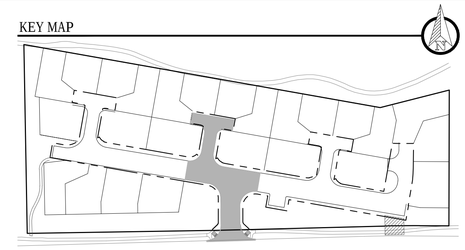
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



PROFILE: H.H. #2 STA: -0+50 TO 1+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3

KEY MAP



LEGEND

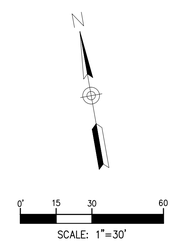
	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR	RIP RAP	RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

CURVE TABLE

CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C3	31.42'	20.00'	90°00'00"	N55°00'27"E	28.28'
C4	31.42'	20.00'	90°00'00"	S34°59'33"E	28.28'
C5	34.90'	25.00'	79°59'33"	N39°59'46"W	32.14'
C6	43.64'	25.00'	100°00'27"	S50°00'14"W	38.30'
C10	38.77'	25.00'	88°51'39"	N44°25'49"E	35.00'
C11	39.79'	25.00'	91°11'38"	S45°35'49"E	35.72'
C12	15.71'	10.00'	90°00'00"	S55°00'27"W	14.14'
C13	15.71'	10.00'	90°00'00"	N34°59'33"W	14.14'

LINE TABLE

LINE NO.	LENGTH	DIRECTION
L1	87.08'	N10°00'27"E
L2	72.67'	N79°59'33"W



PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	BC	CHK	BG	APVD	SM
DSGN	SM							

ENERTIA CONSULTING GROUP
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MONTEX - NORTH
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TOWN OF ERIE, COLORADO

RIDGE VIEW CR & P.D. #2
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	10 RDW-6.2.DWG
DWG	RDW-6.2
SHEET	10 OF18

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LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR	5249.25	RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

CURVE TABLE

CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	44.35'	28.00'	90¦44'08"	N54¦38'17"E	39.86'
C2	31.42'	20.00'	90¦00'00"	S34¦59'33"E	28.28'
C7	31.42'	20.00'	90¦00'00"	N55¦00'27"E	28.28'
C8	31.42'	20.00'	90¦00'00"	S34¦59'33"E	28.28'
C9	31.24'	20.00'	89¦30'36"	N55¦15'10"E	28.16'
C14	25.06'	15.00'	95¦44'21"	N38¦58'46"W	22.25'
C15	23.56'	15.00'	90¦00'00"	N45¦28'11"E	21.21'

LINE TABLE

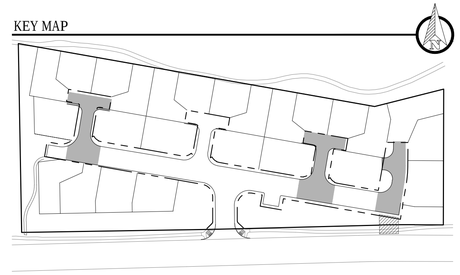
LINE NO.	LENGTH	DIRECTION
L3	87.08'	N10¦00'27"E
L4	72.67'	S79¦59'33"E
L5	87.08'	N10¦00'27"E
L6	72.67'	S79¦59'33"E
L7	37.24'	N10¦00'27"E
L8	40.47'	N0¦28'11"E

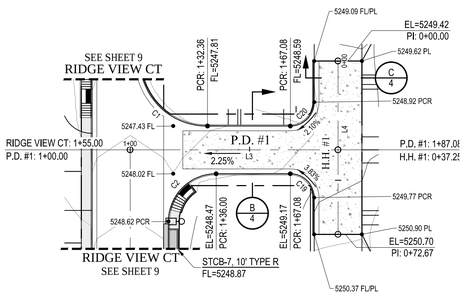
N

0' 15 30 60

SCALE: 1"=30'

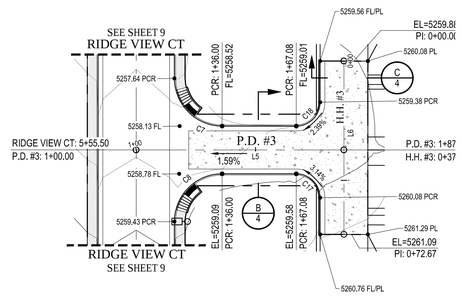
KEY MAP





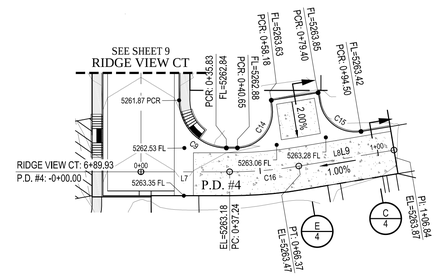
PLAN: PRIVATE DRIVE #1

HORIZONTAL SCALE: 1" = 30'



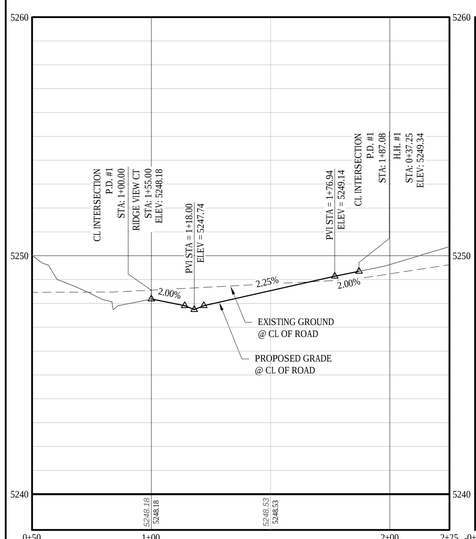
PLAN: PRIVATE DRIVE #3

HORIZONTAL SCALE: 1" = 30'



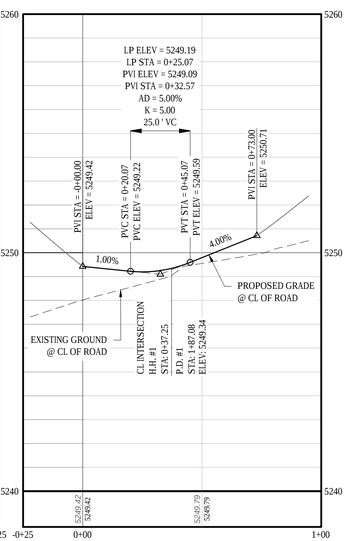
PLAN: PRIVATE DRIVE #4

HORIZONTAL SCALE: 1" = 30'



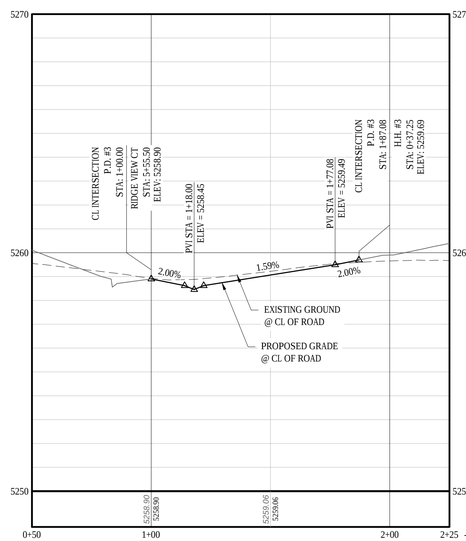
PROFILE: P.D. #1 STA: 0+50 TO 2+25

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



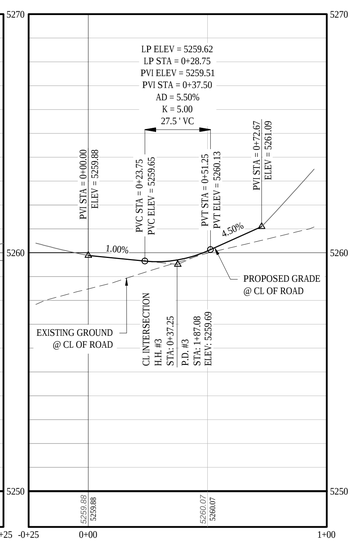
PROFILE: H.H. #1 STA: -0+25 TO 1+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



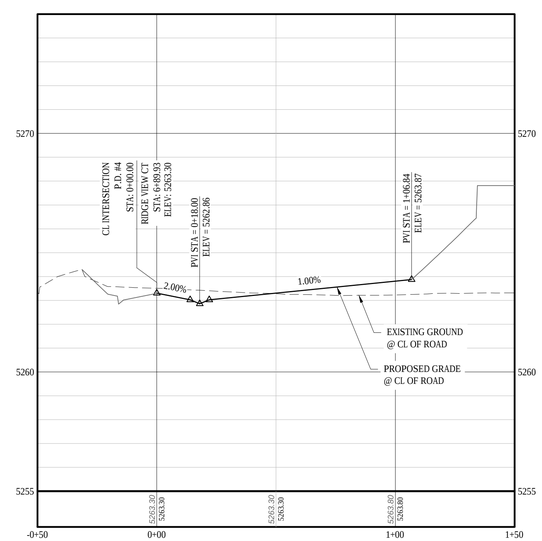
PROFILE: P.D. #3 STA: 0+50 TO 2+25

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



PROFILE: H.H. #3 STA: -0+25 TO 1+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



PROFILE: P.D. #4 STA: -0+50 TO 1+50

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	BC	CHK	BG	APVD	SM
DSGN	SM							

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

PRIVATE DRIVES #1, #3 & #4
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	11 RDW-6.3.DWG
DWG	RDW-6.3
SHEET	11 OF 18

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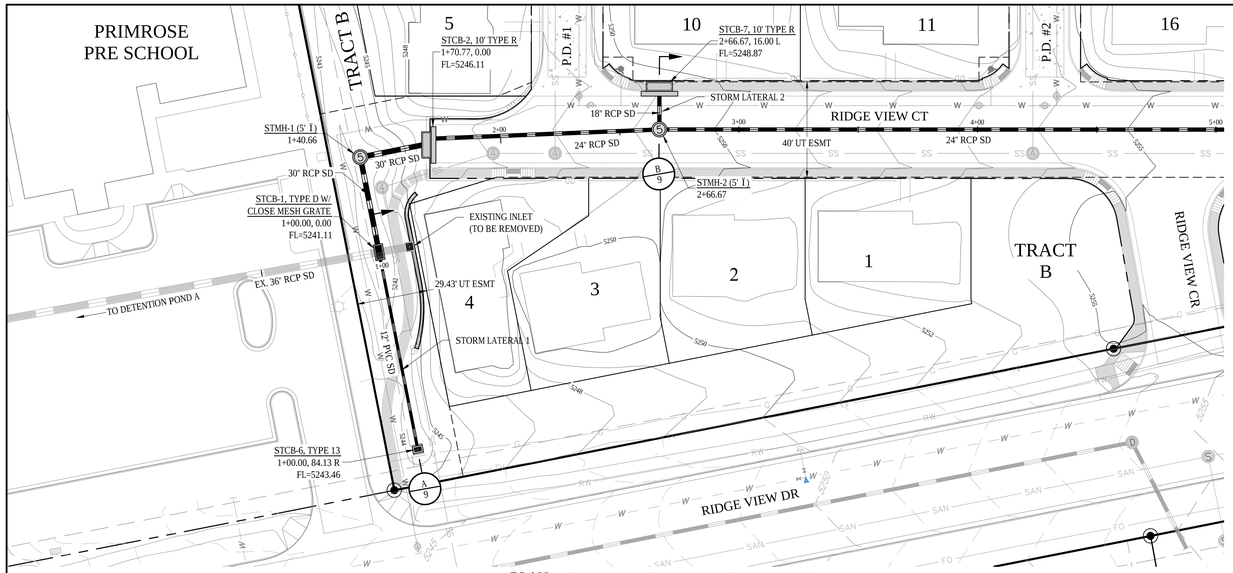
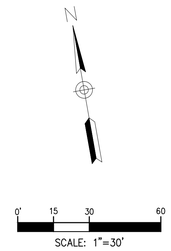
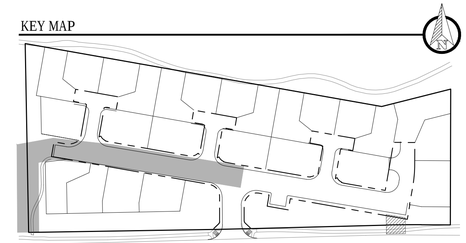


PLAN: STORM DRAIN STA: 0+00 TO 5+00

HORIZONTAL SCALE: 1" = 30'

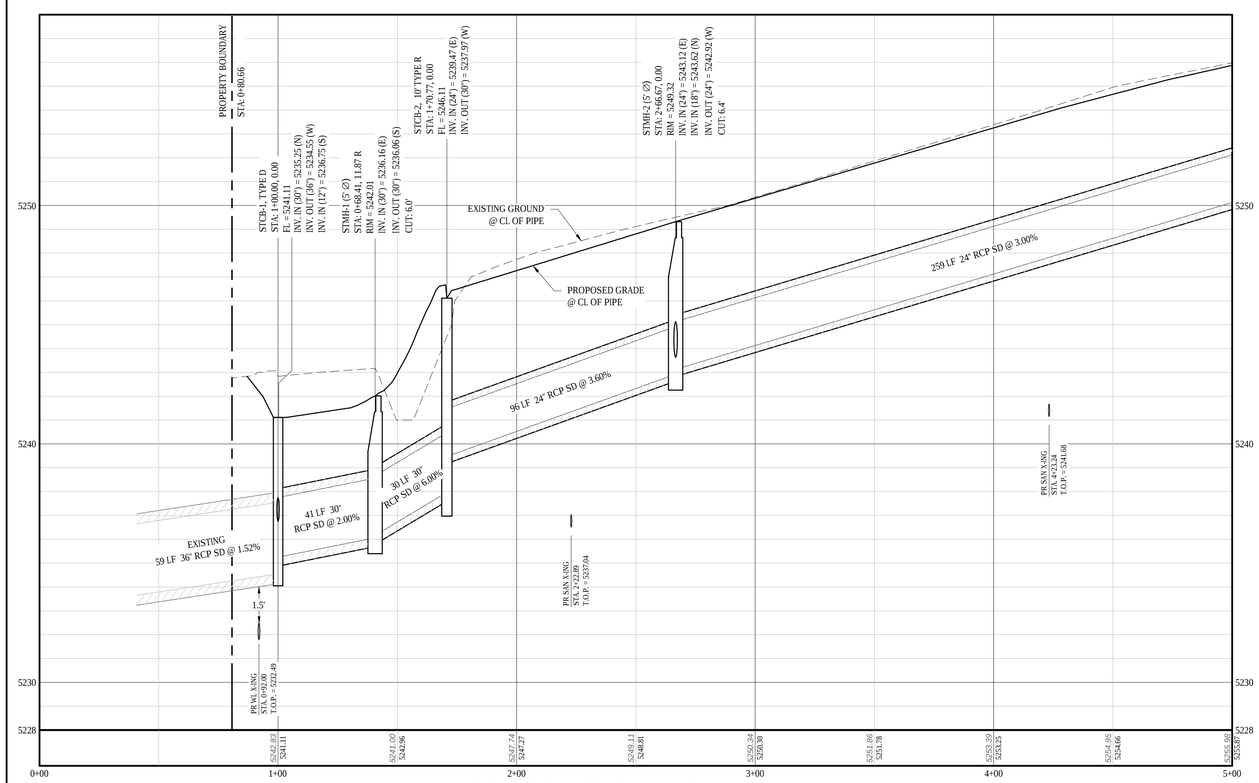


KEY MAP



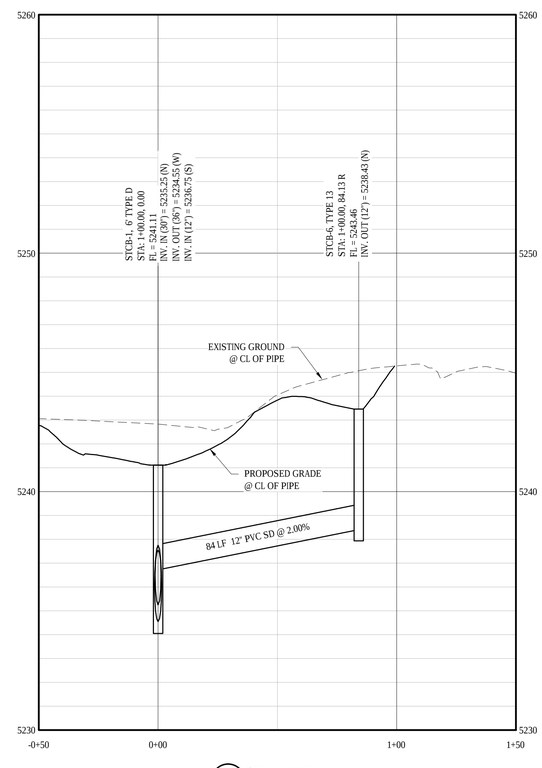
LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING



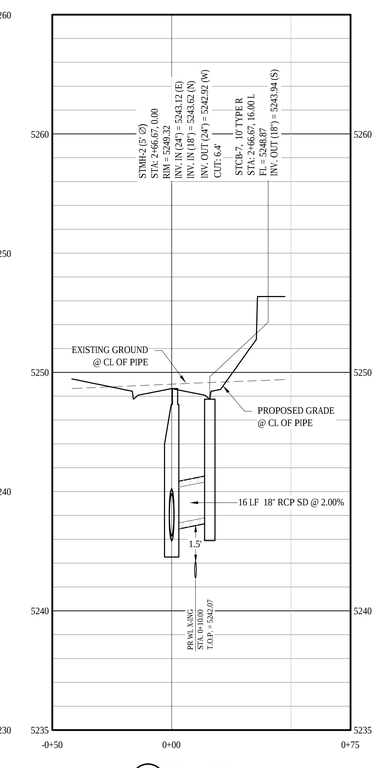
PROFILE: STORM SEWER - MAIN STA: 0+00 TO 5+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



A/9 STM LATERAL 1 PROFILE

H: 1"=30'
V: 1"=3'



B/9 STM LATERAL 2 PROFILE

H: 1"=30'
V: 1"=3'

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
DSGN	SM		BC	BG	SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR. STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

STORM DRAIN STA: 0+00 TO 5+00
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	12 STM-7.1.DWG
DWG	STM-7.1
SHEET	12 OF18

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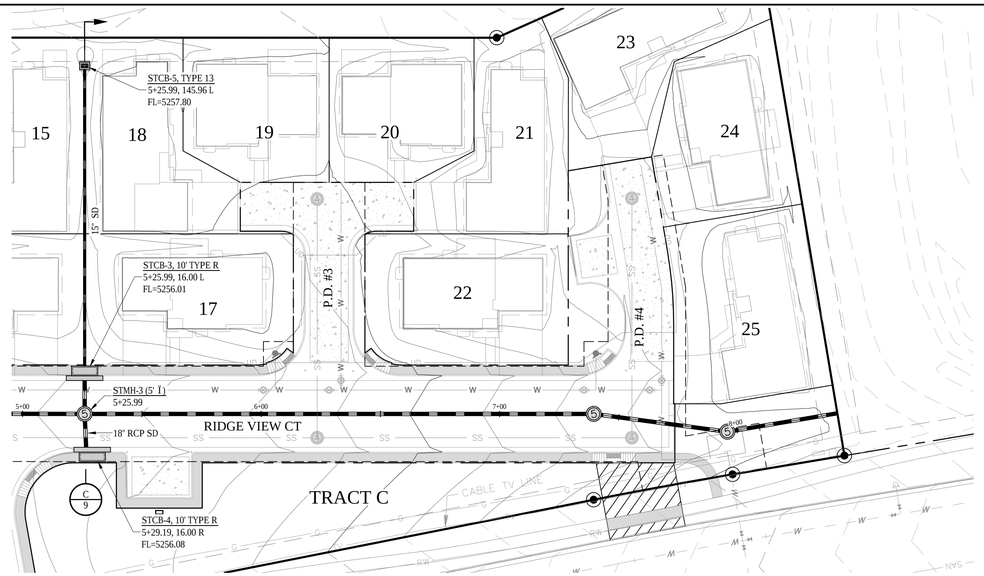
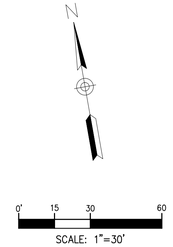
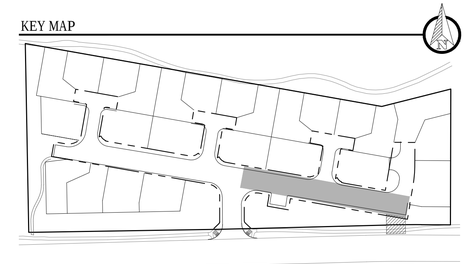


PLAN: STORM DRAIN STA: 5+00 TO 9+00

HORIZONTAL SCALE: 1" = 30'

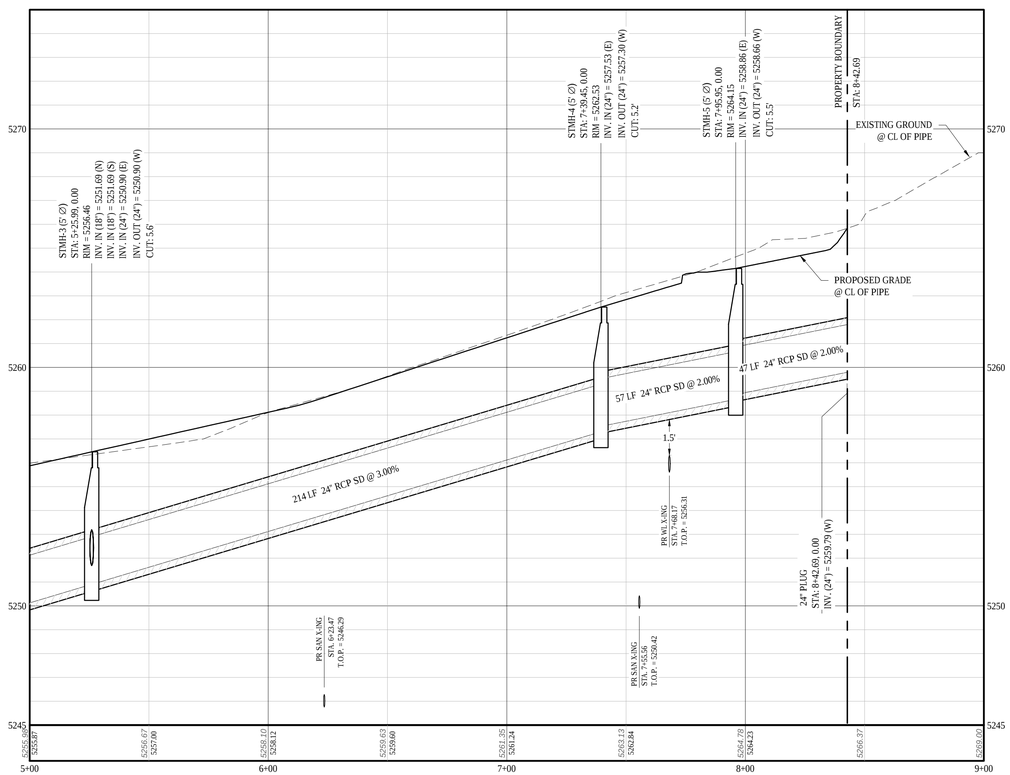


KEY MAP



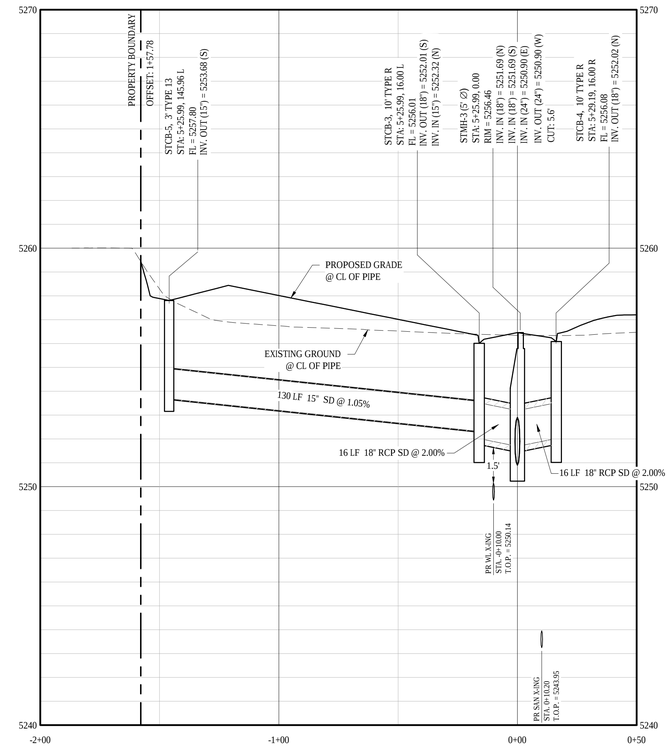
LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING



PROFILE: STORM SEWER - MAIN STA: 5+00 TO 9+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



C / 9 STM LATERAL 3
PROFILE
H: 1"=30'
V: 1"=3'

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NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
			BC	BG	SM

DSGN SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR. STE 104
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MONTEX - NORTH
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TOWN OF ERIE, COLORADO

STORM DRAIN STA: 5+00 TO 9+00
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	13 STM-7.2.DWG
DWG	STM-7.2
SHEET	13 OF 18

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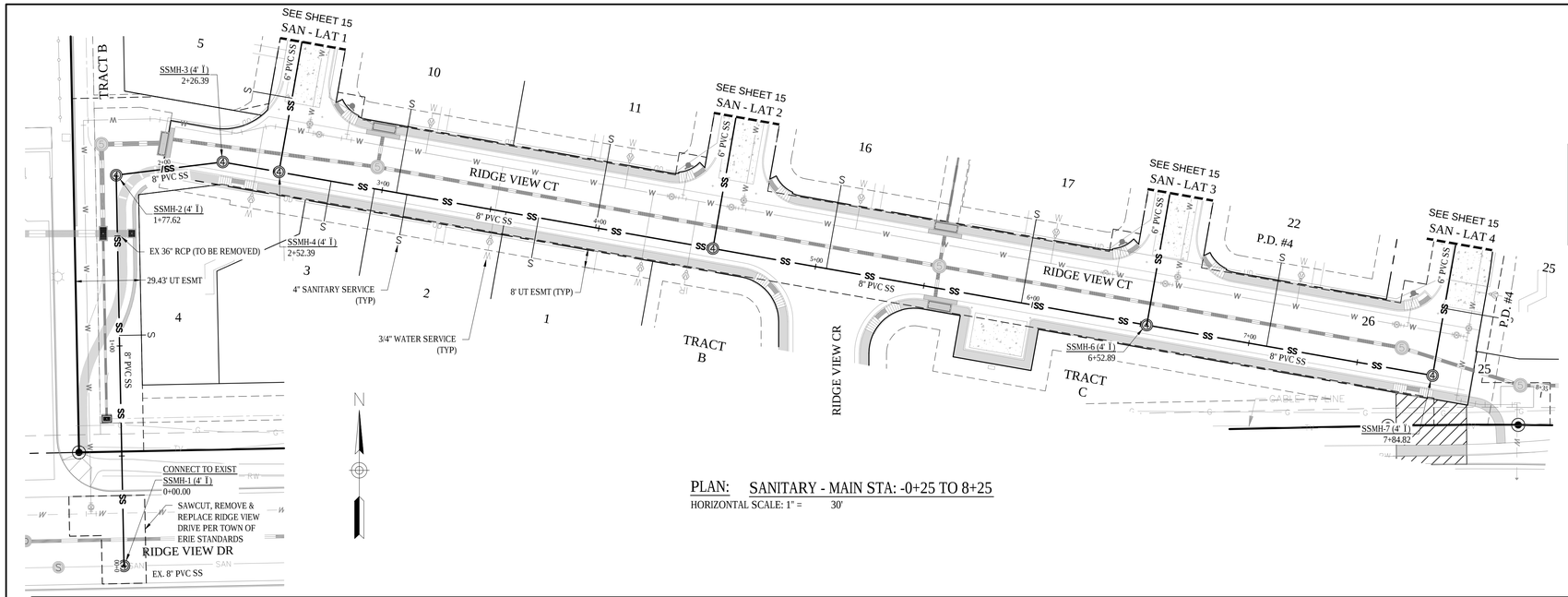
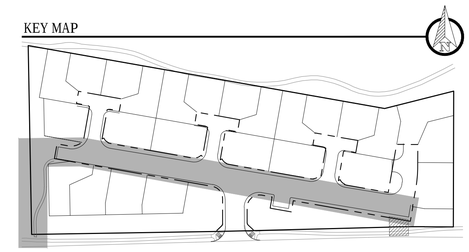


PLAN: SANITARY - MAIN STA: -0+25 TO 8+25

HORIZONTAL SCALE: 1" = 30'

KEY MAP



LEGEND

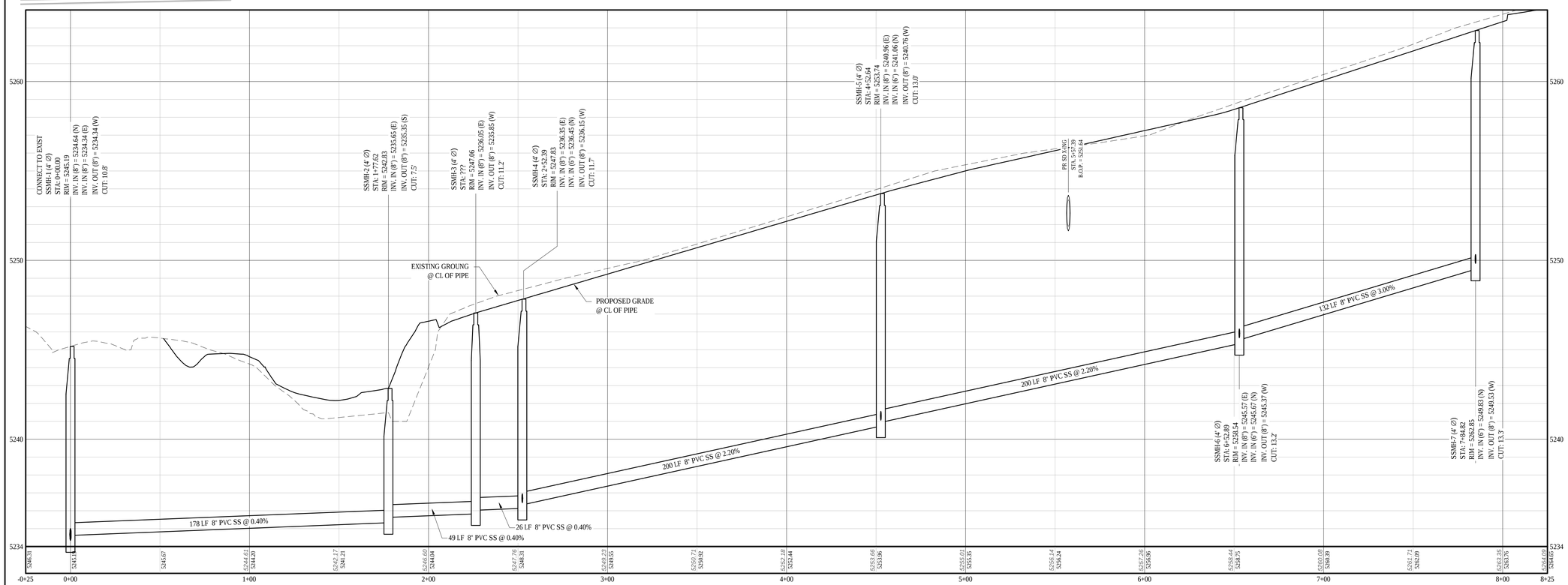
	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING

NOTES

1. SEE SHEET 18 FOR SANITARY SEWER SERVICE TABLE AND DETAIL.
2. CONTRACTOR TO VERIFY EXISTING SANITARY INVERTS IN RIDGE VIEW DRIVE PRIOR TO CONSTRUCTION.

0' 15 30 60

SCALE: 1"=30'



PROFILE: SANITARY SEWER - MAIN STA: -0+25 TO 8+25

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

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			BC	BG	SM

DSGN SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

SANITARY - MAIN STA: -0+25 TO 8+25
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

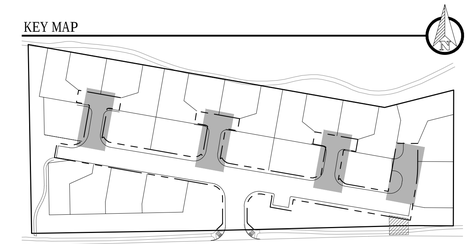
DATE	APRIL 17, 2014
FILE	14 SAN-8.1.DWG
DWG	SAN-8.1
SHEET	14 OF 18

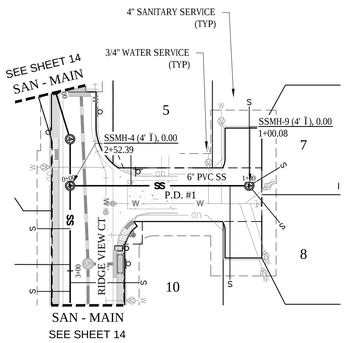
LEGEND

PROPERTY LINE		FIRE HYDRANT	
CURB & GUTTER		MANHOLE	
ROW		SIGN	
CENTERLINE		CONCRETE SIDEWALK	
PROPOSED 5' CONTOUR		UNDERDRAIN	
PROPOSED 1' CONTOUR		EASEMENT	
EXISTING 5' CONTOUR		WALL	
EXISTING 1' CONTOUR		RIP RAP	
STORM INLET	5500.00	PROPOSED ELEVATION	
STORM DRAIN	5500.00	EXISTING ELEVATION	
LIGHT		CONCRETE PAVING	

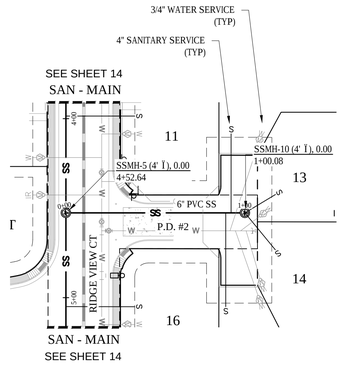
0' 20 40 80
SCALE: 1"=40'

KEY MAP

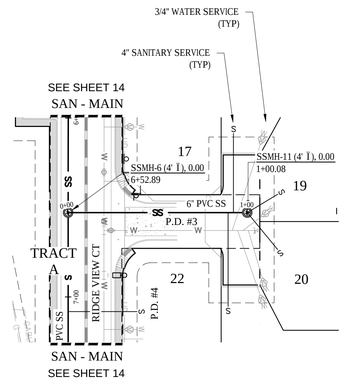




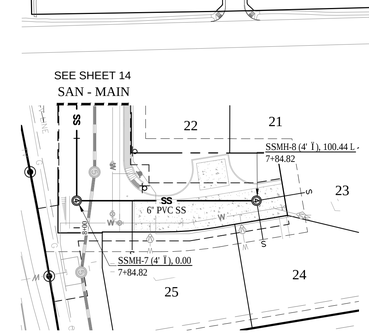
PLAN: SANITARY - LATERAL 1
HORIZONTAL SCALE: 1" = 40'



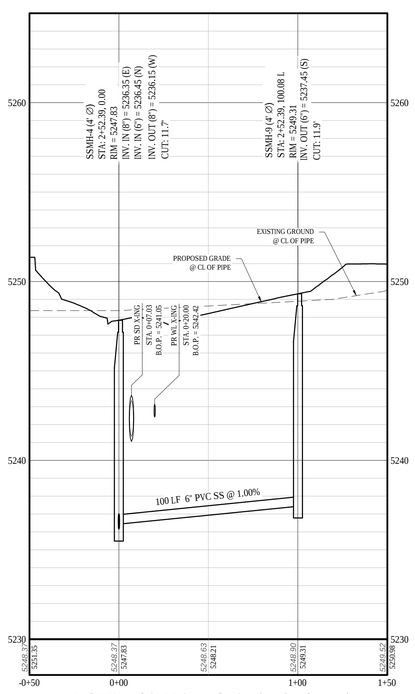
PLAN: SANITARY - LATERAL 2
HORIZONTAL SCALE: 1" = 40'



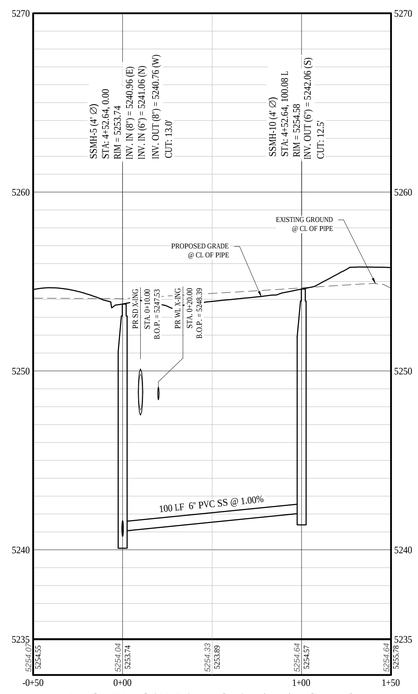
PLAN: SANITARY - LATERAL 3
HORIZONTAL SCALE: 1" = 40'



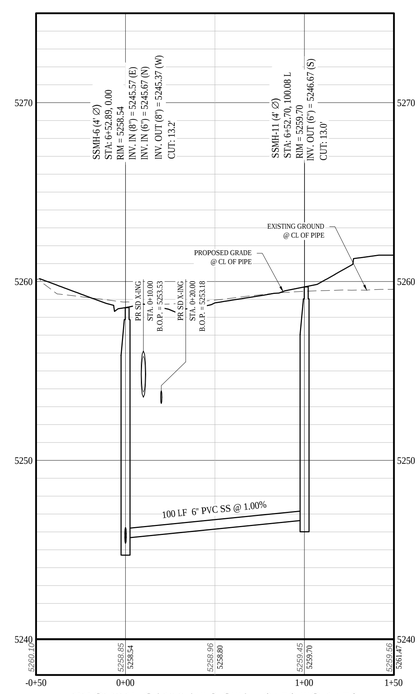
PLAN: SANITARY - LATERAL 4
HORIZONTAL SCALE: 1" = 40'



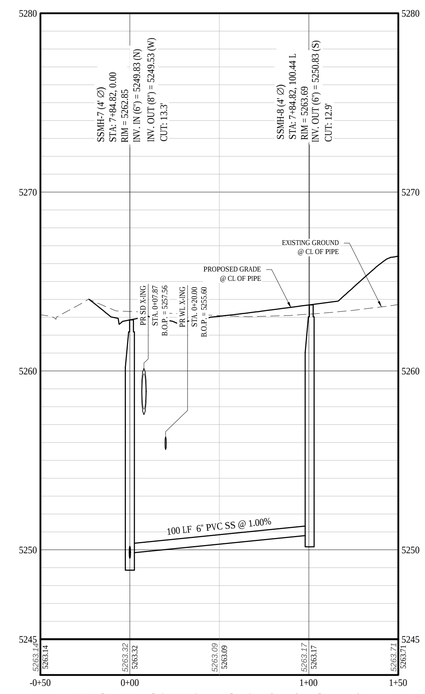
PROFILE: SAN-LAT 1 STA: -0+50 TO 1+50
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROFILE: SAN-LAT 2 STA: -0+50 TO 1+50
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROFILE: SAN-LAT 3 STA: -0+50 TO 1+50
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROFILE: SAN-LAT 4 STA: -0+50 TO 1+50
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	BC	CHK	BG	APVD	SM
DSGN	SM							

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR, STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
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SANITARY LATERALS
PLAN & PROFILE

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	15 SAN-8.2.DWG
DWG	SAN-8.2
SHEET	15 OF 18

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LEGEND

PROPERTY LINE	FIRE HYDRANT
CURB & GUTTER	MANHOLE
ROW	SIGN
CENTERLINE	CONCRETE SIDEWALK
PROPOSED 5' CONTOUR	UNDERDRAIN
PROPOSED 1' CONTOUR	EASEMENT
EXISTING 5' CONTOUR	WALL
EXISTING 1' CONTOUR	RIP RAP
STORM INLET	5500.00 PROPOSED ELEVATION
STORM DRAIN	5500.00 EXISTING ELEVATION
LIGHT	CONCRETE PAVING

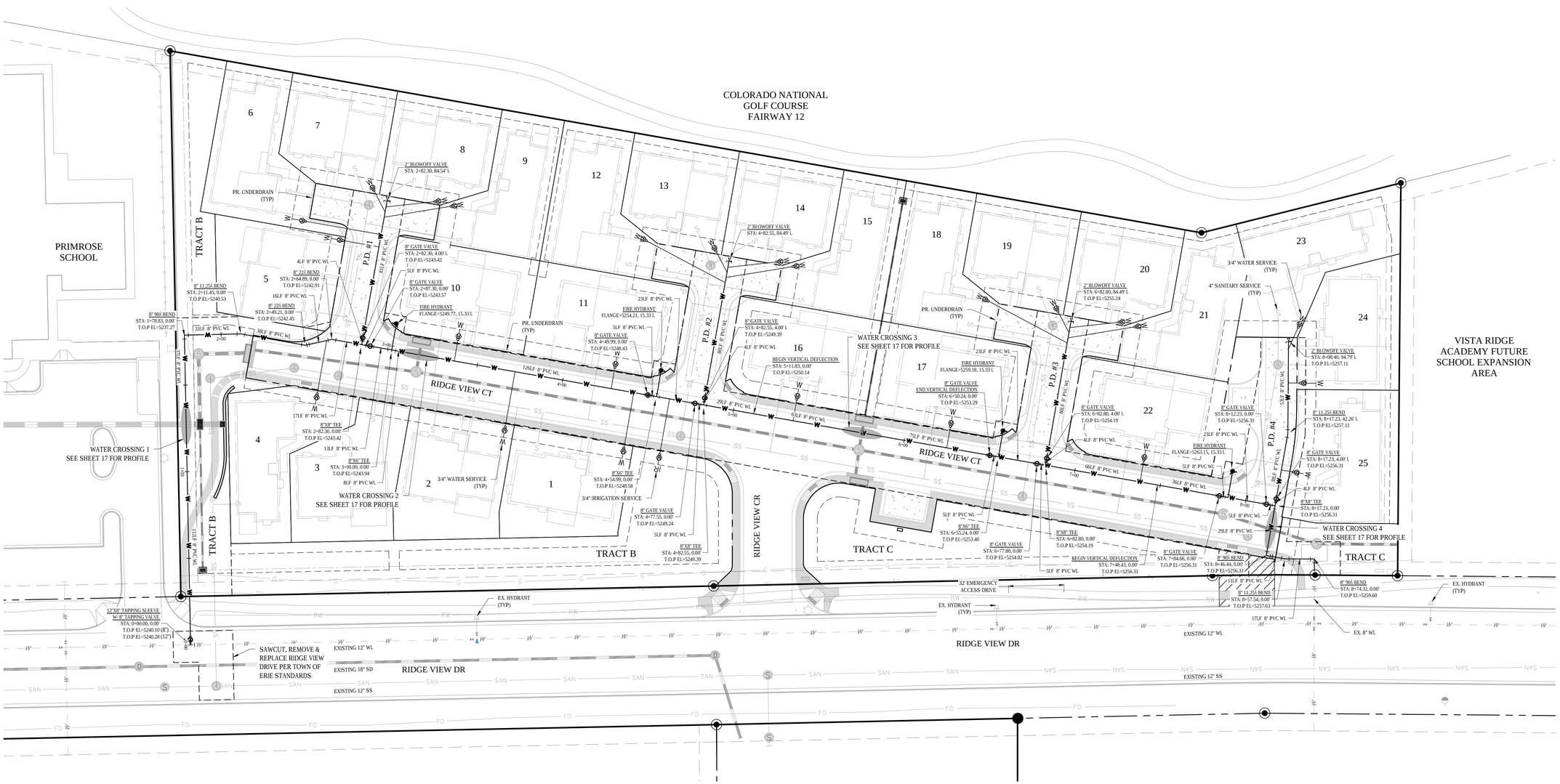
NOTES

1. ALL DOMESTIC WATER SERVICES TO BE 3/4" TYPE K COPPER UNLESS OTHERWISE NOTED
2. CURB STOP & WATER METERS PER TOWN OF ERIE STANDARD DETAIL W11 - W13

N

0' 15 30 60

SCALE: 1"=30'



PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
			BC	BG	SM

DSGN SM

ENERTIA CONSULTING GROUP
1529 MARKET STREET
DENVER, COLORADO 80202

CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR. STE 104
ERIE, COLORADO 80516

MONTEX - NORTH AT VISTA RIDGE
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TOWN OF ERIE, COLORADO

WATER PLAN

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	16 WAT-9.0.DWG
DWG	WAT-9.0
SHEET	16 OF18

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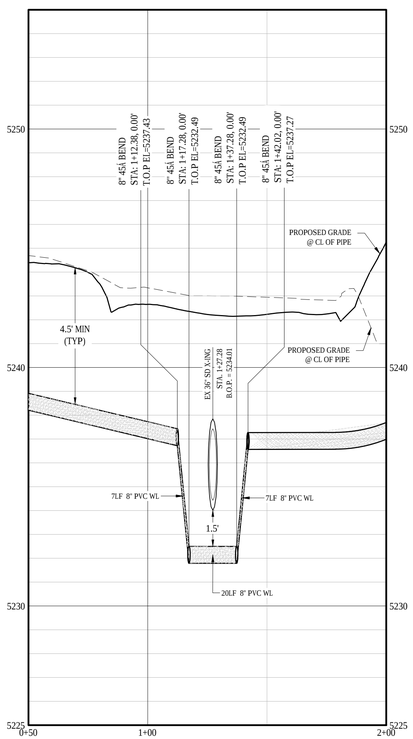
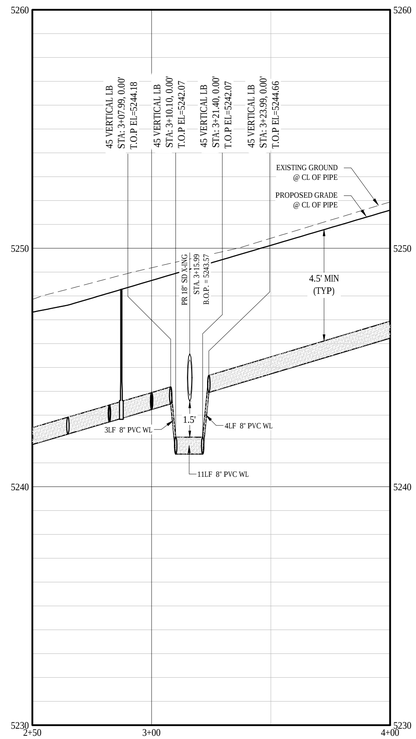
LEGEND

	PROPERTY LINE		FIRE HYDRANT
	CURB & GUTTER		MANHOLE
	ROW		SIGN
	CENTERLINE		CONCRETE SIDEWALK
	PROPOSED 5' CONTOUR		UNDERDRAIN
	PROPOSED 1' CONTOUR		EASEMENT
	EXISTING 5' CONTOUR		WALL
	EXISTING 1' CONTOUR		RIP RAP
	STORM INLET	5500.00	PROPOSED ELEVATION
	STORM DRAIN	5500.00	EXISTING ELEVATION
	LIGHT		CONCRETE PAVING



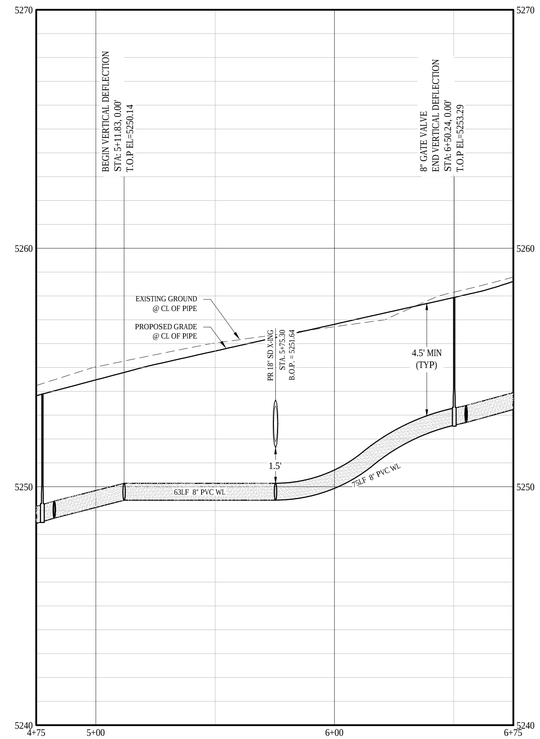
PROFILE: WATER CROSSING 1

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



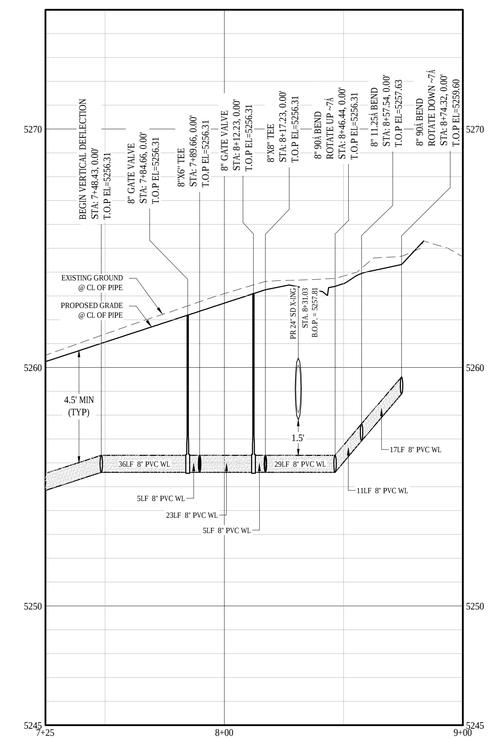
PROFILE: WATER CROSSING 2

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



PROFILE: WATER CROSSING 3

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3



PROFILE: WATER CROSSING 4

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3

PRELIMINARY
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NO.	DATE	REVISION

DSGN SM | DR BC | CHK BG | APVD SM

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CHARTERED HOMES OF COLORADO
3160 VILLAGE VISTA DR. STE 104
ERIE, COLORADO 80516

MONTEX - NORTH
AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

WATER CROSSING PROFILES

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	17 WAT-9.1.DWG
DWG	WAT-9.1
SHEET	17 OF 18

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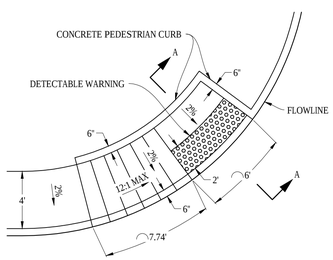
STANDARD DETAIL LIST

ITEM	DETAIL TYPE	MUNICIPALITY	DETAIL ID
STANDARD MANHOLE	SANITARY SEWER	TOWN OF ERIE	SS3A & SS3B
MANHOLE W/ PRIVATE UNDERDRAIN	SANITARY SEWER	TOWN OF ERIE	SS4
24" MANHOLE RING AND COVER	SANITARY SEWER	TOWN OF ERIE	SS6
TRENCH DETAIL	SANITARY SEWER	TOWN OF ERIE	SS8
TRENCH W/ PRIVATE UNDERDRAIN	SANITARY SEWER	TOWN OF ERIE	SS9
SERVICE MAINTENANCE LINE	SANITARY SEWER	TOWN OF ERIE	SS10
TYPICAL MH BASE CHANNELIZATION	SANITARY SEWER	TOWN OF ERIE	SS11A & SS11B
MANHOLE STEPS	SANITARY SEWER	TOWN OF ERIE	SS12
STEEL MARKER POST	SANITARY SEWER	TOWN OF ERIE	SS14
DOMESTIC SEWER TAPPING	SANITARY SEWER	TOWN OF ERIE	SS15
SEWER SERVICE CONNECTION	SANITARY SEWER	TOWN OF ERIE	SS18
PIPE CROSSING SUPPORT PAD	SANITARY SEWER	TOWN OF ERIE	SS19
DITCH OR PIPE CROSSING	SANITARY SEWER	TOWN OF ERIE	SS21
CURB INLET TYPE R	STORM DRAIN	CDOT	M-604-12
MANHOLES	STORM DRAIN	CDOT	M-604-20
MANHOLE STEPS	STORM DRAIN	TOWN OF ERIE	STM9
INLET & INLET COVER	STORM DRAIN	TOWN OF ERIE	STM10
FIRE HYDRANTS, MAINS & VALVES	WATERLINE	TOWN OF ERIE	W7
POLYETHYLENE WRAP	WATERLINE	TOWN OF ERIE	W9
POTABLE SERVICE LINE - ATTACHED WALK	WATERLINE	TOWN OF ERIE	W11A
WATER METER PIT - ⅝" x ¾", ¾" & 1" METER	WATERLINE	TOWN OF ERIE	W12A
1½" & 2" METER MANHOLE METER PIT	WATERLINE	TOWN OF ERIE	W13
MECHANICAL JOINT RESTRAINT	WATERLINE	TOWN OF ERIE	W17
COMBINATION FLANGED HARNESS LUG	WATERLINE	TOWN OF ERIE	W18
JOINT RESTRAINT	WATERLINE	TOWN OF ERIE	W19
TAPPING TEE AND VALVE	WATERLINE	TOWN OF ERIE	W21
DOMESTIC WATER TAPPING	WATERLINE	TOWN OF ERIE	W22
CONCRETE ENCASEMENT	WATERLINE	TOWN OF ERIE	W23
CROSSING STORM AND SANITARY SEWERS	WATERLINE	TOWN OF ERIE	W25
12" OR SMALLER WATERLINE LOWERING	WATERLINE	TOWN OF ERIE	W27
TRENCH DETAIL	WATERLINE	TOWN OF ERIE	W35
STANDARD VALVE AND BOX	WATERLINE	TOWN OF ERIE	W38
MONOLITHIC INTEGRAL CURBWALK	STREET	TOWN OF ERIE	SW2
CONCRETE CROSS PAN	STREET	TOWN OF ERIE	SW3
DRIVE CUT - ATTACHED WALK	STREET	TOWN OF ERIE	SW4B
MOUNTABLE CURB SECTION	STREET	TOWN OF ERIE	SW11
CURB RAMPS	STREET	CDOT	M-608-1

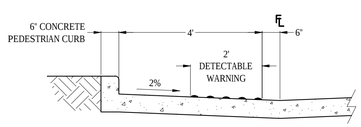
SANITARY SEWER SERVICE TABLE

	LOT	D/S MH	MAIN INV @ D/S MH	DISTANCE to D/S MH3	MAIN SLOPE (%)	MAIN INVERT	TEE INVERT AT MAIN2 3	SERVICE LENGTH TO FOUNDATION4	MIN SERVICE SLOPE (%)	SERVICE INVERT AT FOUNDATION (SIF)	MIN. HEIGHT FROM SIF TO TOF4	MIN. TOF ELEVATION1	DESIGN TOF ELEVATION
Montex North	1	MH-4	5236.35	119.8	0.0220	5238.99	5240.19	26	0.02	5240.71	13.3	5254.0	5254.65
	2	MH-4	5236.35	59.0	0.0220	5237.65	5238.85	26	0.02	5239.36	13.3	5252.7	5252.73
	3	MH-4	5236.35	24.0	0.0220	5236.88	5238.08	67	0.02	5239.41	11.9	5251.3	5251.35
	4	MH-1	5234.64	104.8	0.0040	5235.06	5236.26	15	0.02	5236.56	13.3	5249.9	5250.93
	5	MH-4	5236.45	34.0	0.0100	5236.79	5237.99	27	0.02	5238.53	12.4	5250.9	5250.96
	6	MH-4	5237.45	CONNECTS TO MANHOLE		5237.45	5237.95	75	0.02	5239.46	11.9	5251.4	5251.32
	7	MH-9	5237.45	CONNECTS TO MANHOLE		5237.45	5237.95	40	0.02	5238.75	12.8	5251.6	5251.53
	8	MH-9	5237.45	CONNECTS TO MANHOLE		5237.45	5237.95	40	0.02	5238.75	13.3	5252.1	5252.79
	9	MH-4	5237.45	89.3	0.0100	5238.34	5239.54	84	0.02	5241.23	12.5	5253.7	5253.74
	10	MH-4	5237.35	54.2	0.0220	5238.54	5239.74	46	0.02	5240.66	12.5	5253.2	5253.18
	11	MH-4	5237.35	146.1	0.0220	5240.56	5241.76	46	0.02	5242.68	12.8	5255.5	5255.5
	12	MH-5	5241.06	92.3	0.0100	5241.98	5243.18	75	0.02	5244.69	12.0	5256.7	5256.67
	13	MH-10	5242.06	CONNECTS TO MANHOLE		5242.06	5242.56	40	0.02	5243.36	13.0	5256.4	5256.35
	14	MH-10	5242.06	CONNECTS TO MANHOLE		5242.06	5242.56	40	0.02	5243.36	13.3	5256.7	5258.49
	15	MH-5	5241.06	89.3	0.0100	5241.95	5243.15	84	0.02	5244.84	13.3	5258.2	5259.67
	16	MH-5	5240.96	52.4	0.0220	5242.11	5243.31	46	0.02	5244.23	13.3	5257.6	5258.37
	17	MH-5	5240.96	142.4	0.0220	5244.09	5245.29	46	0.02	5246.21	13.3	5259.5	5260.81
	18	MH-6	5245.67	92.3	0.0100	5246.59	5247.79	75	0.02	5249.30	12.5	5261.8	5261.76
	19	MH-11	5246.67	CONNECTS TO MANHOLE		5246.67	5247.17	40	0.02	5247.97	13.3	5261.3	5261.47
	20	MH-11	5246.67	CONNECTS TO MANHOLE		5246.67	5247.17	40	0.02	5247.97	13.3	5261.3	5263.16
	21	MH-6	5245.67	89.3	0.0100	5246.56	5247.76	84	0.02	5249.45	13.3	5262.8	5264.86
	22	MH-6	5245.57	55.3	0.0300	5247.23	5248.43	46	0.02	5249.35	13.3	5262.7	5264.15
	23	MH-8	5250.83	CONNECTS TO MANHOLE		5250.83	5251.33	66	0.02	5252.65	13.3	5266.0	5267.81
	24	MH-8	5250.83	CONNECTS TO MANHOLE		5250.83	5251.33	57	0.02	5252.46	13.3	5265.8	5267.04
	25	MH-7	5249.83	31.0	0.0100	5250.14	5251.34	61	0.02	5252.55	13.3	5265.9	5266.88

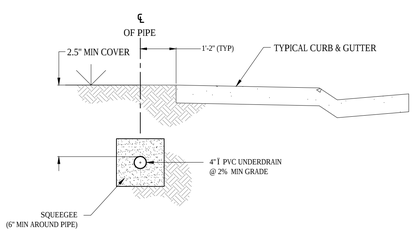
NOTES:
1. TABLE IS PROVIDED FOR INFORMATION ONLY. CONTRACTOR TO VERIFY 2% MINIMUM SERVICE GRADE AND A MINIMUM DEPTH OF 13.3' BELOW TOP OF FOUNDATION PRIOR TO CONSTRUCTING FOUNDATION.
2. ASSUMED TEE ELEVATION OF SANITARY SERVICE EQUALS MAIN INV. + 1.2'. ALL SERVICES THAT ARE CONNECTED DIRECTLY TO MANHOLES WILL NOT REQUIRE A TEE.
3. SERVICES THAT ARE CONNECTED DIRECTLY TO MANHOLES ARE SET 0.5 FT ABOVE INVERT OUT.
4. REFER TO THE TYPICAL SERVICE DETAIL ON SHEET 18 OF THE VISTA RIDGE FILING NO. 2, 1ST AMENDMENT CIVIL CONSTRUCTION DOCUMENTS.



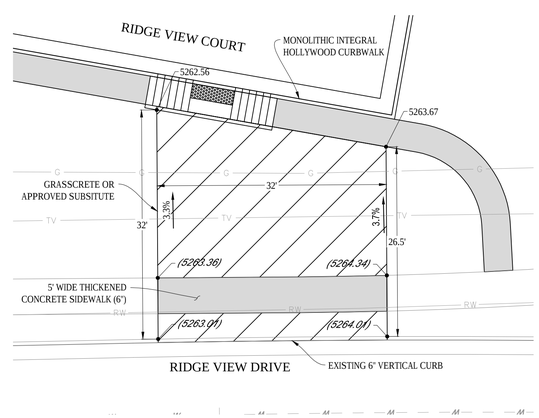
A 18 PRIVATE DRIVE INTERSECTION CURB RAMP
PLAN
NTS



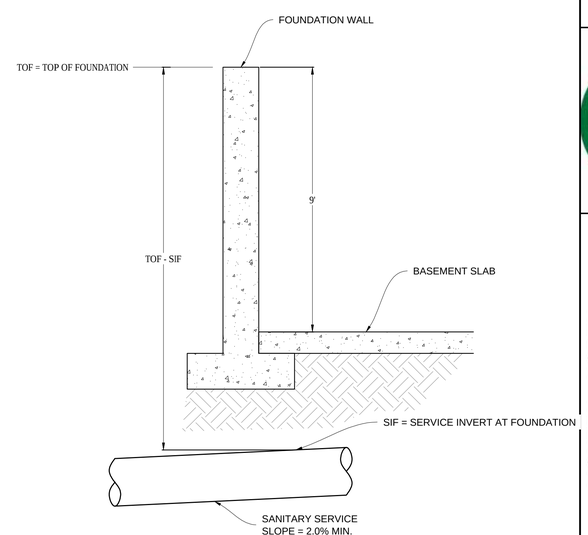
A-A SECTION A-A
NTS



B 18 UNDERDRAIN TRENCH
SECTION
NTS



C 18 EMERGENCY SECONDARY ACCESS
PLAN
NTS



D 18 TYPICAL SANITARY SERVICE DETAIL
(SERVICE TYPICAL AND MAY VARY DEPENDING ON CONSTRAINTS)
NTS

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	BC	CHK	BG	APVD	SM
DSGN	SM							

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MONTEX - NORTH AT VISTA RIDGE
CIVIL CONSTRUCTION DOCUMENTS
TOWN OF ERIE, COLORADO

GENERAL DETAILS

NOT FOR CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 17, 2014
FILE	18 DTL-10.0.DWG
DWG	DTL-10.0
SHEET	18 OF18

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GENERAL ECOLOGICAL RESOURCES SURVEY

Montex at Vista Ridge

14.23 Acres within Section 33,

Township 1 North, Range 68 West

Erie, Colorado 80516

PREPARED FOR:

Chartered Development Corporation
c/o Ward Ritter
3160 Village Vista Drive, Suite 104
Erie, Colorado 80516

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Littleton, Colorado 80120
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GENERAL ECOLOGICAL RESOURCES SURVEY

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Project Number: 571-012-01

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3160 Village Vista Drive, Suite 104
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October 31st, 2014

Prepared by:

Austin Curry
Staff Scientist

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1.0 INTRODUCTION

Western Environment and Ecology, Inc. (Western Environment) was retained by Mr. Ward Ritter, of the Chartered Development Corporation, to conduct a general survey of ecological resources, including threatened and endangered species, wetlands, and other significant habitats, on approximately 14.23 acres within the Town of Erie, Colorado. Mr. Ritter indicated that this study was in response to potential residential development of the site.

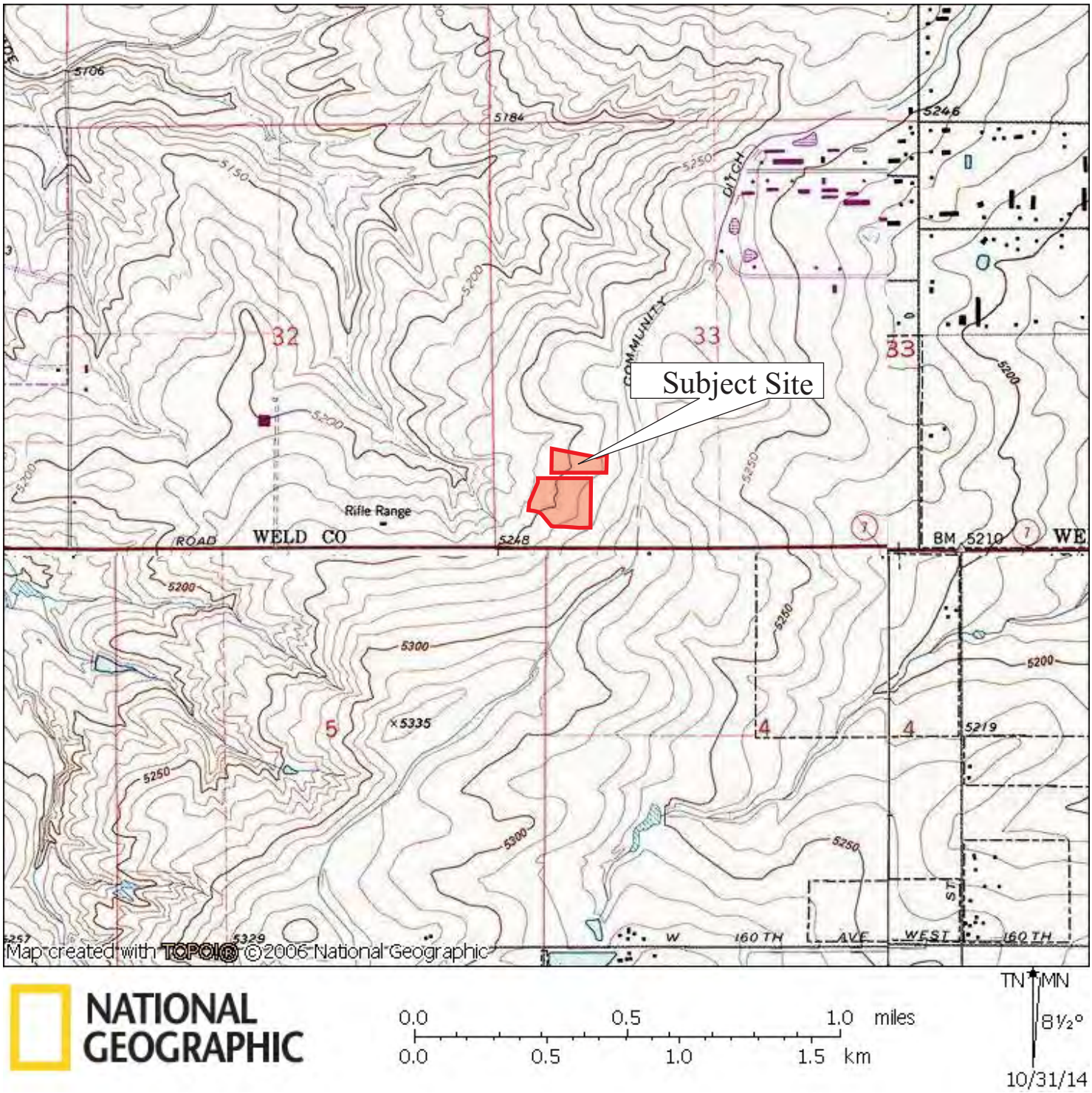
The objectives of this study were to (1) establish presence/absence and potential habitat of any federal or state threatened and endangered species on the property, (2) identify any wetlands or other ecologically sensitive areas on and adjacent to the property, and (3) make practical recommendations based on the results of the study.

View of the site from the east, Colorado National Golf Course to the right

2.0 STUDY AREA

The project site consists of two parcels totaling approximately 14.23 acres within Section 33, Township 1 North, Range 69 West, within the Town of Erie, Weld County, Colorado (Figure 1). The property is part of the Vista Ridge Subdivision located northeast of the intersection of East Baseline Road and Mountain View Boulevard (Figure 2). Ridge View Drive bisects the project site into two parcels. Colorado National Golf Course comprises the northern property boundary, Primrose Preschool borders the property to the northwest, and the Northern Ridge Baptist Church is present to the northeast. Undeveloped properties surround the southern parcel of the project. Properties in dry-farm agricultural production border the site to the south and east, while the lots comprising the western boundary are primarily covered with smooth brome (*Bromus inermis*) and cheatgrass *(Bromus tectorum*). Residential developments are present to the north, west and southwest of the project site.

The subject property was vacant at the time of the investigation. The majority of the site consisted of fallow dry-farm agricultural land dominated by Alfalfa (*Medicago sativa*). Additionally, a small hill, covered with smooth brome and cheatgrass, occurred on the southwestern end of the site. Bunch grass, short native grasses, and Russian thistle (*Salsola australis*) were also present on the site. No woody vegetation was present on the property. The approximate mean elevation of the property is 5,250 feet above sea level (USGS Frederick 7.5 Minute Quadrangle, 1994). The topography is generally flat, with a gradual slope to the west. Site geology includes eolian clays, silts and sands overlying the Cretaceous Age Laramie Formation (Tweto, 1979). The USRCS classifies the soils as Ulm clay loam on 0 to 3% slopes. No streams or stream beds occur on the property.



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Littleton, Colorado 80120

Figure 1 - Project Location Map,
14.23 Acres within Section 33,
Township 1 North, Range 68 West,
Erie, Colorado

Scale in feet

200 0 200 400

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Littleton, Colorado 80120

Figure 2 - Site Map,
14.23 Acres within Section 33,
Township 1 North, Range 68 West,
Erie, Colorado

3.0 METHODS

Species that are federally or state listed as threatened or endangered, including federally proposed and candidate species, occurring or having historically occurred in Weld County were considered for this study (Table 1). The county classification was determined by following the Colorado Field Office of the U.S. Fish and Wildlife Service's county checklist (USFWS, 2011). The list was narrowed based on habitat requirements of the species relative to existing habitats on the project.

The property was surveyed on October 22nd, 2014. Information was collected on topography, ecosystems, and species of flora and fauna found on and adjacent to the property. Photographs were taken, and emphasis was placed on potential habitat of threatened and endangered species, and the presence of wetlands.

View of the site from the south

Table 1. Common name, scientific name, and status of federal and state threatened and endangered species that could occur or historically occurred in the Colorado Piedmont (CDOW, 2008; USFWS, 2008).

Common Name	Scientific Name	Status[1]
Birds		
Bald eagle	*Haliaeetus leucocephalus*	ST
Whooping crane	*Grus americana tabida*	FE, SE
Least Tern	*Sterna antillarum*	FE, SE
Mountain plover	*Charadrius montanus*	FPT, SC
Piping plover	*Charadrius melodus*	FT, ST
Mexican spotted owl	*Strix occidentalis lucida*	FT, ST
Plains Sharp-Tailed Grouse	*Tympanuchus phasianellus jamesii*	SE
Western burrowing owl	*Athene cunicularia*	ST
Lesser Prairie Chicken	*Tympanuchus pallidicinctus*	ST
Ferruginous Hawk	*Buteo regalis*	SC
Mammals		
Black-footed ferret	*Mustela nigripes*	FE, SE
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	FT, ST
Canada Lynx	*Lynx canadensis*	FT, SE
Kit Fox	*Vulpes macrotis*	SE
Black-tailed prairie dog	*Cynomys ludovicianus*	SC
Amphibians		
Boreal Toad	*Bufo boreas boreas*	SE
Northern Leopard Frog	*Rana pipiens*	SC
Plants		
Ute ladies'-tresses	*Spiranthes diluvialis*	FT
Colorado butterfly plant	*Gaura neomexicana coloradensis*	FT
Insects		
Pawnee montane skipper	*Hesperia leonardus montana*	FT

[1]**Status Codes:** FE = Federally Endangered, FT = Federally Threatened, FPT = Federally Proposed as Threatened, FC = Federal Candidate, SE = State Endangered, ST = State Threatened, SC = State Concerned

4.0 RESULTS AND DISCUSSION

4.1 Wetlands

No perennial waters, wetlands or obvious wetland habitat was observed on the project. Vegetation on the site was dominated by non-irrigated Alfalfa (*Medicago sativa*).

Western Environment evaluated, to the best of our ability based upon site conditions at the time of the survey, the three components of a jurisdictional wetland as defined in the US Army Corp of Engineers, (ACOE) Wetland Delineation Manual (1987). These components are: 1) Vegetation, 2) Soil and 3) Hydrology. The ACOE Manual defines *Nonwetlands* as "including upland areas that are neither deepwater aquatic habitats, wetlands, nor other special aquatic sites. They are seldom or never inundated, or if frequently inundated, they have saturated soils for only brief periods during the growing season, and, if vegetated, they normally support a prevalence of vegetation typically adapted for life only in aerobic soil conditions."

The U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill materials into Waters of the U.S. under the authority of Section 404 of the Clean Water Act. Waters of the U.S. include ephemeral, intermittent and perennial streams, their surface connected wetlands and adjacent wetlands, certain lakes, ponds, drainage ditches and irrigation ditches that have a nexus to interstate commerce.

<u>It is the opinion of Western Environment that the proposed development, as shown on Figure 2, does not impact waters or habitat subject to Corps regulations under Section 404 of the Clean Water Act</u>.

4.2 Wildlife Species Eliminated from Consideration as Occurring on the Project

The following threatened and endangered species that have historically been thought to occur in Weld County were immediately ruled out of serious consideration for this project based on available habitat: Mexican spotted owl, whooping crane, least tern, Canada lynx, kit fox, black-footed ferret, boreal toad, and Colorado butterfly plant.

The Mexican spotted owl was eliminated because it requires forests that are not present on the project. The whooping crane was also eliminated due to rarity in Colorado, and no known nesting or feeding habitat exists on or adjacent to the property. Less than 20 sightings of whooping cranes along the eastern plains and mountainous regions of Colorado have been recorded since 1931 (Andrews and Righter, 1992). The least tern inhabits sandy shorelines of reservoirs, lakes, and rivers with bare sandy shorelines. This shore bird is a casual to very rare spring and fall migrant on the northeastern plains of Colorado, and is unlikely to occur on the subject project.

The Canada lynx is a rare forest-dwelling species of northern latitudes that feeds primarily on snowshoe hares. No lynx habitat or its prey exist on the subject site. The kit fox is only know to occur on Colorado's desert slopes ranging from Montrose to Grand Junction. The black-footed ferret, which was eradicated from the Colorado Piedmont, has only been recently reintroduced in small numbers in northern Larimer and Weld Counties. These are experimental populations under study by the US Fish and Wildlife Service.

Colorado's only alpine species of toad, the boreal toad, has been found in spruce-fir forests and alpine meadows at elevations between 7,000 and 12,000 feet. The toad also requires lakes, marshes, ponds, or bogs with shallow water for breeding. These habitats do not exist on the property.

The Colorado butterfly plant has only been found in northern Larimer County in recent years and is generally associated with streams that do not exist onsite (Colorado Native Plant Society 1997).

4.3 Species Included in Survey

Western Burrowing Owl (*Athene cunicularia*)

State Threatened

The burrowing owl is found primarily in eastern Colorado as a summer resident. Two aspects of the biology of the western burrowing owl appear to influence both its regional and local abundance: 1) it prefers areas of short vegetation, and 2) it rarely, if ever, digs its own burrows. This migratory species is most often seen in Colorado during the summer months. Historically, burrowing owls were common wherever there were prairie dog colonies in northeastern Colorado. During the inspection, no prairie dog colonies were observed on the property.

Western burrowing owl, photo acquired on www.corbis.com.

Bald Eagle (*Haliaeetus leucocephalus*)

State Threatened

The bald eagle was removed from the Federal Endangered and Threatened Species List on July 9th, 2007. Western Environment reviewed the Natural Diversity Information Source (NDIS) and identified no active or inactive bald eagle nests within on or adjacent to the project. In winter bald eagles are transient and use areas that provide feeding and roosting opportunities. There is no permanent water or large trees on the property, therefore, it is unlikely that any bald eagles use the site. The Colorado Oil and Gas Conservation Commission (COGCC) did not indicate that a "Sensitive Wildlife Habitant" as defined by COGCC Series Rule 1200, for Bald Eagle Nesting and Roosting, was located near the subject property.

Mountain Plover (*Charadrius montanus*)

State Concerned Species

Typical habitat characteristics of the mountain plover are a mixture of short vegetation, bare ground, and a flat topography at both breeding and wintering locations. This small shorebird breeds in Colorado, and in parts of its breeding range the species commonly shows a preference for prairie dog towns and sites that are heavily grazed by domestic livestock. Prairie dog grazing promotes the short grasses that the plover prefers, and their digging creates areas of bare soil important for plover nesting. Mountain plovers were proposed for federal listing as threatened on February 16, 1999 (USFWS, 1999b), however the U.S. Fish and Wildlife Service withdrew the proposal on September 8, 2003. Mountain plovers breed in Eastern Colorado from approximately April 1st through August 1st. It is our opinion that no habitat conducive to Mountain Plovers was observed on the project.

Piping Plover *(Charadrius melodus)*

Federally Threatened, State Threatened

This small shorebird can be found on very sparsely vegetated beaches, mudflats and sandy areas near water on shores and islands. Piping Plovers usually arrive in Colorado in late April or early May, and leave when the nesting cycle is completed, or by late August. Nesting populations have been documented in eastern Colorado along the South Platte and Arkansas River drainages. Food sources for Piping Plovers include insects, crustaceans and other small aquatic animals. Plovers feed along beaches, especially in areas where waves have washed up debris (CDOW, 1994). Due to the lack of sandbars or mud-flats in the vicinity of the project, it is unlikely to occur.

Plains Sharp-Tailed Grouse *(Tympanuchus phasianellus jamesii*)

State Endangered

The Plains Sharp-Tailed Grouse historically occurred on Colorado's eastern grasslands. Grouse habitat is characterized by rolling hills with Gambles oak, sage brush, service berries and

grassy glades. This grouse is a resident from Alaska east to the Hudson Bay, and south to northern New Mexico. Currently, Colorado populations occur in Douglas County, northern and eastern Weld County, and Logan County east of Sterling. No known populations of the Plains Sharp-Tailed Grouse are known to occur in proximity to the subject project (CDOW, 2008).

Lesser Prairie Chicken (*Tympanuchus pallidicinctus*)

State Threatened

Historically, this bird occupied the grasslands of Texas, Oklahoma, New Mexico, Kansas and southeastern Colorado. It prefers sandy grassland areas abundant in midgrasses, sandsage and yucca. The majority of Colorado breeding pairs occur in the southeastern portion of the state in Baca, Prowers, Kiowa and Cheyenne Counties, and for the most part, on the Comanche National Grasslands near Campo. No known populations of the Plains Sharp-Tailed Grouse are known to occur in proximity to the subject project (CDOW, 2008).

Ferruginous Hawk (*Buteo regalis*)

State Concerned

This hawk is known to occur throughout eastern Colorado and in northwestern Colorado. In Colorado, the species is a common winter resident, but is considered an uncommon summer resident on the eastern plains (Andrews and Righter, 1992). Areas that could be potential nesting sites include large trees, rock outcrops, manmade structures such as windmills and power poles, or the ground. These birds often can be seen associated with prairie dog colonies, which they utilize for foraging. This hawk, as are all birds of prey, is federally protected under the Migratory Bird Species Act.

Preble's Meadow Jumping Mouse

(*Zapus hudsonius preblei*)

Federally Threatened, State Threatened

Preble's meadow jumping mouse

Typical Preble's habitat has been described as "well-developed plains riparian vegetation with relatively undisturbed grassland and a water source in close proximity," and "dense herbaceous vegetation consisting of a variety of grasses, forbs and thick shrubs" (Armstrong et al., 1997). Although any vegetation could offer cover and hibernacula for Preble's, the species is mostly known from habitat containing shrub cover, such as willow or narrow-leaf cottonwood.

Preble's are known to regularly range outward into adjacent uplands to feed and hibernate. For this reason, the U.S. Fish and Wildlife Service generally requires a 300 foot development buffer from the edge of the 100 year flood plain. Although Weld County is not contained within the USFWS Denver Metropolitan area Block Clearance Zone (BCZ), riparian habitat with a permanent water source likely suitable to Preble's was not observed on or adjacent to the project site.

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

Former Candidate for Federal Listing, State Concerned

The U.S. Fish and Wildlife Service was petitioned to list the black-tailed prairie dog as a threatened species in July of 1998. The agency determined on February 3rd, 2000, that listing the species was warranted, but it was precluded because other species were in greater need of protection (USFWS, 2000). The black-tailed prairie dog was added to the candidate list, and the species' status was reviewed annually. On August 12th, 2004 the USFWS determined that the black-tailed prairie dog no longer meets the Endangered Species Act definition as threatened, and

was removed as a candidate for federal listing. The City of Erie, and Weld County have prepared Administrative Procedures and Policies for Prairie Dog Management. The inspection of the subject property identified no prairie dog colonies.

Ute Ladies'-Tresses Orchid

Ute Ladies'-Tresses Orchid (*Spiranthes diluvialis*)

Federally Threatened

This orchid usually occurs in "...old stream channels, alluvial terraces, wet meadows, and other sites where the soil is saturated to within 18" of the surface at least temporarily during the growing seasons" (USFWS, 1992). The eastern Colorado populations of species are located in mesic riparian meadows in relict tall grass prairie areas near Boulder Creek, South Boulder Creek, and Saint Vrain Creek in Boulder County, Colorado, and in mesic meadows in the riparian woodland understory along Clear Creek in Jefferson County, Colorado (USFWS 50 CFR Part 17). One population was historically identified in Weld County east of Greeley near Crow Creek in 1856, but is now considered extirpated. Soil conditions and vegetation composition of known *Spiranthes* sites suggest that wetlands regulated by the Corps under the Clean Water Act qualify as potential *Spiranthes* habitat. Orchid surveys are required in Boulder and Jefferson Counties, and in the 100-year flood plains and perennial tributaries of the South Platte River, Fountain Creek, and the Yampa Rivers if construction is expected to impact these areas (USFWS 1992). Generally, these surveys must be completed during blooming season (July 20 to August 31). It should be noted that the survey is only required in areas where proposed construction activities are to occur in potential *Spiranthes* habitat, and only when a **Federal** permit (for instance a permit to place fill materials into a Waters of the U.S. under Section 404 of the Clean Water Act) or **Federal** funding is utilized for an activity in those habitats. If a Federal

permit or funding is needed for an activity on the project, the agency responsible for issuing the permit or providing the funds would consult the Service to determine how the action may affect the species or its designated critical habitat. The Service would then work with the agency and/or landowner to modify the project and minimize impacts. No perennial waters occur on the property, nor is *Spiranthes* designated Critical Habitat. It is the opinion of Western Environment that *Spiranthes* does not inhabit the project.

Pawnee montane skipper (*Hesperia leonardus montana*)

Federally Threatened

This butterfly occurs in dry, open Ponderosa pine woodlands at an elevation range of 6,000 to 7,000 feet within the Pikes Peak Granite formation. Assessment of the skipper indicates that the insect's habitat is centered near Deckers, Colorado, with their range estimated to be 37.9 square miles (USFWS, 1998). The adult butterflies emerge from their pupae in late July for feeding and mating. The females then deposit their eggs on the leaves of blue grama grass, the larval food supply. Little is known about the larval and pupal stages of the species. Recent surveys of the skipper suggest that their populations may be at an all time high (recorded) after the Hayman Fire of 2002 (Colorado Natural Heritage Program, January 2005). This is likely due to the necessity of fire to remove trees, and promote herbaceous grass growth including blue grama and gayfeather on the forest floor. The subject project does not occur in known Pawnee montane skipper habitat.

Other Wildlife

Western Environment did not observed any wildlife on, or adjacent to the project site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

At the time of the survey, no threatened or endangered species or their obvious habitat were seen on the subject site. Additionally, no wetlands or Waters of the U.S. subject to regulation under Section 404 of the Clean Water Act occur on the project.

No ecological issues were identified with the site.

6.0 LITERATURE CITED

Andrews, R. and R. Righter. 1992. Colorado birds: a reference to their distribution and habitat. Denver Museum of Natural History. Denver. 442 pp.

Armstrong, D.M., M.E. Bakeman, A. Deans, C.A. Meaney, and T.R. Ryon. 1997. Conclusions and recommendations *in*: Report on habitat findings on the Preble's meadow jumping mouse. Edited by M. E. Bakeman. Report to USFWS and Colorado Division of Wildlife.

Bechard, M.J., Knight, D.G., Smith, and R.E. Fitzner. 1990. Nest sites and habitats of sypatric hawks (*Buteo spp*.) Washington Journal of Field Ornithology 61:159-170.

Colorado Division of Wildlife. 1999. Endangered, Threatened, and Special Concern Wildlife

Colorado Division of Wildlife. November 2003. Conservation Plan for Grassland Species in Colorado. Colorado Grassland Species Working Group. November 2003. Denver, Co.

Colorado Division of Wildlife. 2006. Natural Diversity Information Source Maps. Last Updated September, 2006.

Colorado Native Plant Society. 1997. Rare plants of Colorado, 2nd edition. Falcon Press® Publishing Co., Inc. and Rocky Mountain Nature Association in cooperation with Colorado Native Plant Society. Helena, Montana and Estes Park, Colorado. 105 pp.

Colorado Natural Heritage Program. January 2005. Pawnee Montane Skipper Post-fire Habitat Assessment Survey, September 2004.

Fitzgerald, J.P., C.A. Meaney, and D.M. Armstrong. 1994. Mammals of Colorado. Denver Museum of Natural History and University Press of Colorado. Niwot, Colorado. 467 pp.

Graul, W.D. 1975. Breeding biology of the mountain plover. Wilson Bulletin 87:6-31.

Hoogland, John L. 1995. The Black-tailed Prairie Dog. The University of Chicago Press, Chicago and London.

Jennings, W.F. 1989. Final report. Species studied: *Eustoma grandiflorum*, *Spiranthes diluvialis*, *Malaxis brachypoda*, *Hypoxis hirsuta*, *Physaria bellii*, *Aletes humilis*. Unpublished report prepared for the Nature Conservancy under the Colorado Natural History Small Grants Program. The Nature Conservancy, Boulder, Colorado. 48 pp.

Jennings, W.F. 1990. Final report. Species studied: *Spiranthes diluvialis*, *Sisyrinchium pallidum*. Unpublished report prepared for The Nature Conservancy under the Colorado Natural History Small Grants Program. The Nature Conservancy, Boulder, Colorado. 29 pp.

Jones, S.R. 1998. Burrowing owl. Pages 220-221 *in* H.E. Kingery, ed. Colorado breeding bird atlas. Colorado Bird Atlas Partnership. Denver.

Kingery, H.E. 1998. Colorado breeding bird Atlas. Colorado Bird Atlas Partnership. Denver.

Long, Kim. Prairie Dogs, A Wildlife Handbook, Johnson Books, Boulder, 2002.

National List of Plant Species That Occur in Wetlands, Region 4, 5, and 8, Resource Management Group, Inc., Michigan, 1994.

Nichols, F.E. and J.A. Daley. 1995. 1995 Prairie Dog Counts on the Cathy Fromme Prairie. Professional report submitted to the Fort Collins Natural Resources Department. 8p.

Remote Sensing Research. 1996. 1996 Coyote Ridge Prairie Dog Study. Professional report submitted to the City of Fort Collins Natural Resources Department.

Sibley, David Allen. 2000. The Sibley Guide to Birds. Alfred A. Knopf, Inc. New York.

Tileston, J.V., and R.R. Lechleitner. 1966. Some Comparisons of the Black-tailed and White-tailed Prairie Dogs in North-central Colorado. American Midland Naturalist 75:292-316.

U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Adams County, Colorado. Historical Replica, October 1974.

U.S. Department of Agriculture, NRCS. 2001. The PLANTS Database, Version 3.1 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA

U.S. Department of Agriculture. No date. Midwestern wetland flora: Field office guide to plant species. USDA Soil Conservation Service, Midwest National Technical Center, Lincoln, Nebraska. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page http://www.npwrc.usgs.gov/resource/othrdata/plntguid/plntguid.htm (Version 16JUL97).

U.S. Fish and Wildlife Service, Region 6, Pawnee Montane Skipper Butterfly Recovery Plan. September, 1998

U.S. Fish and Wildlife Service Ecological Services Colorado Field Office, Federally Listed and Candidate Species and Their Status in Colorado, August 21, 2001.

U.S. Fish and Wildlife Service. 1999. Interim Survey Guidelines for Preble's Meadow Jumping Mouse.

U.S. Fish and Wildlife Service. 1992. Interim Survey Requirements for *Spiranthes Diluvialis*.

U.S. Fish and Wildlife Service. 1999b. Services proposes to list mountain plover as threatened. News Release 99-02.

U.S. Fish and Wildlife Service. Fish and Wildlife Service Proposes to Remove the Preble's Meadow Jumping Mouse from the Endangered Species List, News Release. Jan. 28, 2005.

Whitson, Tom, et al. 2000. Weeds of the West. Western Society of Weed Science, Newark, CA.

Cultural Resource File Search – Montex North at Vista Ridge

A cultural resource file search was conducted by History Colorado on October 30, 2014. The file search included historical, cultural resources, archaeological and paleontological data base review. As shown on the attached History Colorado letter, 5 sites and 2 surveys were located in the vicinity of the project area. Further analysis indicates that the sites and surveys were not located on the Montex North site.

HISTORY COLORADO
Office of Archaeology and Historic Preservation
1200 Broadway, Denver, Colorado 80203

Mr. Sean O'Hearn
Enertia Consulting Group
1437 Larimer Street,
Denver, CO 80202

October 30, 2014

Re: Vista Ridge Filing 14, Montex at Vista Ridge
File Search No. 18544

At your request, the Office of Archaeology and Historic Preservation has conducted a search of the Colorado Inventory of Cultural Resources located in the following areas:

PM	T	R	S
6th	1N	68W	33

5 sites and 2 surveys were located in the designated area(s).

If information on sites in the project area was found, detailed information follows the summary. If no sites or districts were found, but surveys are known to have been conducted in the project area, survey information follows the summary. We do not have complete information on surveys conducted in Colorado, and our site files cannot be considered complete because most of the state has not been surveyed for cultural resources. There is the possibility that as yet unidentified cultural resources exist within the proposed impact area.

Therefore, in the event there is Federal or State involvement, we recommend that a professional survey be conducted to identify any cultural resources in the project area, which are eligible to be listed in the National Register of Historic Places. We look forward to consulting with you regarding the effect of the proposed project on any eligible cultural resource in accordance with the Advisory Council on Historic Preservation Procedures and the Preservation and Protection of Historic and Cultural Resources (36 CFR 800). Please provide this office with the results of the cultural resource survey for our review of professional adequacy and compliance with regulations.

If you have any questions, please contact the Office of Archaeology and Historic Preservation at (303) 866-3395 or 3392.

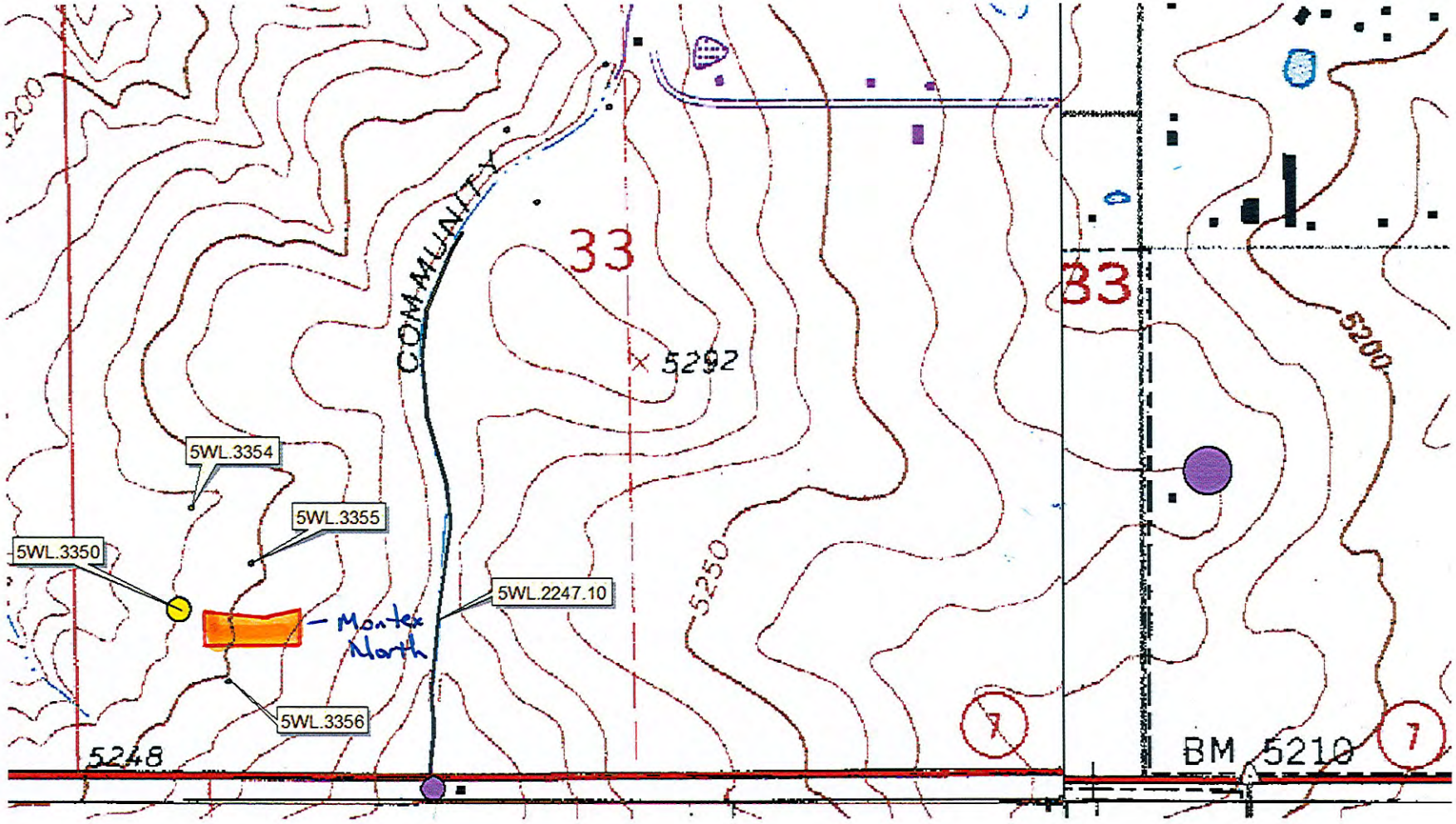
Thank you for your interest in Colorado's cultural heritage.

Richard Wilshusen
Deputy State Historic Preservation Officer for Archaeology
State Archaeologist

Kevin Black
Assistant State Archaeologist

*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included in documents for public distribution.

18544_s/18544_sy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Montex North
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Sean O'Hearn

From: ., HC_FileSearch
Sent: Friday, October 31, 2014 8:07 AM
To: Sean O'Hearn
Subject: Re: new file search in Erie CO

Hi Sean,

Sure I can measure those distances. From the ditch, 5WL3356 is due west 305 meters (1000 feet), and from Highway 7 it is due north 140 meters (459 feet).

Again, sorry I wasn't able to definitively say whether these resources were in or out. I usually can work from a map of a project area and do that.

One thing to note is 5WL3356 was just what is called an Isolated Find. That means a single or few artifacts with no evidence for any longer use or occupation were all that was found. In the case of 5WL3356 it was just a single piece of historic glass. Isolated finds are not eligible, by definition, to the National Register of Historic Places.

Bob

On Thu, Oct 30, 2014 at 3:03 PM, Sean O'Hearn <sean.ohearn@enertiacg.com> wrote:

Thanks for the help Bob. The only resource area that may be on the site is 5WL.3356. Using your system, can you approximately measure the distance from 5WL.3356 to the irrigation ditch and to SH 7? That will help us locate our site on your map, in lieu of sending a shape file (we don't have that capability).

This has certainly been the most interesting site we've worked on together! Thanks again. Sean

From: ., HC_FileSearch [mailto:hc_filesearch@state.co.us]
Sent: Thursday, October 30, 2014 10:57 AM

To: Sean O'Hearn
Subject: Re: new file search in Erie CO

Hi Sean,

Attached you will find a file containing information on the sites and surveys we have in our database for the legals you requested. The file is in a flat ASCII format. The fields are comma delimited and the values within those fields are ">" delimited. Our fields are all of unlimited length and should all be treated as character. On the following page you will find a list of the fields in the order that they appear in the file as well as a description of each. I hope all of this helps. If you have any further questions please feel free to call me at (303) 866-5216.

Sincerely,
Robert Cronk

File: Sites

FIELD NAMES	**DESCRIPTION**
ID	Smithsonian Trinomial assigned to the site.
SITE.NAME	Name of the site.
RESOURCE.TYPE	The resource type as defined by the National Register.
ADDRESS	The address of the resource.
ASSESSMENT	The status of the site in regards to its eligibility to the National Register.
ASSESSMENT.DATE	The date that the assessment was made.
ORGANIZATION	The name of the organization that recorded the site.
RECORDING.DATE	The date that the site was recorded.
CONDITION	The integrity of the site as well as if it has been tested, excavated or vandalized.
CONDITION.DATE	Date associated with condition.
SITE.DOC.ID	Unique ID number of the document in which the site is referenced.
SITE.DOC	The name of the document in which the site is referenced.
ARCHAEOLOGICAL.TYPE	Type of site.
CULTURE	The culture of the people who created the site.
FEATURE	Features found on the site.
FEATURE.COUNT	How many of each feature type found on the site.
ARTIFACT	Artifacts found on the site.
ARTIFACT.COUNT	How many of each artifact type found on the site.
ARCHITECTURE.SITE.TYPE	Historic site type.
ARCHITECTURE.ORIGINAL.USE	The original use of the building. Also may be the type of architectural site.
ARCHITECTURE.PRESENT.USE	The present use of the building. Yet another category where the historians may have stuck the architectural site type.
ARCHITECTURE.STYLE	Architectural style of the property.
ARCHITECTURE.FEATURES	Features and unusual aspects of the property, i.e. gargoyles.
ARCHITECTURE.ARCHITECT	Name of the architect of the property.
ARCHITECTURE.INTEGRITY	Condition of the property as compared to when it was built.
ARCHITECTURE.EARLY.DATE	Earliest date that the property could have been constructed. If there is only an early date, then it is the exact date construction.
ARCHITECTURE.LATE.DATE	Latest date that the property could have been constructed. With early date the date range in which the property was built.
PRINCIPAL.MERIDIAN	Principal Meridian in which the site is located.
TOWNSHIP	Township in which the site is located.
RANGE	Range in which the site is located.
SECTION	Section in which the site is located.
MAPS	The names of the USGS Topographical Quadrangles on which the site is located.
*ZONE.EAST	The zone and easting coordinate of the UTM in a ##;###### format, where the ##; represents the zone.
*NORTH	The northing coordinate of the UTM in a ####### format.

*If the site area is less than 10 acres, then a center point is given. If the area is greater than 10 acres it will be enclosed in a polygon of UTMS. All UTMs are figured from NAD 83.

File: survey

FIELD NAMES	**DESCRIPTION**
ID	This a unique number assigned to each survey. The first two letters are the county code abbreviation, the next two letters are the lead agency abbreviation. This is followed by either an R# or an NR#. R means that there were results, NR no results. The number is just the next sequential number for that county and lead agency. EX: DL.LM.R10 is a positive survey in Dolores county where the BLM was the lead agency.
NAME	The name of the survey.
PROCEDURE	How the survey was done, ie block, linear etc.
COUNTY	The county(s) in which the survey was located.
LEAD.AGENCY	The lead agency of the undertaking.
INSTITUTION	The name of the contractor that performed the survey.
DOC.AUTHOR	Whomever wrote the report.
DOC.NAME	The name of the document associated with this survey. More times than not this will be the same as the name of the survey.
METHOD	The type of survey performed,ie Class I, Class II, Class III
COMPLETION.DATE	The last day of fieldwork for the survey
ACRES.TOTAL	Number of acres surveyed.
SITE.COUNT	Number of sites recorded.
IF.COUNT	Number of isolated finds recorded.
MAPS	The name of the map(s) on which the survey is located.
PMTRSQ	Prime meridian, Township, Range Section and quarter sections in which the survey was located.
*ZONE.EAST	The easting coordinate of the UTM in a ##;###### format where the ##; represents the zone.
*NORTH	The northing coordinate of the UTM in a ####### format.

*If the survey took place on unsectioned land, there will be utms. A center point is given if the area surveyed was less than 10 acres. If it is greater than 10 acres the area will be enclosed in a polygon of UTMS. All UTMs are figured from NAD 83.

Native Tree and Vegetation Survey: Not applicable, there are no trees on the site.

Preliminary Geotechnical Engineering Report

FAIRWAYS AT VISTA RIDGE
RIDGE VIEW DRIVE AND
MOUNTAIN VIEW BOULEVARD
ERIE, COLORADO

Prepared for:

Chartered Development Corporation
1965 Fairway Pointe Drive
Erie, Colorado 80516

Prepared by:

Pickering, Cole & Hivner, LLC
PCH Project No. 12.139.13

March 24, 2014

March 24, 2014

Chartered Development Corporation
1965 Fairway Pointe Drive
Erie, Colorado 80516

Attn: Mr. Ward Ritter

Re: Preliminary Geotechnical Engineering Report
Fairways at Vista Ridge Residential Development
Ridge View Drive and Mountain View Boulevard
Erie, Colorado
PCH Project No. 12.139.13

Pickering Cole & Hivner, LLC (PCH) has completed a preliminary geotechnical engineering investigation for the proposed residential development to be located east of the subject intersection in Erie, Colorado. This study was performed in general accordance with our Proposal and Agreement for Services executed April 24, 2013.

This letter summarizes subsurface conditions and key geotechnical considerations. The entire report should be read and used for site design preliminary structure design, and construction planning purposes. Particular attention should be given to the items noted below and to the section of the report titled General Comments for an understanding of the report limitations.

- **Subsurface Conditions:** Existing fill, consisting of lean clay and claystone bedrock fragments was encountered in Boring Nos. 1 and 4 and extended to a depth of about 4 feet below existing site grade. The near-surface soils encountered in the remainder of the borings at the site consisted of lean clays with varying amounts of sand. Sedimentary claystone and sandstone bedrock was encountered below the fill and native clays at depths ranging from about 4 to 10 feet below the ground surface and extended to the full depth of exploration. Groundwater was encountered in two of the eight borings at depths ranging from about 19 to 20 feet below existing site grade.

- **Expansive Soils and Bedrock:** The clay overburden soils and underlying claystone bedrock materials have variable swell potential, ranging from low to very high. This report provides recommendations to help mitigate the effects of soil shrinkage and expansion. However, even if these procedures are followed, some movement and at least minor cosmetic cracking in the structures, flatwork, etc. should be anticipated. Even with the measures recommended in this report, this movement may cause minor cosmetic distress that is common in this geologic region.

- **Foundations and Floor Slabs:** Considering the size and type of construction planned and the subsurface conditions encountered in our test borings, we have evaluated two foundation systems that can be considered for support of the structures on the site. These include deep foundations such as straight shaft piers (caissons), micropiles, or helical piles drilled into bedrock or shallow foundations

such as spread footings or post-tensioned slabs. We feel that deep foundations best mitigate the risk of post-construction movement where expansive soils are present. It has been our experience that this alternative is typically cost prohibitive for large residential buildings, such as the planned four-plex "Manor Home" buildings.

If the use of shallow foundations is desired, in our experience the expansive potential of the clay soils and bedrock may be reduced by subexcavation, moisture conditioning, and recompaction of these materials. This process does not mitigate the potential for movement as effectively as deep foundations, ***however, we believe that the magnitude of movement can be reduced to tolerable levels by supporting shallow foundations and floor slabs on a sufficient zone of properly compacted fill. In general, we believe on-site soils would be acceptable for use in this fill zone. Additional details are discussed in the report.***

- **Pavement Design and Structural Sections**: Based on the poor quality clay soils and *assumed* traffic volumes, we estimate light-duty pavements for automobile parking areas should include a minimum of 5-½ to 6 inches of asphalt concrete or, alternately, 5 inches of Portland cement concrete. Heavy-duty pavements such as fire lanes, main drive isles, and driveways should include a minimum of 6-½ to 7 inches of asphalt concrete or, alternately, 6 inches of Portland cement concrete.

  The Town of Erie typically requires the use of a composite section of asphalt concrete over aggregate base course and the Town Standards also require the installation of edge drain behind the curb along public roads. These measures will be required for any public roadway improvements and should be considered for private roadway construction as well.

- **Surface Drainage:** The amount of movement associated with foundations, floor slabs, pavements, etc. is typically related to the wetting of underlying supporting soils. Therefore, it is imperative that surface water be directed away from foundations and other critical elements where movement must be held to a minimum. The recommendations outlined in the "Surface Drainage" section of this report should be used by the project Civil Engineer to develop grading plans that promote rapid runoff of storm water. Landscaping should be designed to minimize the amount of irrigation needed in proximity of the foundations.

This report should not be used for final structural design. Supplemental exploration is required for final design (typically a minimum of one boring per structure is recommended in this geologic region). These additional services will be used to develop final structural design parameters and to confirm and/or modify the preliminary recommendations and conclusions contained in this report.

We appreciate being of service to you in the geotechnical engineering phase of this project, and are prepared to assist you during the construction phases as well. Please do not hesitate to contact us if you have any questions concerning this report or any of our testing, inspection, design and consulting services.

Sincerely,

Pickering, Cole & Hivner

COLORADO REGISTERED
ANDREW J. GARNER
34273
3/27/14
PROFESSIONAL ENGINEER

Glenn D. Ohlsen, P.E.
Staff Engineer

Andrew J. Garner, P.E.
Senior Project Manager

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PRELIMINARY GEOTECHNICAL ENGINEERING REPORT

FAIRWAYS AT VISTA RIDGE RESIDENTIAL DEVELOPMENT
RIDGE VIEW DRIVE AND MOUNTAIN VIEW BOULEVARD
ERIE, COLORADO

PCH Project No. 12.139.13
March 24, 2014

INTRODUCTION

This report contains the results of our preliminary geotechnical engineering exploration for the proposed residential development to be located east of the intersection of Ridge View Drive and Mountain View Boulevard in Erie, Colorado.

The purpose of these services is to provide initial subsurface information and geotechnical engineering recommendations relative to:

- Subsurface soil and bedrock conditions
- Groundwater conditions
- Site preparation and earthwork
- Preliminary structure foundation alternatives
- Below-grade construction
- Floor slab construction
- Preliminary pavement sections
- Surface and subsurface drainage

The recommendations contained in this report are based upon the results of field and laboratory testing, engineering analyses, our experience with similar soil conditions, similar projects, and our understanding of the proposed project.

PROJECT INFORMATION

Based on the information provided, we understand that the project will include the construction of approximately 56 single-family cluster homes and 24 four-plex "Manor Home" apartment buildings on approximately 14 acres of vacant land. The site is located east of the intersection of Ridge View Drive and Mountain View Boulevard and includes Lot 33 of Vista Ridge Subdivision and Lot 2, Vista Ridge Filing No. 2 Minor Subdivision. Approximately 4 acres of the property is located north of Ridge View Drive and the remainder of the property is located south of Ridge View Drive.

We understand that the proposed single-family residences will include one to two stories of wood-framed construction over concrete basement foundations. We understand the apartment buildings will include two stories of wood framing over at grade foundations. We assume that all structures will include attached, at-grade garages.

The site was previously graded as part of the overall development, however, we assume some grading of the site will be required to install infrastructure and provide site drainage. We estimate that maximum earthen cut and fill depths on the order of about 5 to 8 feet could be required, exclusive of any sub-excavation that may be necessary to mitigate swell potential of the expansive soils and bedrock known to be present in the area.

Other major site development will include the installation of utilities, as well as the construction of private asphalt concrete and/or Portland cement concrete parking areas, and site landscape improvements. We assume that roadways within the development will be privately maintained and not subject to the Town of Erie roadway design standards.

If our assumptions noted herein are inaccurate or if you have additional information that may be useful, please forward at your convenience.

SITE EXPLORATION PROCEDURES

The scope of the services performed for this project included a preliminary-phase subsurface exploration program, laboratory testing, and engineering analysis.

Field Exploration: Our scope of services included geotechnical exploration of the subsurface materials by advancing eight, widely-spaced test borings on the site, shown on the Boring Location Diagram included in Appendix A. Borings were advanced to depths ranging from about 25 to 35 feet below existing site grades with a truck-mounted drilling rig utilizing 4-inch diameter, solid-stem auger.

Our field engineer recorded lithologic logs of each boring during the drilling operations. At selected intervals, samples of the subsurface materials were obtained by driving Modified California split-barrel samplers. Penetration resistance measurements were obtained by driving the sample barrels into the subsurface materials with a 140-pound manual hammer falling 30 inches. The penetration resistance value is a useful index to the consistency, relative density or hardness of the materials encountered.

Groundwater measurements were conducted in each boring at the time of site exploration and a minimum of two days later.

Laboratory Testing: Samples retrieved during the field exploration were returned to our laboratory for observation by the project geotechnical engineer, and were classified in general accordance with the Unified Soil Classification System described in Appendix C. Samples of bedrock were classified in general

accordance with the general notes for Rock Classification. At that time, an applicable laboratory-testing program was formulated to determine engineering properties of the subsurface materials. Following the completion of the laboratory testing, the field descriptions were confirmed or modified as necessary, and Boring Logs were prepared. These logs are presented in Appendix A.

Laboratory test results are presented in Appendix B. These results were used for the geotechnical engineering analyses and the development of foundation and earthwork recommendations. Laboratory tests were performed in general accordance with the applicable local or other accepted standards.

Selected soil and bedrock samples were tested for the following engineering properties:

- Water content
- Dry density
- Consolidation/Swell
- Moisture-Density relationship
- Grain size
- Plasticity Index
- Water soluble sulfates
- Remolded swell potential

SITE CONDITIONS

The site is located east of the intersection of Ridge View Drive and Mountain View Boulevard in Erie, Colorado. As discussed, approximately 4 acres of the property is located on the north side of Ridge View Drive, with the remainder located south of that roadway. The northern parcel is bound by a golf course (Colorado National Golf Club) to the north and private schools (Vista Ridge Academy and Primrose School) to the east and west. The southern parcel is bound by undeveloped land on the east and south, and a large soil stockpile and regional stormwater detention area to the west.

Vegetation includes a sparse to moderate growth of native grasses and weeds. We were not provided with any topographic information, however, the site appears to slope gently down to the west, with the exception of the soil stockpile. We estimate that the overall topographic relief to be on the order of about 20 feet or more across the site. Site drainage was generally in the form of sheet surface flow directed to the west.

SUBSURFACE CONDITIONS

Geology: Surficial geologic conditions at the site, as mapped by the U.S. Geological Survey (USGS) ([1]Colton, 1977), primarily consist of Loess (Mantles pre-Broadway alluvium) of Pleistocene Age. These materials are described as fine-grained silt, clay and sand. Thickness of this is reported up to 12 feet.

Bedrock underlying the surface units consists of the Laramie Formation of Upper Cretaceous Age. The upper part of the formation is reported to include claystone, shale, sandy shale, and scattered lenticular

[1] Colton, R.B., and Anderson, L.W., 1977, ***Preliminary Geologic Map of the Erie Quadrangle, Boulder, Weld, and Adams Counties, Colorado,*** United States Geological Survey, Map MF-882.

beds of sandstone and lignite. The thickness of this upper unit is reported to be on the order of 600 to 700 feet in thickness.

Mapping completed by the Colorado Geological Survey ([2]Hart, 1972) indicates the site includes soils and bedrock considered to possess "High to Very High Swell Potential". The expansive materials generally include the clay overburden soils and clayey bedrock.

Due to the relatively flat nature of the site, geologic hazards at the site are anticipated to be low. In addition, based upon review of the maps showing the extent of mining in the Boulder-Weld coal field for the area ([3]Roberts, Hynes, and Woodward, 2001), the project is located outside of areas identified as being underlain by past mine workings. A detailed evaluation of subsidence potential is beyond the scope of this study. However, it is our opinion that the planned construction should not cause significant subsidence.

Due to the relatively flat nature of the site, other geologic hazards at the site are anticipated to be low. Seismic activity in the area is anticipated to be low, and the property should be relatively stable from a structural standpoint. With proper site grading around proposed structures, erosional problems at the site should be reduced.

Soil and Bedrock Conditions: Existing fill, consisting of lean clay and claystone bedrock fragments was encountered in Boring Nos. 1 and 4 and extended to a depth of about 4 feet below existing site grade. The near-surface soils encountered in the remainder of the borings at the site consisted of lean clays with varying amounts of sand. Sedimentary claystone and sandstone bedrock was encountered below the fill and native clays at depths ranging from about 4 to 10 feet below the ground surface and extended to the full depth of exploration.

Field and Laboratory Test Results: Field test results indicate that the native and fill clay soils are very stiff to hard in consistency. The bedrock is medium hard to very hard in hardness.

Samples of the existing clay soils and claystone bedrock exhibited moderate to very high expansion upon wetting in our laboratory. Water-soluble sulfate testing indicated moderate to severe concentrations ranging from 300 to 1,600 parts per million (ppm).

Groundwater Conditions: Groundwater was encountered in Boring 4 at a depth of about 21 feet below existing site grade during drilling. The other borings remained dry immediately after drilling. When checked a minimum of two days later, groundwater was encountered in Boring Nos. 4 and 8 at depths of about 19 to 20 feet below grade. Groundwater was not present in the remaining borings at that time.

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[2] Hart, Stephen S., 1972, ***Potentially Swelling Soil and Rock in the Front Range Urban Corridor, Colorado***, Colorado Geological Survey, Sheet 1 of 4.

[3] Roberts, S.B., Hynes, J.L., and Woodward, C.L., 2001, ***Maps showing the extent of mining, locations of mine shafts, adits, air shafts, and bedrock faults, and thickness of overburden above abandoned coal mines in the Boulder-Weld coal field, Boulder, Weld, and Adams Counties, Colorado***, United States Geological Survey, Geologic Investigations Series I-2735.

These observations are only representative of the locations explored at the time of our exploration and may fluctuate seasonally, particularly in the southern lower extents of the site.

Based upon review of U.S. Geological Survey Maps ([4]Hillier, et al, 1983), regional groundwater beneath the project area is mapped as an area where localized water-table aquifers occur in colluvial and aeolian deposits, and in sedimentary bedrock. Depth to water table generally ranges from 5 to 20 feet.

ENGINEERING RECOMMENDATIONS

Geotechnical Considerations: Based on the information obtained from our subsurface exploration, laboratory testing, and a cursory review of geologic conditions, it is our opinion that the site appears suitable for development of the proposed project provided the recommendations in this report are followed. The following primary geotechnical considerations were identified:

- **Expansive Soils and Bedrock:** ***Expansive soils and bedrock are a geologic hazard that is present at this site and will impact the design, construction, and performance of foundations, exterior flatwork, pavements and other features of the development.*** Geologic mapping by the USGS and our laboratory test data indicate the clay soils and bedrock materials range from low to very highly expansive. These materials are common in vicinity of the site, and when subjected to normal post-construction wetting, commonly result in uneven floor slabs or foundation movement causing mostly cosmetic distress such as uneven door and window frames, drywall cracking, etc. ***The risk of this distress will increase if excessive wetting or drying of the expansive soils is allowed to occur. This wetting could be due to excessive irrigation, poor surface drainage, water line breaks, or other items outside of our control. Therefore, site maintenance is critical.***

  Based on our experience with similar materials and testing of select samples from this site, we believe that subexcavation, adding significant moisture, and recompaction of these soils will result in significantly reducing the expansive potential of the native soils and bedrock (essentially "pre-swelling" the materials). This process is commonly used to substantially reduce, but not eliminate, the risk of movement and distress associated with this geologic hazard.

- **Foundations and Floor Slabs:** Considering the size and type of construction planned and the subsurface conditions encountered in our test borings, we have evaluated two foundation systems that can be considered for support of the structures on the site. These include deep foundations such as straight shaft piers (caissons), micropiles, or helical piles drilled into bedrock (caissons) or shallow foundations such as spread footings or post-tensioned slabs. We feel that deep foundations best mitigate the risk of post-construction movement where expansive soils are present. It has been our experience that this alternative is typically cost prohibitive for large residential buildings, such as the planned four-plex Manor Home buildings.

[4] Hillier, Donald E.; and Schneider, Paul A., Jr., 1979, ***Depth to Water Table (1976-1977) in the Boulder-Fort Collins-Greeley Area, Front Range Urban Corridor, Colorado***, United States Geological Survey, Map I-856-I.

If the use of shallow foundations is desired, in our experience the expansive potential of the clay soils and bedrock may be reduced by subexcavation, moisture conditioning, and recompaction of these materials. This process does not mitigate the potential for movement as effectively as deep foundations, ***however, we believe that the magnitude of movement can be reduced to tolerable levels by supporting shallow foundations and floor slabs on a sufficient zone of properly compacted fill. In general, we believe on-site soils would be acceptable for use in this fill zone. Additional details are discussed below.***

Earthwork and Site Development:

- **General Considerations:** The following presents our initial recommendations for site preparation, excavation, subgrade preparation and placement of engineered fills on the project based on the limited plans provided and common construction methods. As the design plans are finalized, these recommendations should be refined accordingly.

  All earthwork on the project should be observed and evaluated by PCH. The evaluation of earthwork should include observation and testing of engineered fills, subgrade preparation, foundation bearing soils and other geotechnical conditions exposed during the construction of the project.

- **Site Preparation:** Strip and remove existing vegetation, debris, and any other deleterious materials from the site. Stripped materials consisting of vegetation and organic materials should be wasted from the site or stockpiled for use in re-vegetation of non-structural areas of the site.

  It is anticipated that excavations for the proposed construction can be accomplished with conventional heavy-duty earthmoving equipment. However, excavations penetrating the bedrock may require ripping or jack-hammering to advance excavations.

  The stability of the site subgrade may be affected by precipitation, proximity to groundwater, detention ponds, repetitive construction traffic, or other factors. If unstable conditions are encountered or develop during construction, workability may be improved by scarifying and aeration. Gravel augmentation or chemical treatment could also be considered for very soft areas.

- **Fill Materials:** The on-site materials are generally considered suitable for use in fill zones beneath structures and new pavements. Evaluation of the stockpiled soils was not included in our scope of services, however, if similar to the on-site materials, the stockpiled materials may be re-used as fill on the site. Clay soils and bedrock materials should be processed to a soil-like consistency, with a maximum fragment size of about 2 to 3 inches. All fill soils will require moisture conditioning prior to compaction.

Imported soils (if required) should conform to the following:

Gradation	Percent finer by weight (ASTM C136)
6"	100
3"	70-100
No. 4 Sieve	50-100
No. 200 Sieve	20-60

- Liquid Limit ..... 45 (max)
- Plasticity Index ..... 20 (max)
- Maximum expansive potential (%)* 1.0

*Measured on a sample compacted to approximately 95 percent of the ASTM D698 maximum dry density at about optimum water content. The sample is confined under a 500 psf surcharge and submerged.

Fill Placement and Compaction: Subgrade soils beneath new fill, engineered fills used to bring the site to construction grade, fill beneath structures, and other backfill soils should be placed and compacted according to the recommendation in the following table:

Criteria	Recommended values
Lift Thickness	8 to 12 inches, depending on compaction equipment
Moisture Content Range	• Clay soils: +1% to +4% over optimum • Imported Sand soils: -2% below to +3% above optimum • Pavement areas: Optimum to +2% above optimum
Compaction	On-site clays: ASTM D698 standard Proctor dry density • Upper fill soils and subgrade soils: 95% minimum • > 12 ft below finished grade: 98% minimum Imported sands: ASTM D1557 modified Proctor dry density • Below foundations: 98% minimum • All other areas: 95% minimum

At a minimum, fill soils placed for site grading, beneath structures, utility trench backfill, and pavement subgrade soils should be tested to confirm that earthwork is being performed according to our recommendations and project specifications. Subsequent lifts of fill should not be placed on previous lifts if the moisture content or dry density is determined to be less than specified. We also recommend that the in-place fill materials comprised of on-site clay be tested for expansion potential frequently to that the fill mass is low expansive.

Excavation and Trench Construction: Excavations into the native clays and bedrock are expected to stand on relatively steep temporary slopes. All excavations should be sloped, shored, and/or dewatered in the interest of safety following local and federal regulations, including current OSHA excavation and trench safety standards. Individual contractors are responsible for providing OSHA competent personnel to evaluate the safety of excavations on the site daily.

The soils to be penetrated by the proposed excavations may vary significantly across the site. The contractor should verify that similar conditions exist throughout the proposed area of excavation. If different subsurface conditions are encountered at the time of construction, the actual conditions should be evaluated to determine any excavation modifications necessary to maintain safe conditions.

As a safety measure, it is recommended that all vehicles and soil piles be kept to a minimum lateral distance from the crest of the slope equal to no less than the slope height. The exposed slope face should be protected against the elements.

Preliminary Structure Foundation Design: As discussed, foundation designs should be based on additional subsurface exploration and analyses for each building. We have evaluated the use of deep and shallow foundation systems for support of the proposed residential structures at the site. Deep foundations would include grade beams supported on straight shaft drilled piers (caissons), micropiles, or helical piles drilled into bedrock. Shallow foundations would include spread footings or post-tensioned slab-on-grade foundations bearing either on a zone of tested and approved engineered fill.

Deep Foundations: Straight shaft drilled piers (caissons) socketed into the deeper bedrock materials are commonly used in this region to mitigate the risk of post-construction movement associated with wetting of the expansive soils/bedrock. We are available to discuss the use of micropiles as well. Helical piles are most likely not feasible due to the shallow bedrock conditions.

Drilled piers are designed to extend through the upper zones of expansive materials to bear in the deeper bedrock materials that are not as likely to experience significant movements. Cast-in-place concrete grade beams are used to span between piers, and a void space is constructed below the grade beam.

Based on our limited study and the shallow bedrock beneath most of the site drilled pier lengths would likely range from about 35 to 40 feet from current site grades. Drilling to the likely design depths should be possible with the heavy-duty caisson drill rigs commonly used in the area.

Some hard bedrock lenses should be anticipated, and the drilling contractor may need to use specialized drilling equipment or techniques to achieve the required length/penetration below these lenses.

Our experience in the area suggests that the bedrock formation can also contain water-bearing seams. This condition, if encountered during drilling, will at least require the use of a concrete pump truck with a tremie extension to discharge concrete at the bottom of the pier hole in order to displace excessive water. Where dry or relatively dry conditions are encountered during pier drilling and no caving of the overburden soil occurs, it will probably be possible to construct the pier using "drill and pour" construction methods. In some cases, groundwater flows could require the use of temporary steel casing to maintain the sides of the shafts while completing drilling and concrete placement, however, we believe these areas will be relatively isolated.

Shallow Foundations with Deep Overexcavation: Shallow foundations can also be considered at this site provided the expansive soils and bedrock are substantially mitigated to reduce the risk of movement. The use of spread footings can be considered for single-family residential construction, however, we understand that post-tensioned slab-on-grade foundations are also being considered for support of the Manor Homes. ***In our opinion, the use of these shallow foundations should only be considered if movement can be tolerated. If movement must be minimized, deep foundations should be used.***

In order to reduce movement to levels that can normally be tolerated, subexcavation of the expansive soils would be required. These on-site soils would then be processed, moisture conditioned and recompacted to provide a zone of low-expansive fill beneath foundations***. Based on our widely spaced test borings, we estimate that deep subexcavation will need to extend a minimum depth of 10 feet below the lowest foundation bearing depth.***

Based on our experience with shallow foundations, including post-tensioned slabs, foundation movements, even after subexcavation, could result in periodic, and possibly seasonal, cosmetic distress to drywall, window frames, door fames and other features. Movements should be reduced and tend to be more uniform when bearing on the recommended zone of fill. We estimate that total foundation movement on the order of about 1 to 2 inches could still be possible. ***Excessive movement could occur should the subsurface soils become wetted to significant depths, which could result in potential excessive movement and severe cracking.*** This could be due to over watering of landscaping, poor drainage, improperly functioning drain systems, and/or broken utility lines. Therefore, it is imperative that the surface drainage recommendations contained in subsequent sections of this report be followed.

Below-Grade Construction: Based on current groundwater conditions, we believe that basement construction should be feasible on the site. Post-construction perched groundwater typically develops at the bottom of basement excavations since the subsurface soils are relatively impermeable and tend to trap water. To collect this perched groundwater, to limit impact to foundation-bearing soils, and prevent the water from entering basement areas, installation of a perimeter foundation drainage system is recommended around the perimeter of the basement excavation.

Normally, the drain systems would be constructed around the exterior of the foundation and would be used to collect water that would tend to accumulate at the base of the foundation excavation after completion of development. Foundation drainage systems would typically include a properly sized perforated pipe, embedded in gravel, designed to discharge flows into the storm sewer system or to a sump pit where water could be pumped to a suitable discharge. We are available to provide additional recommendations regarding the design and installation of a perimeter drain systems around all below-grade portions of the structures.

Seismic Considerations: Based on the soil and bedrock conditions encountered in the test holes drilled on the site, we estimate that portions of the site may be classified as Seismic Site Class C according to the 2012 International Building Code (Table 1613.5.2). The Seismic Site Class was estimated based on extrapolation of data beyond the deepest depth explored, using methods allowed by the code. Actual shear wave velocity testing/analysis and/or exploration to 100 feet was not performed.

Floor Slab Design and Construction: As discussed, expansive materials are present on this site. Floor slabs placed on these materials may be subject to potentially excessive movement. This movement could result in cosmetic distress such as drywall cracking and distress of other elements supported on the floor slab. ***Where deep foundations (drilled piers) are utilized, we recommend the use of a structural floor system suspended above the subgrade soils and supported on the deep foundation elements.***

Conventional slab-on-grade floors may be considered, however, to reduce the movement slabs should bear on a zone of low expansive engineered fill soils as discussed above for shallow foundations. Based on our limited evaluation, we estimate that movement of conventional slab-on-grade floors bearing on at least 10 feet of engineered fill may still be subject to about 1 to 2 inches of total movement. The owner/end-user must accept the risk of this floor movement.

The movement estimates outlined above assume that the other recommendations in this report are followed. Some movement can typically be accommodated using typical expansive subgrade precautions in the design and construction of conventional slab-on-grade floors. ***Additional movement could occur should the subsurface soils become wetted to significant depths, which could result in potential excessive movement causing uneven floor slabs and severe cracking.*** We typically recommend minimal landscaping be installed and downspouts be hard-piped to storm sewer systems as described in subsequent sections of this report.

The following additional recommendations are typically provided for conventional slab-on-grade floors:

- Positive separations and/or isolation joints should be provided between slabs and all foundations, columns or utility lines to allow independent movement.

- Control joints should be provided in conventional slabs to control the location and extent of cracking.

- Typically, a minimum 2-inch void space is recommended below non-bearing partition walls placed on the floor slab. As an alternative, this "slip joint" is often framed above partition walls. Some movement and cosmetic distress to drywall and other finishes could occur if this is done.

- Special framing details should be provided at doorjambs and frames within partition walls to avoid potential distortion. Partition walls should be isolated from suspended ceilings. The isolation should be checked and maintained throughout the life of the project.

- Interior trench backfill placed beneath slabs should consist of on-site soils, moisture conditioned and compacted in accordance with recommended specifications outlined below.

- The use of a vapor retarder may need to be considered beneath concrete slabs on grade that will be covered with wood, tile, carpet or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the architect, slab designer and/or contractor(s) should refer to ACI 302 for procedures and cautions regarding the use and placement of a vapor retarder.

- Floor slabs should not be constructed on frozen subgrade.

- Other design and construction considerations, as outlined in Section 302.1R of the *ACI Design Manual*, are recommended.

Preliminary Private Pavement Thickness Design: The preliminary design of private pavements for the project is based on the procedures outlined in the 1993 *Guideline for Design of Pavement Structures* by the American Association of State Highway and Transportation Officials (AASHTO) and the Colorado Department of Transportation (CDOT). Any public improvements will have to be designed in accordance with Town of Erie standards, which would include additional subsurface investigation for pavement thickness design.

The referenced design methods are based on the subgrade soil support properties and anticipated traffic values.

- **Expansive Subgrade Mitigation and Subgrade Support:** Flexible (asphalt cement concrete, AC) and rigid (Portland cement concrete, PCC) pavements supported on the expansive soils and bedrock will move and may crack due to soil shrink and swell. Subexcavation, maintaining proper surface drainage behind curbs and sidewalks, providing edge drains, chemical stabilization and other methods can help reduce the distress. However, even if these recommendations are followed, some pavement distress (such as longitudinal "edge" cracking, etc.) should be anticipated and may need to be repaired. It may be possible to further reduce movement and distress if significantly more expensive measures are used. We are available to discuss additional alternatives with you.

To reduce potential movements and distress beneath private pavements to a level typically considered acceptable in this geologic region, we recommend pavement subgrade soils be subexcavated, moisture conditioned, and replaced as engineered fill. Based on our experience and current CDOT recommendations, subexcavation on the order of 5 feet below main drives and 3 feet below parking lot pavements will generally provide adequate reduction in surface deflection for these low speed roadways. Existing soils should be subexcavated, moisture-conditioned and recompacted to 95 percent of standard Proctor density (ASTM D698) at moisture contents between optimum to 3 percent above optimum. Stabilization of these soils may also be required to provide a stable base for paving.

Based on the properties of the poorest quality subgrade soils, we have estimated a resilient modulus of 3,025 psi for the subgrade soils.

- **Assumed Traffic:** We assume that pavements associated with the project will include private drive lanes, driveways, fire lanes, and surface parking for automobiles and light trucks. We assume that private pavements will include asphalt concrete or Portland cement concrete. Any improvements to adjacent public roadways will need to be designed and constructed according to the governing standards

  Based on our experience with similar projects, the following traffic criteria were used for determining pavement thicknesses using a design life of 20 years:

  - Driveways and parking stalls - maximum daily traffic of 1,000 cars per day (equivalent single-axle loads, ESAL's of 22,000)
  - Main site access drives and fire lanes – up to 5 trips/day by single-axle delivery trucks per day, 1 combined-axle truck per day and 1 trash truck per day, plus maximum daily traffic of 1,000 cars per day (73,000 ESAL’s)

  The owner should review these assumptions, and we should be contacted to confirm or modify these resulting pavement sections, if needed.

- **Pavement Sections:** Recommended alternatives for flexible and rigid pavements are summarized for each traffic area as follows:

Traffic Area	Alternative	Preliminary Pavement Thickness (Inches)		
		Asphalt Concrete Surface	Aggregate Base Course	Portland Cement Concrete
Light-Duty Automobile and Light Truck Parking Only	A	5-½ to 6	--	--
	B	3-½ to 4	7 to 8	--
	C	--	--	5
Heavy-Duty Private Drives, Fire Lanes, Delivery truck access	A	6-½ to 7	--	--
	B	4 to 4-½	9 to 10	--
	C	--	--	6

Pavement thicknesses recommended are based on approved subgrade materials being properly moisture conditioned and compacted prior to paving. The Town of Erie typically requires the use of a composite section for public roadways (Alternative B outlined above for each type of paved area). In addition, Town of Erie standards require that the base course be drained by installing edge drains behind curbs. These measures should also be considered to reduce the potential for distress for the private pavements associated with this project.

A proofroll of the subgrade soils should also be performed prior to paving and any soft/yielding areas remediated. Paving materials used at the site should meet current Town of Erie and CDOT specifications.

Future performance of pavements constructed on the subgrade soils at this site will be dependent upon several factors, including:

- Maintaining stable moisture content of the subgrade soils.
- Providing for a planned program of preventative maintenance.

Minimizing excess moisture, which can reach the subgrade soils, can enhance the performance of all pavements. Preventative maintenance should be planned and provided for an ongoing pavement management program in order to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment.

Final Grading, Landscaping, and Surface Drainage: All grades must be adjusted to provide positive drainage away from structures during construction and maintained throughout the life of the proposed project. Infiltration of water into utility or foundation excavations must be prevented during

construction. Landscaped irrigation adjacent to foundations should be eliminated where possible or minimized to only limited drip irrigation.

Water permitted to pond near or adjacent to the perimeter of the structures (either during or post-construction) can result in significantly higher soil movements than those discussed in this report. As a result, any estimations of potential movement described in this report cannot be relied upon if positive drainage is not obtained and maintained, and water is allowed to infiltrate the fill and/or subgrade.

Exposed ground should be sloped at a minimum of 10 percent grade for at least 10 feet beyond the perimeter of the buildings, where possible. We understand that this may not be feasible in all unpaved areas due to ADA access requirements and other required design features. In these areas, exterior grades should be sloped as much as possible down to area drain systems, swales, and/or sidewalk chases to facilitate drainage. Downspouts could also be connected to area drain systems to help reduce wetting. If this is not possible, roof drain flows should be directed onto pavements or discharge a minimum of 5 feet away from the structure or through the use of splash blocks or downspout extensions.

Backfill against foundations, exterior walls and in utility and sprinkler line trenches should be well compacted and free of construction debris to reduce the possibility of moisture infiltration. After building construction and prior to project completion, we recommend that verification of final grading be performed to document that positive drainage, as described above, has been achieved. This is especially important in areas where heating and cooling units are placed in close proximity to the buildings.

Planters located adjacent to the structure should preferably be self-contained (planter boxes, potted landscaping, etc.). Sprinkler mains and spray heads should be located a minimum of 5 feet away from the buildings. We recommend the use of Xeric landscaping, requiring little or no irrigation, be used within 5 feet of foundations. If drip irrigation is required in this zone, systems should timed to provide only the amount of water needed to sustain growth. Irrigation systems should be frequently checked for proper performance and any breakages fixed as soon as possible.

Additional Design and Construction Considerations:

- **Exterior Slabs:** Exterior slabs-on-grade, exterior architectural features, and utilities founded on the on-site soils may experience some movement due to frost heave and potential volume change of backfill in utility trenches and around building pads. Overexcavation and recompaction to a depth of 3 feet should be considered to help limit movement of high-profile or critical PCC flatwork. Potential movement could be reduced by:

    - minimizing moisture increases in the subgrade soils.

- controlling moisture-density during placement of any backfill.
- using designs which allow vertical movement between the exterior features and adjoining structural elements.
- placing effective control joints on relatively close centers.

- **Underground Utilities:** All underground piping within or near the proposed structure should be designed with flexible couplings, so minor deviations in alignment do not result in breakage or distress. Utility knockouts in foundation walls should be oversized to accommodate differential movements.

  It is strongly recommended that a representative of the geotechnical engineer provide nearly full-time observation and compaction testing of trench backfill within building and pavement areas.

- **Concrete Corrosion Protection:** Results of soluble sulfate testing indicate that project concrete should include Portland cement meeting the specifications of ASTM Type V or equivalent. Foundation concrete should be designed for potentially severe sulfate exposure in accordance with the provisions of Section 318, Chapter 4, of the *ACI Design Manual*.

GENERAL COMMENTS

Supplemental exploration and analyses should be performed in order to develop final design parameters and to confirm and/or modify the preliminary recommendations and conclusions contained in this report.

PCH should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our preliminary geotechnical recommendations in the project site design and specifications. PCH should also be retained to provide testing and observation during the excavation, grading, foundation and construction phases of the project.

The analysis and recommendations presented in this preliminary report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include, either specifically or by implication, any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This preliminary report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes are planned in the nature, design, or location of the project as outlined in this report, the conclusions and recommendations contained in this report shall not be considered valid unless PCH reviews the changes, and either verifies or modifies the conclusions of this report in writing.

APPENDIX A

BORING LOCATION DIAGRAM
BORING LOGS

1 APPROXIMATE BORING LOCATION

BORING LOCATION DIAGRAM
FAIRWAYS AT VISTA RIDGE
ERIE, COLORADO
PCH PROJECT NO. 12.139.13

Pickering, Cole, & Hivner, LLC
1070 W. 124th Ave., Suite 300
Westminster, CO 80234
(303) 996-2999

LOG OF BORING NO. 1

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	15-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Vine Laboratories / CME-850 Track Rig	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▽ None - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		FILL - CLAY/CLAYSTONE, olive gray, brown, tan, dry to moist, hard	1		CB	50/11"	11	10.5	120	7.9	0.50
		4.0 ft									
5		**CLAYSTONE BEDROCK**, varies sandy, gray, brown, rust, slightly calcareou, moist, medium hard to very hard	2		CB	49	12	15.7	115		
10			3		CB	50/11"	11	15.3	117	16.9	0.50
15			4		CB	50/10"	10	14.0	114		
20			5		CB	50/8"	8	7.7	128		
25			6		CB	50/5"	5	10.1	125		
30											
35			7		CB	50/4"	4	8.6	121		
40		Boring terminated at about 35 feet									

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).

Transitions between layers is shown for information only, actual transitions may be gradual.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

** Disturbed sample

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Geotechnical and Environmental Engineers

Westminster, Colorado – 303.996.2999

LOG OF BORING NO. 2

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	7-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Dakota Driiling / Diedrich D-50	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▾ None - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		LEAN CLAY with SAND, with weathered claystone bedrock fragments with depth, brown, rust, tan, calcareous, moist, very stiff to hard	1	CL	CB	26	12	17.0	112		
5			2	CL	CB	50/6"	6	10.3	127	6.4	0.20
		7.0 ft									
		CLAYSTONE BEDROCK, olive gray, dark gray, brown, rust, moist, very hard									
10			3		CB	50/6"	6	18.2	115	11.5	0.50
15			4		CB	50/6"	6	16.1	110		
20			5		CB	50/5"	5	14.1	104		
25			6		CB	50/6"	6	13.5	119	5.6	2.00
		Boring terminated at 25 feet									
30											
35											
40											

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).

Transitions between layers is shown for information only, actual transitions may be gradual.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

** Disturbed sample

PCH

Pickering, Cole, and Hivner

Geotechnical and Environmental Engineers

Westminster, Colorado – 303.996.2999

LOG OF BORING NO. 3

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	15-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Vine Laboratories / CME-850 Track Rig	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▽ None - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		LEAN CLAY with SAND, to Sandy Lean Clay, light brown, tan, calcareous, dry to moist, very stiff									
5			1	CL	CB	24	12	9.6	103		
		7.0 ft									
		CLAYSTONE BEDROCK, varies sandy, gray, rust, brown, varies calcareous, with trace lignite, moist, medium hard to very hard									
10			2		CB	50	12	10.2	124	6.5	0.50
15			3		CB	50/8"	8	32.0	106	6.3	1.00
20			4		CB	50/11"	11	16.7	115		
25			5		CB	45	12	18.2	113	2.8	2.00
30											
35			6		CB	50/5"	5	10.4	118		
40		Boring terminated at about 35 feet									

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).
Transitions between layers is shown for information only, actual transitions may be gradual.
This information pertains only to this boring and should not be interpreted as being indicative of the site.
** Disturbed sample

Pickering, Cole, and Hivner
Geotechnical and Environmental Engineers
Westminster, Colorado – 303.996.2999

LOG OF BORING NO. 4

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	7-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Dakota Driiling / Diedrich D-50	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ 21 ft - 2/7/2014 ▽ 20 ft - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		FILL - SANDY LEAN CLAY, and Claystone/Sandstone fragments, brown, rust, tan, moist, very stiff	1	CL	CB	30	12	13.4	118	0.4	0.50
		4.0 ft									
5		**SANDY LEAN CLAY,** brown, rust, tan, calcareous, moist, hard	2	CL	CB	45	12	11.6	125	6.5	0.50
10		10.0 ft	3	CL	CB	50/11"	11	7.5	123		
		CLAYSTONE/SANDSTONE BEDROCK, interbedded, gray, rust, brown, tan, varies calcareous, moist to wet, medium hard to very hard									
15			4		CB	49	12	10.5	126	0.7	1.00
20			5		CB	50/6"	6	13.6	105		
25			6		CB	25/0"	0				
30											
35			7		CB	50	12	20.0	109		
40		Boring terminated at about 35 feet									

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).

Transitions between layers is shown for information only, actual transitions may be gradual.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

** Disturbed sample

Pickering, Cole, and Hivner

Geotechnical and Environmental Engineers

Westminster, Colorado – 303.996.2999

LOG OF BORING NO. 5

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	7-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Dakota Driiling / Diedrich D-50	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▽ None - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		SANDY LEAN CLAY, to Lean Clay with Sand, brown, tan, calcareous, dry to moist, hard	1	CL	CB	50/11"	11	11.9	119		
5			2	CL	CB	50/8"	8	6.6	105	-4.1	0.50
		9.0 ft									
10		**CLAYSTONE BEDROCK**, gray, dark gray, rust, brown, moist, hard to very hard	3		CB	50/8"	8	15.1	116	11.0	0.50
15			4		CB	50/7"	7	15.9	110		
20			5		CB	50/5"	5	14.9	118	3.9	2.00
25			6		CB	50/5"	5	15.8	110		
30		Boring terminated at about 25 feet									
35											
40											

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).

Transitions between layers is shown for information only, actual transitions may be gradual.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

** Disturbed sample

Pickering, Cole, and Hivner

Geotechnical and Environmental Engineers

Westminster, Colorado – 303.996.2999

LOG OF BORING NO. 6

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	7-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Dakota Driiling / Diedrich D-50	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▽ None - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		SANDY LEAN CLAY, brown, rust, tan, calcareous, moist, very stiff	1	CL	CB	25	12	16.6	113	2.6	0.20
5		5.0 ft									
		CLAYSTONE/SANDSTONE BEDROCK, interbedded, tan, reddish brown, grey, moist, medium hard to very hard	2		CB	49	12	7.0	123		
10			3		CB	50/6"	6	5.9	111		
15			4		CB	50/2"	2	5.1	111		
20			5		CB	50/6"	6	3.5	112		
25			6		CB	50/10"	10				
30		Boring terminated at about 25 feet									
35											
40											

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).

Transitions between layers is shown for information only, actual transitions may be gradual.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

** Disturbed sample

Pickering, Cole, and Hivner

Geotechnical and Environmental Engineers

Westminster, Colorado – 303.996.2999

LOG OF BORING NO. 7

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	7-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Dakota Driiling / Diedrich D-50	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▽ None - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		SANDY LEAN CLAY, brown, rust, tan, calcareous, moist, hard									
5			1	CL	CB	50/10"	10	9.7	117	6.1	0.50
		7.0 ft									
		CLAYSTONE BEDROCK, with interbedded Sandstone, gray, rust, brown, moist, medium hard to very hard									
10			2		CB	43	12	19.0	114	8.4	0.50
15			3		CB	50/10"	12	11.8	123	5.7	1.00
20			4		CB	50/7"	7	11.6	124		
25			5		CB	50/6"	6	10.0	126		
		Boring terminated at about 25 feet									
30											
35											
40											

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).

Transitions between layers is shown for information only, actual transitions may be gradual.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

** Disturbed sample

Pickering, Cole, and Hivner

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LOG OF BORING NO. 8

PROJECT:	Fairways at Vista Ridge	PROJECT NO.:	12.139.13
CLIENT:	Chartered Development Corporation	DATE:	7-Feb-14
LOCATION:	Erie, Colorado	ELEVATION:	Not Provided
DRILLER / RIG:	Dakota Driiling / Diedrich D-50	LOGGED BY:	G. Ohlsen
DEPTH TO WATER:	▼ None - While Drilling ▽ 19 ft - 2/17/14		

Depth	Soil Graphic	Description	Samples No.	USCS	Type	Blows per foot*	Recovery, in	Moisture Content, %	Dry Density, pcf	Swell or Consol. (-), %	Surcharge, ksf
		Low growth grass and weeds at surface									
		LEAN CLAY with SAND, brown, rust, moist 4.0 ft									
5		**CLAYSTONE BEDROCK**, gray, rust, brown, with trace lignite, moist, medium hard to very hard	1		CB	50/12"	12	15.5	114	12.5	0.50
10			2		CB	50/6"	6	13.5	121	3.1	0.50
15			3		CB	50/10"	10	20.2	109	2.6	1.00
20			4		CB	50/8"	8	16.5	114	2.1	1.00
25			5		CB	48	12	16.0	114	1.9	2.00
30			6		CB	50/8"	8	14.8	113		
35			7		CB	50/5"	5	14.2	108	0.3	2.00
40		Boring terminated at about 35 feet									

* Values represent blows/ft (unless otherwise noted) using sampler indicated. This value may not be indicative of Standard Penetration Test (N-values).
Transitions between layers is shown for information only, actual transitions may be gradual.
This information pertains only to this boring and should not be interpreted as being indicative of the site.
** Disturbed sample

PCH

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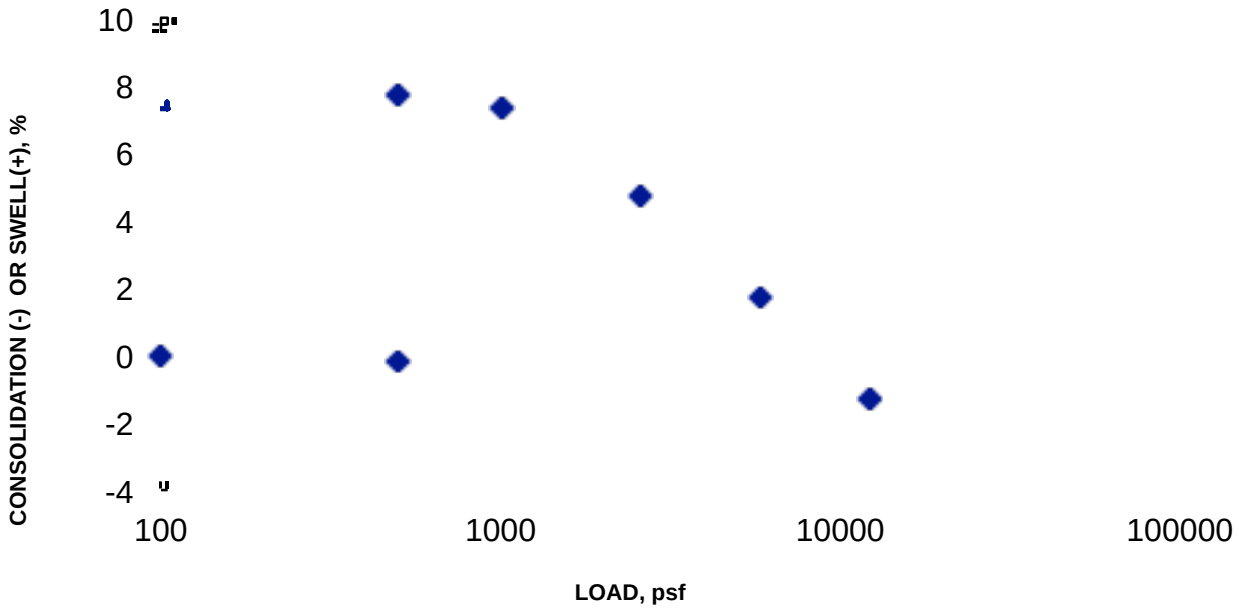
Geotechnical and Environmental Engineers
Westminster, Colorado – 303.996.2999

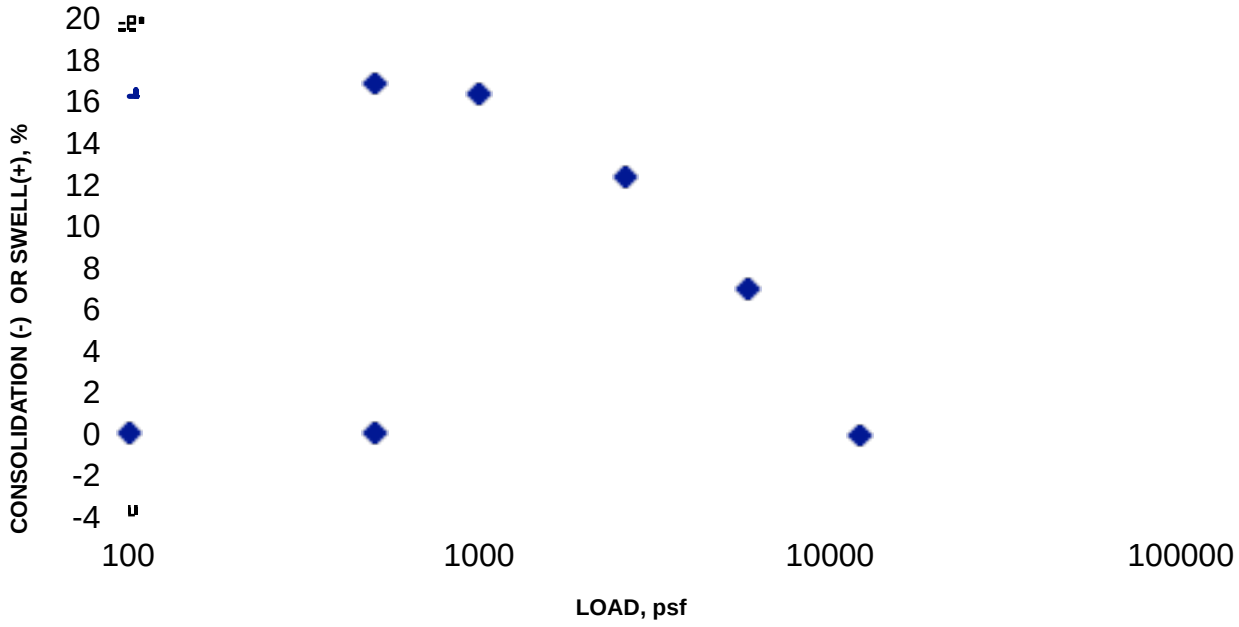
APPENDIX B

LABORATORY TEST RESULTS AND SUMMARY

SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 1 at 2 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Fill - Clay/Claystone		
PRE-TEST MOISTURE CONTENT	10.5%	**DRY DENSITY**	120 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 1 at 9 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	15.3%	**DRY DENSITY**	117 pcf

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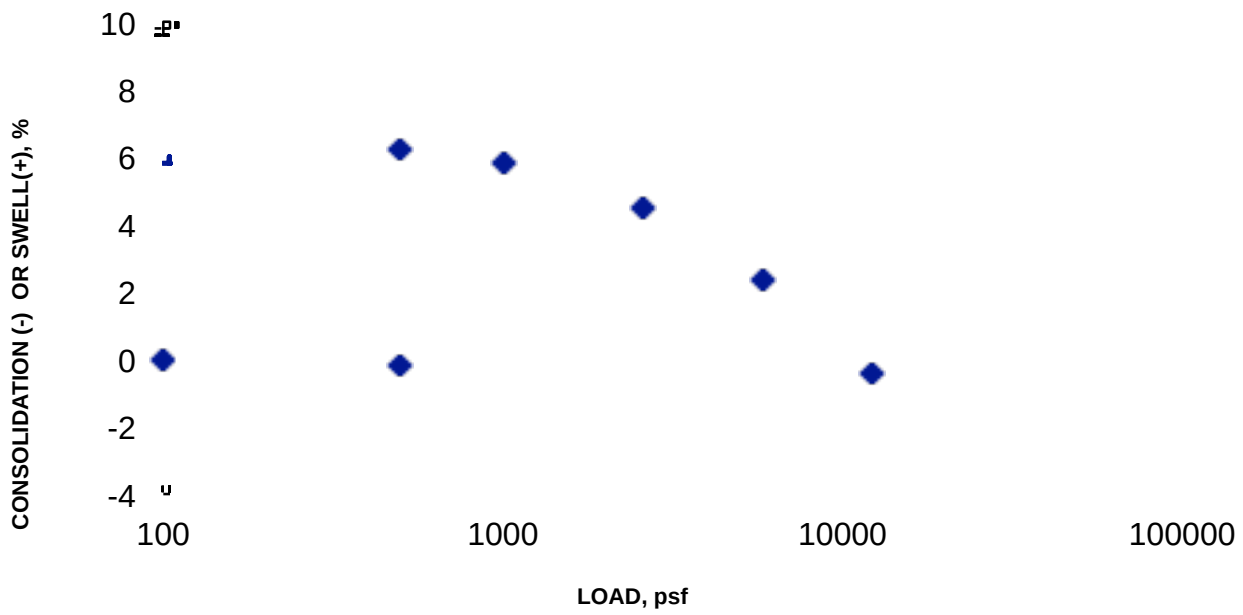
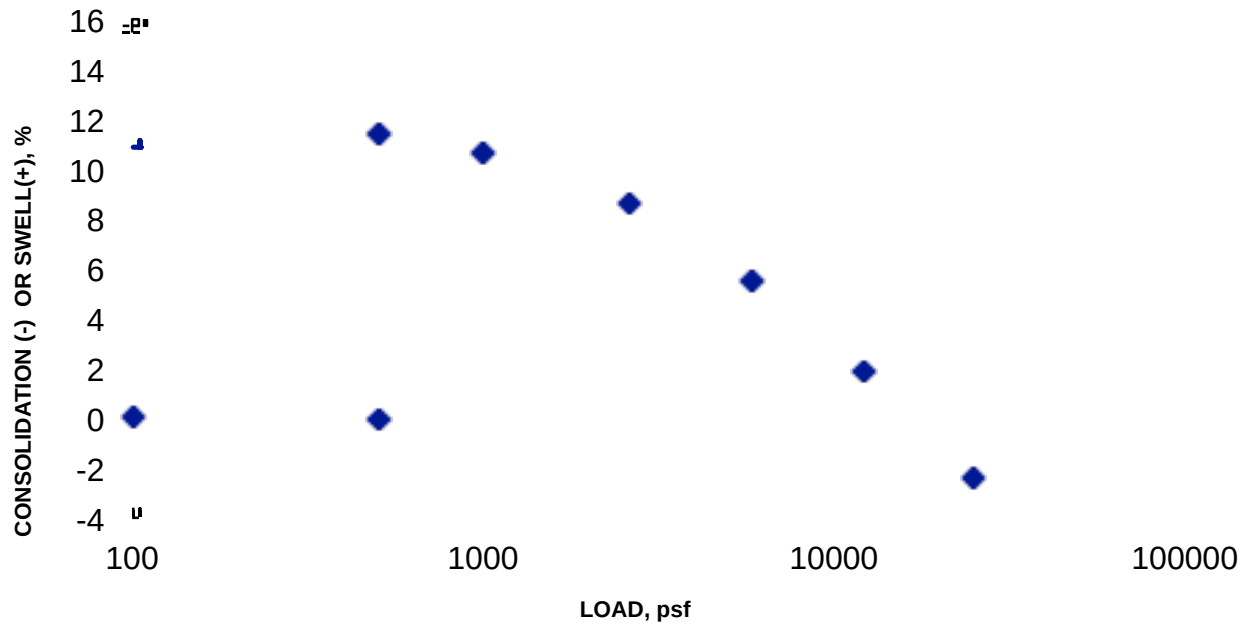
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 2 at 5 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Lean Clay with Sand		
PRE-TEST MOISTURE CONTENT	10.3%	**DRY DENSITY**	127 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 2 at 9 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	18.2%	**DRY DENSITY**	115 pcf

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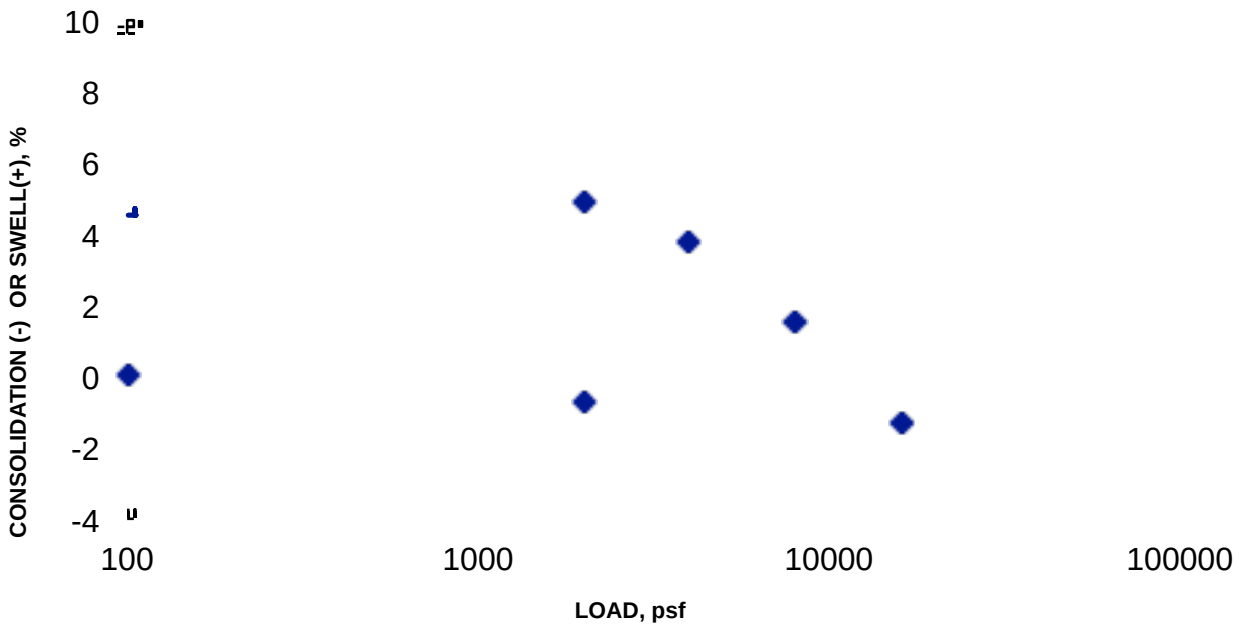
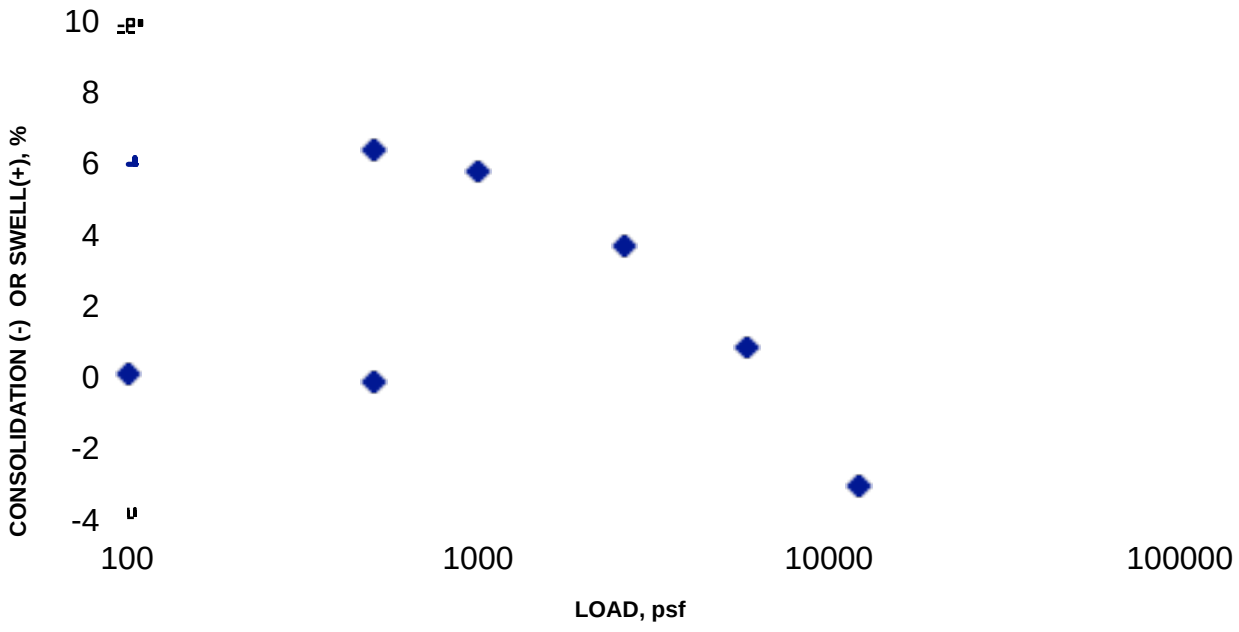


PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 2 at 24 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	13.5%	**DRY DENSITY**	119 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 3 at 9 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	10.2%	**DRY DENSITY**	124 pcf

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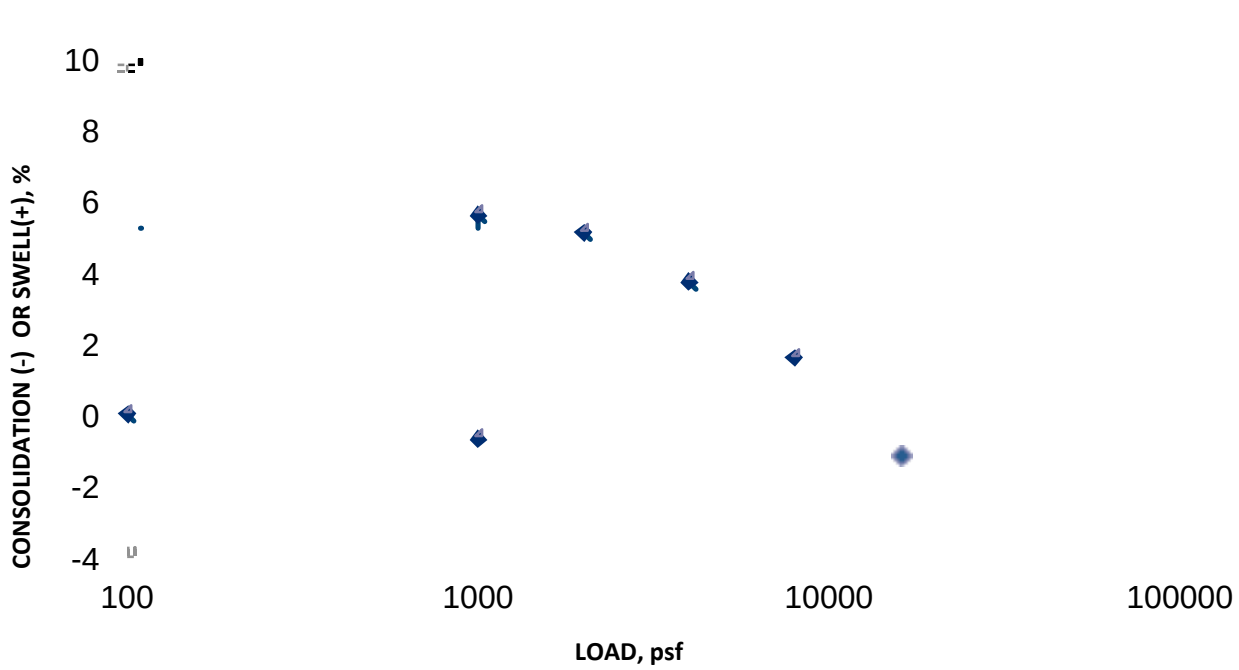
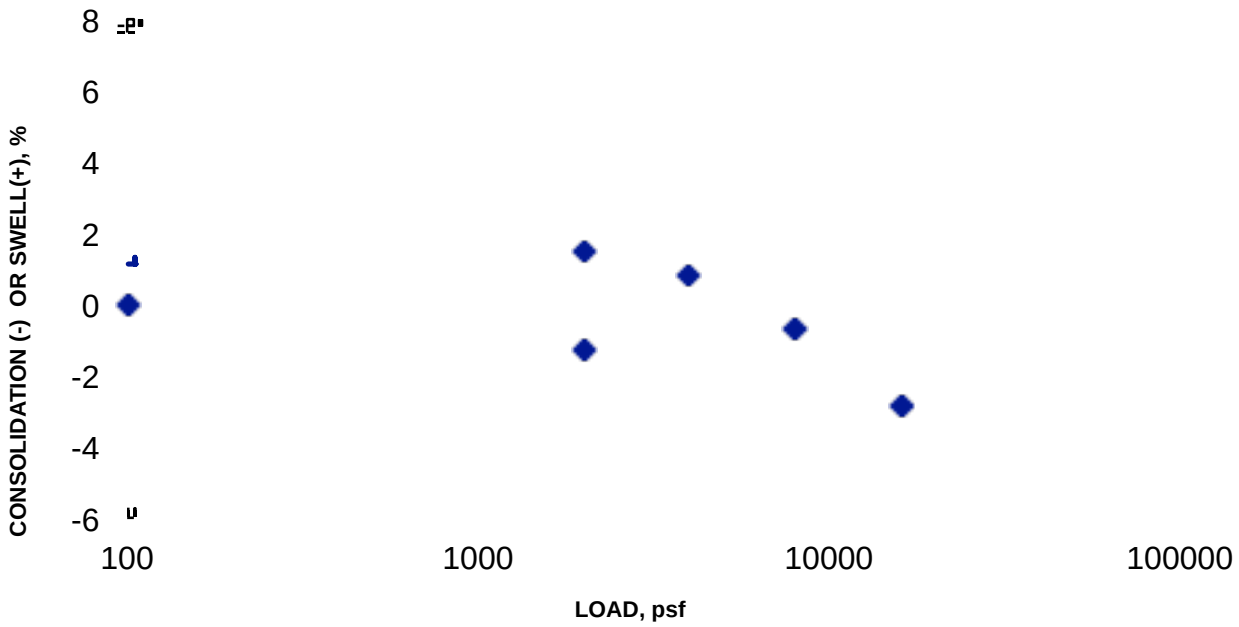
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 3 at 14 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	32.0%	**DRY DENSITY**	106 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 3 at 19 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	17.4%	**DRY DENSITY**	113 pcf

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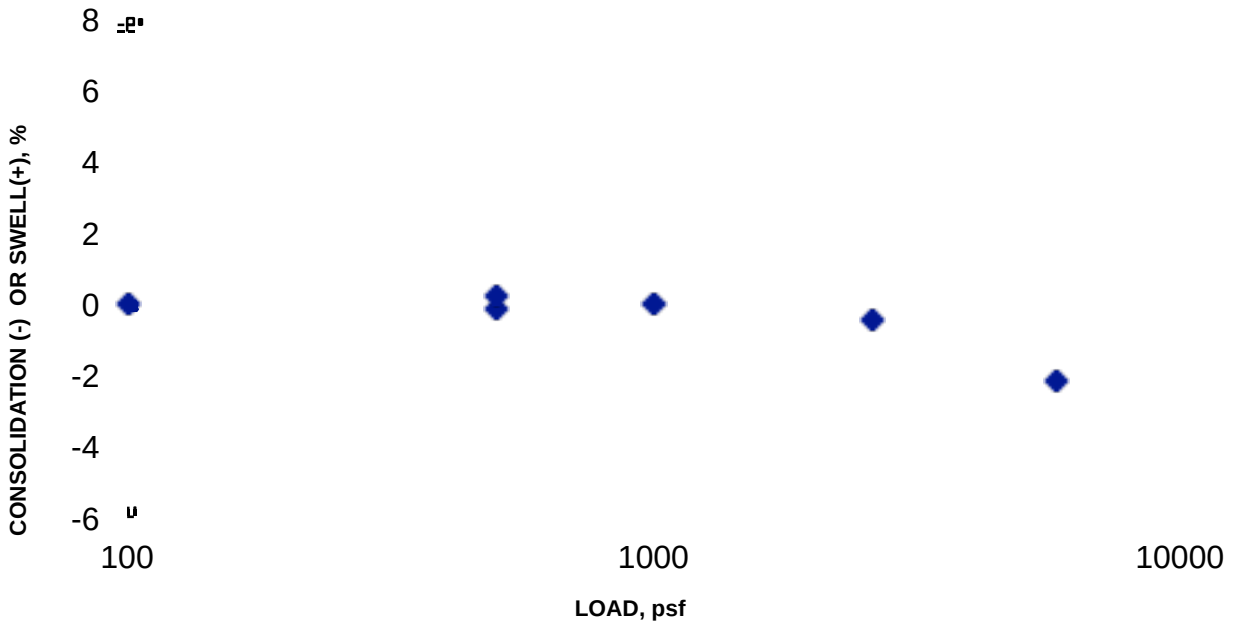
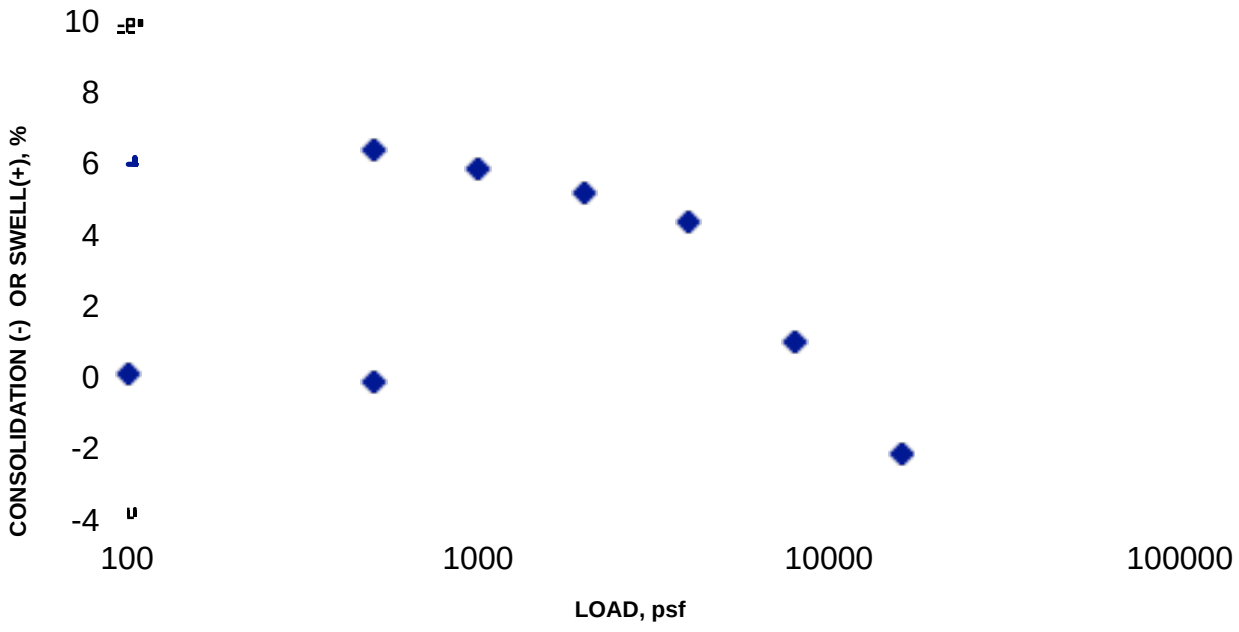


PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 4 at 2 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Fill - Sandy Lean Clay		
PRE-TEST MOISTURE CONTENT	13.4%	**DRY DENSITY**	118 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 4 at 5 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Sandy Lean Clay		
PRE-TEST MOISTURE CONTENT	11.6%	**DRY DENSITY**	125 pcf

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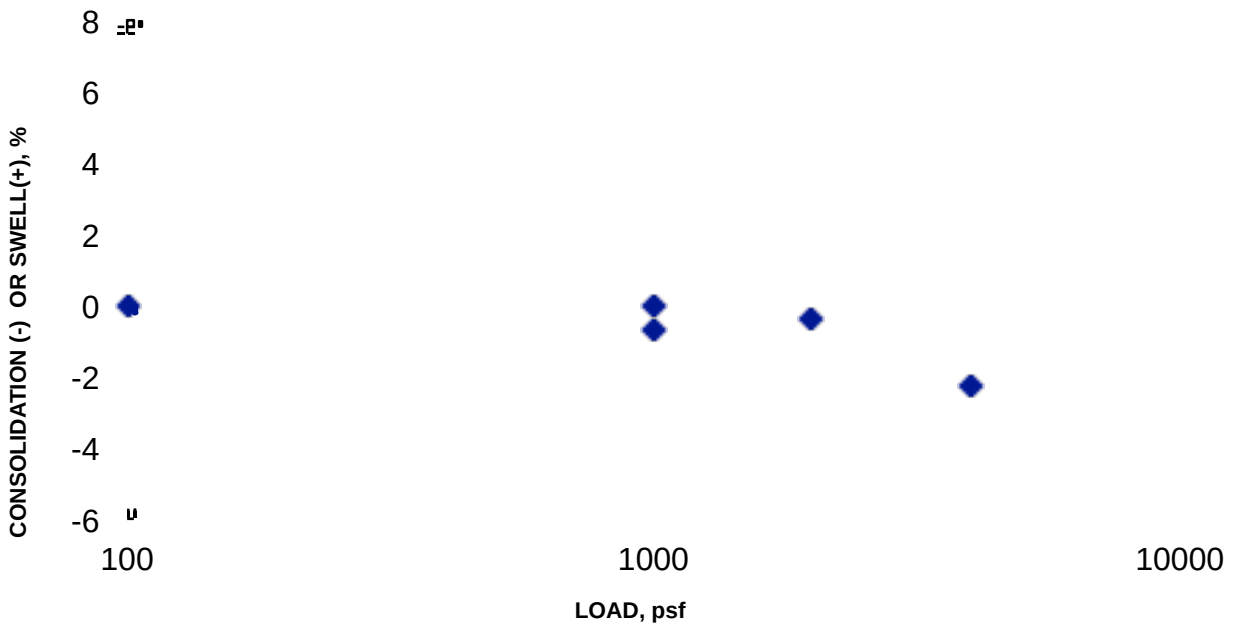
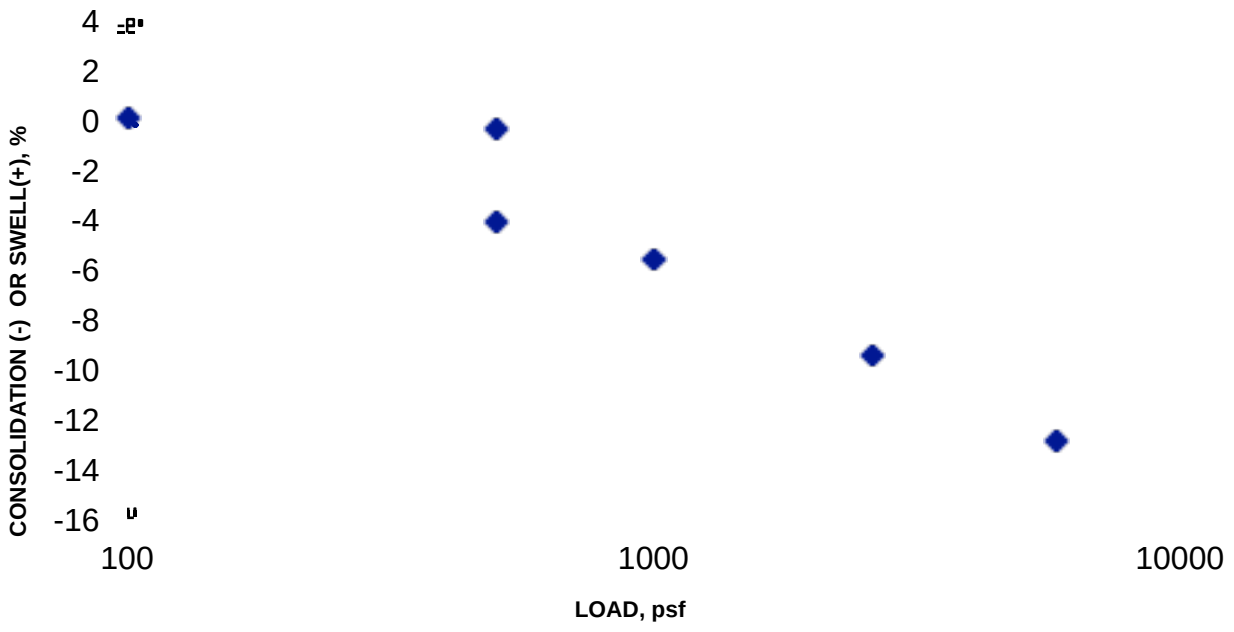
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 4 at 14 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone/Sandstone Bedrock		
PRE-TEST MOISTURE CONTENT	10.5%	**DRY DENSITY**	126 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 5 at 5 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Sandy Lean Clay		
PRE-TEST MOISTURE CONTENT	6.6%	**DRY DENSITY**	105 pcf

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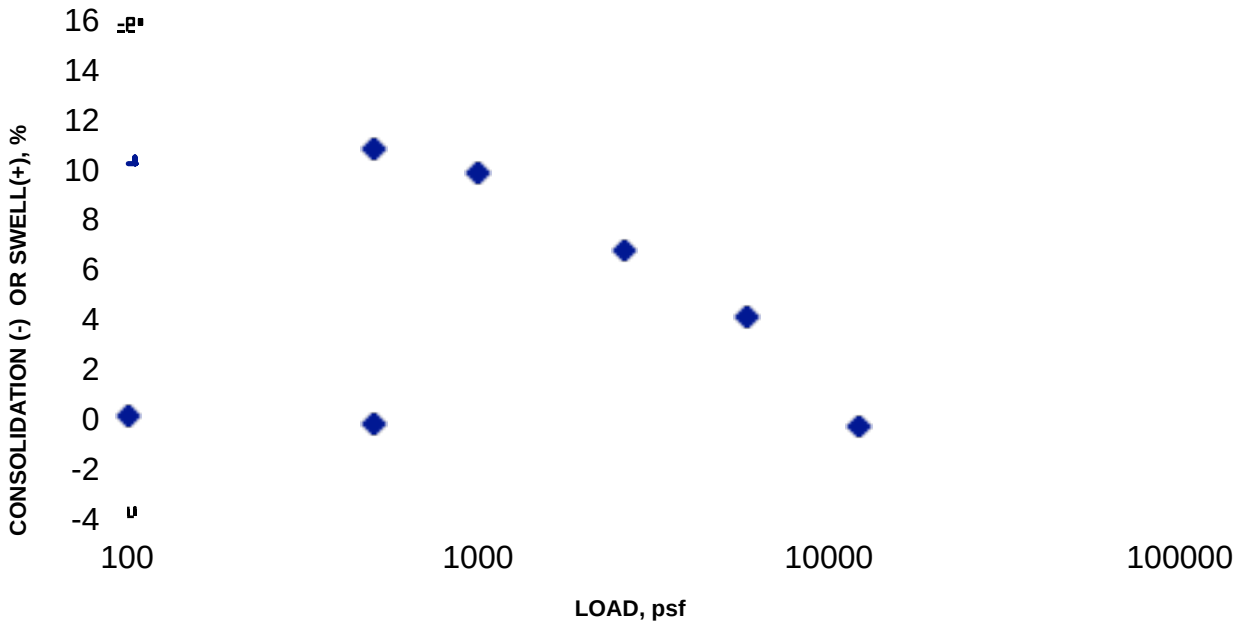
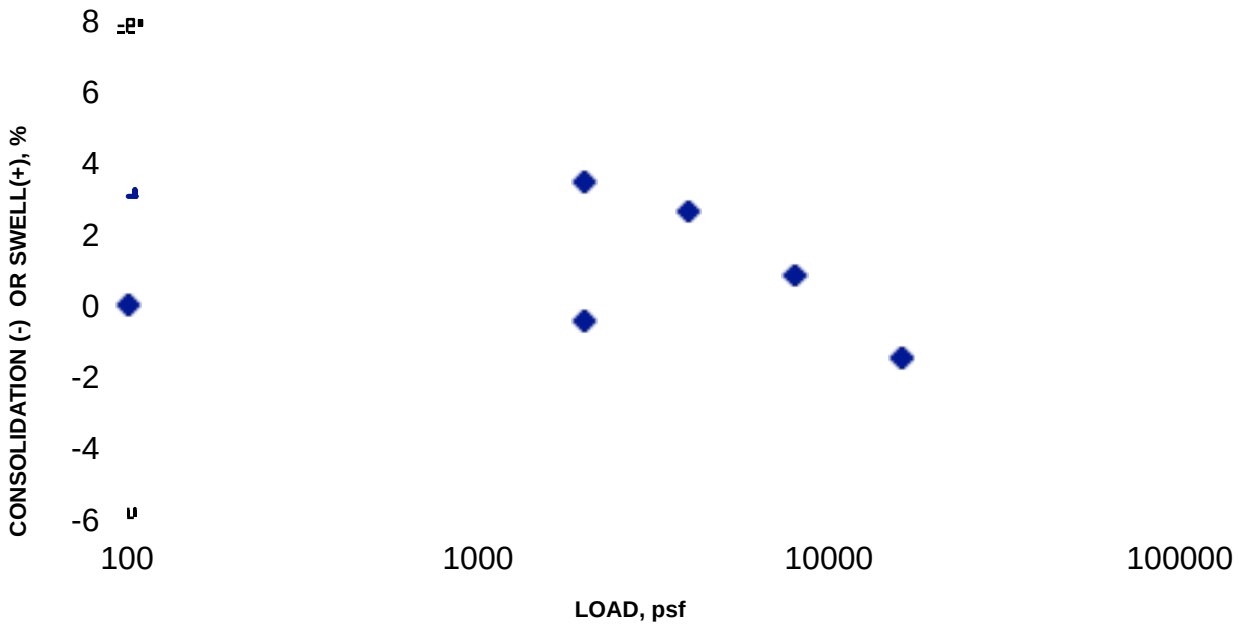


PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 5 at 9 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	15.1%	**DRY DENSITY**	116 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 5 at 19 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	14.9%	**DRY DENSITY**	118 pcf

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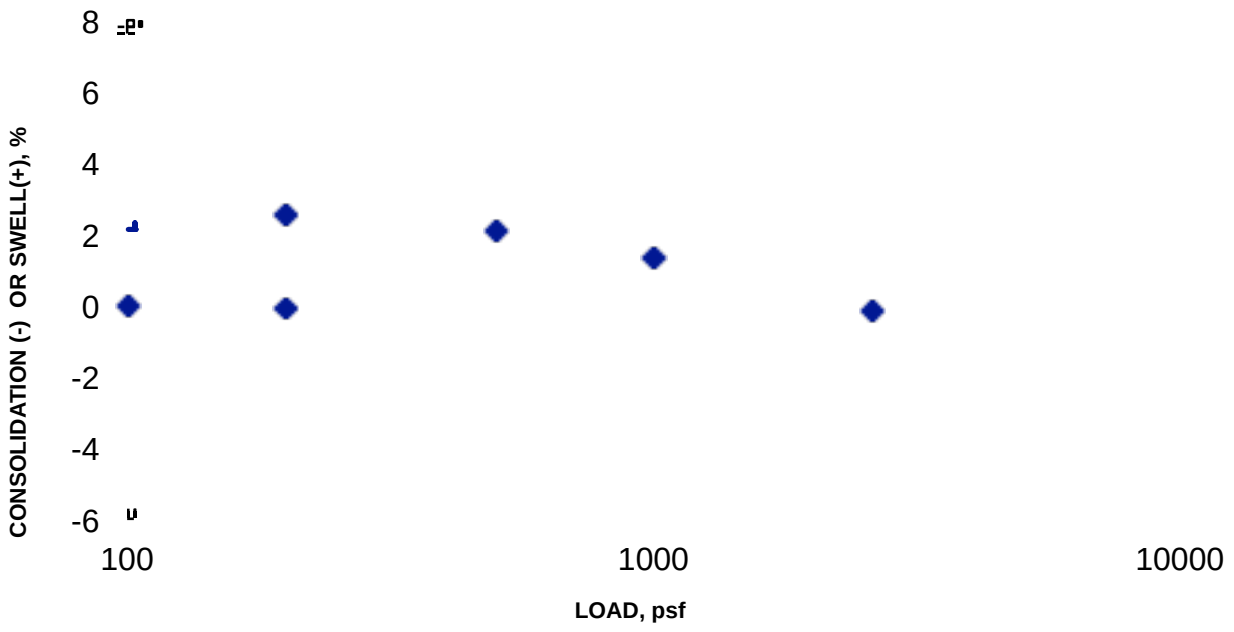
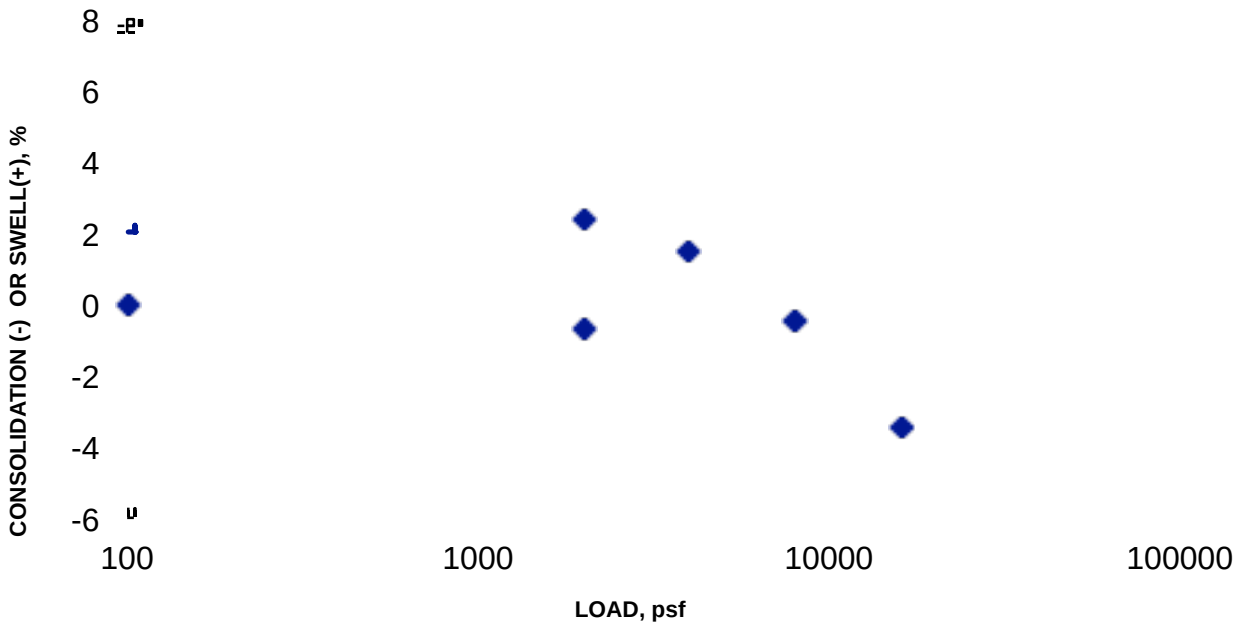


PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 6 at 2 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Sandy Lean Clay		
PRE-TEST MOISTURE CONTENT	16.6%	**DRY DENSITY**	113 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 6 at 24 ft	**START DATE**	3/3/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	19.4%	**DRY DENSITY**	110 pcf

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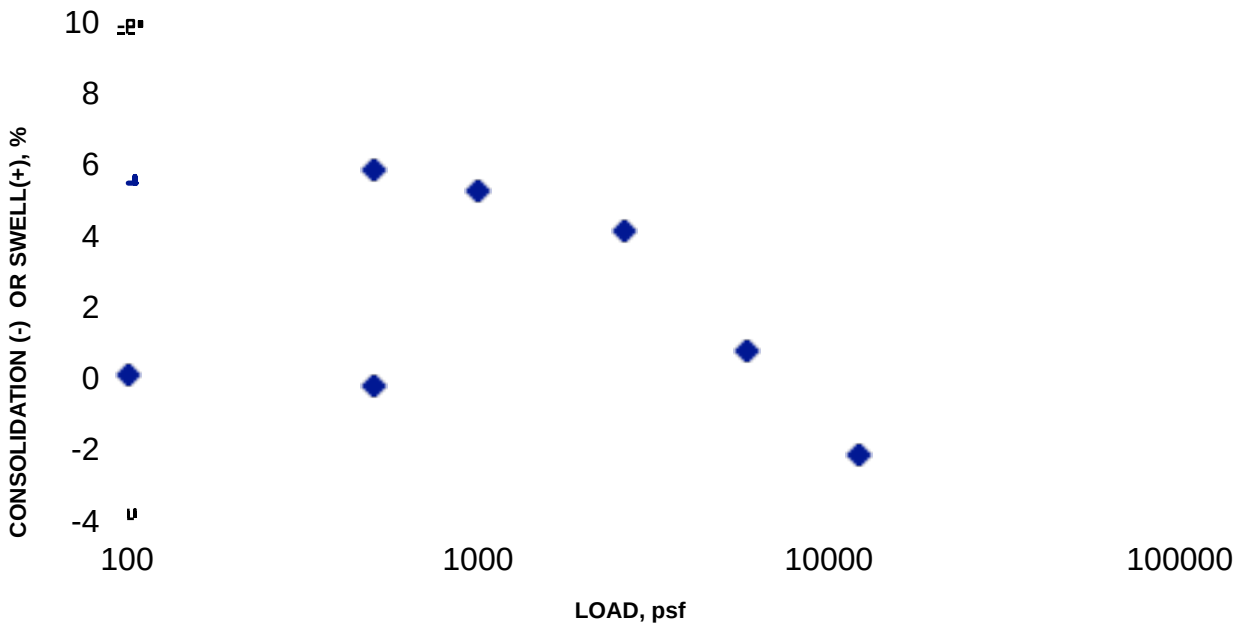
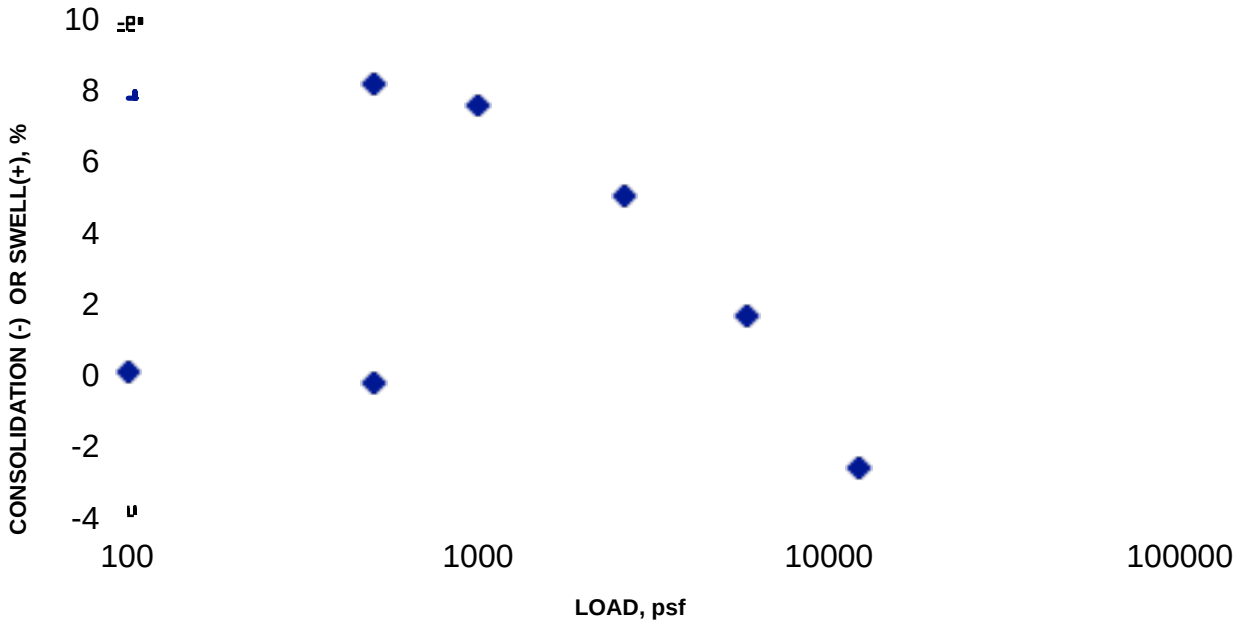
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 7 at 4 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Sandy Lean Clay		
PRE-TEST MOISTURE CONTENT	9.7%	**DRY DENSITY**	117 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.14
SAMPLE ID	Boring 7 at 9 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	19.0%	**DRY DENSITY**	114 pcf

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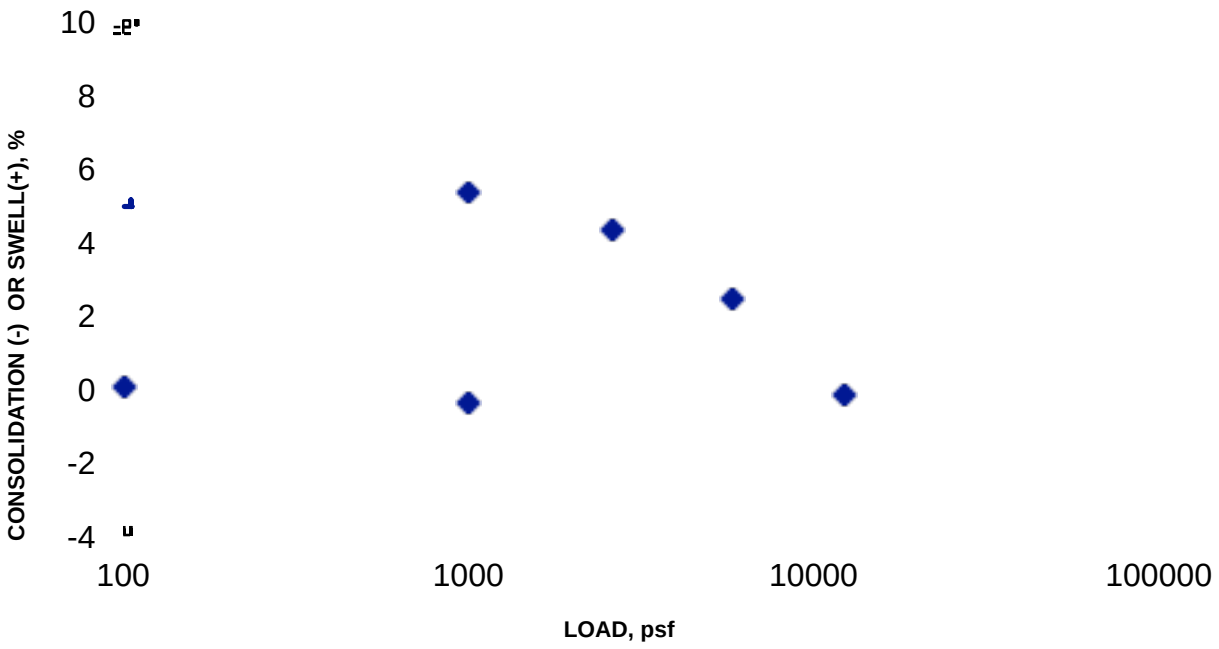
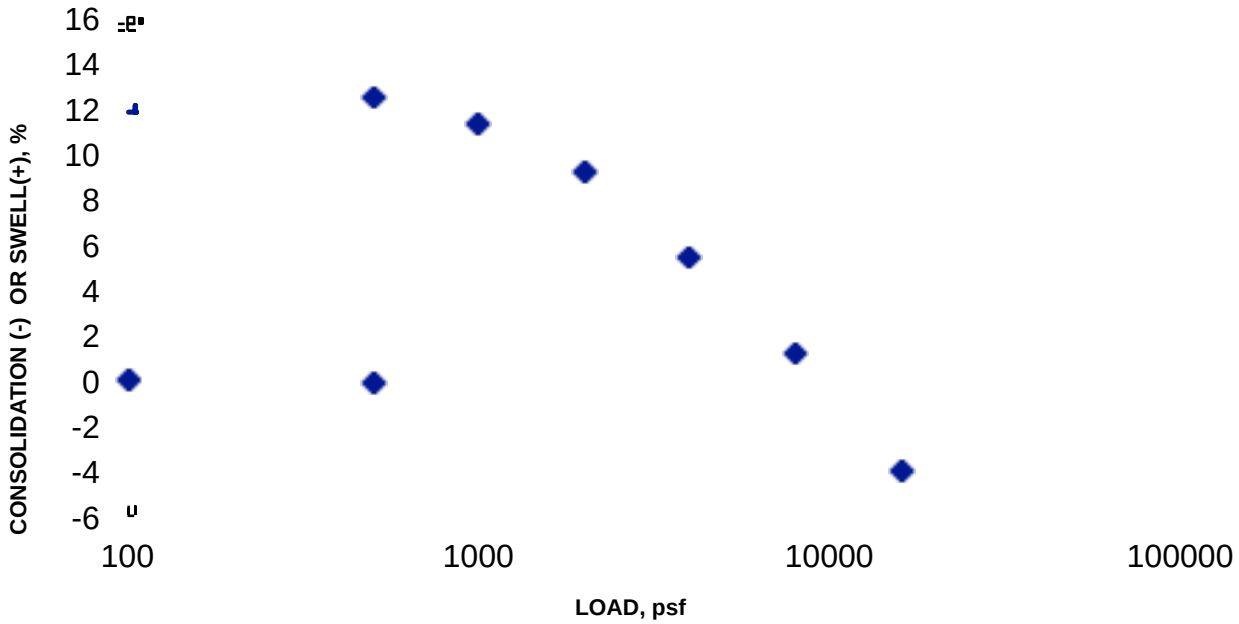
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.14
SAMPLE ID	Boring 7 at 14 ft	**START DATE**	3/3/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	11.8%	**DRY DENSITY**	123 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 8 at 4 ft	**START DATE**	2/25/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	15.5%	**DRY DENSITY**	114 pcf

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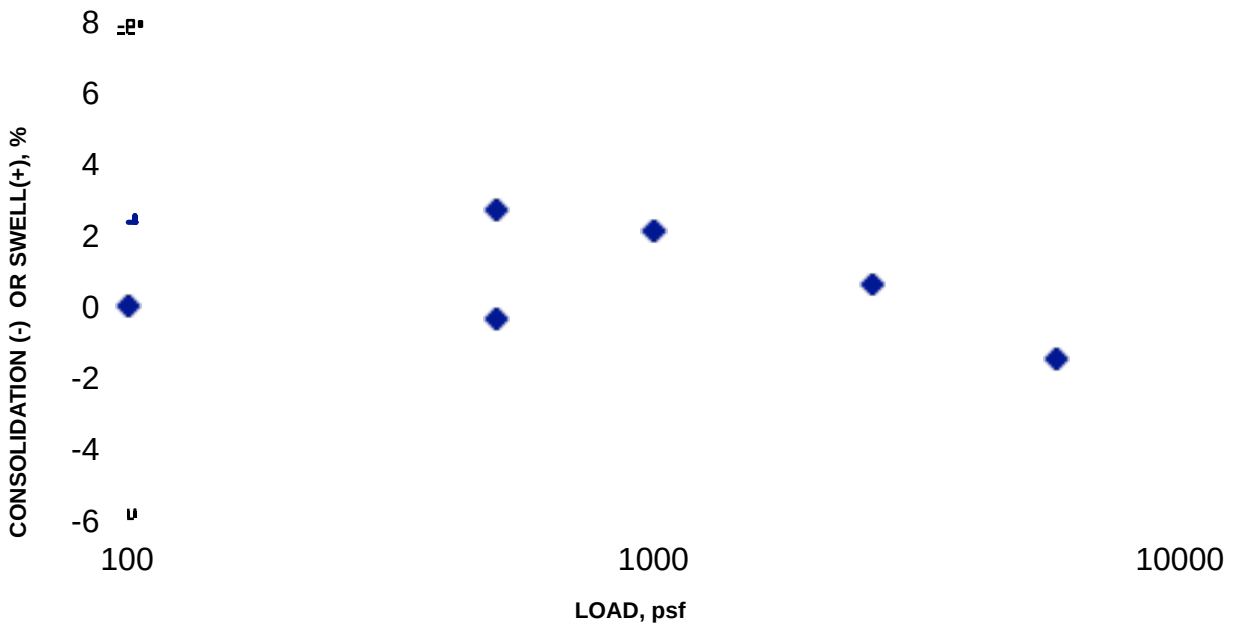
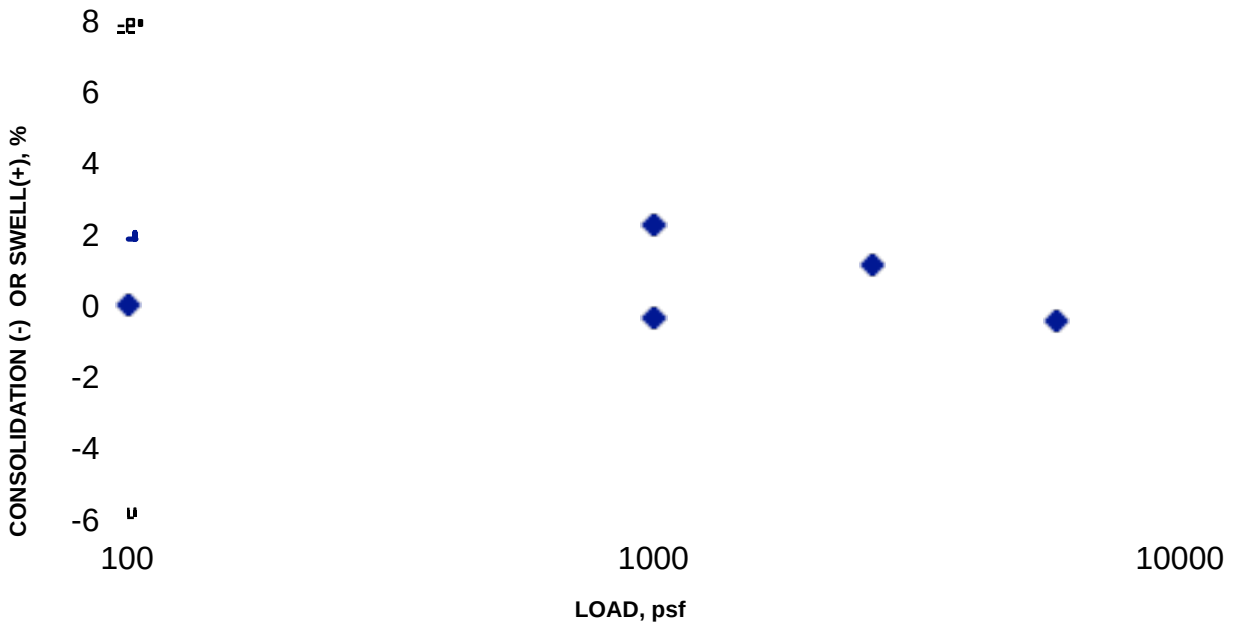
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 8 at 9 ft	**START DATE**	2/27/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	13.5%	**DRY DENSITY**	121 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 8 at 14 ft	**START DATE**	3/3/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	20.2%	**DRY DENSITY**	109 pcf

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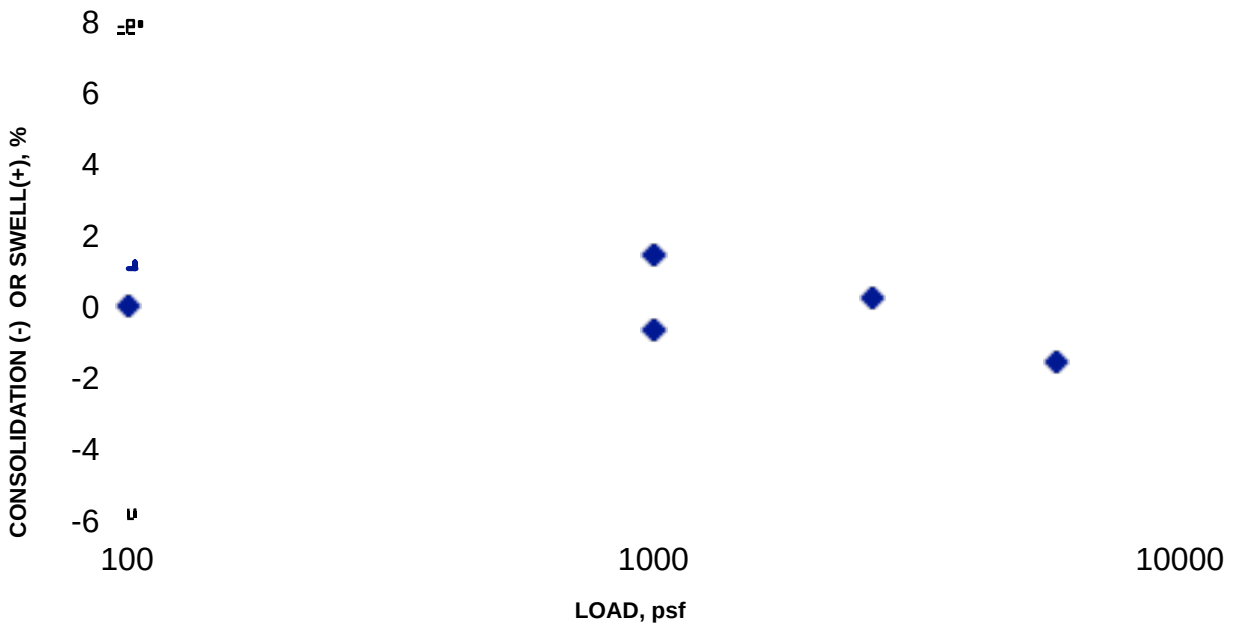
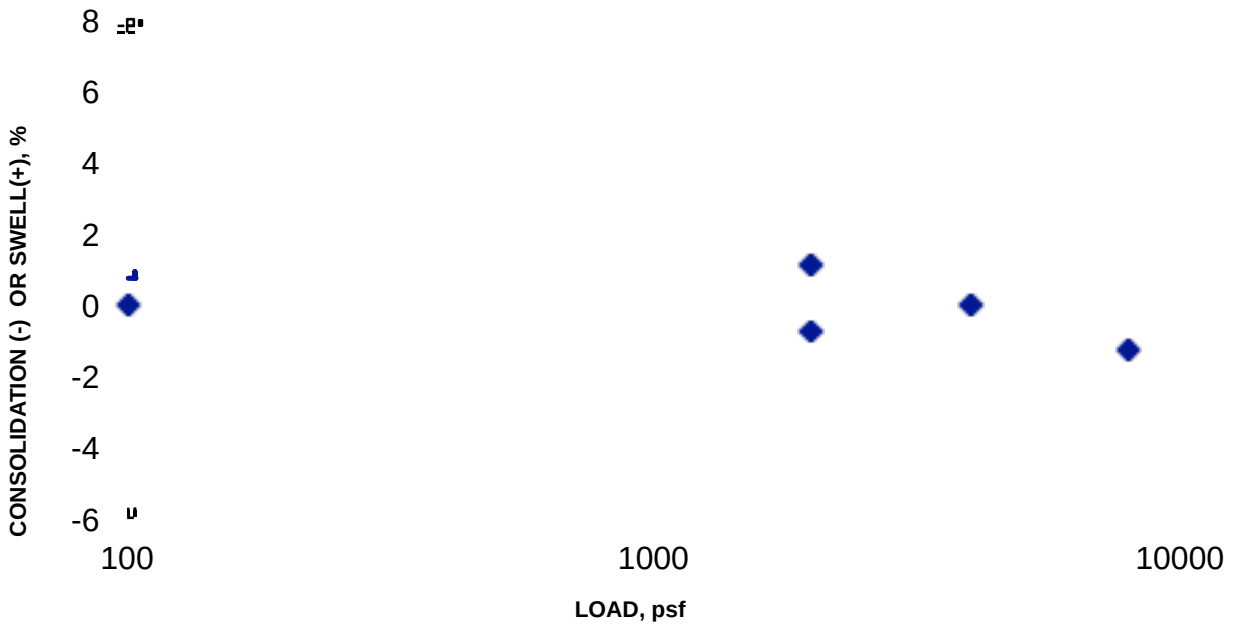
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.14
SAMPLE ID	Boring 8 at 19 ft	**START DATE**	3/3/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	16.5%	**DRY DENSITY**	114 pcf



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.13
SAMPLE ID	Boring 8 at 24 ft	**START DATE**	3/3/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	16.0%	**DRY DENSITY**	114 pcf

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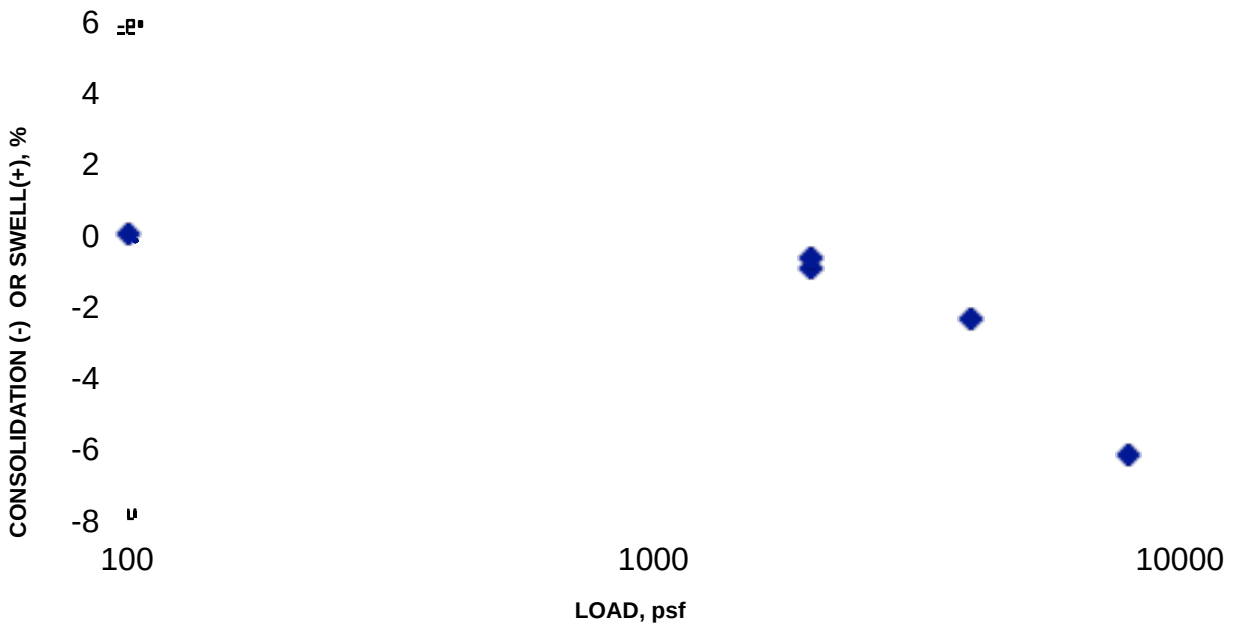
SWELL/CONSOLIDATION TESTING



PROJECT	Fairways at Vista Ridge	**PROJECT NO.**	12.139.14
SAMPLE ID	Boring 8 at 34 ft	**START DATE**	2/27/14
SAMPLE DESCRIPTION	Claystone Bedrock		
PRE-TEST MOISTURE CONTENT	14.2%	**DRY DENSITY**	108 pcf

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Fairways at Vista Ridge
Erie, Colorado
PCH Project No. 12.139.13

SUMMARY OF LABORATORY TEST RESULTS

Boring No.	Depth (ft)	Soil Description	Moisture Content (%)	Dry Density (pcf)	Swell (+) or Consolidation (-) (%)	Surchagre Pressure (psf)	Water Soluble Sulfate (ppm)	Passing #200 Sieve (%)	Atterberg Limits		
									LL	PL	PI
1	2	Fill - Clay/Claystone	10.5%	120	+7.9	500	300				
1	4	Claystone Bedrock	15.7%	115				96	51	17	34
1	9	Claystone Bedrock	15.3%	117	+16.9	500					
1	14	Claystone Bedrock	14.0%	117							
1	19	Claystone Bedrock	7.7%	128							
1	24	Claystone Bedrock	10.1%	125							
1	34	Claystone Bedrock	8.6%	121							
2	2	Lean Clay with Sand	17.0%	112				84	44	18	26
2	5	Lean Clay with Sand	10.3%	127	+6.4	500					
2	9	Claystone Bedrock	18.2%	115	+11.5	500					
2	14	Claystone Bedrock	16.1%	110							
2	19	Claystone Bedrock	14.1%	104							
2	24	Claystone Bedrock	13.5%	119	+5.6	2,000					
3	4	Sandy Lean Clay	9.6%	103							
3	9	Claystone Bedrock	10.2%	124	+6.5	500					
3	14	Claystone Bedrock	32.0%	106	+6.3	1,000					
3	19	Claystone Bedrock	17.4%	113	+2.8	2,000					
3	24	Claystone Bedrock	16.7%	113							
3	34	Claystone Bedrock	10.4%	118							
4	2	Fill - Sandy Lean Clay	13.4%	118	+0.4	500					
4	5	Sandy Lean Clay	11.6%	125	+6.5	500	400				
4	9	Sandy Lean Clay	7.5%	123							
4	14	Claystone/Sandstone Bedrock	10.5%	126	+0.7	1,000					
4	19	Claystone/Sandstone Bedrock	13.6%	105							
4	34	Claystone Bedrock	20.0%	109							

Fairways at Vista Ridge
Erie, Colorado
PCH Project No. 12.139.13

SUMMARY OF LABORATORY TEST RESULTS

Boring No.	Depth (ft)	Soil Description	Moisture Content (%)	Dry Density (pcf)	Swell (+) or Consolidation (-) (%)	Surchagre Pressure (psf)	Water Soluble Sulfate (ppm)	Passing #200 Sieve (%)	Atterberg Limits		
									LL	PL	PI
5	2	Sandy Lean Clay	11.9%	119				70	37	18	19
5	5	Sandy Lean Clay	6.6%	105	-4.1	500					
5	9	Claystone Bedrock	15.1%	116	+11.0	500					
5	14	Claystone Bedrock	15.9%	110							
5	19	Claystone Bedrock	14.9%	118	+3.9	2,000					
5	24	Claystone Bedrock	15.8%	110							
6	2	Sandy Lean Clay	16.6%	113	+2.6	200	300				
6	5	Claystone/Sandstone Bedrock	7.0%	123							
6	9	Claystone/Sandstone Bedrock	5.9%	111				68	39	18	21
6	14	Claystone/Sandstone Bedrock	5.1%	111							
6	19	Claystone/Sandstone Bedrock	3.5%	112							
6	24	Claystone Bedrock	19.4%	111	+3.1	2,000					
7	4	Sandy Lean Clay	9.7%	117	+6.1	500					
7	9	Claystone Bedrock	19.0%	114	+8.4	500		94	52	18	34
7	14	Claystone Bedrock	11.8%	123	+5.7	1,000					
7	19	Claystone Bedrock	11.6%	124							
7	24	Claystone/Sandstone Bedrock	10.0%	126							
8	4	Claystone Bedrock	15.5%	114	+12.5	500	1,600	99	58	19	39
8	9	Claystone Bedrock	13.5%	121	+3.1	500					
8	14	Claystone Bedrock	20.2%	109	+2.6	1,000					
8	19	Claystone Bedrock	16.5%	114	+2.1	1,000					
8	24	Claystone Bedrock	16.0%	114	+1.9	2,000					
8	29	Claystone Bedrock	14.8%	113							
8	34	Claystone Bedrock	14.2%	108	+0.3	2,000					

SUMMARY OF LABORATORY TEST RESULTS

Boring No.	Depth (ft)	Soil Description	Moisture Content (%)	Dry Density (pcf)	Swell (+) or Consolidation (-) (%)	Surchagre Pressure (psf)	Water Soluble Sulfate (ppm)	Passing #200 Sieve (%)	Atterberg Limits		
									LL	PL	PI
Boring No.	**Depth (ft)**	**Soil Description**	**Moisture Content (%)**	**Dry Density (pcf)**	**Swell (+) or Consolidation (-) (%)**	**Surchagre Pressure (psf)**	**(Proctor) Maximum Dry Density (pcf)**	**Optimum Moisture Content (%)**	**Atterberg Limits**		
									LL	**PL**	**PI**
Comp.*	< 20 ft	Remolded Claystone(Borings 1 & 3)	19.8	104.4	+3.1	500	107.7	17.5	45	17	28
Comp.**	< 20 ft	Remolded Claystone(Borings 5, 7 & 8)	18.1	103.2	+4.0	500	108.0	18.0	48	17	31

*Composite sample of claystone bedrock from noted borings - Remolded to approximately 97% of standard Proctor dry density at about 2% above optimum moisture content

**Composite sample of claystone bedrock from noted borings - Remolded to approximately 96% of standard Proctor dry density at about optimum moisture content

APPENDIX C

GENERAL NOTES

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS:

SS:	Split Spoon - 1⅜" I.D., 2" O.D., unless otherwise noted	HS:	Hollow Stem Auger
ST:	Thin-Walled Tube – 2.5" O.D., unless otherwise noted	PA:	Power Auger
RS:	Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted	HA:	Hand Auger
CB:	California Barrel - 1.92" I.D., 2.5" O.D., unless otherwise noted	RB:	Rock Bit
BS:	Bulk Sample or Auger Sample	WB:	Wash Boring or Mud Rotary

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value". For 2.5" O.D. California Barrel samplers (CB) the penetration value is reported as the number of blows required to advance the sampler 12 inches using a 140-pound hammer falling 30 inches, reported as "blows per inch," and is not considered equivalent to the "Standard Penetration" or "N-value".

WATER LEVEL MEASUREMENT SYMBOLS:

WL:	Water Level	WS:	While Sampling
WCI:	Wet Cave in	WD:	While Drilling
DCI:	Dry Cave in	BCR:	Before Casing Removal
AB:	After Boring	ACR:	After Casing Removal

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

DESCRIPTIVE SOIL CLASSIFICATION: Soil classification is based on the Unified Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

FINE-GRAINED SOILS

(CB) Blows/Ft.	(SS) Blows/Ft.	Consistency
< 3	0-2	Very Soft
3-5	3-4	Soft
6-10	5-8	Medium Stiff
11-18	9-15	Stiff
19-36	16-30	Very Stiff
> 36	> 30	Hard

COARSE-GRAINED SOILS

(CB) Blows/Ft.	(SS) Blows/Ft.	Relative Density
0-5	< 3	Very Loose
6-14	4-9	Loose
15-46	10-29	Medium Dense
47-79	30-50	Dense
> 79	> 50	Very Dense

BEDROCK

(CB) Blows/Ft.	(SS) Blows/Ft.	Consistency
< 24	< 20	Weathered
24-35	20-29	Firm
36-60	30-49	Medium Hard
61-96	50-79	Hard
> 96	> 79	Very Hard

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Terms of Other Constituents	Percent of Dry Weight
Trace	< 15
With	15 – 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75 mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Terms of Other Constituents	Percent of Dry Weight
Trace	< 5
With	5 – 12
Modifiers	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1-10
Medium	11-30
High	30+

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]					Soil Classification	
					Group Symbol	Group Name[B]
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[C]	Cu ≥ 4 and 1 ≤ Cc ≤ 3[E]		GW	Well graded gravel[F]
			Cu < 4 and/or 1 > Cc > 3[E]		GP	Poorly graded gravel[F]
		Gravels with Fines More than 12% fines[C]	Fines classify as ML or MH		GM	Silty gravel[F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel[F,G,H]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines[D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3[E]		SW	Well graded sand[I]
			Cu < 6 and/or 1 > Cc > 3[E]		SP	Poorly graded sand[I]
		Sands with Fines More than 12% fines[D]	Fines classify as ML or MH		SM	Silty sand[G,H,I]
			Fines classify as CL or CH		SC	Clayey sand[G,H,I]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI > 7 and plots on or above "A" line[J]		CL	Lean clay[K,L,M]
			PI < 4 or plots below "A" line[J]		ML	Silt[K,L,M]
		Organic	**Liquid limit - oven dried**	< 0.75	OL	Organic clay[K,L,M,N]
			Liquid limit - not dried			Organic silt[K,L,M,O]
	Silts and Clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line		CH	Fat clay[K,L,M]
			PI plots below "A" line		MH	Elastic silt[K,L,M]
		Organic	Liquid limit - oven dried	< 0.75	OH	Organic clay[K,L,M,P]
			Liquid limit - not dried			Organic silt[K,L,M,Q]
Highly organic soils	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-in. (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well graded gravel with silt, GW-GC well graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well graded sand with silt, SW-SC well graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

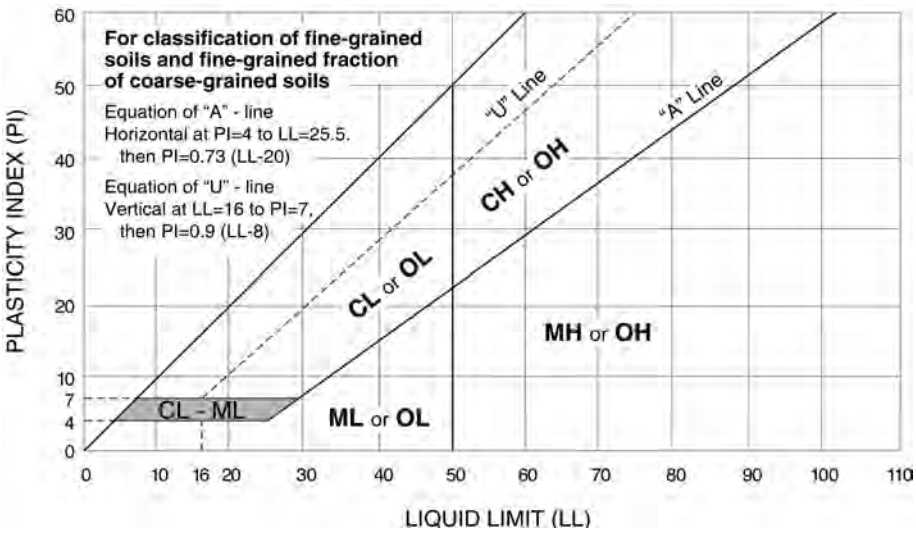
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



ROCK CLASSIFICATION
(Based on ASTM C-294)

Sedimentary Rocks

Sedimentary rocks are stratified materials laid down by water or wind. The sediments may be composed of particles or pre-existing rocks derived by mechanical weathering, evaporation or by chemical or organic origin. The sediments are usually indurated by cementation or compaction.

Chert Very fine-grained siliceous rock composed of micro-crystalline or cyrptocrystalline quartz, chalcedony or opal. Chert is various colored, porous to dense, hard and has a conchoidal to splintery fracture.

Claystone Fine-grained rock composed of or derived by erosion of silts and clays or any rock containing clay. Soft massive and may contain carbonate minerals.

Conglomerate Rock consisting of a considerable amount of rounded gravel, sand and cobbles with or without interstitial or cementing material. The cementing or interstitial material may be quartz, opal, calcite, dolomite, clay, iron oxides or other materials.

Dolomite A fine-grained carbonate rock consisting of the mineral dolomite [$CaMg(CO_3)_2$]. May contain noncarbonate impurities such as quartz, chert, clay minerals, organic matter, gypsum and sulfides. Reacts with hydrochloric acid (HCL).

Limestone A fine-grained carbonate rock consisting of the mineral calcite ($CaCO_3$). May contain noncarbonate impurities such as quartz, chert, clay minerals, organic matter, gypsum and sulfides. Reacts with hydrochloric acid (HCL).

Sandstone Rock consisting of particles of sand with or without interstitial and cementing materials. The cementing or interstitial material may be quartz, opal, calcite, dolomite, clay, iron oxides or other material.

Shale Fine-grained rock composed of or derived by erosion of silts and clays or any rock containing clay. Shale is hard, platy, of fissile may be gray, black, reddish or green and may contain some carbonate minerals (calcareous shale).

Siltstone Fine grained rock composed of or derived by erosion of silts or rock containing silt. Siltstones consist predominantly of silt sized particles (0.0625 to 0.002 mm in diameter) and are intermediate rocks between claystones and sandstones and may contain carbonate minerals.

LABORATORY TEST
SIGNIFICANCE AND PURPOSE

TEST	SIGNIFICANCE	PURPOSE
California Bearing Ratio	Used to evaluate the potential strength of subgrade soil, subbase, and base course material, including recycled materials for use in road and airfield pavements.	***Pavement Thickness Design***
Consolidation	Used to develop an estimate of both the rate and amount of both differential and total settlement of a structure.	***Foundation Design***
Direct Shear	Used to determine the consolidated drained shear strength of soil or rock.	***Bearing Capacity, Foundation Design, and Slope Stability***
Dry Density	Used to determine the in-place density of natural, inorganic, fine-grained soils.	***Index Property Soil Behavior***
Expansion	Used to measure the expansive potential of fine-grained soil and to provide a basis for swell potential classification.	***Foundation and Slab Design***
Gradation	Used for the quantitative determination of the distribution of particle sizes in soil.	***Soil Classification***
Liquid & Plastic Limit, Plasticity Index	Used as an integral part of engineering classification systems to characterize the fine-grained fraction of soils, and to specify the fine-grained fraction of construction materials.	***Soil Classification***
Permeability	Used to determine the capacity of soil or rock to conduct a liquid or gas.	***Groundwater Flow Analysis***
pH	Used to determine the degree of acidity or alkalinity of a soil.	***Corrosion Potential***
Resistivity	Used to indicate the relative ability of a soil medium to carry electrical currents.	***Corrosion Potential***
R-Value	Used to evaluate the potential strength of subgrade soil, subbase, and base course material, including recycled materials for use in road and airfield pavements.	***Pavement Thickness Design***
Soluble Sulfate	Used to determine the quantitative amount of soluble sulfates within a soil mass.	***Corrosion Potential***
Unconfined Compression	To obtain the approximate compressive strength of soils that possess sufficient cohesion to permit testing in the unconfined state.	***Bearing Capacity Analysis for Foundations***
Water Content	Used to determine the quantitative amount of water in a soil mass.	***Index Property Soil Behavior***

REPORT TERMINOLOGY
(Based on ASTM D653)

Allowable Soil Bearing Capacity	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Alluvium	Soil, the constituents of which have been transported in suspension by flowing water and subsequently deposited by sedimentation.
Aggregate Base Course	A layer of specified material placed on a subgrade or subbase usually beneath slabs or pavements.
Backfill	A specified material placed and compacted in a confined area.
Bedrock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting or other methods of extraordinary force for excavation.
Bench	A horizontal surface in a sloped deposit.
Caisson (Drilled Pier or Shaft)	A concrete foundation element cast in a circular excavation which may have an enlarged base. Sometimes referred to as a cast-in-place pier or drilled shaft.
Coefficient of Friction	A constant proportionality factor relating normal stress and the corresponding shear stress at which sliding starts between the two surfaces.
Colluvium	Soil, the constituents of which have been deposited chiefly by gravity such as at the foot of a slope or cliff.
Compaction	The densification of a soil by means of mechanical manipulation
Concrete Slab-on-Grade	A concrete surface layer cast directly upon a base, subbase or subgrade, and typically used as a floor system.
Differential Movement	Unequal settlement or heave between, or within foundation elements of structure.
Earth Pressure	The pressure exerted by soil on any boundary such as a foundation wall.
ESAL	Equivalent Single Axle Load, a criteria used to convert traffic to a uniform standard, (18,000 pound axle loads).
Engineered Fill	Specified material placed and compacted to specified density and/or moisture conditions under observations of a representative of a geotechnical engineer.
Equivalent Fluid	A hypothetical fluid having a unit weight such that it will produce a pressure against a lateral support presumed to be equivalent to that produced by the actual soil. This simplified approach is valid only when deformation conditions are such that the pressure increases linearly with depth and the wall friction is neglected.
Existing Fill (or Man-Made Fill)	Materials deposited throughout the action of man prior to exploration of the site.
Existing Grade	The ground surface at the time of field exploration.

REPORT TERMINOLOGY
(Based on ASTM D653)

Expansive Potential	The potential of a soil to expand (increase in volume) due to absorption of moisture.
Finished Grade	The final grade created as a part of the project.
Footing	A portion of the foundation of a structure that transmits loads directly to the soil.
Foundation	The lower part of a structure that transmits the loads to the soil or bedrock.
Frost Depth	The depth at which the ground becomes frozen during the winter season.
Grade Beam	A foundation element or wall, typically constructed of reinforced concrete, used to span between other foundation elements such as drilled piers.
Groundwater	Subsurface water found in the zone of saturation of soils or within fractures in bedrock.
Heave	Upward movement.
Lithologic	The characteristics which describe the composition and texture of soil and rock by observation.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil, sometimes referred to as natural soil.
Optimum Moisture Content	The water content at which a soil can be compacted to a maximum dry unit weight by a given compactive effort.
Perched Water	Groundwater, usually of limited area maintained above a normal water elevation by the presence of an intervening relatively impervious continuous stratum.
Scarify	To mechanically loosen soil or break down existing soil structure.
Settlement	Downward movement.
Skin Friction (Side Shear)	The frictional resistance developed between soil and an element of the structure such as a drilled pier.
Soil (Earth)	Sediments or other unconsolidated accumulations of solid particles produced by the physical and chemical disintegration of rocks, and which may or may not contain organic matter.
Strain	The change in length per unit of length in a given direction.
Stress	The force per unit area acting within a soil mass.
Strip	To remove from present location.
Subbase	A layer of specified material in a pavement system between the subgrade and base course.
Subgrade	The soil prepared and compacted to support a structure, slab or pavement system.

Environmental Hazards Report: Please see the Preliminary Geotechnical Report (Section 10j) for Geotechnical, Environmental Hazards and Geologic characteristics.

Soils Report: Please see the Preliminary Geotechnical Report (Section 10j) for Soils, Environmental Hazards and Geologic characteristics.

LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
FAX (303) 333-1107
E-mail: lsc@lscdenver.com

October 30, 2014

Chartered Development Corporation
c/o Ward Ritter
3160 Village Vista Drive, Suite 104
Erie, CO 80516

Re: Montex North and South
Vista Ridge Zones 15 and 16
Trip Generation Comparison
Erie, CO
(LSC #140970)

Dear Mr. Ritter:

Per your request, we have completed this letter for Zone 16 of the Vista Ridge development in Erie, Colorado. The purpose of this letter is to compare trip generation from the currently proposed land use with the trip generation from the previously studied land use from the December, 2000 *Vista Ridge Traffic Impact Analysis* (TIA) by LSC and a recent trip generation comparison by LSC in September, 2013.

The currently proposed plan for the Vista Ridge development maintains the shopping center area at about 340,000 square feet. The residential development on the south portion will be reduced from 200 apartment units to 144 apartment units and one single-family detached unit. The northern portion will include 26 single-family detached, age-targeted dwelling units. The northern portion is actually in Zone 15, but was included in this analysis to show the entire site currently being proposed has a lower trip generation potential than the 200 apartment units previously assumed in Zone 16.

Table 1 shows the estimated trip generation potential from the 2000 LSC analysis (6th edition of the ITE *Trip Generation Manual*, 1997), for the trip generation comparison completed in September, 2013, and for the currently proposed land use based on the trip generation rates from the 9th edition of the ITE *Trip Generation Manual*, 2012.

Table 1 shows the currently proposed change in land use is expected to generate about 818 fewer weekday trips, about 63 fewer morning peak-hour trips, and about 155 fewer afternoon peak-hour trips than the original study. The findings in the December, 2000 *Vista Ridge TIA* are still applicable.

* * * * *

We trust this information will assist you in planning for the Montex North and South development.

Respectfully submitted,

LSC Transportation Consultants, Inc.

By:_____
Christopher S. McGranahan, P.E., PTOE

CSM/wc

10-30-14

Enclosures: Table 1

Z:\LSC\Projects\2014\140970-Montex\Report\Montex-103014.wpd

Table 1
ESTIMATED TRAFFIC GENERATION
Montex North and South
Erie, CO
(LSC No. 140970; October; 2014)

Traffic Analysis Zone [2]	Land Use Description	Assumed Trip Generation Units	Generation Rates [1] Average Weekday Traffic	Peak-Hour AM In	Peak-Hour AM Out	Peak-Hour PM In	Peak-Hour PM Out	Percent External Traffic	External Trips Generated Average Weekday Traffic	Peak-Hour AM In	Peak-Hour AM Out	Peak-Hour PM In	Peak-Hour PM Out
Land Use and Trip Generation Approved Based on Vista Ridge TIA, December 2000 by LSC													
16	Office [3]	83 KSF [4]	11.01	1.37	0.19	0.25	1.24	90%	822	103	14	19	92
	Commercial [5]	392 KSF	41.84	0.56	0.36	1.89	2.05	75%	12,316	165	106	557	604
	Total Zone 16							**Total =**	**13,138**	**268**	**120**	**576**	**696**
Recent Trip Generation Comparison (September, 2013 by LSC)													
16	Shopping Center [6]	340.5 KSF	44.23	0.599	0.367	1.919	2.079	75%	11,295	153	94	490	531
	Apartments [7]	200.0 DU [8]	6.65	0.102	0.408	0.403	0.217	90%	1,197	18	73	73	39
								Total =	**12,492**	**171**	**167**	**563**	**570**
Currently Proposed Land Use													
16	Shopping Center [6]	340.5 KSF	44.23	0.599	0.367	1.919	2.079	75%	11,295	153	94	490	531
16 North	Single-Family - Age-Targeted [7]	26.0 DU [8]	6.60	0.132	0.353	0.397	0.238	90%	154	3	8	9	6
16 South	Single-Family [9]	1.0 DU	9.52	0.188	0.563	0.630	0.370	90%	9	0	1	1	0
16 South	Apartments [10]	144.0 DU	6.65	0.102	0.408	0.403	0.217	90%	862	13	53	52	28
								Total =	**12,320**	**169**	**156**	**552**	**565**
								Difference =	**-818**	**-99**	**36**	**-24**	**-131**
										AM =	**-63**	**PM =**	**-155**

Notes:
(1) *Trip Generation*, Institute of Transportation Engineers, 6th Edition, 1997 (previously proposed land use) and 9th Edition, 2012 (currently proposed land use).
(2) Refer to Figure 4 from December 2000 TIA for zone locations.
(3) ITE Land Use No. 710, General Office Building
(4) KSF = 1,000 square feet
(5) ITE Land Use No. 820, Shopping Center - formula rate
(6) ITE Land Use No. 820, Shopping Center - formula rate - assumes a floor area ratio of 0.15 on 49.82 acres plus a future 15.0 KSF Walgreens store
(7) Average of ITE Land Use No. 210, Single-Family Detached and ITE Land Use No. 251, Senior Adult Housing Detached
(8) DU = Dwelling Unit
(9) ITE Land Use No. 210, Single-Family Detached
(10) ITE Land Use No. 220, Apartments

prepared by
Enertia Consulting Group, LLC
1529 Market Street, Suite 200
Denver, CO 80202

Preliminary Utility Study

Montex North at Vista Ridge, Erie, Colorado

prepared for

Chartered Development Corp
3160 Village Vista Drive
Erie, CO 80516

LAND • ENERGY • INFRASTRUCTURE

1437 Larimer St.
Denver, CO 80202
303•875•7131
shawn.merz@enertiacg.com

April 17, 2015

Mr. Martin Ostholthoff
Town of Erie
Community Development Director
645 Holbrook Street
P.O. Box 750
Erie, CO 80516

RE: Preliminary Utility Study Letter
Montex North at Vista Ridge

Dear Mr. Ostholthoff:

This Preliminary Utility Letter Report (Report) is being submitted to the Town of Erie in partial fulfillment of the Site Plan application requirements for Vista Ridge Filing No. 2, 1st Amendment (Montex North). The intent of this Report is to: (i) summarize the water demands and fire flow capacity of the proposed water system being submitted to the Town of Erie for review; (ii) determine sanitary sewer capacity requirements for the proposed 25-unit development in accordance with the Town of Erie Standards and Specifications.

Background Information

The Montex North project is a re-subdivision of Lot 2, Vista Ridge Filing No. 2 and is located in the Southwest Quarter of Section 33, Township 1 North, Range 68 West of the 6th Principle Meridian. The project is bounded to the north by Colorado National Golf Course, Vista Ridge Academy to the east, Primrose Preschool to the west and Ridge View Drive to the south. The adjacent major roadways are Mountain View Boulevard to the west, Sheridan Parkway to the east and East Baseline Road to the south. The proposed site consists of 4.04 acres. The developed parcel will consist of 25 single-family homes with a density of 6.2 dwelling units/acre. The construction will be Type V Construction. Connections will be made to an existing 12-inch waterline and 8-inch sanitary sewer located in Ridge View Drive. There is an existing water stub at the east end of the site which will be utilized for the proposed water system. An additional connection in Ridge View Drive will be made to provide a looped water system to the site. No sanitary stubs have been provided to the site.

Fire hydrant flow tests were performed on the two fire hydrants adjacent to the site in Ridge View Drive by Integrated Safety Services of Colorado on October 21, 2014. Data from these tests were used to determine the boundary conditions in the water analysis. The static pressure was 80 psi and the lowest residual pressure was 70 psi which equates to a head of 184.8 feet and 161.7 feet respectively.

An updated sanitary sewer analysis dated April 6, 2015 by Hurst and Associates has been attached and demonstrates that the existing sanitary sewer mains have capacity to accommodate the Montex North Development.

Water System

The proposed water system for Montex North is a looped system which connects to the existing 12-inch waterline in Ridge View Drive. The proposed water system consists of 1229 LF ~ 8-inch PVC, 4 blow offs

and 4 fire hydrants which will provide domestic potable water, fire protection and irrigation for the 25 single-family units and open space.

There are four dead end private drives on site with 8-inch waterline located within a tract. These drives are less than 150'. A hammerhead turnaround and a grasscrete fire department emergency access have been provided on Ridge View Court. Fire hydrants will be provided on the 8-inch looped water line. Per the Town of Erie Standards and Specification, for 1 and 2 family units, 1000 gpm for duration of 2 hours is required. Hydrant spacing is limited to 500 feet. One irrigation tap will be provided for open space areas.

To evaluate the water distribution system hydraulics and determine adequate design, the proposed water system was modeled assuming a full build out condition using Hazen-Williams Formula within Bentley WaterCAD version V8i software. From the fire hydrant flow tests, a hydraulic grade line curve was used to create a pump curve to simulate variable pressure readings. A Hazen-Williams Friction Coefficient of 100 was used for 8-inch and 12-inch pipe as outlined in the Town of Erie Standards and Specifications. The water demands calculated for the project were applied to the junctions throughout the system. The distribution system was modeled under four scenarios based on an open pipe system which include: average day demand, maximum day demand, maximum day demand with fire flow demand, and peak hour demand.

It was determined that each fire hydrant in the proposed water system is capable of providing 2317 gpm with a maximum velocity of 10 ft/sec during the maximum day demand. Pressures for all scenarios are within the operating pressure requirements outlined in the Town of Erie Standards and specifications.

The water calculations attached for reference.

Sanitary Sewer

The proposed Montex North sanitary system serves 25 single-family residential lots and consists of 1186 LF of 8-inch PVC sewer which will connect to an existing 8-inch PVC sanitary sewer located in Ridge View Drive south of the site.

The sanitary demands for the project were calculated using the requirements defined by the Town of Erie Standards and Specifications. A flow rate of 90 gpcd with residential multiplier of 3.0 was used to determine the Average Daily Flow Rate (0.010 cfs). A peaking factor of 5 was used to determine the Peak Flow Rate which resulted in 0.052 cfs. To accommodate homes with 9 foot basements, the sanitary sewer has been designed at the town's allowable minimum grade of 0.40%. Using Manning's Equation with a roughness coefficient of 0.013 and a pipe slope of 0.40% yields a capacity of 0.76 ft^3/sec at 80% depth for an 8-inch sewer.

The calculations and flow criteria are attached for reference.

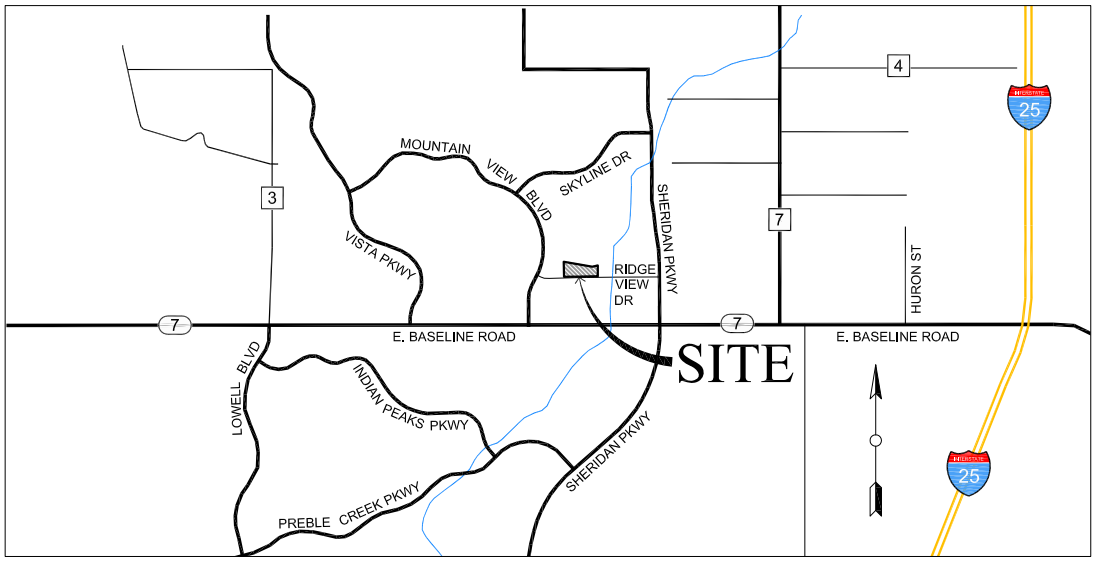
We trust that this Report is acceptable and complete. Please contact me at shawn.merz@enertiacg.com or (720) 502-6574 should you have any questions regarding this submittal.

Sincerely,

ENERTIA CONSULTING GROUP, LLC

Shawn Merz, PE, LEED AP
Senior Engineer

Enclosures


MOUNTAIN VIEW BLVD
SKYLINE DR
VISTA PKWY
RIDGE VIEW DR
SHERIDAN PKWY
HURON ST
E. BASELINE ROAD
E. BASELINE ROAD
SITE
LOWELL BLVD
INDIAN PEAKS PKWY
PREBLE CREEK PKWY
SHERIDAN PKWY
3
4
7
7
7
25
25

Montex North at Vista Ridge Water Demand Summary

Building Demand Breakdown

Node	Land Use	Units (EA)	Residential/Unit Multiplier	Avg. Demand (GPCD) (GPD/ACRE)	Average Day Demand GPM	Max Day/Avg Day Peaking Factor	Max Day Demand (GPM)	Max Hr/Avg Day Peaking Factor	Max Hour Demand (GPM)
J-2	Multi-Family Residential	2	3.00	140	0.58	2.60	1.52	3.90	2.28
J-4	Multi-Family Residential	4	3.00	140	1.17	2.60	3.03	3.90	4.55
J-5	Multi-Family Residential	2	3.00	140	0.58	2.60	1.52	3.90	2.28
J-7	Multi-Family Residential	1	3.00	140	0.29	2.60	0.76	3.90	1.14
J-10	Multi-Family Residential	5	3.00	140	1.46	2.60	3.79	3.90	5.69
J-11	Multi-Family Residential	4	3.00	140	1.17	2.60	3.03	3.90	4.55
J-12	Multi-Family Residential	4	3.00	140	1.17	2.60	3.03	3.90	4.55
J-13	Multi-Family Residential	3	3.00	140	0.88	2.60	2.28	3.90	3.41
		25			**7.29**		**18.96**		**28.44**

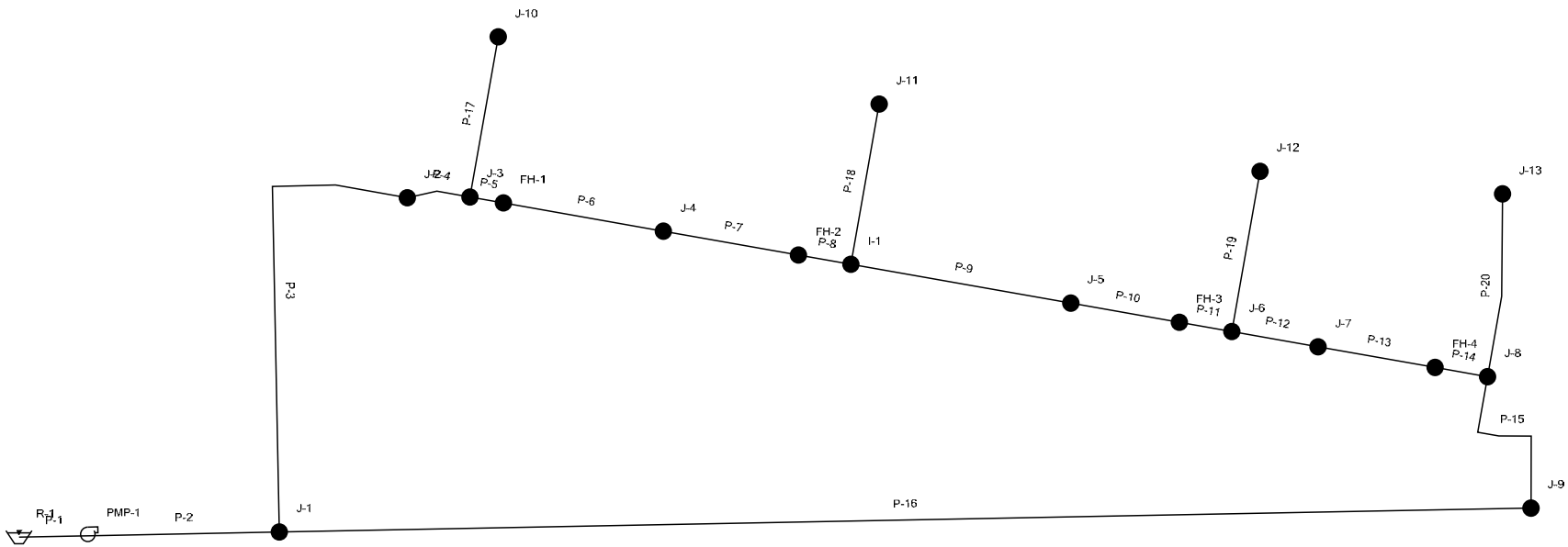
Irrigation Demand Breakdown

Node	Land Use	Irrigation Area (sf)	Irrigation Area (acres)	Irrigation Rate[1] (GPM/acre)	Average Day Demand (GPM)	Max Day Irrigation Rate[2] (GPM/acre)	Max Day Demand (GPM)	Peak Flow Rate (GPM/acre)	Max Hour Demand (GPM)
I-1	Irrigation Area 1	30,760	0.7062	1.55	1.09	15.84	11.19	23.50	16.59
		30,760	**0.71**		**1.09**		**11.19**		**16.59**

Montex-North-WaterCAD.wtg

Scenario: Base

Active Scenario: Base



Montex-North-WaterCAD.wtg

FlexTable: Reservoir Table

Active Scenario: Base

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
29	R-1	5,242.50	<None>	0	5,242.50

Montex-North-WaterCAD.wtg

FlexTable: Pump Table

Active Scenario: Base

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Pump Definition	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
64	PMP-1	5,242.50	Connection	On	5,242.50	5,427.30	0	184.80

Montex-North-WaterCAD.wtg

FlexTable: Junction Table

Active Scenario: Base

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	5,245.30	0.00	5,427.30	78.7
32	J-2	5,247.30	0.00	5,427.30	77.9
34	J-3	5,248.13	0.00	5,427.30	77.5
36	FH-1	5,248.64	0.00	5,427.30	77.3
56	J-10	5,249.64	0.00	5,427.30	76.9
38	J-4	5,251.12	0.00	5,427.30	76.2
85	FH-2	5,253.22	0.00	5,427.30	75.3
40	I-1	5,254.02	0.00	5,427.30	75.0
58	J-11	5,254.81	0.00	5,427.30	74.6
44	J-5	5,256.77	0.00	5,427.30	73.8
79	FH-3	5,258.05	0.00	5,427.30	73.2
46	J-6	5,258.86	0.00	5,427.30	72.9
60	J-12	5,259.95	0.00	5,427.30	72.4
88	J-7	5,260.35	0.00	5,427.30	72.2
53	J-9	5,260.90	0.00	5,427.30	72.0
48	FH-4	5,262.36	0.00	5,427.30	71.4
50	J-8	5,263.26	0.00	5,427.30	71.0
77	J-13	5,263.95	0.00	5,427.30	70.7

Montex-North-WaterCAD.wtg

FlexTable: Pipe Table

Active Scenario: Base

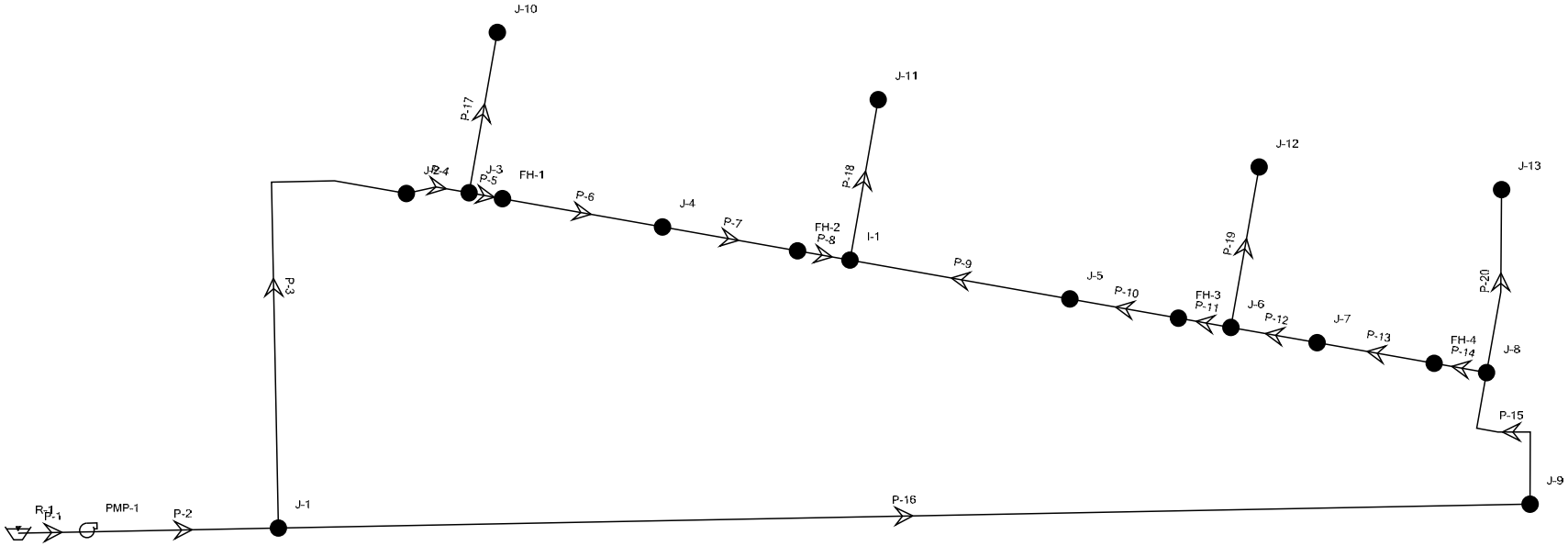
Current Time: 0.000 hours

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
37	P-5	18	J-3	FH-1	8.0	PVC	100.0	0.000	0.02	0.00	0.000
35	P-4	33	J-2	J-3	8.0	PVC	100.0	0.000	0.02	0.00	0.000
86	P-7	71	J-4	FH-2	8.0	PVC	100.0	0.000	0.02	0.00	0.000
39	P-6	84	FH-1	J-4	8.0	PVC	100.0	0.000	0.02	0.00	0.000
33	P-3	249	J-1	J-2	8.0	PVC	100.0	0.000	0.02	0.00	0.000
87	P-8	28	FH-2	I-1	8.0	PVC	100.0	0.000	0.02	0.00	0.000
81	P-11	28	FH-3	J-6	8.0	PVC	100.0	0.000	0.02	0.00	0.000
82	P-9	116	I-1	J-5	8.0	PVC	100.0	0.000	0.02	0.00	0.000
80	P-10	57	J-5	FH-3	8.0	PVC	100.0	0.000	0.02	0.00	0.000
89	P-12	45	J-6	J-7	8.0	PVC	100.0	0.000	0.01	0.00	0.000
90	P-13	62	J-7	FH-4	8.0	PVC	100.0	0.000	0.01	0.00	0.000
51	P-14	28	FH-4	J-8	8.0	PVC	100.0	0.000	0.01	0.00	0.000
54	P-15	94	J-8	J-9	8.0	PVC	100.0	0.000	0.01	0.00	0.000
65	P-1	36	R-1	PMP-1	12.0	PVC	100.0	0.000	0.01	0.00	0.000
66	P-2	98	PMP-1	J-1	12.0	PVC	100.0	0.000	0.01	0.00	0.000
78	P-20	95	J-8	J-13	8.0	PVC	100.0	0.000	0.00	0.00	0.000
61	P-19	84	J-6	J-12	8.0	PVC	100.0	0.000	0.00	0.00	0.000
59	P-18	84	I-1	J-11	8.0	PVC	100.0	0.000	0.00	0.00	0.000
55	P-16	648	J-9	J-1	12.0	PVC	100.0	0.000	0.01	0.00	0.000
57	P-17	84	J-3	J-10	8.0	PVC	100.0	0.000	0.00	0.00	0.000

Montex-North-WaterCAD.wtg

Scenario: Average Day

Active Scenario: Average Day



Montex-North-WaterCAD.wtg
FlexTable: Reservoir Table
Active Scenario: Average Day

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
29	R-1	5,242.50	<None>	8.39	5,242.50

Montex-North-WaterCAD.wtg

FlexTable: Pump Table

Active Scenario: Average Day

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Pump Definition	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
64	PMP-1	5,242.50	Connection	On	5,242.50	5,427.02	8.39	184.52

Montex-North-WaterCAD.wtg
FlexTable: Junction Table
Active Scenario: Average Day

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	5,245.30	0.00	5,427.02	78.6
32	J-2	5,247.30	0.58	5,427.02	77.8
34	J-3	5,248.13	0.00	5,427.02	77.4
36	FH-1	5,248.64	0.00	5,427.02	77.2
56	J-10	5,249.64	1.46	5,427.02	76.7
38	J-4	5,251.12	1.17	5,427.02	76.1
85	FH-2	5,253.22	0.00	5,427.02	75.2
40	I-1	5,254.02	1.09	5,427.02	74.8
58	J-11	5,254.81	1.17	5,427.02	74.5
44	J-5	5,256.77	0.58	5,427.02	73.7
79	FH-3	5,258.05	0.00	5,427.02	73.1
46	J-6	5,258.86	0.00	5,427.02	72.8
60	J-12	5,259.95	1.17	5,427.02	72.3
88	J-7	5,260.35	0.29	5,427.02	72.1
53	J-9	5,260.90	0.00	5,427.02	71.9
48	FH-4	5,262.36	0.00	5,427.02	71.2
50	J-8	5,263.26	0.00	5,427.02	70.9
77	J-13	5,263.95	0.88	5,427.02	70.6

Montex-North-WaterCAD.wtg

FlexTable: Pipe Table

Active Scenario: Average Day

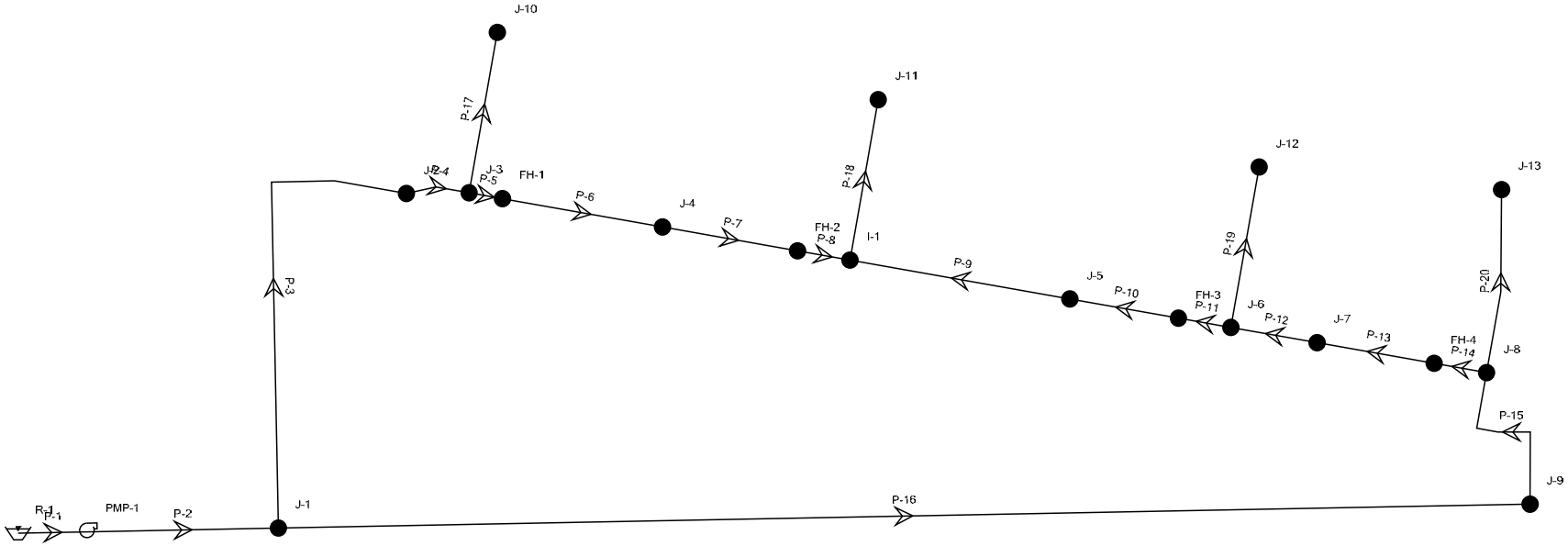
Current Time: 0.000 hours

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
65	P-1	36	R-1	PMP-1	12.0	PVC	100.0	0.000	8.39	0.02	0.000
66	P-2	98	PMP-1	J-1	12.0	PVC	100.0	0.000	8.39	0.02	0.000
33	P-3	249	J-1	J-2	8.0	PVC	100.0	0.000	4.16	0.03	0.000
35	P-4	33	J-2	J-3	8.0	PVC	100.0	0.000	3.58	0.02	0.000
37	P-5	18	J-3	FH-1	8.0	PVC	100.0	0.000	2.12	0.01	0.000
39	P-6	84	FH-1	J-4	8.0	PVC	100.0	0.000	2.12	0.01	0.000
57	P-17	84	J-3	J-10	8.0	PVC	100.0	0.000	1.46	0.01	0.000
59	P-18	84	I-1	J-11	8.0	PVC	100.0	0.000	1.17	0.01	0.000
61	P-19	84	J-6	J-12	8.0	PVC	100.0	0.000	1.17	0.01	0.000
86	P-7	71	J-4	FH-2	8.0	PVC	100.0	0.000	0.95	0.01	0.000
87	P-8	28	FH-2	I-1	8.0	PVC	100.0	0.000	0.95	0.01	0.000
78	P-20	95	J-8	J-13	8.0	PVC	100.0	0.000	0.88	0.01	0.000
82	P-9	116	I-1	J-5	8.0	PVC	100.0	0.000	-1.31	0.01	0.000
80	P-10	57	J-5	FH-3	8.0	PVC	100.0	0.000	-1.89	0.01	0.000
81	P-11	28	FH-3	J-6	8.0	PVC	100.0	0.000	-1.89	0.01	0.000
89	P-12	45	J-6	J-7	8.0	PVC	100.0	0.000	-3.06	0.02	0.000
51	P-14	28	FH-4	J-8	8.0	PVC	100.0	0.000	-3.35	0.02	0.000
90	P-13	62	J-7	FH-4	8.0	PVC	100.0	0.000	-3.35	0.02	0.000
54	P-15	94	J-8	J-9	8.0	PVC	100.0	0.000	-4.23	0.03	0.000
55	P-16	648	J-9	J-1	12.0	PVC	100.0	0.000	-4.23	0.01	0.000

Montex-North-WaterCAD.wtg

Scenario: Max Day

Active Scenario: Max Day



Montex-North-WaterCAD.wtg
FlexTable: Reservoir Table
Active Scenario: Max Day

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
29	R-1	5,242.50	<None>	30.15	5,242.50

Montex-North-WaterCAD.wtg

FlexTable: Pump Table

Active Scenario: Max Day

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Pump Definition	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
64	PMP-1	5,242.50	Connection	On	5,242.50	5,426.33	30.15	183.83

Montex-North-WaterCAD.wtg
FlexTable: Junction Table
Active Scenario: Max Day

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	5,245.30	0.00	5,426.33	78.3
32	J-2	5,247.30	1.52	5,426.33	77.5
34	J-3	5,248.13	0.00	5,426.33	77.1
36	FH-1	5,248.64	0.00	5,426.33	76.9
56	J-10	5,249.64	3.79	5,426.33	76.4
38	J-4	5,251.12	3.03	5,426.33	75.8
85	FH-2	5,253.22	0.00	5,426.33	74.9
40	I-1	5,254.02	11.19	5,426.33	74.5
58	J-11	5,254.81	3.03	5,426.33	74.2
44	J-5	5,256.77	1.52	5,426.33	73.4
79	FH-3	5,258.05	0.00	5,426.33	72.8
46	J-6	5,258.86	0.00	5,426.33	72.5
60	J-12	5,259.95	3.03	5,426.33	72.0
88	J-7	5,260.35	0.76	5,426.33	71.8
53	J-9	5,260.90	0.00	5,426.33	71.6
48	FH-4	5,262.36	0.00	5,426.33	70.9
50	J-8	5,263.26	0.00	5,426.33	70.6
77	J-13	5,263.95	2.28	5,426.33	70.3

Montex-North-WaterCAD.wtg

FlexTable: Pipe Table

Active Scenario: Max Day

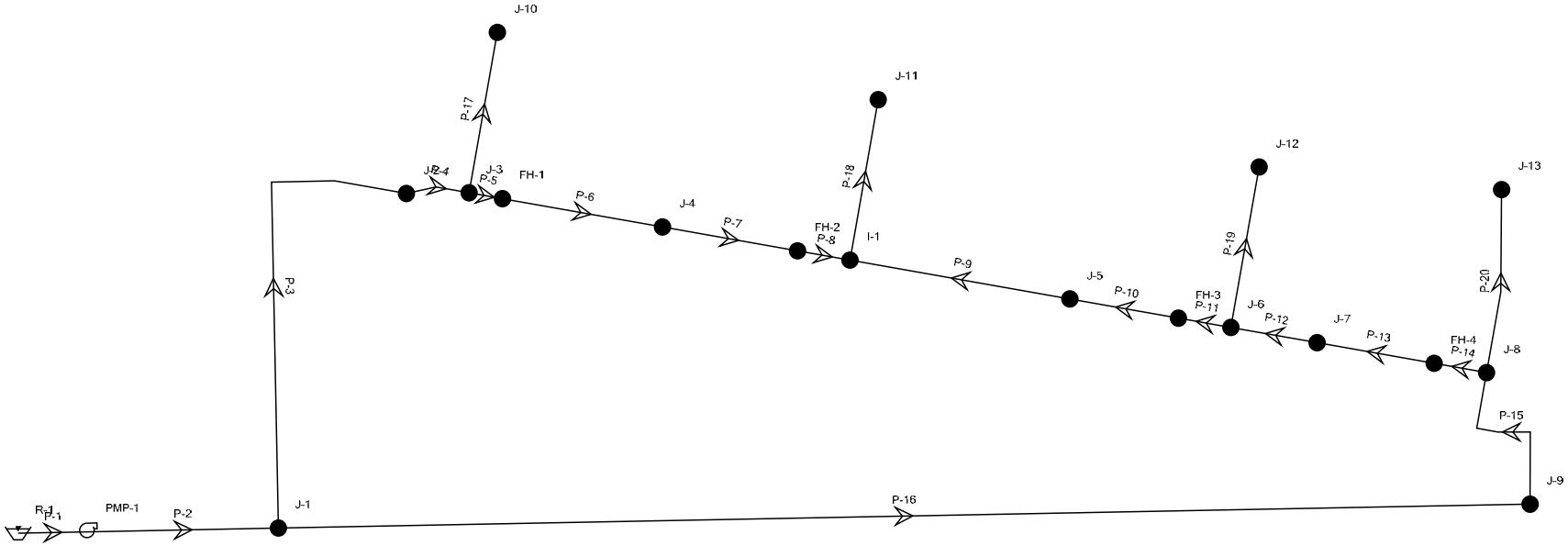
Current Time: 0.000 hours

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
65	P-1	36	R-1	PMP-1	12.0	PVC	100.0	0.000	30.15	0.09	0.000
66	P-2	98	PMP-1	J-1	12.0	PVC	100.0	0.000	30.15	0.09	0.000
33	P-3	249	J-1	J-2	8.0	PVC	100.0	0.000	15.08	0.10	0.000
35	P-4	33	J-2	J-3	8.0	PVC	100.0	0.000	13.56	0.09	0.000
37	P-5	18	J-3	FH-1	8.0	PVC	100.0	0.000	9.77	0.06	0.000
39	P-6	84	FH-1	J-4	8.0	PVC	100.0	0.000	9.77	0.06	0.000
86	P-7	71	J-4	FH-2	8.0	PVC	100.0	0.000	6.74	0.04	0.000
87	P-8	28	FH-2	I-1	8.0	PVC	100.0	0.000	6.74	0.04	0.000
57	P-17	84	J-3	J-10	8.0	PVC	100.0	0.000	3.79	0.02	0.000
59	P-18	84	I-1	J-11	8.0	PVC	100.0	0.000	3.03	0.02	0.000
61	P-19	84	J-6	J-12	8.0	PVC	100.0	0.000	3.03	0.02	0.000
78	P-20	95	J-8	J-13	8.0	PVC	100.0	0.000	2.28	0.01	0.000
82	P-9	116	I-1	J-5	8.0	PVC	100.0	0.000	-7.48	0.05	0.000
80	P-10	57	J-5	FH-3	8.0	PVC	100.0	0.000	-9.00	0.06	0.000
81	P-11	28	FH-3	J-6	8.0	PVC	100.0	0.000	-9.00	0.06	0.000
89	P-12	45	J-6	J-7	8.0	PVC	100.0	0.000	-12.03	0.08	0.000
51	P-14	28	FH-4	J-8	8.0	PVC	100.0	0.000	-12.79	0.08	0.000
90	P-13	62	J-7	FH-4	8.0	PVC	100.0	0.000	-12.79	0.08	0.000
54	P-15	94	J-8	J-9	8.0	PVC	100.0	0.000	-15.07	0.10	0.000
55	P-16	648	J-9	J-1	12.0	PVC	100.0	0.000	-15.07	0.04	0.000

Montex-North-WaterCAD.wtg

Scenario: Max Hour

Active Scenario: Max Hour



Montex-North-WaterCAD.wtg
FlexTable: Reservoir Table
Active Scenario: Max Hour

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
29	R-1	5,242.50	<None>	45.04	5,242.50

Montex-North-WaterCAD.wtg

FlexTable: Pump Table

Active Scenario: Max Hour

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Pump Definition	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
64	PMP-1	5,242.50	Connection	On	5,242.50	5,425.87	45.04	183.37

Montex-North-WaterCAD.wtg

FlexTable: Junction Table

Active Scenario: Max Hour

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	5,245.30	0.00	5,425.87	78.1
32	J-2	5,247.30	2.28	5,425.86	77.3
34	J-3	5,248.13	0.00	5,425.86	76.9
36	FH-1	5,248.64	0.00	5,425.86	76.7
56	J-10	5,249.64	5.69	5,425.86	76.2
38	J-4	5,251.12	4.55	5,425.86	75.6
85	FH-2	5,253.22	0.00	5,425.86	74.7
40	I-1	5,254.02	16.59	5,425.86	74.3
58	J-11	5,254.81	4.55	5,425.86	74.0
44	J-5	5,256.77	2.28	5,425.86	73.2
79	FH-3	5,258.05	0.00	5,425.86	72.6
46	J-6	5,258.86	0.00	5,425.86	72.3
60	J-12	5,259.95	4.55	5,425.86	71.8
88	J-7	5,260.35	1.14	5,425.86	71.6
53	J-9	5,260.90	0.00	5,425.86	71.4
48	FH-4	5,262.36	0.00	5,425.86	70.7
50	J-8	5,263.26	0.00	5,425.86	70.4
77	J-13	5,263.95	3.41	5,425.86	70.1

Montex-North-WaterCAD.wtg

FlexTable: Pipe Table

Active Scenario: Max Hour

Current Time: 0.000 hours

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
65	P-1	36	R-1	PMP-1	12.0	PVC	100.0	0.000	45.04	0.13	0.000
66	P-2	98	PMP-1	J-1	12.0	PVC	100.0	0.000	45.04	0.13	0.000
33	P-3	249	J-1	J-2	8.0	PVC	100.0	0.000	22.52	0.14	0.000
35	P-4	33	J-2	J-3	8.0	PVC	100.0	0.000	20.24	0.13	0.000
37	P-5	18	J-3	FH-1	8.0	PVC	100.0	0.000	14.55	0.09	0.000
39	P-6	84	FH-1	J-4	8.0	PVC	100.0	0.000	14.55	0.09	0.000
86	P-7	71	J-4	FH-2	8.0	PVC	100.0	0.000	10.00	0.06	0.000
87	P-8	28	FH-2	I-1	8.0	PVC	100.0	0.000	10.00	0.06	0.000
57	P-17	84	J-3	J-10	8.0	PVC	100.0	0.000	5.69	0.04	0.000
59	P-18	84	I-1	J-11	8.0	PVC	100.0	0.000	4.55	0.03	0.000
61	P-19	84	J-6	J-12	8.0	PVC	100.0	0.000	4.55	0.03	0.000
78	P-20	95	J-8	J-13	8.0	PVC	100.0	0.000	3.41	0.02	0.000
82	P-9	116	I-1	J-5	8.0	PVC	100.0	0.000	-11.14	0.07	0.000
80	P-10	57	J-5	FH-3	8.0	PVC	100.0	0.000	-13.42	0.09	0.000
81	P-11	28	FH-3	J-6	8.0	PVC	100.0	0.000	-13.42	0.09	0.000
89	P-12	45	J-6	J-7	8.0	PVC	100.0	0.000	-17.97	0.11	0.000
51	P-14	28	FH-4	J-8	8.0	PVC	100.0	0.000	-19.11	0.12	0.000
90	P-13	62	J-7	FH-4	8.0	PVC	100.0	0.000	-19.11	0.12	0.000
54	P-15	94	J-8	J-9	8.0	PVC	100.0	0.000	-22.52	0.14	0.000
55	P-16	648	J-9	J-1	12.0	PVC	100.0	0.000	-22.52	0.06	0.000

Montex-North-WaterCAD.wtg

Fire Flow Node FlexTable: Fire Flow Report

Active Scenario: Max Day + FF

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Is Fire Flow Run Balanced?	Velocity of Maximum Pipe (ft/s)
J-1	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-2	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-3	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-4	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
I-1	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-5	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-6	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-8	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-9	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-10	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-11	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-12	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-13	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-7	(N/A)	1,500.00	(N/A)	(N/A)	(N/A)	20.0	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-4	True	1,500.00	2,317.66	1,500.00	2,317.66	20.0	49.1	48.7	35.3	J-13	True	10.00
FH-1	True	1,500.00	2,534.79	1,500.00	2,534.79	20.0	54.4	50.3	35.3	J-11	True	10.00
FH-3	True	1,500.00	2,653.99	1,500.00	2,653.99	20.0	50.2	49.3	28.8	J-12	True	10.00
FH-2	True	1,500.00	2,957.57	1,500.00	2,957.57	20.0	52.0	49.9	23.8	J-11	True	10.00

Report of Inspection/Test

Fire Hydrant #1

October 21, 2014

Integrated Safety Services of Colorado, LLC
9082 Marshall Ct.
Westminster, CO 80031
Phone: 303-278-1538
Fax: 303-278-1519

Property	**Owner/Agent**
Montex at Vista Ridge	Enertia Consulting Group, LLC
Mountain View Blvd/Ridge View Drive Erie, CO 80516	1437 Larimer St Denver, CO 80202
Shawn Merz (720)502-6574	Shawn Merz (720)502-6574

Conducted by: Matthew Foster
Inspection Ref: 73353

Print Date: 10/22/2014

Signatures

Inspector - Printed	Inspector - Signature	Date Completed	
Signature on Original			I state that the information on this form is correct at the time and place of my inspection, and all equipment tested at this time was left in operational condition upon completion of this inspection except as noted.

Hydrant Flow Test Inspection

Yes	Free from ice or water in barrel ?
Yes	Free from leaks or cracks at outlets and top of hydrants?
Yes	Threads,outlets,caps & stem in good condition and lubricated?
Yes	Pumper and nozzle caps are slightly more than hand tight?
NA	Exposed piping is properly secured and free from leaks or physical damage?
Yes	Is paint in good condition?
Yes	Operating nut not worn, twisted or broken?
Yes	Operating nut turns without difficulty?
Yes	Road box and shutoff valve is visible and accessible?
Yes	Hydrant flowed until clear (min 1 Minute)?
Yes	Dry Barrels drain in at least 1 hour?
NA	Dry barrels requiring pumping are identified?
Yes	Control valves operated through full range?
Yes	Hydrant shuts off completely?
NA	Strainers, if installed, not blocked and corrosion free?
NA	Strainers cleaned (if possible)?
NA	Monitor nozzles moved through full range?
NA	Monitor nozzle flowed acceptable water?
NA	Monitor nozzle lubricated?
NA	Backflow assembles, if installed, passed full flow test?

Fire Hydrant Flow Test 50%

1st Hyd E of 2998	Residual Hydrant Location
2nd Hyd E of 2998	Flow Hydrant Location
80	Static PSI
70	Residual PSI
17	Pitot PSI
2 1/2	Orifice Size
9	Discharge Coefficient
695	Water Flow GPM

Fire Hydrant Flow Test 100%

1st Hyd E of 2998	Residual Hydrant Location
2nd Hyd E of 2998	Flow Hydrant Location
80	Static PSI
75	Residual PSI
22	Pitot PSI
2 1/2	Orifice Size
9	Discharge Coefficient
791	Water Flow GPM

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Report of Inspection/Test

Fire Hydrant #2

October 21, 2014

Integrated Safety Services of Colorado, LLC
9082 Marshall Ct.
Westminster, CO 80031
Phone: 303-278-1538
Fax: 303-278-1519

Property	**Owner/Agent**
Montex at Vista Ridge	Enertia Consulting Group, LLC
Mountain View Blvd/Ridge View Drive Erie, CO 80516	1437 Larimer St Denver, CO 80202
Shawn Merz (720)502-6574	Shawn Merz (720)502-6574

Conducted by: Matthew Foster
Inspection Ref: 73354

Print Date: 10/22/2014

Signatures

Inspector - Printed	Inspector - Signature	Date Completed	
Signature on Original			I state that the information on this form is correct at the time and place of my inspection, and all equipment tested at this time was left in operational condition upon completion of this inspection except as noted.

Hydrant Flow Test Inspection

Yes	Free from ice or water in barrel ?
Yes	Free from leaks or cracks at outlets and top of hydrants?
Yes	Threads,outlets,caps & stem in good condition and lubricated?
Yes	Pumper and nozzle caps are slightly more than hand tight?
NA	Exposed piping is properly secured and free from leaks or physical damage?
Yes	Is paint in good condition?
Yes	Operating nut not worn, twisted or broken?
Yes	Operating nut turns without difficulty?
Yes	Road box and shutoff valve is visible and accessible?
Yes	Hydrant flowed until clear (min 1 Minute)?
Yes	Dry Barrels drain in at least 1 hour?
NA	Dry barrels requiring pumping are identified?
Yes	Control valves operated through full range?
Yes	Hydrant shuts off completely?
NA	Strainers, if installed, not blocked and corrosion free?
NA	Strainers cleaned (if possible)?
NA	Monitor nozzles moved through full range?
NA	Monitor nozzle flowed acceptable water?
NA	Monitor nozzle lubricated?
NA	Backflow assembles, if installed, passed full flow test?

Fire Hydrant Flow Test 50%

2nd Hyd E of 2998	Residual Hydrant Location
1st Hyd E of 2998	Flow Hydrant Location
72	Static PSI
75	Residual PSI
14	Pitot PSI
2 1/2	Orifice Size
9	Discharge Coefficient
631	Water Flow GPM

Fire Hydrant Flow Test 100%

2nd Hyd E of 2998	Residual Hydrant Location
1st Hyd E of 2998	Flow Hydrant Location
72	Static PSI
90	Residual PSI
22	Pitot PSI
2 1/2	Orifice Size
9	Discharge Coefficient
791	Water Flow GPM

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APPENDIX B

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the *fire code official* is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the *exterior walls*, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by *fire walls* without openings, constructed in accordance with the *International Building Code,* are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family *dwellings* having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for *dwellings* having a fire-flow calculation area in excess of 3,600 square feet (344.5m^2) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire-flow of 50 percent, as *approved*, is allowed when the building is equipped with an *approved automatic sprinkler system.*

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings* shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 75 percent, as *approved*, is allowed when the building is provided with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION B106
REFERENCED STANDARDS

ICC	IBC—12	International Building Code	B104.2, Table B105.1
ICC	IWUIC—12	International Wildland-Urban Interface Code	B103.3
NFPA	1142—12	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[b]	FLOW DURATION (hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the *International Building Code*.

b. Measured at 20 psi residual pressure.

APPENDIX C

FIRE HYDRANT LOCATIONS AND DISTRIBUTION

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION C101
GENERAL

C101.1 Scope. Fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed.

SECTION C102
LOCATION

C102.1 Fire hydrant locations. Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

SECTION C103
NUMBER OF FIRE HYDRANTS

C103.1 Fire hydrants available. The minimum number of fire hydrants available to a building shall not be less than that listed in Table C105.1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

SECTION C104
CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

SECTION C105
DISTRIBUTION OF FIRE HYDRANTS

C105.1 Hydrant spacing. The average spacing between fire hydrants shall not exceed that listed in Table C105.1.

Exception: The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1.

TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a, b, c] (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d]
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.

b. Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.

c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

d. Reduce by 50 feet for dead-end streets or roads.

e. One hydrant for each 1,000 gallons per minute or fraction thereof.

HURST

CIVIL ENGINEERING
LAND PLANNING
SURVEYING

April 6, 2015

Matt Weiderspahn
Town of Erie
645 Holbrook
Erie, CO 80516

Re: Montex South Preliminary Plat

Dear Matt:

This is a response to your Phase III Utility Report comments for the Montex South Preliminary Plat dated February 25, 2014. The attached calculations and exhibits for the Vista Ridge existing sewer mains verify the assumptions of our letter dated July 31, 2013 and your Master Plan. The analysis includes the existing and proposed peak flows for the sewer system with the eastern wastewater basins of Vista Ridge. The main capacities are less than 50% of full flow capacity.

Sincerely,
HURST & ASSOCIATES, INC.

John W. Jorgenson, P.E.
State of Colorado No. 22730

COLORADO LICENSED
JOHN W. JORGENSON
22730
4/6/15
PROFESSIONAL ENGINEER

JWJ/kw

Job No. 2142-5

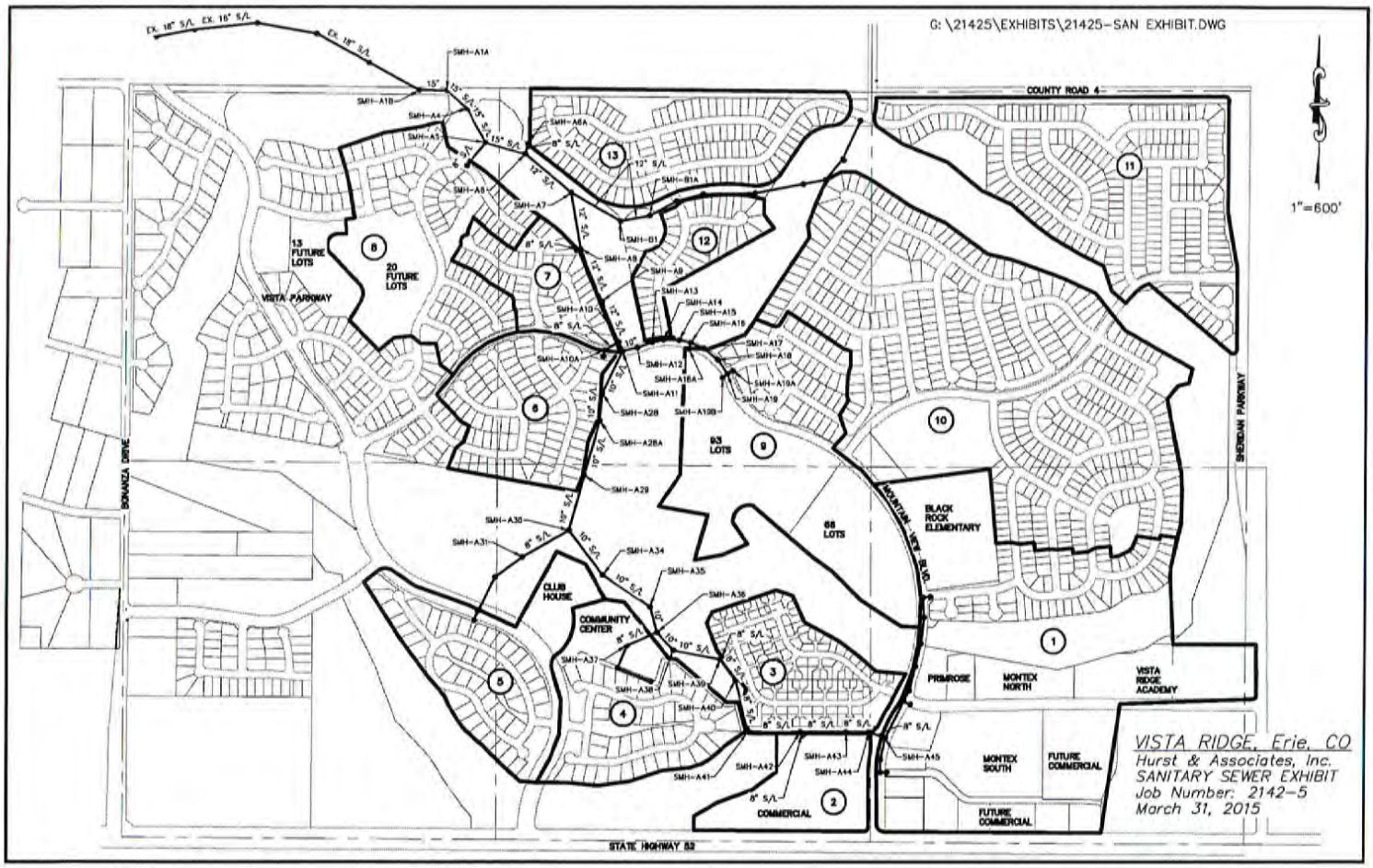
Analysis of Existing Vista Ridge Sanitary Sewer Main Capacities with Montex North & South Constructed

Down MH	Up MH	Note	As-Built ?	Pipe Size (inches)	Pipe Length (feet)	Pipe Slope (ft/ft)	Full Flow Pipe Capacity (cfs)	80% Depth Pipe Capacity (cfs)	Contributing Basins	Average Daily Flows (MGD)	Peaking Factor	Peak Flow Rate (MGD)	Peak Flow Rate (cfs)	Sufficient Pipe Capacity ?	% of Full Flow Capacity (cfs)
SMH-A1B	**SMH-A1A**		Yes	15	203.86	0.0074	**6.57**	6.42	1-13	0.30616	4.45	1.36170	**2.11**	YES	32.1%
SMH-A1A	**SM-A4**		Yes	15	195.41	0.0073	**6.52**	6.38	1-13	0.30616	4.45	1.36170	**2.11**	YES	32.3%
SMH-A4	**SMH-A5**		Yes	15	272.00	0.0047	**5.23**	5.12	1-13	0.30616	4.45	1.36170	**2.11**	YES	40.3%
SMH-A5	**SMH-A5A**	Pipe to SW	Yes	8	211.05	0.0685	**3.74**	3.65	8	0.01724	5.00	0.08621	**0.13**	YES	3.6%
SMH-A5	**SMH-A6**		Yes	15	293.66	0.0044	**5.06**	4.95	1-7, 9-13	0.28891	4.49	1.29752	**2.01**	YES	39.6%
SMH-A6	**SMH-A6A**	Stub to NW	Yes	8	76.61	0.0125	**1.60**	1.56	13	0.02042	5.00	0.10211	**0.16**	YES	9.9%
SMH-A6	**SMH-A7**		Yes	12	420.03	0.0123	**4.67**	4.56	1-7, 9-12	0.26849	4.55	1.22065	**1.89**	YES	40.4%
SMH-A7	**SMH-B1**	Pipe to SE	Yes	12	400.90	0.0182	**5.68**	5.55	10-12	0.10697	5.00	0.53484	**0.83**	YES	14.6%
SMH-A7	**SMH-A8**		Yes	12	401.81	0.0040	**2.66**	2.60	1-7, 9	0.16152	4.95	0.79937	**1.24**	YES	46.4%
SMH-A8	**Stub**	Stub to SW	No	8	2.00	0.0950	**4.40**	4.30	7	0.00870	5.00	0.04352	**0.07**	YES	1.5%
SMH-A8	**SMH-A9**		Yes	12	399.70	0.0203	**6.00**	5.86	1-6, 9	0.15282	5.00	0.76332	**1.18**	YES	19.7%
SMH-A9	**SMH-A10**		Yes	12	310.47	0.0142	**5.02**	4.90	1-6, 9	0.15282	5.00	0.76332	**1.18**	YES	23.5%
SMH-A10	**SMH-A10A**	Pipe to SW	Yes	8	117.07	0.0784	**4.00**	3.91	6	0.01356	5.00	0.06780	**0.10**	YES	2.6%
SMH-A10	**SMH-A11**		Yes	10	66.81	0.0302	**4.50**	4.40	1-5, 9	0.13926	5.00	0.69629	**1.08**	YES	23.9%
SMH-A11	**SMH-A12**	(Pipe to E)	Yes	8	104.43	0.1060	**4.65**	4.54	9	0.03432	5.00	0.17159	**0.27**	YES	5.7%
SMH-11	**SMH-A28**		Yes	10	331.11	0.0175	**3.43**	3.35	1-5	0.10494	5.00	0.52471	**0.81**	YES	23.7%
SMH-A28	**SMH-A28A**		Yes	10	191.94	0.0170	**3.38**	3.30	1-5	0.10494	5.00	0.52471	**0.81**	YES	24.0%
SMH-A28A	**SMH-A29**		Yes	10	399.74	0.0083	**2.36**	2.31	1-5	0.10494	5.00	0.52471	**0.81**	YES	34.4%
SMH-A29	**SMH-A30**		Yes	10	403.98	0.0591	**6.29**	6.15	1-5	0.10494	5.00	0.52471	**0.81**	YES	12.9%
SMH-30	**SMH-A31**	(Pipe to SW)	Yes	8	370.09	0.0328	**2.59**	2.53	5	0.01670	5.00	0.08350	**0.13**	YES	5.0%
SMH-30	**SMH-A34**		Yes	10	396.68	0.0045	**1.74**	1.70	1-4	0.08824	5.00	0.44120	**0.68**	YES	39.3%
SMH-A34	**SMH-A35**		Yes	10	398.97	0.0041	**1.66**	1.62	1-4	0.08824	5.00	0.44120	**0.68**	YES	41.2%
SMH-A35	**SMH-A36**		Yes	10	182.72	0.0069	**2.15**	2.10	1-4	0.08824	5.00	0.44120	**0.68**	YES	31.7%
SMH-A36	**SMH-A37**	(Pipe to SW)	No	8	230.05	0.0167	**1.85**	1.80	4	0.00800	5.00	0.04000	**0.06**	YES	3.4%
SMH-A36	**SMH-A38**		Yes	10	170.19	0.0060	**2.01**	1.96	1-3	0.08024	5.00	0.40120	**0.62**	YES	31.0%
SMH-A38	**SMH-A39**		Yes	10	339.33	0.0045	**1.74**	1.70	1-3	0.08024	5.00	0.40120	**0.62**	YES	35.7%
SMH-A39	**Stub**	(Stub to E)	No	8	2.00	0.0040	**0.90**	0.88	3	0.02310	5.00	0.11551	**0.18**	YES	19.8%
SMH-A39	**SMH-A40**		Yes	8	172.80	0.0165	**1.83**	1.79	1, 2	0.05714	5.00	0.28570	**0.44**	YES	24.1%
SMH-A40	**SMH-A40A**		Yes	8	191.84	0.0267	**2.33**	2.28	1, 2	0.05714	5.00	0.28570	**0.44**	YES	18.9%
SMH-A40A	**SMH-A41**		Yes	8	189.46	0.0226	**2.15**	2.10	1, 2	0.05714	5.00	0.28570	**0.44**	YES	20.6%
SMH-A41	**SMH-A42**		Yes	8	362.20	0.0291	**2.44**	2.38	1, 2	0.05714	5.00	0.28570	**0.44**	YES	18.1%
SMH-A42	**Stub**	(Stub to SW)	No	8	2.00	0.0050	**1.01**	0.99	2	0.00455	5.00	0.02275	**0.04**	YES	3.5%
SMH-A42	**SMH-A43**		Yes	8	325.79	0.0286	**2.42**	2.36	1	0.05259	5.00	0.26295	**0.41**	YES	16.8%
SMH-A43	**SMH-A44**		Yes	8	163.16	0.0056	**1.07**	1.04	1	0.05259	5.00	0.26295	**0.41**	YES	38.1%
SMH-A44	**SMH-A45**		Yes	8	125.28	0.0121	**1.57**	1.54	1	0.05259	5.00	0.26295	**0.41**	YES	25.9%

Peaking Factor = $3.65 / (ADF)^{0.167}$ =

* $2 \leq P.F. \geq 5$

Manning's Equation: $Q = 1.486 / n * A * (A / WP)^{2/3} * S^{1/2}$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COUNTY ROAD 4
STATE HIGHWAY 52
BONANZA DRIVE
SHERIDAN PARKWAY
VISTA PARKWAY
MOUNTAIN VIEW BLVD.
13 FUTURE LOTS
20 FUTURE LOTS
63 LOTS
68 LOTS
BLACK ROCK ELEMENTARY
CLUB HOUSE
COMMUNITY CENTER
PRIMROSE
MONTEX NORTH
VISTA RIDGE ACADEMY
MONTEX SOUTH
FUTURE COMMERCIAL
COMMERCIAL
VISTA RIDGE, Erie, CO
Hurst & Associates, Inc.
SANITARY SEWER EXHIBIT
Job Number: 2142-5
March 31, 2015

Basin 10 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	1046.3 residents	60 gal/capita/day	**62,775**	**0.06278**

*2.79 people unit

*375 lots

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 10 Peak Flow Rate = 0.31388 MGD

Basin 10 Peak Flow Rate = 0.486 cfs

Basin 11 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	625.0 residents	60 gal/capita/day	**37,498**	**0.03750**

*2.79 people unit

*224 lots

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 11 Peak Flow Rate = 0.18749 MGD

Basin 11 Peak Flow Rate = 0.290 cfs

Basin 12 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	111.6 residents	60 gal/capita/day	**6,696**	**0.00670**

*2.79 people unit

*40 lots

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 12 Peak Flow Rate = 0.03348 MGD

Basin 12 Peak Flow Rate = 0.052 cfs

Basin 13 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	340.4 residents	60 gal/capita/day	**20,423**	**0.02042**

*2.79 people unit

*122 lots

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 13 Peak Flow Rate = 0.10211 MGD

Basin 13 Peak Flow Rate = 0.158 cfs

Basin 5 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	128.3 residents	60 gal/capita/day	7,700	0.00770
*2.79 people unit				
*Vista Ridge Filing #1B-A has 46 lots.				
Golf Course Club House			9,000	0.00900
*Assumed (175 inside seats, 125 patio seats, & 30 gal/seat)				
Total			**16,700**	**0.01670**

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* $2 \leq P.F. \geq 5$

Basin 5 Peak Flow Rate = 0.08350 MGD

Basin 5 Peak Flow Rate = 0.129 cfs

Basin 6 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	226.0 residents	60 gal/capita/day	**13,559**	**0.01356**

*2.79 people unit

*81 lots of Vista Ridge F#3

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* $2 \leq P.F. \geq 5$

Basin 6 Peak Flow Rate = 0.06780 MGD

Basin 6 Peak Flow Rate = 0.105 cfs

Basin 7 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	145.1 residents	60 gal/capita/day	**8,705**	**0.00870**

*2.79 people unit

*52 lots of Vista Ridge F#1J

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* $2 \leq P.F. \geq 5$

Basin 7 Peak Flow Rate = 0.04352 MGD

Basin 7 Peak Flow Rate = 0.067 cfs

Basin 8 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	287.4 residents	60 gal/capita/day	**17,242**	**0.01724**

*2.79 people unit

*103 lots (VR F#1J, VR F#1K, and 20 future lots)

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* $2 \leq P.F. \geq 5$

Basin 8 Peak Flow Rate = 0.08621 MGD

Basin 8 Peak Flow Rate = 0.133 cfs

Basin 9 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	572.0 residents	60 gal/capita/day	**34,317**	**0.03432**

*2.79 people unit

*205 lots (VR F#1Q, VR F#9, and Heritage @ VR)

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* $2 \leq P.F. \geq 5$

Basin 9 Peak Flow Rate = 0.17159 MGD

Basin 9 Peak Flow Rate = 0.265 cfs

Basin 1 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Daily Flow (MGD)
Residential	661.2 residents	60 gal/capita/day	39,674	0.03967
*2.79 people unit				
*Montex North 28 units, Montex South 145 unts, & VR F1 64 units (Total=237 units)				
Blackrock Elementary	750 students	7 gal/student/day	5,250	0.00525
*2013-14 Attendance was 746 students.				
Primrose School	100 children	7 gal/student/day	700	0.00070
*Assumed				
Vista Ridge Academy	150 students	7 gal/student/day	1,050	0.00105
*123 students enrolled per www.greatschools.org				
Future Commercial Development	17.4 acres	340 gal/acre/day	5,916	0.00592
Total			**52,590**	**0.05259**

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 1 Peak Flow Rate = 0.26295 MGD

Basin 1 Peak Flow Rate = 0.407 cfs

Basin 2 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Commercial Development	13.38 acres	340 gal/acre/day	**4,549**	**0.00455**

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 2 Peak Flow Rate = 0.02275 MGD

Basin 2 Peak Flow Rate = 0.035 cfs

Basin 3 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	385.0 residents	60 gal/capita/day	**23,101**	**0.02310**

*2.79 people unit

*Vista Ridge F#5, 2nd Amendment has 138 lots.

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 3 Peak Flow Rate = 0.11551 MGD

Basin 3 Peak Flow Rate = 0.179 cfs

Basin 4 Peak Flow Rate Calculations

Land Uses		Unit Wastewater Flow Rate	Average Daily Flow (gal/day)	Average Daily Flow (MGD)
Residential	128.3 residents	60 gal/capita/day	7,700	0.00770
*2.79 people unit				
*Vista Ridge Filing #1B-B has 46 lots.				
VR Community Center & Pool			300	0.00030
*Assumed				
Total			**8,000**	**0.00800**

Peaking Factor = 3.65 / $(ADF)^{0.167}$ = 5.00

* 2 ≤ P.F. ≥ 5

Basin 4 Peak Flow Rate = 0.04000 MGD

Basin 4 Peak Flow Rate = 0.062 cfs

Montex North at Vista Ridge Sanitary Design Summary

Sanitary Sewer Design Flow

Land Use	Units/SF	Residential/Unit Multiplier	Unit Wastewater Flow Rate (GPCD) (GPD/ACRE)	Average Day Demand (GPD)	Average Day Demand (cfs)	Average Day Demand (MGD)	Wastewater Peaking Factor[1]	Max Day Demand (GPD)	Max Day Demand (cfs)	Max Day Demand (MGD)
Single Family Residential	25	3.00	90	6,750	0.010	0.007	5.00	33,750	0.052	0.034
				6,750	**0.010**	**0.007**		**33,750**	**0.052**	**0.034**

[1] $PF = 3.8/(ADF)^{0.17}$ (2.5 min, 5.0 max)

ATTACHMENT D

REFERRAL RESPONSE SUMMARY

VISTA RIDGE FILING NO. 2, 1ST AMENDMENT Preliminary Plat:

AGENCY	Sent	Rec'd	Comments
ERIE:			
Com. Dev.	12/1	2/27	See letter
OSTAB	12/1	12/20	See letter
Parks & Rec	12/1	1/2	No conflicts
Public Works Engineering	12/1	2/13	See letter
Public Works Engineering	4/24	5/29	See letter
HOA'S			
Vista Ridge	12/1		
Metro Districts			
Vista Ridge	12/1	12/3	System development fees due at final plat
MTN. VIEW FIRE	12/1	12/18	See letter
NAT. RES.:			
CGS	12/1	12/16	See letter
SCHOOL DISTRICT:			
St. Vrain Valley	12/1		
TOWNS:			
Broomfield	12/1	12/3	No conflicts
TRANSPORTATION			
Felsburg/Holt/Ullevig	12/1	12/22	See letter
UTILITIES:			
Century Link	12/1		
Comcast	12/1		
United Power	12/1	12/18	No conflicts

Department of Community Development
Planning Division

TOWN OF ERIE
1874

The Town of Erie
645 Holbrook St.
P.O. Box 750
Erie, CO 80516
(303) 926-2773
FAX (303) 926-2706

Memo

To: Ward Ritter

From: R. Martin Ostholthoff

Date: February 27, 2015

Re: PP-14-00017 Vista Ridge Filing No. 2, 1st Amendment - Community Development Review Comments Development Review Team Meeting on February 5, 2015

Dear Ward,

Thank you for submitting the Preliminary Plat application for Vista Ridge Filing No. 2, 1st Amendment. The Development Review Team (DRT) met on Thursday, February 5, 2015. In attendance were Community Development and Public Works. Following are the comments from the meeting that need to be addressed and/or changed for the Preliminary Plat. Redlines of the plan sheets are attached as well for reference. All code references herein are for Title 10-UDC (Code) or the Vista Ridge Development Plan (VRDP).

Note that Public Works comments are being included under separate cover.

Please provide a written response to each of the comments below with your re-submission. Staff proposes to meet with you and your team to go over these comments prior to any re-submission.

General Information

1. Please update the Narrative to reflect changes being requested based on the new Site Plan concept discussed at our February 26th meeting.

Preliminary Plat – Sheet 1

1. Please remove the CERTIFICATE OF DEDICATION AND OWNERSHIP and replace with LEGAL DESCRIPTION.
2. Please note that changes being requested on the Site Plan application will require the updating of the TITLE BLOCK, GENREAL NOTES, LAND SUMMARY CHART and TRACT SUMMARY CHART; adjust accordingly.

Preliminary Plat – Sheet 2

1. Please update the preliminary plat to reflect changes based on the new Site Plan concept discussed at our February 26th meeting.
2. Please note that a separate Vacation application will need to be processed concurrent with the final plat for this property to vacate the existing 10-foot and 8-foot utility easements created by the Vista Ridge Filing No. 2 Final Plat.

3. Please note that the Town will need proof of the vacation of the Utility Easement recorded at reception no. 3148806 prior to recordation of a final plat for the subject property.

Preliminary Plat – Sheet 3

1. Please note that changes being requested on the Site Plan application will require the updating of information on this sheet; adjust accordingly

Since review is a cumulative process and dependent on various criteria, we reserve the right to provide further comment(s) and request additional information upon receipt of this requested information. Please do not hesitate to contact me at 303.926.2771 for further clarification or with any questions or concerns that you may have.

Town of Erie
Open Space and Trails Advisory Board

From: Town of Erie Open Space and Trails Advisory Board (OSTAB)
To: Marty Ostholthoff, Director, Community Development
Date: December 22, 2014

Subject: Montex North Referral – Preliminary Plat and Site Plan

Location: north side of Ridge View Drive.

OSTAB has reviewed the referral materials, compared them to Town planning documents, and has prepared the following comments, questions, and recommendations for the Town's consideration in evaluating this application.

Open Space and the Natural Areas Inventory (NAI):

Discussion: There are no NAI sites on this property. There are no proposed open space areas on this property. The open space obligation in the Town's Unified Development Plan (UDC) was met previous by Vista Ridge Development Corporation.

Recommendations: None

Trails:

Discussion: There are no existing spine trails nearby. There are no proposed spine trails on this property. The application does not contain any neighborhood trails.

We noted that exactly half of the dwelling units (13 of 26) are located in the rear (northern) portion of the property, and that those units do not have direct access to a sidewalk or neighborhood trail. There are sidewalks on the southern (Ridge View Drive) and western sides, but none on the northern and eastern sides. The impact is that residents of half of the dwelling units must utilize common driveways to walk anywhere, and that the only option of all residents who wish to walk even short distances is the sidewalk along Ridge View Drive. Since there are schools both immediately east and west of this property, that street has heavy traffic when the school day is starting and ending. There are also numerous cars and buses turning into the driveways of those schools at those times. As a result, we believe the attractiveness of this development would be greatly enhanced if it contained a perimeter trail.

Recommendation: Build a sidewalk along the northern and eastern borders of the property so that residents have an option of walking without having to use Ridge View Drive.

Please pass this referral letter to the Applicant, and appropriate town departments, boards, and commissions. Thank you for your attention to these matters. OSTAB is available to discuss any of the above in more detail as needed.

Sincerely,

Open Space and Trails Advisory Board

Denise Brady
Monica Kash
Kevin Chard
Dawn Fraser
Nicole Littman
Ken Martin (Chair)
Joe Martinez

Community Development Services
Planning and Building

TOWN OF ERIE
1874

Town of Erie, Colorado
Development Referral

___Town of Erie Building Department
___Town of Erie Engineering
X Town of Erie Parks & Recreation
___Vista Ridge HOA
___Mountain View Fire Protection District
___St. Vrain Valley School District
___Felsburg Holt & Ullevig
___Comcast Commercial & Residential
___XCEL Energy
___Town of Erie Community Development
___Town of Erie OSTAB
___Public Review
___Vista Ridge Metro District
___CGS
___City & County of Broomfield
___Century Link Communications
___United Power

Planner: Marty Ostholthoff **Date: December 1, 2014**

Project: Montex North **Applicant: Montex (Vista Ridge LLC)**

Description: Preliminary Plat and Site Plan

Location: North side of Ridge View Drive between Vista Academy & The Primrose School

Legal Description: See Attached Materials

This application is submitted to you for review and comment. Please reply by **Monday, December 22, 2014,** so that we may give full consideration to your comments. Any response not received by this date may be deemed to be a positive response to the Town of Erie. Email responses can be sent to mostholthoff@erieco.gov. If you have any questions about this application, please call 303-926-2771.

✓ We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

✓ See comments below or attached letter.

Comments: ALL TOE STADARDS & SPECIFICATIONS MUST BE MET, SECTION 1000, PARKS AND RECREATION CONSTRUCTION. PAY PARTICULAR ATTENTION TO 1062.0 - MATERIALS (EDGING) AND 1042.03 SOD (TALL FESCUE).

Signature: Rob Crabb **Date:** January 2, 2015

Name (Please Print) Rob Crabb

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Department of Public Works

TOWN OF ERIE
1874

Memo

To: Marty Ostholthoff
From: Matt Wiederspahn, P.E., CFM, Development Engineer
Date: February 13, 2014
Subject: **Montex North Preliminary Plat**
CC: Russell Pennington
Wendi Palmer

Comments for Preliminary Plats:

1. All Town owned utilities must be places in 30 foot utility easements.
2. Both water and sanitary sewer lines are in the private drives, so they must be a minimum 30 foot wide easement on a tract.

Comments for Phase II Drainage Study:

1. Drainage conveyance will need to be provided for the future development to the east. Similar to what was provided to this area from the west.
2. Basin S7 is proposed to drain off-site un-detained. All flows from developed lands must be detained and provide water quality.
3. At design points 2 and 3, the inlets are only designed for the minor storm. There is no discussion of the downstream major storm and overflow drainage paths and facilities.

Comments for Preliminary Construction Plans:

1. On sheet 4, curb underdrains need to be shown on the local roadway cross-section.
2. On sheet 7:
   a. The water and sewer line connections and drive accesses in Ridgeview Drive for Montex South need to shown.
   b. There is an existing water stub near the east property line that needs to be utilized instead of cutting a new connection into the water line in Ridgeview Drive.
   c. Details need to be provided for the emergency access drive onto Ridgeview Drive.
   d. The 4" water lines in the private drives will be public mains, so they are required to be a minimum 8" PVC lines.
   e. The blowouts at the end of the private drives need to be located in the pavement.
   f. All water and sewer lines will need to be a minimum of 10 feet offset from a lot line and located in a 30 foot easement.
   g. All water meters must be located in a utility easement.
   h. Inlet STCB-2 needs to have a 10 foot separation from the water line.
   i. Streetlights need to be shown on Ridgeview Court.
   j. Irrigation services need to be shown for Tracts B, C, D, and E.
   k. On Tract C, there is a gas line shown outside of an easement.
   l. There is an existing streetlight in the new Ridgeview Circle access to Ridgeview Drive that will need to be relocated.

3. On sheet 13, the water service and meter for Lot 4 will need to be located on Lot 4. It also cannot cross a tract with separate ownership.

Comments for Phase III Utility Report:

1. The report needs to be renamed to Preliminary Utility Study.
2. For the water model, actual water pressures need to be measured at nearby fire hydrants and be used as the base water pressure.
3. In the Max Day + Fire Flow table, the fire flows needed at nodes J-9,10,11, and 12 should be 0 as there are no hydrants at the end of those lines.

Department of Public Works

TOWN OF ERIE
1874

Memo

To: Marty Ostholthoff
From: Matt Wiederspahn, P.E., CFM, Development Engineer
Date: May 29, 2015
Subject: **Montex North Preliminary Plat**
CC: Russell Pennington
Wendi Palmer

Previous (February 2015) Comments for Preliminary Construction Plans:

2. On sheet 7:
   f. All water and sewer lines will need to be a minimum of 10 feet offset from a lot line and located in a 30 foot easement.
   Response: Water and sewer lines have been revised to be 10 feet offset from the lot lines and within a 30' easement. Additional easement along the west property line is being negotiated.
   h. Inlet STCB-2 needs to have a 10 foot separation from the water line.
   Response: 5' of separation has been provided from inlet STCB-2. With the proposed layout, it is not possible to provide 10 feet separation. Insulation have be provided if the town feels it is necessary.

   10 foot separations are a Town minimum and are required for more the insulation purposes, but also for health and future maintenance purposes. In addition, the 30 foot easement width is also a minimum and in order to have three utility lines in easement and meet the separation requirements, a wider easement is necessary. New construction must meet these minimums and the layout may need to be adjusted to achieve them.

Previous (February 2015) Comments for Phase III Utility Report:

3. In the Max Day + Fire Flow table, the fire flows needed at nodes J-9,10,11, and 12 should be 0 as there are no hydrants at the end of those lines.
   Response: The Max Day + Fire Flow table has been modified to only include the hydrant nodes.

   All nodes still need to be included in the Max Day + Fire Flow table. The only change requested was that in the Fire Flow Needed column, the value should be 0 instead of 1500 for nodes J-10, 11, 12, and 13.

New Comments for Preliminary Construction Plans:

1. A few water line profiles were added to the Preliminary Construction Plans and show pipe deflections without bends. While water line profiles are not required with the Preliminary Construction Plans, please keep in mind that the final plans must meet Town Standards which require all changes in direction of waterline pipe to have bends in all instances.

2. On sheet 7, walls are shown being constructed in a utility easement and one is over a sanitary sewer line. While an encroachment license agreement can be done at Final Plat to allow walls in the easement, they cannot be constructed over a utility line.
3. On sheet 8, there doesn't appear to be a water service shown for Lot 3.
4. On sheet 18:
    a. While the Standard Detail Table is acceptable for the Preliminary Construction Plans, the current version of all details will need to shown in the Final Construction Plans.
    b. In the Emergency Secondary Access detail:
        i. A curb cut will be required off of Ridge View Drive (See Town Detail SW4A) with removable bollards to prevent access.
        ii. The curb ramp of Ridge View Court will need to be relocated outside of the emergency access.
        iii. The actual "grasscrete or approved substitute" will need to be specified in the Final Construction Plans.

DEC 02 2014

Community Development Services
Planning and Building

TOWN OF ERIE
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Town of Erie, Colorado
Development Referral

___Town of Erie Building Department
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___Town of Erie Parks & Recreation
___Vista Ridge HOA
___Mountain View Fire Protection District
___St. Vrain Valley School District
___Felsburg Holt & Ullevig
___Comcast Commercial & Residential
___XCEL Energy

___Town of Erie Community Development
___Town of Erie OSTAB
___Public Review
X Vista Ridge Metro District
___CGS
___City & County of Broomfield
___Century Link Communications
___United Power

Planner: Marty Ostholthoff

Date: December 1, 2014

Project: Montex North

Applicant: Montex (Vista Ridge LLC)

Description: Preliminary Plat and Site Plan

Location: North side of Ridge View Drive between Vista Academy & The Primrose School

Legal Description: See Attached Materials

This application is submitted to you for review and comment. Please reply by **Monday, December 22, 2014,** so that we may give full consideration to your comments. Any response not received by this date may be deemed to be a positive response to the Town of Erie. Email responses can be sent to mostholthoff@erieco.gov. If you have any questions about this application, please call 303-926-2771.

X We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

___See comments below or attached letter.

Comments: Note that a System Development Fee of $56,846.84 is due upon Building Permit issuance.

Signature: Lisa Jacoby **Date:** 12/3/14

Name (Please Print) LISA JACOBY

645 Holbrook • P.O. Box 750 • Erie, Colorado 80516 • Phone (303) 926-2770 -• Fax (303) 926-2706

12/2/14

Community Development Services
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Town of Erie, Colorado
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✓ Mountain View Fire Protection District
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Planner: Marty Ostholthoff **Date: December 1, 2014**

Project: Montex North **Applicant: Montex (Vista Ridge LLC)**

Description: Preliminary Plat and Site Plan

Location: North side of Ridge View Drive between Vista Academy & The Primrose School

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X We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

X See comments below or attached letter.

Comments:

Signature: [illegible] **Date:** 12/12/14

Name (Please Print) Linda Penfold

645 Holbrook • P.O. Box 750 • Erie, Colorado 80516 • Phone (303) 926-2770 -• Fax (303) 926-2706

MOUNTAIN VIEW FIRE RESCUE
3561 North Stagecoach Road, Unit 200• Longmont, CO 80504
(303) 772-0710 • FAX (303) 651-7702

December 17, 2014

Mr. Marty Ostholthoff
Town of Erie, Community Development
P.O. Box 750
Erie, CO 80516

Dear Mr. Ostholthoff:

I have reviewed the submitted material pertaining to the Montex North preliminary plat and site plan located on the north side of Ridge View Drive between the Vista Academy and the Primrose School in Erie and shall make the following comments:

- Fire apparatus access is satisfactory as shown on the plans submitted. All roads must be completed with at least one layer of asphalt and street intersections signed before building permits may be issued.
- Fire hydrant locations is satisfactory as shown on the plans submitted. Fire hydrants must be approved by public works prior to the issuance of building permits.

We appreciate being involved in the planning process and should you have any questions, please contact me at 303-772-0710 x 1121.

Sincerely,

LuAnn Penfold
Fire Marshal

LMP/lp

cc: project file

lp12.04.14

COLORADO GEOLOGICAL SURVEY

1801 19th Street
Golden, Colorado 80401
303.384.2655

Karen Berry
State Geologist

December 16, 2014

Marty Ostholthoff
Community Development Services
Town of Erie
P.O. Box 750
Erie, CO 80516

Location:
SW¼ Section 33,
T1N, R68W of the 6th P.M.
40.0034, -105.0135

Subject: **Montex North – Site Plan and Preliminary Plat**
Town of Erie, Weld County, CO; CGS Unique No. WE-15-0015

Dear Marty:

Colorado Geological Survey has reviewed the Montex North site plan and preliminary plat referral. I understand the applicant proposes 26 single-family detached patio homes on approximately four acres located on the north side of Ridge View Drive, between 2998 and 3100 Ridge View Drive.

With this referral, I received a Development Referral requesting CGS's review (December 1, 2014), Vista Ridge Filing 2, 1st Amendment Site Plan and Preliminary Plat Land Use Applications (signed October 28, 2014), Montex North Site Plan and Preliminary Plat narratives (Enertia, November 3, 2014), a set of nine Site Plans (November 20, 2014), a set of three Preliminary Plat sheets (Lange Land Surveys, November 19, 2014), and a Preliminary Geotechnical Engineering Report (Pickering, Cole & Hivner [PCH], March 24, 2014).

The site is not undermined, and is not exposed to any geologic hazards that would preclude the proposed residential use and density. However, the site is underlain by very highly expansive clay fill, clay soils, and claystone bedrock at shallow depths that will cause significant damage to improvements unless carefully mitigated.

Very highly expansive soils and bedrock. Three of PCH's borings are located within the proposed Montex North development. Eight swell-consolidation tests were performed on clay fill, clay, and claystone samples. High to very high swell values of up to 16.9% when wetted under a 500 psf load were observed. PCH makes appropriate *preliminary* recommendations (pages 8-9) for mitigating the risk of structural damage associated with the very highly expansive soils and bedrock, including overexcavation and replacement with moisture-conditioned, properly compacted, low expansive fill to a depth of at least ten feet below lowest foundation bearing depths, and/or drilled pier foundations with structural floor systems.

Deep underdrain system. Because of the relatively small (4 acres), deep excavation that would be required if overexcavation is performed, the need for a deep underdrain system should be evaluated. This would help prevent the development of a shallow, perched water condition in the "bathtub" created by the overexcavation. Perched water can accumulate in the overexcavated and replaced soils as a result of disruption of historic groundwater flow through permeable zones in the upper bedrock and/or infiltration from the surface (and the adjacent, presumably irrigated golf course), potentially causing wetting and softening of foundation bearing soils, and excessive swell or settlement. The hydraulic conductivity of the upper bedrock zones beneath and surrounding the site (a function of the presence or absence of fractures, discontinuities, and permeable sandstone lenses and layers) should be a factor in determining whether an underdrain system is needed.

Additional, lot-specific investigations. Even after ground modifications (if implemented) and grading are complete, it is possible that some of the overexcavated and replaced fill will be moderate or higher swelling and some lots may require drilled pier foundations to resist uplift. Additional investigations, consisting of drilling, sampling, lab testing and analysis, will be needed on each lot, once grading is complete, to verify that swell potential values have been reduced to acceptable levels before shallow foundations and slab-on-grade floors are determined to be feasible. PCH's grading and surface drainage, subsurface drainage (including individual perimeter foundation drain systems, pages 9-10), floor system (pages 10-11), utility, concrete (sulfate attack-resistant Type V cement should be used in all foundation concrete and concrete that will be in contact with site soils), and preliminary pavement recommendations are valid.

Thank you for the opportunity to review and comment on this project. If you have questions or require further review, please call me at 303-384-2643, or e-mail carlson@mines.edu.

Sincerely,

Jill Carlson, C.E.G.
Engineering Geologist

PZ-14-00426

Community Development Services
Planning and Building

TOWN OF ERIE
1874

Town of Erie, Colorado
Development Referral

___Town of Erie Building Department
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X City & County of Broomfield
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___United Power

Planner: Marty Ostholthoff **Date: December 1, 2014**

Project: Montex North **Applicant: Montex (Vista Ridge LLC)**

Description: Preliminary Plat and Site Plan

Location: North side of Ridge View Drive between Vista Academy & The Primrose School

Legal Description: See Attached Materials

This application is submitted to you for review and comment. Please reply by **Monday, December 22, 2014,** so that we may give full consideration to your comments. Any response not received by this date may be deemed to be a positive response to the Town of Erie. Email responses can be sent to mostholthoff@erieco.gov. If you have any questions about this application, please call 303-926-2771.

X We have reviewed this application and find no conflicts with our interests

___We have reviewed this application and find conflicts with our interests.

___See comments below or attached letter.

Comments:_____

Signature:_____ **Date:** 12-3-14

Name (Please Print) Anna Bertanzetti

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Community Development Services
Planning and Building

TOWN OF ERIE
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Town of Erie, Colorado
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Planner: Marty Ostholthoff
Date: December 1, 2014
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Applicant: Montex (Vista Ridge LLC)
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___We have reviewed this application and find no conflicts with our interests
___We have reviewed this application and find conflicts with our interests.
X See comments below or attached letter.

Comments:

Signature: David E. Hattan **Date:** 12/22/14
Name (Please Print) Dave Hattan

FELSBURG
HOLT &
ULLEVIG
connecting and enhancing communities

December 22, 2014

MEMORANDUM

TO: Marty Ostolthoff

FROM: David E. Hattan, P.E.

SUBJECT: Review of Preliminary Plat, Site Plan, and Trip Generation
PROJECT: Montex North (Vista Ridge LLC)
FHU # 95-190

I have reviewed the written narrative, preliminary plat, site plan, and traffic generation letter for the proposed development of Montex North which is located on the north side of Ridge View Drive in the southeast corner of the Vista Ridge development. I have specifically looked at this information from the perspective of traffic engineering and transportation planning but not general civil or utility engineering. This development is relatively small with 26 "age-targeted" single family detached home units. All public access to this development will be at one location (Ridge View Circle) but an emergency only access will also be located on Ridge View Drive, slightly over 100 feet to the east. I have the following observations regarding this information:

Trip Generation Comparison

- This letter report is entitled *Montex North and South – Vista Ridge Zones 15 and 16 Trip Generation Comparison*, LSC Transportation Consultants, October 30, 2014. It compares the trip generation for both Montex North and South (144 apartment units). Similar information has been received regarding Montex South and a King Soopers anchored development also serviced by Ridge View Drive. More complete reviews of these other nearby development will be provided by the end of 2014 and in January, 2015. However, as much as possible, the comments on Montex North are based on our initial review of these other developments.
- Table 1 – Estimated Traffic Generation for Montex North and South. The trip generation for the 26 age-targeted single family units in Montex North is based on an average two Institute of Transportation Engineers (ITE) land uses. The same explanatory note was previously used (Trip Generation Comparison (September, 2013 by LSC) for 200 apartments. The end result is a trip generation rate that reduces the trip generation rate from 9.52 trips per day (tpd) to 6.60 tpd. It is difficult to reconcile this reduction with the design for these units that includes an attached, two-car garage with additional parking for two cars in each driveway. More (and less confusing) information must be provided before I can agree that the proposed rate is appropriate. This information could possibly be in the September 2013 comparison, but this document was not provided.
- The basic premise of the Montex studies is that their trip generation is less than originally calculated in 2000 for the overall development. The data is almost 15 years old and no specific information regarding Ridge View Drive was provided in the 2000 report. It is my recommendation that the traffic impact analyses for Montex North and South be coordinated closely with the analyses for the King Soopers development (which will need

6300 South Syracuse Way, Suite 600 Centennial, CO 80111 tel 303.721.1440 fax 303.721.0832
www.fhueng.com info@fhueng.com

to be revised also) in order to provide the Town of Erie with a complete picture of the traffic that will be using Ridge View Drive and the two intersections at each end – Sheridan Boulevard and Mountain View Drive.

- Ridge View Drive is a two-lane street with a continuous center left turn lane. This should provide convenient access to the development.

Preliminary Plat and Site Plan

- The intersection of Ridge View Circle with Ridge View Drive should line up opposite the east access (Ridge View Circle) in Montex South.
- The written narrative states that a pocket park is located in Montex South on the south side of Ridge View Drive. Without more information regarding traffic volumes on Ridge View Drive and the walking distances involved, it is hard to assess the utility of this park for Montex North residents.
- The dimensions of Ridge View Court and private drives shown in the Preliminary Plat do not meet standards for public streets in Erie. The written narrative states that "The propose Site Plan is generally consistent with the previously approved Site Plans within the planning area and is consistent with the Vista Ridge PD that governs the master development as a whole. In addition, the proposed Site Plan complies with the applicable design and development standards set forth in Chapter 2 thru 6 of the UDC," I do not have copies the previous Site Plans that are referred to and am not too familiar with the UDC. The appropriateness of these streets and driveways will need to be analyzed more closely by Town staff.
- Staff for emergency service provides will need to comment on the appropriateness of the separation between Ridge View Circle and the emergency access shown to the east.

Please call if you have any questions or need additional information.

Community Development Services
Planning and Building

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Town of Erie, Colorado
Development Referral

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Planner: Marty Ostholthoff
Date: December 1, 2014
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✓ We have reviewed this application and find no conflicts with our interests
___We have reviewed this application and find conflicts with our interests.
___See comments below or attached letter.

Comments:_____

Signature: Kathy Rotello **Date:** 12/18/14
Name (Please Print) KATHY ROTELLO

645 Holbrook • P.O. Box 750 • Erie, Colorado 80516 • Phone (303) 926-2770 -• Fax (303) 926-2706

ENERTIA CONSULTING GROUP LLC

1529 Market St., Suite 200
Denver, CO 80202
303.564.3435
shawn.merz@enertiacg.com

April 17, 2015

R. Martin Ostholthoff
Community Development Director
Town of Erie
Community Development Department
645 Holbrook Street
PO Box 750
Erie, CO 80516

Re: SP-14-00037, PP-14-00017 Vista Ridge Filing No. 2, 1st Amendment

Dear Mr. Ostholthoff:

This letter presents a response to the comments received on March 5, 2015 for the Preliminary Plat and Site Plan Submittals for Montex North at Vista Ridge.

Development Review Team (DRT) Preliminary Plat Comments (2/27/2015)

General Information

1. Please update the Narrative to reflect changes being requested based on the new Site Plan concept discussed at our February 26th meeting.
   Response: The Narrative has been updated to reflect the changes to the Site Plan.

Preliminary Plat – Sheet 1

1. Please remove the CERTIFICATE OF DEDICATION AND OWNERSHIP and replace with LEGAL DESCRIPTION.
   Response: Revised as requested.

2. Please note that changes being requested on the Site Plan application will require the updating of the TITLE BLOCK, GENREAL NOTES, LAND SUMMARY CHART and TRACT SUMMARY CHART; adjust accordingly.
   Response: Revised as requested.

Preliminary Plat – Sheet 2

1. Please update the preliminary plat to reflect changes based on the new Site Plan concept discussed at our February 26th meeting.
   Response: Noted. Changes have been reflected on the preliminary plat.

2. Please note that a separate Vacation application will need to be processed concurrent with the final plat for this property to vacate the existing 10-foot and 8-foot utility easements created by the Vista Ridge Filing No. 2 Final Plat.
   Response: Noted.

3. Please note that the Town will need proof of the vacation of the Utility Easement recorded at reception no. 3148806 prior to recordation of a final plat for the subject property.
   Response: Noted.

Preliminary Plat – Sheet 3 (now sheet 4)

1. Please note that changes being requested on the Site Plan application will require the updating of information on this sheet; adjust accordingly
   Response: Noted. Changes have been reflected on the preliminary plat.

Development Review Team (DRT) Site Plan Comments (2/27/2015)

General Information

1. Please update the Narrative to reflect changes being requested based on the new Site Plan concept discussed at our February 26th meeting.
   Response: The Narrative has been updated to reflect the changes to the Site Plan.

2. Please verify that the minimum lot frontage requirements of Section V.F.5.g (VRDP) are being complied with for each lot and the proposed dwelling unit model.
   Response: All lot frontages meet the 30-foot required frontage per V.F.5.g per the VRDP.

3. Please note that a letter approving the architectural plans needs to be submitted to the Town by James Spehalski.
   Response: Noted. Mr. Spehalski has been contacted and has provided a letter approving the architectural plans. The approval letter is included with this resubmittal.

Site Plan Sheets

1. Please note that changes being requested on the Site Plan application will require the updating of the TITLE BLOCK on all sheets, and updating the LAND USE TABULATION TABLE and PARKING INVENTORY TABLE on sheet C1; adjust accordingly.
   Response: Revised as requested.

2. Please delete the LAND USE TABULATION TABLE and PARKING INVENTORY TABLE on sheet C2, as the information of sheet 1 will suffice.
   Response: Revised as requested.

3. Please update all sheets to reflect the concept discussed at our February 26th meeting.
   Response: All sheets have been updated as requested.

4. With the relocated Emergency Access Drive, please update the signage locations on sheet C2 and update the roadway cross sections on sheet C4 as necessary.
   Response: Revised as requested.

5. Please revise sheets L2, L3 and L4 to reflect the open rail fence being the perimeter fence in lieu of the 5-foot solid fence (delete solid fence detail on sheet L4). Note that the undulating fencing requirement and masonry column requirement does not apply to the open fence.
   Response: Sheets L2, L3 and L4 have been revised to show the perimeter fence as open rail fence. Solid fence detail on sheet L4 remains to illustrate the fence that is predominately proposed at the rear yards of interior lots.

6. Please note that the area inlet on Lot 4 cannot be on an individual lot, relocate area inlet accordingly.
   Response: There are no area inlets located on Lot 4. The existing inlet is identified to be removed.

7. As the dry utility design progresses, please design the location of all ground mounted utility boxes (Xcel transformer boxes) to be a minimum of 100-feet from the intersection of Ridge View Drive and Ridge View Court to meet the intent of Section 6.4.G.9.a (UDC).
   Response: Noted.

Public Works Comments – Matt Wiederspahn, P.E. (2/13/2015)

Comments for Preliminary Plats:

1. All Town owned utilities must be places in 30 foot utility easements.
   Response: A 30 foot utility easement has been provided for all town owned utilities.

2. Both water and sanitary sewer lines are in the private drives, so they must be a minimum 30 foot wide easement on a tract.
   Response: A 30 foot utility easement has been provided for all town owned utilities.

Comments for Phase II Drainage Study:

1. Drainage conveyance will need to be provided for the future development to the east. Similar to what was provided to this area from the west.
   Response: A 24" pipe has been extended to the east for the future development.

2. Basin S7 is proposed to drain off-site un-detained. All flows from developed lands must be detained and provide water quality.
   Response: The runoff to the golf course has been minimized and is very small (Q_2=0.26 cfs, Q_{100}=1.26 cfs). Additionally, there is a small basin from the golf course (Basin OS5) which drains onto the Montex North Site. Flow from the golf course (Q_2=0.15 cfs, Q_{100}=2.68 cfs) exceeds the flow from Basin S9. The golf course runoff is captured in an area inlet between Buildings 15 and 18 and routed through the pond west of Primrose Preschool where detention and water quality is provided. This offsets the runoff to the golf course from Basin S9. Basin S9 water quality and detention will be provided in downstream ponds. Ultimately both basins end up in the same location.

3. At design points 2 and 3, the inlets are only designed for the minor storm. There is no discussion of the downstream major storm and overflow drainage paths and facilities.
   Response: Inlets have been sized for the major storm event and overflow drainage paths and facilities have been provided.

Comments for Preliminary Construction Plans:

1. On sheet 4, curb underdrains need to be shown on the local roadway cross-section.
   Response: The underdrains shown are provided for the sump line connections. These have been shown on the roadway cross-section.

2. On sheet 7:
   a. The water and sewer line connections and drive accesses in Ridgeview Drive for Montex South need to be shown.
      Response: The water and sewer line connections have been show as requested.

   b. There is an existing water stub near the east property line that needs to be utilized instead of cutting a new connection into the water line in Ridgeview Drive.
      Response: The water alignment has been revised to connect to the provided stub near the east property line.

   c. Details need to be provided for the emergency access drive onto Ridgeview Drive.
      Response: Details have been provided for the emergency access drive.

   d. The 4" water lines in the private drives will be public mains, so they are required to be a minimum 8" PVC lines.
      Response: The private drive waterlines have been upsized to 8" PVC lines. However, 4" water lines are adequate for 6 single-family homes and it is our recommendation that 4" water lines be used to avoid water quality issues. These waterlines are for domestic use only and not used for fire flow.

   e. The blowouts at the end of the private drives need to be located in the pavement.
      Response: Blowouts have been moved to be within the pavement.

f. All water and sewer lines will need to be a minimum of 10 feet offset from a lot line and located in a 30 foot easement.
Response: Water and sewer lines have been revised to be 10 feet offset from the lot lines and within a 30' easement. Additional easement along the west property line is being negotiated.

g. All water meters must be located in a utility easement.
Response: All water meters have been located in a utility easement.

h. Inlet STCB-2 needs to have a 10 foot separation from the water line.
Response: 5' of separation has been provided from inlet STCB-2. With the proposed layout, it is not possible to provide 10 feet of separation. Insulation have be provided if the town feels it is necessary.

i. Streetlights need to be shown on Ridgeview Court.
Response: Street lights on Ridge View Court have been shown.

j. Irrigation services need to be shown for Tracts B, C, D, and E.
Response: Irrigation services have been shown.

k. On Tract C, there is a gas line shown outside of an easement.
Response: Additional easement has been provided to include the existing gas line.

l. There is an existing streetlight in the new Ridgeview Circle access to Ridgeview Drive that will need to be relocated.
Response: Noted. The streetlight has been identified to be relocated.

3. On sheet 13, the water service and meter for Lot 4 will need to be located on Lot 4. It also cannot cross a tract with separate ownership.
Response: The water service and meter have been relocated to avoid crossing a tract with separate ownership and the meter has been located on Lot 4.

Comments for Phase III Utility Report:

1. The report needs to be renamed to Preliminary Utility Study.
Response: The report has been renamed to Preliminary Utility Study as requested.

2. For the water model, actual water pressures need to be measured at nearby fire hydrants and be used as the base water pressure.
Response: The model was based on actual pressures at the existing hydrants located in Ridge View Drive. These tests were performed by Integrated Safety Services of Colorado on October 21, 2014. The hydrant test reports have been included in the Preliminary Utility Study for reference.

3. In the Max Day + Fire Flow table, the fire flows needed at nodes J-9,10,11, and 12 should be 0 as there are no hydrants at the end of those lines.
Response: The Max Day + Fire Flow table has been modified to only include the hydrant nodes.

REFERRAL AGENCY COMMENTS:

Felsburg Holt & Ullevig (December 22, 2014)

Trip Generation Comparison

1. This letter report is entitled *Montex North and South – Vista Ridge Zones 15 and 16 Trip Generation Comparison*, LSC Transportation Consultants, October 30, 2014. It compares the trip generation for both Montex North and South (144 apartment units). Similar information has been

received regarding Montex South and a King Soopers anchored development also serviced by Ridge View Drive. More complete reviews of these other nearby development will be provided by the end of 2014 and in January, 2015. However, as much as possible, the comments on Montex North are based on our initial review of these other developments.
Response: Noted.

2. Table 1 – Estimated Traffic Generation for Montex North and South. The trip generation for the 26 age-targeted single family units in Montex North is based on an average two Institute of Transportation Engineers (ITE) land uses. The same explanatory note was previously used (Trip Generation Comparison (September, 2013 by LSC) for 200 apartments. The end result is a trip generation rate that reduces the trip generation rate from 9.52 trips per day (tpd) to 6.60 tpd. It is difficult to reconcile this reduction with the design for these units that includes an attached, two-car garage with additional parking for two cars in each driveway. More (and less confusing) information must be provided before I can agree that the proposed rate is appropriate. This information could possibly be in the September 2013 comparison, but this document was not provided.
Response: The proposed site plans have 25 age-targeted single family homes and 144 apartment units. Even with the standard rate of 9.52 trips per day (tpd) there will be an overall reduction from what was anticipated for this parcel in the Master TIS.

3. The basic premise of the Montex studies is that their trip generation is less than originally calculated in 2000 for the overall development. The data is almost 15 years old and no specific information regarding Ridge View Drive was provided in the 2000 report. It is my recommendation that the traffic impact analyses for Montex North and South be coordinated closely with the analyses for the King Soopers development (which will need to be revised also) in order to provide the Town of Erie with a complete picture of the traffic that will be using Ridge View Drive and the two intersections at each end – Sheridan Boulevard and Mountain View Drive.
Response: The Montex North development is the development of a parcel that has been anticipated and accounted for since the beginning of the Vista Ridge Development. Ridgeview Drive has been designed, reviewed and approved to be constructed to accommodate the proposed development of this, and the surrounding lots, both north and south of Ridgeview Dr. In addition, Montex North as residential has reduced the traffic contributing to Ridgeview Dr. Please refer to the Montex North TIS submitted with the first submittal for trip generation numbers.

4. Ridge View Drive is a two-lane street with a continuous center left turn lane. This should provide convenient access to the development.
Response: Noted.

Preliminary Plat and Site Plan

5. The intersection of Ridge View Circle with Ridge View Drive should line up opposite the east access (Ridge View Circle) in Montex South.
Response: Noted. Ridge View Circle on the north aligns with Ridge View Circle on the south.

6. The written narrative states that a pocket park is located in Montex South on the south side of Ridge View Drive. Without more information regarding traffic volumes on Ridge View Drive and the walking distances involved, it is hard to assess the utility of this park for Montex North residents.
Response: The residents from Montex North can easily access the park via multiple options; there are walks that route pedestrians from all homes to the park, only having to cross Ridgeview. In addition, parking spaces have been provided near the park for those who would prefer to drive to the park.

7. The dimensions of Ridge View Court and private drives shown in the Preliminary Plat do not meet standards for public streets in Erie. The written narrative states that "The propose Site Plan is generally consistent with the previously approved Site Plans within the planning area and is consistent with the Vista Ridge PD that governs the master development as a whole. In addition,

the proposed Site Plan complies with the applicable design and development standards set forth in Chapter 2 thru 6 of the UDC," I do not have copies the previous Site Plans that are referred to and am not too familiar with the UDC. The appropriateness of these streets and driveways will need to be analyzed more closely by Town staff.
Response: Ridge View Court and the private drives are private streets and meet the criteria outlined in the Vista Ridge Development Plan.

8. Staff for emergency service provides will need to comment on the appropriateness of the separation between Ridge View Circle and the emergency access shown to the east.
Response: Noted.

Town of Erie Open Space and Trails Advisory Board (December 22, 2014)

Open Space and the Natural Areas Inventory (NAI):

1. Discussion: There are no NAI sites on this property. There are no proposed open space areas on this property. The open space obligation in the Town's Unified Development Plan (UDC) was met previous by Vista Ridge Development Corporation.

   Recommendations: None
   Response: Noted.

Trails:

2. Discussion: There are no existing spine trails nearby. There are no proposed spine trails on this property. The application does not contain any neighborhood trails. We noted that exactly half of the dwelling units (13 of 26) are located in the rear (northern) portion of the property, and that those units do not have direct access to a sidewalk or neighborhood trail. There are sidewalks on the southern (Ridge View Drive) and western sides, but none on the northern and eastern sides. The impact is that residents of half of the dwelling units must utilize common driveways to walk anywhere, and that the only option of all residents who wish to walk even short distances is the sidewalk along Ridge View Drive. Since there are schools both immediately east and west of this property, that street has heavy traffic when the school day is starting and ending. There are also numerous cars and buses turning into the driveways of those schools at those times. As a result, we believe the attractiveness of this development would be greatly enhanced if it contained a perimeter trail.

   Recommendation: Build a sidewalk along the northern and eastern borders of the property so that residents have an option of walking without having to use Ridge View Drive.
   Response: Sidewalks adjacent to the golf course are not provided on other developments within Vista Ridge community and are discouraged by the golf course. Eliminating pedestrian trails adjacent to the golf course circumvents pedestrian trespassing and eliminates golfer/pedestrian interaction. In addition, there is concern for pedestrian safety from stray golf balls from the golf course.

Mountain View Fire Rescue (December 17, 2014)

1. Fire apparatus access is satisfactory as shown on the plans submitted. All roads must be completed with at least one layer of asphalt and street intersections signed before building permits may be issued.
   Response: Noted.

2. Fire hydrant locations is satisfactory as shown on the plans submitted. Fire hydrants must be approved by public works prior to the issuance of building permits.
   Response: Noted.

Colorado Geological Survey (December 16, 2014)

Colorado Geological Survey has reviewed the Montex North site plan and preliminary plat referral. I understand the applicant proposes 26 single-family detached patio homes on approximately four acres located on the north side of Ridge View Drive, between 2998 and 3100 Ridge View Drive.

With this referral, I received a Development Referral requesting CGS's review (December 1, 2014), Vista Ridge Filing 2, 1st Amendment Site Plan and Preliminary Plat Land Use Applications (signed October 28, 2014), Montex North Site Plan and Preliminary Plat narratives (Enertia, November 3, 2014), a set of nine Site Plans (November 20, 2014), a set of three Preliminary Plat sheets (Lange Land Surveys, November 19, 2014), and a Preliminary Geotechnical Engineering Report (Pickering, Cole & Hivner [PCH], March 24, 2014).

The site is not undermined, and is not exposed to any geologic hazards that would preclude the proposed residential use and density. However, the site is underlain by very highly expansive clay fill, clay soils, and claystone bedrock at shallow depths that will cause significant damage to improvements unless carefully mitigated.

Very highly expansive soils and bedrock. Three of PCH's borings are located within the proposed Montex North development. Eight swell-consolidation tests were performed on clay fill, clay, and claystone samples. High to very high swell values of up to 16.9% when wetted under a 500 psf load were observed. PCH makes appropriate *preliminary* recommendations (pages 8-9) for mitigating the risk of structural damage associated with the very highly expansive soils and bedrock, including overexcavation and replacement with moisture-conditioned, properly compacted, low expansive fill to a depth of at least ten feet below lowest foundation bearing depths, and/or drilled pier foundations with structural floor systems.

Deep underdrain system. Because of the relatively small (4 acres), deep excavation that would be required if overexcavation is performed, the need for a deep underdrain system should be evaluated. This would help prevent the development of a shallow, perched water condition in the "bathtub" created by the overexcavation. Perched water can accumulate in the overexcavated and replaced soils as a result of disruption of historic groundwater flow through permeable zones in the upper bedrock and/or infiltration from the surface (and the adjacent, presumably irrigated golf course), potentially causing wetting and softening of foundation bearing soils, and excessive swell or settlement. The hydraulic conductivity of the upper bedrock zones beneath and surrounding the site (a function of the presence or absence of fractures, discontinuities, and permeable sandstone lenses and layers) should be a factor in determining whether an underdrain system is needed.

Additional, lot-specific investigations. Even after ground modifications (if implemented) and grading are complete, it is possible that some of the overexcavated and replaced fill will be moderate or higher swelling and some lots may require drilled pier foundations to resist uplift. Additional investigations, consisting of drilling, sampling, lab testing and analysis, will be needed on each lot, once grading is complete, to verify that swell potential values have been reduced to acceptable levels before shallow foundations and slab-on-grade floors are determined to be feasible. PCH's grading and surface drainage, subsurface drainage (including individual perimeter foundation drain systems, pages 9-10), floor system (pages 10-11), utility, concrete (sulfate attack-resistant Type V cement should be used in all foundation concrete and concrete that will be in contact with site soils), and preliminary pavement recommendations are valid.

Response: Noted.

<u>United Power (December 18, 2014)</u>

No Comment.

<u>Town of Erie Parks & Recreation (January 2, 2015)</u>

1. All the standards and specifications must be met, section 1000, Parks and Recreation Construction. Pay particular attention to 1062.0 – Materials (Edging) and 1042.03 Sod (Tall Fescue).

Response: 6" deep edger is very expensive and difficult to acquire. 4" deep edger has been proposed.

City and County of Broomfield (December 3, 2014)

No Comment.

Vista Ridge Metro District (December 3, 2014)

1. Note that a System Development Fee of $56,846.84 is due upon Building Permit issuance.
Response: Noted.

Xcel Energy (December 22, 2014)

Public Service Company of Colorado (PSCo) has reviewed the plans for **Montex North / Vista Ridge F2 A1**. Please be aware PSCo owns and operates existing natural gas distribution facilities within the subject property. The property owner/developer/contractor must contact the **Builder's Call Line at 1-800-628-2121** and complete the application process for any new natural gas service or modification to existing facilities. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details. Additional easements may need to be acquired by separate document for new facilities.

PSCo requests the utility easements be dedicated to the Town of Erie for the benefit of the applicable utility providers for the installation, maintenance, and replacement of electric, gas, television, cable, and telecommunications facilities (Dry Utilities). Utility easements shall also be granted within any access easements and private streets in the subdivision including Tract A. Permanent structures, improvements, objects, buildings, wells, water meters and other objects that may interfere with the utility facilities or use thereof (Interfering Objects) shall not be permitted within said utility easements and the utility providers, as grantees, may remove any Interfering Objects at no cost to such grantees, **including, without limitation, vegetation**. Public Service Company of Colorado (PSCo) and its successors reserve the right to require additional easements and to require the property owner to grant PSCo an easement on its standard form. Public Service Company also requests that all utility easements be depicted graphically on the preliminary and final plats. While these easements should accommodate the majority of utilities to be installed in the subdivision, some additional easements may be required as planning and building progresses.

As a safety precaution, PSCo would like to remind the developer to call the **Utility Notification Center at 1-800-922-1987** to have all utilities located prior to any construction.

Response: Noted.

We trust that our responses to the comments are acceptable and complete. Please do not hesitate to call should you have any questions.

Sincerely,

ENERTIA CONSULTING GROUP, LLC

Shawn Merz, PE, LEED A.P.
Senior Engineer

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**PUBLIC HEARING - RESOLUTION** Resolution 15-103: A Resolution of the Board of Trustees Of The Town of Erie, Colorado Approving the Service Plan for the Sierra Vista Metropolitan District With A Condition; And, Authorizing The Town Of Erie, Colorado, To Enter Into An Intergovernmental Agreement Between The Town Of Erie And The Sierra Vista Metropolitan District, Ensuring Compliance With The Approved Service Plan And The Erie Municipal Code; Authorizing And Directing The Appropriate Town Officers To Sign Said Intergovernmental Agreement; And Setting Forth Details In Relation Thereto.
DEPARTMENT:	Community Development
PRESENTER:	R. Martin Ostholthoff, Community Development Director

FISCAL INFORMATION:	Cost as Recommended:	n/a
	Balance Available:	n/a
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☐ No

STAFF RECOMMENDATION:	Staff recommends approval of Resolution 15-103 with the following condition: the Sierra Vista Preliminary Plat shall be approved for the development prior to the formation of the District.

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

The Town has received the Service Plan (Plan) for the Sierra Vista Metropolitan District (District). The District encompasses approximately 60 acres of land located at the northwest corner of State Highway 7 and Bonanza Drive. State Statute requires the Board of Trustees to approve the Plan by resolution of any special district organized within the municipal limits of the Town. This is a required step for the District to participate in the November 2015 Title 32 district election.

The Board of Trustees adopted a special district ordinance and model service plan in June 2007. The special district ordinance was amended in 2013. The Plan has been submitted in accordance with the ordinance and amendment thereto. The Plan was submitted using the model service plan as a guide and the Districts have complied with the amended Town ordinance.

The District will provide public improvements and services to a new residential community, Sierra Vista. The Plan identifies improvements and services expected to be provided by the District, the Plan also describes how activities will be financed.

The Plan identifies powers of the Districts as well as describes the limitations. In addition, disclosure of the District is included that advises potential property owners to investigate financing, servicing of indebtedness, etc.

Town staff and Kim Crawford, Special Counsel to the Town has reviewed the Plan and have found it to be in general compliance with the model service plan and the Town ordinance as amended. Approval of Plan does not constitute the Town's approval of any future development plan or zoning.

Below is a summary of several of the limitations and contract points of the Plan.

Debt Service Mill Levy	50 mills
Operations/Maintenance Mill Levy	included in debt mill levy (combined not to exceed 50 mills)
Limit on Final Debt Maturity	40 years
Public Improvements Estimate	$6,882,000
Debt Cap	$10,000,000
IGA with Town	Required prior to debt issuance
Town liable for Districts obligations	No

Staff Review:

_____ **Town Attorney**
_____ **Town Clerk**
_____ **Community Development Director**
_____ **Finance Director**
_____ **Police Chief**
_____ **Parks and Recreation Director**
_____ **Public Works Director**

Approved by:

A. J. Krieger
Town Administrator

ATTACHMENTS:

a. Resolution 15-103
b. Service Plan For Sierra Vista Metropolitan District
c. Town of Erie/Sierra Vista Metropolitan District IGA

ATTACHMENT A

RESOLUTION NO. 15-103

RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO APPROVING THE SERVICE PLAN FOR THE SIERRA VISTA METROPOLITAN DISTRICT WITH A CONDITION; AND, AUTHORIZING THE TOWN OF ERIE, COLORADO, TO ENTER INTO AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE TOWN OF ERIE AND THE SIERRA VISTA METROPOLITAN DISTRICT, ENSURING COMPLIANCE WITH THE APPROVED SERVICE PLAN AND THE ERIE MUNICIPAL CODE; AUTHORIZING AND DIRECTING THE APPROPRIATE TOWN OFFICERS TO SIGN SAID INTERGOVERNMENTAL AGREEMENT; AND, SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, §32-1-204.5, C.R.S. provides that no special district shall be organized within the boundaries of the Town of Erie (the "Town") except upon adoption of a resolution of the Board of Trustees (the "Board") approving the Service Plan of the proposed special district; and

WHEREAS, a service plan dated July 24, 2015, has been submitted to the Board for the Sierra Vista Metropolitan District (the "District") in compliance with § 32-1-204.5 (the "Service Plan"); and

WHEREAS, the Service Plan has been submitted to the Board for the District in compliance with Title 9, Chapter 7, "Special Districts," of the Town's Municipal Code; and

WHEREAS, the territory of the proposed District is located wholly within the boundaries of the Town; and

WHEREAS, adequate notice of a public hearing of the Board to review the Service Plan has been given; and

WHEREAS, following the required notice the Board has conducted a public hearing on the Service Plan for the District and has made certain findings; and

WHEREAS, Section 9-4-6 of the Code of Ordinances of the Town ("Code") requires that the District enter into an intergovernmental agreement with the Town regarding the enforcement of the Town Code provisions and the provisions of the Plan ("Intergovernmental Agreement"); and,

WHEREAS, the Board of Trustees of the Town believes it is in the best interest of the Town to approve the Service Plan with the condition set forth herein, and to enter into such Intergovernmental Agreement with the District.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO:

Section 1. The Board makes the following findings:

1. The Board has jurisdiction to hear this matter.

2. The evidence presented at the public hearing held before the Board is satisfactory to show the following:

a. There is sufficient existing and projected need for organized service in the area to be serviced by the proposed special district.

b. The existing service in the area to be served by the proposed special district is inadequate for present and projected needs.

c. The proposed special district is capable of providing economical and sufficient service to the areas within its proposed boundaries.

d. The area to be included in the proposed special district has, or will have, the financial ability to discharge the proposed indebtedness on a reasonable basis.

Section 2. The Service Plan for the District is hereby approved with the following condition: the Sierra Vista Preliminary Plat shall be approved for the development prior to the formation of the District. Nothing herein limits the Town's powers with respect to the District, the property within the District, or the improvements to be constructed by the District. The Town's findings are based solely upon the evidence in the Service Plan and such other evidence presented at the public hearing, and the Town has not conducted any independent investigation of the evidence. The Town makes no guarantee as to the financial viability of the District or the achievability of the results.

Section 3. That the Intergovernmental Agreement between the Town and the District, a copy of which is attached hereto as "Exhibit A" and incorporated herein by reference, is found to be a reasonable and acceptable agreement for enforcement of the Town Code provisions and the provisions of the Plan.

Section 4. That the Town be and is hereby authorized and directed to enter into the Intergovernmental Agreement, and the appropriate Town officers are hereby authorized and directed to sign and bind the Town to said Intergovernmental Agreement.

Section 5. That entering into the Intergovernmental Agreement is found to be in the best interest of the Town, and necessary for the preservation of the public health and safety.

ADOPTED AND APPROVED THIS 11TH DAY OF AUGUST, 2015, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy J. Parker, CMC, Town Clerk

EXHIBIT A

INTERGOVERNMENTAL AGREEMENT
BETWEEN
THE TOWN OF ERIE COLORADO
AND
SIERRA VISTA METROPOLITAN DISTRICT

THIS INTERGOVERNMENTAL AGREEMENT ("Agreement") is made and entered into by and between the TOWN OF ERIE, a municipal corporation of the State of Colorado ("Town"), and SIERRA VISTA METROPOLITAN DISTRICT, a quasi-municipal corporation and political subdivision of the State of Colorado (the "District"). The Town and District are collectively referred to herein as the Parties.

RECITALS

WHEREAS, the District was organized to provide those services and to exercise powers as are more specifically set forth in the District's Service Plan dated July 24, 2015, as amended from time to time by Town approval ("Service Plan"); and

WHEREAS, the Service Plan and Town Code requires the execution of an intergovernmental agreement between the Town and the District regarding the enforcement of the Service Plan and Title 9, Chapter 4 of the Town Code; and

WHEREAS the Town has constructed the Airpark Interception Extension ("Extension"), which benefits the property within the District ("Property"); and

WHEREAS, the District desires to reimburse the Town for the Property's share of the Extension costs; and

WHEREAS, the Town and the District have determined it to be in their best interests to enter into this Agreement.

NOW, THEREFORE, for and in consideration of the covenants and mutual agreements herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

COVENANTS AND AGREEMENTS

1. Incorporation by Reference. The Service Plan and Title 9, Chapter 4 of the Town Code (the "Special District Code") are hereby incorporated in this Agreement by this reference. The District agrees to comply with all provisions of the Service Plan and the Special District Code.

2. Enforcement. The parties agree that this Agreement may be enforced in law, or in equity for specific performance, injunctive, or other appropriate relief. The parties also agree that this Agreement may be enforced pursuant to Section 32-1-207, C.R.S. and other provisions of Title 32, Article 1, C.R.S., granting rights to municipalities or counties approving a service plan of a special district.

3. Airpark Interceptor Extension. The District has the authority to impose a facility fee in an amount not to exceed $5,000 per single-family residential unit in order to reimburse the Town and/or the URA for the portion of the Extension attributable to the property within the District or to help finance other public improvements. If the facility fee is used to reimburse the Town and/or the URA for the Extension, the Town, not the District, will collect the facility fee at the time the Town issues a building permit.

4. Operation Fees. The District is hereby authorized to impose a monthly operations fee, in an amount not to exceed $50 to fund the District's operations and maintenance responsibilities.

5. Entire Agreement of the Parties. This written Agreement constitutes the entire agreement between the parties and supersedes all prior written or oral agreements, negotiations, or representations and understandings of the parties with respect to the subject matter contained herein.

6. Amendment. This Agreement may be amended, modified, changed, or terminated in whole or in part only by a written agreement duly authorized and executed by the parties hereto.

7. Governing Law; Venue. The internal laws of the State of Colorado shall govern the interpretation and enforcement of this Agreement, without giving effect to choice of law or conflict of law principles. The parties hereby submit to the jurisdiction of and venue in the district court in Weld County, Colorado. In any proceeding brought to enforce the provisions of this Agreement, the prevailing party therein shall be entitled to an award of reasonable attorneys' fees, actual court costs and other expenses incurred.

8. Beneficiaries. Except as otherwise stated herein, this Agreement is intended to describe the rights and responsibilities of and between the named parties and is not intended to, and shall not be deemed to confer any rights upon any persons or entities not named as parties.

9. Effect of Invalidity. If any portion of this Agreement is held invalid or unenforceable for any reason by a court of competent jurisdiction as to either party or as to both parties, such portion shall be deemed severable and its invalidity or its unenforceability shall not cause the entire Agreement to be terminated.

10. Assignability. Neither the Town nor the District shall assign their rights or delegate their duties hereunder without the prior written consent of the other party.

11. Notices. All notices, certificates or other communications hereunder shall be sufficiently given and shall be deemed given when given by hand delivery, overnight delivery, mailed by certified or registered mail, postage prepaid, delivered electronically (if confirmed promptly telephonically) or dispatched by telegram or telecopy (if confirmed promptly telephonically), addressed to the following address or at such other address or addresses as any party hereto shall designate in writing to the other party hereto:

Town of Erie
Town Administrator
PO Box 750
645 Holbrook St
Erie, Colorado 80516
Ph: (303) 926-2710
Fax: (303) 926-2706

Sierra Vista Metropolitan District
c/o WHITE BEAR & ANKELE
Professional Corporation
Attn: George M. Rowley, Esq.
2154 E Commons Ave, Suite 2000
Centennial, Colorado 80122
Ph: (303) 858-1800
Fax: (303) 858-1801

11. Successors and Assigns. This Agreement and the rights and obligations created hereby shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

SIERRA VISTA METROPOLITAN DISTRICT

_____
Officer

ATTEST:

_____

TOWN OF ERIE, COLORADO

_____
Tina Harris, Mayor

ATTEST:

_____
Nancy Parker, Town Clerk

ATTACHMENT B

SERVICE PLAN

FOR

SIERRA VISTA METROPOLITAN DISTRICT

Prepared

by

WHITE BEAR ANKELE TANAKA & WALDRON
2154 E. Commons Ave, Suite 2000
Centennial, CO 80122
(303) 858-1800

July 24, 2015

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EXHIBIT I	Form of Disclosure
EXHIBIT J	Proof of Ownership and Encumbrances

SERVICE PLAN
FOR SIERRA VISTA METROPOLITAN DISTRICT

I. INTRODUCTION

A. Purpose and Intent. The District is an independent unit of local government, separate and distinct from the Town. It is intended that the District will provide a part or all of the Public Improvements for the use and benefit of all anticipated constituents and taxpayers of the District. The primary purpose of the District will be to finance the construction of these Public Improvements. The District is not being created to provide ongoing operations and maintenance services other than as specifically set forth in Exhibit E to this Service Plan.

B. Need for the District. There are currently no other governmental entities, including the Town, located in the immediate vicinity of the District that consider it desirable, feasible or practical to undertake the planning, design, acquisition, construction installation, relocation, redevelopment, and financing of the Public Improvements needed for the Project. Formation of the District is therefore necessary in order for the Public Improvements required for the Project to be provided in the most economic manner possible.

C. Objective of the Town Regarding District Service Plan. The Town's objective in approving the Service Plan for the District is to authorize the District to provide for the planning, design, acquisition, construction, installation, and financing of the Public Improvements from the proceeds of Debt to be issued by the District. All Debt is expected to be repaid by taxes imposed and collected for no longer than the Maximum Mill Levy Imposition Term. The District's mill levy shall be no higher than the Maximum Mill Levy.

This Service Plan is intended to establish a limited purpose for the District and explicit financial constraints that are not to be violated under any circumstances. The primary purpose is to provide for the Public Improvements associated with development and regional needs. Operational activities are allowed, but only as specified in Exhibit E to this Service Plan.

Unless the District has operational responsibilities for any of the Public Improvements, it is the intent of the District to dissolve upon payment or defeasance of all Debt incurred or upon a court determination that adequate provision has been made for the payment of all Debt, or upon the occurrence of an event specified in Section 32-1-701(2) or (3), C.R.S.

The District shall be authorized to finance the Public Improvements that can be funded from Debt to be repaid from tax revenues collected from a mill levy which shall not exceed the Maximum Mill Levy and which shall not exceed the Maximum Mill Levy Imposition Term. It is the intent of this Service Plan to assure to the extent possible that no property bear an economic burden that is greater than that associated with the Maximum Mill Levy in amount and that no property bear an economic burden that is greater than that associated with the Maximum Mill Levy Imposition Term. Generally, the cost of Public Improvements that cannot be funded within these parameters are not costs to be paid by the District.

D. Organizers and Consultants. This Service Plan has been prepared by the following:

Organizers
Highway 7 & Bonanza, LLC
9033 E. Easter Place
Centennial, CO 80112

District Counsel
White Bear Ankele Tanaka & Waldron
George M. Rowley, Esq
2154 E. Commons Ave, Suite 2000
Centennial, CO 80122

Financial Advisor
D.A. Davidson & Company
Zach Bishop
1600 Broadway, Suite 1100
Denver, CO 80202

Engineers
Calibre
Todd A. Johnson
9090 S Ridgeline Blvd, Suite 105
Highlands Ranch, CO 80129

Bond Counsel
Sherman & Howard
Blake Jordan
633 17th Street, Suite 3000
Denver, CO 80202

E. First Board of Directors.

The proposed first board of directors is proposed to include:

Jeff Handlin 9033 E. Easter Place Centennial, CO 80112 (813) 787-9000	Carl Nelson 9033 E. Easter Place Centennial, CO 80112 (303) 947-0744	Matthew J. Deibel 9033 E. Easter Place Centennial, CO 80112 (303) 356-1422

Attached hereto as Exhibit J is proof of current ownership of and encumbrances on property in the District.

II. DEFINITIONS

In this Service Plan, the following terms shall have the meanings indicated below, unless the context hereof clearly requires otherwise:

Board: means the board of directors of the District.

Board of Trustees: means the Board of Trustees of the Town of Erie, Colorado.

Bonds or Debt: means any bonds, notes, debentures, certificates, contracts, capital leases, or other multiple fiscal year financial obligations of the District.

District: means the Sierra Vista Metropolitan District.

External Financial Advisor: means a consultant that: (1) advises Colorado governmental entities on matters relating to the issuance of securities by Colorado governmental entities, including matters such as the pricing, sales and marketing of such securities and the procuring of bond ratings, credit enhancement and insurance in respect of such securities; (2) shall be an underwriter, investment banker, or individual listed as a public finance advisor in the Bond Buyer's Municipal Market Place (also known as the Redbook); and (3) is not an officer of the District.

Financial Plan: means the Financial Plan attached hereto as Exhibit F and described in Section VI which describes (a) how the Public Improvements are to be financed; (b) how the Debt is expected to be incurred; and (c) the estimated revenue and expenses.

Initial District Boundaries: means the boundaries of the area described in the District's Boundary Map.

Initial District Boundary Map: means the map attached hereto as Exhibit C, describing the District's Boundaries.

Market Issued Debt: means Debt which is underwritten by an underwriter or investment banker listed in the Bond Buyer's Municipal Market Place (also known as the Redbook).

Maximum Mill Levy: means fifty (50) mills; provided that if, on or after January 1, 2015, there are changes in the method of calculating assessed valuation or any constitutionally mandated tax credit, cut or abatement; the Maximum Mill Levy may be increased or decreased to reflect such changes, such increases or decreases to be determined by the Board in good faith (such determination to be binding and final) so that to the extent possible, the actual tax revenues generated by the mill levy, as adjusted for changes occurring after January 1, 2015, are neither diminished nor enhanced as a result of such changes. For purposes of the foregoing, a change in the ratio of actual valuation shall be deemed to be a change in the method of calculating assessed valuation.

Maximum Debt Mill Levy: means the maximum mill levy the District is permitted to impose for payment of Debt as set forth in Section VI.E below.

Maximum Mill Levy Imposition Term: means the maximum term for imposition of a mill levy as set forth in Section VI.F below.

Maximum Operations Mill Levy: means the maximum mill levy the District is permitted to impose for payment of its operations costs as set forth in Section VI.I below

Official Development Plan: means the zoning for the property as approved by the Town pursuant to the Town Code.

Privately Placed Debt: means Debt which is sold or placed directly with an investor, without being underwritten by an underwriter or investment banker.

Project: means the development or property commonly referred to as Sierra Vista.

Public Improvements: means a part or all of the improvements authorized to be planned, designed, acquired, constructed, installed, and financed as generally described in Exhibit D, except as specifically limited in Section V below, to serve the future taxpayers and inhabitants of the District Boundaries as determined by the Board of the District.

Service Plan: means this service plan for the District approved by Board of Trustees.

Service Plan Amendment: means an amendment to the Service Plan approved by Board of Trustees in accordance with the Town's ordinance and the applicable state law.

Special District Act: means Section 32-1-101, et seq., of the Colorado Revised Statutes, as amended from time to time.

State: means the State of Colorado.

Town: means the Town of Erie, Colorado.

Town Code: means the Town Code of the Town of Erie, Colorado.

III. BOUNDARIES

The area of the Initial District Boundaries includes approximately 60 acres. A legal description of the Initial District Boundaries is attached hereto as Exhibit A. A map of the Initial District Boundaries is attached hereto as Exhibit C. A vicinity map is attached hereto as Exhibit B.

IV. PROPOSED LAND USE/POPULATION PROJECTIONS/ASSESSED VALUATION

The Initial District Boundaries consist of approximately 54 acres of residential and 6 acres of commercial land. The current assessed valuation of the property within the Initial District Boundaries is $0.00 for purposes of this Service Plan and, at build out, is expected to be sufficient to reasonably discharge the Debt under the Financial Plan. The population of the District at build-out is estimated to be approximately 435 people. The Official Development Plan for the property in the Initial District Boundaries has not been approved by the Town to date.

V. DESCRIPTION OF PROPOSED POWERS, IMPROVEMENTS AND SERVICES

A. Powers of the District and Service Plan Amendment.

The District shall have the power and authority to provide the Public Improvements and, if provided herein, related operation and maintenance services, within and without the boundaries of the District as such power and authority is described in the Special District Act, and other applicable statutes, common law and the Constitution, subject to the limitations set forth herein.

1. Operations and Maintenance Limitation. The purpose of the District is to plan for, design, acquire, construct, install, and finance the Public Improvements. The District shall dedicate the Public Improvements to the Town or other appropriate jurisdiction or owners

association in a manner consistent with the Official Development Plan and other rules and regulations of the Town and applicable provisions of the Town Code. The District shall not be authorized to operate and maintain any part or all of the Public Improvements unless the provision of such operation and maintenance is pursuant to Exhibit E in the approved Service Plan.

2. Use of Bond Proceeds and Other Revenues of the District Limitation. Proceeds from the sale of Debt instruments and other revenues of the District may not be used to pay landowners within the District for any items required by annexation agreements or land use codes. Examples of ineligible reimbursements include: the acquisition of rights of way, easements, water rights, and land for prudent drainage, parkland or open space. Additionally, if the landowner/developer constructs the public infrastructure and conveys it to the District contingent upon a pledge from the District that it will issue bonds to pay the landowner/developer, prior to reimbursing the landowner/developer for such amounts, the District must receive the report of an independent engineer or accountant confirming that the amount of the reimbursement is reasonable.

3. Recovery Agreement Limitation. Should the District construct infrastructure subject to a recovery agreement with the Town or other entity, the District will retain all benefits under the recovery agreement. Any subsequent reimbursement for public improvements installed or financed by the District will remain the property of the District and be applied toward repayment of its Debt, if any. Any reimbursement revenue not necessary to repay District Debt may be utilized to construct additional Public Improvements permitted under this Service Plan.

4. Construction Standards Limitation. The District will ensure that the Public Improvements are designed and constructed in accordance with the standards and specifications of the Town and of other governmental entities having proper jurisdiction. In all instances, the District will comply with applicable Town ordinances, regulations and standards, including, without limitation, and to the extent necessary, execution of public improvement agreements and provision of improvements and dedication of any of the public improvements to the Town. The District will obtain the Town's approval of civil engineering plans and will obtain applicable permits for construction and installation of Public Improvements prior to performing such work. Nothing herein requires the Town to accept the transfer of any Public Improvement.

5. Privately Placed Debt Limitation. Prior to the issuance of any Privately Placed Debt, the District shall obtain the certification of an External Financial Advisor substantially as follows:

> We are [I am] an External Financial Advisor within the meaning of the District's Service Plan.
>
> We [I] certify that (1) the net effective interest rate (calculated as defined in Section 32-1-103(12), C.R.S.) to be borne by [insert the designation of the Debt] does not exceed a reasonable current [tax-exempt] [taxable] interest rate, using criteria deemed appropriate

by us [me] and based upon our [my] analysis of comparable securities; and (2) the structure of [insert designation of the Debt], including maturities and early redemption provisions, is reasonable considering the financial circumstances of the District.

6. Boundary Change Limitation. The District shall not include within or exclude from its boundaries any property without the prior written consent of the Town.

7. Total Debt Issuance Limitation. The District shall not issue Debt in an aggregate principal amount in excess of $10,000,000 provided that the foregoing shall not include the principal amount of Debt which has been refunded by the issuance of refunding Debt.

8. No Rates, Fees, Charges, Assessments or Exaction. The District shall not impose any rate, fee, charge, assessment or exaction and shall not utilize any rate, fee, charge, assessment or exaction imposed by any public or private entity without written consent of the Town.

9. Monies from Other Governmental Sources. The District shall not apply for or accept Conservation Trust Funds, Great Outdoors Colorado Funds, or other funds available from or through governmental or non-profit entities that the Town is eligible to apply for, except pursuant to an intergovernmental agreement with the Town. This Section shall not apply to specific ownership taxes which shall be distributed to and a revenue source for the District without any limitation.

10. Consolidation Limitation. The District shall not file a request with any Court to consolidate with another Title 32 district without the prior written consent of the Town.

11. Bankruptcy Limitation. All of the limitations contained in this Service Plan, including, but not limited to, those pertaining to the Maximum Mill Levy and the Maximum Mill Levy Imposition Term have been established under the authority of the Town to approve a Service Plan with conditions pursuant to Section 32-1-204.5, C.R.S. It is expressly intended that such limitations:

(a) Shall not be subject to set-aside for any reason or by any court of competent jurisdiction, absent a Service Plan Amendment; and

(b) Are, together with all other requirements of Colorado law, included in the "political or governmental powers" reserved to the State under the U.S. Bankruptcy Code (11 U.S.C.) Section 903, and are also included in the "regulatory or electoral approval necessary under applicable nonbankruptcy law" as required for confirmation of a Chapter 9 Bankruptcy Plan under Bankruptcy Code Section 943(b)(6).

Any Debt issued with a pledge or which results in a pledge that exceeds the Maximum Mill Levy or the Maximum Mill Levy Imposition Term, shall be deemed a material departure from this Service Plan pursuant to Section 32-1-207, C.R.S., and the Town shall be entitled to all remedies available under State and local law to enjoin such actions of the District.

12. Eminent Domain Powers Limitation. The District shall provide the Town with written notice prior to its exercise of the power of eminent domain.

13. Notice of Meetings. The District shall deliver to the Town Clerk a copy of written notice of every regular or special meeting of the District at least five (5) business days prior to such meeting. The District shall post a copy of such notice at Town Hall and the Town Post Office. From the time that 50% of the structures to be built in the District have been sold to purchasers, all meetings of the Board of Directors shall be held within Town limits.

14. Subdistricts; 63-20 Corporations. No subdistricts shall be created by the District pursuant to Section 32-1-1101(1.5), C.R.S. The District shall not create any corporation to issue Bonds on the District's behalf.

15. Intergovernmental Agreement; Improvement Guaranty. The District shall not levy any taxes or issue any debt until it enters into an intergovernmental agreement with the Town regarding the enforcement of the approving ordinance and the provisions of the Model Service Plan. The intergovernmental agreement shall be in form and substance satisfactory to the Town Administrator and Town Attorney. The creation of the District shall not alter the obligation of the developer of property in the District to provide the Town with improvement guarantees pursuant to agreements entered into with the developer.

16. Service Plan Amendment Requirement. This Service Plan has been designed with sufficient flexibility to enable the District to provide required services and facilities under evolving circumstances without the need for numerous amendments. While the assumptions upon which this Service Plan are generally based are reflective of an Official Development Plan for the property within the District, the cost estimates and Financing Plan are sufficiently flexible to enable the District to provide necessary services and facilities without the need to amend this Service Plan as development plans change. Modification of the general types of services and facilities, and changes in proposed timing, configurations, locations, or dimensions of various facilities and improvements shall be permitted to accommodate development needs consistent with then-current Official Development Plans for the property. Actions of the District which violate the limitations set forth in Sections A.1-15 above or in Section VI shall be deemed to be material departures from this Service Plan and the Town shall be entitled to all remedies available under State and local law to enjoin such actions of the District.

B. Preliminary Engineering Survey.

The District shall have authority to provide for the planning, design, acquisition, construction, installation, relocation, redevelopment, maintenance, and financing of the Public Improvements within and without the boundaries of the District, as more specifically described in Exhibit D. An estimate of the costs of the Public Improvements which may be planned for, designed, acquired, constructed, installed, relocated, redeveloped, maintained or financed was prepared based upon a preliminary engineering survey and estimates derived from the Official Development Plan on the property in the Initial District Boundaries and is approximately $7,000,000 and as more specifically detailed in Exhibit D.

All of the Public Improvements described herein will be designed in such a way as to assure that the Public Improvements standards will be compatible with those of the Town and shall be in accordance with the requirements of the Official Development Plan. All descriptions of the Public Improvements to be constructed, and their related costs, are estimates only and are subject to modification as engineering, development plans, economics, the Town's requirements, and construction scheduling may require. Upon approval of this Service Plan, the District will continue to develop and refine cost estimates contained herein and prepare for issuance of Debt. All cost estimates will be inflated to then-current dollars at the time of the issuance of Debt and construction. All construction cost estimates assume construction to applicable local, State or Federal requirements.

VI. FINANCIAL PLAN

A. General.

The District shall be authorized to provide for the planning, design, acquisition, construction, installation, relocation, and financing of the Public Improvements from its revenues and by and through the proceeds of Debt to be issued by the District. The Financial Plan for the District shall be to issue such Debt as the District can reasonably pay within the Maximum Mill Levy Imposition Term from revenues derived from the Maximum Debt Mill Levy and other legally available revenues (subject to Section V.A.8 hereof). The total Debt that the District shall be permitted to issue shall not exceed the total Debt issuance limitation set forth in Section V.A.7 hereof, and shall be permitted to be issued on a schedule and in such year or years as the District determines shall meet the needs of the Financial Plan referenced above and phased to serve development as it occurs. All Debt issued by the District may be payable from any and all legally available revenues of the District, including general ad valorem taxes to be imposed upon all taxable property of the District. The Financing Plan demonstrates one method that might be used by the District to finance the cost of infrastructure. At the time bonds or other debt instruments are proposed to be issued, alternative financing plans may be employed and be utilized by the District. As long the District's Debt otherwise complies with the restriction in the Service Plan, it will be deemed to be in material compliance with the Service Plan for purposes of § 32-1-1101(2) regardless of whether the structure, dates and amount of Debt differ from the projections in the Financial Plan. Prior to issuing any Debt, the District shall deliver to the Town an opinion of nationally recognized bond counsel (acceptable to the Town Attorney) stating that the Debt satisfies the requirements of the Service Plan.

B. Maximum Voted Interest Rate and Maximum Underwriting Discount.

The interest rate on any Debt is expected to be the market rate at the time the Debt is issued. The proposed maximum interest rate on any Debt shall not exceed 18%. The maximum underwriting discount shall not exceed 5%. Debt, when issued, will comply with all relevant requirements of this Service Plan, State law and Federal law as then applicable to the issuance of public securities. The forms of the ballot questions which the District will submit to its electors at the organizational election are attached hereto as Exhibit G.

C. No-Default Provisions.

Debt issued by a District shall be structured so that failure to pay debt service when due shall not of itself constitute an event of default or result in the exercise of remedies. The foregoing shall not be construed to prohibit events of default and remedies for other occurrences including, without limitation, (1) failure to impose or collect the Maximum Debt Mill Levy or such portion thereof as may be pledged thereto, or to apply the same in accordance with the terms of the Debt, (2) failure to abide by other covenants made in connection with such Debt, or (3) filing by a District as a debtor under any bankruptcy or other applicable insolvency laws. Notwithstanding the foregoing, Debt will not be structured with a remedy which requires the District to increase the Maximum Debt Mill Levy or the Maximum Mill Levy Imposition Term.

D. Eligible Bondholders

All District Bonds or other Debt instruments, if not rated in one of its four highest rating categories by one or more nationally recognized organizations which regularly rate such obligations, must be issued in minimum denominations of $500,000. The foregoing shall not prohibit the redemption by the District of such Debt instruments in denominations smaller than $500,000.

E. Maximum Debt Mill Levy.

The "Maximum Debt Mill Levy" shall be the maximum mill levy the District is permitted to impose upon the taxable property of the District for the payment of Debt, and shall be determined as follows:

1. The Maximum Debt Mill Levy shall be fifty (50) mills, however, in no event shall the combined debt mill levy and operations mill levy exceed the Maximum Mill Levy; provided that if, on or after January 1, 2015, there are changes in the method of calculating assessed valuation or any constitutionally mandated tax credit, cut or abatement; the mill levy limitation applicable to such Debt may be increased or decreased to reflect such changes, such increases or decreases to be determined by the Board in good faith (such determination to be binding and final) so that to the extent possible, the actual tax revenues generated by the mill levy, as adjusted for changes occurring after January 1, 2015, are neither diminished nor enhanced as a result of such changes. For purposes of the foregoing, a change in the ratio of actual valuation shall be deemed to be a change in the method of calculating assessed valuation.

F. Maximum Mill Levy Imposition Term.

The District shall not impose a Debt service mill levy for more than forty (40) years after the year of the initial imposition of such Debt service mill levy unless: (1) a majority of the Board of Directors of the District imposing the mill levy are residents of such District, and (2) such Board has voted in favor of issuing Debt with a term which requires or contemplates the imposition of a Debt service mill levy for a longer period of time than the limitation contained herein.

G. Debt Repayment Sources.

The District may impose a mill levy on taxable property within its boundaries as a primary source of revenue for repayment of Debt service and for operations and maintenance. The Debt mill levy shall only be used for Debt service on Market Issued Debt or for Privately Placed Debt. It shall never be used to pay debt service on any other obligation. Specifically, developer advances for capital outlays must be structured as Privately Placed Debt if there is a reasonable expectation that the advance will not be repaid in its entirety within one (1) year. In no event shall the debt service mill levy in the District exceed the Maximum Debt Mill Levy or the Maximum Mill Levy Imposition Term. Any Debt of the District issued with a pledge or which results in pledge that exceeds the Maximum Debt Mill Levy and the Maximum Mill Levy Imposition Term shall be deemed a material modification of this Service Plan.

H. Security for Debt.

No Debt or other financial obligation of the District will constitute a debt or obligation of the Town in any manner. The faith and credit of the Town will not be pledged for the repayment of any Debt or other financial obligation of the District. This will be clearly stated on all offering circulars, prospectuses, or disclosure statements associated with any securities issued by the District. District shall not utilize the Town of Erie's name in the name of the District.

I. Operating Mill Levy

In addition to the capital costs of the Public Improvements, the District will require operating funds for administration and to plan and cause the Public Improvements to be constructed and maintained. The maximum mill levy the District is permitted to impose upon the taxable property of the District for the payment of operations and maintenance shall be fifty (50) mills, however, in no event shall the combined debt mill levy and operations mill levy exceed the Maximum Mill Levy; provided that if, on or after January 1, 2015, there are changes in the method of calculating assessed valuation or any constitutionally mandated tax credit, cut or abatement; the mill levy limitation applicable to such Debt may be increased or decreased to reflect such changes, such increases or decreases to be determined by the Board in good faith (such determination to be binding and final) so that to the extent possible, the actual tax revenues generated by the mill levy, as adjusted for changes occurring after January 1, 2015, are neither diminished nor enhanced as a result of such changes. For purposes of the foregoing, a change in the ratio of actual valuation shall be deemed to be a change in the method of calculating assessed valuation. The first year's operating budget is estimated to be $100,000 which is anticipated to be derived from property taxes and other revenues as described in Exhibit F.

VII. ANNUAL REPORT

A. General.

The District shall be responsible for submitting an annual report to the Town no later than August 1 of each year following the year in which the Order and Decree creating the District has been issued.

B. Reporting of Significant Events.

The annual report shall include the following information:

(a) A narrative summary of the progress of the District in implementing its Service Plan;

(b) Except when an exemption from audit has been granted for the fiscal year under the Local Government Audit Law, the audited financial statements of the District for the fiscal year including a statement of financial condition (i.e. balance sheet) as of December 31 of the fiscal year and the statement of operations (i.e. revenues and expenditures) for the fiscal year;

(c) Unless disclosed within a separate schedule to the financial statements, a summary of the capital expenditures incurred by the District in development of public facilities in the fiscal year, as well as any capital improvements or projects proposed to be undertaken in the five (5) years following the fiscal year;

(d) Unless disclosed within a separate schedule to the financial statements, a summary of the financial obligations of the District at the end of the fiscal year, including the amount of outstanding indebtedness, the amount and terms of any new District indebtedness or long-term obligations issued in the fiscal year, the amount of payment or retirement of existing indebtedness of the District in the fiscal year, the total assessed valuation of all taxable properties within the District as of January 1 of the fiscal year, and the current mill levy of the District pledged to debt retirement in the fiscal year;

(e) The District's budget for the calendar year in which the annual report is submitted;

(f) A summary of residential and commercial development which has occurred within the District for the fiscal year;

(g) A summary of all taxes, fees, charges and assessments imposed by the District as of January 1 of the fiscal year;

(h) The name, business address and telephone number of each member of the Board and its chief administrative officer and general counsel, together with the date, place and time of the regular meetings of the Board.

VIII. DISSOLUTION

The District agrees to file petitions in the appropriate District Court for dissolution, pursuant to the applicable State statutes upon the occurrence of one of the following: (1) if the Board of Trustees has not approved a preliminary plat and/or development agreement for the development of the property within the District within one year from the approval of this Service Plan, (2) if the District has not issued any Debt within two years from the approval of this Service Plan, (3) upon an independent determination of the Board of Trustees that the purposes for which the District were created have been accomplished, or (4) when no Debt is then

outstanding. If the Board of Trustees has not approved a preliminary plat and/or development agreement for the development of the property within the District within one year from the approval of this Service Plan, the District may request a modification of this Service Plan to provide for a six-month extension of the one year dissolution clause. The Board of Trustees may approve up to two six-month extensions for a maximum of one year. In no event shall a dissolution occur until the District has provided for the payment or discharge of all of its outstanding Debt as required pursuant to State statutes.

IX. DISCLOSURE TO PURCHASERS

The District will use reasonable efforts to assure that all developers of the property located within the District provide written notice to all purchasers or lessees of property in the District regarding the Maximum Mill Levy as well as a description of the District's authority to impose and collect rates, fees, charges or exactions. The form of notice shall be substantially in the form of Exhibit I hereto; provided that such form may be modified by the District so long as a new form is submitted to the Town prior to modification. All promotional, marketing, and sales information shall display notice, equal in size and font to all other pertinent information, as to debt, taxes, rates, fees and exactions, and this information shall further be recorded in the real estate records of the County with the order of the court creating the District.

X. COMPLIANCE WITH LAWS

The approval of the Service Plan shall not limit the Town in implementing any growth limitations imposed by the Board of Trustees or the voters. The District shall be subject to all of the Town's zoning, subdivision, building code or land use requirements.

XI. CONCLUSION

It is submitted that this Service Plan for the District, as required by Section 32-1-203(2), C.R.S., establishes that:

1. There is sufficient existing and projected need for organized service in the area to be serviced by the District;

2. The existing service in the area to be served by the District is inadequate for present and projected needs;

3. The District is capable of providing economical and sufficient service to the area within its proposed boundaries; and

4. The area to be included in the District does have, and will have, the financial ability to discharge the proposed indebtedness on a reasonable basis.

EXHIBIT A

Legal Description

LEGAL DESCRIPTION

A PART OF THE S 1/2 OF THE SE 1/4 OF SECTION 31, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SE CORNER OF SAID SE 1/4 OF SECTION 31; THENCE
N 00° 29' 47" W ALONG THE EAST LINE OF SAID SE 1/4, A DISTANCE OF 75.31 FEET; THENCE S 89° 30' 13" W, A DISTANCE OF 109.21 FEET TO THE WESTERLY RIGHT OF WAY OF COUNTY ROAD NO 3 AS RECORDED IN THE OFFICE OF THE WELD COUNTY CLERK AND RECORDER IN BOOK 1631 AT RECEPTION NO. 2572958, SAID POINT ALSO BEING THE NORTHERLY RIGHT OF WAY OF STATE HIGHWAY NO 7 AS DESCRIBED IN THE OFFICE OF THE WELD COUNTY CLERK AND RECORDER IN BOOK 1224 AT RECEPTION NO. 2170911 AND THE POINT OF BEGINNING;
THENCE ALONG SAID NORTHERLY RIGHT OF WAY OF STATE HIGHWAY NO 7, ALONG A LINE 75.00 FEET NORTHERLY DISTANT AND PARALLEL, WHEN MEASURED AT RIGHT ANGLES, WITH THE SOUTH LINE OF SAID SE 1/4 THE FOLLOWING 2 COURSES;
1) THENCE S 89° 40' 06" W, A DISTANCE OF 1896.40 FEET;
2) THENCE S 89° 42' 14" W, A DISTANCE OF 13.43 FEET TO THE EASTERLY LINE OF THAT PARCEL OF LAND AS RECORDED IN THE OFFICE OF THE WELD COUNTY CLERK AND RECORDER IN BOOK 1274 AT RECEPTION NO. 2225423;
THENCE ALONG SAID EASTERLY LINE THE FOLLOWING 2 COURSES:
1) THENCE N 17° 16' 21" W, A DISTANCE OF 1176.48 FEET;
2) THENCE N 12° 59' 17" W, A DISTANCE OF 123.38 FEET TO THE NORTH LINE OF SAID S 1/2 OF THE SE 1/4 OF SECTION 31;
THENCE N 89° 39' 51" E ALONG SAID NORTH LINE, A DISTANCE OF 2330.26 FEET TO SAID WESTERLY RIGHT OF WAY OF COUNTY ROAD NO 3 AS DESCRIBED IN BOOK 1631 AT RECEPTION NO. 2572958; THENCE ALONG SAID WESTERLY RIGHT OF WAY THE FOLLOWING 2 COURSES:
1) THENCE S 04° 01' 23" W, A DISTANCE OF 564.23 FEET;
2) THENCE S 00° 19' 04" W, A DISTANCE OF 683.43 FEET TO THE POINT OF BEGINNING.

CONTAINING 2,634,345 SQUARE FEET OR 60.48 ACRES MORE OR LESS.

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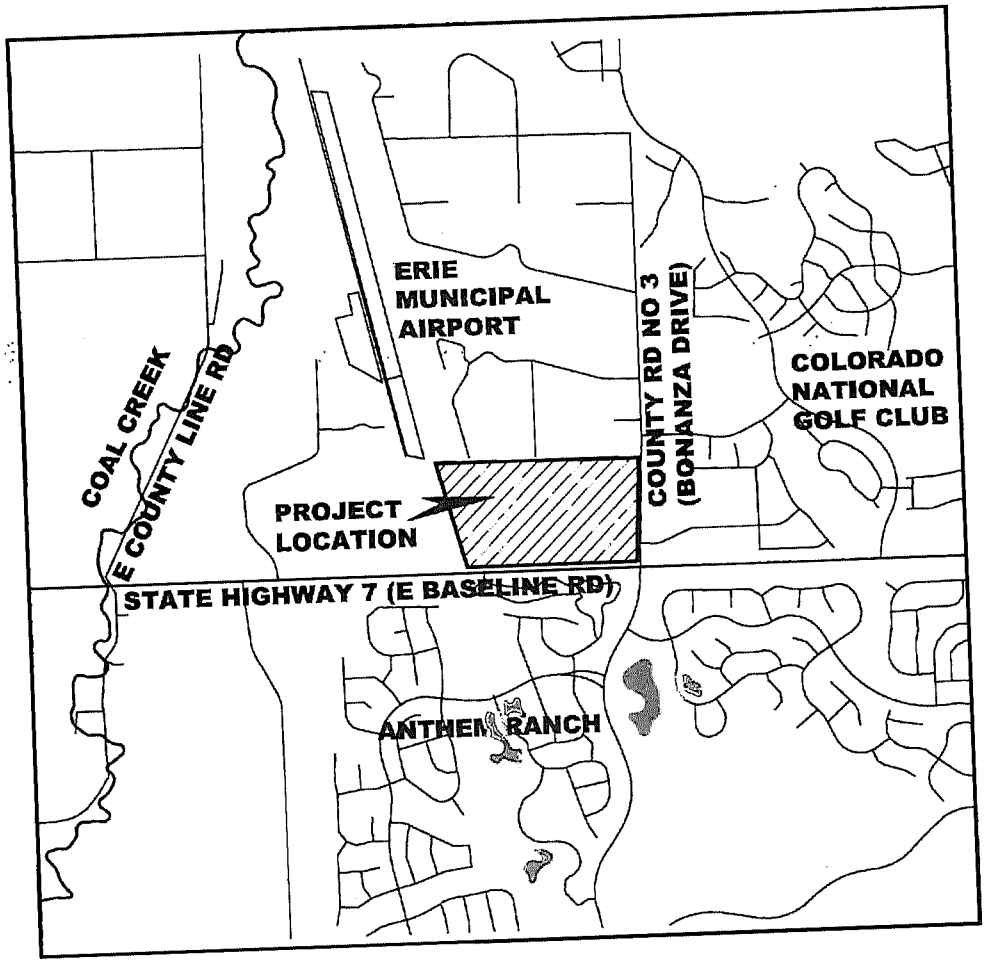
Construction Management Civil Engineering Surveying

SIERRA VISTA
METROPOLITAN DISTRICT
LEGAL DESCRIPTION
IMPROVEMENTS EXHIBIT

SCALE: NTS
DATE: JULY 15, 2015

EXHIBIT B

Erie Vicinity Map



NORTH

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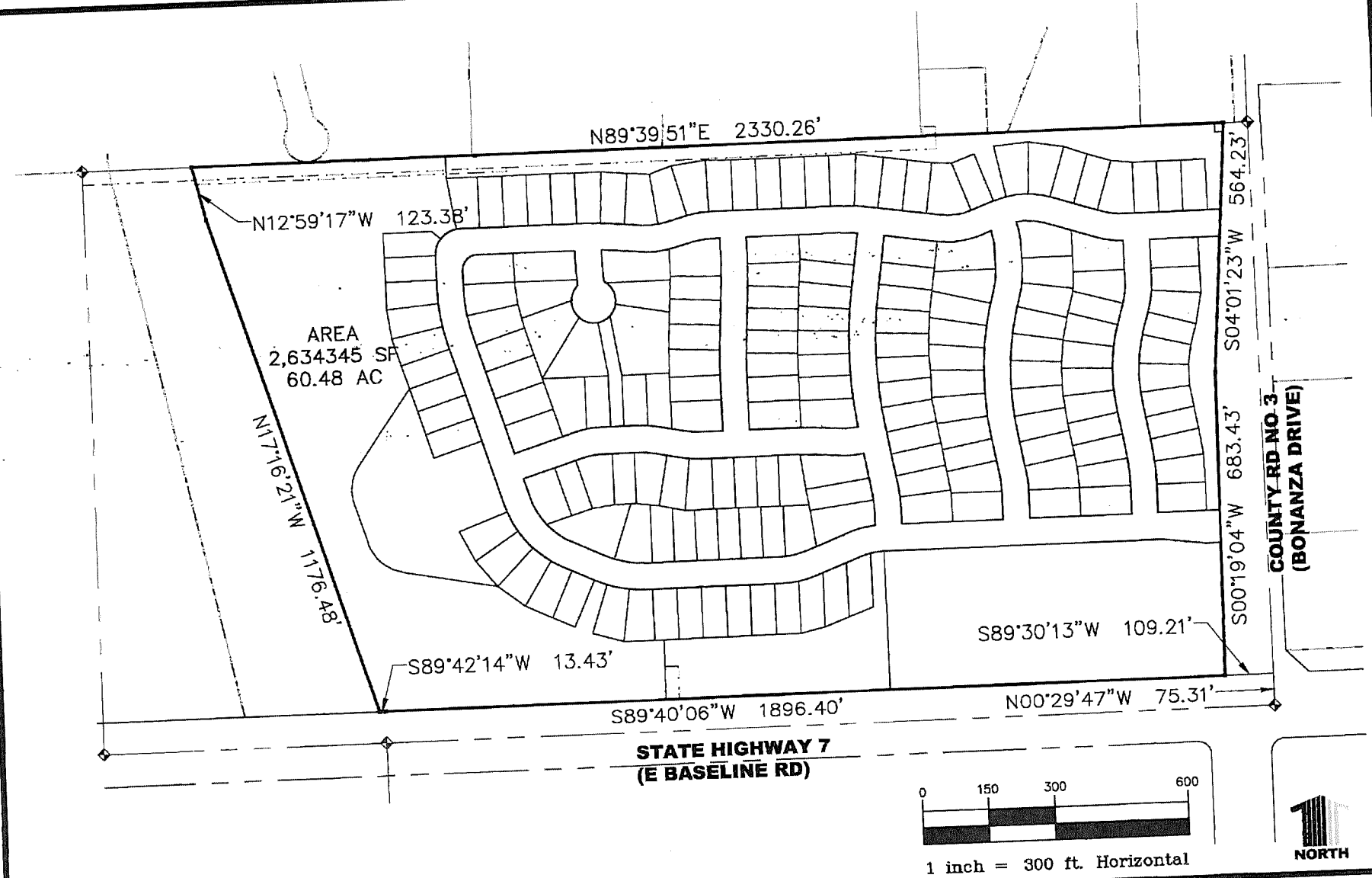
SIERRA VISTA
METROPOLITAN DISTRICT
VICINITY MAP
IMPROVEMENTS EXHIBIT

SHEET
1 OF 8
SCALE: NTS
DATE:
JULY 15, 2015

EXHIBIT C

District Boundary Map



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SIERRA VISTA
METROPOLITAN DISTRICT
BOUNDARY MAP
IMPROVEMENTS EXHIBIT

SHEET
3 OF 8
SCALE: 1" = 300'
DATE:
JULY 15, 2015

EXHIBIT D

Description of Public Improvements

SIERRA VISTA METROPOLITAN DISTRICT IMPROVEMENTS
PROJECTION OF PROBABLE COSTS
JULY 2015

Notes:

The District plans to construct the public improvements in a single phase. At the time of construction alternative phasing plans may be utilized by the District. The use of alternative phasing plans shall not be considered a material modification of the service plan.

STREET IMPROVEMENTS - ONSITE	$	1,693,905.00
STREET IMPROVEMENTS - OFFSITE	$	493,740.00
STORM IMPROVEMENTS - ONSITE	$	404,013.50
WATER IMPROVEMENTS - ONSITE	$	509,663.00
WATER IMPROVEMENTS - OFFSITE	$	150,563.50
SANITARY SEWER IMPROVEMENTS - ONSITE	$	328,780.00
PARKS & LANDSCAPING IMPROVEMENTS - ONSITE	$	778,176.00
MISCELLANEOUS	$	1,376,300.00
SUBTOTAL	$	5,735,141.00
20% CONTINGENCY	$	1,147,028.20
TOTAL	$	6,882,169.20

SIERRA VISTA METROPOLITAN DISTRICT IMPROVEMENTS
PROJECTION OF PROBABLE COSTS
JULY 2015

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
STREET IMPROVEMENTS - ONSITE					
1	EROSION CONTROL	1	LS	$ 40,000.00	$ 40,000.00
2	AGGREGATE BASE COURSE (CLASS 6, 12" DEPTH)	25,225	SY	$ 11.00	$ 277,475.00
3	RECONDITIONING (SUBGRADE PREPARATION, 18" DEPTH)	25,225	SY	$ 3.00	$ 75,675.00
4	HOT BITUMINOUS PAVEMENT (5" DEPTH)	25,225	SY	$ 20.00	$ 504,500.00
5	CONCRETE SIDEWALK (5' WIDTH)	74,140	SF	$ 4.00	$ 296,560.00
6	CONCRETE SIDEWALK (8' WIDTH)	19,300	SF	$ 4.50	$ 86,850.00
7	CONCRETE CURB RAMP	35	EA	$ 1,375.00	$ 48,125.00
8	MOUNTABLE CURB AND GUTTER	11,330	LF	$ 14.00	$ 158,620.00
9	VERTICAL CURB AND GUTTER	3,200	LF	$ 13.00	$ 41,600.00
10	4" PERFORATED UNDERDRAIN	14,530	LF	$ 10.00	$ 145,300.00
11	CONCRETE INTERSECTION PAN (8' WIDE, 8" DEPTH)	4	EA	$ 2,250.00	$ 9,000.00
12	STREET SIGNS AND POSTS	13	EA	$ 400.00	$ 5,200.00
13	PAVEMENT MARKINGS	1	LS	$ 5,000.00	$ 5,000.00
				SUBTOTAL	**$ 1,693,905.00**
STREET IMPROVEMENTS - OFFSITE					
1	REMOVALS	1	LS	$ 20,000.00	$ 20,000.00
2	DETOUR ROAD/TEMPORARY IMPROVEMENTS	1	LS	$ 40,000.00	$ 40,000.00
3	EROSION CONTROL	1	LS	$ 25,000.00	$ 25,000.00
4	AGGREGATE BASE COURSE (CLASS 6, 12" DEPTH)	6,995	SY	$ 11.00	$ 76,945.00
5	RECONDITIONING (SUBGRADE PREPARATION, 18" DEPTH)	6,995	SY	$ 3.00	$ 20,985.00
6	HOT BITUMINOUS PAVEMENT (8" DEPTH)	6,995	SY	$ 32.00	$ 223,840.00
7	CONCRETE SIDEWALK (5' WIDTH)	5,000	SF	$ 4.00	$ 20,000.00
8	CONCRETE CURB RAMP	4	EA	$ 1,375.00	$ 5,500.00
9	VERTICAL CURB AND GUTTER	1,135	LF	$ 13.00	$ 14,755.00
10	4" PERFORATED UNDERDRAIN	1,135	LF	$ 9.00	$ 10,215.00
11	CONCRETE INTERSECTION PAN (8' WIDE, 8" DEPTH)	2	EA	$ 2,250.00	$ 4,500.00
12	STREET SIGNS AND POSTS	5	EA	$ 400.00	$ 2,000.00
13	PAVEMENT MARKINGS	1	LS	$ 10,000.00	$ 10,000.00
14	CONSTRUCTION TRAFFIC CONTROL	1	LS	$ 20,000.00	$ 20,000.00
				SUBTOTAL	**$ 493,740.00**

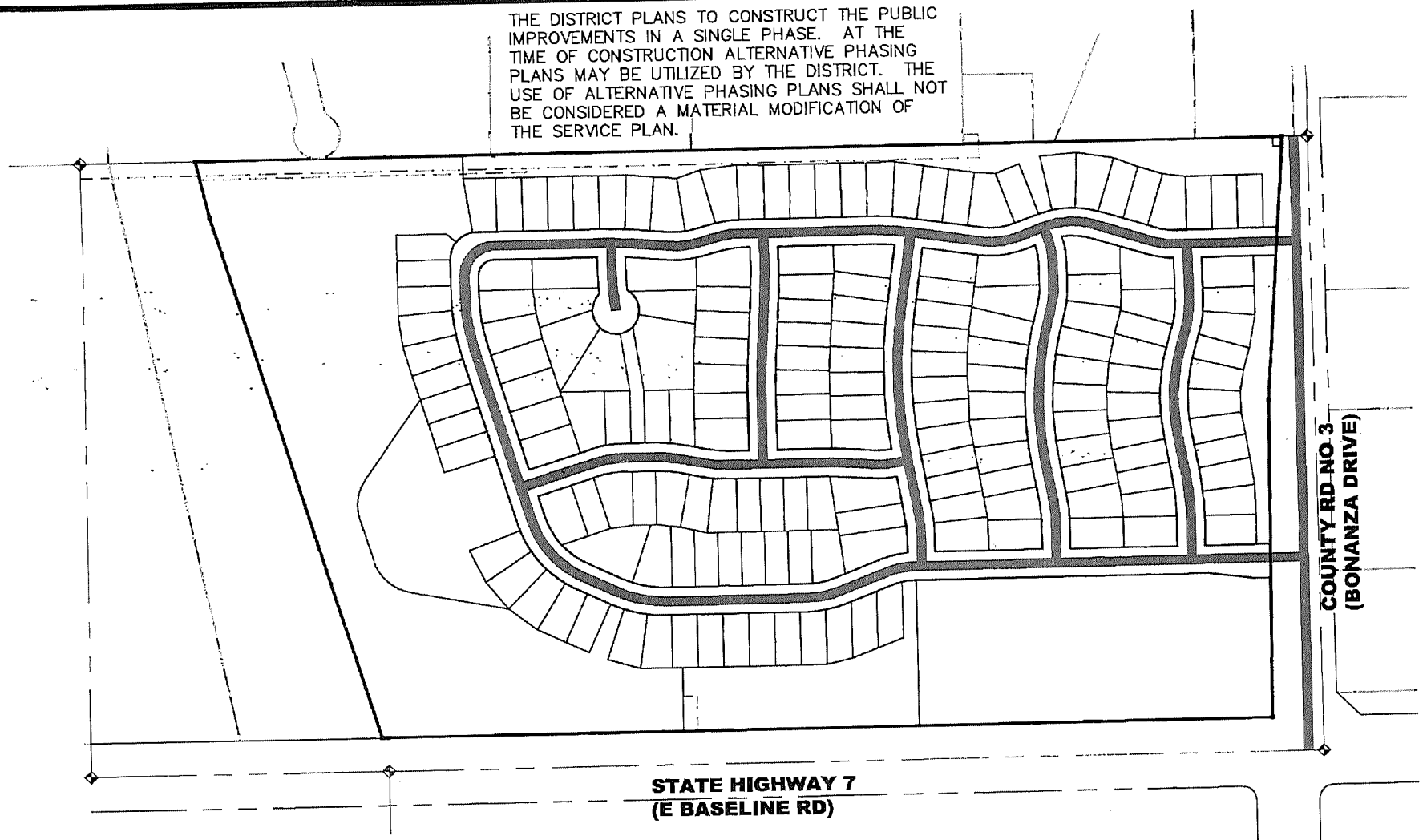
SIERRA VISTA METROPOLITAN DISTRICT IMPROVEMENTS
PROJECTION OF PROBABLE COSTS
JULY 2015

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
STORM IMPROVEMENTS - ONSITE					
1	5' DIAMETER STORM MANHOLE	14	EA	$ 2,500.00	$ 35,000.00
2	6' DIAMETER STORM MANHOLE	1	EA	$ 4,500.00	$ 4,500.00
3	18" RCP	330	LF	$ 44.00	$ 14,520.00
4	24" RCP	760	LF	$ 63.35	$ 48,146.00
5	30" RCP	575	LF	$ 84.10	$ 48,357.50
6	36" RCP	790	LF	$ 111.00	$ 87,690.00
7	18" FES	2	EA	$ 800.00	$ 1,600.00
8	30" FES	1	EA	$ 1,275.00	$ 1,275.00
9	36" FES	1	EA	$ 1,625.00	$ 1,625.00
10	10' TYPE R INLET	3	EA	$ 6,300.00	$ 18,900.00
11	15' TYPE R INLET	6	EA	$ 7,900.00	$ 47,400.00
12	OUTLET STRUCTURE	2	EA	$ 7,500.00	$ 15,000.00
13	TYPE M RIPRAP (D50=12") WITH 4" TYPE II BEDDING	500	CY	$ 160.00	$ 80,000.00
				SUBTOTAL	**$ 404,013.50**
WATER IMPROVEMENTS - ONSITE					
1	WATERLINE 8" PVC	4,580	LF	$ 29.10	$ 133,278.00
2	WATERLINE 12" PVC	2,775	LF	$ 44.40	$ 123,210.00
3	8" TEES & HORIZONTAL BENDS	35	EA	$ 525.00	$ 18,375.00
4	12" TEES & HORIZONTAL BENDS	20	EA	$ 900.00	$ 18,000.00
5	8" VERTICAL LOWERING	5	EA	$ 3,500.00	$ 17,500.00
6	12" VERTICAL LOWERING	2	EA	$ 6,000.00	$ 12,000.00
7	8" GATE VALVE	24	EA	$ 2,200.00	$ 52,800.00
8	12" GATE VALVE	16	EA	$ 4,000.00	$ 64,000.00
9	8" PLUG	2	EA	$ 800.00	$ 1,600.00
10	6" FIRE HYDRANT ASSEMBLY WITH TEE & 6" DIP	13	EA	$ 5,300.00	$ 68,900.00
				SUBTOTAL	**$ 509,663.00**

SIERRA VISTA METROPOLITAN DISTRICT IMPROVEMENTS
PROJECTION OF PROBABLE COSTS
JULY 2015

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
WATER IMPROVEMENTS - OFFSITE					
1	CONSTRUCTION TRAFFIC CONTROL	1	LS	$ 15,000.00	$ 15,000.00
2	REMOVE WATERLINE	1	LS	$ 50,000.00	$ 50,000.00
3	WATERLINE 12" PVC	1,235	LF	$ 44.10	$ 54,463.50
4	12" TEES & HORIZONTAL BENDS	10	EA	$ 900.00	$ 9,000.00
5	12" GATE VALVE	4	EA	$ 4,000.00	$ 16,000.00
6	CONNECT TO EXISTING 14" WATER LINE	1	EA	$ 2,500.00	$ 2,500.00
7	CONNECT TO EXISTING 12" WATER LINE	2	EA	$ 1,800.00	$ 3,600.00
				SUBTOTAL	**$ 150,563.50**
SANITARY SEWER IMPROVEMENTS - ONSITE					
1	SANITARY SEWER 8" PVC	8,020	LF	$ 29.00	$ 232,580.00
2	4' DIAMETER SANITARY MANHOLE	37	EA	$ 2,600.00	$ 96,200.00
				SUBTOTAL	**$ 328,780.00**
PARKS & LANDSCAPING IMPROVEMENTS - ONSITE					
1	TREES (TREE LAWNS)	365	EA	$ 400.00	$ 146,000.00
2	TREES (PARK)	105	EA	$ 400.00	$ 42,000.00
3	GRASS SOD & SOIL PREPARATION (TREE LAWNS)	87,200	SF	$ 0.70	$ 61,040.00
4	GRASS SOD & SOIL PREPARATION (PARK)	27,520	SF	$ 0.70	$ 19,264.00
5	IRRIGATION SYSTEM (TREE LAWNS)	87,200	SF	$ 1.35	$ 117,720.00
6	IRRIGATION SYSTEM (PARK)	27,520	SF	$ 1.35	$ 37,152.00
7	STREET LIGHTS	22	EA	$ 2,500.00	$ 55,000.00
8	ENTRY MONUMENTATION	1	LS	$ 50,000.00	$ 50,000.00
9	PARK AMENITIES (1 PARK)	1	LS	$ 250,000.00	$ 250,000.00
				SUBTOTAL	**$ 778,176.00**
MISCELLANEOUS					
1	SANITARY SEWER EXTENSION (ESTIMATED)	1	LS	$ 800,000.00	$ 800,000.00
2	RETAINING WALLS	12,000	FF	$ 25.00	$ 300,000.00
3	GRADING - STREETS	59,200	CY	$ 2.25	$ 133,200.00
4	GRADING - PARK	11,600	CY	$ 2.25	$ 26,100.00
5	GRADING - OPEN SPACE	52,000	CY	$ 2.25	$ 117,000.00
				SUBTOTAL	**$ 1,376,300.00**
				SUBTOTAL	**$ 5,735,141.00**
				20% CONTINGENCY	**$ 1,147,028.20**
				TOTAL	**$ 6,882,169.20**

THE DISTRICT PLANS TO CONSTRUCT THE PUBLIC IMPROVEMENTS IN A SINGLE PHASE. AT THE TIME OF CONSTRUCTION ALTERNATIVE PHASING PLANS MAY BE UTILIZED BY THE DISTRICT. THE USE OF ALTERNATIVE PHASING PLANS SHALL NOT BE CONSIDERED A MATERIAL MODIFICATION OF THE SERVICE PLAN.



DISTRICT ROADWAY IMPROVEMENTS
ALL ROADS WILL BE OWNED AND
MAINTAINED BY THE TOWN OF ERIE.

0 150 300 600

1 inch = 300 ft. Horizontal

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SIERRA VISTA
METROPOLITAN DISTRICT

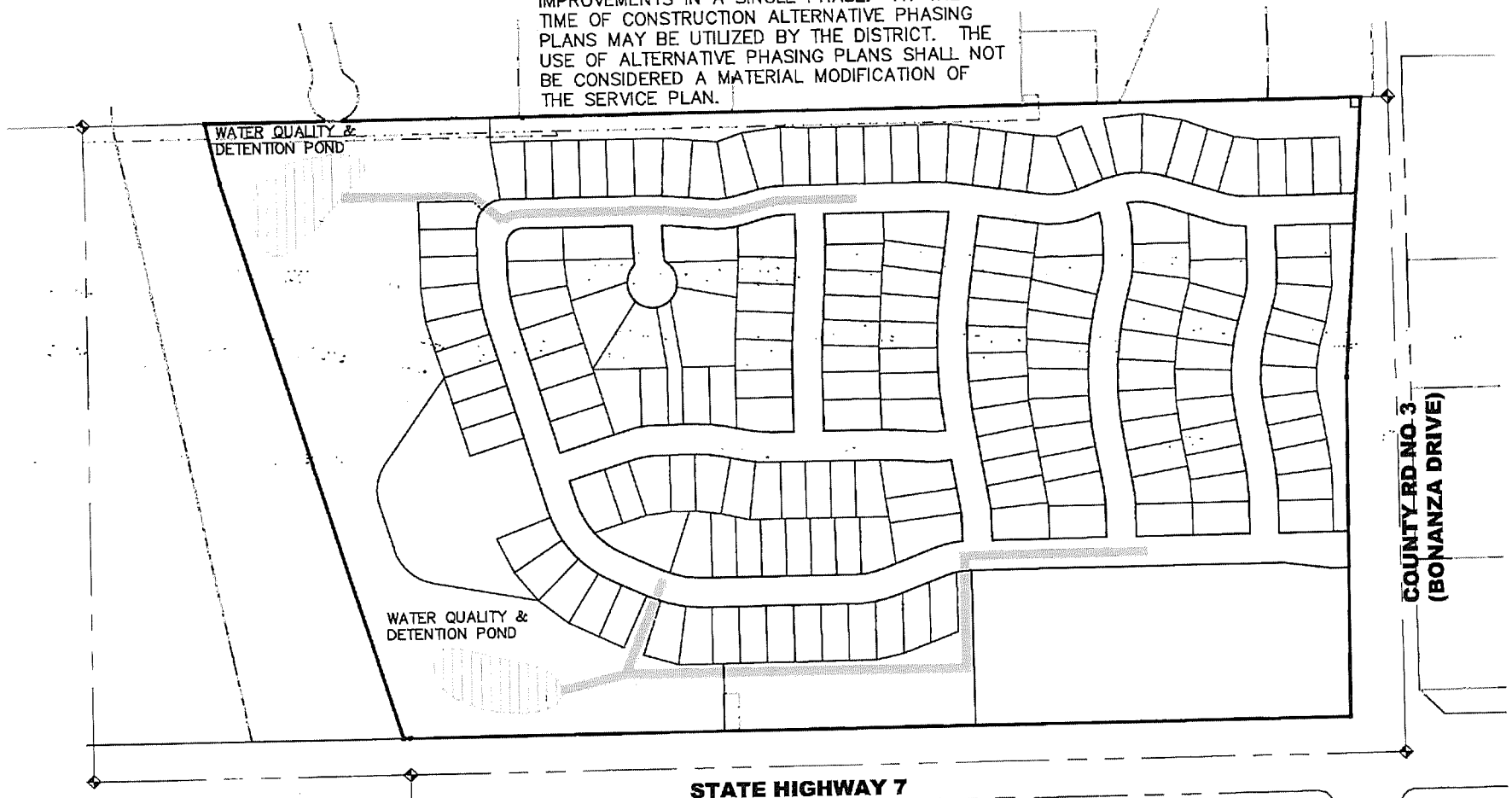
ROADWAY IMPROVEMENTS EXHIBIT

SHEET
4 OF 8

SCALE: 1" = 300'

DATE:
JULY 15, 2015

THE DISTRICT PLANS TO CONSTRUCT THE PUBLIC IMPROVEMENTS IN A SINGLE PHASE. AT THE TIME OF CONSTRUCTION ALTERNATIVE PHASING PLANS MAY BE UTILIZED BY THE DISTRICT. THE USE OF ALTERNATIVE PHASING PLANS SHALL NOT BE CONSIDERED A MATERIAL MODIFICATION OF THE SERVICE PLAN.



DISTRICT STORM SEWER IMPROVEMENTS
STORM DRAINAGE INFRASTRUCTURE WILL BE OWNED AND MAINTAINED BY THE TOWN OF ERIE.
PONDS WILL BE OWNED AND MAINTAINED BY THE METROPOLITAN DISTRICT.

0 150 300 600

1 inch = 300 ft. Horizontal

NORTH

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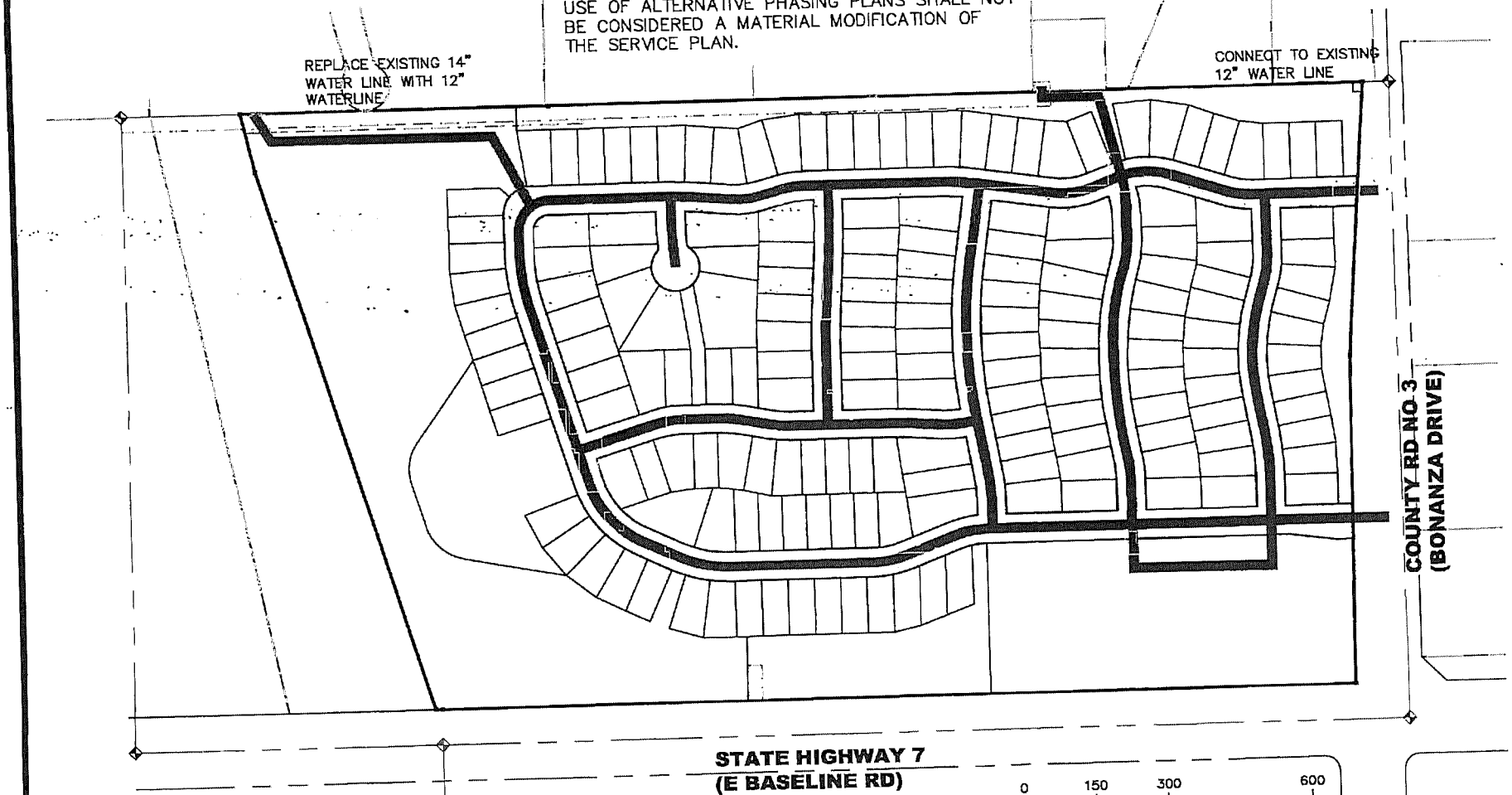
SIERRA VISTA
METROPOLITAN DISTRICT
STORM IMPROVEMENTS EXHIBIT

SHEET
5 OF 8
SCALE: 1" = 300'
DATE: JULY 15, 2015

THE DISTRICT PLANS TO CONSTRUCT THE PUBLIC IMPROVEMENTS IN A SINGLE PHASE. AT THE TIME OF CONSTRUCTION ALTERNATIVE PHASING PLANS MAY BE UTILIZED BY THE DISTRICT. THE USE OF ALTERNATIVE PHASING PLANS SHALL NOT BE CONSIDERED A MATERIAL MODIFICATION OF THE SERVICE PLAN.



DISTRICT WATER MAIN IMPROVEMENTS
ALL WATER IMPROVEMENTS WILL BE OWNED AND MAINTAINED BY THE TOWN OF ERIE.

0 150 300 600

1 inch = 300 ft. Horizontal

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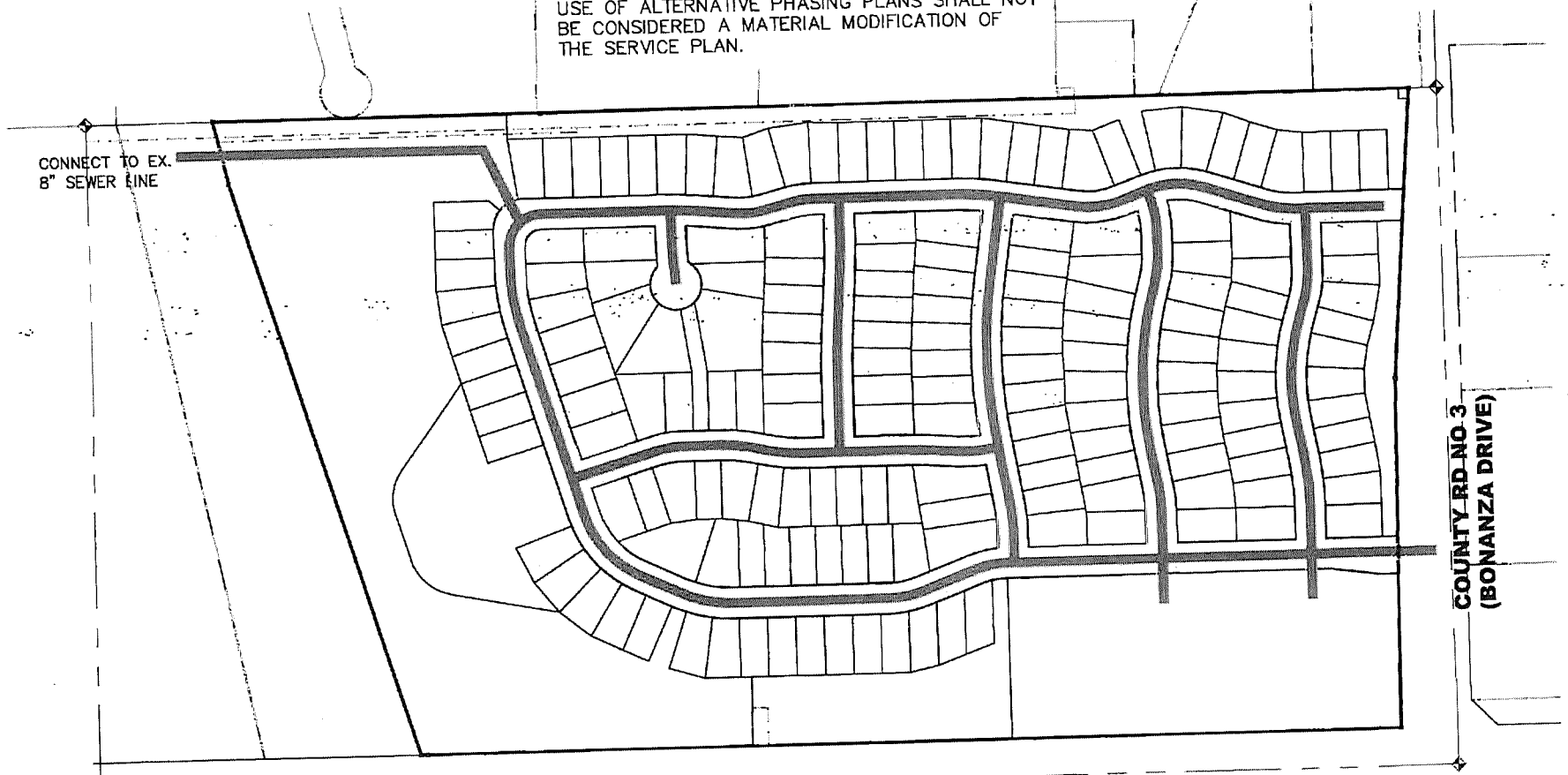
SIERRA VISTA
METROPOLITAN DISTRICT
WATER IMPROVEMENTS EXHIBIT

SHEET
6 OF 8

SCALE: 1" = 300'

DATE: JULY 15, 2015

THE DISTRICT PLANS TO CONSTRUCT THE PUBLIC IMPROVEMENTS IN A SINGLE PHASE. AT THE TIME OF CONSTRUCTION ALTERNATIVE PHASING PLANS MAY BE UTILIZED BY THE DISTRICT. THE USE OF ALTERNATIVE PHASING PLANS SHALL NOT BE CONSIDERED A MATERIAL MODIFICATION OF THE SERVICE PLAN.



DISTRICT SANITARY SEWER IMPROVEMENTS
ALL SANITARY SEWER IMPROVEMENTS WILL BE OWNED AND MAINTAINED BY THE TOWN OF ERIE.

0 150 300 600

1 inch = 300 ft. Horizontal

NORTH

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METROPOLITAN DISTRICT
SANITARY SEWER IMPROVEMENTS EXHIBIT

SHEET
7 OF 8

SCALE: 1" = 300'

DATE:
JULY 15, 2015

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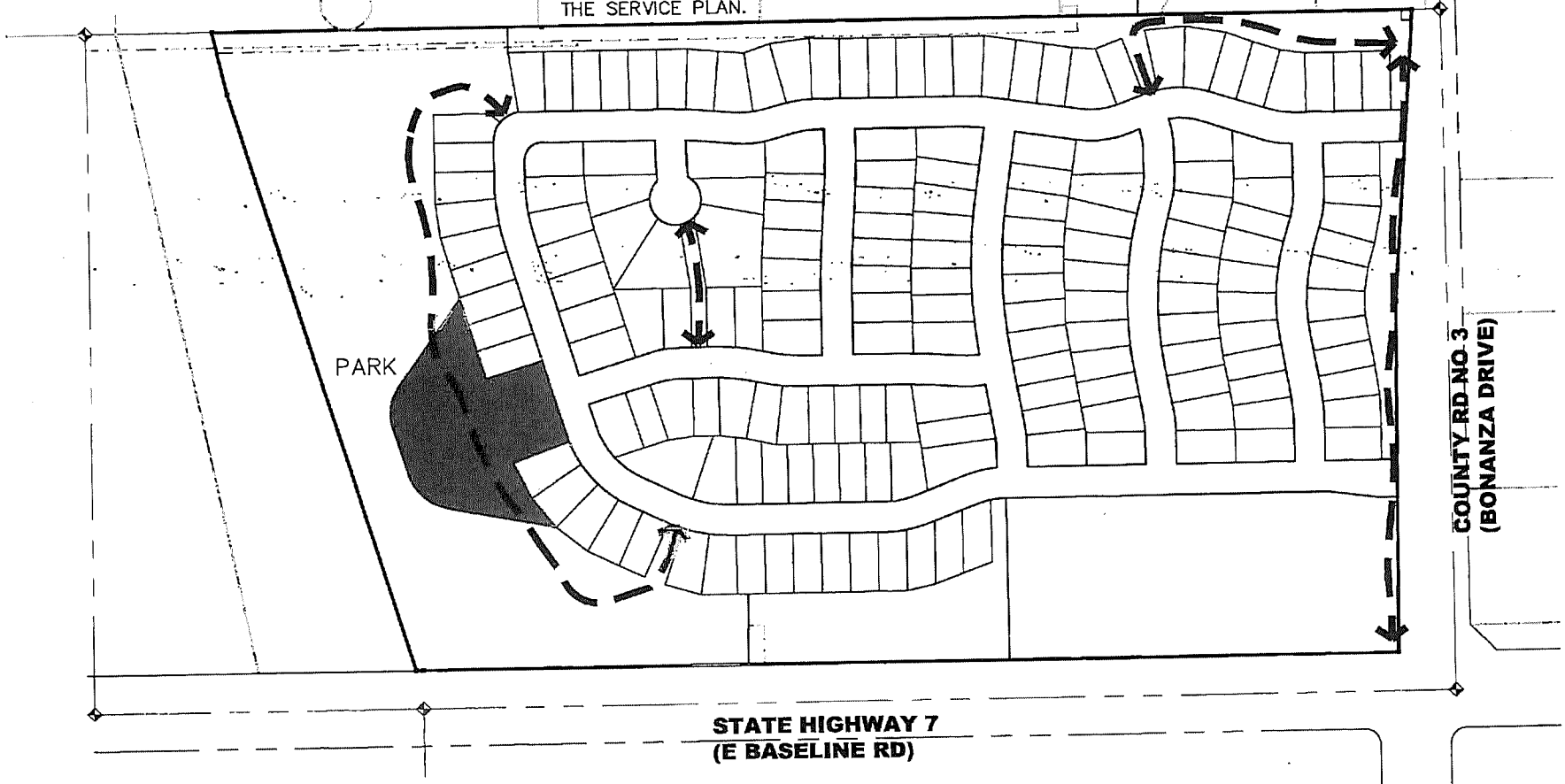

DISTRICT PARKS AND RECREATION IMPROVEMENTS

TRAILS

PARK AND TRAILS WILL BE OWNED AND MAINTAINED BY THE METRO DISTRICT.

0 150 300 600

1 inch = 300 ft. Horizontal

NORTH

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SIERRA VISTA

METROPOLITAN DISTRICT

PARKS AND RECREATION IMPROVEMENTS EXHIBIT

SHEET

8 OF 8

SCALE: 1" = 300'

DATE: JULY 15, 2015

EXHIBIT E

Matrix of Ownership and Maintenance

A. District/HOA Ownership and Maintenance:

i. Internal parks
ii. Roadway landscape including adjacent landscape tracts
iii. Open space
iv. Detention ponds

B. Town Ownership and Maintenance:

i. Public roadways
ii. Public water, sanitary sewer and storm water infrastructure
iii. Median landscape in all arterial roadways

EXHIBIT F

Financing Plan, including sources: and uses,
and bond solutions

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection at 45.00 (target) District Mills

Series 2026, General Obligation Bonds, Pay & Cancel Refg of (proposed) Series 2020 + New Money, Non-Rated, 120x, 30-yr. Maturity

	< < < < < < < < Residential > > > > > > > >				< Platted/Developed Lots >		< < < < < < < < < Commercial > > > > > > > > > >								
YEAR	Total Res'l Units	Mkt Value Biennial Reasses'mt @ 2.0%	Cumulative Market Value	As'ed Value @ 7.96% of Market (2-yr lag)	Cumulative Market Value	As'ed Value @ 29.00% of Market (2-yr lag)	Total Comm'l Sq. Ft.	Mkt Value Biennial Reasses'mt @ 2.0%	Cumulative Market Value	As'ed Value @ 29.00% of Market (2-yr lag)	Total Assessed Value	District D/S Mill Levy [45.00 Target] [60.00 Cap]	District D/S Mill Levy Collections @ 98%	District S.O. Taxes Collected @ 6%	Total Available Revenue
2015	0		0		0		0		0		$0				0
2016	0		0		2,550,000		0		0		0	45.000	$0	$0	0
2017	60		26,530,200	0	2,768,250	0	0		0	0	0	45.000	0	0	0
2018	60	530,604	54,121,608	0	2,513,250	739,500	17,460	0	2,316,086	0	739,500	45.000	32,612	1,957	34,569
2019	54		78,963,426	2,111,804	218,250	802,793	17,460		4,678,495	0	2,914,596	45.000	128,534	7,712	136,246
2020	0	1,579,269	80,542,695	4,308,080	0	728,843	17,460	93,570	7,181,721	671,665	5,708,588	45.000	251,749	15,105	266,854
2021	0		80,542,695	6,285,489	0	63,293	0		7,181,721	1,356,763	7,705,545	45.000	339,815	20,389	360,203
2022	0	1,610,854	82,153,548	6,411,198	0	0	0	143,634	7,325,355	2,082,699	8,493,898	45.000	374,581	22,475	397,056
2023	0		82,153,548	6,411,198	0	0	0		7,325,355	2,082,699	8,493,898	45.000	374,581	22,475	397,056
2024	0	1,643,071	83,796,619	6,539,422	0	0	0	146,507	7,471,862	2,124,353	8,663,776	45.000	382,072	22,924	404,997
2025	0		83,796,619	6,539,422	0	0	0		7,471,862	2,124,353	8,663,776	45.000	382,072	22,924	404,997
2026	0	1,675,932	85,472,552	6,670,211	0	0	0	149,437	7,621,300	2,166,840	8,837,051	45.000	389,714	23,383	413,097
2027	0		85,472,552	6,670,211	0	0	0		7,621,300	2,166,840	8,837,051	45.000	389,714	23,383	413,097
2028	0	1,709,451	87,182,003	6,803,615	0	0	0	152,426	7,773,726	2,210,177	9,013,792	45.000	397,508	23,850	421,359
2029	0		87,182,003	6,803,615	0	0	0		7,773,726	2,210,177	9,013,792	45.000	397,508	23,850	421,359
2030	0	1,743,640	88,925,643	6,939,687	0	0	0	155,475	7,929,200	2,254,380	9,194,068	45.000	405,458	24,328	429,786
2031	0		88,925,643	6,939,687	0	0	0		7,929,200	2,254,380	9,194,068	45.000	405,458	24,328	429,786
2032	0	1,778,513	90,704,156	7,078,481	0	0	0	158,584	8,087,784	2,299,468	9,377,949	45.000	413,568	24,814	438,382
2033	0		90,704,156	7,078,481	0	0	0		8,087,784	2,299,468	9,377,949	45.000	413,568	24,814	438,382
2034	0	1,814,083	92,518,239	7,220,051	0	0	0	161,756	8,249,540	2,345,457	9,565,508	45.000	421,839	25,310	447,149
2035	0		92,518,239	7,220,051	0	0	0		8,249,540	2,345,457	9,565,508	45.000	421,839	25,310	447,149
2036		1,850,365	94,368,604	7,364,452		0		164,991	8,414,531	2,392,367	9,756,818	45.000	430,276	25,817	456,092
2037			94,368,604	7,364,452		0			8,414,531	2,392,367	9,756,818	45.000	430,276	25,817	456,092
2038		1,887,372	96,255,976	7,511,741		0		168,291	8,582,821	2,440,214	9,951,955	45.000	438,881	26,333	465,214
2039			96,255,976	7,511,741		0			8,582,821	2,440,214	9,951,955	45.000	438,881	26,333	465,214
2040		1,925,120	98,181,095	7,661,976		0		171,656	8,754,478	2,489,018	10,150,994	45.000	447,659	26,860	474,518
2041			98,181,095	7,661,976		0			8,754,478	2,489,018	10,150,994	45.000	447,659	26,860	474,518
2042		1,963,622	100,144,717	7,815,215		0		175,090	8,929,567	2,538,799	10,354,014	45.000	456,612	27,397	484,009
2043			100,144,717	7,815,215		0			8,929,567	2,538,799	10,354,014	45.000	456,612	27,397	484,009
2044		2,002,894	102,147,612	7,971,519		0		178,591	9,108,159	2,589,575	10,561,094	45.000	465,744	27,945	493,689
2045			102,147,612	7,971,519		0			9,108,159	2,589,575	10,561,094	45.000	465,744	27,945	493,689
2046		2,042,952	104,190,564	8,130,950		0		182,163	9,290,322	2,641,366	10,772,316	45.000	475,059	28,504	503,563
2047			104,190,564	8,130,950		0			9,290,322	2,641,366	10,772,316	45.000	475,059	28,504	503,563
2048		2,083,811	106,274,375	8,293,569		0		185,806	9,476,128	2,694,193	10,987,762	45.000	484,560	29,074	513,634
2049			106,274,375	8,293,569		0			9,476,128	2,694,193	10,987,762	45.000	484,560	29,074	513,634
2050		2,125,488	108,399,863	8,459,440		0		189,523	9,665,651	2,748,077	11,207,517	45.000	494,252	29,655	523,907
2051			108,399,863	8,459,440		0			9,665,651	2,748,077	11,207,517	45.000	494,252	29,655	523,907
2052		2,167,997	110,567,860	8,628,629				193,313	9,858,964	2,803,039	11,431,668	45.000	504,137	30,248	534,385
2053			110,567,860	8,628,629					9,858,964	2,803,039	11,431,668	45.000	504,137	30,248	534,385
2054		2,211,357	112,779,217	8,801,202				197,179	10,056,143	2,859,099	11,660,301	45.000	514,219	30,853	545,072
2055			112,779,217	8,801,202					10,056,143	2,859,099	11,660,301	45.000	514,219	30,853	545,072
2056		2,255,584	115,034,801	8,977,226				201,123	10,257,266	2,916,281	11,893,507	45.000	524,504	31,470	555,974
	174	36,601,979					52,380	3,169,115					16,269,491	976,169	17,245,660

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection at 45.00 (target) District Mills

Series 2026, General Obligation Bonds, Pay & Cancel Refg of (proposed) Series 2020 + New Money, Non-Rated, 120x, 30-yr. Maturity

YEAR	Net Available for Debt Svc	Ser. 2020 $5,905,000 Par [Net $5,034 MM] Net Debt Service	Ser. 2026 $6,705,000 Par [Net $0.759 MM] Net Debt Service	Total Net Debt Service	Annual Surplus	Surplus Release @ 50% D/A to $1,261,000	Cumulative Surplus $1,261,000 Target	Senior Debt/ Assessed Ratio	Senior Debt/ Act'l Value Ratio	Cov. of Net DS: @ 45.00 Target	Cov. of Net DS: @ 50.00 Cap
2015	0				n/a						
2016	0				n/a		0	n/a	n/a	0.0%	0.0%
2017	0			0	n/a		0	n/a	n/a	0.0%	0.0%
2018	34,569			0	n/a		0	0%	0%	0.0%	0.0%
2019	136,246			0	n/a		0	0%	0%	0.0%	0.0%
2020	266,854	$0		0	266,854		266,854	111%	7%	0.0%	0.0%
2021	360,203	161,915		161,915	198,289	0	465,142	77%	7%	222.5%	247.2%
2022	397,056	363,830		363,830	33,226	0	498,368	70%	7%	109.1%	121.3%
2023	397,056	366,630		366,630	30,426	0	528,794	69%	7%	108.3%	120.3%
2024	404,997	374,155		374,155	30,842	0	559,637	67%	6%	108.2%	120.3%
2025	404,997	371,130		371,130	33,867	0	593,504	67%	6%	109.1%	121.3%
2026	413,097	378,105	$0	378,105	34,992	0	628,496	65%	8%	109.3%	121.4%
2027	413,097	[Ref'd by Ser. '26]	379,240	379,240	33,857	0	662,353	140%	13%	108.9%	121.0%
2028	421,359		386,990	386,990	34,369	0	696,722	136%	13%	108.9%	121.0%
2029	421,359		389,240	389,240	32,119	0	728,842	134%	13%	108.3%	120.3%
2030	429,786		396,240	396,240	33,546	0	762,388	130%	12%	108.5%	120.5%
2031	429,786		397,740	397,740	32,046	0	794,434	128%	12%	108.1%	120.1%
2032	438,382		403,990	403,990	34,392	0	828,827	124%	12%	108.5%	120.6%
2033	438,382		404,740	404,740	33,642	0	862,469	122%	12%	108.3%	120.3%
2034	447,149		410,240	410,240	36,910	0	899,378	117%	11%	109.0%	121.1%
2035	447,149		410,240	410,240	36,910	0	936,288	114%	11%	109.0%	121.1%
2036	456,092		419,990	419,990	36,103	0	972,391	62%	6%	108.6%	120.7%
2037	456,092		418,990	418,990	37,103	0	1,009,494	60%	6%	108.9%	121.0%
2038	465,214		427,740	427,740	37,475	0	1,046,968	58%	6%	108.8%	120.8%
2039	465,214		425,740	425,740	39,475	0	1,086,443	57%	5%	109.3%	121.4%
2040	474,518		438,490	438,490	36,029	0	1,122,472	54%	5%	108.2%	120.2%
2041	474,518		435,240	435,240	39,279	0	1,161,751	52%	5%	109.0%	121.1%
2042	484,009		446,740	446,740	37,269	0	1,199,020	50%	5%	108.3%	120.4%
2043	484,009		447,240	447,240	36,769	0	1,235,789	48%	5%	108.2%	120.2%
2044	493,689		452,240	452,240	41,449	16,238	1,261,000	45%	4%	109.2%	121.3%
2045	493,689		456,490	456,490	37,199	37,199	1,261,000	43%	4%	108.1%	120.2%
2046	503,563		464,990	464,990	38,573	38,573	1,261,000	40%	4%	108.3%	120.3%
2047	503,563		462,490	462,490	41,073	41,073	1,261,000	38%	4%	108.9%	121.0%
2048	513,634		474,490	474,490	39,144	39,144	1,261,000	35%	3%	108.2%	120.3%
2049	513,634		475,240	475,240	38,394	38,394	1,261,000	32%	3%	108.1%	120.1%
2050	523,907		480,240	480,240	43,667	43,667	1,261,000	29%	3%	109.1%	121.2%
2051	523,907		484,240	484,240	39,667	39,667	1,261,000	26%	2%	108.2%	120.2%
2052	534,385		492,240	492,240	42,145	42,145	1,261,000	22%	2%	108.6%	120.6%
2053	534,385		493,990	493,990	40,395	40,395	1,261,000	19%	2%	108.2%	120.2%
2054	545,072		499,740	499,740	45,333	45,333	1,261,000	16%	1%	109.1%	121.2%
2055	545,072		504,240	504,240	40,833	40,833	1,261,000	12%	1%	108.1%	120.1%
2056	555,974		512,240	512,240	43,734	1,304,734	0	8%	1%	108.5%	120.6%
	17,245,660	2,015,763	13,291,685	15,307,448	1,767,398	1,767,398					

[EJun1715 20nrlbE] [EJun1715 26nr20nE]

PV to '20 @ 8.0%: $129,556

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection – Buildout Plan (updated 6/17/15)

	Residential Development					Residential Summary	
			SFDs				
YEAR	# Lots Devel'd	Incr/(Decr) in Finished Lot Value @ 10%	# Units Completed 174 target	Price Inflated @ 2%	Market Value	Total Residential Market Value	Total Res'l Units
2015	0	0		$425,000	0	$0	0
2016	60	2,550,000		433,500	0	0	0
2017	60	0	60	442,170	26,530,200	26,530,200	60
2018	54	(255,000)	60	451,013	27,060,804	27,060,804	60
2019	0	(2,295,000)	54	460,034	24,841,818	24,841,818	54
2020	0	0	0	469,234	0	0	0
2021	0	0	0	478,619	0	0	0
2022	0	0	0	488,191	0	0	0
2023	0	0	0	497,955	0	0	0
2024	0	0	0	507,914	0	0	0
2025	0	0	0	518,073	0	0	0
2026	0	0	0	528,434	0	0	0
2027	0	0	0	539,003	0	0	0
2028	0	0	0	549,783	0	0	0
2029	0	0	0	560,778	0	0	0
2030	0	0	0	571,994	0	0	0
2031	0	0	0	583,434	0	0	0
2032	0	0	0	595,103	0	0	0
2033	0	0	0	607,005	0	0	0
2034	0	0	0	619,145	0	0	0
2035		0	0	631,528	0	0	0
	174	0	174		78,432,822	78,432,822	174

Prepared by D.A. Davidson & Co.

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection -- Buildout Plan (updated 6/17/15)

	Commercial Development					Commercial Summary			
	6 Acres Comm'l (.20 FAR)								
YEAR	SF Devel'd	Incr/(Decr) In Finished Lot Value @ 10%	Square Ft Completed 52,380	per Sq Ft, Inflated @ 2%	Market Value	Total Commercial Market Value	Total Commercial Sq Ft	Value of Platted & Developed Lots Adjustment[1]	Value of Platted & Developed Lots Adjusted Value
2015	0	0		$125.00	$0	0	0	0	0
2016	0	0		127.50	0	0	0	0	2,550,000
2017	17,460	218,250		130.05	0	0	0	0	218,250
2018	17,460	0	17,460	132.65	2,316,086	2,316,086	17,460	0	(255,000)
2019	17,460	0	17,460	135.30	2,362,408	2,362,408	17,460	0	(2,295,000)
2020	0	(218,250)	17,460	138.01	2,409,656	2,409,656	17,460	0	(218,250)
2021	0	0	0	140.77	0	0	0	0	0
2022	0	0	0	143.59	0	0	0	0	0
2023	0	0	0	146.46	0	0	0	0	0
2024	0	0	0	149.39	0	0	0	0	0
2025	0	0	0	152.37	0	0	0	0	0
2026	0	0	0	155.42	0	0	0	0	0
2027	0	0	0	158.53	0	0	0	0	0
2028	0	0	0	161.70	0	0	0	0	0
2029	0	0	0	164.93	0	0	0	0	0
2030	0	0	0	168.23	0	0	0	0	0
2031	0	0	0	171.60	0	0	0	0	0
2032	0	0	0	175.03	0	0	0	0	0
2033	0	0	0	178.53	0	0	0	0	0
2034	0	0	0	182.10	0	0	0	0	0
2035		0	0	185.74	0	0	0	0	0
	52,380	0	52,380		7,088,151	7,088,151	52,380	0	0

[1] Adj. to actual/prelim AV

Prepared by D.A. Davidson & Co.

D A DAVIDSON

SOURCES AND USES OF FUNDS

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Dated Date	12/01/2026
Delivery Date	12/01/2026

Sources:	
Bond Proceeds:	
Par Amount	6,705,000.00
Other Sources of Funds:	
DSRF (Series 2020)	472,675.00
	7,177,675.00

Uses:	
Project Fund Deposits:	
Project Fund	759,225.00
Refunding Escrow Deposits:	
Cash Deposit	5,645,000.00
Other Fund Deposits:	
Debt Service Reserve Fund	505,250.00
Delivery Date Expenses:	
Cost of Issuance (est.)	268,200.00
	7,177,675.00

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BOND SUMMARY STATISTICS

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Dated Date	12/01/2026
Delivery Date	12/01/2026
First Coupon	06/01/2027
Last Maturity	12/01/2056
Arbitrage Yield	5.000000%
True Interest Cost (TIC)	5.000000%
Net Interest Cost (NIC)	5.000000%
All-In TIC	5.332035%
Average Coupon	5.000000%
Average Life (years)	21.245
Duration of Issue (years)	12.733
Par Amount	6,705,000.00
Bond Proceeds	6,705,000.00
Total Interest	7,122,250.00
Net Interest	7,122,250.00
Bond Years from Dated Date	142,445,000.00
Bond Years from Delivery Date	142,445,000.00
Total Debt Service	13,827,250.00
Maximum Annual Debt Service	1,018,500.00
Average Annual Debt Service	460,908.33
Underwriter's Fees (per $1000)	
Average Takedown	
Other Fee	
Total Underwriter's Discount	
Bid Price	100.000000

Bond Component	Par Value	Price	Average Coupon	Average Life	PV of 1 bp change
Term Bond due 2056	6,705,000.00	100.000	5.000%	21.245	10,392.75
	6,705,000.00			21.245	10,392.75

	TIC	All-In TIC	Arbitrage Yield
Par Value	6,705,000.00	6,705,000.00	6,705,000.00
+ Accrued Interest			
+ Premium (Discount)			
- Underwriter's Discount			
- Cost of Issuance Expense			
- Other Amounts		-268,200.00	
Target Value	6,705,000.00	6,436,800.00	6,705,000.00
Target Date	12/01/2026	12/01/2026	12/01/2026
Yield	5.000000%	5.332035%	5.000000%

D.A. DAVIDSON

BOND DEBT SERVICE

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Period Ending	Principal	Coupon	Interest	Debt Service	Annual Debt Service
06/01/2027			167,625	167,625	
12/01/2027	45,000	5.000%	167,625	212,625	380,250
06/01/2028			166,500	166,500	
12/01/2028	55,000	5.000%	166,500	221,500	388,000
06/01/2029			165,125	165,125	
12/01/2029	60,000	5.000%	165,125	225,125	390,250
06/01/2030			163,625	163,625	
12/01/2030	70,000	5.000%	163,625	233,625	397,250
06/01/2031			161,875	161,875	
12/01/2031	75,000	5.000%	161,875	236,875	398,750
06/01/2032			160,000	160,000	
12/01/2032	85,000	5.000%	160,000	245,000	405,000
06/01/2033			157,875	157,875	
12/01/2033	90,000	5.000%	157,875	247,875	405,750
06/01/2034			155,625	155,625	
12/01/2034	100,000	5.000%	155,625	255,625	411,250
06/01/2035			153,125	153,125	
12/01/2035	105,000	5.000%	153,125	258,125	411,250
06/01/2036			150,500	150,500	
12/01/2036	120,000	5.000%	150,500	270,500	421,000
06/01/2037			147,500	147,500	
12/01/2037	125,000	5.000%	147,500	272,500	420,000
06/01/2038			144,375	144,375	
12/01/2038	140,000	5.000%	144,375	284,375	428,750
06/01/2039			140,875	140,875	
12/01/2039	145,000	5.000%	140,875	285,875	426,750
06/01/2040			137,250	137,250	
12/01/2040	165,000	5.000%	137,250	302,250	439,500
06/01/2041			133,125	133,125	
12/01/2041	170,000	5.000%	133,125	303,125	436,250
06/01/2042			128,875	128,875	
12/01/2042	190,000	5.000%	128,875	318,875	447,750
06/01/2043			124,125	124,125	
12/01/2043	200,000	5.000%	124,125	324,125	448,250
06/01/2044			119,125	119,125	
12/01/2044	215,000	5.000%	119,125	334,125	453,250
06/01/2045			113,750	113,750	
12/01/2045	230,000	5.000%	113,750	343,750	457,500
06/01/2046			108,000	108,000	
12/01/2046	250,000	5.000%	108,000	358,000	466,000
06/01/2047			101,750	101,750	
12/01/2047	260,000	5.000%	101,750	361,750	463,500
06/01/2048			95,250	95,250	
12/01/2048	285,000	5.000%	95,250	380,250	475,500
06/01/2049			88,125	88,125	
12/01/2049	300,000	5.000%	88,125	388,125	476,250
06/01/2050			80,625	80,625	
12/01/2050	320,000	5.000%	80,625	400,625	481,250
06/01/2051			72,625	72,625	
12/01/2051	340,000	5.000%	72,625	412,625	485,250
06/01/2052			64,125	64,125	
12/01/2052	365,000	5.000%	64,125	429,125	493,250
06/01/2053			55,000	55,000	
12/01/2053	385,000	5.000%	55,000	440,000	495,000
06/01/2054			45,375	45,375	
12/01/2054	410,000	5.000%	45,375	455,375	500,750
06/01/2055			35,125	35,125	
12/01/2055	435,000	5.000%	35,125	470,125	505,250
06/01/2056			24,250	24,250	
12/01/2056	970,000	5.000%	24,250	994,250	1,018,500
	6,705,000		7,122,250	13,827,250	13,827,250

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NET DEBT SERVICE

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Period Ending	Principal	Interest	Total Debt Service	Debt Service Reserve Fund	Net Debt Service
12/01/2027	45,000	335,250	380,250	-1,010.50	379,239.50
12/01/2028	55,000	333,000	388,000	-1,010.50	386,989.50
12/01/2029	60,000	330,250	390,250	-1,010.50	389,239.50
12/01/2030	70,000	327,250	397,250	-1,010.50	396,239.50
12/01/2031	75,000	323,750	398,750	-1,010.50	397,739.50
12/01/2032	85,000	320,000	405,000	-1,010.50	403,989.50
12/01/2033	90,000	315,750	405,750	-1,010.50	404,739.50
12/01/2034	100,000	311,250	411,250	-1,010.50	410,239.50
12/01/2035	105,000	306,250	411,250	-1,010.50	410,239.50
12/01/2036	120,000	301,000	421,000	-1,010.50	419,989.50
12/01/2037	125,000	295,000	420,000	-1,010.50	418,989.50
12/01/2038	140,000	288,750	428,750	-1,010.50	427,739.50
12/01/2039	145,000	281,750	426,750	-1,010.50	425,739.50
12/01/2040	165,000	274,500	439,500	-1,010.50	438,489.50
12/01/2041	170,000	266,250	436,250	-1,010.50	435,239.50
12/01/2042	190,000	257,750	447,750	-1,010.50	446,739.50
12/01/2043	200,000	248,250	448,250	-1,010.50	447,239.50
12/01/2044	215,000	238,250	453,250	-1,010.50	452,239.50
12/01/2045	230,000	227,500	457,500	-1,010.50	456,489.50
12/01/2046	250,000	216,000	466,000	-1,010.50	464,989.50
12/01/2047	260,000	203,500	463,500	-1,010.50	462,489.50
12/01/2048	285,000	190,500	475,500	-1,010.50	474,489.50
12/01/2049	300,000	176,250	476,250	-1,010.50	475,239.50
12/01/2050	320,000	161,250	481,250	-1,010.50	480,239.50
12/01/2051	340,000	145,250	485,250	-1,010.50	484,239.50
12/01/2052	365,000	128,250	493,250	-1,010.50	492,239.50
12/01/2053	385,000	110,000	495,000	-1,010.50	493,989.50
12/01/2054	410,000	90,750	500,750	-1,010.50	499,739.50
12/01/2055	435,000	70,250	505,250	-1,010.50	504,239.50
12/01/2056	970,000	48,500	1,018,500	-506,260.50	512,239.50
	6,705,000	7,122,250	13,827,250	-535,565.00	13,291,685.00

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SUMMARY OF BONDS REFUNDED

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Bond	Maturity Date	Interest Rate	Par Amount	Call Date	Call Price
6/17/15: Ser 20 NR LB, 5.50%, 120x, 30yrs:					
TERM50	12/01/2027	5.500%	70,000.00	12/01/2026	100.000
	12/01/2028	5.500%	80,000.00	12/01/2026	100.000
	12/01/2029	5.500%	85,000.00	12/01/2026	100.000
	12/01/2030	5.500%	100,000.00	12/01/2026	100.000
	12/01/2031	5.500%	105,000.00	12/01/2026	100.000
	12/01/2032	5.500%	120,000.00	12/01/2026	100.000
	12/01/2033	5.500%	125,000.00	12/01/2026	100.000
	12/01/2034	5.500%	140,000.00	12/01/2026	100.000
	12/01/2035	5.500%	145,000.00	12/01/2026	100.000
	12/01/2036	5.500%	165,000.00	12/01/2026	100.000
	12/01/2037	5.500%	170,000.00	12/01/2026	100.000
	12/01/2038	5.500%	190,000.00	12/01/2026	100.000
	12/01/2039	5.500%	200,000.00	12/01/2026	100.000
	12/01/2040	5.500%	220,000.00	12/01/2026	100.000
	12/01/2041	5.500%	230,000.00	12/01/2026	100.000
	12/01/2042	5.500%	255,000.00	12/01/2026	100.000
	12/01/2043	5.500%	270,000.00	12/01/2026	100.000
	12/01/2044	5.500%	290,000.00	12/01/2026	100.000
	12/01/2045	5.500%	310,000.00	12/01/2026	100.000
	12/01/2046	5.500%	335,000.00	12/01/2026	100.000
	12/01/2047	5.500%	355,000.00	12/01/2026	100.000
	12/01/2048	5.500%	380,000.00	12/01/2026	100.000
	12/01/2049	5.500%	400,000.00	12/01/2026	100.000
	12/01/2050	5.500%	905,000.00	12/01/2026	100.000
			5,645,000.00		

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ESCROW REQUIREMENTS

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Dated Date	12/01/2026
Delivery Date	12/01/2026

Period Ending	Principal Redeemed	Total
12/01/2026	5,645,000.00	5,645,000.00
	5,645,000.00	5,645,000.00

PRIOR BOND DEBT SERVICE

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Period Ending	Principal	Coupon	Interest	Debt Service	Annual Debt Service
06/01/2027			155,237.50	155,237.50	
12/01/2027	70,000	5.500%	155,237.50	225,237.50	380,475
06/01/2028			153,312.50	153,312.50	
12/01/2028	80,000	5.500%	153,312.50	233,312.50	386,625
06/01/2029			151,112.50	151,112.50	
12/01/2029	85,000	5.500%	151,112.50	236,112.50	387,225
06/01/2030			148,775.00	148,775.00	
12/01/2030	100,000	5.500%	148,775.00	248,775.00	397,550
06/01/2031			146,025.00	146,025.00	
12/01/2031	105,000	5.500%	146,025.00	251,025.00	397,050
06/01/2032			143,137.50	143,137.50	
12/01/2032	120,000	5.500%	143,137.50	263,137.50	406,275
06/01/2033			139,837.50	139,837.50	
12/01/2033	125,000	5.500%	139,837.50	264,837.50	404,675
06/01/2034			136,400.00	136,400.00	
12/01/2034	140,000	5.500%	136,400.00	276,400.00	412,800
06/01/2035			132,550.00	132,550.00	
12/01/2035	145,000	5.500%	132,550.00	277,550.00	410,100
06/01/2036			128,562.50	128,562.50	
12/01/2036	165,000	5.500%	128,562.50	293,562.50	422,125
06/01/2037			124,025.00	124,025.00	
12/01/2037	170,000	5.500%	124,025.00	294,025.00	418,050
06/01/2038			119,350.00	119,350.00	
12/01/2038	190,000	5.500%	119,350.00	309,350.00	428,700
06/01/2039			114,125.00	114,125.00	
12/01/2039	200,000	5.500%	114,125.00	314,125.00	428,250
06/01/2040			108,625.00	108,625.00	
12/01/2040	220,000	5.500%	108,625.00	328,625.00	437,250
06/01/2041			102,575.00	102,575.00	
12/01/2041	230,000	5.500%	102,575.00	332,575.00	435,150
06/01/2042			96,250.00	96,250.00	
12/01/2042	255,000	5.500%	96,250.00	351,250.00	447,500
06/01/2043			89,237.50	89,237.50	
12/01/2043	270,000	5.500%	89,237.50	359,237.50	448,475
06/01/2044			81,812.50	81,812.50	
12/01/2044	290,000	5.500%	81,812.50	371,812.50	453,625
06/01/2045			73,837.50	73,837.50	
12/01/2045	310,000	5.500%	73,837.50	383,837.50	457,675
06/01/2046			65,312.50	65,312.50	
12/01/2046	335,000	5.500%	65,312.50	400,312.50	465,625
06/01/2047			56,100.00	56,100.00	
12/01/2047	355,000	5.500%	56,100.00	411,100.00	467,200
06/01/2048			46,337.50	46,337.50	
12/01/2048	380,000	5.500%	46,337.50	426,337.50	472,675
06/01/2049			35,887.50	35,887.50	
12/01/2049	400,000	5.500%	35,887.50	435,887.50	471,775
06/01/2050			24,887.50	24,887.50	
12/01/2050	905,000	5.500%	24,887.50	929,887.50	954,775
	5,645,000		5,146,625.00	10,791,625.00	10,791,625

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BOND SOLUTION

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION REFUNDING & IMPROVEMENT BONDS, SERIES 2026
Pay & Cancel Refunding of (proposed) Series 2020 G.O. + New Money
Non-Rated, 120x @ Cap, 30-Year Maturity
[Preliminary -- for discussion only]

Period Ending	Proposed Principal	Proposed Debt Service	Debt Service Adjustments	Total Adj Debt Service	Revenue Constraints	Unused Revenues	Debt Serv Coverage
12/01/2027	45,000	380,250	-1,011	379,240	458,996	79,757	121.03075%
12/01/2028	55,000	388,000	-1,011	386,990	468,176	81,187	120.97909%
12/01/2029	60,000	390,250	-1,011	389,240	468,176	78,937	120.27977%
12/01/2030	70,000	397,250	-1,011	396,240	477,540	81,300	120.51799%
12/01/2031	75,000	398,750	-1,011	397,740	477,540	79,800	120.06348%
12/01/2032	85,000	405,000	-1,011	403,990	487,091	83,101	120.57013%
12/01/2033	90,000	405,750	-1,011	404,740	487,091	82,351	120.34671%
12/01/2034	100,000	411,250	-1,011	410,240	496,833	86,593	121.10791%
12/01/2035	105,000	411,250	-1,011	410,240	496,833	86,593	121.10791%
12/01/2036	120,000	421,000	-1,011	419,990	506,769	86,780	120.66234%
12/01/2037	125,000	420,000	-1,011	418,990	506,769	87,780	120.95032%
12/01/2038	140,000	428,750	-1,011	427,740	516,905	89,165	120.84564%
12/01/2039	145,000	426,750	-1,011	425,740	516,905	91,165	121.41334%
12/01/2040	165,000	439,500	-1,011	438,490	527,243	88,753	120.24065%
12/01/2041	170,000	436,250	-1,011	435,240	527,243	92,003	121.13850%
12/01/2042	190,000	447,750	-1,011	446,740	537,787	91,048	120.38055%
12/01/2043	200,000	448,250	-1,011	447,240	537,787	90,548	120.24597%
12/01/2044	215,000	453,250	-1,011	452,240	548,543	96,304	121.29485%
12/01/2045	230,000	457,500	-1,011	456,490	548,543	92,054	120.16557%
12/01/2046	250,000	466,000	-1,011	464,990	559,514	94,525	120.32833%
12/01/2047	260,000	463,500	-1,011	462,490	559,514	97,025	120.97877%
12/01/2048	285,000	475,500	-1,011	474,490	570,704	96,215	120.27756%
12/01/2049	300,000	476,250	-1,011	475,240	570,704	95,465	120.08774%
12/01/2050	320,000	481,250	-1,011	480,240	582,118	101,879	121.21420%
12/01/2051	340,000	485,250	-1,011	484,240	582,118	97,879	120.21292%
12/01/2052	365,000	493,250	-1,011	492,240	593,761	101,521	120.62437%
12/01/2053	385,000	495,000	-1,011	493,990	593,761	99,771	120.19705%
12/01/2054	410,000	500,750	-1,011	499,740	605,636	105,897	121.19035%
12/01/2055	435,000	505,250	-1,011	504,240	605,636	101,397	120.10881%
12/01/2056	970,000	1,018,500	-506,261	512,240	617,749	105,509	120.59764%
	6,705,000	13,827,250	-535,565	13,291,685	16,033,986	2,742,301	

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection at 45.00 (target) District Mills

Series 2020, General Obligation Bonds, Non-Rated, 120x, 30-yr. Maturity

	<<<<<<<< Residential >>>>>>>>				< Platted/Developed Lots >		<<<<<<<<<< Commercial >>>>>>>>>>								
YEAR	Total Res'l Units	Mkt Value Biennial Reasses'mt @ 2.0%	Cumulative Market Value	As'ed Value @ 7.96% of Market (2-yr lag)	Cumulative Market Value	As'ed Value @ 29.00% of Market (2-yr lag)	Total Comm'l Sq. Ft.	Mkt Value Biennial Reasses'mt @ 2.0%	Cumulative Market Value	As'ed Value @ 29.00% of Market (2-yr lag)	Total Assessed Value	District D/S Mill Levy [45.00 Target] [50.00 Cap]	District D/S Mill Levy Collections @ 98%	District S.O. Taxes Collected @ 6%	Total Available Revenue
2015	0		0		0		0		0		$0				0
2016	0		0		2,550,000		0		0		0	45.000	$0	$0	0
2017	60		26,530,200	0	2,768,250	0	0		0	0	0	45.000	0	0	0
2018	60	530,604	54,121,608	0	2,513,250	739,500	17,460	0	2,316,086	0	739,500	45.000	32,612	1,957	34,569
2019	54		78,963,426	2,111,804	218,250	802,793	17,460		4,678,495	0	2,914,596	45.000	128,534	7,712	136,246
2020	0	1,579,269	80,542,695	4,308,080	0	728,843	17,460	93,570	7,181,721	671,665	5,708,588	45.000	251,749	15,105	266,854
2021	0		80,542,695	6,285,489	0	63,293	0		7,181,721	1,356,763	7,705,545	45.000	339,815	20,389	360,203
2022	0	1,610,854	82,153,548	6,411,198	0	0	0	143,634	7,325,355	2,082,699	8,493,898	45.000	374,581	22,475	397,056
2023	0		82,153,548	6,411,198	0	0	0		7,325,355	2,082,699	8,493,898	45.000	374,581	22,475	397,056
2024	0	1,643,071	83,796,619	6,539,422	0	0	0	146,507	7,471,862	2,124,353	8,663,776	45.000	382,072	22,924	404,997
2025	0		83,796,619	6,539,422	0	0	0		7,471,862	2,124,353	8,663,776	45.000	382,072	22,924	404,997
2026	0	1,675,932	85,472,552	6,670,211	0	0	0	149,437	7,621,300	2,166,840	8,837,051	45.000	389,714	23,383	413,097
2027	0		85,472,552	6,670,211	0	0	0		7,621,300	2,166,840	8,837,051	45.000	389,714	23,383	413,097
2028	0	1,709,451	87,182,003	6,803,615	0	0	0	152,426	7,773,726	2,210,177	9,013,792	45.000	397,508	23,850	421,359
2029	0		87,182,003	6,803,615	0	0	0		7,773,726	2,210,177	9,013,792	45.000	397,508	23,850	421,359
2030	0	1,743,640	88,925,643	6,939,687	0	0	0	155,475	7,929,200	2,254,380	9,194,068	45.000	405,458	24,328	429,786
2031	0		88,925,643	6,939,687	0	0	0		7,929,200	2,254,380	9,194,068	45.000	405,458	24,328	429,786
2032	0	1,778,513	90,704,156	7,078,481	0	0	0	158,584	8,087,784	2,299,468	9,377,949	45.000	413,568	24,814	438,382
2033	0		90,704,156	7,078,481	0	0	0		8,087,784	2,299,468	9,377,949	45.000	413,568	24,814	438,382
2034	0	1,814,083	92,518,239	7,220,051	0	0	0	161,756	8,249,540	2,345,457	9,565,508	45.000	421,839	25,310	447,149
2035	0		92,518,239	7,220,051	0	0	0		8,249,540	2,345,457	9,565,508	45.000	421,839	25,310	447,149
2036		1,850,365	94,368,604	7,364,452		0		164,991	8,414,531	2,392,367	9,756,818	45.000	430,276	25,817	456,092
2037			94,368,604	7,364,452		0			8,414,531	2,392,367	9,756,818	45.000	430,276	25,817	456,092
2038		1,887,372	96,255,976	7,511,741		0		168,291	8,582,821	2,440,214	9,951,955	45.000	438,881	26,333	465,214
2039			96,255,976	7,511,741		0			8,582,821	2,440,214	9,951,955	45.000	438,881	26,333	465,214
2040		1,925,120	98,181,095	7,661,976		0		171,656	8,754,478	2,489,018	10,150,994	45.000	447,659	26,860	474,518
2041			98,181,095	7,661,976		0			8,754,478	2,489,018	10,150,994	45.000	447,659	26,860	474,518
2042		1,963,622	100,144,717	7,815,215		0		175,090	8,929,567	2,538,799	10,354,014	45.000	456,612	27,397	484,009
2043			100,144,717	7,815,215		0			8,929,567	2,538,799	10,354,014	45.000	456,612	27,397	484,009
2044		2,002,894	102,147,612	7,971,519		0		178,591	9,108,159	2,589,575	10,561,094	45.000	465,744	27,945	493,689
2045			102,147,612	7,971,519		0			9,108,159	2,589,575	10,561,094	45.000	465,744	27,945	493,689
2046		2,042,952	104,190,564	8,130,950		0		182,163	9,290,322	2,641,366	10,772,316	45.000	475,059	28,504	503,563
2047			104,190,564	8,130,950		0			9,290,322	2,641,366	10,772,316	45.000	475,059	28,504	503,563
2048		2,083,811	106,274,375	8,293,569		0		185,806	9,476,128	2,694,193	10,987,762	45.000	484,560	29,074	513,634
2049			106,274,375	8,293,569		0			9,476,128	2,694,193	10,987,762	45.000	484,560	29,074	513,634
2050		2,125,488	108,399,863	8,459,440		0		189,523	9,665,651	2,748,077	11,207,517	45.000	494,252	29,655	523,907
	174	29,967,040					52,380	2,577,500					13,214,024	792,841	14,006,866

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection at 45.00 (target) District Mills

Series 2020, General Obligation Bonds, Non-Rated, 120x, 30-yr. Maturity

YEAR	Net Available for Debt Svc	Ser. 2020 $5,905,000 Par [Net $5.034 MM] Net Debt Service	Total Net Debt Service	Annual Surplus	Surplus Release @ 50% D/A to $590,500	Cumulative Surplus $590,500 Target	Senior Debt/ Assessed Ratio	Senior Debt/ Act'l Value Ratio	Cov. of Net DS: @ 45.00 Target	Cov. of Net DS: @ 50.00 Cap
2015	0			n/a						
2016	0			n/a		0	n/a	n/a	0.0%	0.0%
2017	0		0	n/a		0	n/a	n/a	0.0%	0.0%
2018	34,569		0	n/a		0	0%	0%	0.0%	0.0%
2019	136,246		0	n/a		0	0%	0%	0.0%	0.0%
2020	266,854	$0	0	266,854		266,854	111%	7%	0.0%	0.0%
2021	360,203	161,915	161,915	198,289	0	465,142	77%	7%	222.5%	247.2%
2022	397,056	363,830	363,830	33,226	0	498,368	70%	7%	109.1%	121.3%
2023	397,056	366,630	366,630	30,426	0	528,794	69%	7%	108.3%	120.3%
2024	404,997	374,155	374,155	30,842	0	559,637	67%	6%	108.2%	120.3%
2025	404,997	371,130	371,130	33,867	3,004	590,500	67%	6%	109.1%	121.3%
2026	413,097	378,105	378,105	34,992	34,992	590,500	65%	6%	109.3%	121.4%
2027	413,097	379,530	379,530	33,567	33,567	590,500	64%	6%	108.8%	120.9%
2028	421,359	385,680	385,680	35,679	35,679	590,500	62%	6%	109.3%	121.4%
2029	421,359	386,280	386,280	35,079	35,079	590,500	61%	6%	109.1%	121.2%
2030	429,786	396,605	396,605	33,181	33,181	590,500	59%	6%	108.4%	120.4%
2031	429,786	396,105	396,105	33,681	33,681	590,500	58%	5%	108.5%	120.6%
2032	438,382	405,330	405,330	33,052	33,052	590,500	56%	5%	108.2%	120.2%
2033	438,332	403,730	403,730	34,652	34,652	590,500	54%	5%	108.6%	120.6%
2034	447,149	411,855	411,855	35,295	35,295	590,500	52%	5%	108.6%	120.6%
2035	447,149	409,155	409,155	37,995	37,995	590,500	50%	5%	109.3%	121.4%
2036	456,092	421,180	421,180	34,913	34,913	590,500	48%	5%	108.3%	120.3%
2037	456,092	417,105	417,105	38,988	38,988	590,500	46%	4%	109.3%	121.5%
2038	465,214	427,755	427,755	37,459	37,459	590,500	44%	4%	108.8%	120.8%
2039	465,214	427,305	427,305	37,909	37,909	590,500	42%	4%	108.9%	121.0%
2040	474,518	436,305	436,305	38,214	38,214	590,500	39%	4%	108.8%	120.8%
2041	474,518	434,205	434,205	40,314	40,314	590,500	37%	3%	109.3%	121.4%
2042	484,009	446,555	446,555	37,454	37,454	590,500	34%	3%	108.4%	120.4%
2043	484,009	447,530	447,530	36,479	36,479	590,500	31%	3%	108.2%	120.2%
2044	493,689	452,680	452,680	41,009	41,009	590,500	28%	3%	109.1%	121.2%
2045	493,689	456,730	456,730	36,959	36,959	590,500	25%	2%	108.1%	120.1%
2046	503,563	464,680	464,680	38,883	38,883	590,500	22%	2%	108.4%	120.4%
2047	503,563	466,255	466,255	37,308	37,308	590,500	19%	2%	108.0%	120.0%
2048	513,634	471,730	471,730	41,904	41,904	590,500	15%	1%	108.9%	121.0%
2049	513,634	470,830	470,830	42,804	42,804	590,500	12%	1%	109.1%	121.2%
2050	523,907	481,155	481,155	42,752	633,252	0	8%	1%	108.9%	121.0%
	14,006,866	12,312,024	12,312,024	1,524,027	1,524,027					

[EJun1715 20nribE]

PV to '20 @ 8.0%:
$322,551

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection – Buildout Plan (updated 6/17/15)

	Residential Development					Residential Summary	
			SFDs				
YEAR	# Lots Devel'd	Incr/(Decr) In Finished Lot Value @ 10%	# Units Completed 174 target	Price Inflated @ 2%	Market Value	Total Residential Market Value	Total Res'l Units
2015	0	0		$425,000	0	$0	0
2016	60	2,550,000		433,500	0	0	0
2017	60	0	60	442,170	26,530,200	26,530,200	60
2018	54	(255,000)	60	451,013	27,060,804	27,060,804	60
2019	0	(2,295,000)	54	460,034	24,841,818	24,841,818	54
2020	0	0	0	469,234	0	0	0
2021	0	0	0	478,619	0	0	0
2022	0	0	0	488,191	0	0	0
2023	0	0	0	497,955	0	0	0
2024	0	0	0	507,914	0	0	0
2025	0	0	0	518,073	0	0	0
2026	0	0	0	528,434	0	0	0
2027	0	0	0	539,003	0	0	0
2028	0	0	0	549,783	0	0	0
2029	0	0	0	560,778	0	0	0
2030	0	0	0	571,994	0	0	0
2031	0	0	0	583,434	0	0	0
2032	0	0	0	595,103	0	0	0
2033	0	0	0	607,005	0	0	0
2034	0	0	0	619,145	0	0	0
2035		0	0	631,528	0	0	0
	174	0	174		78,432,822	78,432,822	174

Prepared by D.A. Davidson & Co.

SIERRA VISTA METROPOLITAN DISTRICT

Development Projection – Buildout Plan (updated 6/17/15)

	Commercial Development					Commercial Summary			
	6 Acres Comm'l (.20 FAR)								
YEAR	SF Devel'd	Incr/(Decr) In Finished Lot Value @ 10%	Square Ft Completed 52,380	per Sq Ft, Inflated @ 2%	Market Value	Total Commercial Market Value	Total Commercial Sq Ft	Value of Platted & Developed Lots Adjustment[1]	Adjusted Value
2015	0	0		$125.00	$0	0	0	0	0
2016	0	0		127.50	0	0	0	0	2,550,000
2017	17,460	218,250		130.05	0	0	0	0	218,250
2018	17,460	0	17,460	132.65	2,316,086	2,316,086	17,460	0	(255,000)
2019	17,460	0	17,460	135.30	2,362,408	2,362,408	17,460	0	(2,295,000)
2020	0	(218,250)	17,460	138.01	2,409,656	2,409,656	17,460	0	(218,250)
2021	0	0	0	140.77	0	0	0	0	0
2022	0	0	0	143.59	0	0	0	0	0
2023	0	0	0	146.46	0	0	0	0	0
2024	0	0	0	149.39	0	0	0	0	0
2025	0	0	0	152.37	0	0	0	0	0
2026	0	0	0	155.42	0	0	0	0	0
2027	0	0	0	158.53	0	0	0	0	0
2028	0	0	0	161.70	0	0	0	0	0
2029	0	0	0	164.93	0	0	0	0	0
2030	0	0	0	168.23	0	0	0	0	0
2031	0	0	0	171.60	0	0	0	0	0
2032	0	0	0	175.03	0	0	0	0	0
2033	0	0	0	178.53	0	0	0	0	0
2034	0	0	0	182.10	0	0	0	0	0
2035		0	0	185.74	0	0	0	0	0
	52,380	0	52,380		7,088,151	7,088,151	52,380	0	0

[1] Adj. to actual/prelim AV

Prepared by D.A. Davidson & Co.

D A DAVIDSON

SOURCES AND USES OF FUNDS

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION BONDS, SERIES 2020
Non-Rated, 120x, 30-yr. Maturity
[Preliminary -- for discussion only]

Dated Date	12/01/2020
Delivery Date	12/01/2020

Sources:	
Bond Proceeds:	
Par Amount	5,905,000.00
	5,905,000.00

Uses:	
Project Fund Deposits:	
Project Fund (Restricted*)	5,034,291.09
Other Fund Deposits:	
Capitalized Interest	161,833.91
Debt Service Reserve Fund	472,675.00
	634,508.91
Delivery Date Expenses:	
Cost of Issuance (est.)	236,200.00
	5,905,000.00

D A DAVIDSON

BOND SUMMARY STATISTICS

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION BONDS, SERIES 2020
Non-Rated, 120x, 30-yr. Maturity
[Preliminary -- for discussion only]

Dated Date	12/01/2020
Delivery Date	12/01/2020
First Coupon	06/01/2021
Last Maturity	12/01/2050
Arbitrage Yield	5.500000%
True Interest Cost (TIC)	5.500000%
Net Interest Cost (NIC)	5.500000%
All-In TIC	5.841200%
Average Coupon	5.500000%
Average Life (years)	21.769
Duration of Issue (years)	12.424
Par Amount	5,905,000.00
Bond Proceeds	5,905,000.00
Total Interest	7,069,975.00
Net Interest	7,069,975.00
Bond Years from Dated Date	128,545,000.00
Bond Years from Delivery Date	128,545,000.00
Total Debt Service	12,974,975.00
Maximum Annual Debt Service	954,775.00
Average Annual Debt Service	432,499.17
Underwriter's Fees (per $1000)	
Average Takedown	
Other Fee	
Total Underwriter's Discount	
Bid Price	100.000000

Bond Component	Par Value	Price	Average Coupon	Average Life	PV of 1 bp change
Term Bond due 2050	5,905,000.00	100.000	5.500%	21.769	8,621.30
	5,905,000.00			21.769	8,621.30

	TIC	All-In TIC	Arbitrage Yield
Par Value	5,905,000.00	5,905,000.00	5,905,000.00
+ Accrued Interest			
+ Premium (Discount)			
- Underwriter's Discount			
- Cost of Issuance Expense			
- Other Amounts		-236,200.00	
Target Value	5,905,000.00	5,668,800.00	5,905,000.00
Target Date	12/01/2020	12/01/2020	12/01/2020
Yield	5.500000%	5.841200%	5.500000%

D A DAVIDSON

BOND DEBT SERVICE

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION BONDS, SERIES 2020
Non-Rated, 120x, 30-yr. Maturity
[Preliminary -- for discussion only]

Period Ending	Principal	Coupon	Interest	Debt Service	Annual Debt Service
06/01/2021			162,387.50	162,387.50	
12/01/2021			162,387.50	162,387.50	324,775
06/01/2022			162,387.50	162,387.50	
12/01/2022	40,000	5.500%	162,387.50	202,387.50	364,775
06/01/2023			161,287.50	161,287.50	
12/01/2023	45,000	5.500%	161,287.50	206,287.50	367,575
06/01/2024			160,050.00	160,050.00	
12/01/2024	55,000	5.500%	160,050.00	215,050.00	375,100
06/01/2025			158,537.50	158,537.50	
12/01/2025	55,000	5.500%	158,537.50	213,537.50	372,075
06/01/2026			157,025.00	157,025.00	
12/01/2026	65,000	5.500%	157,025.00	222,025.00	379,050
06/01/2027			155,237.50	155,237.50	
12/01/2027	70,000	5.500%	155,237.50	225,237.50	380,475
06/01/2028			153,312.50	153,312.50	
12/01/2028	80,000	5.500%	153,312.50	233,312.50	386,625
06/01/2029			151,112.50	151,112.50	
12/01/2029	85,000	5.500%	151,112.50	236,112.50	387,225
06/01/2030			148,775.00	148,775.00	
12/01/2030	100,000	5.500%	148,775.00	248,775.00	397,550
06/01/2031			146,025.00	146,025.00	
12/01/2031	105,000	5.500%	146,025.00	251,025.00	397,050
06/01/2032			143,137.50	143,137.50	
12/01/2032	120,000	5.500%	143,137.50	263,137.50	406,275
06/01/2033			139,837.50	139,837.50	
12/01/2033	125,000	5.500%	139,837.50	264,837.50	404,675
06/01/2034			136,400.00	136,400.00	
12/01/2034	140,000	5.500%	136,400.00	276,400.00	412,800
06/01/2035			132,550.00	132,550.00	
12/01/2035	145,000	5.500%	132,550.00	277,550.00	410,100
06/01/2036			128,562.50	128,562.50	
12/01/2036	165,000	5.500%	128,562.50	293,562.50	422,125
06/01/2037			124,025.00	124,025.00	
12/01/2037	170,000	5.500%	124,025.00	294,025.00	418,050
06/01/2038			119,350.00	119,350.00	
12/01/2038	190,000	5.500%	119,350.00	309,350.00	428,700
06/01/2039			114,125.00	114,125.00	
12/01/2039	200,000	5.500%	114,125.00	314,125.00	428,250
06/01/2040			108,625.00	108,625.00	
12/01/2040	220,000	5.500%	108,625.00	328,625.00	437,250
06/01/2041			102,575.00	102,575.00	
12/01/2041	230,000	5.500%	102,575.00	332,575.00	435,150
06/01/2042			96,250.00	96,250.00	
12/01/2042	255,000	5.500%	96,250.00	351,250.00	447,500
06/01/2043			89,237.50	89,237.50	
12/01/2043	270,000	5.500%	89,237.50	359,237.50	448,475
06/01/2044			81,812.50	81,812.50	
12/01/2044	290,000	5.500%	81,812.50	371,812.50	453,625
06/01/2045			73,837.50	73,837.50	
12/01/2045	310,000	5.500%	73,837.50	383,837.50	457,675
06/01/2046			65,312.50	65,312.50	
12/01/2046	335,000	5.500%	65,312.50	400,312.50	465,625
06/01/2047			56,100.00	56,100.00	
12/01/2047	355,000	5.500%	56,100.00	411,100.00	467,200
06/01/2048			46,337.50	46,337.50	
12/01/2048	380,000	5.500%	46,337.50	426,337.50	472,675
06/01/2049			35,887.50	35,887.50	
12/01/2049	400,000	5.500%	35,887.50	435,887.50	471,775
06/01/2050			24,887.50	24,887.50	
12/01/2050	905,000	5.500%	24,887.50	929,887.50	954,775
	5,905,000		7,069,975.00	12,974,975.00	12,974,975

D A DAVIDSON

NET DEBT SERVICE

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION BONDS, SERIES 2020
Non-Rated, 120x, 30-yr. Maturity
[Preliminary -- for discussion only]

Period Ending	Principal	Interest	Total Debt Service	Debt Service Reserve Fund	Capitalized Interest	Net Debt Service
12/01/2021		324,775	324,775	-472.68	-162,387.50	161,914.82
12/01/2022	40,000	324,775	364,775	-945.36		363,829.64
12/01/2023	45,000	322,575	367,575	-945.36		366,629.64
12/01/2024	55,000	320,100	375,100	-945.36		374,154.64
12/01/2025	55,000	317,075	372,075	-945.36		371,129.64
12/01/2026	65,000	314,050	379,050	-945.36		378,104.64
12/01/2027	70,000	310,475	380,475	-945.36		379,529.64
12/01/2028	80,000	306,625	386,625	-945.36		385,679.64
12/01/2029	85,000	302,225	387,225	-945.36		386,279.64
12/01/2030	100,000	297,550	397,550	-945.36		396,604.64
12/01/2031	105,000	292,050	397,050	-945.36		396,104.64
12/01/2032	120,000	286,275	406,275	-945.36		405,329.64
12/01/2033	125,000	279,675	404,675	-945.36		403,729.64
12/01/2034	140,000	272,800	412,800	-945.36		411,854.64
12/01/2035	145,000	265,100	410,100	-945.36		409,154.64
12/01/2036	165,000	257,125	422,125	-945.36		421,179.64
12/01/2037	170,000	248,050	418,050	-945.36		417,104.64
12/01/2038	190,000	238,700	428,700	-945.36		427,754.64
12/01/2039	200,000	228,250	428,250	-945.36		427,304.64
12/01/2040	220,000	217,250	437,250	-945.36		436,304.64
12/01/2041	230,000	205,150	435,150	-945.36		434,204.64
12/01/2042	255,000	192,500	447,500	-945.36		446,554.64
12/01/2043	270,000	178,475	448,475	-945.36		447,529.64
12/01/2044	290,000	163,625	453,625	-945.36		452,679.64
12/01/2045	310,000	147,675	457,675	-945.36		456,729.64
12/01/2046	335,000	130,625	465,625	-945.36		464,679.64
12/01/2047	355,000	112,200	467,200	-945.36		466,254.64
12/01/2048	380,000	92,675	472,675	-945.36		471,729.64
12/01/2049	400,000	71,775	471,775	-945.36		470,829.64
12/01/2050	905,000	49,775	954,775	-473,620.36		481,154.64
	5,905,000	7,069,975	12,974,975	-500,563.12	-162,387.50	12,312,024.38

BOND SOLUTION

SIERRA VISTA METROPOLITAN DISTRICT
GENERAL OBLIGATION BONDS, SERIES 2020
Non-Rated, 120x, 30-yr. Maturity
[Preliminary -- for discussion only]

Period Ending	Proposed Principal	Proposed Debt Service	Debt Service Adjustments	Total Adj Debt Service	Revenue Constraints	Unused Revenues	Debt Serv Coverage
12/01/2021		324,775	-162,860	161,915	400,226	238,311	247.18305%
12/01/2022	40,000	364,775	-945	363,830	441,173	77,343	121.25814%
12/01/2023	45,000	367,575	-945	366,630	441,173	74,543	120.33207%
12/01/2024	55,000	375,100	-945	374,155	449,997	75,842	120.27019%
12/01/2025	55,000	372,075	-945	371,130	449,997	78,867	121.25049%
12/01/2026	65,000	379,050	-945	378,105	458,996	80,892	121.39402%
12/01/2027	70,000	380,475	-945	379,530	458,996	79,467	120.93823%
12/01/2028	80,000	386,625	-945	385,680	468,176	82,497	121.38996%
12/01/2029	85,000	387,225	-945	386,280	468,176	81,897	121.20141%
12/01/2030	100,000	397,550	-945	396,605	477,540	80,935	120.40704%
12/01/2031	105,000	397,050	-945	396,105	477,540	81,435	120.55902%
12/01/2032	120,000	406,275	-945	405,330	487,091	81,761	120.17149%
12/01/2033	125,000	404,675	-945	403,730	487,091	83,361	120.64774%
12/01/2034	140,000	412,800	-945	411,855	496,833	84,978	120.63297%
12/01/2035	145,000	410,100	-945	409,155	496,833	87,678	121.42903%
12/01/2036	165,000	422,125	-945	421,180	506,769	85,590	120.32138%
12/01/2037	170,000	418,050	-945	417,105	506,769	89,665	121.49689%
12/01/2038	190,000	428,700	-945	427,755	516,905	89,150	120.84136%
12/01/2039	200,000	428,250	-945	427,305	516,905	89,600	120.96862%
12/01/2040	220,000	437,250	-945	436,305	527,243	90,938	120.84277%
12/01/2041	230,000	435,150	-945	434,205	527,243	93,038	121.42722%
12/01/2042	255,000	447,500	-945	446,555	537,787	91,233	120.43038%
12/01/2043	270,000	448,475	-945	447,530	537,787	90,258	120.16801%
12/01/2044	290,000	453,625	-945	452,680	548,543	95,864	121.17691%
12/01/2045	310,000	457,675	-945	456,730	548,543	91,814	120.10239%
12/01/2046	335,000	465,625	-945	464,680	559,514	94,834	120.40857%
12/01/2047	355,000	467,200	-945	466,255	559,514	93,259	120.00183%
12/01/2048	380,000	472,675	-945	471,730	570,704	98,975	120.98124%
12/01/2049	400,000	471,775	-945	470,830	570,704	99,875	121.21250%
12/01/2050	905,000	954,775	-473,620	481,155	582,118	100,964	120.98365%
	5,905,000	12,974,975	-662,951	12,312,024	15,076,886	2,764,862	

EXHIBIT G

District Election Questions

No. 0001

OFFICIAL BALLOT FOR
SIERRA VISTA METROPOLITAN DISTRICT
ORGANIZATIONAL ELECTION, TUESDAY, NOVEMBER 3, 2015

/s/
Facsimile of Signature of the Designated Election Official of the District

WARNING

ANY PERSON WHO, BY USE OF FORCE OR OTHER MEANS, UNDULY INFLUENCES AN ELIGIBLE ELECTOR TO VOTE IN ANYPARTICULAR MANNER OR TO REFRAIN FROM VOTING, OR WHO FALSELY MAKES, ALTERS, FORGES, OR COUNTERFEITS ANY MAIL BALLOT BEFORE OR AFTER IT HAS BEEN CAST, OR WHO DESTROYS, DEFACES, MUTILATES, OR TAMPERS WITH A BALLOT IS SUBJECT, UPON CONVICTION, TO IMPRISONMENT, OR TO A FINE, OR BOTH. (§1-13.5-1105(4)(b), C.R.S.)

To vote, place crossmark (X) at the right of the name of a candidate.

For the office of Director of Sierra Vista Metropolitan District

Vote for TWO (2) directors to serve until they or their successors are elected and qualified at the next regular special district election in MAY 2016. If more than TWO names are selected, the ballot will NOT be counted.

For the office of Director of Sierra Vista Metropolitan District

Vote for THREE (3) directors to serve until they or their successors are elected and qualified at the second regular special district election in MAY 2018. If more than THREE names are selected, the ballot will NOT be counted.

Sierra Vista Metropolitan District
Ballot Issue 5A (Operations, Administration and Maintenance Mill Levy – Ad Valorem Taxes)

SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $5,000,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS NECESSARY TO PAY THE DISTRICT'S ADMINISTRATION, COVENANT ENFORCEMENT, DESIGN REVIEW, OPERATIONS, MAINTENANCE, AND OTHER SIMILAR EXPENSES BY THE IMPOSITION OF AD VALOREM PROPERTY TAXES LEVIED IN ANY YEAR, WITHOUT LIMITATION AS TO RATE OR AMOUNT OR ANY OTHER CONDITION, TO PAY SUCH EXPENSES AND SHALL THE REVENUE FROM SUCH TAXES AND ANY INVESTMENT INCOME THEREON BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, THE LIMITS IMPOSED ON INCREASES IN TAXATION BY SECTION 29-1-301, C.R.S., IN ANY YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, ALL WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Remainder of Ballot Page 2 intentionally left blank. Ballot continues on Page 3.

Sierra Vista Metropolitan District
Ballot Issue 5B (Capital Costs – Ad Valorem Taxes)

SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $5,000,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS NECESSARY TO PAY FOR CAPITAL COSTS OF PUBLIC IMPROVEMENTS, THROUGH PROPERTY TAXES LEVIED IN ANY YEAR, WITHOUT LIMITATION AS TO RATE OR AMOUNT OR ANY OTHER CONDITION, TO PAY SUCH EXPENSES AND SHALL THE REVENUE FROM SUCH TAXES AND ANY INVESTMENT INCOME THEREON BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, AND PURSUANT TO SECTION 29-1-302(2)(B), C.R.S., WITHOUT REGARD TO THE LIMITS IMPOSED ON INCREASES IN TAXATION BY SECTION 29-1-301, C.R.S., IN ANY YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, ALL WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5C (Operations, Administration and Maintenance – Fees)

SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $5,000,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING TAX CUTS) OR SUCH LESSER AMOUNT AS NECESSARY TO PAY THE DISTRICT'S ADMINISTRATION, COVENANT ENFORCEMENT, DESIGN REVIEW, OPERATIONS, AND MAINTENANCE EXPENSES, AND FOR THE PURPOSE OF PAYING THE COSTS OF ANY PUBLIC IMPROVEMENTS, FACILITIES, SYSTEMS, PROGRAMS, OR PROJECTS WHICH THE DISTRICT MAY LAWFULLY PROVIDE, BY THE IMPOSITION OF A FEE OR FEES IMPOSED, WITHOUT LIMITATION AS TO RATE OR AMOUNT OR ANY OTHER CONDITION, TO PAY SUCH EXPENSES AND SHALL THE REVENUE FROM SUCH FEES AND ANY INVESTMENT INCOME THEREON BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, THE LIMITS IMPOSED ON INCREASES IN TAXATION BY SECTION 29-1-301, C.R.S., IN ANY YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, ALL WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5D (Multiple Fiscal Year Intergovernmental Agreement Mill Levy Question)

SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $12,000,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS NECESSARY FOR THE PAYMENT OF AMOUNTS DUE UNDER ONE OR MORE INTERGOVERNMENTAL AGREEMENTS OR OTHER CONTRACTS, OR FOR PAYMENT OF REGIONAL IMPROVEMENTS FOR WHICH THE DISTRICT IS AUTHORIZED OR OBLIGATED PURSUANT TO ITS SERVICE PLAN, BY THE IMPOSITION OF AD VALOREM PROPERTY TAXES LEVIED IN ANY YEAR, WITHOUT LIMITATION AS TO RATE OR AMOUNT OR ANY OTHER CONDITION, FOR THE PURPOSE OF PAYING THE DISTRICT'S OBLIGATIONS UNDER ANY ONE OR MORE OF SUCH INTERGOVERNMENTAL AGREEMENTS OR OTHER CONTRACTS, OR TO PAY THE COSTS OF REGIONAL IMPROVEMENTS, AND SHALL THE REVENUE FROM SUCH TAXES AND ANY INVESTMENT INCOME THEREON BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, THE LIMITS IMPOSED ON INCREASES IN PROPERTY TAXATION BY SECTION 29-1-301, C.R.S. IN ANY YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, ALL WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5E (Multiple Fiscal Year Private Agreement Mill Levy Question)

SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $12,000,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS NECESSARY FOR THE PAYMENT OF SUCH AMOUNTS DUE PURSUANT TO ONE OR MORE AGREEMENTS OR CONTRACTS WITH PRIVATE PARTIES, BY THE IMPOSITION OF AD VALOREM PROPERTY TAXES LEVIED IN ANY YEAR, WITHOUT LIMITATION AS TO RATE OR AMOUNT OR ANY OTHER CONDITION FOR THE PAYMENT OF SUCH AMOUNTS DUE, AND SHALL THE PROCEEDS OF SUCH TAXES AND ANY INVESTMENT INCOME THEREON BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, THE LIMITS IMPOSED ON INCREASES IN PROPERTY TAXATION BY SECTION 29-1-301, C.R.S. IN ANY YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, ALL WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5F (De-TABOR)

SHALL SIERRA VISTA METROPOLITAN DISTRICT BE AUTHORIZED TO COLLECT, RETAIN, AND SPEND ANY AND ALL AMOUNTS ANNUALLY FROM ANY REVENUE SOURCES WHATSOEVER, INCLUDING BUT NOT LIMITED TO TAXES, TAX INCREMENT REVENUES, TAP FEES, PARK FEES, FACILITY FEES, SERVICE CHARGES, INSPECTION CHARGES, ADMINISTRATIVE CHARGES, GIFTS, GRANTS OR ANY OTHER FEE, RATE, TOLL, PENALTY, INCOME OR CHARGE AUTHORIZED BY LAW OR CONTRACT TO BE IMPOSED, COLLECTED OR RECEIVED BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER, SUCH AMOUNTS TO CONSTITUTE A VOTER-APPROVED REVENUE CHANGE AND BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING TAX CUTS, THE LIMITS IMPOSED ON INCREASES IN PROPERTY TAXATION BY SECTION 29-1-301, C.R.S. IN ANY SUBSEQUENT YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5G (In-District Special Assessment Debt)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING TAX CUTS) OR BY SUCH LESSER ANNUAL AMOUNT AS MAY BE NECESSARY TO PAY THE AFOREMENTIONED DEBT, BY IMPOSING SPECIAL ASSESSMENTS UPON PROPERTY IN THE DISTRICT, WHICH ASSESSMENTS ARE SUBJECT TO PREPAYMENT AT THE OPTION OF THE PROPERTY OWNER, SUCH DEBT TO CONSIST OF SPECIAL ASSESSMENT BONDS OR OTHER FINANCIAL OBLIGATIONS BEARING INTEREST AT A NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM; SUCH SPECIAL ASSESSMENT BONDS OR OTHER FINANCIAL OBLIGATIONS TO BE ISSUED TO PAY THE COSTS OF PROVIDING CERTAIN PUBLIC IMPROVEMENTS FOR SUCH DISTRICT, TO BE REPAID FROM THE PROCEEDS OF SPECIAL ASSESSMENTS TO BE IMPOSED UPON THE PROPERTY INCLUDED WITHIN SUCH DISTRICT; SUCH TAXES TO CONSIST OF THE AFOREMENTIONED SPECIAL ASSESSMENTS IMPOSED UPON THE PROPERTY FOR THE DISTRICT BENEFITED BY THE PUBLIC IMPROVEMENTS; AND SHALL THE PROCEEDS OF SUCH BONDS OR OTHER FINANCIAL OBLIGATIONS AND THE PROCEEDS OF SUCH ASSESSMENTS, AND INVESTMENT INCOME THEREON CONSTITUTE VOTER-APPROVED REVENUE CHANGES AND BE COLLECTED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER WITHOUT REGARD TO ANY EXPENDITURE, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5H (Street Improvements)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, STREET IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO CURBS, GUTTERS, CULVERTS, AND OTHER DRAINAGE FACILITIES, UNDERGROUND CONDUITS, SIDEWALKS, TRAILS, PUBLIC PARKING LOTS, STRUCTURES AND FACILITIES, PAVING, LIGHTING, GRADING, LANDSCAPING, BIKE PATHS AND PEDESTRIAN WAYS, PEDESTRIAN OVERPASSES, RETAINING WALLS, FENCING, ENTRY MONUMENTATION, STREETSCAPING, BRIDGES, OVERPASSES, UNDERPASSES, INTERCHANGES, MEDIAN ISLANDS, IRRIGATION, AND A SAFETY PROTECTION SYSTEM THROUGH TRAFFIC AND SAFETY CONTROLS AND DEVICES ON STREETS AND HIGHWAYS AND AT RAILROAD CROSSINGS, SIGNALIZATION, SIGNING AND STRIPING, AREA IDENTIFICATION, DRIVER INFORMATION AND DIRECTIONAL ASSISTANCE SIGNS, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND AND EASEMENTS AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS; ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT, WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5I (Parks and Recreation)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, PARKS AND RECREATION FACILITIES, IMPROVEMENTS AND PROGRAMS, INCLUDING BUT NOT LIMITED TO COMMUNITY PARKS, BIKE PATHS AND PEDESTRIAN WAYS, FENCING, TRAILS, REGIONAL TRAILS, FIELDS, TOT LOTS, OPEN SPACE, CULTURAL ACTIVITIES, COMMON AREAS, COMMUNITY RECREATION CENTERS, TENNIS COURTS, OUTDOOR LIGHTING, EVENT FACILITIES, IRRIGATION FACILITIES, LAKES, WATER BODIES, SWIMMING POOLS, PUBLIC FOUNTAINS AND SCULPTURES, ART, GARDENS, LANDSCAPING, WEED CONTROL, AND OTHER ACTIVE AND PASSIVE RECREATIONAL FACILITIES, IMPROVEMENTS AND PROGRAMS, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5J (Water)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, A POTABLE AND NON-POTABLE WATER SUPPLY, STORAGE, TRANSMISSION AND DISTRIBUTION SYSTEM FOR DOMESTIC AND OTHER PUBLIC AND PRIVATE PURPOSES BY ANY AVAILABLE MEANS, AND TO PROVIDE ALL NECESSARY OR PROPER TREATMENT WORKS AND FACILITIES, EQUIPMENT, AND APPURTENANCES INCIDENT THERETO, INCLUDING BUT NOT LIMITED TO WELLS, WATER PUMPS, WATER LINES, WATER FEATURES, PURIFICATION PLANTS, PUMP STATIONS, TRANSMISSION LINES, DISTRIBUTION MAINS AND LATERALS, FIRE HYDRANTS, METERS, WATER TAPS, IRRIGATION FACILITIES, CANALS, DITCHES, WATER RIGHTS, FLUMES, PARTIAL FLUMES, HEADGATES, DROP STRUCTURES, STORAGE RESERVOIRS AND FACILITIES, TOGETHER WITH ALL NECESSARY, INCIDENTAL AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS, AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5K (Sanitation/Storm Sewer)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, A SANITATION SYSTEM WHICH MAY CONSIST OF STORM OR SANITARY SEWERS, OR BOTH, FLOOD AND SURFACE DRAINAGE, TREATMENT AND DISPOSAL WORKS AND FACILITIES, OR SOLID WASTE DISPOSAL FACILITIES OR WASTE SERVICES, AND ALL NECESSARY OR PROPER EQUIPMENT AND APPURTENANCES INCIDENT THERETO, INCLUDING BUT NOT LIMITED TO TREATMENT PLANTS AND FACILITIES, COLLECTION MAINS AND LATERALS, LIFT STATIONS, TRANSMISSION LINES, CANALS, SLUDGE HANDLING, REUSE AND DISPOSAL FACILITIES, AND/OR STORM SEWER, FLOOD AND SURFACE DRAINAGE FACILITIES AND SYSTEMS, INCLUDING DETENTION/RETENTION PONDS, BOX CULVERTS AND ASSOCIATED IRRIGATION FACILITIES, EQUIPMENT, LAND, EASEMENTS AND SEWER TAPS, AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5L (Transportation)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, A SYSTEM TO TRANSPORT THE PUBLIC BY BUS, RAIL OR ANY OTHER MEANS OF CONVEYANCE, OR ANY COMBINATION THEREOF, OR PURSUANT TO CONTRACT, INCLUDING BUT NOT LIMITED TO PUBLIC TRANSPORTATION SYSTEM IMPROVEMENTS, TRANSPORTATION EQUIPMENT, PARK AND RIDE FACILITIES, PUBLIC PARKING LOTS, STRUCTURES, ROOFS, COVERS AND FACILITIES, TOGETHER WITH ALL NECESSARY, INCIDENTAL AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS, AND ALL NECESSARY EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES OR SYSTEMS, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5M (Mosquito Control)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $1,000,000 WITH A REPAYMENT COST OF $8,200,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $8,200,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, MOSQUITO CONTROL AND ERADICATION FACILITIES, IMPROVEMENTS, PROGRAMS, EQUIPMENT AND SUPPLIES NECESSARY FOR THE ELIMINATION OF MOSQUITOES, INCLUDING BUT NOT LIMITED TO THE ELIMINATION OR TREATMENT OF BREEDING GROUNDS AND PURCHASE, LEASE, CONTRACTING OR OTHER USE OF EQUIPMENT OR SUPPLIES FOR MOSQUITO CONTROL WITHIN THE BOUNDARIES OF THE DISTRICT, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5N (Safety Protection)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, A SAFETY PROTECTION SYSTEM OF TRAFFIC AND SAFETY CONTROLS AND DEVICES ON STREETS AND HIGHWAYS AND AT RAILROAD CROSSINGS, INCLUDING BUT NOT LIMITED TO TRAFFIC SIGNALS AND SIGNAGE, AND CONSTRUCTING UNDERPASSES OR OVERPASSES AT RAILROAD CROSSINGS, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5O (Fire Protection)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE

REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, FACILITIES, IMPROVEMENTS AND EQUIPMENT FOR FIRE PROTECTION, INCLUDING BUT NOT LIMITED TO FIRE STATIONS, AMBULANCE AND EMERGENCY MEDICAL RESPONSE AND RESCUE SERVICES AND DIVING AND GRAPPLING STATIONS, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5P (Television Relay and Translation)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $1,000,000 WITH A REPAYMENT COST OF $8,200,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $8,200,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, TELEVISION RELAY AND TRANSLATION SYSTEM IMPROVEMENTS THROUGH ANY MEANS NECESSARY, INCLUDING BUT NOT LIMITED TO EQUIPMENT, FACILITIES AND STRUCTURES, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS AND EXTENSIONS OF AND

IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHERREVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5Q (Security)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $1,000,000 WITH A REPAYMENT COST OF $8,200,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $8,200,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, RELOCATING, INSTALLING, COMPLETING AND OTHERWISE PROVIDING, WITHIN OR WITHOUT THE BOUNDARIES OF THE DISTRICT, SECURITY SERVICES AND IMPROVEMENTS INCLUDING PERIMETER AND INTERIOR SECURITY PATROLS, CONSTRUCTION OF SAFETY BARRIERS OR SIMILAR PROTECTIVE MEASURES, ACQUISITION OF SECURITY EQUIPMENT, PROTECTION OF DISTRICT PROPERTY FROM UNLAWFUL DAMAGE OR DESTRUCTION, AND OTHER SECURITY IMPROVEMENTS WHICH MAY BE NECESSARY FOR THE ORDERLY CONDUCT OF DISTRICT AFFAIRS AND FOR PROTECTION OF THE HEALTH, SAFETY, AND WELFARE OF THE DISTRICT RESIDENTS, TAXPAYERS, OFFICERS, AND EMPLOYEES, INCLUSIVE OF THE GENERAL PUBLIC, TOGETHER WITH ALL NECESSARY, INCIDENTAL, AND APPURTENANT FACILITIES, EQUIPMENT, LAND, EASEMENTS AND EXTENSIONS OF AND IMPROVEMENTS TO SUCH FACILITIES, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO

REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5R (Operations and Maintenance Debt)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF PAYING, REIMBURSING, FINANCING OR REFINANCING THE DISTRICT'S OPERATING AND MAINTENANCE EXPENSES, OR ADVANCES OF OPERATING AND MAINTENANCE EXPENSES MADE TO THE DISTRICT, SUCH DEBT TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, SUCH DEBT TO BE INCURRED AT ONE TIME OR FROM TIME TO TIME AND TO MATURE, BE SUBJECT TO REDEMPTION, WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, AND TO CONTAIN SUCH TERMS, NOT INCONSISTENT HEREWITH, AND BE MADE PAYABLE FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING WITHOUT LIMITATION AD VALOREM PROPERTY TAXES LEVIED IN ANY YEAR OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF ANY SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR

OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, THE LIMITS IMPOSED ON INCREASES IN TAXATION BY SECTION 29-1-301, C.R.S., IN ANY YEAR, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, ALL WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5S (Refunding Debt)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT BUT NOT TO EXCEED A MAXIMUM NET EFFECTIVE INTEREST RATE OF 18% PER ANNUM, SUCH DEBT TO BE IN ANY FORM DETERMINED BY THE DISTRICT AND ISSUED OR INCURRED FOR THE PURPOSE OF REFUNDING, REFINANCING OR DEFEASING ANY OR ALL OF THE DISTRICT'S DEBT, SUCH INTEREST TO BE PAYABLE AT SUCH TIME OR TIMES, AND WHICH MAY COMPOUND ANNUALLY OR SEMIANNUALLY, AND SUCH DEBT TO MATURE, BE SUBJECT TO REDEMPTION WITH OR WITHOUT PREMIUM, AND BE ISSUED AND SOLD AT, ABOVE OR BELOW PAR, SUCH DEBT TO BE ISSUED OR INCURRED AT ONE TIME OR FROM TIME TO TIME, TO BE PAID FROM ANY LEGALLY AVAILABLE REVENUES OF THE DISTRICT, INCLUDING THE PROCEEDS OF AD VALOREM PROPERTY TAXES OR SPECIAL ASSESSMENTS, ALL OF THE ABOVE AS DETERMINED BY THE DISTRICT; SUCH TAXES TO CONSIST OF AN AD VALOREM MILL LEVY IMPOSED ON ALL TAXABLE PROPERTY OF THE DISTRICT WITHOUT LIMITATION OF RATE OR WITH SUCH LIMITATIONS AS MAY BE DETERMINED BY THE DISTRICT, AND IN AMOUNTS SUFFICIENT TO PRODUCE THE ANNUAL INCREASE SET FORTH ABOVE OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PURPOSE OF PAYING THE PRINCIPAL OF, PREMIUM IF ANY, AND INTEREST ON SUCH DEBT; AND SHALL THE PROCEEDS OF SUCH DEBT AND THE REVENUE FROM SUCH TAXES, ANY OTHER REVENUE USED TO PAY SUCH DEBT, AND INVESTMENT EARNINGS THEREON, BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5T (District Intergovernmental Agreements as Debt)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE

INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF ISSUED AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO CONSIST OF INTERGOVERNMENTAL AGREEMENTS OR OTHER CONTRACTS WITHOUT LIMIT AS TO TERM WITH ONE OR MORE POLITICAL SUBDIVISIONS OF THE STATE, GOVERNMENTAL UNITS, GOVERNMENTALLY-OWNED ENTERPRISES, OR OTHER PUBLIC ENTITIES, WHICH CONTRACTS WILL CONSTITUTE MULTIPLE FISCAL YEAR FINANCIAL OBLIGATIONS AND WHICH WILL OBLIGATE THE DISTRICT TO PAY, REIMBURSE, FINANCE OR REFINANCE THE COSTS OF DESIGNING, ACQUIRING, CONSTRUCTING, COMPLETING OR OTHERWISE PROVIDING, AND THE COSTS OF OPERATING AND MAINTAINING, ANY PUBLIC IMPROVEMENT WHICH THE DISTRICT IS LAWFULLY AUTHORIZED TO PROVIDE, ALL AS MAY BE PROVIDED IN SUCH ONE OR MORE INTERGOVERNMENTAL AGREEMENTS OR OTHER CONTRACTS, SUCH DEBT OBLIGATION OF THE DISTRICT PURSUANT TO SUCH AGREEMENTS AND CONTRACTS TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM AND BE PAYABLE AND OTHERWISE CONTAIN SUCH TERMS, NOT INCONSISTENT HEREWITH, ALL AS THE DISTRICT MAY DETERMINE; AND IN CONNECTION THEREWITH SHALL AD VALOREM PROPERTY TAXES BE LEVIED IN ANY YEAR, WITHOUT LIMITATION AS TO RATE AND IN AN AMOUNT SUFFICIENT TO PAY THE DISTRICT'S OBLIGATIONS UNDER SUCH CONTRACTS WHEN DUE; AND SHALL THE PROCEEDS OF THE DEBT REPRESENTED BY SUCH CONTRACTS, THE REVENUE FROM SUCH TAXES, THE REVENUE PAID TO THE DISTRICT PURSUANT TO REVENUE SHARING AGREEMENTS, ANY OTHER REVENUES USED TO PAY THE DEBT OBLIGATIONS REPRESENTED BY SUCH CONTRACTS, AND ANY EARNINGS FROM THE INVESTMENT OF SUCH PROCEEDS AND REVENUES BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5U (District Private Agreements as Debt)

SHALL SIERRA VISTA METROPOLITAN DISTRICT DEBT BE INCREASED BY $12,000,000 WITH A REPAYMENT COST OF $98,400,000; AND SHALL SIERRA VISTA METROPOLITAN DISTRICT TAXES BE INCREASED $98,400,000 ANNUALLY (SUCH TAX INCREASE TO BE AUTHORIZED NOTWITHSTANDING ANY PROVISION OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, INCLUDING ANY FUTURE AMENDMENTS TO ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION IMPOSING PROPERTY TAX CUTS) OR SUCH LESSER AMOUNT AS MAY BE NECESSARY FOR THE PAYMENT OF SUCH DEBT AND ANY REFUNDINGS THEREOF, AT AN INTEREST RATE THAT IS EQUAL TO, LOWER OR HIGHER THAN THE INTEREST RATE ON THE REFUNDED DEBT, SUCH DEBT TO CONSIST OF AGREEMENTS OR OTHER CONTRACTS WITH ONE OR MORE PRIVATE PARTIES, WHICH CONTRACTS WILL CONSTITUTE MULTIPLE FISCAL YEAR FINANCIAL OBLIGATIONS AND WHICH WILL OBLIGATE THE DISTRICT TO PAY, REIMBURSE OR FINANCE THE COSTS OF FINANCING, DESIGNING, ACQUIRING, CONSTRUCTING, COMPLETING OR OTHERWISE PROVIDING, AND THE COSTS OF OPERATING AND MAINTAINING, ANY PUBLIC IMPROVEMENT WHICH THE DISTRICT IS LAWFULLY AUTHORIZED TO PROVIDE, OR FOR ANY

OTHER LAWFUL ACTIVITY OF THE DISTRICT, CONTAINING SUCH TERMS AND CONDITIONS AS THE DISTRICT MAY DETERMINE TO BE NECESSARY AND APPROPRIATE, ALL AS MAY BE PROVIDED IN SUCH CONTRACTS, SUCH CONTRACTS TO BEAR INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 18% PER ANNUM, BE REFINANCED AT A NET EFFECTIVE INTEREST RATE NOT TO EXCEED THE MAXIMUM NET EFFECTIVE INTEREST RATE WITHOUT ADDITIONAL VOTER APPROVAL AND CONTAIN SUCH TERMS, NOT INCONSISTENT HEREWITH, AS THE DISTRICT BOARD OF DIRECTORS MAY DETERMINE; AND IN CONNECTION THEREWITH SHALL AD VALOREM PROPERTY TAXES BE LEVIED IN ANY YEAR, WITHOUT LIMITATION AS TO RATE AND IN AN AMOUNT SUFFICIENT TO PAY THE OBLIGATIONS OF THE CONTRACTS WHEN DUE, THE PROCEEDS OF THE CONTRACTS, THE REVENUES FROM ALL TAXES, FROM REVENUE SHARING AGREEMENTS, ANY OTHER REVENUES USED TO PAY THE CONTRACTS AND ANY EARNINGS FROM THE INVESTMENT OF SUCH PROCEEDS AND REVENUES BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT IN FISCAL YEAR 2015 AND IN EACH FISCAL YEAR THEREAFTER AS A VOTER-APPROVED REVENUE CHANGE, WITHOUT REGARD TO ANY SPENDING, REVENUE-RAISING, OR OTHER LIMITATION CONTAINED WITHIN ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, OR ANY OTHER LAW WHICH PURPORTS TO LIMIT THE DISTRICT'S REVENUES OR EXPENDITURES AS IT CURRENTLY EXISTS OR AS IT MAY BE AMENDED IN THE FUTURE, AND WITHOUT LIMITING IN ANY YEAR THE AMOUNT OF OTHER REVENUES THAT MAY BE COLLECTED, RETAINED AND SPENT BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5V (Mortgage)

SHALL SIERRA VISTA METROPOLITAN DISTRICT BE AUTHORIZED TO ISSUE, CREATE, EXECUTE, AND DELIVER MORTGAGES, LIENS, AND OTHER ENCUMBRANCES ON DISTRICT REAL AND PERSONAL PROPERTY, WHETHER NOW OWNED OR HEREAFTER ACQUIRED, AND INCLUDING WATER AND WATER RIGHTS, SUCH ENCUMBRANCES TO BE IN THE TOTAL PRINCIPAL AMOUNT OF NOT MORE THAN $12,000,000, PLUS INTEREST THEREON AT A NET EFFECTIVE INTEREST RATE NOT IN EXCESS OF 18% PER ANNUM, ALL AS MAY BE DETERMINED BY THE BOARD OF DIRECTORS TO BE NECESSARY OR APPROPRIATE IN CONNECTION WITH THE ISSUANCE OF BONDS, NOTES, CONTRACTS, OR OTHER FINANCIAL OBLIGATIONS OF THE DISTRICT; SUCH ENCUMBRANCES TO BE CREATED FOR THE PURPOSE OF PROVIDING ADDITIONAL SECURITY FOR DISTRICT FINANCIAL OBLIGATIONS, AND TO BE CREATED AT ONE TIME OR FROM TIME TO TIME; SUCH MORTGAGES, LIENS, OR OTHER ENCUMBRANCES TO ENTITLE THE OWNER OR BENEFICIARY THEREOF TO FORECLOSE UPON AND TAKE TITLE TO AND POSSESSION OF THE DISTRICT PROPERTY SO ENCUMBERED, AND IN CONNECTION THEREWITH SHALL THE DISTRICT BE AUTHORIZED TO MAKE SUCH COVENANTS REGARDING THE USE OF THE ENCUMBERED PROPERTY AND OTHER MATTERS ARISING UNDER THE ENCUMBRANCES, ALL AS MAY BE DETERMINED BY THE BOARD OF DIRECTORS OF THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5W (Multiple Fiscal Year Intergovernmental Agreement)

SHALL SIERRA VISTA METROPOLITAN DISTRICT BE AUTHORIZED TO ENTER INTO ONE OR MORE INTERGOVERNMENTAL AGREEMENTS WITH THE STATE, ONE OR MORE POLITICAL SUBDIVISIONS OF THE STATE, A REGIONAL AUTHORITY, OR GOVERNMENTALLY-OWNED ENTERPRISES, FOR THE

PURPOSE OF JOINTLY FINANCING THE COSTS OF ANY PUBLIC IMPROVEMENTS, FACILITIES, SYSTEMS, PROGRAMS, OR PROJECTS WHICH THE DISTRICT MAY LAWFULLY PROVIDE, OR FOR THE PURPOSE OF PROVIDING FOR THE OPERATIONS AND MAINTENANCE OF PUBLIC IMPROVEMENTS, FACILITIES, AND PROPERTIES, OR FOR ANY OTHER LAWFUL ACTIVITY OF THE DISTRICT, CONTAINING SUCH TERMS AND CONDITIONS AS THE DISTRICT MAY DETERMINE TO BE NECESSARY AND APPROPRIATE, WHICH AGREEMENT MAY CONSTITUTE A MULTIPLE FISCAL YEAR FINANCIAL OBLIGATION OF THE DISTRICT TO THE EXTENT PROVIDED THEREIN, AND IN CONNECTION THEREWITH SHALL THE DISTRICT BE AUTHORIZED TO MAKE COVENANTS REGARDING THE USE OF AD VALOREM TAXES AND THE ESTABLISHMENT AND USE OF RATES, FEES, TOLLS, PENALTIES, AND OTHER CHARGES OR REVENUES OF THE DISTRICT, AND COVENANTS, REPRESENTATIONS, AND WARRANTIES AS TO OTHER MATTERS ARISING UNDER THE AGREEMENTS, ALL AS MAY BE DETERMINED BY THE DISTRICT?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Issue 5X (Multiple Fiscal Year Private Agreement)

SHALL SIERRA VISTA METROPOLITAN DISTRICT BE AUTHORIZED TO ENTER INTO ONE OR MORE AGREEMENTS WITH PRIVATE PARTIES FOR THE PURPOSE OF FINANCING THE COSTS OF ANY PUBLIC IMPROVEMENTS, FACILITIES, SYSTEMS, PROGRAMS, OR PROJECTS WHICH THE DISTRICT MAY LAWFULLY PROVIDE, OR FOR THE PURPOSE OF PROVIDING FOR THE OPERATIONS AND MAINTENANCE OF PUBLIC IMPROVEMENTS, FACILITIES AND PROPERTIES, OR FOR ANY OTHER LAWFUL ACTIVITY OF THE DISTRICT, CONTAINING SUCH TERMS AND CONDITIONS AS THE DISTRICT MAY DETERMINE TO BE NECESSARY AND APPROPRIATE, WHICH AGREEMENT MAY CONSTITUTE A MULTIPLE FISCAL YEAR FINANCIAL OBLIGATION OF THE DISTRICT TO THE EXTENT PROVIDED THEREIN AND OTHERWISE AUTHORIZED BY LAW, AND IN CONNECTION THEREWITH SHALL THE DISTRICT BE AUTHORIZED TO MAKE COVENANTS REGARDING THE ESTABLISHMENT AND USE OF AD VALOREM TAXES, RATES, FEES, TOLLS, PENALTIES, AND OTHER CHARGES OR REVENUES OF THE DISTRICT, AND COVENANTS, REPRESENTATIONS, AND WARRANTIES AS TO OTHER MATTERS ARISING UNDER THE AGREEMENTS, ALL AS MAY BE DETERMINED BY THE DISTRICT BOARD OF DIRECTORS?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Question 5Y (Organize District)

Shall Sierra Vista Metropolitan District be organized as a Special District pursuant to Article 1 of Title 32, C.R.S.?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Question 5Z (Term Limit Elimination)

Shall members of the Board of Directors of Sierra Vista Metropolitan District be authorized to serve without limitation on their terms of office pursuant to the right granted to the voters of the District in Article XVIII, Section 11 of the Colorado Constitution to lengthen, shorten, or eliminate the limitations on the terms of office imposed by such Section?

YES:_____
NO:_____

Sierra Vista Metropolitan District
Ballot Question 5AA (Transportation Authorization)

Shall Sierra Vista Metropolitan District be authorized to exercise the power to establish, maintain, and operate a system to transport the public by bus, rail, or any other means of conveyance, or any combination thereof, and may the District contract to undertake such activities?

YES:_____
NO:_____

BALLOTS MUST BE RECEIVED BY 7:00 P.M. ON ELECTION DAY, NOVEMBER 3, 2015, AT:
SIERRA VISTA METROPOLITAN DISTRICT
C/O WHITE BEAR ANKELE TANAKA & WALDRON, ATTORNEYS AT LAW,
2154 E. COMMONS AVENUE, SUITE 2000, CENTENNIAL, COLORADO 80122

EXHIBIT H

Underwriter Commitment Letter

D|A DAVIDSON
D.A. Davidson & Co. member SIPC

March 11, 2015

Town of Erie
645 Holbrook
P.O. Box 750
Erie, CO 80516

RE: Proposed Sierra Vista Metropolitan District

To Whom It May Concern:

D.A. Davidson is engaged as investment banker for the Proposed Sierra Vista Metropolitan District. We have reviewed the service plan and the cash flow analyses, which demonstrate the feasibility of the financing based on assumptions provided by the developer.

Based on our work thus far and our understanding of, and experience with, the financial markets, we believe the debt assumptions included in the financial analysis are reasonable. Our engagement provides that we will serve as underwriter to the District's voter authorized debt once sufficient credit support can be identified based on assessed value, guarantees provided by the Developer and/or other forms of credit enhancement.

Please do not hesitate to contact me with any questions.

Sincerely,

D.A. Davidson & Co. Fixed Income Capital Markets

Sam Sharp
Managing Director

D.A. Davidson & Co. Fixed Income Capital Markets
1600 Broadway, Suite 1100 • Denver, Colorado 80202-4922 • (303) 764-6000 • (800) 942-7557 • Fax (303) 764-5770
www.dadavidson.com
D.A. Davidson & Co.
Member SIPC

EXHIBIT I

Form of Disclosure

Special Taxing District. The property is located within the boundaries of Sierra Vista Metropolitan District, a special taxing district (the "District"). The District has issued or expects to issue bonds that are paid by revenues produced from annual tax levies on the taxable property within the District. The buyer should investigate the financing plans of the District, proposed or existing mill levies of the District servicing such indebtedness, and the potential for an increase in such mill levies.

EXHIBIT J

Proof of Ownership and Encumbrances

Karen K. Kramer & Pratt Properties, LP
105 S. Sunset, Suite H
Longmont, CO 80501

Martin Ostholthoff
Town of Erie
Director of Community Development
645 Holbrook Street
Erie, CO 80516

Highway 7 & Bonanza, LLC
9033 E. Easter Place
Suite 110
Centennial, CO 80112
Attn: Jeff Handlin

May 29, 2014

RE: Letter of Authorization

Gentlemen:

Karen K. Kramer and Pratt Properties, LP (collectively, "Seller") are the owner of a portion of Sierra Vista, more particularly described in Exhibit A attached hereto (the "Property").

Seller is currently under contract to sell the Property to Highway 7 & Bonanza, LLC ("H7B"). By way of this correspondence, Seller hereby fully authorizes H7B to act on Seller's behalf to submit applications to the Town of Erie ("Town") to obtain entitlement approvals pertaining to the Property, including, but not limited to, amendments of the comprehensive plan, site development plans, approval of a final plat map, annexation agreements (or amendments thereto), development agreements, approvals of any zoning designations, and any and all entitlements and approvals required by the Town for design and construction of development infrastructure, residential building lots, and commercial parcels.

Very truly yours,

Karen K. Kramer

Karen K. Kramer

Susan Pratt, for Pratt Properties, LP

25820007v1 115239/00010
25820007v2 115239/00010

(Attachment to Letter dated May 29, 2014 to Martin Ostholthoff, Town of Erie, and Highway 7 & Bonanza, LLC from Karen K. Kramer and Pratt Properties, LP)

STATE OF COLORADO)
) ss.
COUNTY OF BOULDER)

The foregoing instrument was acknowledged before me this 29TH day of May, 2014 by Karen K. Kramer.

Witness my hand and official seal.

My commission expires: 4/2/15

Notary Public

WINNAFRED F KLING
Notary Public
State of Colorado
My Commission Expires April 02, 2015

STATE OF COLORADO)
) ss.
COUNTY OF BOULDER)

The foregoing instrument was acknowledged before me this 29TH day of May, 2014 by Susan M. Pratt as General Manager of All Pratt Companies, LLC, General Manager of Pratt Properties, LP.

Witness my hand and official seal.

My commission expires: 4/2/15

Notary Public

WINNAFRED F KLING
Notary Public
State of Colorado
My Commission Expires April 02, 2015

EXHIBIT A

THE PROPERTY

A part of the South Half of the Southeast Quarter of Section 31, Township 1 North, Range 68 West of the Sixth Principal Meridian, County of Weld, State of Colorado, more particularly described as follows:

Commencing at the Southeast Corner of said Southeast Quarter of Section 31;

Thence North 00°15'14" East along the East line of said Southeast Quarter, a distance of 75.31 feet;

Thence North 89°44'46" West, a distance of 109.21 feet to the Westerly Right-of-Way of County Road No. 3 as recorded in the office of the Weld County Clerk and Recorder in Book 1631 at Reception No. 2572958, said point also being on the Northerly Right-of-Way of State Highway No. 7 as described in the office of the Weld County Clerk and Recorder in Book 1224 at Reception No. 02170911 and the Point of Beginning:

Thence along said Northerly Right-of-Way of State Highway No. 7, along a line seventy-five (75.00) feet Northerly distant and parallel, when measured at right angles, with the South line of said Southeast Quarter the following two (2) courses;

1. Thence North 89°34'53" West, a distance of 1896.40 feet;

2. Thence North 89°32'45" West, a distance of 13.43 feet to the Easterly line of that parcel of land as recorded in the office of the Weld County Clerk and Recorder in Book 1274 at Reception No. 02225423;

Thence along said Easterly line the following two (2) courses:

1. Thence North 16°31'20" West, a distance of 1176.48 feet;

2. Thence North 12°14'16" West, a distance of 123.38 feet to the North line of said South half of the Southeast Quarter of Section 31;

Thence South 89°35'08" East along said North line, a distance of 2330.26 feet to said Westerly Right-of-Way of County Road No. 3 as described in Book 1631 at Reception No. 2572958;

Thence along said Westerly Right-of-Way the following two (2) courses:

1. Thence South 04°46'24" West, a distance of 564.23 feet;

2. Thence South 01°04'07" West, a distance of 683.43 feet to the Point of Beginning,

County of Weld, State of Colorado,

Except:

A part of the South half of the Southeast Quarter of Section 31, Township 1 North, Range 68 West of the Sixth Principal Meridian, County of Weld, State of Colorado, more particularly described as follows:

Commencing at the Southeast corner of said Southeast Quarter of Section 31, and considering the West line of the South half of said Southeast Quarter of Section 31 to bear North 00°45'47" East, with all bearings hereon relative thereto;

Thence North 83'36'10" East a distance of 628.67 feet to a point on the Northerly Right-of-Way of State Highway No. 7 as described in the office of the Weld County Clerk and Recorder in Book 1224 at Reception No. 02170911 and the Point of Beginning;

Thence North 16°31'20" West a distance of 540.23 feet; Thence South 89°34'53" East a distance of 837.42 feet;

Thence South 00°25'07" West a distance of 516.80 feet to a point on said Northerly Right-of-Way;

Thence North 89°34'53" West along said Northerly Right-of-Way a distance of 666.57 feet;

Thence North 89°32'45" West a distance of 13.43 feet to the Point of Beginning;

Said parcel contains an area of 392,100 square feet, or 9.001 acres, more or less.

BC Land, LLC
10261 Arapahoe Road
Lafayette, CO 80026

Martin Ostholthoff
Town of Erie
Director of Community Development
645 Holbrook Street
Erie, CO 80516

Highway 7 & Bonanza, LLC
9033 E. Easter Place
Suite 110
Centennial, CO 80112
Attn: Jeff Handlin

May 29, 2014

RE: Letter of Authorization

Gentlemen:

BC Land, LLC ("Seller") is the owner of a portion of Sierra Vista, more particularly described in Exhibit A attached hereto (the "Property").

Seller is currently under contract to sell the Property to Highway 7 & Bonanza, LLC ("H7B"). By way of this correspondence, Seller hereby fully authorizes H7B to act on Seller's behalf to submit applications to the Town of Erie ("Town") to obtain entitlement approvals pertaining to the Property, including, but not limited to, amendments of the comprehensive plan, site development plans, approval of a final plat map, annexation agreements (or amendments thereto), development agreements, approvals of any zoning designations, and any and all entitlements and approvals required by the Town for design and construction of development infrastructure, residential building lots, and commercial parcels.

Very truly yours,

Blake Carlson for BC Land, LLC

STATE OF COLORADO)
) ss:
CITY AND COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 16th day of June, 2014, by Blake Carlson, as Manager of **BC Land, LLC,** a Colorado limited liability company.

Witness my hand and official seal.

My commission expires: 12/20/2015.

Stephanie M. Reed
Notary Public

STEPHANIE M REED
NOTARY
PUBLIC
STATE OF COLORADO

My Commission Expires 12/20/2015

EXHIBIT A

THE PROPERTY

A part of the South half of the Southeast Quarter of Section 31, Township 1 North, Range 68 West of the Sixth Principal Meridian, County of Weld, State of Colorado, more particularly described as follows:

Commencing at the Southeast corner of said Southeast Quarter of Section 31, and considering the West line of the South half of said Southeast Quarter of Section 31 to bear North 00°45'47" East, with all bearings hereon relative thereto;

Thence North 83'36'10" East a distance of 628.67 feet to a point on the Northerly Right-of-Way of State Highway No. 7 as described in the office of the Weld County Clerk and Recorder in Book 1224 at Reception No. 02170911 and the Point of Beginning;

Thence North 16°31'20" West a distance of 540.23 feet; Thence South 89°34'53" East a distance of 837.42 feet;

Thence South 00°25'07" West a distance of 516.80 feet to a point on said Northerly Right-of-Way;

Thence North 89°34'53" West along said Northerly Right-of-Way a distance of 666.57 feet;

Thence North 89°32'45" West a distance of 13.43 feet to the Point of Beginning;

Said parcel contains an area of 392,100 square feet, or 9.001 acres, more or less.

ATTACHMENT C

INTERGOVERNMENTAL AGREEMENT
BETWEEN
THE TOWN OF ERIE COLORADO
AND
SIERRA VISTA METROPOLITAN DISTRICT

THIS INTERGOVERNMENTAL AGREEMENT ("Agreement") is made and entered into by and between the TOWN OF ERIE, a municipal corporation of the State of Colorado ("Town"), and SIERRA VISTA METROPOLITAN DISTRICT, a quasi-municipal corporation and political subdivision of the State of Colorado (the "District"). The Town and District are collectively referred to herein as the Parties.

RECITALS

WHEREAS, the District was organized to provide those services and to exercise powers as are more specifically set forth in the District's Service Plan dated July 24, 2015, as amended from time to time by Town approval ("Service Plan"); and

WHEREAS, the Service Plan and Town Code requires the execution of an intergovernmental agreement between the Town and the District regarding the enforcement of the Service Plan and Title 9, Chapter 4 of the Town Code; and

WHEREAS the Town has constructed the Airpark Interception Extension ("Extension"), which benefits the property within the District ("Property"); and

WHEREAS, the District desires to reimburse the Town for the Property's share of the Extension costs; and

WHEREAS, the Town and the District have determined it to be in their best interests to enter into this Agreement.

NOW, THEREFORE, for and in consideration of the covenants and mutual agreements herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

COVENANTS AND AGREEMENTS

1. Incorporation by Reference. The Service Plan and Title 9, Chapter 4 of the Town Code (the "Special District Code") are hereby incorporated in this Agreement by this reference. The District agrees to comply with all provisions of the Service Plan and the Special District Code.

2. Enforcement. The parties agree that this Agreement may be enforced in law, or in equity for specific performance, injunctive, or other appropriate relief. The parties also agree that this Agreement may be enforced pursuant to Section 32-1-207, C.R.S. and other provisions of Title 32, Article 1, C.R.S., granting rights to municipalities or counties approving a service plan of a special district.

3. Airpark Interceptor Extension. The District has the authority to impose a facility fee in an amount not to exceed $5,000 per single-family residential unit in order to reimburse the Town and/or the URA for the portion of the Extension attributable to the property within the District or to help finance other public improvements. If the facility fee is used to reimburse the Town and/or the URA for the Extension, the Town, not the District, will collect the facility fee at the time the Town issues a building permit.

4. Operation Fees. The District is hereby authorized to impose a monthly operations fee, in an amount not to exceed $50 to fund the District's operations and maintenance responsibilities.

5. Entire Agreement of the Parties. This written Agreement constitutes the entire agreement between the parties and supersedes all prior written or oral agreements, negotiations, or representations and understandings of the parties with respect to the subject matter contained herein.

6. Amendment. This Agreement may be amended, modified, changed, or terminated in whole or in part only by a written agreement duly authorized and executed by the parties hereto.

7. Governing Law; Venue. The internal laws of the State of Colorado shall govern the interpretation and enforcement of this Agreement, without giving effect to choice of law or conflict of law principles. The parties hereby submit to the jurisdiction of and venue in the district court in Weld County, Colorado. In any proceeding brought to enforce the provisions of this Agreement, the prevailing party therein shall be entitled to an award of reasonable attorneys' fees, actual court costs and other expenses incurred.

8. Beneficiaries. Except as otherwise stated herein, this Agreement is intended to describe the rights and responsibilities of and between the named parties and is not intended to, and shall not be deemed to confer any rights upon any persons or entities not named as parties.

9. Effect of Invalidity. If any portion of this Agreement is held invalid or unenforceable for any reason by a court of competent jurisdiction as to either party or as to both parties, such portion shall be deemed severable and its invalidity or its unenforceability shall not cause the entire Agreement to be terminated.

10. Assignability. Neither the Town nor the District shall assign their rights or delegate their duties hereunder without the prior written consent of the other party.

11. Notices. All notices, certificates or other communications hereunder shall be sufficiently given and shall be deemed given when given by hand delivery, overnight delivery, mailed by certified or registered mail, postage prepaid, delivered electronically (if confirmed promptly telephonically) or dispatched by telegram or telecopy (if confirmed promptly telephonically), addressed to the following address or at such other address or addresses as any party hereto shall designate in writing to the other party hereto:

Town of Erie
Town Administrator
PO Box 750
645 Holbrook St
Erie, Colorado 80516
Ph: (303) 926-2710
Fax: (303) 926-2706

Sierra Vista Metropolitan District
c/o WHITE BEAR & ANKELE
Professional Corporation
Attn: George M. Rowley, Esq.
2154 E Commons Ave, Suite 2000
Centennial, Colorado 80122
Ph: (303) 858-1800
Fax: (303) 858-1801

11. Successors and Assigns. This Agreement and the rights and obligations created hereby shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

SIERRA VISTA METROPOLITAN DISTRICT

ATTEST:

_____
Officer

_____

TOWN OF ERIE, COLORADO

_____
Tina Harris, Mayor

ATTEST:

_____
Nancy Parker, Town Clerk

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**RESOLUTION** Resolution 15-100: A Resolution Authorizing The Engagement Of TischlerBise Inc. For Completion Of An Impact Fee Study; Authorizing And Directing The Appropriate Town Officers To Enter Into An Agreement For Such Services; And, Setting Forth Details In Relation Thereto.
DEPARTMENT:	Finance
PRESENTER:	**Steve Felten** **Finance Director**

FISCAL INFORMATION:	Cost as Recommended:	**$59,440.00**
	Balance Available:	$0.00
	Budget Line Item Number:	100 . 30 . 410 . 560100 . 000000
	New Appropriation Required:	☒ Yes ☐ No

STAFF RECOMMENDATION:	**Staff recommends the Board of Trustees approve entering into an agreement with TischlerBise Inc. to complete an impact fee study.**

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

The Town's municipal code requires the performance of a professional impact fee study at least every five years in order to determine the adequacy of fees charged. The Town's last rate study was performed in 1999 (2002 for the storm drainage impact fee) and impact fees were last changed in 2002. Future capital demands for parks, public facilities, storm drainage and streets are significant, and the current impact fees do not reflect those demands or cost increases since the time of the last studies. As a result, in accordance to policy and at the request of the Board, a new rate study is required.

Staff requested proposals from three firms – BBC Research & Consulting, TischlerBise Inc. and Willdan Financial Services. TischlerBise performed the Town's last fee study and Willdan performed the Town's water, wastewater and storm drainage rate and fee study in 2014. Tischlerbise's fee proposal was $59,440 while Willdan's was $36,430. BBC did not provide a response to the request for proposal.

Although TischlerBise's fee is more than Willdan's, staff is recommending the selection of TischlerBise. Tischlerbise is recognized as the national leader in the performance of impact fee studies, having conducted over 900 impact fee studies across the country. They have conducted numerous studies in Colorado, including for Boulder, Castle Rock, Colorado Springs, Longmont, Louisville and Thornton, and therefore are fully familiar with the legal requirements for the establishment of impact fees, which are governed by State statute and case law. On the other hand, Willdan, has conducted 100 impact fee studies, with only a few in Colorado. Two Colorado municipalities that used Willdan for impact fee studies in the past have recently utilized other firms to update their fees.

TischlerBise also brings to the table some innovative approaches to the establishment of impact fees to ensure they are as equitable as possible, in addition to the traditional approach of simply projecting the cost of future growth-related capital projects and dividing by the number of projected residential and commercial units. Willdan's methodology only encompasses this more traditional approach. (Note: TischlerBise requested that the description of their approach as described in their proposal remain confidential as it is proprietary. Therefore, a portion of their proposal attached to the consulting agreement has been omitted. Any Board members desiring to see these sections will be provided a copy upon request.)

TischlerBise would begin its study immediately upon signing of a contract, which would follow the Board's approval. It is anticipated that the study would be concluded within approximately 120 days after initiation of the project for presentation to the Board at a study session. This rate and fee study would help ensure that impact fees for parks improvement, public facilities, storm drainage and streets/transportation are established at appropriate levels, with the objective of implementing any resulting changes effective January 1, 2016.

Staff Review:

_____ **Town Attorney**
_____ **Town Clerk**
_____ **Community Development Director**
_____ **Finance Director**
_____ **Police Chief**
_____ **Parks and Recreation Director**
_____ **Public Works Director**

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:
a. Resolution 15-100
b. TischlerBise Inc. consulting agreement

RESOLUTION NO. 15-100

A RESOLUTION AUTHORIZING THE ENGAGEMENT OF TISCHLERBISE INC. FOR COMPLETION OF AN IMPACT FEE STUDY; AUTHORIZING AND DIRECTING THE APPROPRIATE TOWN OFFICERS TO ENTER INTO AN AGREEMENT FOR SUCH SERVICES; AND, SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, the Town of Erie, Colorado wishes to enter into an agreement with TischlerBise Inc. for the purpose of completing an impact fee study for the Town; and

WHEREAS, the Board of Trustees of the Town of Erie believes it is in the best interest of the Town to enter into such an agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. That the services and fees as described in the consulting agreement with TischlerBise Inc., a copy of which is attached hereto and incorporated herein by reference, is found to be a reasonable and acceptable proposal for the purpose of completion of an impact fee study for the Town of Erie.

Section 2. That the Town of Erie be and is hereby authorized and directed to enter into the agreement with TischlerBise Inc. for the services described in the attached agreement for a fee not to exceed $59,440, and the Town Administrator is hereby authorized and directed to sign and bind the Town of Erie to said agreement for completion of an impact fee study.

Section 3. That entering into the agreement is found to be in the best interest of the Town of Erie, and necessary for the preservation of the public health and safety.

ADOPTED AND APPROVED THIS 11TH DAY OF AGUST, 2015, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE, a Colorado municipal corporation

By:_____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy Parker, Town Clerk

CONSULTING AGREEMENT

THIS CONSULTING AGREEMENT ("Consulting Agreement" or "Agreement") is made and entered into this _____ day of _____, 2015, by and between **TISCHLERBISE, INC.**, a District of Columbia corporation, whose address is 4701 Sangamore Road, S240, Bethesda, MD 20816 (hereinafter referred to as "Consultant") and the **TOWN OF ERIE, COLORADO,** a Colorado municipal corporation, whose address is 645 Holbrook Street, P.O. Box 750, Erie, Colorado 80516 (hereinafter referred to as "Town" or "Erie").

WITNESSETH

WHEREAS, the Town desires to engage the Consultant to render the professional services described in this Consulting Agreement and the Consultant is qualified and willing to perform such services in accordance with, and subject to the provisions of this Consulting Agreement; and,

WHEREAS, legal authority exists to engage the Consultant and sufficient funds have been budgeted and are available for the work to be performed by the Consultant under this Agreement, and other necessary approvals have been obtained.

NOW, THEREFORE, in consideration of the mutual promises, covenants and obligations of the parties hereto, the terms, covenants and conditions hereof, and intending to be legally bound, the Town and the Consultant agree as follows:

1. The Project. The Consultant's services are engaged under this Consulting Agreement for the following project: Develop and support a comprehensive Development Impact Fee Study and Program (for both residential and commercial development) ("Project"). The Project is further described in the Town's Request for Proposal as set forth in Exhibit "A", attached hereto and incorporated herein by this reference (the "RFP").

2. Consultant's Services. The Consultant shall, during the term of this Agreement, provide the services to the Town as set forth in the RFP and in Exhibit "B", attached hereto and incorporated herein by this reference (collectively the "Services"). The Consultant shall perform the Services competently, efficiently, and in accordance with the highest standards of its profession. The Consultant shall perform the Services meeting all industry safety standards.

3. Additional Services. The Town may request the Consultant to perform additional work or phases of the Project in addition to the Services. The Consultant agrees to perform the additional work or phases of the Project if the Town so requests, either pursuant to an amendment to this Consulting Agreement or a new agreement in which the Town and the Consultant shall define the scope of, and additional payment for, the additional work or phases of the Project.

4. Compensation. In consideration for the performance of the Services, the Town shall pay to the Consultant a fee in the total amount of **$59,440.00**, and payable in accordance with the payment schedule, as set forth in Exhibit "B", attached hereto and incorporated herein by this reference.

5. Reimbursable Expenses. The Town agrees to reimburse the Consultant for the reimbursable expenses incurred by the Consultant in connection with the Services, such expenses to be described in detail in Exhibit "B". The Consultant shall maintain an accurate record of all such expenses and provide itemized records and copies of receipts when submitting such expenses to the Town for reimbursement. The maximum amount reimbursable by the Town to the Consultant under this Consulting Agreement shall be set forth on Exhibit "B". Such expenses not described on Exhibit "B", shall not be reimbursed by the Town.

6. Commencement and Completion of Services. The Consultant understands and agrees that

time is an essential requirement of this Consulting Agreement. The term of this Consulting Agreement shall commence on the date of this agreement and shall end on **December 31, 2015**. The Services shall be completed as soon as good practice and due diligence will permit.

7. Termination.

A. This Consulting Agreement may be terminated by either party upon Ten (10) days prior written notice to the other party in the event of a substantial failure by the other party to fulfill its obligations under this Consulting Agreement through no fault of the terminating party.

B. This Consulting Agreement may be terminated by the Town in its sole discretion upon Ten (10) days prior written notice to the Consultant.

C. In the event of termination as provided for in this paragraph, the Town shall pay the Consultant in full for Services performed to the date of notice of termination plus any Services the Town deems necessary during the notice period. Said compensation shall be paid upon the Consultant's delivering or otherwise making available to the Town all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the Consultant in performing the Services included in this Consulting Agreement, whether completed or in progress.

8. Insurance.

8.1 Consultant shall procure and maintain, and shall cause any subcontractor of Consultant to procure and maintain, the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the Town. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by Consultant pursuant to paragraph 17 of this Consulting Agreement. In case of any claims made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

A. Workmen's Compensation Insurance and Employer's Liability Insurance to cover obligations imposed by applicable laws for any employee of Consultant or a subcontractor engaged in the performance of work under this Consulting Agreement.

B. General liability insurance with minimum combined single limits of One Million Dollars ($1,000,000) each occurrence and One Million Dollars ($1,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employees' acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision.

C. Comprehensive Automobile Liability insurance within single limits for bodily injury and property damage of not less than One Million Dollars ($1,000,000) each occurrence and One Million Dollars ($1,000,000) aggregate with respect to each of Consultant's owned, hired or non-owned vehicles assigned to or used in the performance of this Consulting Agreement. The policy shall contain a severability of interests provision.

D. Professional Liability insurance within minimum single limits of not less than One Million Dollars ($1,000,000) each occurrence and One Million Dollars ($1,000,000) aggregate.

8.2 The policies required by subparagraphs B and C, above shall be endorsed to include the Town and the Town's officers and employees as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the Town, its officers, or its employees, or carried by or provided through any insurance pool of the Town, shall be excess and not contributory insurance to that provided by the Consultant. The Consultant shall be solely responsible for any deductible losses under any policy require above.

8.3 A certificate of insurance shall be completed by the Consultant's insurance agent and provided to the Town as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the Town prior to commencement of the Consulting Agreement. The certificate shall identify this Consulting Agreement and shall provide that the coverages afforded under the policies shall not be cancelled until at least thirty (30) days prior written notice has been given to the Town. Consultant shall notify the Town within ten (10) days if the coverages afforded under the policies are materially changed. The completed Certificate of Insurance shall be sent to: Town Clerk, Town of Erie, PO Box 750, Erie, CO 80516

8.4 Notwithstanding any other portion of this Consulting Agreement, failure on the part of Consultant to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of this Consulting Agreement for which the Town may immediately terminate this Consulting Agreement, or, at its discretion, the Town may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all money so paid by the Town shall be repaid by the Consultant to the Town upon demand, or the Town may offset the cost of the premiums against any money due to the Consultant from the Town.

8.5 The parties hereto understand and agree that the Town is relying on, and does not waive or intend to waive by any provision of this Consulting Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, Section 24-10-101, et seq., C.R.S., as from time to time amended, or any other law, protection or limitation otherwise available to the Town, its officers, or its employees.

9. Payment of Subcontractors. Consultant shall contract with and pay any and all subcontractors used by Consultant in the performance of the Project. The Town shall in no event have any liability to any subconsultant, and Consultant shall hold the Town harmless with respect to any payments alleged to be due to Consultant's subcontractors.

10. Compliance with Applicable Laws. In connection with the execution of this Consulting Agreement, the Consultant shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, or disability. Such actions shall include, but not be limited to the following: employment; upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Consultant shall comply with the Americans with Disabilities Act (Public Law 101-336), and all applicable regulations and rules promulgated by the Equal Employment Opportunity Commission and the Colorado Civil Rights Commission. At all times during the performance of the Agreement, Consultant shall strictly adhere to all applicable federal, state and Town laws that have been or may hereafter be established. This shall include, without limitation, the United States Department of Labor standards. As used in this paragraph, and hereafter, the term "laws" shall include, without limitation, all federal, state and Town codes, charters, ordinances, laws, standards, rules and regulations. The indemnification and termination provisions of this Consulting Agreement shall apply with respect to Consultant's failure to comply with all applicable laws or regulations.

10A. No Discrimination in Employment. In connection with the performance of work under this Agreement, CONSULTANT agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified on the basis of race, color, ancestry, creed, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability and further agrees to insert the foregoing provision in all subcontracts hereunder.

11. Prohibited Interest.

A. The Consultant agrees that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its Services hereunder. The Consultant further agrees that in the performance of the Consulting Agreement, no person having any such

interest shall be employed.

B. No official or employee of the Town shall have any interest, direct or indirect, in the Consultant, this Consulting Agreement or the proceeds therefrom.

12. Independent Contractor. The Consultant shall perform all Services as an independent contractor, and nothing in this Consulting Agreement is intended to or shall create a relationship of employer-employee, joint venturers, or partners, between the parties. The Consultant shall be solely responsible for all federal and state income taxes attributable to the monies payable to the Consultant for the Services.

13. Books and Records. The Consultant's books and records with respect to the Services and reimbursable costs shall be kept in accordance with generally accepted accounting principles and practices, consistently applied, and will be made available for the Town's inspection at all reasonable times at the places where the same may be kept. The Consultant shall not be required to retain such books and records for more than three (3) years after completion of the services.

14. Obligation of Non-Disclosure. The Consultant agrees to keep confidential any and all drawings, reports, documents, memoranda, research, plans, analysis, maps, photographs, designs, information and work product either provided by the Town or generated by the Consultant pursuant to this Consulting Agreement, or provided to the Consultant by other consultants. Consultant shall make use of the information or items set forth hereinabove for any purpose, including public hearings of the Town, as expressly directed by the Town, for the Town's benefit. Consultant shall not use the information or items set forth hereinabove for its own account, or another's account, or in any manner detrimental to the Town. The Town acknowledges the need to share said information and items referred to hereinabove with the Consultant's subconsultants under this Consulting Agreement, and hereby approves such sharing and use.

15. Acknowledgement of Ownership. Consultant acknowledges that all drawings documents, information and materials relating to the Services performed and the Project for which the Services are performed, as well as those items described in paragraph 14, are or shall become, upon termination of this Consulting Agreement, the exclusive property of the Town.

16. Return of Information. Promptly upon the Town's request, and in any event upon the termination of this Consulting Agreement for any reason, all documents, materials and writings, as well as those items described in paragraph 14, and all copies thereof provided by the Town to the Consultant, directly or indirectly, shall be returned by the Consultant to the Town.

17. Professional Liability. The Consultant shall exercise in its performance of the Services hereunder the standard of care required by Colorado law. The Consultant shall be liable to the Town for any loss, damages, or costs incurred by the Town for the repair, replacement or correction of any part of the Project which is deficient or defective as a result of any failure of the Consultant to comply with this standard.

18. Communications. All communications relating to the day-to-day Services for the Project shall be exchanged between the respective Project representatives of the Town and the Consultant who will be designated by the parties promptly upon commencement of the Services.

19. Indemnification. Consultant agrees to indemnify and save harmless the Town against any and all claims, debts, demands, damages or obligations which may be asserted against the Town arising by reason of, or in connection with, any alleged act or omission of Consultant or any person claiming under, by or through Consultant, at Consultant's own expense using those attorneys that the Town deems appropriate. If, however, it becomes necessary for the Town to defend any action arising by reason of, or in connection with, any alleged act or omission of Consultant or any person claiming under, by or through Consultant seeking to impose liability for such claim or demand, Consultant shall pay all court costs, witness fees, expert witness fees, and attorney's fees, incurred by the Town in effecting such defense in addition to any other sums which the Town

may be called upon to pay by reason of the entry of any judgment, assessment, bond, writ or levy against the Town in the litigation in which such claims are asserted. Consultant shall be subrogated to any and all amounts paid by it on behalf of the Town to any claims that the Town may have as a result of said payments to any person or third persons which are the reason or cause of said payments.

20. No Assignment. Consultant's duties and obligations pursuant to this Consulting Agreement require a particular expertise and skill, and may not be assigned to any third party or agency without the express written consent of the Town, which consent may be withheld at the sole discretion of the Town.

21. Notices. Any notices required or permitted hereunder shall be sufficient if personally delivered or if sent by certified mail, return receipt requested, addressed as follows:

If to the Town:

Finance Director
Town of Erie
P.O. Box 750
Erie, Colorado 80516

With a copy (which shall not constitute notice) to:

Mark R. Shapiro
Mark R. Shapiro, P.C.
1650 38th Street, Suite 103
Boulder, Colorado 80301

If to the Consultant:

_____
_____
_____
_____

Notices personally delivered shall be effective upon delivery. Mailed notices shall be effective three (3) business days after mailing.

22. Agreement Subject to Annual Appropriation.

A. The parties hereto understand and agree that the amount of **$59,440.00** has been budgeted for compensation for work done pursuant to this Consulting Agreement for the current fiscal year ending December 31, 2015. This is a full and lawful appropriation as required by appropriate statute for this project. In the event that the Town fails to appropriate sufficient funds to cover any compensation which may become due for the fiscal year beginning January 1, 2016, then, and in that event, this Consulting Agreement shall immediately terminate as of December 31, 2015, without further action of any party. The Town shall provide notice to Consultant prior to December 31, 2015, as to whether an appropriation has been made for further work anticipated following December 31, 2015.

B. The amount of money appropriated by the Town is equal to or in excess of the Consulting Agreement amounts due herein for the current fiscal year.

C. The Town shall be prohibited from issuing any change order or other form of order or directive requiring additional compensable work to be performed, which work causes the aggregate amount payable under this Consulting Agreement to exceed the amount appropriated for the original Consulting Agreement, unless Consultant is given written assurance by the Town that lawful appropriations to cover the cost of the additional work have been made or unless such work is covered under a remedy-granting provision in this Consulting Agreement.

23. Prohibition Against Employment of Illegal Aliens.

A. By its signature on this Agreement, Consultant certifies that, as of the time of its signature, it does not knowingly employ or contract with an illegal alien and that, in order to verify that it does not employ any illegal aliens, the Consultant will participate in the E-Verify Program created in Public Law 104-208, as amended, and expanded in Public Law 108-156, as amended, administered by the United States Department of Homeland Security and the Social Security Administration.

B. Consultant agrees that it shall not knowingly employ or contract with an illegal alien to perform work under this Agreement; and that it shall not enter into a contract with a subcontractor that fails to certify to the Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this contract.

C. Consultant has verified through participation in the E-Verify Program that the Consultant does not employ any illegal aliens.

D. Consultant shall not use the E-Verify Program procedures to undertake preemployment screening of job applicants while work under this Agreement is being performed.

E. If Consultant obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien, the Consultant shall: (1) notify the subcontractor and the Town within three days that the Consultant has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and (2) terminate the subcontract with the subcontractor if, within three days of receiving the notice required herein, the subcontractor does not stop employing or contracting with the illegal alien; except that the Consultant shall not terminate the contract with the subcontractor if during such three days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

F. The Consultant shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation that the Department is undertaking pursuant to the authority established in C.R.S. section 8-17.5-101(5).

G. If Consultant violates a provision of this Illegal Alien section, the Town may terminate this Agreement for breach of contract. If the Agreement is so terminated, the Consultant shall be liable for actual and consequential damages to the Town. Consultant understands that, in the event of such a termination, Town is required to notify the office of the Colorado Secretary of State.

24. Attorney's Fees; Interest. In any action brought to enforce the provision(s) of this Consulting Agreement, the prevailing party shall be entitled to an award of all reasonable attorney's fees and costs, including expert witness' fees, expended or incurred, to be recovered as part of the costs therein. Any fees and expenses not paid to Consultant by the Town when due shall earn interest at the rate of twelve percent (12%) per annum.

25. Waiver. Failure to insist upon strict compliance with any of the terms, covenants, and/or conditions hereof shall not be deemed a waiver of such terms, covenants or conditions, nor shall any waiver or relinquishment of any right or power hereunder at any one time or more times be deemed a waiver or relinquishment of such right or power at any other time or times.

26. Amendments to Agreement. No changes, alterations or modifications to any of the provisions hereof shall be effective unless contained in a written agreement signed by both parties.

27. Entire Agreement. This Consulting Agreement shall constitute the entire agreement between the parties hereto and shall supersede all prior contracts, proposals, representations, negotiations and letters of intent, whether written or oral, pertaining to the Services.

28. Situs, Venue and Severability. The laws of the State of Colorado shall govern the

interpretation, validity, performance and enforcement of this Consulting Agreement. For the resolution of any dispute arising hereunder, venue shall be in the Courts of the County of Weld, State of Colorado. If any provision of this Consulting Agreement shall be held to be invalid or unenforceable, the validity and enforceability of the remaining provisions of this Consulting Agreement shall not be affected thereby.

29. Paragraph Headings. Paragraph headings are inserted for convenience only and in no way limit or define the interpretation to be placed upon this Consulting Agreement.

30. Binding Agreement. This Consulting Agreement shall be binding upon and for the benefit of the parties hereto, their successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this Consulting Agreement as of the day and year first-above written.

TOWN:

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
A.J. Krieger, Town Administrator

ATTEST:

By: _____
Nancy J. Parker, Town Clerk

CONSULTANT:

TISCHLERBISE, INC., a District of Columbia corporation

By: _____
L. Carson Bise, President

ATTEST:

By: _____
Julie Herlands, Secretary

EXHIBIT "A"

Request For Proposal (the "Project")

REQUEST FOR PROPOSAL (RFP)
Development Impact Fee Study

INTRODUCTION

The Town of Erie, Colorado (the "Town") is requesting proposals from qualified organizations to assist the Town in the preparation of a Development Impact Fee Study.

GENERAL INFORMATION

Erie is a rapidly growing community, with a current population of approximately 22,000, and is located approximately 25 miles north of Denver and 15 miles east of Boulder. More information about the Town can be obtained online at www.erieco.gov.

BACKGROUND

The Town's current impact fees for single family residential development are as follows:

- ☐ Parks Improvement - $2,165
- ☐ Public Facilities - $1,808
- ☐ Storm Drainage Facilities - $1,300
- ☐ Transportation - $1,678
- ☐ Tree - $300 (not included in scope of requested study)

The public facilities, storm drainage and transposition impact fees for nonresidential development are based on various calculation criteria, as described in the Town's Municipal Code. There are no parks improvement or tree impact fees for nonresidential development.

The most recent impact fee study for the parks improvement, public facilities and transportation impact fees was conducted in 1999. A fee study was prepared for storm drainage in 2001. The ordinance establishing the parks improvement, public facilities and transportation fees provided for indexing, but there has been no increase in these fees since 2002. There has been no increase in the storm drainage fee since 2002. The tree impact fee has been in place at the current amount since it was created in 1999, but it is uncertain how this fee was determined. The Municipal Code section addressing impact fees can be found in Code Section Title 2, Chapter 5 at the following web address: http://www.sterlingcodifiers.com/codebook/index.php?book_id=477. A copy of the relevant code sections is also attached to this RFP.

SCOPE OF SERVICES

The Scope of Services involves all necessary analyses and documentation to develop and support a comprehensive Development Impact Fee Program (for both residential and commercial development) that meets the requirements of the Town. Detail of the desired work is outlined in the Scope of Services to this RFP as Exhibit "A".

PROPOSAL FORMAT AND CONTENT

The Town is requesting a PDF version of the proposal, which must contain the following information:

1. Letter of Interest: Please include a letter expressing the Consultant's interest in being considered for the project. Include a statement regarding the Consultant's availability to dedicate time, personnel, and resources to this effort during the period of August 2015 to December 2015. The letter of interest must include a commitment to the availability of the Consultant and all key project staff during the planning period and a proposed schedule designed to meet the Town's deadline for the impact fee study which is outlined in Exhibit A.

2. Project Understanding and Approach: Please include a statement demonstrating your understanding of the proposed project and of the Town and describe your approach to completing the project successfully and within the proposed timeline.

3. Relevant Experience: Please include information describing the Consultant's experience with development impact fees. Please provide a minimum of 5 specific examples of the Consultant's relevant experience on development impact fees in Colorado. Please provide at least three references including phone number and/or email address of contacts.

4. Project Manager/Key Staff: Please include information about the specific relevant experience and billing rates for the proposed Project Manager and the Principal-in-Charge (if that person is different from the Project Manager) and all other applicable staff. A Project Manager must be designated and must be the principal contact for the Town. Information on the experience of the Project Manager (on similar projects) should also be provided.

5. Proposed Scope of Services: Please provide a Proposed Scope of Services, which is based on the scope of work contained in Exhibit A. Discuss any ideas for modifying, clarifying, or improving the Town's proposed scope of work so that the Town is able to implement a fair and effective development impact fee program that is able to fund its highest priority capital improvements for the Town.

6. Budget and Schedule: Based on the Proposed Scope of Services, please provide a detailed budget and schedule that meets the timeframe proposed by the Town. If your proposed schedule exceeds the proposed timeframe, please indicate the reasons why you believe additional time will be needed to complete the project.

SELECTION PROCESS

After receipt of the proposals, Town staff may send follow-up questions to submitting consultants. The final selection will be based upon the following criteria:

A. The Consultant Team's proposed scope of work, its demonstrated understanding of the proposed project and the Town, and its demonstrated ability to successfully complete the project in a timely manner.

B. The Consultant Team's past experience and results with similar projects, and the feedback received from reference checks made on the Consultant.

C. The quality and experience of the Project Manager and key staff persons who will be working on the project on a regular basis.

D. The Consultant Team's proposed fees and costs for the engagement and ability to deliver the proposed Scope of Services within their proposed schedule.

E. The Consultant Team's ability to meet the Town's standard contract and insurance requirements.

The Town will not discriminate against any interested firm or individual on the grounds of race, creed, color, sex, age, disability or national origin in the contract award. The Town reserves the right to reject all proposals, to request additional information concerning any proposal for purposes of clarification, to accept or negotiate any modification to any proposal following the deadline for receipt of all proposals, and to waive any irregularities if such would serve the best interests of the Town.

CONDITIONS OF REQUEST

A. General Conditions - The Town reserves the right to cancel or reject all, or a portion, or portions of this Request for Proposals without notice. Further, the Town makes no representations that any agreement will be awarded to any organization submitting a Proposal. The Town reserves the right to reject any and all Proposals submitted in response to this request or any addenda thereto. Any changes to the Proposal requirements will be made by written addendum sent by email.

B. Liability of Costs and Responsibility - The Town shall not be liable for any costs incurred in response to this request for Proposals. All costs shall be borne by the person or organization responding to the request. The person or organization responding to the request shall hold the Town harmless from any and all liability, claim or expense whatsoever incurred by or on behalf of that person or organization. All submitted material becomes the property of the Town. The selected organization will be required to assume responsibility for all services offered in the Proposal whether or not they possess them within their organization. The selected organization will be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the contract.

C. Permits and Licenses - The Consultant, at its sole expense, shall obtain and maintain during the term of any agreement, all appropriate permits, certificates and licenses which will be required in connection with the performance of services hereunder.

D. Consultant's Representative - The person signing the Proposal must be a legal representative of the firm authorized to bind the firm to an agreement in the event of the award.

ADMINISTRATIVE CONTACT

Any questions regarding contractual terms and conditions, proposal format, technical specifications, or Statement of Work requirements shall be directed in writing to:

Steve Felten
Finance Director
(303) 926-2751
sfelten@erieco.gov

DUE DATES

Proposals should be submitted via e-mail to Steve Felten. All Proposals are due by 4:00 P.M. (local time) on Friday, July 17, 2015. Any Proposal received after the required time and date specified for receipt shall be considered late and non-responsive. It is the responsibility of the Consultant to ensure that the Proposal is delivered by the time specified in this RFP.

Exhibit A
Scope of Service

The consultant shall determine the Town of Erie's development impact fees (both residential and commercial) based on the proposed facility requirements. Additionally, the consultant may suggest unique areas or separate zones where appropriate and necessary to identify opportunities for additional revenue to accommodate Town-wide growth. Fees shall be calculated to provide for facilities, equipment, infrastructure, and services needed to support growth based on forecasts of new development over a 10-year period. The proposed new impact fee analysis shall take into account existing fees, if any, and be compared to both (a) surrounding and (b) at least three comparable cities to ensure reasonableness, consistency, and feasibility.

The Consultant shall provide sufficient information and analysis upon which the Town may base the findings that there is a reasonable relationship (benefit and burden) between the type of development projects planned for the Town and the need for new or expanded facilities. To accomplish this, the Consultant shall:

a) Identify and clarify existing Town standards (including, but not limited to, reference to the Comprehensive Plan, Municipal Code, Annexation and Development Agreements, and interviews with Town staff) regarding the acceptable level of service for specific facilities.

b) Describe assumptions, and bases for assumptions, regarding existing level of service in the Town (compared to identified Town standards), including a description of the existing facilities and the existing number of non-residential square footages, residents served or equivalent benefit units (EBUs).

c) For the purpose of determining the level of service, the Consultant shall identify assumptions, and bases for assumptions, regarding the specific facilities to be constructed and the new development to be served.

d) Describe assumptions, and bases for assumptions, regarding the type of development projects planned for the Town, and the impact the new development projects in the Town would have upon the level of service for the existing facilities. This description would include a description of any varying impacts caused by residential development versus commercial and industrial development.

e) Describe whether new development in the Town will require additional facilities, and if so, include a description of the standards by which it was determined that additional facilities would be required, and a description of the additional facilities required.

f) Describe the impact upon level of service for the new development in the Town after the required additional facilities are constructed.

g) Describe how the new development in the Town would benefit from the additional facilities.

h) Prepare the estimated cost of providing the additional facilities.

i) Describe the basis, or bases, upon which the total estimated cost of providing the additional facilities would be allocated to each EBU in the Town.

j) Prepare a draft fee study report, documenting the overall methodology of the study, supporting justification, recommendations and other relevant information and documentation.

k) Based on input from Town staff, prepare a final fee study and present the results of the study to the Board of Trustees at a study session. The target date for this study session is November 17, 2015.

EXHIBIT "B"

(Services to be provided by Consultant)

(Payment Schedule and reimbursable expenses description and limit)

TischlerBise

FISCAL | ECONOMIC | PLANNING

Response to **Request for Proposal for Development Impact Fee Study**

July 17, 2015

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Section 1. Letter of Interest

June 18, 2015

RFP Coordinator: Steven Felten
Finance Director
Town of Erie
Phone: 303-926-2751
sfelten@erieco.gov

RE: Development Impact Fee Study

Dear Mr. Felten,

TischlerBise is pleased to submit the enclosed proposal to provide analysis of the Town of Erie Development Impact Fee Study. We feel that TischlerBise is ideally suited to undertake this project based on our extensive national and Colorado impact fee experience. There are several points we would like to note that make our qualifications unique:

1. **Depth of Experience.** TischlerBise is the nation's leading impact fee and infrastructure financing consulting firm. Our qualified professionals bring an unparalleled depth of experience to this assignment. **We have managed over 900 impact fee studies across the country – more than any other firm.** We are innovators in the field, pioneering approaches for credits, impact fees by size of housing unit, and distance-related/tiered impact fees. More importantly, a TischlerBise impact fee methodology has never been challenged in a court of law.

2. **Technical Knowledge of Land Use Planning and Local Government Finance.** The Town requires consulting expertise in the areas of land use planning and growth management in the State of Colorado, as well as in local government finance. **Many communities overlook the fact that impact fees are a land use regulation.** The TischlerBise team will apply years of impact fee experience within the context of overall Town financial needs, land use, and economic development policies. This will lead to a work product that is both defensible and that promotes equity. Principal-level staff—Carson Bise and Dwayne Guthrie—will be assigned to this project. Each are AICP and have worked with the Town of Erie on past assignments.

3. **Colorado Experience.** TischlerBise has conducted numerous impact fee studies in the State of Colorado, including current or recently completed impact fee work for the cities of Boulder, Evans, Fort Collins, Garfield County, Larimer County, Louisville, Longmont, Montezuma County and Thornton.

4. **Community Outreach.** An important component of a successful impact fee program is community support. Carson Bise and Dwayne Guthrie each have substantial experience developing and managing public outreach and community relations programs associated with impact fees and infrastructure finance.

5. **Responsiveness.** As a small firm, we have the flexibility and responsiveness to meet all deadlines of the Town's project. We are committed to fulfilling the Town's desired schedule for completion of the assignment(s) and will work closely with staff to identify required support.

6. **Staff Time Commitment.** To ensure an efficient project process, we anticipate that the Town's Project Manager(s) will coordinate responses to requests for information, coordinate review of work products, and help resolve policy issues. If there are delays on the part of the Town, we will contact the Town's Project Manager(s) immediately to get the project schedule back on track. We will keep the Town's Project Manager(s) informed of data or feedback we need to keep the project on schedule. In terms of time needed from Town staff, it is important to note that we typically do not request information that doesn't already exist. A good rule of thumb is that the time needed for meetings and compiling of data by individual departments is about 10-16 hours for the entire study. This includes review of work products. The Project Manager(s) are likely to devote more time than that.

Sincerely,

L. Carson Bise II, AICP, President
4701 Sangamore Road, Suite S240
Bethesda, MD 20816
Phone: 800-424-4318 Ext. 12
E-mail: carson@tischlerbise.com

Town of Erie

Development Impact Fee Study

Section 2. **Project Understanding and Approach**

Project Understanding

The Town of Erie seeks professional consulting services to conduct a study to update the Town's impact fee program for parks, public facilities, storm drainage, and transportation that meet the State of Colorado's requirements for impact fees. The selected consultant will document and forecast future growth, collect data on existing levels of service and growth-related capital facility needs, and determine the appropriate methodology for assessing impact fees on new residential and nonresidential development.

Project Considerations

TischlerBise considers the information provided in this section of the proposal to be proprietary and therefore requests that the information in this section remain confidential and separate from any Freedom of Information Act requests.

Project Approach

Each community is different, each fee category is different, and TischlerBise compares alternative methodologies to maximize revenues for our clients.

GIS Technology. TischlerBise routinely utilizes GIS technology to add value to the evaluation of infrastructure needs and to assess financing alternatives. This includes assessing existing land use, performing a GIS-based land suitability analyses that can be used to define service areas, projecting demands for facilities, and coordinating investment for Erie.

Lending a Sense of Market Reality to the Development Projections. Projecting future residential and nonresidential development is more difficult now than in the past due to the recent economic downturn. This is compounded by shifting trends in the housing market as a result of changing demographics and lifestyle choices. Changes in the retail sector combined with existing surpluses of retail space in many communities are also a concern. **TischlerBise's extensive national experience conducting market analysis and real estate feasibility studies is invaluable in determining the appropriate development projections used in the impact fee calculations.** These projections include both the amount of development and the geographic location. Depending on the methodology employed, overly optimistic development projections can increase The Town's financial exposure, if impact fee revenue is less than expected.

Public Outreach. The importance of public outreach when considering impact fees and infrastructure funding options should not be overlooked. Based upon our experience with impact fees and infrastructure funding efforts across the country, we anticipate that this study may attract controversy, especially given

the recent economic climate. Therefore, it is important to build a coalition of support early in the process, to educate and inform the public and other key stakeholders about the purpose of the study, and to explain how it will benefit both key constituents (developers) and the general public. It is critical to develop a communications strategy that will offset and correct any misinformation that might proliferate, and to provide a clear and compelling logic for public adoption of an impact fee program. Our seasoned Project Team has actively participated in legislative body meetings and citizen committees to educate stakeholders regarding the technical process of impact fee calculations as well as the pros and cons of impact fees, particularly during challenging economic times.

Section 3. Relevant Experience

TischlerBise, Inc., was founded in 1977 as Tischler, Montasser & Associates. The firm became Tischler & Associates, Inc., in 1980 and TischlerBise, Inc., in 2005. The firm is a Subchapter (S) corporation, is incorporated in Washington, D.C., and maintains offices in Bethesda, Maryland and Bradenton, Florida. The firm's legal address is:

Principal Office
L. Carson Bise, AICP, President
4701 Sangamore Rd, Suite 240
Bethesda, MD 20816
301.320.6900 x12 (w) | 301.320.4860 (f)
carson@tischlerbise.com

Florida Office
Dwayne Guthrie, AICP, Principal
606 3rd Avenue #304
Bradenton, FL 34205

TischlerBise is a fiscal, economic, and planning consulting firm specializing in fiscal/economic impact analysis, impact fees, market feasibility, infrastructure financing studies and related revenue strategies. Our firm has been providing consulting services to public agencies for over thirty years. In this time, we have prepared over **800 fiscal/economic impact evaluations and over 900 impact fee/infrastructure financing studies** – more than any other firm. Through our detailed approach, proven methodology, and comprehensive product, we have established TischlerBise as the leading national expert on revenue enhancement and cost of growth strategies. The graphic depicts our vast fiscal/economic impact experience with clients nationwide.

Colorado Experience

An important factor to consider related to this work effort is our relevant experience working in the State of Colorado, which makes us intimately familiar with local government revenue structures as well as the

planning and growth management issues facing the Town of Erie. The following table summarizes TischlerBise's vast impact fee experience in the State of Colorado.

CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government
Arapahoe County		◆									
Boulder		◆				◆	◆	◆	◆	◆	◆
Castle Rock		◆			◆	◆	◆	◆	◆		◆
Colorado Springs		◆									
Eaton			◆	◆		◆		◆	◆		◆
Erie		◆				◆		◆	◆		◆
Evans		◆	◆	◆		◆	◆	◆	◆		
Fort Collins		◆									
Garfield County		◆									
Greeley		◆	◆				◆	◆			
Johnstown		◆				◆	◆	◆	◆	◆	◆
Larimer County		◆									
Longmont		◆					◆				◆
Louisville	◆	◆				◆		◆	◆	◆	◆
Montezuma County		◆									
Pitkin County		◆									
Pueblo		◆									
Steamboat Springs						◆	◆	◆	◆		◆
Thornton		◆				◆	◆	◆	◆		◆
Vail		◆									

National Experience

TischlerBise is the national leader in impact fee calculations, having prepared over 900 impact fee evaluations nationwide. Our widespread national experience has enabled us to stay ahead of the latest approaches and impact fee trends. TischlerBise staff members are frequently called upon to speak on impact fees for various national groups and organizations including the American Planning Association, the National Association of Homebuilders, the National Impact Fee Roundtable, the Urban Land Institute and the Government Finance Officers Association. While every community is unique, this national experience provides invaluable perspective for our clients. The table below illustrates our vast national impact fee experience over the past ten years.

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
AL	Baldwin County		◆							◆				◆
AL	Daphne		◆					◆	◆	◆				
AL	Fairhope		◆					◆	◆	◆		◆		
AL	Foley		◆					◆	◆	◆				
AL	Gulf Shores		◆					◆	◆	◆				
AL	Orange Beach		◆					◆	◆	◆		◆		
AR	Bentonville			◆	◆			◆	◆	◆		◆		
AR	Siloam Springs		◆	◆	◆			◆	◆	◆				
AZ	Apache County	◆												
AZ	Apache Junction		◆					◆	◆	◆		◆	◆	
AZ	Avondale		◆	◆	◆			◆	◆	◆		◆	◆	
AZ	Buckeye		◆	◆	◆			◆		◆		◆	◆	
AZ	Bullhead City		◆					◆		◆			◆	
AZ	Camp Verde	◆						◆		◆		◆	◆	
AZ	Carefree	◆	◆		◆						◆		◆	
AZ	Casa Grande		◆	◆				◆	◆	◆		◆	◆	
AZ	Cave Creek		◆	◆	◆					◆	◆		◆	
AZ	Cochise County	◆												
AZ	Coolidge		◆	◆			◆	◆	◆	◆			◆	
AZ	Dewey-Humboldt		◆					◆	◆	◆		◆	◆	
AZ	El Mirage			◆	◆			◆	◆	◆			◆	
AZ	Eloy			◆	◆			◆		◆		◆	◆	
AZ	Flagstaff	◆	◆					◆	◆	◆		◆	◆	
AZ	Gilbert		◆		◆			◆	◆			◆		
AZ	Glendale			◆	◆	◆		◆	◆	◆		◆	◆	
AZ	Goodyear		◆	◆	◆			◆	◆	◆		◆		
AZ	Holbrook			◆	◆		◆							
AZ	Lake Havasu City		◆											
AZ	Maricopa	◆	◆					◆	◆	◆	◆	◆	◆	
AZ	Navajo County	◆	◆						◆					
AZ	Northwest Fire District								◆					
AZ	Peoria	◆	◆					◆	◆	◆	◆	◆	◆	
AZ	Phoenix		◆				◆	◆	◆	◆	◆	◆		
AZ	Pinal County	◆	◆					◆		◆				
AZ	Pinetop-Lakeside		◆					◆		◆	◆		◆	
AZ	Prescott	◆												
AZ	Queen Creek		◆	◆	◆			◆	◆		◆	◆	◆	
AZ	Safford			◆	◆									

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
AZ	San Luis		◆	◆	◆	◆		◆	◆	◆				
AZ	Scottsdale			◆	◆									
AZ	Sedona		◆			◆		◆		◆			◆	
AZ	Show Low	◆	◆	◆	◆			◆		◆		◆		
AZ	Sierra Vista		◆					◆	◆	◆	◆	◆		
AZ	Somerton		◆	◆	◆	◆		◆	◆	◆				
AZ	Springerville	◆		◆	◆									
AZ	Surprise		◆	◆	◆			◆	◆	◆		◆	◆	
AZ	Taylor	◆	◆					◆	◆	◆			◆	
AZ	Tolleson	◆	◆	◆	◆	◆		◆	◆				◆	
AZ	Tucson		◆											
AZ	Wellton		◆	◆	◆	◆		◆	◆	◆				
AZ	Yuma		◆	◆		◆		◆	◆	◆	◆		◆	
CA	Avenal		◆	◆		◆	◆	◆	◆	◆		◆		
CA	Banning		◆					◆	◆	◆			◆	
CA	Butte County		◆					◆	◆			◆	◆	
CA	Chino Hills		◆	◆		◆				◆				
CA	Clovis			◆										
CA	Corcoran			◆	◆			◆		◆			◆	
CA	El Centro							◆	◆	◆		◆	◆	
CA	Grass Valley		◆	◆	◆	◆		◆	◆	◆			◆	
CA	Half Moon Bay		◆	◆				◆		◆	◆			
CA	Hemet		◆			◆		◆	◆	◆	◆	◆	◆	
CA	Imperial County	◆												
CA	Maywood	◆												
CA	National City							◆	◆	◆		◆		
CA	Rancho Cucamonga									◆				
CA	Suisun City		◆							◆			◆	
CA	Temecula		◆	◆	◆			◆		◆	◆	◆	◆	
CA	Tulare		◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	
CA	Visalia									◆		◆	◆	
CO	Arapahoe County		◆											
CO	Boulder		◆					◆	◆	◆	◆	◆		
CO	Castle Rock		◆			◆		◆	◆	◆	◆		◆	
CO	Colorado Springs		◆											
CO	Eaton			◆	◆			◆		◆	◆		◆	
CO	Erie		◆					◆		◆	◆		◆	
CO	Evans		◆											

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
CO	Garfield County		◆											
CO	Greeley		◆	◆					◆	◆				
CO	Johnstown		◆					◆	◆	◆	◆	◆	◆	
CO	Longmont		◆						◆				◆	
CO	Louisville	◆	◆					◆		◆	◆	◆	◆	
CO	Montezuma County		◆											
CO	Pitkin County		◆											
CO	Pueblo		◆											
CO	Steamboat Springs							◆	◆	◆	◆		◆	
CO	Thornton		◆			◆		◆	◆	◆			◆	
CO	Vail		◆											
DE	Appoquinimink Schools													◆
DE	New Castle County			◆				◆	◆	◆		◆	◆	
DE	State of Delaware		◆					◆	◆					◆
FL	Coral Gables		◆	◆				◆	◆	◆			◆	
FL	Deerfield Beach							◆	◆					
FL	DeSoto County	◆	◆						◆	◆		◆	◆	
FL	DeSoto County Schools													◆
FL	Key Biscayne	◆												
FL	Lake Wales			◆	◆			◆	◆	◆		◆		
FL	Manatee County		◆					◆	◆	◆			◆	
FL	Manatee County Schools													◆
FL	Miami	◆						◆	◆	◆	◆		◆	◆
FL	Naples	◆												
FL	North Miami	◆		◆	◆			◆	◆	◆	◆	◆	◆	
FL	Parkland							◆		◆				
FL	Pasco County School Board													◆
FL	Plant City											◆		
FL	Polk County							◆		◆				
FL	Port St. Lucie									◆			◆	
FL	Punta Gorda		◆					◆	◆	◆		◆	◆	
FL	Seminole County Schools													◆
FL	Stuart		◆					◆	◆	◆			◆	
FL	Sunny Isles Beach							◆		◆			◆	
FL	West Miami			◆				◆		◆			◆	
GA	Atlanta		◆					◆	◆	◆		◆	◆	
GA	Calhoun	◆												
GA	Douglas County	◆	◆					◆	◆	◆		◆		

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
GA	Douglasville	◆	◆					◆		◆				
GA	Effingham County		◆	◆	◆			◆		◆		◆		
GA	Gordon County	◆							◆	◆		◆		
GA	Henry County		◆											
GA	Roswell		◆						◆	◆				
IA	West Des Moines									◆				
ID	Caldwell	◆												
ID	Canyon County	◆												
ID	Hailey		◆	◆	◆			◆	◆	◆	◆	◆	◆	
ID	Hayden		◆					◆		◆				
ID	Kellogg			◆				◆		◆				
ID	Kootenai County Fire & Rescue								◆					
ID	Nampa	◆	◆	◆	◆			◆	◆	◆	◆			
ID	Post Falls	◆	◆					◆		◆				
ID	Sandpoint		◆						◆	◆	◆			
ID	Shoshone Fire District								◆					
ID	Victor		◆					◆	◆	◆				
IL	Evanston	◆	◆		◆					◆		◆		
LA	Covington			◆	◆									
MD	Anne Arundel		◆											◆
MD	Brunswick							◆		◆			◆	
MD	Calvert County		◆					◆	◆					◆
MD	Caroline County													◆
MD	Carroll County					◆			◆	◆		◆	◆	◆
MD	Cecil County		◆					◆	◆				◆	
MD	Charles County		◆							◆				◆
MD	Dorchester County	◆						◆						◆
MD	Easton	◆	◆					◆	◆	◆			◆	
MD	Frederick		◆											
MD	Frederick County		◆					◆	◆	◆		◆	◆	◆
MD	Hagerstown		◆					◆		◆			◆	
MD	Hampstead				◆			◆		◆				
MD	Harford County	◆												
MD	Ocean City	◆												
MD	Queen Anne's County	◆						◆	◆	◆	◆	◆	◆	◆
MD	Salisbury	◆	◆	◆	◆			◆	◆	◆	◆		◆	
MD	Snow Hill	◆						◆	◆	◆			◆	

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
MD	Talbot	◆	◆							◆		◆	◆	◆
MD	Washington County							◆						◆
MD	Westminster		◆		◆					◆			◆	◆
MD	Wicomico		◆											◆
MD	Worcester					◆				◆		◆	◆	◆
MN	Woodbury			◆	◆	◆								
MO	Nixa			◆	◆			◆		◆			◆	
MO	Nixa Fire Protection District								◆					
MS	Madison							◆	◆	◆	◆			
MT	Belgrade	◆	◆	◆	◆				◆	◆				
MT	Big Sky			◆										
MT	Bozeman		◆	◆	◆				◆					
MT	Corvallis School District													◆
MT	Flathead County		◆						◆					
MT	Florence School District													◆
MT	Gallatin County	◆	◆						◆					
MT	Gallatin County Fire Districts								◆					
MT	Great Falls	◆												
MT	Madison	◆												
MT	Manhattan			◆	◆									
MT	Missoula							◆	◆	◆	◆		◆	
MT	Missoula County							◆	◆	◆				
MT	Polson			◆	◆					◆				
MT	Ravalli	◆												
NC	Cabarrus County													◆
NC	Camden County													◆
NC	Catawba County													◆
NC	Chatham County													◆
NC	Creedmoor			◆	◆									
NC	Currituck County													◆
NC	Durham													◆
NC	Greenville		◆						◆	◆				
NC	Jacksonville	◆		◆	◆									
NC	Nags Head							◆		◆			◆	
NC	Orange County									◆	◆			◆
NC	Pasquotank													◆
ND	Minot											◆	◆	
NE	Lincoln		◆	◆	◆					◆				

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
NM	Albuquerque		◆					◆	◆	◆				
NM	Las Cruces			◆	◆									
NV	North Las Vegas	◆							◆					
NV	Nye County		◆			◆		◆	◆	◆				
NV	Washoe County		◆											
OH	Delaware							◆	◆	◆			◆	
OH	Lebanon		◆							◆				
OH	Pickerington	◆	◆					◆		◆			◆	
OH	Sunbury							◆					◆	
OK	Edmond			◆	◆									
RI	East Greenwich								◆	◆	◆		◆	◆
RI	Middletown			◆				◆	◆	◆			◆	◆
SC	Aiken		◆				◆	◆	◆	◆				
SC	Anderson County		◆											
SC	Georgetown County		◆					◆				◆		
SC	Horry County	◆						◆	◆	◆	◆	◆		
SC	Richland County		◆											
SC	Summerville								◆	◆			◆	
UT	American Fork	◆	◆	◆						◆				
UT	Brigham City	◆												
UT	Clearfield	◆		◆	◆	◆				◆				
UT	Clinton City		◆	◆	◆	◆			◆	◆	◆			
UT	Draper		◆		◆	◆			◆	◆	◆			
UT	Farmington		◆	◆	◆	◆		◆	◆	◆	◆			
UT	Hyde Park		◆	◆	◆					◆				
UT	Kaysville		◆	◆						◆				
UT	Logan	◆	◆	◆	◆	◆		◆		◆	◆			
UT	Mapleton			◆	◆	◆			◆	◆	◆			
UT	North Logan	◆	◆	◆	◆					◆	◆			
UT	Pleasant Grove	◆	◆	◆	◆			◆	◆	◆				
UT	Salt Lake County					◆				◆				
UT	Sandy City		◆			◆		◆	◆		◆			
UT	South Valley Sewer District	◆		◆										
UT	Spanish Fork	◆		◆	◆	◆				◆				
UT	Springville									◆				
UT	Wellsville		◆	◆	◆				◆	◆				
UT	West Jordan		◆	◆	◆	◆		◆	◆	◆				
UT	Woods Cross	◆		◆	◆					◆				

STATE	CLIENT	Feasibility Analysis	Roads/Transportation	Sewer	Water	Stormwater	Solid Waste	Law Enforcement	Fire/EMS	Parks and Recreation	Trails/Open Space	Libraries	General Government	Schools
VA	Chesterfield County		◆						◆	◆		◆		◆
VA	Goochland County		◆											
VA	Henrico County		◆							◆		◆		◆
VA	Isle of Wight County								◆	◆				◆
VA	Prince George County							◆	◆	◆		◆	◆	◆
VA	Prince William County		◆											
VA	Spotsylvania County		◆											
VA	Stafford County		◆											
VA	Suffolk			◆	◆									
VA	Sussex County	◆												
WI	Eau Claire		◆	◆	◆	◆				◆				
WV	Jefferson County							◆	◆	◆			◆	◆
WY	Casper	◆	◆						◆	◆				
WY	Pinedale	◆		◆	◆				◆	◆	◆		◆	
WY	Teton County		◆											

References

The following project descriptions demonstrate our recent and vast experience with assignments similar to the scope of services required by Erie. Please note that all projects were managed and completed by TischlerBise.

Arapahoe County, Colorado – *Rural Road Funding Strategy and Impact Fee; Mitigating Road Impacts from Energy Production Report*

Project Contact: Bryan Weimer, Transportation Division Manager
Phone: (720) 874-6500
E-mail: bweimer@co.arapahoe.co.us
Date of Performance: 2005 and 2012

As part of our contract to prepare rural transportation impact fees and evaluate rural transportation maintenance options, TischlerBise was asked to prepare a report on the mitigating road impacts from energy production. Our analysis and recommendations were focused on two major policy tracks. First, we analyzed mitigation efforts to avoid doing harm to the people, environment, and fiscal health of Arapahoe County. The second major policy option evaluated was alternative ways to raise revenue to be used for transportation and the common good of people living and working in Arapahoe County.

City of Boulder, Colorado – *Impact Fee Study*
Project Contact: Susan Richstone, Senior Planner
Phone: (303) 441-3271
E-mail: richstones@bouldercolorado.gov
Date of Performance: 1996 and 2008
TischlerBise Staff: Carson Bise, Julie Herlands

TischlerBise was retained by the City of Boulder in 2008 to review and update our original 1996 impact fee study for fire/rescue, parks, trails, police, general government and libraries. In addition, TischlerBise updated our original 1996 Transportation Excise Tax methodology, which required voter approval. In our 2008 update, TischlerBise prepared the impact fees and excise tax using progressive housing multipliers (i.e. the fee increases with the size of the dwelling unit). The primary reason for this approach was to promote housing affordability. Because any change to the City's current Transportation Excise Tax required another referendum, TischlerBise worked with a citizen/developer Liaison Committee throughout the study process.

The City of Boulder also contracted with TischlerBise to prepare a transportation maintenance fee methodology. The establishment of a transportation maintenance fee to address transportation needs not only allows a jurisdiction to address the funding of capital improvements but also provides revenue to cover the cost of operations and administration. Maintenance fees may address all aspects of capital costs including debt service, operations, maintenance, and repair and replacement of facilities. Unlike impact fees that are imposed on new development, maintenance fee revenue is generated from all development, existing and new. This stable revenue stream can support the issuance of bonds backed by the anticipated utility revenue.

City of Evans, Colorado – *Modified Transportation Impact Fees*
Project Contact: Sheryl Trent, Economic Development Director
Phone: (970) 475-1112
E-mail: strent@evanscolorado.gov
Date of Performance: 2005 and 2015

The City of Evans is affected by growth in Denver, Greeley, and Loveland. TischlerBise was hired to modify the City's existing street impact fees based on a new transportation study. One of the City's objectives was to evaluate the perception that impact fees currently imposed on nonresidential development were disproportionately high. In the new impact fee, TischlerBise added the average trip length adjustments by type of development, which reduced the nonresidential impact fees.

An innovative feature in this study was a projected cash flow analysis that provided five different options for funding the City's transportation plan. Funding options varied the mix of revenue from street impact fees, State and County Highway funds and a street user charge. The latter funding option would be a new source of revenue for the City of Evans, requiring transportation services to be provided as an enterprise

operation. Several western states have successfully implemented transportation utilities and their use has withstood a court challenge in Colorado.

City of Louisville, Colorado – *Impact Fee Study*
Project Contact: Troy Russ, Planning Director
Phone: (303) 335-4590 (Russ)
E-mail: troyr@louisvilleco.gov
Dates of Performance: 2005 and 2010

TischlerBise was retained on two occasions to prepare impact fees for this suburban Denver community. Over time, the impact fee methodologies have evolved to reflect the City moving from "greenfield" development to approaching residential build out within the next 10-15 years. Although residential development opportunities are limited, nonresidential development potential is still quite prevalent.

Pitkin County, Colorado – *Transportation Impact Fee and Funding Strategy*
Project Contact: Brian Pettet, Public Works Director
Phone: (970) 920-5392
E-mail: brian.pettet@co.pitkin.co.us
Date of Performance: 2008/2009

Working under the urgency of a growth moratorium, **TischlerBise helped Pitkin County select a transportation funding strategy which included transportation impact fees.** Pitkin County was facing a fiscal crisis regarding transportation funding due to a recent decision by voters to not extend a Use Tax that provided approximately $2 million per year for transportation projects. The funding strategy for transportation capital costs is shown in the diagram below. **TischlerBise recommended a combination of development exactions, one-time impact fees and on-going utility charges** (as shown by the boldface type). If Pitkin County chose not to implement a transportation utility, the alternative approach would be General Fund taxes and possible area-specific assessments or improvement districts.

A unique aspect of the Pitkin County transportation impact fee is the use of size thresholds for residential development. TischlerBise worked with County staff and a Denver-area engineering firm to establish trip generation rates for small, medium and large size residential units. Given the topography and travel patterns in this mountainous area, it was possible to obtain traffic counts and housing unit data for traffic sheds where all vehicle trips pass through one outlet point. The average daily trip ends and proposed transportation impact fees are shown in the following table.

Square Feet of Residential Unit	*Average Daily Trip Ends*	*Fee Per Residential Unit*
Large (4,000 SF or more)	14.70	$7,818
Medium (2,000 - 3,999 SF)	10.65	$5,664
Small (less than 2,000 SF)	6.59	$3,505

Town of Vail, Colorado – *Multi-Modal Transportation Impact Fee Study*

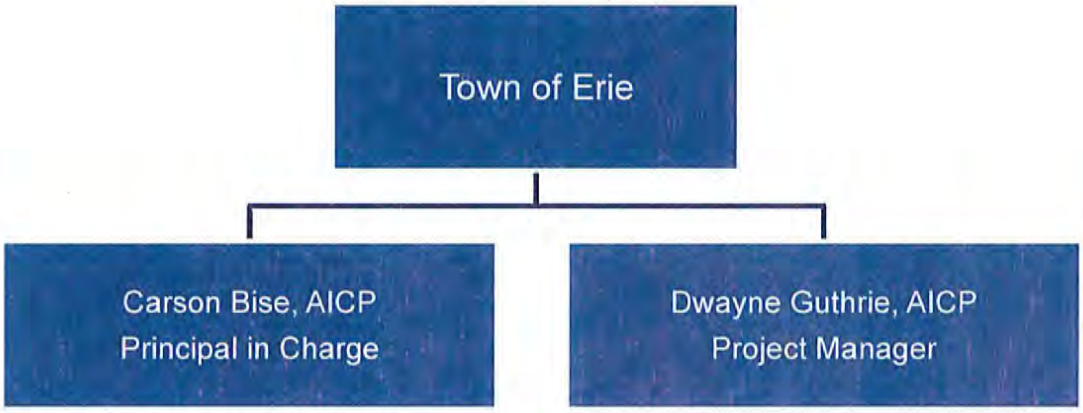
Project Contact: Tom Kassmel, P.E., Town Engineer
Phone: (970) 479-2158
E-mail: tkassmel@vailgov.com
Project Manager: Dwayne Guthrie

TischlerBise recently completed an assignment for the Town of Vail, Colorado to prepare a transportation impact fee that includes unique multi-modal improvements. Natural containment of the urbanized area by the surrounding mountains has helped Vail become an attractive resort community with a walkable urban core area. In recognition of this development pattern, proposed impact fees are lower in the core area. Fee amounts are based on planned improvements such as a shared parking structure with integrated transit centers and complete-street concepts (i.e., pedestrian, bike, and bus facilities).

Section 4. **Project Personnel**

Project Team Overview

Our proposed Project Team of Carson Bise, AICP and Dwayne Guthrie, Ph.D., has unsurpassed experience performing projects requiring the same expertise as that needed to serve the Town of Erie. Our Project Team brings over 70 years of impact fee calculation, infrastructure finance, demographic and market analysis, and implementation experience to the Town's assignment. In summary, each of our Project Team are considered national thought leaders in the areas of impact fees, exactions, infrastructure finance, impact fee program administration, and implementation. The organizational chart below shows our project team for this assignment.



Carson Bise, AICP, President of TischlerBise, will serve as Principal in Charge and coordinate our project team's interaction with the Town to ensure that all work is completed properly, on time, and within budget. He will work closely with all team members, developing and reviewing all aspects of the project and providing overall quality assurance for the project. He will also have a major role in all aspects of the project. **His recent and current Colorado impact fee assignments include Castle Rock, Boulder, Evans, Fort Collins, Larimer County, Longmont, Louisville, and Thornton.**

Dwayne Guthrie, Ph.D., AICP, Principal at TischlerBise, has been selected as Project Manager for this assignment due to his substantial experience preparing impact fees as well as his previous work experience for the Town of Erie, and his strong project management skills. Dr. Guthrie will be responsible for controlling the work in progress, providing feedback to project team members and staff, and meeting the technical requirements of the project. **Dr. Guthrie's Colorado clients include Erie, Johnstown, Arapahoe County, Fort Collins, Garfield County, Larimer County, Montezuma County, Pitkin County and Thornton.**

Project Team Resumes

L. Carson Bise, II, AICP, President

Mr. Bise has 23 years of fiscal, economic and planning experience, and **has conducted fiscal and infrastructure finance evaluations in over 35 states.** Mr. Bise is a leading national figure in the calculation of impact fees, having completed over 200 impact fees for the following categories: parks and recreation, open space, police, fire, schools, water, sewer, roads, municipal power, and general government facilities. In his seven years as a planner at the local government level he coordinated Capital Improvement Plans, conducted market analyses and business development strategies, and developed comprehensive plans. Mr. Bise has also written and lectured extensively on fiscal impact analysis and infrastructure financing. His most recent publications are *Next Generation Transportation Impact Fees* and *Fiscal Impact Analysis: Methodologies for Planners* published by the American Planning Association, a chapter on fiscal impact analysis in the book *Planning and Urban Design Standards* also published by the American Planning Association, and the ICMA IQ Report, *Fiscal Impact Analysis: How Today's Decisions Affect Tomorrow's Budgets*. Mr. Bise was also the principal author of the fiscal impact analysis component for the Atlanta Regional Commission's Smart Growth Toolkit and is featured in the recently released AICP CD-ROM Training Package entitled *The Economics of Density*. Mr. Bise is currently on the Board of Directors of the Growth and Infrastructure Finance Consortium and **recently Chaired the American Planning Association's Paying for Growth Task Force. He was also recently named an Affiliate of the National Center for Smart Growth Research & Education.**

SELECTED IMPACT FEE AND INFRASTRUCTURE FUNDING STRATEGY EXPERIENCE

- City of Daphne, Alabama – *Impact Fee Study*
- City of Foley, Alabama – *Impact Fee Study*
- City of Gulf Shores, Alabama – *Impact Fee Study*
- City of Orange Beach, Alabama – *Impact Fee Study*
- City of Apache Junction, Arizona – *Impact Fee Study*
- Town of Camp Verde, Arizona – *Impact Fee Study*
- City of Eloy, Arizona – *Impact Fee Study*
- City of Siloam Springs, Arkansas – *Impact Fee Study*
- City of Avenal, California – *Impact Fee Study*
- City of Banning, California – *Impact Fee Study*
- City of National City, California – *Impact Fee Study*
- City of Temecula, California – *Impact Fee Study*
- City of Tulare, California – *Impact Fee Study*
- City of Boulder, Colorado – *Impact Fee/Excise Tax Study*
- Town of Castle Rock, Colorado – *Impact Fee Study*
- City of Evans, Colorado – *Impact Fee Study*
- City of Greeley, Colorado – *Impact Fee Study*
- City of Longmont, Colorado – *Impact Fee Study*
- City of Louisville, Colorado – *Impact Fee Study*
- City of Steamboat Springs, Colorado – *Impact Fee Study*

- City of Thornton, Colorado – *Impact Fee Study*
- Town of Vail, Colorado – *Impact Fee Study*
- DeSoto County, Florida – *Impact Fee Study*
- Manatee County, Florida – *Impact Fee Study*
- City of North Miami, Florida – *Impact Fee Study*
- Pasco County, Florida – *School Impact Fee Study*
- Polk County, Florida – *Impact Fee Study*
- City of Punta Gorda, Florida – *Impact Fee Study*
- Seminole County, Florida – *School Impact Fee and Infrastructure Financing Study*
- Anne Arundel County, Maryland – *Revenue Strategies*
- Calvert County, Maryland – *Impact Fee Study*
- Caroline County, Maryland – *Schools Excise Tax Study*
- Carroll County, Maryland – *Impact Fee Study*
- Charles County, Maryland – *Impact Fee Study*
- Dorchester County, Maryland – *Impact Fee Study*
- Town of Easton, Maryland – *Impact Fee Study*
- City of Hagerstown, Maryland – *Impact Fee Study*
- Town of Hampstead, Maryland – *Impact Fee Study*
- City of Salisbury, Maryland – *Impact Fee Study*
- Talbot County, Maryland – *Impact Fee Study*
- Washington County, Maryland – *Impact Fee Study*
- Wicomico County, Maryland – *Impact Fee Study*
- Worcester County, Maryland – *Impact Fee Study*
- Broadwater County, Montana – *Impact Fee Feasibility Study*
- Flathead County, Montana – *Impact Fee Feasibility Study and Impact Fee Study*
- Florence-Carlton School District, Montana – *Impact Fee Study*
- Gallatin Canyon/Big Sky, Montana – *Capital Improvement and Funding Plan*
- City of Great Falls, Montana – *Impact Fee Feasibility Study*
- City of Laurel, Montana – *Impact Fee Feasibility Study*
- City of Missoula/Missoula County, Montana – *Impact Fee Study and Capital Facility Plan*
- City of North Las Vegas, Nevada – *Impact Fee Study*
- Nye County/Town of Pahrump, Nevada – *Impact Fee Study*
- City of Las Cruces, New Mexico – *Water and Sewer Impact Fee Study*
- Cabarrus County, North Carolina – *Voluntary Mitigation Payment Studies (Two School Districts)*
- City of Greenville, North Carolina – *Impact Fee Study*
- Abbeville County, South Carolina – *Infrastructure Funding Strategy*
- Beaufort County, South Carolina – *Infrastructure Funding Strategy*
- Clinton City, Utah – *Impact Fee Study*
- Draper City, Utah – *Impact Fee Study*
- Farmington City, Utah – *Impact Fee Study*
- Logan City, Utah – *Impact Fee Study*
- Mapleton City, Utah – *Impact Fee Study*
- City of Spanish Fork, Utah – *Impact Fee Study*

- City of West Jordan, Utah – *Impact Fee Study*
- Goochland County, Virginia – *Cash Proffer Study*
- Henrico County, Virginia – *Impact Fee Study; Cash Proffer Study*
- Prince George County, Virginia – *Cash Proffer Study*
- Prince William County, Virginia – *Impact Fee Study*
- Spotsylvania County, Virginia – *Impact Fee Study*
- Stafford County, Virginia – *Impact Fee Study*
- Sussex County, Virginia – *Cash Proffer Study*

EDUCATION

M.B.A., Economics, Shenandoah University

B.S., Geography/Urban Planning, East Tennessee State University

B.S., Political Science/Urban Studies, East Tennessee State University

PUBLICATIONS

- "Next Generation Transportation Impact Fees," American Planning Association, Planners Advisory Service.
- "Fiscal Impact Analysis: Methodologies for Planners," American Planning Association.
- "Planning and Urban Design Standards," American Planning Association, Contributing Author on Fiscal Impact Analysis.
- "Fiscal Impact Analysis: How Today's Decisions Affect Tomorrow's Budgets," ICMA Press.
- "The Cost/Contribution of Residential Development," Mid-Atlantic Builder.
- "Are Subsidies Worth It?" Economic Development News & Views.
- "Smart Growth and Fiscal Realities," ICMA Getting Smart! Newsletter.
- "The Economics of Density," AICP Training Series, 2005, Training CD-ROM (American Planning Association).

Dwayne Guthrie PhD, AICP, Principal

Dr. Guthrie has 32 years of experience as a professional planner working primarily in the areas of impact fees, demographic analysis, infrastructure funding, fiscal evaluations and transportation planning. His career includes 23 years of work as a planning consultant and eight years of public sector experience. At TischlerBise, Dr. Guthrie is the impact fee team leader with over 380 studies completed for approximately 120 jurisdictions in 25 states/provinces. Dr. Guthrie has also served as an expert witness on the topic of impact fees.

As a planning practitioner, Dr. Guthrie promotes smart growth through revenue strategies and pricing policies. By helping communities implement development impact fees, local governments create a nexus between private sector development and the demand for public facilities. Rather than subsidize growth with general tax revenues, Dr. Guthrie works to ensure designated funding for infrastructure that also helps to minimize externalities like traffic congestion. He has pioneered innovative methods for tabulating census data to support higher fees for larger housing units and reducing fees for infill development located in urban centers.

Dr. Guthrie also recently taught graduate planning courses at local universities including Growth Management at the Alexandria campus of Virginia Tech and Planning Techniques at Catholic University of America. His doctoral dissertation, titled "*Understanding Urban, Metropolitan, and Megaregion Development to Improve Transportation Governance*", documents the expected geographic extent of commuter sheds in 2030 for large metropolitan areas within the continental United States. Commuter sheds provide a viable refinement to current statistical area designations and solve problems due to inconsistent and fragmented MPO boundaries. Nine transportation megaregions are proposed based on specific criteria including global gateways that facilitate movement of people and goods, contiguous commuter sheds with urban centers spaced a suitable distance for high-speed rail service, and end-point commuter sheds projected to add at least one million persons and jobs from 2000 to 2030. The dissertation recommends a new paradigm for transportation governance with scale-dependent decision-making and funding strategies.

SELECTED IMPACT FEE AND INFRASTRUCTURE FUNDING STRATEGY EXPERIENCE

- Baldwin County, Alabama – *Impact Fee Study*
- City of Foley, Alabama – *Impact Fee Study*
- Apache Junction Water Company, Arizona – *Water System Connection Fees*
- City of Avondale, Arizona – *Development Impact Fees*
- City of Casa Grande, Arizona – *Development Impact Fees*
- City of Glendale, Arizona – *Development* Impact Fees
- City of Goodyear, Arizona – *Development Impact Fees*
- City of Goodyear, Arizona – *Water Resources Fee*
- City of Peoria, Arizona – *Development Impact Fees*
- City of Prescott, Arizona – *Feasibility of Development Impact Fees for Roads*
- Town of Queen Creek, Arizona – *Development Impact Fees*
- City of Scottsdale, Arizona – *Development Impact Fees*
- Cityof Show Low, Arizona – *Development Impact Fees*
- City of Surprise, Arizona – *Development Impact Fees*
- City of Tolleson, Arizona – *Development Impact Fees*
- Cityof Bentonville, Arkansas – *Development Impact Fees*
- City of Chino Hills, California – *Development Impact Fees*
- City of Clovis, California – *Sewer Impact Fee*
- City of Temecula, California – *Development Impact Fee*
- City of Tulare, California – *Development Impact Fee*
- Arapahoe County, Colorado – *Rural Road Funding Strategy*
- City of Boulder, Colorado – *Development Excise Taxes*
- Town of Castle Rock, Colorado – *Development Impact Fees and Evaluation of Douglas County School Fees*
- Town of Erie, Colorado – *Development Impact Fees*
- City of Evans, Colorado – *Development Impact Fees*
- Town of Johnstown, Colorado – *Drainage Financing Alternatives, Impact Fees, and Water Rate Study*
- City of Louisville, Colorado – *Impact Fee Study*

- Garfield County, Colorado – *Impact Fee Study*
- Montezuma County, Colorado – *Impact Fee Study*
- Pitkin County, Colorado – *Funding Strategy & Impact Fee*
- City of Pueblo, Colorado – *Impact Fee Study*
- Town of Vail, Colorado – *Impact Fee Study*
- State of Delaware – *Transportation Impact Fee*
- New Castle County, Delaware – *Development Impact Fees, Sewer Policies and Capacity Fees*
- Coral Ridge Properties – *Capital Improvements Element for Parkland, Florida*
- DeSoto County, Florida – *Development Impact Fees*
- DeSoto School District, Florida – *School Impact Fees*
- City of Lake Wales, Florida – *Development Impact Fees*
- Manatee County, Florida – *Development Impact Fees*
- City of Miami, Florida – *Development Impact Fees and Evaluation of Miami-Dade County Impact Fees for Roads and Schools*
- City of Naples, Florida – *Development Impact Fees*
- Pasco County School District, Florida – *School Impact Fees*
- Polk County School District, Florida – *Capital Needs Assessment*
- Cityof Punta Gorda, Florida – *Development Impact Fees*
- City of Sunny Isles Beach, Florida – *Development Impact Fees*
- Douglas County, Georgia – *CIE and Development Impact Fees*
- City of Douglasville, Georgia – *CIE and Development Impact Fees*
- Effingham County, Georgia – *CIE and Development Impact Fees*
- City of Garden City, Georgia – *CIE and Development Impact Fees*
- Gordon County, Georgia – *CIE and Development Impact Fees*
- Henry County, Georgia – *CIE and Transportation Impact Fee*
- Town of Hailey, Idaho – *Annexation Study and Development Impact Fees*
- City of Nampa, Idaho – *Development Impact Fees*
- City of Post Falls, Idaho – *Development Impact Fees*
- City of Baltimore, Maryland – *Transportation Funding Strategy*
- Carroll County, Maryland – *Development Impact Fees*
- Cecil County, Maryland – *Development Excise Tax*
- Charles County, Maryland – *School Impact Fees*
- Frederick County, Maryland – *Development Impact Fees*
- Town of Hampstead, Maryland – *Development Impact Fees*
- Home Builders Association of Carroll County, Maryland – *Evaluation of Development Impact Fees*
- Queen Anne's County, Maryland – *Development Impact Fees*
- City of Westminster, Maryland – *Capital Improvements Plan*
- Worcester County, Maryland – *Development Impact Fees*
- City of Madison, Mississippi – *Development Impact Fees*
- City of Nixa, Missouri – *Development Impact Fees*
- City of Belgrade, Montana – *Development Impact Fees*
- Florence-Carlton School District, Montana – *School Impact Fees*

- Frenchtown Fire District, Montana – *Development Impact Fees*
- Gallatin County, Montana – *Roads and Fire District Impact Fees*
- City of Great Falls, Montana – *Evaluation of Capacity Fees*
- Town of Manhattan, Montana – *Development Impact Fees*
- City and County of Missoula, Montana – *Development Impact Fees*
- City of Polson, Montana – *Development Impact Fees*
- Douglas County, Nevada – *Road Impact Fees*
- NAOIP & HBA of Albuquerque, New Mexico – *Evaluation of Impact Fees*
- City of Las Cruces, New Mexico – *Development Fees*
- Currituck County, North Carolina – *School Impact Fee*
- City of Jacksonville, North Carolina – *Water and Sewer Facilities Charges*
- Orange County, North Carolina – *School Impact Fee*
- City of Delaware, Ohio – *Development Impact Fees*
- City of Green, Ohio – *Development Impact Fees*
- Home Builders Association of Beavercreek, Ohio – *Review of Transportation Fees*
- Village of Sunbury, Ohio – *Development Impact Fees*
- City of Edmond, Oklahoma – *Water and Sewer Impact Fees*
- City of Cambridge, Ontario – *Development Charges*
- Hydro Electric Commission of Cambridge, Ontario – *Development Charges*
- City of Sarnia-Clearwater, Ontario – *Development Charges*
- Township of Wellesley, Ontario – *Development Charges*
- Aiken County, South Carolina – *Development Impact Fees*
- Anderson County, South Carolina – *Development Impact Fees*
- Georgetown County, South Carolina – *Development Impact Fees*
- City of Sherman, Texas – *Development Impact Fees*
- City of American Fork, Utah – *Development Impact Fees*
- City of Clearfield, Utah – *Development Impact Fees*
- City of Clinton, Utah – *Development Impact Fees*
- City of Draper, Utah – *Development Impact Fees*
- City of Farmington, Utah – *Development Impact Fees*
- City of Hooper, Utah – *Sewer Impact Fee*
- City of Hyde Park, Utah – *Development Impact Fees*
- City of Kaysville, Utah – *Development Impact Fees*
- City of North Logan, Utah – *Development Impact Fees*
- Cityof Pleasant Grove, Utah – *Development Impact Fees*
- Salt Lake County, Utah – *Stormwater and Park Impact Fees*
- South Valley Sewer District, Utah – *Sewer Impact Fees*
- City of Spanish Fork, Utah – *Development Impact Fees*
- City of Springville, Utah – *Park Impact Fees*
- City of Wellsville, Utah – *Development Impact Fees*
- City of West Jordan, Utah – *Development Impact Fees*
- City of Woods Cross, Utah – *Development Impact Fees*
- Graham Companies (Loudoun County, Virginia) – *Evaluation of Dulles Sewer District*

- City of Suffolk, Virginia – *Water and Sewer Availability Charges*
- Jefferson County, West Virginia – *Development Fees*
- City of Eau Claire, Wisconsin – *Public Facilities Needs Assessment*
- City of Kenosha, Wisconsin – *Evaluation of CIP Process*
- City of Casper, Wyoming – *Development Impact Fees*
- Teton County, Wyoming – *Transit Impact Fee*

EDUCATION

Ph.D., Planning, Governance, and Globalization, Virginia Tech
M.A., Urban and Regional Planning, University of Florida
B.A., Education, University of Florida

PUBLICATIONS

- "Next Generation Transportation Impact Fees," American Planning Association, Planners Advisory Service.
- "Introduction to Infrastructure Financing", ICMA IQ Service Report, 1999

Section 5. Work Scope

TASK 1: PROJECT INITIATION / DATA ACQUISITION

During this task, we will meet with Town staff to establish lines of communication, review and discuss project goals and expectations related to the project, review (and revise if necessary) the project schedule, request data and documentation related to new proposed development, and discuss Town staff's role in the project. The objectives of this initial discussion are outlined below:

- Obtain and review current demographics and other land use information for the Town of Erie
- Review and refine work plan and schedule
- Discuss current and previous work efforts related to this topic
- Assess additional information needs and required staff support
- Identify and collect data and documents relevant to the analysis
- Identify any major relevant policy issues
- Discuss outreach strategy and schedule

Meetings:

One (1) on-site visit to meet with Town project management team/Town staff as appropriate.

Deliverables:

1) Revisions to project schedule, if necessary. 2) Data request memorandum.

TASK 2: PREPARE LAND USE ASSUMPTIONS AND DEVELOPMENT PROJECTIONS

The purpose of this task is to review and understand the current demographics of the Town as they relate to growth and development and determine the likely development future for the Town in terms on new population, housing units, employment, and nonresidential building area over the next 10-20 years. Information from the Town will serve as the basis for preparing projections of residential and nonresidential development for consideration by staff and the stakeholder group. TischlerBise will prepare a plan that includes projections of changes in land uses, densities, intensities, and population for a specific service area. A map of the area(s) to which the land use assumptions apply will also be included in this task.

Meetings:

Discussions with the Community Development Department will be held as part of Task 1, as well as conference calls as needed.

Deliverables:

TischlerBise will prepare a draft technical memorandum discussing the recommended land use factors and projections. After review and sign-off by the Town, a final memorandum will be issued, which will become part of the final Development Impact Fee Study.

TASK 3: DETERMINE CAPITAL FACILITY NEEDS AND SERVICE LEVELS

This Task as well as Tasks 4-6 may vary somewhat depending on the methodology applied to a particular impact fee category. The impact fee study for each facility type would be presented in separate chapters in the impact fee report.

Identify Facilities/Costs Eligible for Impact Fee Funding. As an essential part of the nexus analysis, TischlerBise will evaluate the impact of development on the need for additional facilities, by type, and identify costs eligible for impact fee funding. Elements of the analysis include:

- Review facility plans, fixed asset inventories, and other documents establishing the relationship between development and facility needs by type.
- Identify planned facilities, vehicles, equipment, and other capital components eligible for impact fee funding.
- Prepare forecast of relevant capital facility needs.
- Adjust costs as needed to reflect other funding sources.

As part of calculating the fee, Erie may include the construction contract price; the cost of acquiring land, improvements, materials, and fixtures; the cost for planning, surveying, and engineering fees for services provided for and directly related to the construction system improvement; and debt service charges, if the Town of Erie might use impact fees as a revenue stream to pay the principal and interest on bonds, notes or other obligations issued to finance the cost of system improvements. All of these components will be considered in developing an equitable allocation of costs.

Identify Appropriate Level of Service (LOS) Standards. We will review needs analyses and LOS for each facility type. Activities related to this Task include:

- Apply defined service standards to data on future development to identify the impacts of development on facility and other capital needs. This will include discussions with staff of the existing versus adopted LOS, as appropriate.
- Ascertain and evaluate the actual demand factors (measures of impact) that generate the need for each type of facility to be addressed in the study.
- Identify actual existing service levels for each facility type. This is typically expressed in the number of demand units served.
- Define service standards to be used in the impact fee analysis.
- Determine appropriate geographic service areas for each fee category.

Meetings:

Two (2) meetings with Town staff to discuss capital facility needs and levels-of-service.

Deliverables:

Memoranda as appropriate. Results integrated into Draft/Final Impact Fee report (See Task 7).

TASK 4: EVALUATE DIFFERENT ALLOCATION METHODOLOGIES

The purpose of this Task is to determine the methodology most appropriate for each impact fee category. As noted previously, the three basic methodologies that can be applied in the calculation of impact fees

are the plan-based, incremental expansion, and cost-recovery approaches. Selection of the particular methodology for each component of the impact fee category will depend on which is most beneficial for Erie. In a number of cases, we will prepare the impact fees for a particular infrastructure category using several methodologies and will discuss the trade-offs with Erie. This allows the utilization of a combination of methodologies within one fee category. For instance, a plan-based approach may be appropriate for a new building while an incremental approach may be appropriate for support vehicles and equipment. By testing all possible methodologies, Erie is assured that the maximum supportable impact fee will be developed. Policy discussions will then be held at the staff level regarding the trade-offs associated with each allocation method prior to proceeding to the next Task as well as trade-offs regarding implementation as impact fees.

Meetings:

One (1) meeting with Erie staff to discuss issues related to allocation methodologies

Deliverables:

Memoranda as appropriate. See Task 7.

TASK 5: DETERMINE NEED FOR "CREDITS" TO BE APPLIED AGAINST CAPITAL COSTS

A consideration of "credits" is integral to the development of a legally valid impact fee methodology. There is considerable confusion among those who are not immersed in impact fee law about the definition of a credit and why it may be required.

There are two types of "credits" that are included in the calculation of impact fees, each with specific, distinct characteristics. The first is a credit due to possible double payment situations. This could occur when a property owner will make future contributions toward the capital costs of a public facility covered by an impact fee. The second is a credit toward the payment of an impact fee for the required dedication of public sites and improvements provided by the developer and for which the impact fee is imposed. Both types of credits will be considered and addressed in the impact fee study.

Deliverables:

Memoranda as appropriate. See Task 7.

TASK 6: CONDUCT FUNDING AND CASH FLOW ANALYSIS

In order to prepare a meaningful capital funding strategy, it is important to not only understand the gross revenues, but also the capital facility costs and any deficits. In this case some consideration should be given to anticipated funding sources. This calculation will allow Erie to better understand the various revenue sources possible and the amount that would be needed if the impact fees were discounted.

The initial cash flow analysis will indicate whether additional funds might be needed or if the funding strategy might need to be changed to have new growth pay its fair share of new capital facilities. This could also affect the total credits calculated in the previous Task. Therefore, it is likely that a number of iterations will be conducted in order to refine the cash flow analysis reflecting the capital improvement needs.

Deliverables:

See Task 7.

TASK 7: PREPARE IMPACT FEE REPORT, PUBLIC PRESENTATIONS

TischlerBise will prepare a draft report for Erie's review. The report will summarize the need for all relevant categories of impact fees in Erie and the relevant methodologies employed in the calculation. It will also document all assumptions and cost factors. The report will include at a minimum the following information:

- Executive summary
- A detailed description of the methodologies used during the study
- A detailed description of all LOS standards and cost factors used and accompanying rationale
- A detailed schedule of all proposed fees listed by land use type and activity
- Other information which adequately explains and justifies the resulting recommended fee schedule
- Cash flow analysis
- Implementation and administration procedures
- Impact fee comparison with peer communities

Following Erie's review of the draft report, we will make mutually agreed upon changes to the impact fee report and issues a final version.

TischlerBise's report(s) will have flow diagrams clearly indicating the methodology and approach, a series of tables for each activity showing all of the data assumptions and figures, and a narrative explaining all of the data assumptions, sources and the methodologies. The report will be a stand-alone document clearly understood by all interested parties. Because of the firm's extensive experience in calculating impact fees and preparing such reports, we have developed a very succinct written product that leaves a well-understood paper trail.

Meetings:

One (1) meeting/ presentation to present results with the Town Council.

Deliverables:

Draft and final reports and presentation materials for meetings.

TASK 8: PUBLIC OUTREACH

Meetings with various stakeholder groups will allow interested parties, designated by the Town, to understand assumptions and raise any questions about the technical data and approach being used in the fee update. The intent is for these discussions to be an opportunity for interested parties to understand the soundness and reasonableness of the technical methodologies, and to a certain extent, the political and/or philosophical use of fees. We recommend a minimum of three meetings—one toward the beginning of the process, a second to discuss preliminary methodological directions, and one to discuss the draft work product.

Meetings:

Two (2) meetings with stakeholder group.

Deliverables:

Presentation materials for meetings.

Section 6. Schedule and Costs

Project Schedule

The following figure provides our anticipated schedule for the Development Impact Fee Study, as well as number of meetings and deliverables.

PROJECT SCHEDULE FOR THE TOWN OF ERIE, COLORADO			
Tasks	Timeframe	Meetings*	Meetings/Deliverables
Task 1: Project Initiation/Data Acquisition	August, 2015	1	Data Request Memorandum and Revised Project Schedule, if necessary
Task 2: Prepare Land Use Assumptions and Development Projections	August-September, 2015	Part of Task 1	Technical Memorandum Discussing Recommended Land Use Factors and Projections
Task 3: Determine Capital Facility Needs and Service Levels	September, 2015	2	Memoranda as Appropriate; See Task 7
Task 4: Evaluate Different Allocation Methodologies	September-October, 2015	1	Memoranda as Appropriate; See Task 7
Task 5: Determine Need for "Credits"	October, 2015	0	Memoranda as Appropriate; See Task 7
Task 6: Conduct Funding and Cash Flow Analysis	October, 2015	0	Memoranda as Appropriate; See Task 7
Task 7: Prepare Impact Fee Report, Public Presentations	October-November, 2015	1	Draft and Final Reports and Presentation Materials for Meetings
Task 8: Public Outreach	August-October, 2015	2	Presentation Materials as Appropriate

*In several cases it is assumed meetings are held with multiple departments over one (1) trip.

Project Costs

The following figure provides our fixed fee cost proposal for the Development Impact Fee Study.

Proposed Fee Schedule for Development Impact Fee Study				
Project Team Member:	**Bise**	**Guthrie**	**Total**	
Hourly Rate*	**$200**	**$180**	**Hours**	**Cost**
Tasks				
Task 1: Project Initiation	8	8	16	$3,040
Task 2: Prepare Land Use Assumptions	4	40	44	$8,000
Task 3: Determine Capital Facility Needs and Service Levels	24	72	96	$17,760
Task 4: Evaluate Different Allocation Methodologies	8	16	24	$4,480
Task 5: Determine Need for Credits	4	16	20	$3,680
Task 6: Conduct Funding Source and Cash Flow Analysis	2	10	12	$2,200
Task 7: Prepare Impact Fee Report, Public Presentations	16	48	64	$11,840
Task 8: Public Outreach	8	8	16	$3,040
Total Hours and Cost:	***74***	***218***	***292***	***$54,040***
Travel and Related Expenses	*$1,800*	*$3,600*		***$5,400***
Total Cost:				**$59,440**

TischlerBise

FISCAL | ECONOMIC | PLANNING

Principal Office
4701 Sangamore Road, Suite S240 |
Bethesda, MD 20816
301.320.6900 x12 (w) | 301.320.4860 (f) |
carson@tischlerbise.com

Florida Office:
606 3rd Avenue West #305 | Bradenton,
FL 34205

TOWN OF ERIE
BOARD OF TRUSTEES AGENDA ITEM
Board Meeting Date: 08-11-2015

SUBJECT:	**CONSENT AGENDA** **RESOLUTIONS 15-107; A Resolution of the Town of Erie Approving an Intergovernmental Agreement between Boulder County Communications and the Town of Erie to Provide Police Dispatch Services; and Setting Forth Details in Relation Thereto**
PRESENTER:	Chief Marco Vasquez
FISCAL INFORMATION:	Cost as Recommended: Balance Available: Budget Line Item Number: New Appropriation Required: ☐Yes ☒ No
STAFF RECOMMENDATION:	Sign Intergovernmental Agreement for Dispatching Services with Boulder County

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Boulder County Communications and the Town of Erie Police Department are asking the Town of Erie to sign an Intergovernmental Agreement to provide police dispatch services. Previously the town had signed an IGA that was renewable yearly in 2000. This agreement will cover the years 2016 through 2020 and set a new fee schedule for those years. The fee schedule for the proposed agreement is reflected in the table below:

Year	1.5% Increase	Total
2016	N/A	**$100,000.00**
2017	N/A	**$100,000.00**
2018	$1,500.00	**$101,500.00**
2019	$1,522.00	**$103,022.00**
2020	$1,545.00	**$104,567.00**

This Fee schedule represents a significant decrease in dispatch fees from 2015, when the fee was $215,000.00 under the previous agreement.

Staff Review:

____ **Town Attorney**
____ **Town Clerk**
____ **Community Development Director**
____ **Finance Director**
____ **Police Chief**
____ **Public Works Director**
____ **Assistant to the Town Administrator**

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS: **Resolution 15-107**
Boulder County-Erie Communications IGA
Attachments A, B and C

RESOLUTION NO. 15-107

A RESOLUTION OF THE TOWN OF ERIE, COLORADO APPROVING AN INTERGOVERNMENTAL AGREEMENT BY AND BETWEEN THE TOWN OF ERIE AND THE BOULDER COUNTY SHERIFF'S OFFICE COMMUNICATIONS CENTER AUTHORIZING AND DIRECTING THE APPROPRIATE TOWN OFFICER TO SIGN SAID AGREEMENT; AND SETTING FORTH DETAILS IN RELATION THERETO

WHEREAS, Sections 29-1-203, and 30-11-410 C.R.S., allow local governments to enter into agreements for the provision of services within each other's jurisdiction; and

WHEREAS, the Boulder County Sheriff's Office operates a Communications Center which serves as a Public Safety Answering Point for 911 and non-emergency calls for law enforcement, fire, and emergency medical services in Boulder County, and which has the capacity to assist other jurisdictions within the County; and

WHEREAS, the Town of Erie, Colorado (AGENCY) wishes to utilize the services of the Boulder County Sheriff's Office Communications Center (BCCC) for the answering of emergency and non-emergency public safety calls, the dispatching of its police department to those calls, and the routine tracking and recording of officer activity; and

WHEREAS, Boulder County agrees to provide police dispatching services to the AGENCY in accordance with the service agreement provisions herein contained. The AGENCY agrees to help support the ongoing operational costs of the BCCC, by annual appropriation and payment of service fees as negotiated and agreed to per this agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. That the Intergovernmental Agreement by and between the BCCC and the Town of Erie a copy of which is attached hereto and incorporated herein by reference, is found to be a reasonable and acceptable agreement.

Section 2. That the Town of Erie be and is hereby authorized and directed to enter into the Intergovernmental Agreement with the BCCC, and the appropriate Town officers are hereby authorized and directed to sign and bind the Town of Erie to said Agreement.

Section 3. That entering into the Intergovernmental Agreement with the BCCC is found to be in the best interest of the Town of Erie, and necessary for the preservation of the public health and safety.

ADOPTED AND APPROVED THIS 8TH DAY OF JULY, 2014, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy J. Parker, CMC, Town Clerk

INTERGOVERMENTAL AGREEMENT

SERVICE LEVEL AND FUNDING AGREEMENT FOR USER LAW ENFORCEMENT AGENCIES

BOULDER COUNTY SHERIFF'S COMMUNICATIONS CENTER

Recitals:

1. Sections 29-1-203, and 30-11-410 C.R.S., allow local governments to enter into agreements for the provision of services within each other's jurisdiction.

2. The Boulder County Sheriff's Office operates a Communications Center which serves as a Public Safety Answering Point for 911 and non-emergency calls for law enforcement, fire, and emergency medical services in Boulder County, and which has the capacity to assist other jurisdictions within the County.

3. The Town of Erie, Colorado (AGENCY) wishes to utilize the services of the Boulder County Sheriff's Office Communications Center (BCCC) for the answering of emergency and non-emergency public safety calls, the dispatching of its police department to those calls, and the routine tracking and recording of officer activity.

4. Boulder County agrees to provide police dispatching services to the AGENCY in accordance with the service agreement provisions herein contained. The AGENCY agrees to help support the ongoing operational costs of the BCCC, by annual appropriation and payment of service fees as negotiated and agreed to in the attached ***Service Fee Agreement.*** (See Attached A)

Service Agreements:

1. BCCC will answer emergency as well as non-emergency calls for service 24 hours a day, seven days per week, and dispatch those calls within agreed upon time limits, based on the priority level of the call **(See Attachment B).**

2. BCCC will accept public calls from transferred office lines, (one per agency), during non-business hours, or upon special request.

3. BCCC will act as the National Crime Information Center (NCIC) and Colorado Crime Information Center (CCIC) Terminal Guard during non-business hours, or upon special request, according to the rules established by the Colorado Bureau of Investigation (**See Attachment C** for BCCC and AGENCY responsibilities).

4. BCCC will provide a primary law enforcement dispatcher for dispatching calls and tracking officer activity. In addition, when practical, BCCC will provide a data dispatcher for NCIC/CCIC, DMV access as well as routine business and support requests, (towing, street maintenance, etc.). The AGENCY will have access and use of each radio channel/frequency commonly known as the primary and tactical channels. In addition, BCCC will provide radio channel/frequency access to other law enforcement agencies that may provide direct assistance for the AGENCY to be used during an incident within the AGENCY's law enforcement jurisdiction.

5. An additional dedicated channel and dispatcher may be made available with advance notice for special events within the law enforcement jurisdiction of the AGENCY, with the agreement that the BCCC will be reimbursed for the cost of that dispatcher. During emergency events a second channel and dedicated dispatcher may be made available upon request if BCCC staffing allows, and/or by temporarily closing the data channel. (There is no charge for the short term emergency use of a second dispatcher and dedicated alternate channel).

6. The AGENCY will appoint a Computer Aided Dispatch (CAD) liaison officer or employee. BCCC will provide training and query access to the CAD reporting system; utilizing Boulder Regional Emergency Telephone Service Authority (BRETSA) funded reporting triggers, for the query of information, the retrieval of data, and the making of reports pertinent to the AGENCY. BCCC will assist with these requests as well as whenever a CAD liaison is not available or unable to access the information requested from the CAD system.

7. BCCC will provide statistical reports from the center's emergency 9-1-1 telephone system for the AGENCY as needed.

8. BCCC and the AGENCY will participate in a Communication Center Advisory Group. The AGENCY will appoint a user representative to meet regularly with administrative and supervisory staff from BCCC, to identify issues and work toward mutually acceptable resolution of those issues or concerns.

9. The Agency Chiefs, the Sheriff, the Communications Center Director, and the Sheriff's Office Support Services Division Chief shall meet at least twice annually as the Communications Center Policy Advisory Group. The Policy Advisory Group may discuss and provide input on any issue regarding the performance of the Communication Center, its personnel, policies, protocols, equipment, training, etc. Members of the advisory group may request information regarding training, finance, equipment performance and replacement, CAD reports or data, etc. and such requests shall not be unreasonably withheld.

   The goal of the Policy Advisory Group is to collaborate and agree on major policies, practices or technology changes which would adversely affect agency budgets. The BCCC will strive to gain agreement of the law enforcement agencies prior to making major changes. The policy group will strive to maintain interoperable radio communication systems in Boulder County.

10. The Boulder County Sheriff's Office Technical Team will provide one annual fleet and/or portable radio system programming or re-programming for either VHF or 700/800 MHz at no additional cost to the AGENCY (as long as the system and technical access requested for programming or re-programming is available to the Sheriff's Office).

11. The Sheriff's Office will provide pager system access and use, as well as pager programming at no additional cost to the AGENCY.

12. BCCC shall provide an electronic copy of audio recordings of any radio or telephone conversations, pertaining to that Agency, within 5 business days for routine requests or within 2 business days for an exigent request, at no additional cost.

13. This agreement may be cancelled by either party, without cause, by giving the other party written notice at least 180 days prior to the date of the termination.

14. This agreement is intended for calendar years 2016 – 2020, unless otherwise amended by mutual agreement of both parties.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date last written below.

BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF BOULDER

ATTEST: _____
Administrative Assistant
Clerk to the Board of
Commissioners

By: _____
Chair, Board of County Commissioners

Date _____

BOULDER COUNTY SHERIFF'S OFFICE

By: _____
Joseph K. Pelle, Sheriff

Date _____

TOWN OF ERIE

ATTEST: _____
Town Clerk

By: _____
Tina Harris, Mayor

Date _____

By: _____
Marco Vasquez, Chief of Police

Date _____

By: _____
A.J. Krieger, Town Administrator

Date _____

ATTACHMENT A

SERVICE FEE AGREEMENT

This Service Fee Agreement dated _____between Boulder County and the Erie Police Department is an attachment to the *Intergovernmental Agreement; Service Level and Funding Agreements for User Law Enforcement Agencies* dated_____, and establishes Erie Police Department's annual contribution to the operating costs of the Boulder County Sheriff's Office Communications Center, as described in the IGA. The fees are based upon historic usage and financial contributions, and are agreed to as follows:

The Town of Erie agrees to pay Boulder County for dispatch services based upon the following payment plan:

Year	1.5% Increase	Total
2016	N/A	**$100,000.00**
2017	N/A	**$100,000.00**
2018	$1,500.00	**$101,500.00**
2019	$1,522.00	**$103,022.00**
2020	$1,545.00	**$104,567.00**

This Service Fee Agreement is subject to appropriation and all the clauses and conditions contained in the Intergovernmental Agreement.

_____ _____

Chief of Police Date

_____ _____

Town Administrator Date

_____ _____

Sheriff Date

ATTACHMENT B

BOULDER COUNTY SHERIFF'S OFFICE
COMMUNICATIONS SECTION
LAW PROTOCOLS

SUBJECT: Call Management **NUMBER: 1.01**

EFFECTIVE DATE: **REVISION DATE: 2/1/2015**

PROCEDURE:

Calls for service will be dispatched by radio based upon a priority system that designates the calls as emergency or non-emergency. Emergency calls are dispatched immediately and non-emergency calls are dispatched as soon as possible. The call taker and the dispatcher are expected to determine the priority of the call by relying upon the information about the call and their training and experience.

Emergency Calls

Communications will immediately dispatch emergency calls to the appropriate district officer(s) based on CAD recommendations. In the event that the CAD recommendations are incorrect, the Dispatcher may use their discretion to send the closest available officer(s). In the event that no officer is available, Communications will notify the on-duty supervisor. It is the responsibility of the assigned officer(s) or a supervisor to modify the response based upon available information. Communications is notified of any modification to the original response.

Non-emergency Calls

Communications will dispatch non-emergency calls as soon as practical to the appropriate district officer(s) based on CAD recommendations, or general car if the district car is unavailable. If the officer is already assigned to another call or will otherwise be unable to clear for a significant period, communications will air to all units that the call is holding. If no officer volunteers to take the call it will be held until the district car is available.

Communications will notify the RP if the delay is expected to be more than 1 hour. If the district officer is engaged in a short-term activity, the dispatcher may notify the officer of the pending call or elect to hold it until the officer is available.

Communications is responsible for advising field units when there are calls for service pending and the nature of those calls. In the event that all officers and field supervisors are engaged in priority activities, Communications may elect to hold non-emergency calls if notification would create a distraction affecting officer safety, or notify the next level of command depending on the urgency of those calls. Nothing in this protocol relieves the field supervisor of the responsibility to monitor and manage calls as necessary.

ATTACHMENT C

During Business Hours:

RECORDS

- ALL CBI related requests not being generated by radio from a unit in the field. (Including but not limited to: clearances, entries, confirmations, locates, modifications, etc.
- Extended searches or queries that do not pertain to actively developing incidents. (Including but not limited to: criminal histories, RMS searches, QDA, etc.
- Broadcasts (BOLOs) via CBI **These require a supporting entry

COMMUNICATIONS

- Any request by radio from a unit in the field for basic queries (clearances, listings, DL)
- Follow up to any warrant that resulted from a basic query by Communications (confirmation requests and locates)
- Required notification that resulted from a basic query by Communications (probation and correction client notifications)
- Providing assistance with rapidly evolving public safety events when it is not practical using records personnel and as staffing in the Communications Center allows.

After Business Hours:

COMMUNICATIONS

- Monitor CBI terminal for any warrant confirmation requests for the User Agency
- Any request by radio from a unit in the field for basic queries (clearances, listings, DL)
- Follow up to any warrant that was initiated from a basic query (confirmation requests and locates)
- Extended searches or queries that pertain to an actively developing incident where there is an imminent threat to law enforcement or public safety
- Required notification that was initiated from a basic query (probation and correction client notifications)
- Broadcasts (BOLOs) via CBI for actively developing incidents or when there is an immediate threat to law enforcement or public safety **These require a supporting entry
- Entries for the following:
    - Escape Warrants for the Jail
    - Felony Affidavit Warrants where there is an imminent threat to law enforcement or public safety
    - Misdemeanors **IF** there is an exigent circumstance and there is an immediate threat to law enforcement or public safety
    - Vehicles
    - License Plates (lost or stolen only)
    - Missing Persons
    - Guns

    ** Entries should be submitted via the forms provided by dispatch and can be submitted electronically or via fax with a follow up phone call to confirm receipt and that they are properly completed. Entries received at or near shift changes that are non-exigent circumstances may be held for the following Dispatch shift or for records on weekdays.
- Warrant confirmation requests
- Warrant confirmations (Must be confirmed by representative of the agency owning the warrant) ***This must be completed within 10 minutes from receipt of the request***
- Locates (when an agency makes an arrest on a warrant that belongs to a different agency) ***Arresting agency/officer is responsible for notifying Communications in a timely manner of the status of the arrest, i.e. transporting to jail, bonding, etc.*
- Clearing (removing) a Warrant from the system (when an agency makes an arrest on their own warrant) ***Arresting agency/officer is responsible for notifying Communications in a timely manner when the warrant should be cleared from the system*

HELD FOR RECORDS ON FOLLOWING BUSINESS DAY:

- Entering Articles, Securities, Economic Crime Index and Boats
- Modifications to an entry previously entered in the system
- Canceling an entry that was erroneously entered previously in the system

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**CONSENT AGENDA** Consideration of Resolution 15-104: A Resolution Authorizing Award Of Construction Contract To A-1 Chipseal Company For The 2015 Street Maintenance In The Amount Of $546,067.74; And Setting Forth Details In Relation Thereto.	
DEPARTMENT:	Public Works	
PRESENTER/PREPARER:	**Russell Pennington, Deputy Director of Public Works** **Jody Lambert, Operations and Maintenance Manager**	
FISCAL INFORMATION:	Cost as Recommended:	**$ 624,300**
	Balance Available:	$ 624,300
	Budget Line Item Number:	100 . 70 . 710 . 602000 . 000000
	Fund:	General – Capital Outlay
	New Appropriation Required:	☐ Yes ☒ No
STAFF RECOMMENDATION:	Approving Resolution 15-104 awarding said contract, authorizing the Mayor to execute said contract, authorizing Staff to expend contracted funds and contingency funds.	

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

The 2015 Capital Budget includes the annual Street Maintenance Program (SMP). The purpose of this program is to protect and preserve the value of the street assets and to maintain their safety and drivability. Maintaining the Town's streets is important for public safety and as a means to extend the useable life of the streets. This also keeps with the Town's commitment to perform preventative maintenance of our infrastructure.

Over the past several years, there have been significant advances in street seal coat technology as compared with the more traditional asphalt overlays. By using the surface treatments identified, the Town is able to extend the life of roads that have not degraded to a point where they need an overlay. This is the most cost-effective way to maintain street conditions with the advances in technology and the current economic times. This strategy also results in a greater number of miles being treated each year.

The Town of Erie annually budgets to make needed repairs to the Town's street system. Repair work generally consists of asphalt patching, overlay & reconstruction, and various surface treatments including: microsurfacing, rock seal, cape seal, slurry seal, chip seal, double chip seal, and/or hot applied chip seal. Work needed is identified using a pavement management program. The program evaluates needs at various locations throughout the Town.

The street conditions are assessed using a standardized method of pavement distress identification developed by the United States Department of Transportation's Federal Highway Administration. Distresses for each street are stored in a pavement management database that, when applied to a formula, calculates the Remaining Service Life (RSL) of a street section where RSL 20 = New, and RSL 0 = Failed. The system is used as a tool by staff to determine the type and desired timing of maintenance treatment for the streets.

Hot Chip Seal is a surface treatment that combines a Chip Seal and a thin lift of open graded friction course (OGFC) providing a double application of material. The Chip Seal provides a waterproof membrane and the Hot Chip Seal provides a strong wearing surface that will improve the profile of the existing asphalt. A hot chip seal will bring the roadway back to a Remaining Service Life (RSL) of 20 years.

Benefits of Hot Chip Seal:

- Improves skid-resistance and safety with a high friction surface
- Asphalt pavement needs additional structural strength
- Quiet surface treatment especially on high volume traffic roads
- Has a long life expectancy
- Enhances the appearance of the road by improving the surface texture, profile and surface color
- Effective use of maintenance dollars

Bid Results

An Invitation to Bid was sent out on July 6, 2015. A pre-bid meeting was held on July 14, 2015. A Bid Opening was held on July 27, 2015. There were no local bidders. The Town received only one bid for Hot Chip Seal from A-1 Chipseal. A vicinity map is included showing the sections. The areas identified are not to a point of needed complete reconstruction at this time; therefore a reconstruction cost was not bid.

Recommendation

The current 2015 Street Maintenance Program budget is $624,300. To meet the budgeted amount, Staff negotiated with the Contractor to Hot Chip Seal 119th Street from Erie Parkway north approximately ½ mile and Hot Chip Seal 111th Street from Arapahoe Road north to the end of pavement. Staff recommends award of contract to A-1 Chipseal Company. A-1 Chipseal Company is familiar with this type of work and has completed successful projects for the Town of Erie. Monies not used on this project will be transferred to complete additional asphalt repairs. Staff has reviewed the bid and found the bid to be competitive. The following is a breakdown of the project summary:

Project Budget Summary

Bid (negotiated)	$546,067.74
Contingency	$78,232.26
Total	**$624,300.00**

Project Schedule

Notice of Award	August 12, 2015
Notice to Proceed	August 19, 2015
Estimated Project Completion	October, 2015

Staff Review:

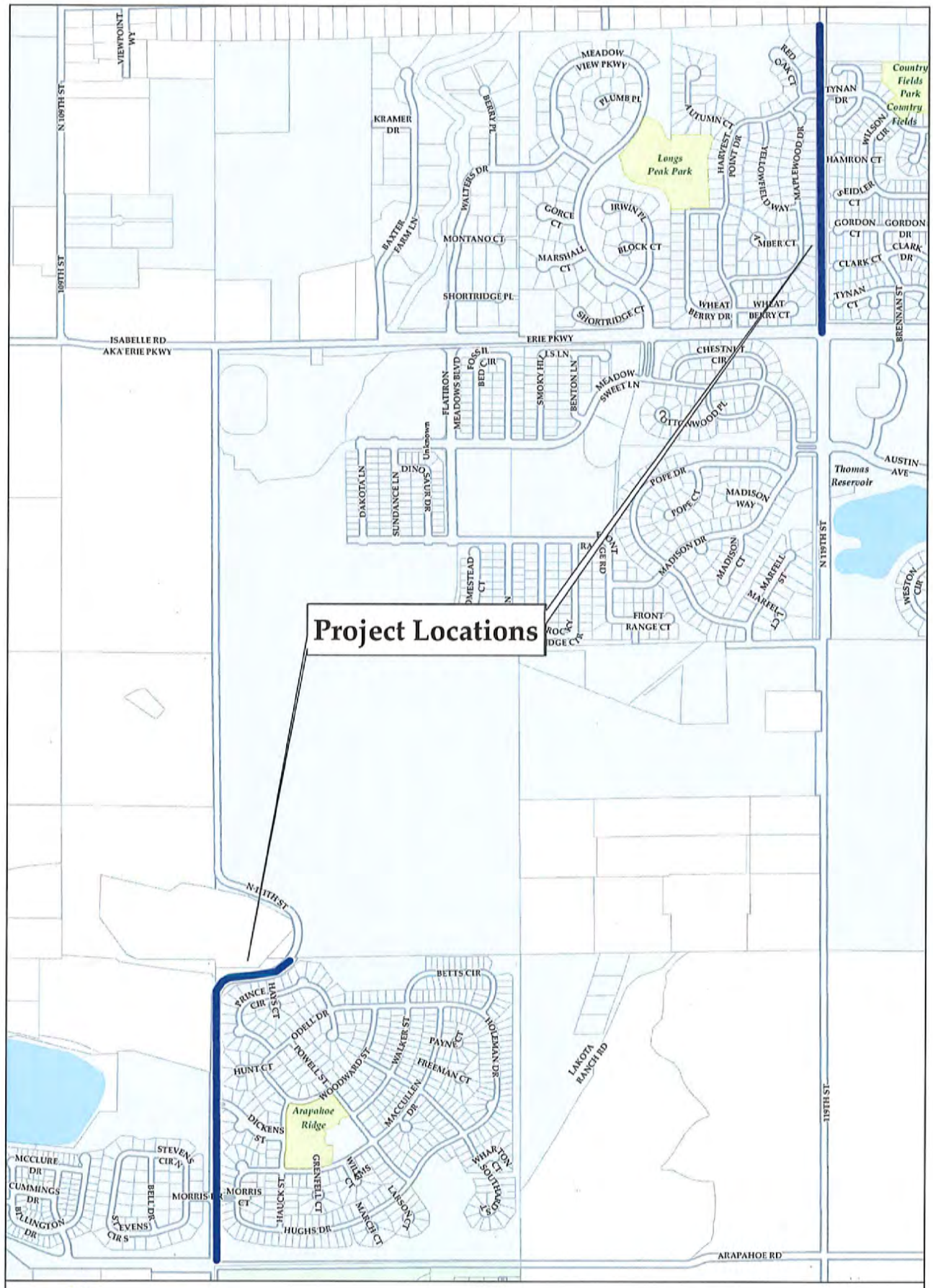
_____ **Town Attorney**
_____ **Town Clerk**
_____ **Community Development Director**
SZ **Finance Director**
_____ **Police Chief**
GWB **Director of Public Works**

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:

a. Resolution 15-104
b. Vicinity Map



2015 Street Maintenance Project

TOWN OF ERIE
1874

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RESOLUTION NO. 15-104

A RESOLUTION AUTHORIZING AWARD OF CONTRACT TO A-1 CHIPSEAL COMPANY FOR THE 2015 STREET MAINTENANCE PROGRAM IN THE AMOUNT OF $546,067.74; AND SETTING FORTH DETAILS IN RELATION THERETO:

WHEREAS, the Town of Erie, Colorado wishes to award a contract to A-1 Chipseal Company for Chip Seal in the amount of $546,067.74 for the 2015 Street Maintenance Program; and

WHEREAS, the Board of Trustees of the Town of Erie believes it is in the best interest of the Town to enter into such a contract.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. That the contract between the Town of Erie and A-1 Chipseal Company is found to be a reasonable and acceptable contract for the 2015 Street Maintenance Program.

Section 2. That the Town of Erie be and is hereby authorized and directed to enter into the contract with A-1 Chipseal Company, and the appropriate Town Officers are hereby authorized and directed to sign and bind the Town of Erie to said contract in the amount of $546,067.74 with a contingency amount not to exceed $78,232.26.

Section 3. That entering into the contract is found to be in the best interest of the Town of Erie, and necessary for the preservation of the public health and safety.

ADOPTED AND APPROVED THIS 11TH DAY OF AUGUST, 2015, BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO.

TOWN OF ERIE,
a Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By: _____
Nancy J. Parker, C.M.C., Town Clerk

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**ORDINANCES** **Consideration of Ordinance 14-2015:** An Ordinance Of The Town Of Erie, Colorado, Amending Title 9, "Building And Development Regulations," Chapter 4, "Special Districts," Of The Erie Municipal Code; And, Setting Forth Details in Relation Thereto. First Reading
CODE:	Erie Municipal Code, Title 9
DEPARTMENT:	Administration
PRESENTER:	A.J. Krieger, Town Administrator

FISCAL INFORMATION:	Cost as Recommended:	n/a
	Balance Available:	n/a
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☒ No

STAFF RECOMMENDATION:	Approval of Ordinance 14-2015, an ordinance approving amendments to Title 9 of the Town of Erie Municipal Code.

SUMMARY AND BACKGROUND OF SUBJECT MATTER

Per Board of Trustee direction, three amendments are proposed to Title 9, Chapter 4-Special Districts as it relates to metropolitan districts and their associated service plans.

1. Section 9-4-5 B.2

   The proposed amendment caps the mill levy assessed by the district at 50 mills for both debt service and operations and maintenance.

   > The mill levy assessed by the district on real or personal property within the district shall be capped at fifty (50) mills for both debt service and ~~twenty-five (25) mills~~ for operation and maintenance purposes, as provided in the service plan. The debt service mill levy may be subject to adjustment in future years to reflect changes in the residential assessment ratio. The debt service mill levy will terminate when the bonds are no longer outstanding. The district shall not impose a debt service mill levy for more than forty (40) years after the year of the initial imposition of such debt service mill levy unless: a) a majority of the board of directors of the district imposing the mill levy are residents of such district, and b) such board has voted in favor of issuing debt with a term which requires or contemplates the imposition of a debt service mill levy for a longer period of time than the limitation contained herein.

2. Section 9-4-5 B.6.a

   The proposed amendment requires a district to provide written notice to the Town prior to the use of eminent domain powers.

Condemn property inside or outside the district boundaries without ~~approval by~~first providing prior written notice to the board of trustees of the district's intention to use the power of eminent domain.

3. Section 9-4-12 F

The proposed amendment adds a new requirement for a disclosure statement indicating the existence of a metropolitan district(s). This disclosure would be added to all future development agreements for developments having metropolitan district(s).

Every development that creates or proposes to create a district shall have, as a requirement in its development agreement with the town, a disclosure statement indicating the existence (or proposed formation) of a district that may impose up to fifty (50) mills upon all taxable property within the district's boundaries. Such disclosure statement shall be signed by the property owner with the execution of the sales contract for the purchase of the property.

Staff Review:

____Town Attorney
____Town Clerk
DM Community Development Director
____Finance Director
____Police Chief
____Public Works Director

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:

A. Ordinance 14-2015

ATTACHMENT A

ORDINANCE NO. 14-2015
Series of 2015

AN ORDINANCE OF THE TOWN OF ERIE, COLORADO AMENDING TITLE 9, "BUILDING REGULATIONS," CHAPTER 4, "SPECIAL DISTRICTS," SECTIONS 9-4-5, "MODEL SERVICE PLAN," AND 9-4-12, "COMPLIANCE; MODIFICATION; ENFORCEMENT," OF THE ERIE MUNICIPAL CODE; AND, SETTING FORTH DETAILS IN RELALTION THERETO.

WHEREAS, the Board of Trustees of the Town of Erie desires to amend Title 9, "Building Regulations," Chapter 4, "Special Districts," Sections 9-4-5, "Model Service Plan," and 9-4-12, "Compliance; Modification; Enforcement," of the Erie Municipal Code; and,

WHEREAS, it is deemed to be in the best interest of the public health, safety and welfare of the residents of the Town of Erie to amend the Erie Municipal Code as set forth herein below.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE, COLORADO, AS FOLLOWS:

Section 1. Title 9, "Building Regulations," Chapter 4, "Special Districts," Section 9-4-5, "Model Service Plan," of the Erie Municipal Code is hereby amended to repeal sub-part B.2. in its entirety, and to adopt a new sub-part B.2. to read as follows:

> B. 2. The mill levy assessed by the district on real or personal property within the district shall be capped at fifty (50) mills for both debt service and for operation and maintenance purposes, as provided in the service plan. The debt service mill levy may be subject to adjustment in future years to reflect changes in the residential assessment ratio. The debt service mill levy will terminate when the bonds are no longer outstanding. The district shall not impose a debt service mill levy for more than forty (40) years after the year of the initial imposition of such debt service mill levy unless: a) a majority of the board of directors of the district imposing the mill levy are residents of such district, and b) such board has voted in favor of issuing debt with a term which requires or contemplates the imposition of a debt service mill levy for a longer period of time than the limitation contained herein.

Section 2. Title 9, "Building Regulations," Chapter 4, "Special Districts," Section 9-4-5, "Model Service Plan," of the Erie Municipal Code is hereby amended to repeal sub-part B.6.a. in its entirety, and to adopt a new sub-part B.6.a. to read as follows:

B. 6. a. Condemn property inside or outside the district boundaries without first providing prior written notice to the board of trustees of the district's intention to use the power of eminent domain.

Section 3. Title 9, "Building Regulations," Chapter 4, "Special Districts," Section 9-4-12, "Compliance; Modification; Enforcement," of the Erie Municipal Code is hereby amended to add a new sub-paragraph F. to read as follows:

F. Every development that creates or proposes to create a district shall have, as a requirement in its development agreement with the town, a disclosure statement indicating the existence (or proposed formation) of a district that may impose up to fifty (50) mills upon all taxable property within the district's boundaries. Such disclosure statement shall be signed by the property owner with the execution of the sales contract for the purchase of the property.

Section 4: Severance Clause. If any part, section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, such invalidity shall not affect the validity of the remaining sections of the ordinance. The Town Board hereby declares that it would have passed the ordinance including each part, section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more parts, sections, subsections, sentence, clauses or phrases be declared invalid.

Section 5: Repeal. All ordinances or resolutions, or parts thereof, in conflict with this ordinance are hereby repealed, provided that such repeal shall not repeal the repeal clauses of such ordinance nor revive any ordinance thereby.

Section 6. Effective Date. This ordinance shall take effect thirty (30) days after publication following final passage.

INTRODUCED, PASSED, ADOPTED AND ORDER PUBLISHED IN FULL BY THE BOARD OF TRUSTEES OF THE TOWN OF ERIE THIS ____ DAY OF _____, 2015.

PUBLISHED IN FULL ON THE _____ DAY OF _____, 2015.

TOWN OF ERIE, COLORADO, a
Colorado municipal corporation

By: _____
Tina Harris, Mayor

ATTEST:

By:_____
Nancy Parker, Town Clerk

5/22/15

TOWN OF ERIE
BOARD OF TRUSTEE AGENDA ITEM
Board Meeting Date: August 11, 2015

SUBJECT:	**STAFF REPORT**
	Community Development Monthly Reports
DEPARTMENT:	Community Development
PRESENTER:	R. Martin Ostholthoff, Director

FISCAL INFORMATION:	Cost as Recommended:	n/a
	Balance Available:	n/a
	Budget Line Item Number:	000 . 00 . 000 . 000000 . 000000
	New Appropriation Required:	☐ Yes ☒ No

STAFF RECOMMENDATION: n/a

SUMMARY AND BACKGROUND OF SUBJECT MATTER:

Building Permit Monthly Report

The attached Building Permit Report indicates the number of new residential building permits issued to date (through July 2015) versus the building permit projections utilized in determining the 2015 budget. The Town issued 57 new residential building permits in July 2015.

For 2015 the Town has issued 289 building permits or 72 percent of the yearly projected total of 400 building permits.

The Building Permit Reports for 2014 and 2013 are attached hereto for comparison.

Historic Erie Neighborhood Building Permit Fee Waiver

The effective date of the Historic Erie Neighborhood waiver was October 6, 2012.

A total of 8 permits valued at $849.53 in fees were waived for the month of July 2015. The cumulative value of fees waived since the inception of the program is $27,945.62. A breakdown of the fees waived is attached hereto.

Staff Review:

___Town Attorney
___Town Clerk
✓ Community Development Director
___Finance Director
___Police Chief
___Public Works Director

Approved by:

A.J. Krieger
Town Administrator

ATTACHMENTS:

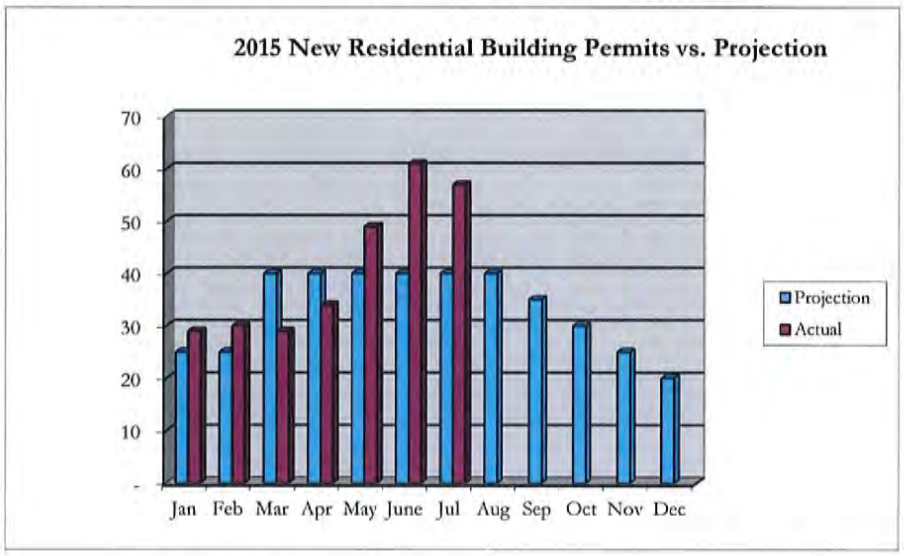
A. 2015/2014/2013 Building Permits to Projection Comparison
B. Historic Erie Neighborhood Fees Waived

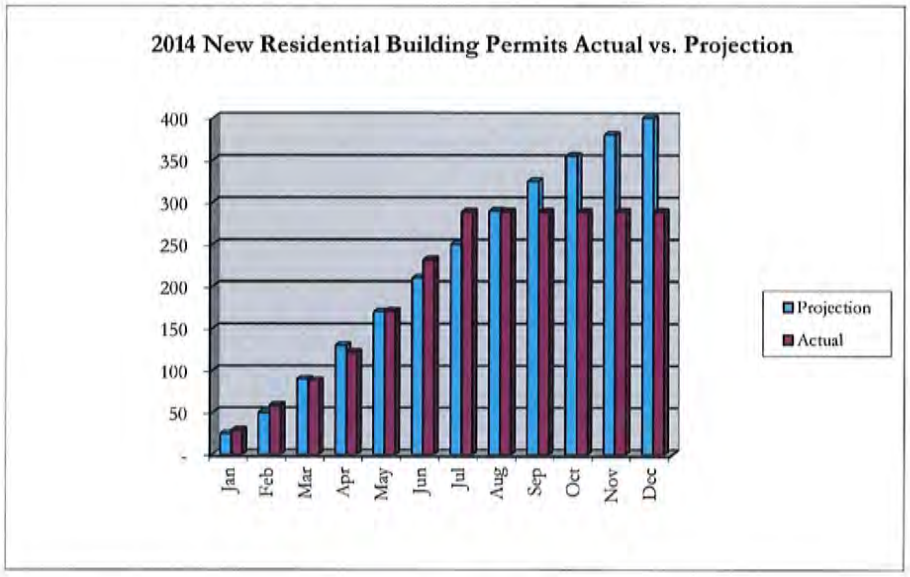
ATTACHMENT A

2015 Building Permits to Projection Comparison

2015	Month by Month Projection	Month by Month Actual	*Seasonal Projection*
Jan	25	29	*8%*
Feb	25	30	*7%*
Mar	40	29	*11%*
Apr	40	34	*12%*
May	40	49	*10%*
June	40	61	*11%*
Jul	40	57	*10%*
Aug	40		*8%*
Sep	35		*7%*
Oct	30		*6%*
Nov	25		*7%*
Dec	20		*5%*
Total	400		

	Accumulation Projection	Accumulation Actual
Jan	25	29
Feb	50	59
Mar	90	88
Apr	130	122
May	170	171
Jun	210	232
Jul	250	289
Aug	290	289
Sep	325	289
Oct	355	289
Nov	380	289
Dec	400	289

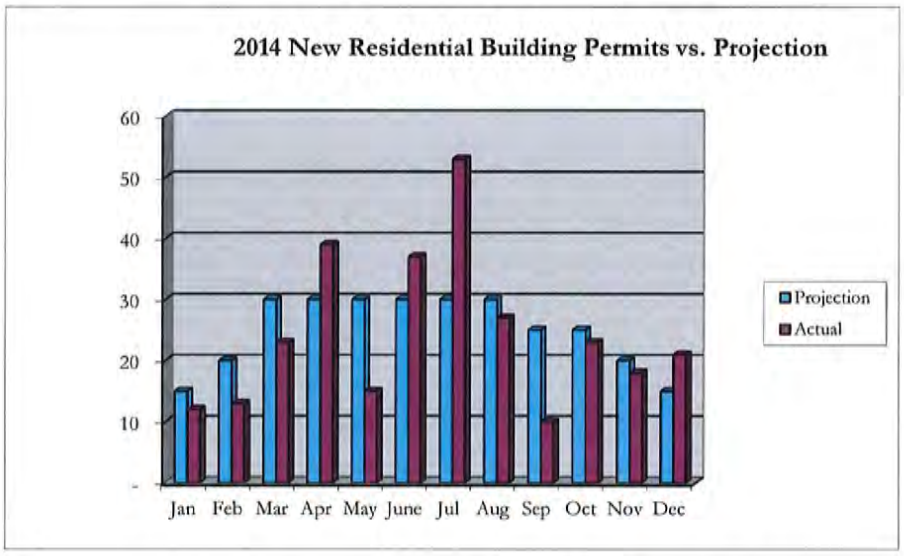


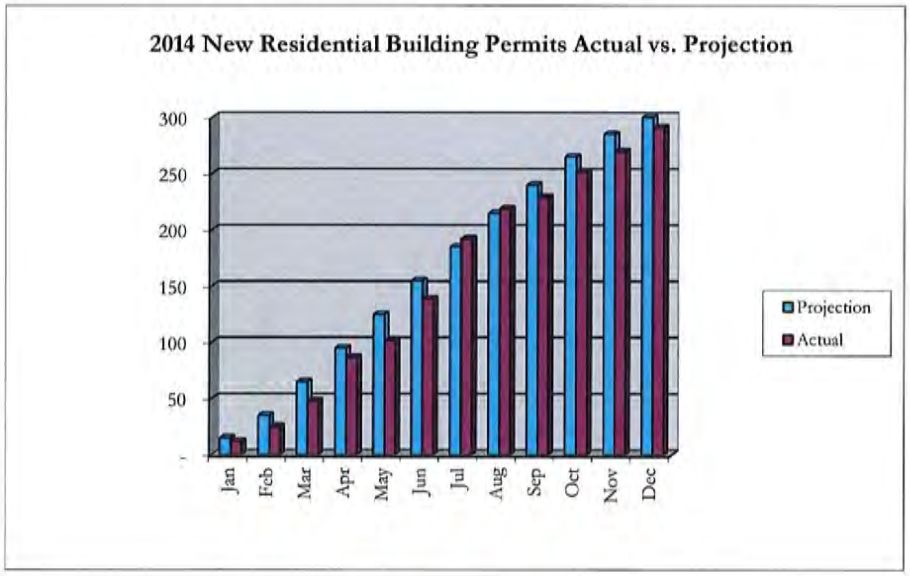


2014 Building Permits to Projection Comparison

2014	Month by Month Projection	Month by Month Actual	*Seasonal Projection*
Jan	15	12	*8%*
Feb	20	13	*7%*
Mar	30	23	*11%*
Apr	30	39	*12%*
May	30	15	*10%*
June	30	37	*11%*
Jul	30	53	*10%*
Aug	30	27	*8%*
Sep	25	10	*7%*
Oct	25	23	*6%*
Nov	20	18	*7%*
Dec	15	21	*5%*
Total	300		

	Accumulation Projection	Accumulation Actual
Jan	15	12
Feb	35	25
Mar	65	48
Apr	95	87
May	125	102
Jun	155	139
Jul	185	192
Aug	215	219
Sep	240	229
Oct	265	252
Nov	285	270
Dec	300	291

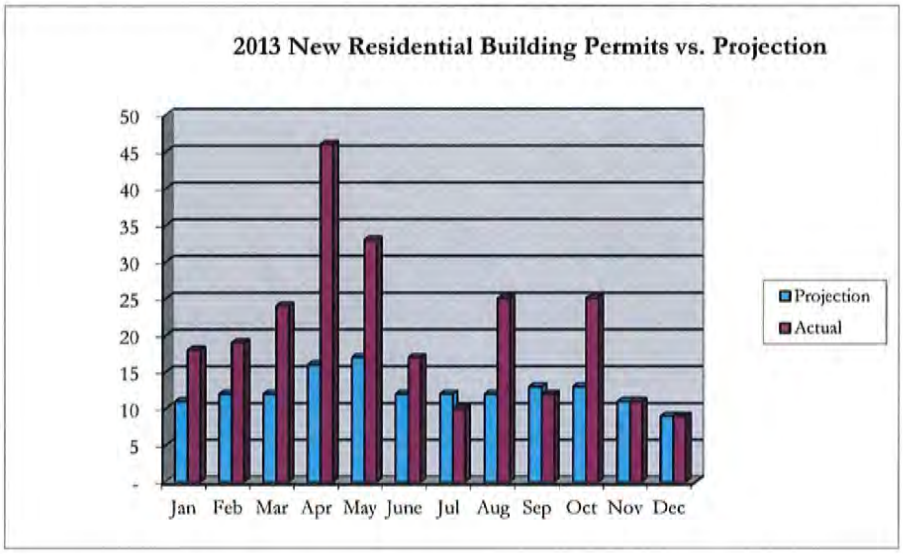




2013 Building Permits to Projection Comparison

2013	Month by Month Projection	Month by Month Actual	*Seasonal Projection*
Jan	11	18	*8%*
Feb	12	19	*7%*
Mar	12	24	*11%*
Apr	16	46	*12%*
May	17	33	*10%*
June	12	17	*11%*
Jul	12	10	*10%*
Aug	12	25	*8%*
Sep	13	12	*7%*
Oct	13	25	*6%*
Nov	11	11	*7%*
Dec	9	9	*5%*
Total	150		

	Accumulation Projection	Accumulation Actual
Jan	11	18
Feb	23	37
Mar	35	61
Apr	51	107
May	68	140
Jun	80	157
Jul	92	167
Aug	104	192
Sep	117	204
Oct	130	229
Nov	141	240
Dec	150	249



ATTACHMENT B

Jul-15

Permit No.	Permit Type	Contractor Nan	Home Owner	Property Address	Building Fee	Electrical Fee	Mechanical Fee	Plumbing Fee	Misc. Fee	Total Fees Waived	Use Tax Collected
BPR-1032-15	Re-Roof	Environmental Pro Const	Joseph Signorelli	310 Briggs St	$ 47.00					$ 47.00	$ 52.50
BPR-1026-15	Deck	J.A. Wilce	J.A Wilce	125 Pierce St.	$ 114.26					$ 114.26	$ 29.40
BPR-1060-15	Garage Remodel	Mollevik Const Co	Cindy Drozda	655 Pierce St	$ 111.25	35.00			$ 72.31	$ 218.56	$ 42.00
BPC-942-15	Sign	Precision Sign	Randy Rose	578 Briggs St	$ 83.25					$ 83.25	$ 43.75
BPC-1065-15	Tenennt Finih	The Service Guy	Mike Amaya	698 Briggs St	$ 97.25	35.00		$ 50.00	$ 63.21	$ 245.46	$ 52.50
BPR-1031-15	Re-Roof	Roof Link	Jennifer McCallu	205 Anderson Ct	$ 47.00					$ 47.00	$ 77.00
BPR-1043-15	Sewer Line Repair	Pipe X, LLC	Ms. Kristen	460 Kattell St	$ 47.00					$ 47.00	$ 21.00
BPR-996-15	Re-Roof	Jon Walter Roofing	John Ghum	524 High St	$ 47.00					$ 47.00	$ 41.51
										$ 849.53	$ 359.66