



**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](http://www.erieco.gov)

**LAND USE APPLICATION**

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

<b>STAFF USE ONLY</b>		
FILE NAME:	_____	
FILE NO:	DATE SUBMITTED:	FEES PAID:
_____	_____	_____

**PROJECT/BUSINESS NAME:** Canyon Creek Filing No. 7 & 8  
**PROJECT ADDRESS:** Fil. 7: NW corner of Telleen Ave. & Jasper Rd. Fil. 8. SE corner of Jasper Rd. & the Railroad ROW  
**PROJECT DESCRIPTION:** Development of 104 Single Family Homes in Filing 7 and 90 Paired Homes in Filing 8.

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

Subdivision Name: Canyon Creek  
 Filing #: \_\_\_\_\_ Lot #: \_\_\_\_\_ Block #: \_\_\_\_\_ Section: S 1/2 of 13 Township: 1 North Range: 69 West

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

Name/Company: Johnson Development Company  
 Contact Person: Con Gerdes  
 Address: 10 Churchill Drive  
 City/State/Zip: Englewood, CO 80113  
 Phone: 303-748-2155 Fax: \_\_\_\_\_  
 E-mail: cgerdes@me.com

**AUTHORIZED REPRESENTATIVE**

Company/Firm: Henry Design Group, Inc.  
 Contact Person: Karen Henry  
 Address: 1501 Wazee Street, Suite 1-C  
 City/State/Zip: Denver, CO 80202  
 Phone: 303-446-2368 Fax: \_\_\_\_\_  
 E-mail: khenry@henrydesigngroup.com

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

Name/Company: Johnson Development Company  
 Address: c/o Howard Johnson  
 City/State/Zip: 10 Churchill Drive, Englewood, CO 80113

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

Name/Company: See attached list  
 Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_

**LAND-USE & SUMMARY INFORMATION**

Present Zoning: Planned Development SFD and MDR	Gross Site Density (du/ac): 2.72 DU/Ac
Proposed Zoning: Planned Development SFD	# Lots/Units Proposed: 192
Gross Acreage: 70.594 Acres	Gross Floor Area: _____

**SERVICE PROVIDERS**

Electric: Xcel Energy	Gas: Xcel Energy
Metro District:	Fire District: Mountain View Fire
Water <i>(if other than Town)</i> :	Sewer <i>(if other than Town)</i> :

**PAGE TWO MUST BE SIGNED AND NOTARIZED**

**DEVELOPMENT REVIEW FEES**

ANNEXATION		SUBDIVISION	
<input type="checkbox"/> Major (10+ acres)	\$ 4000.00	<input checked="" type="checkbox"/> Sketch Plan	\$ 1000.00 + 10.00 per lot
<input type="checkbox"/> Minor (less than 10 acres)	\$ 2000.00	<input type="checkbox"/> Preliminary Plat	\$ 2000.00 + 40.00 per lot
<input type="checkbox"/> Deannexation	\$ 1000.00	<input type="checkbox"/> Final Plat	\$ 2000.00 + 20.00 per lot
COMPREHENSIVE PLAN AMENDMENT		<input type="checkbox"/> Minor Subdivision Plat	\$ 2000.00
<input type="checkbox"/> Major	\$ 3000.00	<input type="checkbox"/> Minor Amendment Plat	\$ 1000.00 + 10.00 per lot
<input type="checkbox"/> Minor	\$ 1200.00	<input type="checkbox"/> Road Vacation (constructed)	\$ 1000.00
ZONING/REZONING		<input type="checkbox"/> Road Vacation (paper)	\$ 100.00
<input type="checkbox"/> Rezoning	\$ 1700.00 + 10.00 per acre	SITE PLAN	
<input type="checkbox"/> PUD Rezoning	\$ 1700.00 + 10.00 per acre	<input type="checkbox"/> Residential	\$ 1400.00 + 10.00 per unit
<input type="checkbox"/> PUD Amendment	\$ 1700.00 + 10.00 per acre	<input type="checkbox"/> Non-Resi. (>10,000 sq. ft.)	\$ 2200.00
<input type="checkbox"/> Major PD Amendment	\$ 3700.00 + 10.00 per acre	<input type="checkbox"/> Non-Resi. (>2,000 sq. ft.)	\$ 1000.00
<input type="checkbox"/> Minor PD Amendment	\$ 500.00	<input type="checkbox"/> Non-Resi. (<2,000 sq. ft.)	\$ 200.00
SPECIAL REVIEW USE		<input type="checkbox"/> Amendment (major)	\$ 1100.00
<input type="checkbox"/> Major	\$ 1000.00	<input type="checkbox"/> Amendment (minor)	\$ 350.00
<input type="checkbox"/> Minor	\$ 400.00	VARIANCE	
<input type="checkbox"/> 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: \_\_\_\_\_

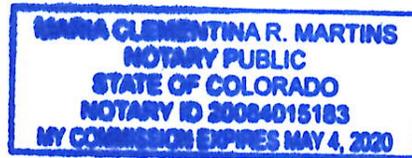
Applicant: \_\_\_\_\_

Date: \_\_\_\_\_

STATE OF COLORADO )  
 ) ss.  
 County of Arapahoe )

The foregoing instrument was acknowledged before me this 20 day of July, 2018, by C. Howard Johnson.

My commission expires: 5/4/2020  
 Witness my hand and official seal.



Mariaclementina R. Martins  
 Notary Public



**CANYON CREEK FILING NO. 7 AND 8 Sketch Plan**  
**Mineral Right Owners, Mineral Lease Holders and Requests for Notice of Surface Use**  
***TO BE VERIFIED*** ***7-26-18***

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1. Johnson Development Company (Owner)  
10 Churchill Drive  
Englewood, CO 80113
  
2. Erie Eight, Ltd. (Owner)  
7720 E. Belleview Avenue  
Englewood, CO 80111  
  
Centennial Petroleum, Inc. (Lessee)  
518 Seventeenth Street, Suite 520  
Denver, CO 80202
  
3. Sonja J. Willert, representative of JB Telleen, deceased (Owner)  
4314 North 119th Street  
Lafayette, CO 80026
  
4. HS Resources (Request for notice of Surface Use)  
1999 Broadway, Suite 3600  
Denver, CO 80202
  
5. RME Petroleum Company and  
RME Land Corporation (Request for notice of Surface Use)  
c/o Anadarko Petroleum Corporation  
PO Box 9149  
Woodlands, TX 77387  
  
Anadarko Entities  
1099 Eighteenth Street, Suite 1800  
Denver, CO 80202
  
6. The Rocky Mountain Fuel Company (Request for notice of Surface Use)  
8020 S. County Line Road 5  
Suite 200  
Ft. Collins, CO 80528



**THE HENRY DESIGN GROUP**  
LAND PLANNING • LANDSCAPE ARCHITECTURE & DESIGN

7. Noble Energy, Inc. (Request for notice of Surface Use)  
Attn: Wattenberg Land Department  
1625 Broadway, Suite 2000  
Denver, CO 80202
  
8. Encana Oil and Gas (Surface Use Agreement/Lease)  
370 Seventh Street, Suite 1700  
Denver, CO 80202 (Lessee)
  
9. Extraction Oil and Gas, LLC (Request for notice of Surface Use)  
370 Seventeenth Street, Suite 370  
Denver, CO 80202
  
10. NRC-CO, LLC (Request for notice of Surface Use)  
c/o Natura Resource Consortium  
755 E. Mulberry, Suite 600  
San Antonio, TX 78212  
Attn: David Schlagel  
  
Well berg, Sullivan, Meck and Tooley, PC  
821 Seventeenth Street, Suite 500  
Denver, CO 80202  
Attn: Steve Sullivan
  
11. Kerr-McGee Oil & Gas Onshore, LP (Request for notice of Surface Use)  
1099 Eighteenth Street, Suite 1500  
Denver, CO 80202  
Attn: Land Manager Wattenberg



July 24, 2018

Johnson Development Company  
10 Churchill Dr.  
Englewood, CO 80113  
Attn: Con Gerdes

(303) 748-2155 Phone  
email: [cpgerdes@me.com](mailto:cpgerdes@me.com)

Re: Canyon Creek Filing No's 7 and 8 – Sketch Plan Submission

To whom it may concern:

Please be advised that Johnson Development Company, owner, hereby authorizes Stratus Canyon Creek, LLC to submit a Sketch Plan application for the above described property to the Town of Erie for processing.

Please advise me should you have any questions.

Cordially,



Howard P. Dean  
Johnson Development Company

Con Gerdes  
Authorized Agent

Cc: Stratus Canyon Creek LLC, Richard Dean, manager

## CANYON CREEK FILING No.'s 7 & 8 Sketch Plan

July 26, 2018

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### NARRATIVE

On behalf of Johnson Development Company and Stratus Canyon Creek, LLC we are pleased to provide this narrative in support of the proposed Sketch Plan for Canyon Creek Filing No.'s 7&8.

**a. Project Concept and Purpose of the Request**

*The purpose of the request is for the review and approval of the Sketch Plan for Canyon Creek Filing No.'s 7&8, thereby initiating the platting process for the residential neighborhood.*

Canyon Creek Filing No's. 7 and 8 are located in the northern portion of the existing Canyon Creek PD. The two filings are generally situated north of the previously platted Canyon Creek Filing No's 1 and 2 and the Creekside Neighborhood. The two filings are contiguous with one another, share similar land characteristics and are proposed to be linked together by common vehicular and pedestrian circulations systems.

The proposed residential neighborhood is in compliance with the Town of Erie Comprehensive Plan, Town of Erie UDC and the Canyon Creek Planned Development.

The design intent is to provide neighborhoods which are complementary to surrounding development and in keeping with the Town's long-range goals. Filing No. 8 is proposed for 88 paired homes on individual lots which are 30-32 feet wide by 90 feet deep. Filing No. 7 is proposed for single family detached lots between 50 and 56 feet wide by 110 to 120 feet deep. Two entrances from Jasper Road are proposed into each neighborhood which are at a common alignment.

Similar to other filings within Canyon Creek, both filings have been designed with distinct identities based on the natural environment. Additionally, the filings are linked together by common open space areas and a walkway/trail system. Filing No. 7 is bisected by the Leyner Cottonwood Ditch, overhead power lines and a gas line. These areas will be included in the open space corridors with trail connections. The eastern portion of Filing No. 8 incorporates an existing regional detention pond which is owned and maintained by the Town. A north/south trail on the west side of the pond and along the north side of the drainage between the Creekside neighborhood and Filing No. 8 provide a pedestrian connection with the trail system within Filing No. 7.

Both Filings have been designed to respect the newly adopted 350-foot oil and gas well radius. The location of an abandoned mine shaft within Filing No. 7 is identified on the Sketch Plan. The shaft is located within the street right-of-of way. The area of mining influence is also identified on the Plan.

**b. Land Area to be Subdivided**

Filing No. 7: 37.269 Acres

Filing No. 8: 33.325 Acres

**c. Total Number of Lots and Density:**

Filing No. 7: 104 Lots

2.71 Gross DU/Ac

Filing No. 8: 88 Lots

2.64 Gross DU/Ac

**d. Area to be preserved as open space**

Approximately 11.85 acres within Filing No. 7 and 14.7 acres within Filing No. 8 of open space are planned for natural open space areas, buffers, common area open space, trails, and pocket parks. The design intent of the parks and open space is to provide a complete trail system. Tract E within Filing No. 7 and Tract C within Filing No. 8 are planned for pocket parks. The pocket park will be designed in accordance with Town regulations and are intended to meet the passive and active recreational needs of the neighborhood. Additionally, Tract B within Filing No. 7 is intended for future dedication to the Town for the expansion of the Town's park located south of Filing No. 7.

The common areas including landscaping, parks, open space and trails will be owned and maintained by the homeowner's association with the exception of the regional detention facility which is owned and maintained by the Town of Erie.

Requirements for public land dedications for parks and open space will be determined at the time of Preliminary Plat. Some credit toward the public land dedication requirements have been previously satisfied for these parcels in other areas within Canyon Creek by Johnson Development Company.

**e. Phasing**

The developer is considering phasing options. Phasing will be determined at the time of Preliminary Plat.

**f. Services**

Canyon Creek Filing No. 7 and 8 are located in the northern portion of Canyon Creek and as such, services will need to be extended to meet the needs of the neighborhood.

Water and Sanitary Service: Filing No. 7 is located in the Town's Water Zone 3 and Filing No. 8 is located within Zone 2. This development will connect to the existing 12" water main located at the south end of the project near the Jasper Road and Telleen Avenue intersection.

The subject development is located in the West Side Basin for sanitary sewer.

Full utility connections will be determined at the time of Preliminary Plat given much of the surrounding area to the north is currently developing or in the planning phases. The applicant will work with the Town to determine the appropriate connections

Stormwater: A Phase I Drainage Report has been included in this application to discuss the impacts of this development on the storm drainage system.

Other services are as follows: Filings No. 7 and 8 are the last portions of Canyon Creek to development. The infill nature of the site enables service providers to serve the neighborhood in an efficient manner. Service providers include:

Schools:	St. Vrain School District
Fire Protection:	Mountain View Fire Protection District
Electric:	Xcel Energy
Natural Gas:	Xcel Energy
Cable:	Comcast
Telephone:	Century Link
Water and Sanitary Sewer:	Town of Erie.

**g. Existing and Proposed Covenants and Restrictions:**

1. Easement agreement with Leyner Cottonwood Ditch Company
2. Canyon Creek PD
3. Avigation Easement
4. Drainage Easement granted to the Town of Erie.
5. Permanent access and utility easement to the Town of Erie.
6. Surface Use Agreement with EnCana Oil and Gas
7. Overhead Utility Easement for WAPA



## 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: Karen Henry  
From: Christopher C. LaRue, Senior Planner  
Date: January 25, 2019 [Responses provided 3/8/2019](#)  
Re: SK-1004-2018: Canyon Creek Filing No. 7 & 8 – Sketch Plan Application  
cc: Deborah Bachelder, Matt Wiederspahn

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Town staff has reviewed the Canyon Creek Filing No. 7 and 8 Sketch Plan for conformance with Municipal Code, Title 10 at the January 10, 2019 Development Review Team meeting. A list of the Town staff that have commented and referral agencies that have responded are listed below. Referral comments received by the Town after the date of this memo shall be forwarded on to the applicant. Please note, engineering comments will arrive by separate e-mail.

#### Referral Agency comments:

1. Town of Erie: Planning & Parks
2. Merrick
3. OSTAB

#### **General Comments:**

1. *Request is to develop the property with 104 single-family lots and 88 duplex units. The following land use applications will be required: [Acknowledged](#).*
    - a. *Preliminary Plat*
    - b. *Site Plan*
    - c. *Final Plat*
  2. *Compliance/ability to meet building setback requirements are not discussed within the sketch plan application. This will need to be addressed with a lot fit analysis with future platting and site plan submittals.*
    - a. *Lot typicals were provided. Be sure to factor in the window well setback/encroachments in future submittals. [A lot fit analysis will be provided at time of Preliminary Plat. The lots were sized to accommodate the structure and window wells without encroachments into setbacks.](#)*
2. Sketch Plan:
    - a. Sheet 2 of 3:
      - i. *A view corridor, at the cul-de-sac head, a minimum of 35 feet in width shall be provided to maintain open views and pedestrian access.*

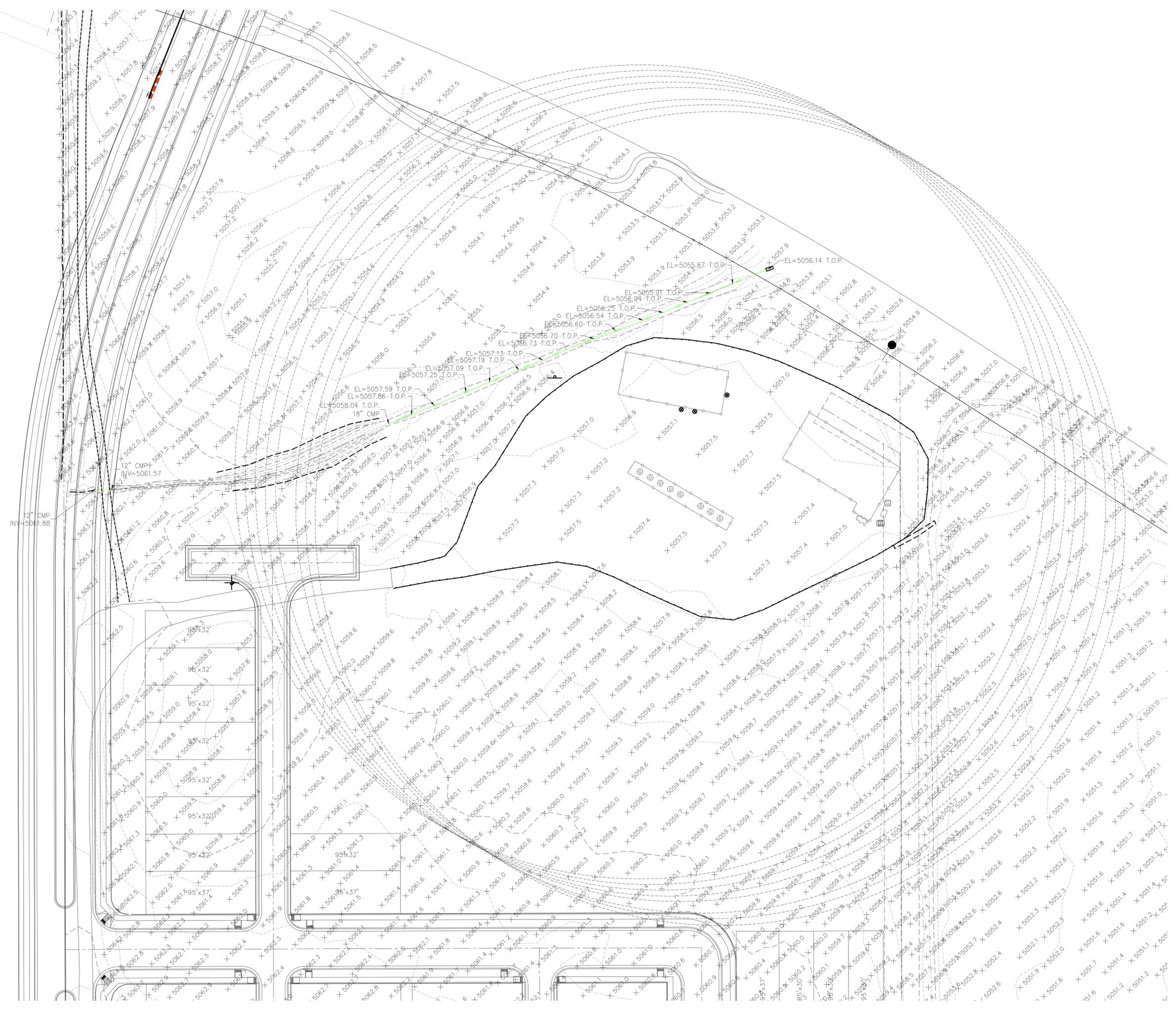
1. View corridors shall contain a pedestrian walkway or trail connection. There are cul-de-sacs that will require trail connections.
  2. The southwest cul-de-sac does not contain a trail connection. Future submittals should explore this possibility. A trail connection in this area would require crossing the ditch which is not proposed. Access to the trail will be from the sidewalk where the road crosses the ditch.
- b. Lot Design:
- i. Please look at lots 75 through 80 in Filing 8. Staff suggests turning the block 180 degrees so the lots are oriented north to south similar to Lots 81 through 88. This should improve the view from the trail and allow the pocket park to be more squared off. The lots have been revised as suggested to create a better view and pocket park.
- c. Oil and Gas
- i. Please double check the setbacks listed on the sketch plan. Setbacks should be based upon existing wells *and associated above ground production facilities*. The plan only depicts well setbacks. The oil and gas facilities have been verified. See attached exhibit indicating the setbacks and facilities.
- d. Parks & Open Space (MC 10.6.3.)
- a. Staff has evaluated the minimum dedication requirements for the Sketch Plan proposal and updated the numbers, as listed below:

	Filing 7 - MC Requirement	Filing 8 - MC Requirement
Pocket Park	0.157 (.25 minimum required)	0.127 (.25 minimum required)
Neighborhood Park	0.945	0.762
Community Park	1.575	1.27
Open Space	5.355	4.32

- i. Open Space:
1. The dedication requirement for the proposed development is 9.675 acres. There is about 3.93 acres of open space credit. This leaves approximately 5.745 acres of dedication required.
  2. Please review Section 10.6.3.C.4 regarding Characteristics of Open Space to be Dedicated. Among other requirements, Open Space is required to be a minimum of ten contiguous acres.
    - a. After discussions with the Town of Erie Parks Director, the Town is potentially interested in allowing Tract B of Filing 8 to meet the Open Space requirement. Some improvements to this tract would be required. Please see the Parks comments. 10.36 acres of Tract B will be dedicated to the Town as Open Space as suggested.

6.315

3.36





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**Internal Memo**

To: Chris LaRue, Planning & Development - Senior Planner  
From: Darren Champion, Parks and Open Space Project Coordinator  
Date: January 24, 2019  
**Subject: Canyon Creek Filings 7 & 8 – Sketch Plan**  
Cc: Farrell Buller, Community Services Director  
Mike McGill, Parks and Open Space Interim Division Manager

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Parks & Open Space Division staff has reviewed the subject plans and offers these comments:

- Sheet 1 of 3 – Filing No. 8 Tract B - Improvements will need to be made to this tract including prairie dog removal. Successful removal of prairie dogs and native restoration of Tract B will be required prior to possible future acceptance as open space by the Town.
- Sheet 3 of 3 – Identify trail running from the northeast corner of Tract B to the northwest corner of Tract A tying into Jasper Road as a “SPINE TRAIL”.

Improvements to Tract B will be coordinated with the Parks department at time of Preliminary

The trail has been identified on the Sketch Plan



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Memo

To: Chris LaRue  
From: Chad Schroeder, P.E., CFM, Development Engineer  
Date: February 5, 2019  
Subject: **Canyon Creek Filing 7 & 8 Sketch Plan**  
CC: Joe Smith  
Matt Wiederspahn  
Wendi Palmer

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**Response Comments for the Sketch Plan:**

6. Jasper Road will need to be extended to connect with the realigned northern portion of Jasper Road which part of it will be constructed by the proposed Meadowlark subdivision. The existing Jasper Road and 123<sup>rd</sup> Street intersecting curve realignment will be constructed by the Meadowlark subdivision while the Jay Road and 123<sup>rd</sup> Street intersecting curve realignment will be constructed by the Canyon Creek Filing 7 and 8. Staff is currently reviewing the plans for the Jasper Road / 123<sup>rd</sup> Street / Jay Road realignment. A portion of this extension of Jasper Road will require acquiring the needed ROW, annexation of the ROW from unincorporated Boulder County parcel(s) into the Town of Erie, and approval of RTD for crossing their property. All agreements and approvals will be required for Final Plat approval.

**Response: Comment acknowledged**

Propose a round-about plan for the existing 123<sup>rd</sup> Street and Jay Road intersection curve with the new Jasper Road extension. The Meadowlark subdivision has provided a primary sketch on what the round-about design could look like. The proposed design shall adhere to applicable setbacks to existing structures.

7. The proposed Meadowlark and Wise subdivisions will be installing some portions of the utility lines required for the Canyon Creek Filings 7 and 8. If these subdivisions are not able to install these utility lines, then Canyon Creek Filings 7 and 8 will need to install these lines along with obtaining any of the needed easements, agreements, etc. The Utility Report for Canyon Creek Filings 7 and 8 will need to verify that the final utility layout meets standards. Listed next are the needed portions of the utility lines from the other proposed subdivisions:

c. The proposed Meadowlark subdivision will need to construct a 16-inch waterline from the Jasper Road and 123<sup>rd</sup> Street intersecting curve. From this junction, the proposed Meadowlark subdivision will need to install a 12-inch water line to the existing 12-inch water line in the existing southern segment of Jasper Road. This portion of the water line will also require easements from the respective land owners as well as approval

from RTD for crossing their property. All agreements and approvals will be required for Final Plat approval.

**Response: Comment acknowledged**

There has been a change to water line plans. The Meadowlark subdivision will now just provide a 12-inch waterline stub under the 123rd Street and Jay Road intersecting curve. Canyon Creek Filings 7 & 8 will need to install the 12-inch water line from the said stub to the Jasper Road 12-inch water line in the Canyon Creek subdivision. Additionally along this water line in the new extension of Jasper Road, a PRV will need to be installed between pressure Zones 2 & 3.

d. The proposed Meadowlark subdivision shall install a PRV on the new 12-inch water line in the realigned Jasper Road between the Meadowlark subdivision and Canyon Creek Filing 7 and 8.

**Response: Comment acknowledged**

Along with the water line installation described in 7c above, Canyon Creek Filings 7 & 8 will need to install a PRV on the 12-inch water line between pressure Zones 2 & 3.

8. See attached Drainage Report Comments from Merrick dated 12 October 2018.

**Response: See responses to the Drainage Report comments.**

See attached Drainage Report response comments from Merrick dated 24 January 2019.

March 11, 2019

Town of Erie Engineering Division  
P.O. Box 750  
645 Holbrook Street  
Erie, CO 80516

Subject: Canyon Creek Filing 7 & 8, 3rd review drainage Response to Comments

### Drainage Report

1. We acknowledge that the wetlands are not yet determined to be jurisdictional or non-jurisdictional and note that CWC will be responsible for complying with all requirements in future submittals should there be jurisdictional wetlands. **Noted**
2. Per the drainage report, an additional 5 acres from Basin 617 is planned to be tributary to existing Pond 1045 than the pond was designed for. The additional area appears to be single family lots in Filing 7. Due to this increase in tributary area, the revised inflows to Pond 1045 must be analyzed to determine if the pond can handle the additional flows and volume of runoff from the site. Pond 1045 was designed to control the 10-year and 100-year storm events, so provide calculations for the 10-year and 100-year peak inflows to Pond 1045 (including flows from all of the offsite tributary basins) for evaluation. **The OSP basins 478 and 481 total 147 acres at 32.16% Impervious (product of area X Impervious=4727.52). This project's projected basins A-1, A-2, A-3, B-1, C-1, C-2, D-1, OS-1, OS-2, OS-3 and OS-4 total 152.83 acres at 27.0% impervious (product of area X impervious= 4126.41). Although the drainage area of the OSP basins increased by 4%, the imperviousness of the OSP basins decreased by 5%. We believe that a pond analysis is not warranted due to the decrease in impervious coverage. If that is believed to be not the case, we request that hydraulic analysis occur in the future Phase III drainage report and not this Phase I drainage report.**

### *Appendix B*

3. On the Composite Imperviousness Calculations spreadsheet, provide a separate calculation to determine the composite imperviousness for the ROW categories or include the ROW in other categories such as paved and lawns. **The imperviousness for the ROW was determined by looking at a 1 acre section of ROW for each road classification and determining how much area of asphalt, concrete and lawn was present in that acre and then using that information to determine the composite imperviousness of that acre. A calculation is shown in the report.**
4. On the Time of Concentration spreadsheet, we have the following comments:
  - a. Update the Check for Urban Catchments Tc column using equation 6-5 from UDFCD DCM Volume 1, revised August 2018. **Corrected**
  - b. Describe how the Final Tc was determined for Sub-basin OS-2 or provide a calculation. **A calculation for a hypothetical flow path is presented.**

c. Provide Tc calculations for sub-basins OS-3 and OS-4. **Basins OS-3 and OS-4 are only presented in order to compare the developed basin to the OSP basins in area and imperviousness. There is no plan on developing time of concentration and determining the flow rates for this Phase I drainage report. If it becomes necessary to determine those flow rates during detailed hydraulic analysis of the future Phase III drainage report, we will do so.**

***Appendix C***

5. On Sheet 3 of 5 of the Proposed Drainage Map, “Existing Laferty Ditch Lateral to be relocated” does not point to a ditch. Correct the label. **Corrected**
6. It is understood that the wetlands are in review. Show and label the existing wetlands on the existing and proposed conditions drainage maps. **An area is labeled as “Approximate area under jurisdictional wetland review”**



## Town of Erie Open Space and Trails Advisory Board

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From: Town of Erie Open Space and Trails Advisory Board (OSTAB)

To: Chris LaRue, Senior Planner, Community Development

Date: September 25, 2018 [Responses provided 3/4/2019](#)

**Subject: Country Meadows Filings 7 and 8, Sketch Plan  
Canyon Creek**

Date of Drawing: August 14, 2018

Location: NW of intersection of Telleen Ave. and Jasper Rd.

OSTAB has reviewed the referral materials, compared them to Town planning documents, and prepared the following comments, questions, and recommendations for the Town's consideration in evaluating this application.

We primarily use the following Town documents as we evaluate the proposed open space and trails in all development application reviews:

1. Natural Area Inventory (NAI) - In 2008, the Town engaged Walsh Environmental Scientists and Engineers of Boulder, Colorado, to identify and evaluate the natural areas within the Town's planning area. Over 125 areas were evaluated. Based upon a variety of characteristics, a numerical "summary rating" was calculated, and the habitat quality of each site was categorized as high, medium, or low;
2. Unified Development Code (UDC), Chapter 6 – Development and Design Standards:
  - a. Section 10.6.2 – Natural and Scenic Resource Protection;
  - b. Section 10.6.3 – Parks, Open Space, and Trails.
3. Parks, Recreation, Open Space, and Trails (PROST) Master Plan.

### **Open Space:**

#### **Discussion:**

There are two NAI sites within this application: [Thank you for the information on the NAI](#)

1. Site #49, Leyner Cottonwood Ditch East, 14 acres:

"This site follows a section of the Leyner Cottonwood ditch that has a cottonwood woodland in its northeast corner bend. This woodland is in good condition with a well-developed herbaceous understory and a large patch of willows. The area appears to be seasonally flooded and provides excellent nesting habitat for songbirds. The ditch itself is steeply banked and relatively homogeneous with reed canary grass and smooth brome dominating and occasional cottonwoods intervening. Enhancement efforts should focus on cutting down and eradicating the grove of Russian olive trees onsite."

2. Site #54, Three Triangles, 18 acres:

"Three Triangles is comprised of a ditch (appears to be a lateral of the Leyner Cottonwood ditch) and a pasture that seems to be seasonally flooded in places, as evidenced by the presence of reed canary grass near the center. The structure of the herbaceous cover provides marginal habitat for wildlife. Weeds dominate the site. The area could benefit from weed control and cutting down the Russian olives."

We believe that most of NAI Site #49 is in Filing 7, on the north side of the Ditch, where it has a roughly 90 degree bend. The southern portion of NAI site #54 is adjacent to site #49. It contains a lateral from the Ditch that travels northward in Filing 7, then northeastward in Filing 8. The Sketch plan states that this lateral will be relocated and piped underground. Thus, most of NAI site #54 will be destroyed.

The Landscape Inspection and Inventory Report appears to describe the same area:

**Observation:** The trees on the above mentioned development are located on two natural areas. The majority of the trees are located in a large area on the west property line of Filing 7, dissected by the high voltage power line running east/west. This group consists of two large cottonwood stands, one each side of the power lines. These two stands are intermixed with the remaining species. Directly under the power line is a thick stand of Russian Olive.

The second group is a smaller dog-hair stand located on the southeast section of Filing 8, directly north of the pedestrian path and developed homes. This stand is all Cottonwood.

It is difficult to align the map in the Landscape and Inventory Report with either NAI site #49 or the Sketch Plan. Our judgement is that Tract A, a 5.7 acre open space tract, contains the portion of the large stand of trees (mostly cottonwoods) that is south of the power lines. We are unable to determine if the cottonwood stand that is north of the powerlines will be protected, or destroyed by house lots and/or a road. [See attached map aligning the map from the Landscape Inventory over the Sketch Plan. A updated inventory will be provided at the time of Preliminary Plan](#)

The Unified Development Code (UDC) requires a minimum of a 75' setback from the centerline of a main ditch on both sides. This requirement exists even if no dedicated open space is required. Our rough estimate is that some of lots 83-91 and 92-95 are less than 75' from the centerline of the Leyner Cottonwood Ditch. This situation must be resolved.

[The lotting has been revised to ensure that all lots are a minimum of 75' from the CL of the Ditch](#)

This application does not identify any dedicated open space. The narrative states the following:

“Requirements for public land dedications for parks and open space will be determined at the time of Preliminary Plat. Some credit toward the public land dedication requirements have been previously satisfied for these parcels in other areas within Canyon Creek by Johnson Development Company.”

We very strongly oppose excluding the calculation and location for dedicated open space during the sketch plan process. One of the primary purposes of this process is to locate open space, trails and parks prior to the applicant and staff spending substantial time and financial resources creating a preliminary plat which might need major changes to meet requirement in the UDC. We are unable to provide any guidance concerning dedicated open space, or the protection of NAI site # 49 and 54, until we know the acreage of required open space.

[The calculation and location of dedicated open space has been resolved and included with the Sketch Recommendations:](#) Plan. We were awaiting information from the Town to provide the amount and

1. Determine the acreage needed to meet the dedicated open space requirement in the location UDC; [There is a credit of 3.36 acres of OS. 6.315 acres are required and will be met by the](#)
2. Identify where the dedicated open space will be located; [dedication of 10.36 acres in Fil.8-Tr. B](#)
3. Determine if portions of lots 83-91 and 92-95 are less than 75' from the centerline of the Leyner Cottonwood Ditch. If they are, they must be redesigned. [The lots have been redesigned to meet the 75' setback](#)

**Spine Trail:**

Discussion:

Chapter 6 of the PROST Master Plan is devoted to trails. It includes a map (Figure 15) of current and proposed future Spine Trails, and recommendations of improving access to regional trails and neighboring communities. Perhaps the most important future regional trail will connect Erie to the open spaces and trails in eastern Boulder County and the City of Boulder. That regional trail is proposed to follow the Union Pacific/RTD ROW (right of way). A portion of that ROW is the northern border of Filing 8. In the past, the Town has required developers to build a Spine Trail adjacent to the ROW on the south side.

Recommendations: Build a Spine Trail in Filing 8 that is adjacent to the south side of the Union Pacific/RTD ROW. [A spine trail is proposed on the south side the RTD ROW](#)

**Neighborhood Trails and Sidewalks:**

Discussion:

We have reviewed the neighborhood trails in both Filings and are in agreement. In particular, we like the trail in Filing 8 that goes through pocket park Tract C, across the drainage ditch, and connects to the existing Spine Trail in the Creekside subdivision. That existing spine trail provides direct access to both the Erie Elementary School and Erie Middle School.

Recommendation: None

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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.

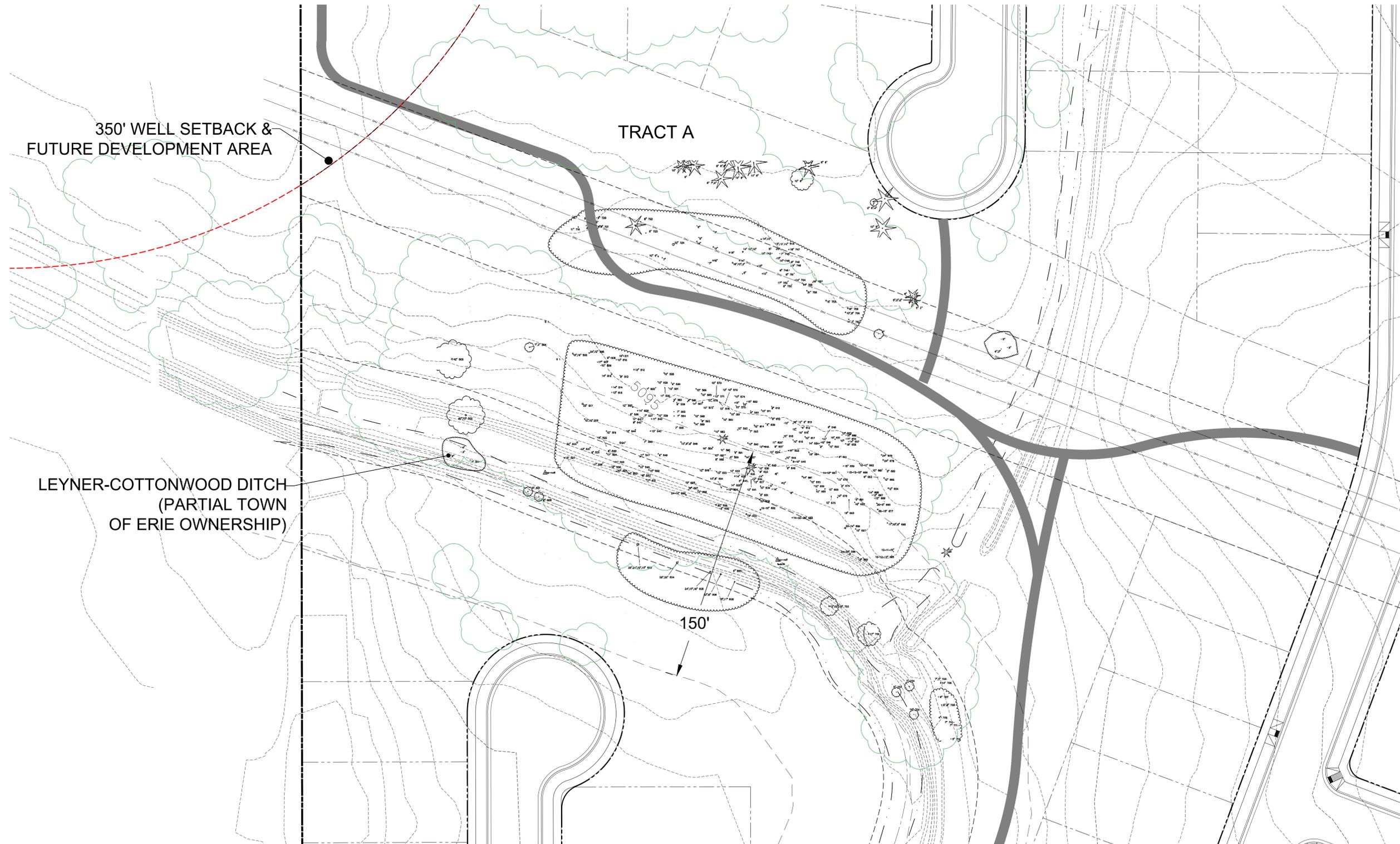
Sincerely,

**Open Space and Trails Advisory Board**

- Bob Braudes
- Phil Brink
- Christine Felz
- Dawn Fraser
- Ken Martin (Chair)
- Joe Swanson

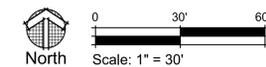
# CANYON CREEK FILING NO. 7 & 8 - SKETCH PLAN

A PARCEL OF LAND LOCATED IN THE SOUTH HALF OF SECTION 13, TOWNSHIP 1 NORTH,  
RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN,  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO



## LEGEND

- |                   |                                |                       |
|-------------------|--------------------------------|-----------------------|
| PROPERTY BOUNDARY | TRAIL                          | EXISTING VEGETATION   |
| EASEMENT          | POTENTIAL MINE SUBSIDENCE LINE | EXISTING GAS/OIL WELL |
| EXISTING CONTOUR  | EXISTING DITCH LATERAL         |                       |



NO	REVISION RECORD	DATE
1		03-05-2019
2		
3		
4		

LANDSCAPE ARCHITECT / PLANNER:

**henry design group**

Landscape Architecture • Planning • Entitlements  
1501 Wazee Street Suite 1-C, Denver, Colorado 80202  
303.446.2388 • henydesigngroup.com

ENGINEER:

**CONSULTING GROUP**

9360 Teddy Lane, Suite 203  
Lone Tree, CO 80124  
303.395.2700

APPLICANT:

**Stratus Canyon Creek, LLC.**  
1842 Montane Drive East  
Golden, CO 80401  
Richard Dean  
720.214.5000

**CANYON CREEK FILING NO. 7 & 8**

**EXISTING TREE EXHIBIT**

ERIE, COLORADO

JOB NO.:  
DRAWN: AY  
CHECKED: KH  
ISSUE DATE: 3-5-2019

SHEET:  
**EXISTING TREE EXHIBIT**  
1 of 1



**First American Title Insurance Company - NCS**  
**1125 17th Street, Suite 500**  
**Denver, Colorado 80202**  
**Phone: (303)876-1112 Fax:(877)235-9185**

**DATE:** December 12, 2017

**FILE NUMBER:** NCS-882395-CO

**PROPERTY ADDRESS:** Canyon Creek Filing No 7 and No 8, Erie, CO

**OWNER/BUYER:** Johnson Development Company/KB Home of Colorado, Inc

**YOUR REFERENCE NUMBER:** Canyon Creek

**ASSESSOR PARCEL NUMBER:**

**PLEASE REVIEW THE ENCLOSED MATERIAL COMPLETELY AND TAKE NOTE OF THE FOLLOWING TERMS CONTAINED THEREIN:**

**Transmittal:**

**Revision No.:**

**Schedule A:**

**Schedule B - Section 1 Requirements:**

**Schedule B - Section 2 Exceptions:**

Should you have any questions regarding these materials, please contact First American Title Insurance Company National Commercial Services at the above phone number. We sincerely thank you for your business.

<b>TO:</b>	<b>First American Title Insurance Company National Commercial Services</b>	<b>TITLE OFFICER:</b>	<b>Daniel Bennetts</b>
	<b>1125 17th Street, Suite 500</b>	<b>PHONE:</b>	<b>(303)876-1112</b>
	<b>Denver, Colorado 80202</b>	<b>FAX:</b>	<b>(877)235-9185</b>
		<b>E-MAIL:</b>	<b>DBennetts@firstam.com</b>
		<b>DELIVERY:</b>	<b>E-MAIL</b>

<b>TO:</b>	<b>First American Title Insurance Company National Commercial Services</b>	<b>ESCROW OFFICER:</b>	<b>Sonya Bailey</b>
	<b>1125 17th Street, Suite 500</b>	<b>PHONE:</b>	<b>(303)876-1112</b>
	<b>Denver, CO 80202</b>	<b>FAX:</b>	<b>(877)235-9185</b>
		<b>E-MAIL:</b>	<b>sonyabailey@firstam.com</b>
		<b>DELIVERY:</b>	<b>E-MAIL</b>

<b>To:</b>	<b>Johnson Development Company</b>	<b>ATTN:</b>	<b>Howard Johnson</b>
	<b>10 Churchill Dr</b>	<b>PHONE:</b>	<b>(303)478-3785</b>
	<b>Englewood, CO 80113-4001</b>	<b>MOBILE:</b>	
		<b>FAX:</b>	
		<b>E-MAIL:</b>	<b>howard.johnson@me.com;</b> <b>cpgerdes@me.com</b>
		<b>DELIVERY:</b>	<b>E-MAIL</b>

**To:**           **KB Home Colorado Inc.**  
                  **7807 East Peakview Avenue Suite**  
                  **300**  
                  **Centennial, CO 80111**

**ATTN:**           **Douglas Shelton**  
**PHONE:**       **(303)323-1141**  
**MOBILE:**  
**FAX:**           **(720)488-3860**  
**E-MAIL:**       **dshelton@kbhome.com;**  
                      **tgarrelts@kbhome.com**  
**DELIVERY:**   **E-MAIL**

---

**To:**           **First American Title Insurance**  
                  **Company National Commercial**  
                  **Services**  
                  **1125 17th Street, Suite 750**  
                  **Denver, CO 80202**

**ATTN:**           **Beverly M. Carlson**  
**PHONE:**       **303-876-1138**  
**MOBILE:**      **720-775-8892**  
**FAX:**           **877-235-9185**  
**E-MAIL:**       **bevcarlson@firstam.com**  
**DELIVERY:**   **E-MAIL**

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## ALTA Commitment Form

### COMMITMENT FOR TITLE INSURANCE

Issued by

#### *First American Title Insurance Company*

First American Title Insurance Company, a Nebraska 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 Schedules 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 (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

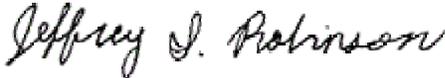
The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, First American 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.

#### ***First American Title Insurance Company***



Dennis J. Gilmore  
President



Jeffrey S. Robinson  
Secretary

**COMMITMENT FOR TITLE INSURANCE FORM  
SCHEDULE A**

1. Effective Date: December 5, 2017 at 5:00 p.m.
  - a. ALTA Owner's Policy (06-17-06) \$4,830,000.00  
  
Proposed Insured:  
KB Home of Colorado, Inc, a Colorado corporation
  - b. ALTA Loan Policy (06-17-06) \$0.00  
  
Proposed Insured:  
None
2. The estate or interest in the Land described or referred to in this Commitment is:  
  
Fee Simple
3. [Title to the estate or interest in the Land is at the Effective Date vested in:](#)  
  
Johnson Development Company, a Colorado corporation
4. The Land referred to in this Commitment is described as follows:  
  
See Exhibit "A" attached hereto and made a part hereof.  
  
For informational purposes only: Canyon Creek Filing No 7 and No 8,  
Erie, Colorado

**EXHIBIT A**

Commitment No.: NCS-882395-CO

The land referred to in Schedule A is situated in the County of Boulder, State of Colorado and is described as follows:

## Parcel A:

A part of the Southeast quarter of the Southwest quarter of Section 13, Township 1 North, Range 9 West of the 6th P.M., Boulder County, Colorado, together with Tract "O" of Creekside Subdivision as recorded in Plat [Cabinet 56, File 2, Page 17](#), in the office of the recorder of Boulder County, Colorado, more particularly described as follows:

Commencing at the South quarter corner of Section 13, Township 1 North, Range 69 West of the 6th P.M., said point being monumented by a 3-1/4" aluminum cap marked PLS 36580; thence North 89°44'23" West along the South line of the Southwest quarter of Section 13, 693.72 feet to the Point of Beginning of the herein described tract; thence continuing North 89°44'23" West, along the South line of said Southwest quarter of Section 13, 636.82 feet to the Southwest corner of the Southeast quarter of said Southwest quarter, this and the following two (2) courses being monumented by a 3-1/4" aluminum cap stamped J.R. Engineering PLS No. 19606, and being along the perimeter of said quarter section; thence North 00°26'39" West 1319.12 feet to the Northwest corner thereof; thence South 89°50'01" East 1329.50 feet to the Northeast corner thereof; thence South 00°29'19" East, along the East line of said quarter, 795.29 feet to a 2" aluminum capped rebar marked LS 24305, per the Plat of Creekside Subdivision, as recorded in Plat [Cabinet 56, File 2, Page 17](#), in the office of the recorder of Boulder County, Colorado; thence North 89°42'38" West, along the Northerly line of said Creekside Plat, 90.01 feet to the Northwest corner of Tract "L" of said Creekside Subdivision; Thence South 00°29'19" East, along the West line of said Tract "L" 320.00 feet to the Southwest corner thereof, thence South 89°42'38" East, along the South line of Tract "L" of said Creekside Plat extended, 40.00 feet to the Westerly right-of-way of Tract "G", per the Plat of Canyon Creek Filing No. 2, as recorded in the office of the recorder of Boulder County, Colorado; thence South 00°29'28" East, along the West line of said Tract "G", 61.05 feet to the Northeast corner of said Parcel "C" Tract "G" of Canyon Creek Filing 3; thence North 89°44'23" West along the perimeter of Parcel "C" Tract "G", 642.45 feet to a point of curvature; thence along a 805.00 foot radius curve to the right (said curve having a central angle of 00°05'27" and a chord bearing North 89°41'39" West a distance of 1.28 feet) an arc length of 1.28 feet; thence South 00°29'19" East, 145.00 feet to the Point of Beginning.

## Parcel B:

A parcel of land within the Southeast quarter of Section 13, Township 1 North, Range 69 West of the Sixth Principal Meridian, Town of Erie, County of Boulder, State of Colorado, shown as Parcel 073 on Parcel Map No. 1465130 in the records of said county, lying South of the Union Pacific Railroad right of way, and North of that real property described in Reception No. [1895203](#), and being more particularly described as follows:

Commencing at the South quarter corner of said Section 13; thence North 00°29'19" West, along the West line of said Southeast quarter section, a distance of 750.95.00 feet to the North intersection of said Reception No. [1895203](#) as recorded in the records of said county with said west line, which is the point of beginning; thence on the north line of said Reception No. [1895203](#) the following (5) courses

1. North 85 degrees 33'33" East, 80.27 feet;
2. North 54 degrees 48'33" East, 920.00 feet;
3. South 85 degrees 58'27" East, 214.00 feet;
4. North 56 degrees 33'33" East, 560.00 feet;
5. North 18 degrees 21'09" East, 64.70 feet to the South right of way line of the Union Pacific Railroad;

Thence North 57 degrees 49'09" West, along the South right of way line of said railroad, 985.00 feet to a non-tangent 2764.93 foot radius curve which is concave Southwesterly;

Thence Westerly along said non-tangent curve, whose center bears South 31 degrees 58'00" West, through a central angle of 16 degrees 14'03", a distance of 783.42 feet to the West line of said Southeast quarter; thence South 00 degrees 29'19" East, non-tangent to said curve, 1731.77 feet to the Point of Beginning.

For informational purposes only: APN(s): 146513000073, 146513000077, 146513014002

**COMMITMENT FOR TITLE INSURANCE FORM**  
**SCHEDULE B**  
**SECTION ONE**  
**REQUIREMENTS**

The following requirements must be met:

1. Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
2. Pay us the premiums, fees and charges for the policy.
3. Payment of all taxes and assessments now due and payable.
4. Recordation of a Special Warranty Deed satisfactory to the Company, from Johnson Development Company, a Colorado corporation, vesting fee simple title in and to KB Home of Colorado, Inc, a Colorado corporation.
5. Receipt by the Company of a Corporate Resolution executed by the officers of Johnson Development Company, a Colorado corporation, authorizing the transaction herein contemplated and setting forth the names and authority of those authorized to sign for the corporation.

NOTE: The Company reserves the right to make further requirements and/or exceptions upon review of the above item(s).

6. Receipt by the Company of a satisfactory Final Affidavit and Indemnity, executed by Johnson Development Company, a Colorado corporation.
7. Receipt by the Company of an ALTA/NSPS Land Title Survey, certified to First American Title Insurance Company, and in form and content satisfactory to the Company. The Company reserves the right to make further requirements and/or exceptions upon review of this survey.

**COMMITMENT FOR TITLE INSURANCE FORM**  
**SCHEDULE B**  
**SECTION TWO**  
**EXCEPTIONS**

Schedule B of the policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Any facts, rights, interests or claims which are not shown by the Public Records, but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
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 and 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 heretofore or hereafter furnished, imposed by law and not shown in the Public Records.
5. Any and all unpaid taxes, assessments and unredeemed tax sales.
6. Water rights, claims or title to water, whether or not shown by the public records.
7. Right of way for the Leyner Cottonwood Ditch.
8. All oil, gas and other minerals as reserved by the Union Pacific Railroad Co., and the terms within, as set forth in Deed recorded April 1, 1931 in [Book 573 at Page 510](#).

NOTE: Notice of Oil and Gas Interests and Surface Use in connection therewith recorded December 11, 2000 at Reception No. [2102274](#).

NOTE: Request for Notification of Surface Development in connection therewith recorded May 17, 2002 at Reception No. [2288454](#).

NOTE: Notice of Mineral Interests and Surface Use in connection therewith recorded March 7, 2007 at Reception No. [2840804](#).

NOTE: Request for Notification in connection therewith recorded December 21, 2007 at Reception No. [2900941](#).

NOTE: Requests for Notice of Surface Development in connection therewith recorded October 23, 2007 at Reception No. [2890878](#) and September 28, 2009 at Reception No. [3032258](#).

NOTE: Request for Notification of Application for Development in connection therewith recorded July 12, 2016 at Reception No. [3529919](#).

9. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Contract and Grant of Easements recorded December 31, 1950 in [Book 865 at Page 300](#) and April 14, 1951 in [Book 885 at Page 448](#).
10. Any tax, lien, fee or assessment by reason of inclusion of subject property in the the Erie Water & Sanitation District, as evidenced by instrument recorded August 20, 1976 at Reception No. [188837](#).
11. Oil and Gas Lease recorded July 21, 1980 at Reception No. [404110](#), and any and all assignments thereof or interests therein.
12. Oil and Gas Lease recorded January 6, 1982 at Reception No. [478713](#), and any and all assignments thereof or interests therein.
13. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Right-of-Way Grant recorded May 26, 1982 at Reception No. [496103](#).
14. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Right-of-Way Agreement recorded April 25, 1985 at Reception No. [684896](#).
15. Any tax, lien, fee or assessment by reason of inclusion of subject property in the the Northern Colorado Water Conservancy District, as evidenced by instruments recorded February 7, 1992 at Reception Nos. [1159956](#) and [1159957](#) and July 15, 1994 at Reception No. [1446208](#).
16. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Sewer Line Easements recorded November 21, 1994 at Reception Nos. [1479810](#) and [1479811](#).
17. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Agreement recorded January 16, 1996 at Reception No. [1576745](#).
18. Terms, conditions, provisions, obligations and agreements as set forth in the Intergovernmental Agreement Amendment to East Central Boulder County Comprehensive Development Plan recorded April 3, 1998 at Reception No. [1787992](#).
19. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Agreement recorded July 23, 1998 at Reception No. [1826698](#).
20. Reservation of oil, gas and other minerals as reserved in Special Warranty Deed recorded August 25, 2000 at Reception No. [2073245](#), and any and all assignments thereof or interests therein.
21. Ordinance No. 733, for approving the Canyon Creek PD Development Plan, recorded April 26, 2001 at Reception No. [2142188](#).
22. Terms, conditions, provisions, obligations and agreements as set forth in the Canyon Creek PD Development Plan recorded July 9, 2001 at Reception No. [2171024](#), and amendments recorded November 7, 2007 at Reception No. [2893769](#), February 13, 2008 at Reception Nos. [2909751](#) and [2909752](#), October 11, 2012 at Reception No. [3258805](#), and March 31, 2016 at Reception No. [3509414](#).
23. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Drainage Easement recorded August 29, 2001 at Reception No. [2190497](#).

24. Easements, notes, covenants, restrictions and rights-of-way as shown on the plat of Creekside Subdivision, recorded February 28, 2002 at Reception No. [2259493](#).
25. Terms, conditions, provisions, obligations and agreements as set forth in the Creekside Subdivision Development Agreement recorded February 28, 2002 at Reception No. [2259499](#).
26. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Grant of Permanent Access and Utilities Easement Agreement recorded February 18, 2005 at Reception No. [2666112](#).
27. Terms, conditions, provisions, obligations and agreements as set forth in the Memorandum of Compatible Development and Surface Use Agreement recorded January 13, 2009 at Reception No. [2973242](#).
28. Oil and Gas Lease recorded January 13, 2009 at Reception No. [2973243](#), and any and all assignments thereof or interests therein.
29. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Agreement and Grant of Access Easement recorded July 1, 2010 at Reception No. [3084110](#).
30. Terms, conditions, provisions, obligations and agreements as set forth in the Compatible Surface Use Agreement recorded June 14, 2011 at Reception No. [3153652](#).
31. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Easement and Right of Way recorded January 11, 2013 at Reception No. [3281950](#).
32. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Easement Grant recorded March 14, 2013 at Reception No. [3297125](#).
33. Terms, conditions, provisions, obligations, easements and agreements as set forth in the Right-of-Way Grant recorded March 14, 2013 at Reception No. [3297126](#).
34. Existing leases and tenancies.

**EXHIBIT B**  
**Statement of Charges**

ALTA Extended Owner Policy	\$ 4,521.00
Tax Certification	\$ 75.00

## CONDITIONS

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 acquired 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 the 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 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 <http://www.alta.org/>.



*First American Title*

#### Privacy Information

##### We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

#### Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

#### Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

#### Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

#### Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

#### Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

#### Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet. In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site. There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

#### Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

#### Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive. [FirstAm.com](http://FirstAm.com) uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

#### Fair Information Values

**Fairness** We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

**Public Record** We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

**Use** We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

**Accuracy** We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

**Education** We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

**Security** We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

**DISCLOSURE STATEMENT**

Pursuant to C.R.S. 30-10-406(3)(a) 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 will refuse to record or file any document that does not conform to the requirements of this section.

NOTE: If this transaction includes a sale of the property and the price exceeds \$100,000.00, the seller must comply with the disclosure/withholding provisions of C.R.S. 39-22-604.5 (Nonresident withholding).

NOTE: Colorado Division of Insurance Regulations 8-1-2 requires that "Every title insurance company shall be responsible to the proposed insured(s) subject to the terms and conditions of the title commitment, other than the effective date of the title commitment, for all matters which appear of record prior to the time of recording whenever the title insurance company, or its agent, conducts the closing and settlement service that is in conjunction with its issuance of an owner's policy of title insurance and is responsible for the recording and filing of legal documents resulting from the transaction which was closed.

Pursuant to C.R.S. 10-11-122, the company will not issue its owner's policy or owner's policies of title insurance contemplated by this commitment until it has been provided a Certificate of Taxes due or other equivalent documentation from the County Treasurer or the County Treasurer's authorized agent; or until the Proposed Insured has notified or instructed the company in writing to the contrary.

The subject property may be located in a special taxing district. A Certificate of Taxes due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent. 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: 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 Colorado Division of Insurance Regulations 8-1-2, 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 C.R.S. 38-35-125(2) no person or entity that provides closing and settlement services for a real estate transaction shall disburse funds as a part of such services until those funds have been received and are available for immediate withdrawal as a matter of right.

NOTE: C.R.S. 39-14-102 requires that a real property transfer declaration accompany any conveyance document presented for recordation in the State of Colorado. Said declaration shall be completed and signed by either the grantor or grantee.

**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.**

NOTE: Pursuant to Colorado Division of Insurance Regulations 8-1-3, notice is hereby given of the availability of an ALTA Closing Protection Letter which may, upon request, be provided to certain parties to the transaction identified in the commitment.

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.

# ALTANSPS LAND TITLE SURVEY

TRACT "O", CREEKSIDE SUBDIVISION AND A PORTION OF THE SOUTH ONE-HALF OF SECTION 13,  
TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO



## LEGAL DESCRIPTION

### PARCEL A:

(FROM RECEPTION NO. 2073245, EXHIBIT A, PARCEL B, PAGE 4 OF 15)

A PARCEL OF LAND WITHIN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 13, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO, SHOWN AS PARCEL NO. 074 ON MAP NO. 1465130, EXCEPT THAT REAL PROPERTY DESCRIBED IN RECEPTION NO. 1895203, RECEPTION NO. 1534041, AND RECEPTION NO. 1826699 FILED IN THE RECORDS OF SAID COUNTY, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 13;

THENCE SOUTH 89 DEGREES 44' 23" EAST, ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER, SECTION 13, A DISTANCE OF 1330.55 FEET TO THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER WHICH IS THE TRUE POINT OF BEGINNING;

THENCE NORTH 00 DEGREES 26' 39" WEST, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER, A DISTANCE OF 1319.12 FEET TO THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 13; THENCE SOUTH 89 DEGREES 50' 01" EAST, ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, A DISTANCE OF 1329.50 FEET TO THE NORTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 13; THENCE SOUTH 00 DEGREES 29' 19" EAST, ALONG THE EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 13, A DISTANCE OF 795.37 FEET TO THE SOUTHERLY INTERSECTION OF SAID RECEPTION NO. 1895203 AS RECORDED IN THE RECORDS OF SAID COUNTY WITH THE SAID EAST LINE; THENCE ALONG THE NORTHERLY AND EASTERLY LINES OF SAID RECEPTION NO. 1895203 THROUGH THE FOLLOWING FOUR COURSES:

1. NORTH 89 DEGREES 42' 44" WEST, 180.00 FEET;
2. SOUTH 07 DEGREES 35' 53" WEST, 211.75 FEET;
3. SOUTH 00 DEGREES 28' 46" EAST, 110.00 FEET;
4. SOUTH 89 DEGREES 42' 46" EAST, 160.06 FEET TO THE WEST LINE OF TRACT G CANYON CREEK FILING NO. 2 AS PLATTED IN SAID RECORDS;

THENCE SOUTH 00 DEGREES 28' 17" EAST, A DISTANCE OF 55.49 FEET TO THE NORTH LINE OF SAID RECEPTION NO. 1826699 IN THE RECORD OF SAID COUNTY;

THENCE ALONG THE NORTH AND WEST LINES OF SAID RECEPTION NO. 1826699 THROUGH THE FOLLOWING TWO COURSES:

1. SOUTH 89 DEGREES 44' 29" WEST, 500.00 FEET;
2. SOUTH 00 DEGREES 28' 28" EAST, 145.00 FEET TO THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 13;

THENCE NORTH 89 DEGREES 44' 23" WEST, ON THE SOUTH LINE OF THE SOUTHWEST QUARTER, A DISTANCE OF 780.55 FEET TO THE POINT OF BEGINNING.

TOGETHER WITH (FROM RECEPTION NO. 2282882)

A TRACT OF LAND BEING TRACT O OF THE CREEKSIDE SUBDIVISION AS RECORDED IN THE BOULDER COUNTY CLERK AND RECORDER'S OFFICE AT RECEPTION NO. 2259443, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 13, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 13 AND CONSIDERING THE EAST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 13 TO BEAR NORTH 00°31'00" WEST ALONG SAID EAST LINE A DISTANCE OF 206.00 FEET; THENCE NORTH 89°44'19" WEST, A DISTANCE OF 90.00 FEET TO THE SOUTHWEST CORNER OF SAID TRACT O;

THENCE ALONG THE SOUTHERLY BOUNDARY OF SAID TRACT O, NORTH 89°44'19" WEST, A DISTANCE OF 120.16 FEET TO THE SOUTHWEST CORNER OF SAID TRACT O;

THENCE ALONG THE WESTERLY BOUNDARY OF SAID TRACT O, NORTH 00°31'00" WEST, A DISTANCE OF 110.00 FEET;

THENCE CONTINUING ALONG SAID WESTERLY BOUNDARY OF SAID TRACT O, NORTH 07°40'20" EAST, A DISTANCE OF 211.75 FEET, TO THE NORTHWEST CORNER OF SAID TRACT O;

THENCE ALONG THE NORTHERLY BOUNDARY OF SAID TRACT O, SOUTH 89°44'19" EAST, A DISTANCE OF 89.99 FEET TO THE NORTHWEST CORNER OF SAID TRACT L;

THENCE ALONG THE WESTERLY BOUNDARY OF SAID TRACT L, SOUTH 00°31'00" EAST, A DISTANCE OF 320.00 FEET TO THE POINT OF BEGINNING;

CONTAINING 0.81 ACRES, MORE OR LESS

EXCEPT (FROM RECEPTION NO. 03064195)

A PARCEL OF LAND LOCATED IN THE SOUTHWEST QUARTER OF SECTION 13, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SAID SECTION 13 THENCE N89°44'23"W ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER AND ALONG THE SOUTH LINE OF PARCEL C, TRACT G, CANYON CREEK SUBDIVISION FILING NO. 3 A DISTANCE OF 550.00 FEET TO THE TRUE POINT OF BEGINNING, SAID POINT BEING THE SOUTHWEST CORNER OF SAID PARCEL C, TRACT G; THENCE N89°44'23"W CONTINUING ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER AND ALONG THE NORTHERN BOUNDARY OF CANYON CREEK SUBDIVISION FILING NO. 2 A DISTANCE OF 143.72 FEET; THENCE N00°29'19"W A DISTANCE OF 145.00 FEET TO A POINT OF NON-TANGENT CURVATURE; THENCE ALONG A 805.00 FOOT RADIUS CURVE TO THE LEFT (SAID CURVE HAVING A CENTRAL ANGLE OF 00°05'27" AND A CHORD BEARING S89°41'39"E A DISTANCE OF 1.28 FEET) AN ARC LENGTH OF 1.28 FEET; THENCE S89°44'23"E A DISTANCE OF 142.45 FEET TO THE NORTHWEST CORNER OF SAID PARCEL C, TRACT G; THENCE S00°29'19"E ALONG THE WEST LINE OF SAID PARCEL C, TRACT G A DISTANCE OF 145.00 FEET TO THE TRUE POINT OF BEGINNING.

## LEGAL DESCRIPTION (CONT.)

CONTAINS 20,838 SQUARE FEET OR 0.478 ACRE, MORE OR LESS.

### PARCEL B:

(FROM RECEPTION NO. 2073245, EXHIBIT A, PARCEL C, PAGE 5 OF 15)

A PARCEL OF LAND WITHIN THE SOUTHEAST QUARTER OF SECTION 13, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO, SHOWN AS PARCEL 073 ON PARCEL MAP NO. 1465130 IN THE RECORDS OF SAID COUNTY, LYING SOUTH OF THE UNION PACIFIC RAILROAD RIGHT OF WAY, AND NORTH OF THAT REAL PROPERTY DESCRIBED IN RECEPTION NO. 1895203, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SAID SECTION 13;

THENCE NORTH 00 DEGREES 29' 19" WEST, ON THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 750.95 FEET TO THE NORTH INTERSECTION OF SAID RECEPTION NO. 1895203 AS RECORDED IN THE RECORDS OF SAID COUNTY WITH SAID WEST LINE, WHICH IS THE POINT OF BEGINNING;

1. NORTH 85 DEGREES 33' 33" EAST, 80.27 FEET;
2. NORTH 54 DEGREES 48' 33" EAST, 920.00 FEET;
3. SOUTH 85 DEGREES 58' 27" EAST, 214.00 FEET;
4. NORTH 56 DEGREES 33' 33" EAST, 560.00 FEET;
5. NORTH 18 DEGREES 21' 09" EAST, 64.70 FEET TO THE SOUTH RIGHT OF WAY LINE OF THE UNION PACIFIC RAILROAD;

THENCE NORTH 57 DEGREES 49' 09" WEST, ALONG THE SOUTH RIGHT OF WAY LINE OF SAID RAILROAD, 985.00 FEET TO A NON-TANGENT 2764.93 FOOT RADIUS CURVE WHICH IS CONCAVE SOUTHWESTERLY;

THENCE WESTERLY ALONG SAID NON-TANGENT CURVE, WHOSE CENTER BEARS SOUTH 31 DEGREES 58'00" WEST, THROUGH A CENTRAL ANGLE OF 16 DEGREES 14' 03", A DISTANCE OF 783.42 FEET TO THE WEST LINE OF SAID SOUTHWEST QUARTER;

THENCE SOUTH 00 DEGREES 29' 19" EAST, NON-TANGENT TO SAID CURVE, 1731.77 FEET TO THE POINT OF BEGINNING.

## SURVEYED AREA

PARCEL A: 1,623,217 SQUARE FEET (37.264 ACRES) MORE OR LESS  
PARCEL B: 14,453,261 SQUARE FEET (33,382 ACRES) MORE OR LESS  
TOTAL: 3,076,478 SQUARE FEET (70.626 ACRES) MORE OR LESS

## PARKING SPACES

0 REGULAR SPACES + 0 DISABLED PARKING SPACES = 0 TOTAL SPACES  
NOTE: SPACE COUNT IS BASED ON ACTUAL STRIPED PARKING SPACES.

## SURVEYOR'S NOTES

1. DISTANCES ARE MARKED IN U.S. SURVEY FEET AND DECIMAL PLACES THEREOF. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON. DISTANCES AND/OR BEARINGS SHOWN IN PARENTHESIS (0.007) ARE RECORD OR DEED VALUES, NOT FIELD MEASUREMENTS.

2. MANHOLES, INLETS AND OTHER UTILITY RIMS OR GRATES SHOWN HEREON ARE FROM FIELD LOCATION OF SUCH, AND ONLY REPRESENT SUCH UTILITY IMPROVEMENTS WHICH ARE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY, THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE. THE LABELING OF THESE MANHOLES (SANITARY, WATER, ETC.) IS BASED SOLELY ON THE "STAMPED" MARKINGS OF THE RIM. NO UNDERGROUND OBSERVATIONS HAVE BEEN MADE TO VERIFY THE ACTUAL USE OF EXISTENCE OF UNDERGROUND UTILITIES.

3. ONLY THE IMPROVEMENTS WHICH WERE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY AND THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE ARE SHOWN ON THE FACE OF THIS PLAT. LAWN SPRINKLER SYSTEMS, IF ANY, ARE NOT SHOWN ON THIS SURVEY.

4. THIS SURVEY MAY NOT REFLECT ALL UTILITIES, OR IMPROVEMENTS, IF SUCH ITEMS ARE HIDDEN BY LANDSCAPING, OR ARE COVERED BY SUCH ITEMS AS DUMPSTERS OR TRAILERS, OR WHEN THE SITE WAS COVERED WITH SNOW. AT THE TIME OF THE SURVEY THE SITE WAS NOT COVERED IN SNOW.

5. OTHER THAN VISIBLE OBSERVATIONS NOTED HEREON, THIS SURVEY MAKES NO STATEMENT REGARDING THE ACTUAL PRESENCE OR ABSENCE OF ANY SERVICE OR UTILITY LINE. CONTROLLED UNDERGROUND EXPLORATORY EFFORT TOGETHER WITH "UNCC" MARKINGS IS RECOMMENDED TO DETERMINE THE FULL EXTENT OF UNDERGROUND SERVICE AND UTILITY LINES. CONTACT UTILITY NOTIFICATION CENTER OF COLORADO.

6. THE LOCATION OF THE PROPERTY LINES SHOWN ON THE FACE OF THIS PLAT ARE BASED ON THE DESCRIPTION AND INFORMATION FURNISHED BY THE CLIENT, TOGETHER WITH THE TITLE COMMITMENT. THE PARCEL WHICH IS DEFINED MAY NOT REFLECT ACTUAL OWNERSHIP, BUT REFLECTS WHAT WAS SURVEYED, FOR OWNERSHIP, CONSULT YOUR TITLE COMPANY.

7. COMPARE THIS PLAT, LEGAL DESCRIPTION AND ALL SURVEY MONUMENTS BEFORE BUILDING, AND IMMEDIATELY REPORT ANY DISCREPANCIES TO THE SURVEYOR.

8. RESTRICTIONS THAT MAY BE FOUND IN LOCAL BUILDING AND/OR ZONING CODES HAVE NOT BEEN SHOWN. HEIGHT AND BULK RESTRICTIONS (IF ANY) HAVE NOT BEEN SHOWN, ONLY THOSE SETBACK RESTRICTIONS SHOWN ON THE RECORDED SUBDIVISION PLAT OR IN THE TITLE COMMITMENT HAVE BEEN SHOWN. NOTE: IF SURVEY IS CERTIFIED TO ALTA TABLE A ITEM 6, THEN SEE ZONING/BULK REGULATIONS SECTION FOR ADDITIONAL INFORMATION.

## SURVEYOR'S NOTES

9. SURFACE INDICATIONS OF UTILITIES ON THE SURVEYED PARCEL HAVE BEEN SHOWN. UNDERGROUND AND OFFSITE OBSERVATIONS HAVE NOT BEEN MADE TO DETERMINE THE EXTENT OF UTILITIES SERVING OR EXISTING ON THE PROPERTY. PUBLIC AND/OR PRIVATE RECORDS HAVE NOT BEEN SEARCHED TO PROVIDE ADDITIONAL INFORMATION. OVERHEAD WIRES AND POLES (IF ANY) HAVE BEEN SHOWN, HOWEVER THEIR FUNCTION AND DIMENSIONS HAVE NOT BEEN SHOWN.

10. PHYSICAL ACCESS TO THE PROPERTY IS NOT RESTRICTED.

11. THIS LAND SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY CWC CONSULTING GROUP, INC. TO DETERMINE OWNERSHIP OF THIS TRACT, VERIFY THE DESCRIPTION SHOWN, VERIFY THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS, OR VERIFY EASEMENTS. RECORD REFERENCE IS MADE TO FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NUMBER: NCS-902301-CO, WITH AN EFFECTIVE DATE OF JUNE 21, 2018 AT 5:00 P.M. FROM WHICH THIS SURVEY IS BASED. THIS PROPERTY IS SUBJECT TO ALL COVENANTS AND RESTRICTIONS RELATING TO THE USE AND CHARACTER OF THE LAND AND ALL MATTERS APPEARING OF PUBLIC RECORD AND AS MAY BE DISCLOSED BY A MORE RECENT TITLE COMMITMENT OR REPORT.

12. ALL REFERENCES HEREON TO BOOKS, PAGES, MAPS AND RECEPTION NUMBERS ARE PUBLIC DOCUMENTS FILED IN THE RECORDS OF THE BOULDER COUNTY CLERK AND RECORDER'S OFFICE.

13. EASEMENTS AND PUBLIC DOCUMENTS SHOWN OR NOTED HEREON WERE EXAMINED AS TO LOCATION AND PURPOSE AND WERE NOT EXAMINED AS TO RESERVATIONS, RESTRICTIONS, CONDITIONS, OBLIGATIONS, TERMS, OR AS TO THE RIGHT TO GRANT THE SAME.

14. ALL TIES TO RECORD TITLE LINES FROM THE BUILDING CORNERS OR OTHER IMPROVEMENTS SHOWN HEREON ARE PERPENDICULAR TO THE RECORD TITLE LINE.

15. BASIS OF BEARINGS: BEARINGS ARE BASED ON THE SOUTH LINE OF THE SOUTHWEST ONE-QUARTER OF SECTION 13, TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, SAID TO BEAR NORTH 89°24'33" WEST, A DISTANCE OF 2,661.09 FEET, FROM THE SOUTH ONE-QUARTER CORNER OF SAID SECTION 13 BEING MONUMENTED BY A 3.25" ALUMINUM CAP 0.45" DOWN IN A RANGE BOX IN ASPHALT WITH A LID MARKED "RANGE POINT", STAMPED "AZTEC CONSULTANTS INC, TIN 96R, S13, 1/4 -", S24, 2004, LS 36580 TO THE SOUTHWEST CORNER OF SAID SECTION 13 BEING MONUMENTED BY A 3.25" ALUMINUM CAP, 0.85" DOWN IN A RANGE BOX IN ASPHALT WITH A LID MARKED "RANGE POINT", STAMPED "L.P.I., TIN 96R, 14 | 13, ---, 23 | 24, 2006, PLS 23521".

16. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-6-508, C.R.S.

17. DEFINITION: CERTIFY, CERTIFICATION - A PROFESSIONAL'S OPINION BASED ON HIS OR HER OBSERVATION OF CONDITIONS, KNOWLEDGE, INFORMATION AND BELIEFS. IT IS EXPRESSLY UNDERSTOOD THAT THE PROFESSIONAL'S CERTIFICATION OF A CONDITION'S EXISTENCE RELIEVES NO OTHER PARTY OF ANY RESPONSIBILITY OR OBLIGATION HE OR SHE HAS ACCEPTED BY CONTRACT OR CUSTOM.

18. CWC CONSULTING GROUP, INC. DOES NOT WARRANT THAT THE PARCEL, AS DESCRIBED HEREON, COMPLIES WITH COLORADO SENATE BILL 35, (30--28-101).

19. 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.

20. TITLE COMMITMENT SCHEDULE B - SECTION 2 - ITEMS

SCHEDULE B - ITEM 1: THE PROPERTY IS SUBJECT TO ANY FACTS, RIGHTS, INTERESTS OR CLAIMS WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS, BUT WHICH COULD BE ASCERTAINED BY AN INSPECTION OF THE LAND OR BY MAKING INQUIRY OF PERSONS IN POSSESSION THEREOF.

SCHEDULE B - ITEM 2: THE PROPERTY IS SUBJECT TO EASEMENTS, OR CLAIMS OF EASEMENTS, NOT SHOWN BY THE PUBLIC RECORDS.

SCHEDULE B - ITEM 3: THE PROPERTY IS SUBJECT TO DISCREPANCIES, CONFLICTS IN BOUNDARY LINES, SHORTAGE IN AREA, ENCROACHMENTS, AND ANY FACTS WHICH A CORRECT SURVEY AND INSPECTION OF THE LAND WOULD DISCLOSE, AND WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS.

SCHEDULE B - ITEM 4-6: NOT SURVEY RELATED.

SCHEDULE B - ITEM 7: THE RIGHT OF WAY FOR THE LEYNER COTTONWOOD DITCH. PLEASE REFER TO ITEM 19.

SCHEDULE B - ITEM 8: THE PROPERTY IS SUBJECT TO ALL OIL, GAS AND OTHER MINERALS AS RESERVED BY THE UNION PACIFIC RAILROAD CO., AND THE TERMS WITHIN, AS SET FORTH IN DEED RECORDED APRIL 1, 1931 AS CONTAINED IN THE DOCUMENT RECORDED IN BOOK 573 AT PAGE 510. AFFECTS SOUTHWEST ONE-QUARTER OF SAID SECTION 13 EXCEPT THAT PORTION SHOWN HEREON. THE PROPERTY IS SUBJECT TO THE NOTICE OF OIL AND GAS INTERESTS AND SURFACE USE DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2909941. THE PROPERTY IS SUBJECT TO THE REQUEST FOR NOTIFICATION OF SURFACE DEVELOPMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2288454, AFFECTS SOUTHWEST ONE-QUARTER OF SAID SECTION 13. THE PROPERTY IS SUBJECT TO NOTICE OF MINERAL INTERESTS AND SURFACE USE DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2848004, AFFECTS THE WEST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 13. THE PROPERTY IS SUBJECT TO THE REQUEST FOR NOTIFICATION (MINERAL ESTATE OWNER) DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2909941. THE PROPERTY IS SUBJECT TO THE REQUEST FOR NOTIFICATION OF SURFACE DEVELOPMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2890878, AFFECTS THE WEST ONE-HALF OF SAID SECTION 13. THE PROPERTY IS SUBJECT TO REQUEST FOR NOTICE OF SURFACE DEVELOPMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03032258, AFFECTS THE WEST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 13. THE PROPERTY IS SUBJECT TO REQUEST FOR NOTIFICATION OF APPLICATION FOR DEVELOPMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03529919.

## SURVEYOR'S NOTES

SCHEDULE B - ITEM 9: THE 75' CONTRACT AND GRANT OF EASEMENT DESCRIBED IN THE DOCUMENT RECORDED IN BOOK 885 AT PAGE 300 DOES NOT LIE WITHIN THE SUBJECT PROPERTY, HOWEVER, IT MAY BENEFIT THE SUBJECT PROPERTY AND IS SHOWN HEREON. THE 75' CONTRACT AND GRANT OF EASEMENT DESCRIBED IN THE DOCUMENT RECORDED IN BOOK 885 AT PAGE 448 IS SHOWN HEREON.

SCHEDULE B - ITEM 10: NOT SURVEY RELATED.

SCHEDULE B - ITEM 11: THE PROPERTY IS SUBJECT TO AN OIL AND GAS LEASE AS CONTAINED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 404110 AFFECTS THAT PORTION OF THE SUBJECT PROPERTY LYING IN THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 13.

SCHEDULE B - ITEM 12: THE PROPERTY IS SUBJECT TO AN OIL AND GAS LEASE AS CONTAINED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 478713 AFFECTS THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O".

SCHEDULE B - ITEM 13: THE 50' RIGHT-OF-WAY GRANT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 496103 IS SHOWN HEREON.

SCHEDULE B - ITEM 14: THE 50' RIGHT-OF-WAY AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 00684896 IS DEPICTED HEREON BY GRAPHIC METHODS ONLY.

SCHEDULE B - ITEM 15: NOT SURVEY RELATED.

SCHEDULE B - ITEM 16: THE 60' SEWER LINE EASEMENT TO ERIE WATER AND SANITATION DISTRICT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 01479810 IS SHOWN HEREON. THE 60' SEWER LINE EASEMENT TO ERIE WATER AND SANITATION DISTRICT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 01479811 DOES NOT LIE WITHIN THE SUBJECT PROPERTY, HOWEVER, IT MAY BENEFIT SUBJECT PROPERTY AND IS SHOWN HEREON.

SCHEDULE B - ITEM 17: THE PROPERTY IS SUBJECT TO AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 01576745, AFFECTS DITCHES AND LATERALS IN THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 13.

SCHEDULE B - ITEM 18: THE PROPERTY IS SUBJECT TO INTERGOVERNMENTAL AGREEMENT AMENDMENT TO EAST CENTRAL BOULDER COUNTY COMPREHENSIVE DEVELOPMENT PLAN DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 1787992.

SCHEDULE B - ITEM 19: THE 60' AGREEMENT BETWEEN LEYNER-COTTONWOOD CONSOLIDATED DITCH COMPANY AND ERIE EIGHT, LTD. DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 1826698 IS SHOWN HEREON.

SCHEDULE B - ITEM 20: THE PROPERTY IS SUBJECT TO SPECIAL WARRANTY DEED DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2073245, EXCEPT THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O".

SCHEDULE B - ITEM 21: THE PROPERTY IS SUBJECT TO ORDINANCE NO. 733 DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2142188, EXCEPT THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O".

SCHEDULE B - ITEM 22: THE PROPERTY IS SUBJECT TO CANYON CREEK PD DEVELOPMENT PLAN AN AMENDMENT OF THE HOMESTEAK P.U.D. DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2171024, EXCEPT THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O". THE PROPERTY IS SUBJECT TO CANYON CREEK PD AMENDMENT NO. 2 DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2893769, EXCEPT THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O". THE PROPERTY IS SUBJECT TO CANYON CREEK PD AMENDMENT NO. 3 DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2909751, EXCEPT THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O". THE GRANT OF NON-EXCLUSIVE TEMPORARY DRAINAGE EASEMENT AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2909752 DOES NOT LIE WITHIN THE SUBJECT PROPERTY. THE PROPERTY IS SUBJECT TO CANYON CREEK PD AMENDMENT NO. 6 DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03258805. THE PROPERTY IS SUBJECT TO CANYON CREEK PD AMENDMENT NO. 9 DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03509414.

SCHEDULE B - ITEM 23: THE DRAINAGE EASEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2190497 IS SHOWN HEREON.

SCHEDULE B - ITEM 24: THERE ARE NO PROPOSED EASEMENTS SHOWN OR NOTED ON TRACT "O", CREEKSIDE SUBDIVISION, RECORDED UNDER RECEPTION NO. 2259493, HOWEVER, THE PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O" IS SUBJECT TO ANY NOTES SHOWN THEREON. AFFECTS TRACT "O" SHOWN HEREON. A 30' PIPELINE AND ACCESS EASEMENT SHOWN ON CREEKSIDE SUBDIVISION MAY BENEFIT THE SUBJECT PROPERTY AND IS SHOWN HEREON.

SCHEDULE B - ITEM 25: THE PROPERTY IS SUBJECT TO CREEKSIDE SUBDIVISION DEVELOPMENT AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2259499, AFFECTS THAT PORTION OF THE SUBJECT PROPERTY SHOWN HEREON AS TRACT "O".

SCHEDULE B - ITEM 26: THE 50' GRANT OF PERMANENT ACCESS AND UTILITIES EASEMENT AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2666112 IS SHOWN HEREON.

SCHEDULE B - ITEM 27: THE PROPERTY IS SUBJECT TO MEMORANDUM OF COMPATIBLE DEVELOPMENT AND SURFACE USE AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2873242, AFFECTS THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 13.

SCHEDULE B - ITEM 28: THE OIL AND GAS LEASE AS CONTAINED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 2973243 IS SHOWN HEREON.

## SURVEYOR'S NOTES

SCHEDULE B - ITEM 29: THE 60' AGREEMENT AND GRANT OF ACCESS EASEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03084110 IS SHOWN HEREON.

SCHEDULE B - ITEM 30: THE PROPERTY IS SUBJECT TO COMPATIBLE SURFACE USE AGREEMENT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03153652.

SCHEDULE B - ITEM 31: THE CENTERLINE OF THE EASEMENT AND RIGHT OF WAY DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03281950 IS DEPICTED HEREON BY GRAPHIC METHODS ONLY.

SCHEDULE B - ITEM 32: THE 30' EASEMENT GRANT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03297125 DOES NOT LIE WITHIN THE SUBJECT PROPERTY, HOWEVER, IT MAY BENEFIT SUBJECT PROPERTY AND IS SHOWN HEREON.

SCHEDULE B - ITEM 33: THE 30' RIGHT-OF-WAY GRANT DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 03297126 IS SHOWN HEREON.

SCHEDULE B - ITEM 34: NOT SURVEY RELATED.

21. THE PROPERTY IS LOCATED WITHIN "OTHER AREAS - ZONE X" (AREAS DETERMINED TO BE OUTSIDE THEN 0.2% ANNUAL CHANCE FLOODPLAIN.) AS IDENTIFIED ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP - COMMUNITY PANELS NUMBERED 08013C0437J AND 08013C0441J WITH AN EFFECTIVE DATE OF DECEMBER 18, 2012.

22. THE LOCATION OF THE UTILITIES SHOWN HEREON WITHIN THE ROADWAY AREAS ALONG JAY ROAD, JASPER ROAD AND TELLEN AVENUE ARE SHOWN BASED ON UTILITY MARKS PROVIDED IN THE FIELD BY UNDERGROUND CONSULTING SOLUTIONS (UCS) AND SHOWN HEREON BASED ON THE FIELD MARKINGS TOGETHER WITH KNOWN UTILITY FEATURES. THE LOCATION OF THE UTILITIES SHOWN HEREON WITHIN THE PROPERTY BOUNDARIES ARE SHOWN BASED ON EXISTING UTILITY MARKS PROVIDED IN THE FIELD BY OTHERS.

23. BENCHMARK: ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM (NAVD88) FROM GPS OBSERVATIONS OF NGS BENCHMARK LL1423, DESIGNATION "R 53 5026", MONUMENTED BY A 4" BRASS CAP IN 6"x6" CONCRETE BASE, STAMPED "U.S. GEOLOGICAL SURVEY BENCHMARK, FOR MORE INFORMATION WRITE THE DIRECTOR WASHINGTON D.C., JR 53, ELEVATION, ABOVE SEA, A 5026 FEET, 1948". PUBLISHED HEIGHT = 5028.0

## SURVEYOR'S CERTIFICATE

TO STRATUS CANYON CREEK, LLC, A COLORADO LIMITED LIABILITY COMPANY; JOHNSON DEVELOPMENT COMPANY, A COLORADO CORPORATION; AND FIRST AMERICAN 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 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 7(c), 8, 9 AND 13 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON SEPTEMBER 10, 2018.

DATE OF PLAT OR MAP: 31ST DAY OF OCTOBER, 2018.

ERIC DAVID CARSON  
COLORADO PROFESSIONAL LAND SURVEYOR NO.37890  
FOR AND ON BEHALF OF  
CWC CONSULTING GROUP, INC.  
EMAIL: ERIC@CWC-CONSULTING.COM



## INDEXING STATEMENT

DEPOSITED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ AT \_\_\_\_\_, M.,

IN BOOK \_\_\_\_\_ OF THE COUNTY SURVEYOR'S LAND SURVEY/RIGHT-OF-WAY SURVEYS

AT PAGE(S) \_\_\_\_\_ RECEPTION NUMBER \_\_\_\_\_

COUNTY SURVEYOR/DEPUTY COUNTY SURVEYOR



DATE	REVISION	BOUNDARY PER RTD ROW MAP	LS-17-0051	SLG3
10/30/18				

ALTANSPS LAND TITLE SURVEY  
SHOWING  
0 N 119TH ST. (NO ADDRESS POSTED)  
ERIE, COLORADO 80516  
SHEET 1 - COVER PAGE, NOTES AND EXCEPTIONS

DRAWN:	CHECKED:	JOB NO.:	DATE:	SURVEY PREPARED FOR:
S.L.C.3	E.D.C.	130-00089	09/12/2018	STRATUS CANYON CREEK, LLC

SHEET NO. 1 OF 10 SHEETS

T:\\_0851\20\_Survey\130-00237 (130-00089) - SA.DWG Date: 10/30/18 01:21p arelletto



# ALTANSPS LAND TITLE SURVEY

TRACT "O", CREEKSIDE SUBDIVISION AND A PORTION OF THE SOUTH ONE-HALF OF SECTION 13,  
TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO



DATE	10/30/18	REVISION	BOUNDARY PER RTD ROW MAP LS-17-0051	BY	SLG3
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ALTANSPS LAND TITLE SURVEY  
SHOWING  
0 N 119TH ST. (NO ADDRESS POSTED)  
ERIE, COLORADO 80516  
SHEET 3- BOUNDARY AND EXCEPTIONS

DRAWN:	S.L.C.J.	CHECKED:	E.L.C.
DATE:	09/12/2018	JOB NO.:	130-00091
SURVEY PREPARED FOR:		STRATUS CANYON CREEK, LLC	

### LEGEND

- ▲ PROJECT CONTROL POINT
- FOUND MONUMENT AS NOTED;  
NOTE: BEARING AND DISTANCE, IF LISTED, IS FROM THE BOUNDARY CORNER TO THE FOUND MONUMENT.
- ⊙ SET NO. 5 REBAR WITH PPC, STAMPED "MG LLC, 37890" OR 1" BRASS TAG & ALUMINUM NAIL, STAMPED "MG LLC, 37890"
- ⊕ FOUND PLSS MONUMENT AS NOTED
- ⊕ FOUND CHISELED CROSS
- ⊕ FOUND CUT "X"
- FOUND RANGE POINT AS NOTED
- BOUNDARY LINE
- - - SECTION/ALIQUOT LINE
- - - RIGHT-OF-WAY LINE
- - - CENTER/RANGE LINE
- - - TRACT/LOT LINE
- - - EASEMENT LINE
- ⊕ BARRIED-WIRE FENCE
- ⊕ WOOD FENCE
- ⊕ WROUGHT-IRON FENCE
- XX.X' - - - FENCE DIMENSION.  
NOTE: LABEL POSITION IS BASED ON THE FENCE LOCATION RELATIVE TO THE BOUNDARY LINE. DIMENSION INSIDE BOUNDARY LINE MEANS THE FENCE IS INSIDE THE BOUNDARY LINE.
- YPC = YELLOW PLASTIC CAP
- RPC = RED PLASTIC CAP
- PPC = PINK PLASTIC CAP
- ESMT = EASEMENT
- R.O.W. = RIGHT OF WAY
- BK. = BOOK, PAGE
- REC.P. NO. = RECEPTION NUMBER
- PAR. = PARCEL
- R1=RECORD PER REC.P. NO. 2073245 (DEED)
- R2=RECORD PER CREEKSIDE SUBDIVISION
- R3=RECORD PER REC.P. NO. 2282882 (TRACT "O")
- R4=RECORD PER REC.P. NO. 03064195 (EXCEPTION)
- R5=RECORD PER CANYON CREEK SUBDIVISION FILING NO. 3
- R6=RECORD PER REC.P. NO. 1826699
- R7=RECORD PER REC.P. NO. 1895203

### LINE DATA:

- L1: N89°22'55"W 90.01' (30.00'+60.01'=90.01' R2)
- L2: S89°22'55"E 40.00'
- L3: S89°22'55"E 160.16' (S89°42'46"E 160.06' R1) (S89°44'19"E R2)
- L4: S89°22'55"E 120.16' (S89°44'19"E 120.16' R2) (N89°44'19"W 120.16' R3)
- L5: N89°22'55"W 89.99' (N89°44'19"W 89.99' R2) (S89°44'19"E 89.99' R3)
- L6: N89°24'33"W 143.72' (N89°44'23"W 143.72' R4)

### MONUMENTS:

- A FOUND 1.25" OPC, 0.2' BELOW GROUND SURFACE, STAMPED "LS 29414, EGA, S882701'E 0.05'
- B FOUND 1.5" ALUMINUM CAP, 0.2' BELOW GROUND SURFACE, STAMPED "ADP PLS 34309"
- C FOUND 1.25" PLASTIC CAP, 0.1' BELOW GROUND SURFACE, STAMPED "EHRHART LS 29414, N251447'W 0.05'
- D FOUND 1" BRASS TAG & NAIL IN CONCRETE SIDEWALK RAMP, STAMPED "EHRHART LS 29414, N662533'W 0.05'
- E FOUND 1" BRASS TAG & NAIL IN CONCRETE SIDEWALK, STAMPED "EHRHART LS 29414"

J & J ELKE TRUST  
(PARCEL NO. 14651300007)  
(REC.P. NO. 3075428)

THOMAS M. JONES  
(PARCEL NO. 14651300003)  
(REC.P. NO. 3614714)

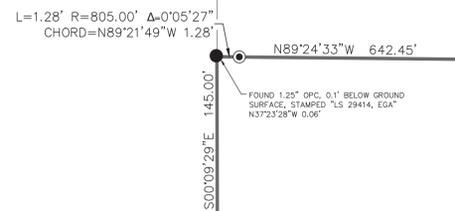
VICKIE L. NEWMAN,  
ET AL  
(PARCEL NO. 14651300004)  
(REC.P. NO. 2807881)

JOHNSON DEVELOPMENT COMPANY  
(PARCEL NO. 14651300007)  
PARCEL A

SW 1/4  
SE 1/4  
SEC. 13

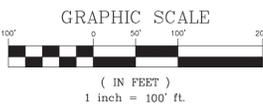
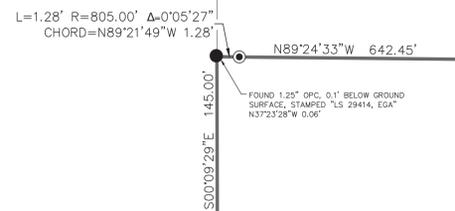
### DETAIL "A"

SCALE: 1" = 5'



### DETAIL "A"

SCALE: 1" = 5'



P.O.C. PARCEL A  
SOUTHWEST CORNER OF SECTION 13  
FOUND 3.25" ALUMINUM CAP 0.85' DOWN IN A RANGE BOX WITH A LID MARKED "RANGE POINT", STAMPED "L.P.I., TIN R69W, 14 | 13, ---, 23 | 24, 2006, PLS 23521"

P.O.B. PARCEL A  
SOUTHWEST CORNER OF THE SOUTHWEST ONE-QUARTER OF SECTION 13  
FOUND 2.5" ALUMINUM CAP FLUSH WITH GROUND SURFACE, STAMPED "JR ENG, S1, ---, S24, 2000, LS 19606"

### BASIS OF BEARINGS

S89°24'33"E 1330.56' TIE (S89°44'23"W 1330.55' TIE R1)

NW 1/4  
SEC. 24

ST VRAIN VALLEY SCHOOL DISTRICT RE-1J  
(PARCEL NO. 14651300007)  
(REC.P. NO. 30064124)

(P.O.C. PARCEL B)  
SOUTH ONE-QUARTER CORNER OF SECTION 13  
FOUND 3.25" ALUMINUM CAP, 0.45' DOWN IN A RANGE BOX WITH A LID MARKED "RANGE POINT", STAMPED "AZTEC CONSULTANTS INC, TIN R69W, S13, 1/4 ---, S24, 2004, LS 36580"

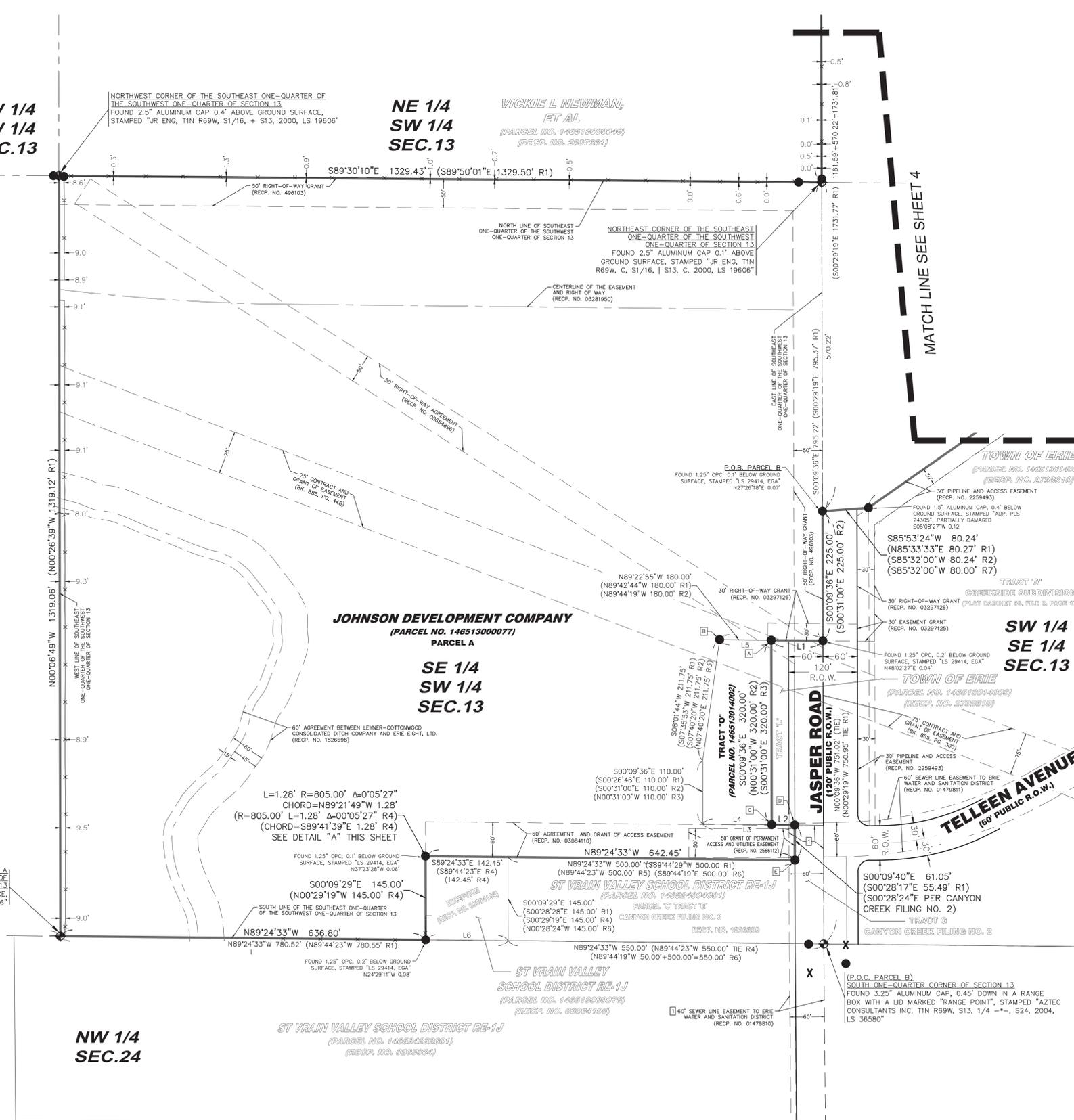
MATCH LINE SEE SHEET 4

TOWN OF ERIE  
(PARCEL NO. 146513014003)  
(REC.P. NO. 5706810)

TOWN OF ERIE  
(PARCEL NO. 146513014003)  
(REC.P. NO. 5706810)

TELLEN AVENUE  
(60' PUBLIC R.O.W.)

JASPER ROAD  
(30' PUBLIC R.O.W.)



# ALT/NSPS LAND TITLE SURVEY

TRACT "O", CREEKSIDE SUBDIVISION AND A PORTION OF THE SOUTH ONE-HALF OF SECTION 13,  
TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO

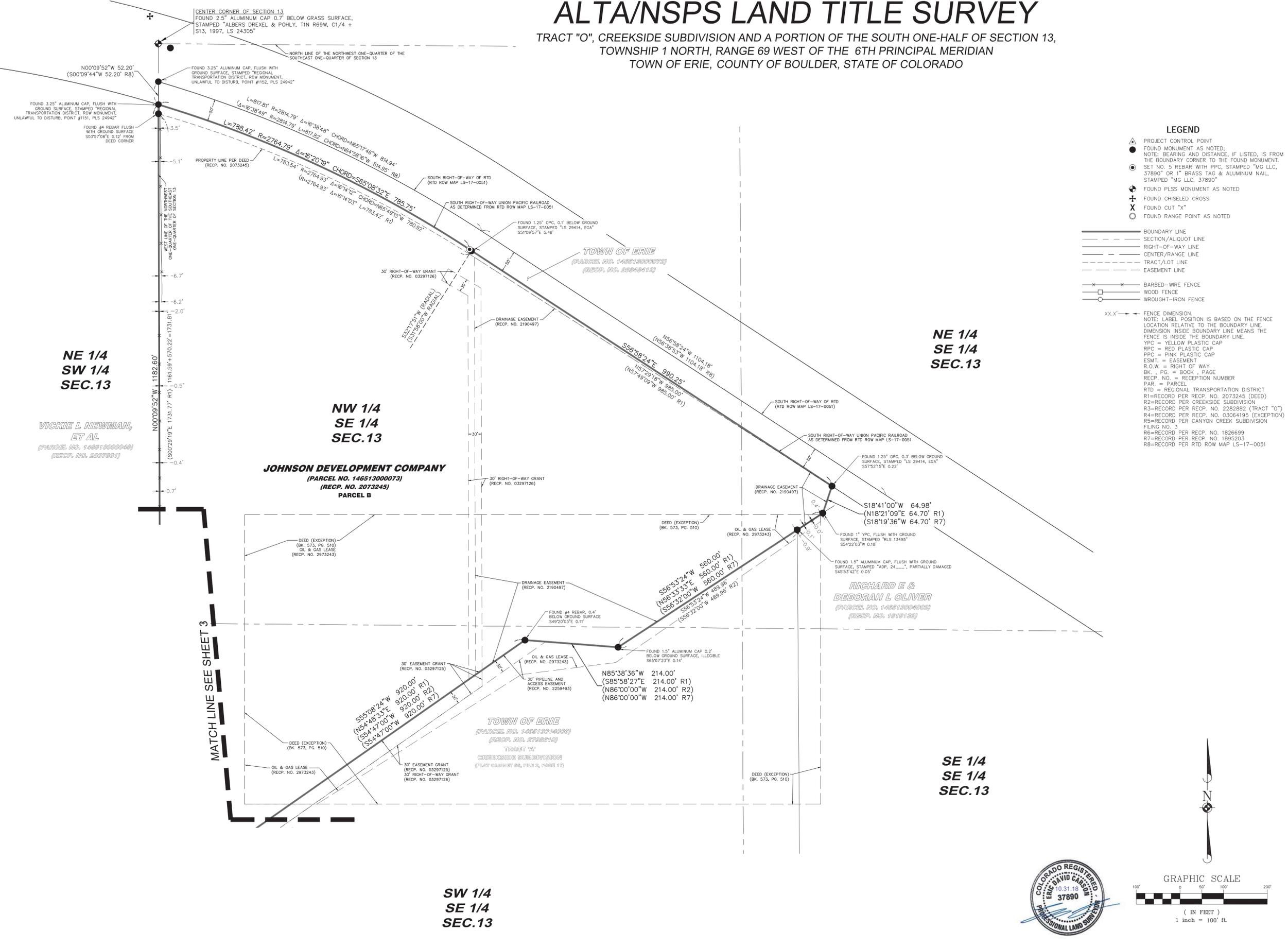


DATE	REVISION	BY
10/30/18	MODIFIED BOUNDARY PER RTD ROW MAP LS-17-0051	SLG3

ALT/NSPS LAND TITLE SURVEY  
SHOWING  
0 N 119TH ST. (NO ADDRESS POSTED)  
ERIE, COLORADO 80516  
SHEET 4 - BOUNDARY AND EXCEPTIONS

DRAFTED:	CHECKED:
S.L.C.3	E.D.C.
DATE: 09/12/2018	JOB NO. 130-00091
SURVEY PREPARED FOR: STRATUS CANYON CREEK, LLC	

SHEET NO. 4 OF 10 SHEETS



- LEGEND**
- ▲ PROJECT CONTROL POINT
  - FOUND MONUMENT AS NOTED; NOTE: BEARING AND DISTANCE, IF LISTED, IS FROM THE BOUNDARY CORNER TO THE FOUND MONUMENT
  - SET NO. 5 REBAR WITH PPC, STAMPED "MG LLC, 37890" OR 1" BRASS TAG & ALUMINUM NAIL, STAMPED "MG LLC, 37890"
  - ⊕ FOUND PLS MONUMENT AS NOTED
  - ⊕ FOUND CHISELED CROSS
  - X FOUND CUT "X"
  - FOUND RANGE POINT AS NOTED
- BOUNDARY LINE  
 - - - SECTION/ALIQUOT LINE  
 - - - RIGHT-OF-WAY LINE  
 - - - CENTER/RANGE LINE  
 - - - TRACT/LOT LINE  
 - - - EASEMENT LINE
- ⊗ BARBED-WIRE FENCE  
 □ WOOD FENCE  
 ○ WROUGHT-IRON FENCE
- XX.X' FENCE DIMENSION  
 NOTE: LABEL POSITION IS BASED ON THE FENCE LOCATION RELATIVE TO THE BOUNDARY LINE. DIMENSION INSIDE BOUNDARY LINE MEANS THE FENCE IS INSIDE THE BOUNDARY LINE.
- YPC = YELLOW PLASTIC CAP  
 RPC = RED PLASTIC CAP  
 PPC = PINK PLASTIC CAP  
 ESMT. = EASEMENT  
 R.O.W. = RIGHT OF WAY  
 BK. . PG. = BOOK . PAGE  
 RECP. NO. = RECEPTION NUMBER  
 PAR. = PARCEL  
 RTD = REGIONAL TRANSPORTATION DISTRICT  
 R1=RECORD PER RECP. NO. 2073245 (DEED)  
 R2=RECORD PER CREEKSIDE SUBDIVISION  
 R3=RECORD PER RECP. NO. 2282892 (TRACT "O")  
 R4=RECORD PER RECP. NO. 03064195 (EXCEPTION)  
 R5=RECORD PER CANYON CREEK SUBDIVISION FILING NO. 3  
 R6=RECORD PER RECP. NO. 1826699  
 R7=RECORD PER RECP. NO. 1895203  
 R8=RECORD PER RTD ROW MAP LS-17-0051

NE 1/4  
SW 1/4  
SEC.13

VICKIE L. NEWMAN,  
ET AL  
(PARCEL NO. 146513000046)  
(RECP. NO. 2807881)

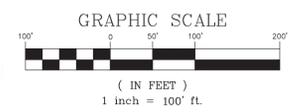
NW 1/4  
SE 1/4  
SEC.13

JOHNSON DEVELOPMENT COMPANY  
(PARCEL NO. 146513000073)  
(RECP. NO. 03297126)  
PARCEL B

NE 1/4  
SE 1/4  
SEC.13

SE 1/4  
SE 1/4  
SEC.13

SW 1/4  
SE 1/4  
SEC.13

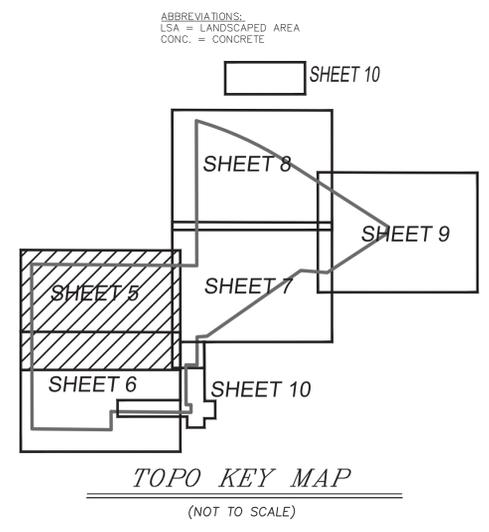
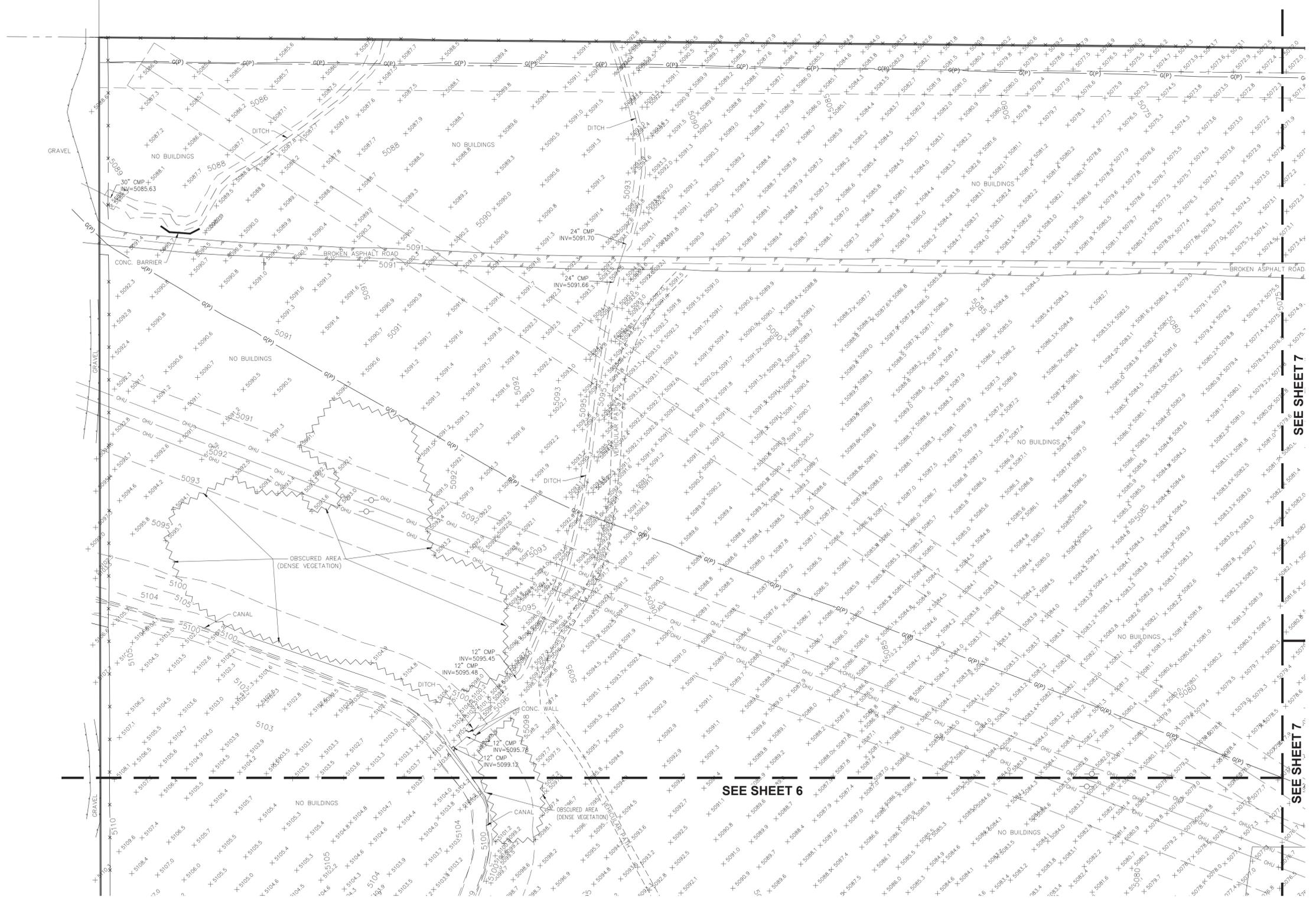


T:\0851\20 Survey\120-00237 (130-00091)\_Canyon Creek Development-Erie\120-00237-5A.DWG Date: 10/30/18 12:09p avelletta

# ALTANSPS LAND TITLE SURVEY

TRACT "O", CREEKSIDE SUBDIVISION AND A PORTION OF THE SOUTH ONE-HALF OF SECTION 13,  
TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO

- ### LEGEND
- BOUNDARY LINE
  - RIGHT-OF-WAY LINE
  - CENTER/RANGE LINE
  - EASEMENT LINE
  - ✕✕✕ BARBED-WIRE/CHAINLINK FENCE
  - WROUGHT-IRON FENCE
  - ~ EDGE OF WATER/OBSCURED AREA
  - ▬ WALL AS NOTED
  - ▭ BUILDING FOOTPRINT
  - ▬ EDGE OF ASPHALT
  - ▬ EDGE OF GRAVEL SURFACE
  - ▽ SIGN
  - BOLLARD
  - ☐ MAILBOX/KIOSK
  - UTILITY POLE
  - ⊙ STREET LIGHT
  - ⊛ LIGHT POLE/ELECTROLIER
  - DECIDUOUS TREE, AS NOTED
  - ⊙ SANITARY SEWER MANHOLE
  - SS(P) — SANITARY SEWER LINE
  - ⊙ STORM SEWER MANHOLE
  - SS(P) — STORM SEWER LINE
  - ⊙ WATER VALVE
  - ⊙ WATER METER
  - ⊙ FIRE HYDRANT
  - ⊙ IRRIGATION PULLBOX
  - W(P) — WATER LINE
  - ⊙ GAS METER
  - ⊙ GAS RISER
  - G(P) — GAS LINE
  - ⊙ ELECTRIC METER
  - ⊙ ELECTRIC RISER
  - ⊙ ELECTRIC PULLBOX
  - ⊙ ELECTRIC TRANSFORMER
  - ⊙ TRAFFIC SIGNAL PULLBOX
  - E(P) — ELECTRIC LINE
  - OHU — OVERHEAD ELECTRIC LINE
  - ⊙ TELEPHONE RISER
  - ⊙ TELEPHONE PULLBOX
  - T(P) — TELEPHONE LINE
  - ⊙ FIBER OPTIC MANHOLE
  - ⊙ FIBER OPTIC PULLBOX
  - FO(P) — FIBER OPTIC LINE
  - ⊙ CABLE TV MANHOLE
  - ⊙ CABLE TV PULLBOX
  - TV(P) — CABLE TV LINE
- ABBREVIATIONS:  
LSA = LANDSCAPED AREA  
CONC. = CONCRETE



DATE	REVISION	BY
10/30/18	MODIFIED BOUNDARY PER RTD ROW MAP	LS-17-0051
		SLG3

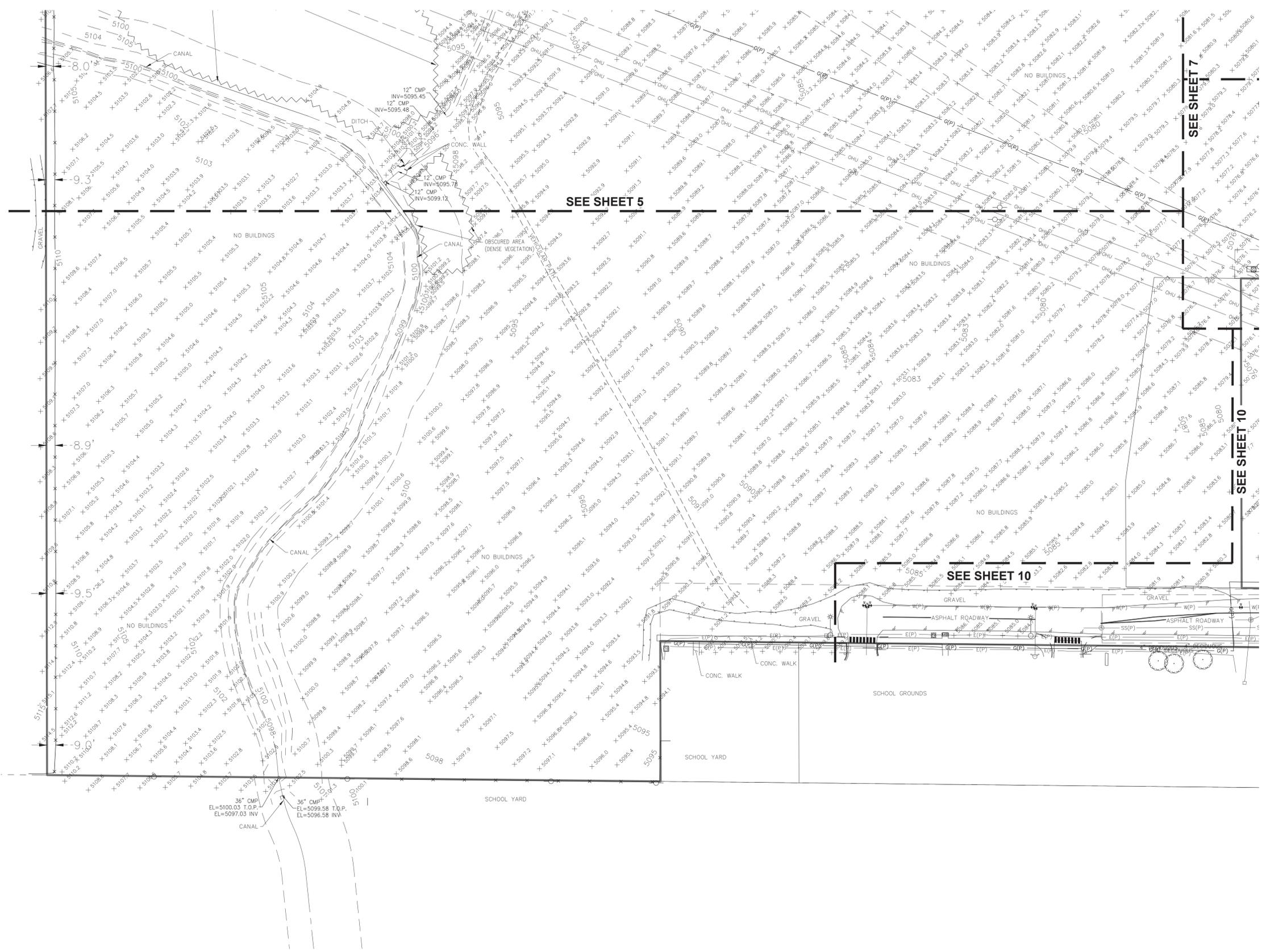
**ALTANSPS LAND TITLE SURVEY**  
SHOWING  
0 N 119TH ST. (NO ADDRESS POSTED)  
ERIE, COLORADO 80516  
**SHEET 5 - TOPOGRAPHY AND IMPROVEMENTS**

DRAWN BY: S.L.C.3	CHECKED BY: E.L.C.
DATE: 09/12/2018	JOB NO. 130-00091
SURVEY PREPARED FOR: <b>STRATUS CANYON CREEK, LLC</b>	
SHEET NO. <b>5</b> OF <b>10</b> SHEETS	

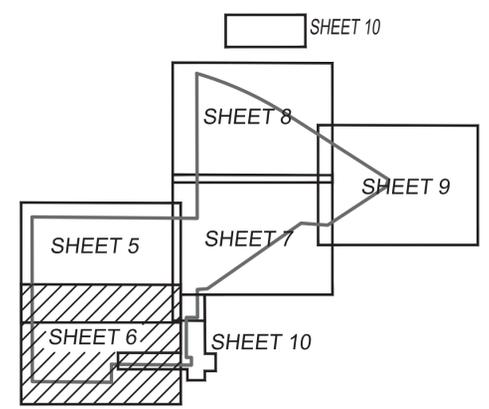
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# ALTANSPS LAND TITLE SURVEY

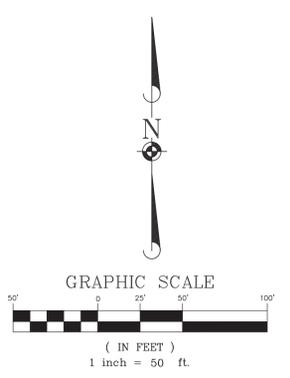
TRACT "O", CREEKSIDE SUBDIVISION AND A PORTION OF THE SOUTH ONE-HALF OF SECTION 13,  
TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO



- ### LEGEND
- BOUNDARY LINE
  - - - RIGHT-OF-WAY LINE
  - · · CENTER/RANGE LINE
  - · - EASEMENT LINE
  - ✕ ✕ ✕ BARBED-WIRE/CHAINLINK FENCE
  - ○ ○ WROUGHT-IRON FENCE
  - ~ ~ ~ EDGE OF WATER/OBSCURED AREA
  - ▨ ▨ ▨ WALL AS NOTED
  - ▭ BUILDING FOOTPRINT
  - ▬ EDGE OF ASPHALT
  - ▬▬▬ EDGE OF GRAVEL SURFACE
  - SIGN
  - BOLLARD
  - MAILBOX/KIOSK
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  - ○ ○ DECIDUOUS TREE, AS NOTED
  - ⊙ SANITARY SEWER MANHOLE
  - SS(P) — SANITARY SEWER LINE
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  - ⊕ IRRIGATION PULLBOX
  - ⊕ WATER LINE
  - ⊕ GAS METER
  - ⊕ GAS RISER
  - ⊕ GAS LINE
  - ⊕ ELECTRIC METER
  - ⊕ ELECTRIC RISER
  - ⊕ ELECTRIC PULLBOX
  - ⊕ ELECTRIC TRANSFORMER
  - ⊕ TRAFFIC SIGNAL PULLBOX
  - ⊕ ELECTRIC LINE
  - ⊕ OVERHEAD ELECTRIC LINE
  - ⊕ TELEPHONE RISER
  - ⊕ TELEPHONE PULLBOX
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- ABBREVIATIONS:  
LSA = LANDSCAPED AREA  
CONC. = CONCRETE



TOPO KEY MAP  
(NOT TO SCALE)





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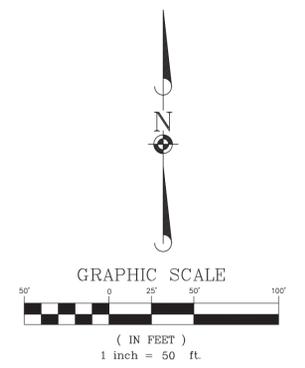
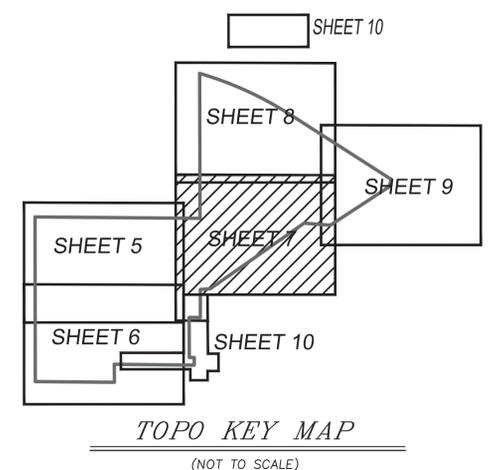
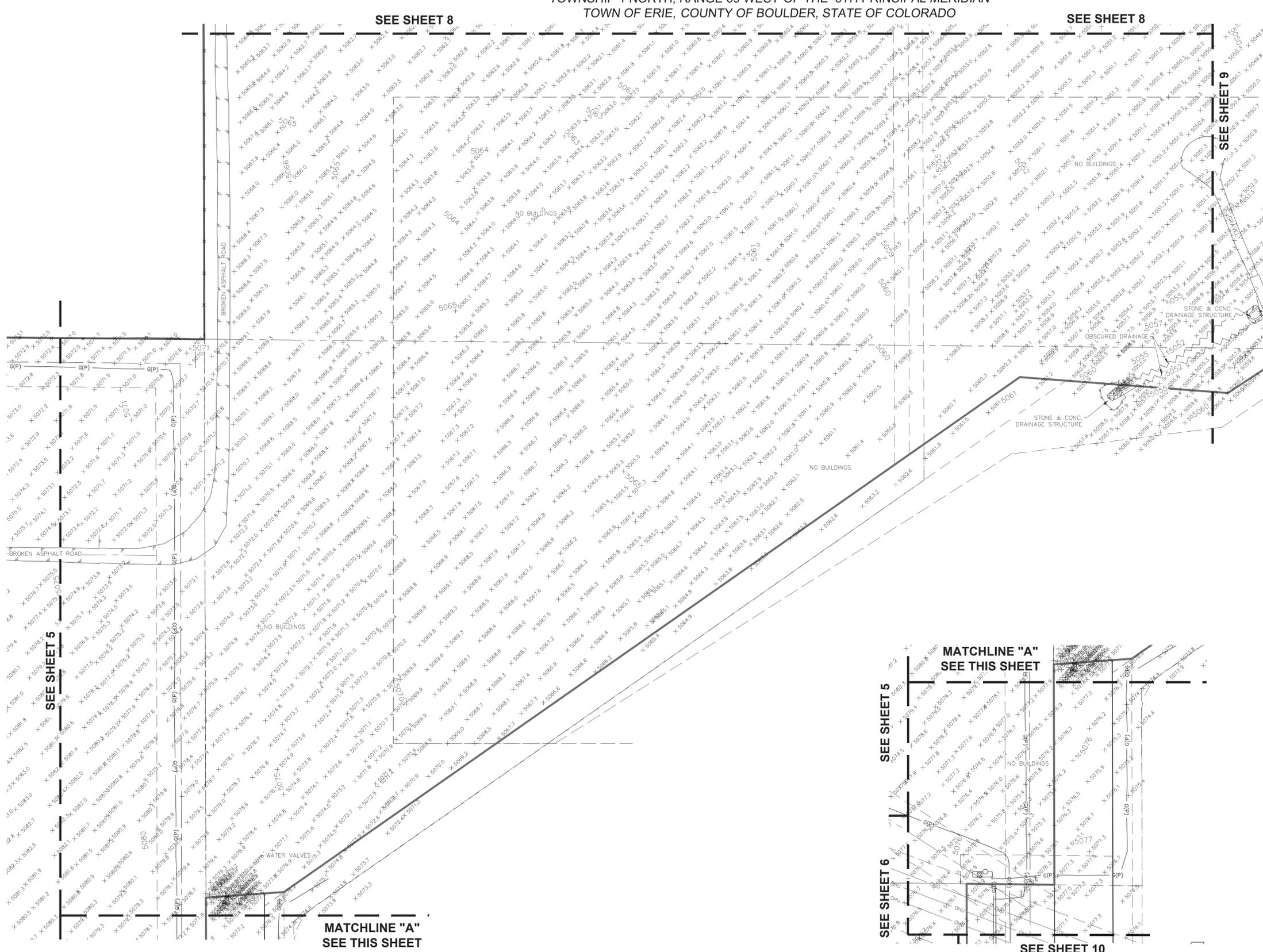
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SURVEY PREPARED FOR: STRATUS CANYON CREEK, LLC	

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**6** OF 10 SHEETS

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TOWNSHIP 1 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN  
TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO

- ### LEGEND
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  - ▨ EDGE OF ASPHALT
  - ▨ EDGE OF GRAVEL SURFACE
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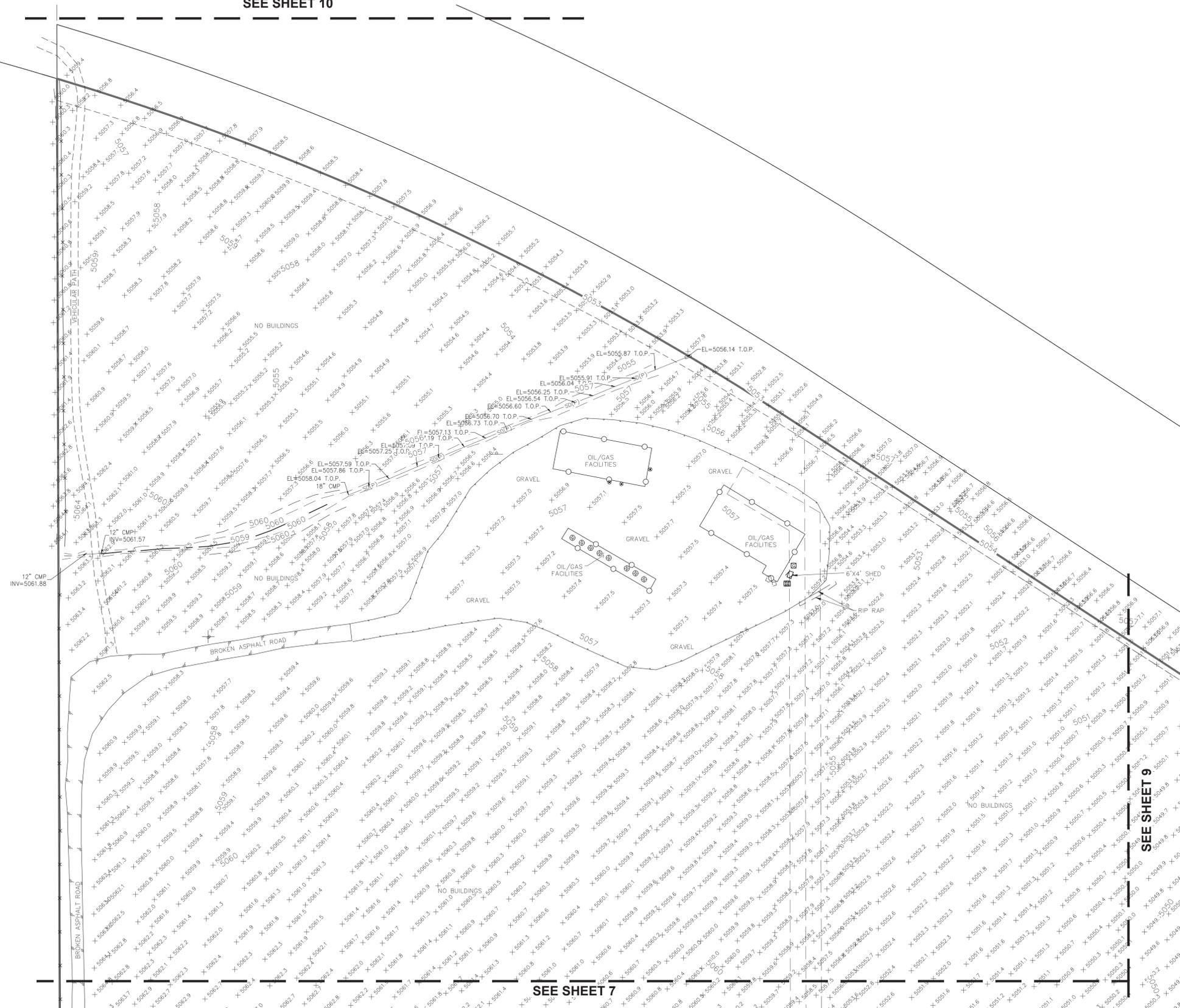
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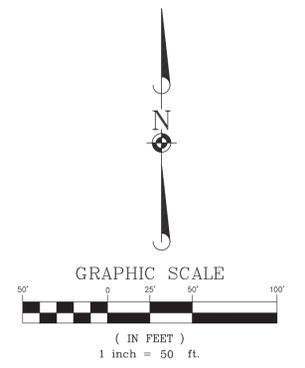
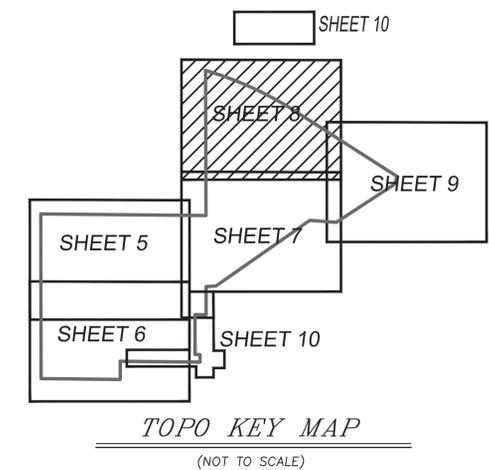
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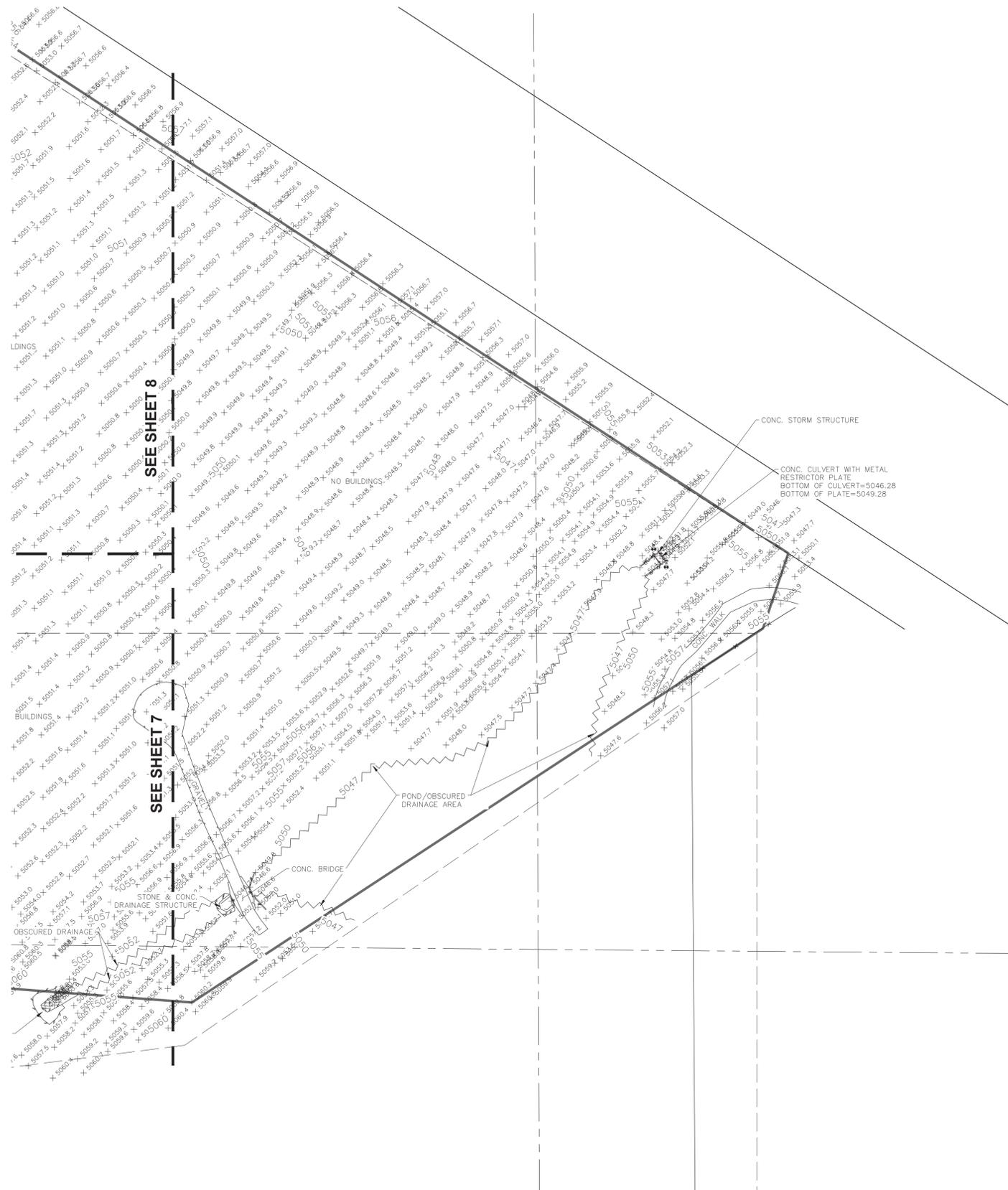
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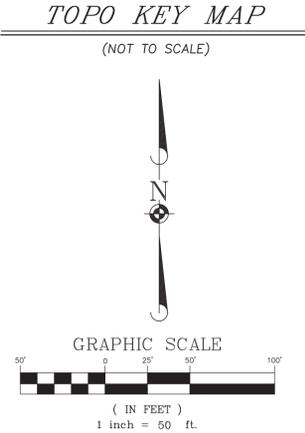
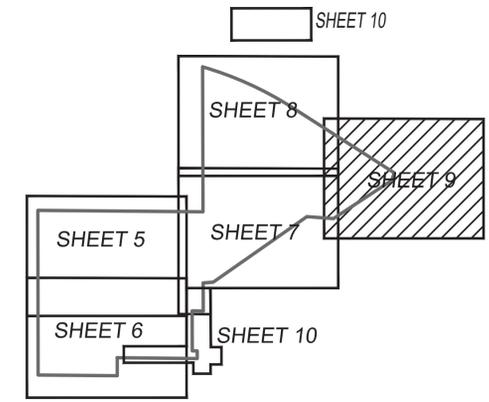
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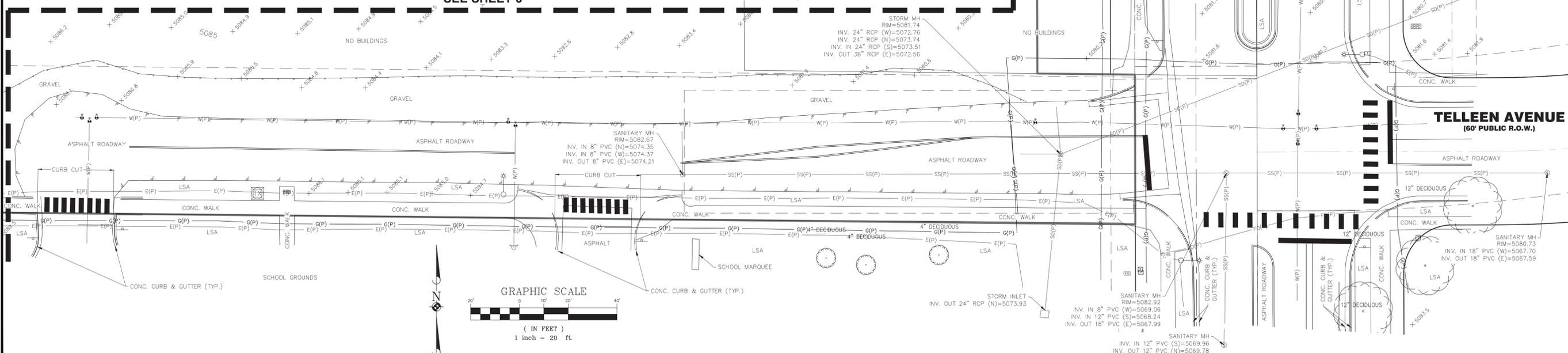
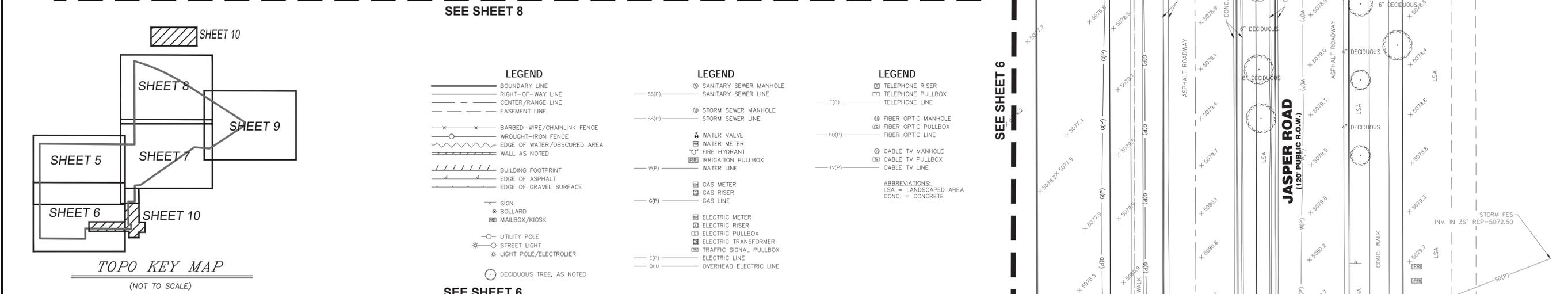
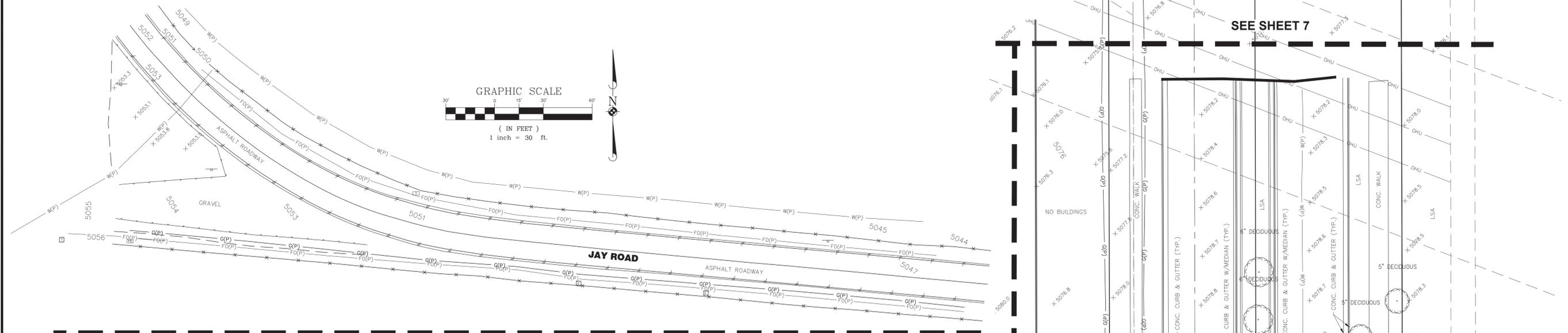
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SHEET 9 - TOPOGRAPHY AND IMPROVEMENTS

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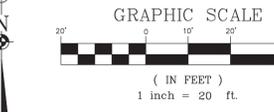
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SEE SHEET 7

SEE SHEET 8

SEE SHEET 6

SEE SHEET 6

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**PHASE 1 DRAINAGE REPORT  
FOR  
CANYON CREEK FILING No 7 – No 8**

**SK-1004-2018**

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**July 2018  
November 2018  
March 2018**

**Prepared for:**

Stratus Canyon Creek LLC  
Montane Drive East  
Golden Co. 80401  
Contact: Richard Dean

**Prepared by:**



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## TABLE OF CONTENTS

<b>I. GENERAL LOCATION AND DESCRIPTION.....</b>	<b>1</b>
A. General Location.....	1
B. Property Description.....	1
<b>II. DRAINAGE BASINS AND SUB-BASINS .....</b>	<b>1</b>
A. Major Basin Description.....	1
A. Minor Basin Description .....	1
<b>III. DRAINAGE DESIGN CRITERIA.....</b>	<b>1</b>
A. Hydrology .....	1
B. Wetlands Mitigation .....	1
C. Water Quality Review.....	1
D. Ground Water.....	1
<b>IV. DRAINAGE FACILITY DESIGN.....</b>	<b>1</b>
A. Stormwater Conveyance .....	1
B. Drainge Storage Facilites .....	1
C. Maintenace (proposed / existing).....	1
<b>V. CONCLUSIONS .....</b>	<b>68</b>

### APPENDIX A –SUPPORTING DOCUMENTS

- Erie Zoning Map Showing Location
- Soil Survey Information
- FEMA Map
- OSP Maps and documents
- Pond 1045 documents
- Natural Resources Assessment documents
- Mining Subsidence documents

### APPENDIX B – PROPOSED HYDROLOGIC CALCULATIONS

- Right of Way Imperviousness
- Parcel Data
- Impervious Calculations
- Runoff Coefficients
- Time of Concentration
- 2-yr Hydrology
- 100-yr Hydrology

### APPENDIX C – DRAINAGE MAPS

- Existing Conditions Map
- Phase 1 Drainage Maps

## **I. GENERAL LOCATION AND DESCRIPTION**

Canyon Creek Filings 7 and Filing 8 sites are located at the north end of the existing Jasper Road and north of Canyon Creek Filing 2 and Filing 3 and the Creek Side subdivision.

Canyon Creek Filing 7 and Filing 8 are proposed to be served with a new collector street Extension of Jasper Road that will connect to Jay Rodd at the northern end of the development.

A railway crossing will be needed for the extension of Jasper Road.

### **A. Site Location**

Filing No. 7 is located within the South East  $\frac{1}{4}$  of the South West  $\frac{1}{4}$  of Section 13, Township 1 North, Range 69 West of the 6<sup>th</sup> Principal Meridian. Located in the Town of Erie, County of Boulder, State of Colorado.

Filing No.8 is located within the South East  $\frac{1}{4}$  of the South West  $\frac{1}{4}$  of Section 13, Township 1 North, Range 69 West of the 6<sup>th</sup> Principal Meridian. Located in the Town of Erie, County of Boulder, State of Colorado.

There is an existing regional drainage channel along the north side of the Creekside development. The channel is known as Boulder Creek Ditch and runs to the existing regional detention pond, Pond 1045. Boulder Creek Ditch and the pond outfall downstream to Coal Creek.

### **B. Filing No.7 Property Descriptions:**

Filing 7 is approximately 37 acres in size and will be developed as single family detached Residential homes. The project site is currently undeveloped with field grass and has historically been used for agricultural purposes.

There have been past mining operations underlying areas of the site that have since been abandoned.

An existing electrical transmission line runs through the site within Filing No.7. This overhead electrical line will remain with the development of this property. A new 50' Gas easement is proposed to parallel the overhead power easement. A provision for this line has been provided. Additional existing gas and other utilities lines are located on the property but it is CWC's understanding that a majority of these are being vacated.

The Newman Lafferty property is located to the north of Filing No. 7. The property is currently undeveloped although a future road connection is provided along the Filing

No. 7 northern boundary. An existing ditch lateral serving this property will be relocated due to conflicts with proposed residential lots.

Canyon Creek Filings No.2 and No.3 and Redhawk Elementary are located south of Filing No. 7. The school will access Telleen Drive which will be extended to the west with this project.

There are about 6 acres of off-site area directly tributary to Filing 7 that generates runoff from the school to the south. It is anticipated that this area will be conveyed within the extension of Telleen Drive street and likely storm sewer that will be extended as well. The storm sewer currently outfalls to Boulder Creek Ditch east of Jasper Drive.

The current draft of the Natural Resources Assessment notes that there may be wetlands located with Boulder Creek Ditch and the existing irrigation ditches on the property. A determination of Jurisdictional classification is currently being conducted. Should Jurisdictional Wetlands be present on the site, 404 Permit requirements will be followed for proposed disturbances. A draft of the NRA is included in the Appendix.

There are approximately 5 acres of Filing No. 7 on the western boundary that may drain to the Regional Pond 1045 that the OSP had not assumed to drain in that direction.

### **C. Filing No.8 Property Descriptions:**

Filing 8 is approximately 31 acres in size and will be developed as single family attached lots. Filing No.8 is located along the east side of Jasper Road extension north of the existing Creekside subdivision and Boulder Creek Ditch. The Union Pacific railroad is located to the north. Regional Detention and Water Quality Pond 1045 is located directly East.

An existing drainage easement encompasses the portion of Pond 1045 located within Filing No. 8. It is anticipated that this project will provide a sperate Tract for this portion of the pond.

A large area north of the residential lots contains oil and gas facilities and will remain undeveloped with this project. The area will drain directly to Pond 1045 as it does historically.

## II. DRAINAGE BASINS AND SUB-BASINS

### A. Major Drainage Basins

The Site is not within a 100 year flood hazard area according to FIRM map panels 08013C0437J and 08013C0441J Revised December 18, 2012.

A NRCS soils report produced from the Web Soils Survey has been included in the appendix. The on-site soils are listed at Type “B” Soils. The on-site soils are considered loose at on the top portion based on the prior agricultural activities.

The current OSP associated with Filing No.7 and Filing No.8 is the “Erie Outfall Systems Planning-West of Coal Creek. This report was last revised in January of 2014 and completed on the behalf of the Town of Erie and UDFCD

Additionally, there is a design report created by Love and Associates Inc. listed as “Erie Detention Facility No.1045 Final Report”. This report provides the analysis for the design of the regional detention and water quality Pond 1045. The pond, as noted in the report, is designed as two stage pond. Water quality is done online while the offline portion provides storage for events larger than 10 year event. The pond is designed for the 100 year event. The report had coordinated the design of the pond with a previous rendition of this project as well as the OSP at the time.

The southern portion of Filing No.7 is located in OSP basin 478. Basin 478 was determined to be 83 acres at a future developed impervious coverage of 31.2%. This area is planned to flow east to the existing Boulder Creek Ditch similar to the OSP. The ditch is listed as ownership by the Town of Erie. It is CWC’s understanding that all improvements within the ditch are completed. Boulder Creek Ditch releases into Pond 1045.

The northern portion of Filing No.7 resides in OSP basin 481. Basin 481 was determined to be 64 acres at a future developed impervious coverage of 33.4%. This area is planned to drain to Pond A, which is the 10-yr storage component of Pond 1045. This is consistent with the OSP SWMM model.

### B. Minor Drainage Basins

The Filing 7 and Filing 8 sites will be split into smaller basins that will drain to onsite storm

sewer. The southern portion of Filing No. 7 is split up into Basins designated by the letter A. The three A basins total 15.4 acres at 38.5% imperviousness, which is consistent with the OSP land use assumption of residential lots with 40% imperviousness. The on-site flows will combine with off-site flows generated from the school to the south in Basin OS-1. These basins will drain to both existing storm sewer in Telleen Drive and anticipated storm sewer that will be located in Jasper Road, all of which drains directly to Boulder Creek Ditch as the OSP modeled.

The northern portion of Filing No. 7 is contained within Basin B. Basin B is 16.1 acres in size at 43.4% imperviousness, which is consistent with the OSP land use assumption of residential lots with 40% imperviousness. Basin B will drain to the east towards Jasper Road where it is anticipated to be collected in a future storm sewer system which will be directed across Jasper Road into Filing No. 8.

Filing No. 8 is contained within Basin C. Basin C is 20.2 acres in size at 31.3% imperviousness, which is well below the OSP land use assumption of multi-family residential lots with 50% imperviousness. This is due to the northern portion of Basin C remaining undeveloped. Basin C-1 will drain to the south into a storm sewer system where it is combined with the Basin B flows and directed into Pond A, which is the 10-yr storage component of Pond 1045. Basin C-2, which remains undeveloped, will drain directly to Pond B, which is the 100-yr storage component of Pond 1045. The OSP basin 481 had assumed all of Basins B and C drain to Pond A. The undeveloped portion of Basin C-2 draining to Pond B is the historic flow path and will not negatively affect the operation of Pond 1045.

The on-site basins, which consist of Basin A, Basin B and Basin C total 51.8 acres at 37.2% imperviousness. This is below the OSP assumed 40% land use for the area. There are 4 off-site drainage basins that make up the remainder of OSP Basins 478 and 481.

Basin D is located in the Right of Way of the future extension of Jasper Drive in OSP Basin 481. The basin is 3.4 acres in size at 71.1% imperviousness. The basin drains to an anticipated lowpoint where runoff will be collected in storm sewer which will be conveyed to Filing. No. 8.

Basin OS-1 is located south of Filing No. 7 in OSP basin 478 and consists of the existing Redhawk Elementary School. The basin is 3.9 acres in size at 55% imperviousness. The basin drains to on-site Basin A where it will be collected in existing storm sewer in Telleen Drive and discharge directly to Boulder Creek Ditch.

Basin OS-2 is located north of Filing No. 7 and west of Filing No. 8 in OSP Basin 481. The basin is 9.21 acres in size at 45.0% imperviousness. The basin drains eastward towards the future extension of Jasper Drive. The basin is currently undeveloped but is modeled as single family residential. The basin is anticipated to be combined with flows from Jasper Drive in Basin D and be conveyed to the southeast where it will be combined with flows from Basin B and Basin C and be discharged into the Pond A portion of Pond 1045 which is consistent with the OSP.

Basin OS-3 is located south and east of Basin C in OSP Basin 481. The basin is 23.5 acres in size at 7.8% imperviousness. The basin drains to Pond 1045.

Basin OS-4 is located south and west of Basin OS-1 in OSP Basin 478 and consists of Town owned open space and a northern portion of the Canyon Creek Subdivision. The basin is 61.1 acres in size at 18.7% imperviousness. The western portion of the basin drains to Leyner Cottonwood Ditch but is modeled in the OSP to cross the ditch and drain to Boulder Creek Ditch along with the eastern portion of the basin.

All of the proposed basins, when combined together, add up to 152.8 acres at 27.0% imperviousness. OSP basins 478 and 481 add up to 147 acres at 32.1% imperviousness. The reduced imperviousness under proposed conditions makes up for the added drainage area that will be tributary to Pond 1045.

The proposed layouts for Filing No.7 and No.8 generally provide for flows to be conveyed within the streets. All runoff will be collected in inlets and storm pipe in accordance with the Town of Erie requirements. Final conveyance design and calculations will be provided with future zoning documents. Any new improvements required to convey flows either into Boulder Creek Ditch and Pond 1045 will be reviewed and designed in preliminary plat process per the Town of Erie guidelines.

### **III. DRAINAGE DESIGN CRITERIA**

#### **A. Hydrology**

The proposed site plan is shown to be in general conformance with the major basin design from the OSP. Based on this Phase 1 report, Filing No.7 and Filing No.8 is in conformance with the OSP. Based on site review and review of the reports it appears that Pond 1045 can serve this project without modification. More in depth analysis will be performed in a later report to develop flows for hydraulic modelling.

#### **B. Wet Lands Mitigation**

A draft of the Natural Resources Assessment is provided in the Appendix. There is current on-going discussions on whether wetlands located on the Site are jurisdictional or not. The project will be required to conform with the final determination.

#### **C. Water Quality Enhancement and Detention**

Water quality and detention will be provided by the existing regional pond 1045. Any required new and existing outfalls will be analyzed for outfall protection at the time of Preliminary Plat.

#### **D. Groundwater Investigation**

Depth to ground water is not known at this time.

### **IV. DRAINAGE FACILITY DESIGN**

**A. Stormwater Conveyance Facilities**

CWC has not provide analysis for detailed conveyance with this report and all information will provided with the Preliminary Plat process. CWC has identified areas where storm sewer is anticipated to convey major portions of basins.

The Filing No.7 and No. 8 storm drainage conveyance will be done in conjunction with the OSP planning. Conveyance will be handled by roadway, inlets and storm pipe within the proposed public right of ways. Any storm proposed outside the public right of way will require drainage and utility easements and will be obtained as needed.

A portion of the Lafferty property in Basin OS-2 (OSP Basin 481) drains towards the existing Pond 1045. All storm sewer conveyance built within the extension of Jasper Drive and Filing No.8 will be sized accordingly to convey the flows. The remaining portion of the property may also be able to drain to Pond 1045 if the total area and impervious do not exceed what was modeled in the OSP. Otherwise, that portion of the property may be required to provide its own pond when it is developed.

**B. Stormwater Storage Facilities**

The existing regional detention pond 1045 was designed and constructed as a two stage pond. In the existing reports, Pond A is an online water quality pond that will provide detention for the 10 year while Pond B serves as storage for events between the 10-yr storm and the 100-yr storm.

**Maintenance Access**

Currently the regional detention pond and drainage ways have been constructed with maintenance access. This project will assure that facility access is maintained.

**V. STORMWATER FACILITY DESIGN CRITERIA AND ADAPTATIONS**

**A. Compliance with Standards**

The proposed site plan was developed to comply too the best of the sites topography to meet the Town of Erie standards and specifications and the OSP. The OSP will remain the governing document when looking at the drainage from a regional perspective and the Town of Erie standards will be utilized for site specific drainage design.

**B. Variances**

Based on the OSP reviews a small portion of basin 617 will need to be drained to the existing Pond 1045. It is anticipated this area (5 acres) will be picked up via the

proposed streets and allowed to be conveyed to Pond 1045. The total area and impervious coverage under conditions modeled in this report is consistent with the OSP.

Filing No.7 and Filing No.8 have abandoned mining operations. It is CWC's understanding that all mining activities are decommissioned. There has been subsidence noted in the area and a subsidence report has been included for review.

#### **VI. SUMMARY CONCLUSION**

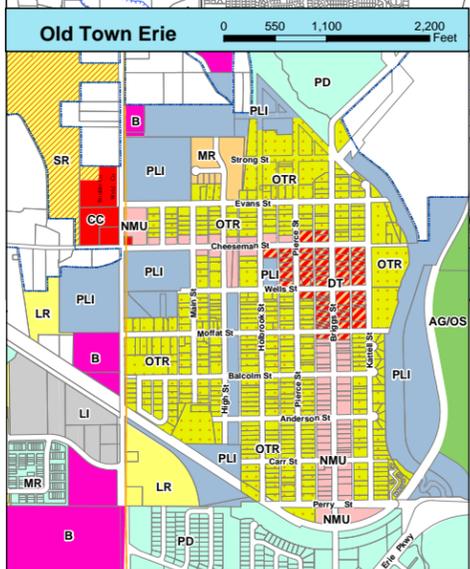
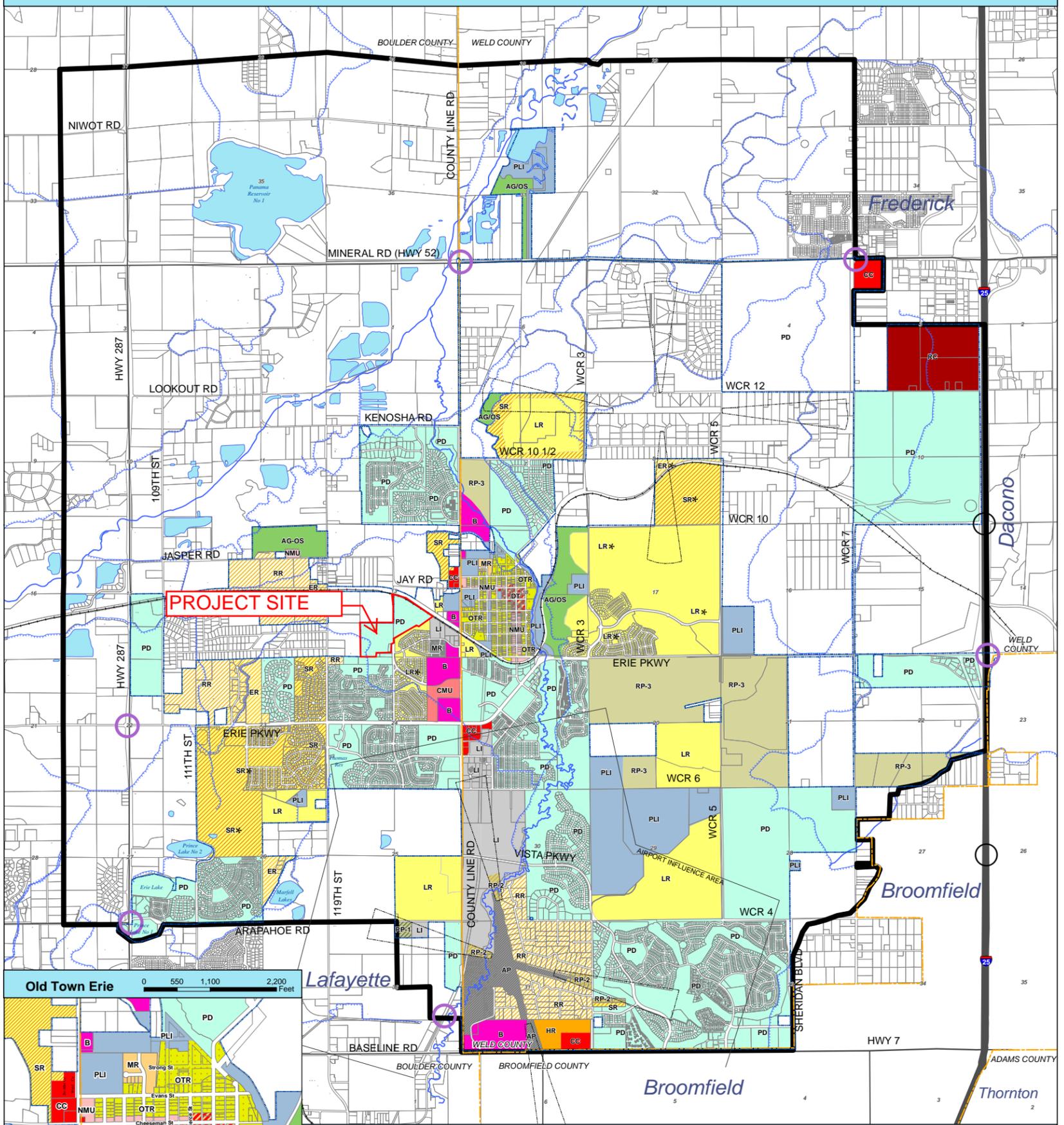
The Filing 7 and Filing 8 area has been planned for in the OSP and regional detention pond 1045 design. The intent of the OSP is maintained with this project. Final analysis will be provided with Preliminary Plat process.

**VII. REFERENCES**

1. *Standards and Specifications for Design and Construction of Public Improvements-2018 Edition*, Town of Erie, CO
2. *Erie Outfall Systems Planning – West of Coal Creek*  
RESPEC Consulting and Services, January 2014.
3. *Erie Detention Facility No. 1045, Final Report, Erie Colorado –*  
Town of Erie Public Works Department, Prepared by Love and Associates March, 2005.
4. *Federal Emergency Management Agency Flood Insurance Rate Map*,  
Community-Panel Number 08013C0437J Revised December 18, 2012 and 08013C0441J Revised  
December 18, 2012.
5. *Natural Resources Conservation Center Web Soil Survey*,  
United States Department of Agriculture, site visited January 2012.
6. *Urban Storm Drainage Criteria Manual, Volume 1* Revised August 2018, *Volume 2* Revised  
September 2017, *and Volume 3*, Revised April 2018  
Urban Drainage and Flood Control District.

# APPENDIX A

# Town of Erie, Colorado Zoning Map



## Zoning Legend

- |                                 |  |
|---------------------------------|--|
| Rural Preservation 1 (RP-1)     | Regional Commercial (RC)                 |
| Rural Preservation 2 (RP-2)     | Community Commercial (CC)                |
| Rural Preservation 3 (RP-3)     | Business (B)                             |
| Rural Residential (RR)          | Downtown District (DT)                   |
| Estate Residential (ER)         | Neighborhood Mixed-Use (NMU)             |
| Suburban Residential (SR)       | Community Mixed-Use (CMU)                |
| Low Density Residential (LR)    | Light Industrial (LI)                    |
| Medium Density Residential (MR) | Public Lands & Institutions (PLI)        |
| High Density Residential (HR)   | Airport (AP)                             |
| Old Town Residential (OTR)      | Agriculture/Open Space (AG/OS)           |
| Planned Development (PD)        | * Planned Unit Development (PUD) Overlay |



- Planning Area Boundary
- Town Boundary
- Community Gateways
- I-25 Interchange (Future)

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 5, 2013



Soil Map—Boulder County Area, Colorado  
(CANYON CREEK FIL 7 & 8)



Map Scale: 1:6,210 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

11/7/2018  
Page 1 of 3

## 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 1:20,000.

**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:  
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 15, Sep 10, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 30, 2014—Sep 18, 2014

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 of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AcA	Ascalon sandy loam, 0 to 3 percent slopes	55.0	75.6%
AcC	Ascalon sandy loam, 3 to 5 percent slopes	0.3	0.5%
MdD	Manter sandy loam, 3 to 9 percent slopes	17.4	24.0%
<b>Totals for Area of Interest</b>		<b>72.8</b>	<b>100.0%</b>

## RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. .

### Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

RUSLE2 Related Attributes—Boulder County Area, Colorado								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
AcA—Ascalon sandy loam, 0 to 3 percent slopes								
Ascalon	85	298	B	.17	5	66.8	19.2	14.0
AcC—Ascalon sandy loam, 3 to 5 percent slopes								
Ascalon	80	180	B	.17	5	66.8	19.2	14.0
MdD—Manter sandy loam, 3 to 9 percent slopes								
Manter	85	—	A	.10	5	65.9	19.1	15.0

### Data Source Information

Soil Survey Area: Boulder County Area, Colorado  
 Survey Area Data: Version 15, Sep 10, 2018

# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/7/2018 at 7:20:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

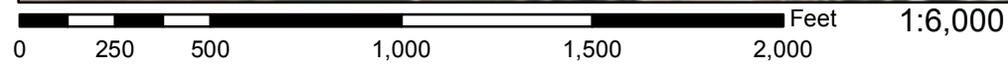
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



40°3'2.68"N

105°4'13.41"W

USGS The National Map: Orthoimagery. Data refreshed October 2017.



40°2'35.14"N

105°3'35.95"W

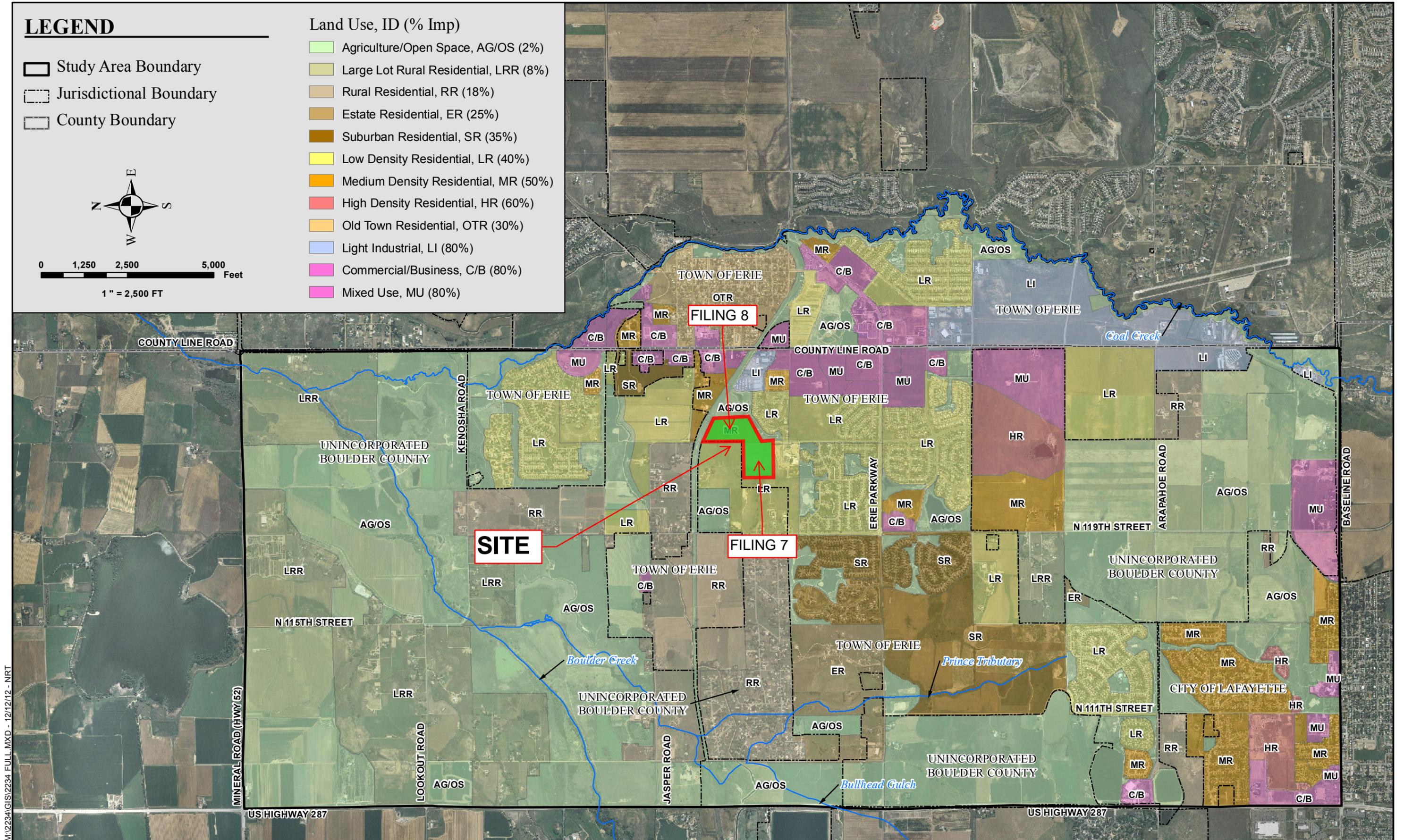
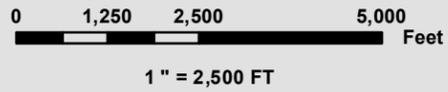


# LEGEND

- Study Area Boundary
- Jurisdictional Boundary
- County Boundary

## Land Use, ID (% Imp)

- Agriculture/Open Space, AG/OS (2%)
- Large Lot Rural Residential, LRR (8%)
- Rural Residential, RR (18%)
- Estate Residential, ER (25%)
- Suburban Residential, SR (35%)
- Low Density Residential, LR (40%)
- Medium Density Residential, MR (50%)
- High Density Residential, HR (60%)
- Old Town Residential, OTR (30%)
- Light Industrial, LI (80%)
- Commercial/Business, C/B (80%)
- Mixed Use, MU (80%)



M:\2234\GIS\2234\_FULL\_MXD - 12/12/12 - NRT





**Table B-1  
CUHP Input**

Subbasin	Area (mi <sup>2</sup> )	Distance to Centroid (mi)	Length (mi)	Slope (ft/ft)	Percent Imperviousness		Depression Storage		Horton's Infiltration Parameters		
					Existing Land Use	Future Land Use	Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/sec)	Final Rate (in/hr)
468	0.031	0.170	0.315	0.024	33.9	55.1	0.38	0.10	4.50	0.0018	0.60
469	0.047	0.185	0.341	0.012	2.0	71.3	0.38	0.10	4.41	0.0018	0.59
470	0.064	0.233	0.452	0.018	31.8	31.8	0.38	0.10	4.50	0.0018	0.60
471	0.121	0.258	0.542	0.020	33.6	33.6	0.38	0.10	4.50	0.0018	0.60
472	0.054	0.160	0.365	0.015	13.5	13.5	0.38	0.10	4.50	0.0018	0.60
473	0.021	0.132	0.273	0.016	35.2	35.2	0.38	0.10	4.50	0.0018	0.60
474	0.058	0.183	0.422	0.015	26.3	26.3	0.38	0.10	4.50	0.0018	0.60
475	0.149	0.162	0.473	0.015	22.8	40.8	0.38	0.10	4.50	0.0018	0.60
476	0.185	0.375	0.785	0.015	35.6	35.8	0.38	0.10	4.50	0.0018	0.60
477	0.054	0.150	0.305	0.017	2.4	40.0	0.38	0.10	4.35	0.0018	0.59
478	0.130	0.364	0.842	0.016	15.7	31.2	0.38	0.10	4.50	0.0018	0.60
479	0.061	0.187	0.404	0.017	38.9	40.0	0.38	0.10	4.05	0.0018	0.57
480	0.049	0.152	0.326	0.023	2.1	78.3	0.38	0.10	4.50	0.0018	0.60
481	0.100	0.297	0.544	0.017	4.4	33.4	0.38	0.10	4.50	0.0018	0.60
482	0.047	0.137	0.321	0.008	58.2	61.4	0.38	0.10	4.50	0.0018	0.60
483	0.043	0.098	0.259	0.010	61.5	61.5	0.38	0.10	4.50	0.0018	0.60
484	0.123	0.094	0.460	0.009	35.2	35.2	0.38	0.10	4.50	0.0018	0.60
485	0.200	0.232	0.581	0.008	27.4	27.4	0.38	0.10	4.16	0.0018	0.58
486	0.138	0.274	0.601	0.011	30.0	46.8	0.38	0.10	3.50	0.0018	0.53
487	0.108	0.235	0.676	0.011	28.3	49.2	0.38	0.10	3.50	0.0018	0.53
488	0.090	0.187	0.539	0.011	19.9	49.7	0.38	0.10	4.26	0.0018	0.58
489	0.052	0.221	0.426	0.012	32.2	32.2	0.38	0.10	4.17	0.0018	0.58
490	0.138	0.463	0.827	0.012	6.2	21.5	0.38	0.10	4.24	0.0018	0.58
491	0.112	0.624	0.934	0.004	22.9	23.0	0.38	0.10	4.13	0.0018	0.58
492	0.171	0.347	0.768	0.009	31.1	32.7	0.38	0.10	3.63	0.0018	0.54
493	0.088	0.207	0.543	0.004	25.5	25.5	0.38	0.10	4.50	0.0018	0.60
494	0.018	0.113	0.279	0.005	5.1	5.1	0.38	0.10	3.99	0.0018	0.57
495	0.046	0.216	0.515	0.006	2.0	2.0	0.38	0.10	3.00	0.0018	0.50
496	0.075	0.472	0.924	0.007	2.0	4.4	0.38	0.10	3.16	0.0018	0.51
497	0.093	0.505	0.926	0.006	2.0	4.1	0.38	0.10	3.00	0.0018	0.50
498	0.078	0.332	0.617	0.008	15.6	40.6	0.38	0.10	3.98	0.0018	0.57
499	0.049	0.327	0.593	0.008	2.2	73.6	0.38	0.10	3.45	0.0018	0.53
600	0.147	0.294	0.585	0.030	4.3	4.3	0.38	0.10	3.73	0.0018	0.55
601	0.080	0.237	0.479	0.003	2.0	2.3	0.38	0.10	4.30	0.0018	0.59
602	0.081	0.228	0.449	0.008	2.0	2.0	0.38	0.10	3.00	0.0018	0.50
603	0.162	0.238	0.538	0.028	5.8	5.8	0.38	0.10	3.35	0.0018	0.52
604	0.040	0.097	0.263	0.020	4.5	4.5	0.38	0.10	4.00	0.0018	0.57
605	0.183	0.415	0.799	0.025	5.6	5.6	0.38	0.10	3.81	0.0018	0.55
606	0.071	0.402	0.694	0.006	2.0	2.0	0.38	0.10	3.00	0.0018	0.50
607	0.040	0.121	0.282	0.010	2.0	16.8	0.38	0.10	4.37	0.0018	0.59
608	0.203	0.377	0.733	0.007	2.8	3.0	0.38	0.10	3.14	0.0018	0.51

**Table B-2  
Peak Flow Summary**

Coal Creek Tributaries			Peak Discharge (cfs) - Existing Development						Peak Discharge (cfs) - Future Development					
SWMM Node	Location Description	Drainage Area (acres)	2-Year	5-Year	10-Year	25-Year	50-year	100-Year	2-Year	5-Year	10-Year	25-Year	50-year	100-Year
<b>912</b>		85	22	56	74	120	153	183	22	56	74	120	153	183
521	E. County Line Road	79	1	23	34	72	97	122	117	190	221	283	337	391
522		174	88	159	194	288	360	431	200	339	400	535	625	705
<b>913</b>		234	92	182	227	349	438	513	202	369	440	569	676	785
<b>914</b>		51	6	24	33	60	78	95	31	66	84	125	157	186
523		41	12	29	37	61	77	93	12	29	37	61	77	93
526		168	10	20	27	68	95	106	10	20	27	68	95	106
528		35	3	13	18	34	45	55	3	13	18	34	45	55
529		298	11	46	66	136	183	210	19	63	84	137	188	212
530	Meller Street	489	32	77	130	263	362	470	49	99	162	295	410	515
<b>531</b>		<b>572</b>	<b>38</b>	<b>91</b>	<b>152</b>	<b>317</b>	<b>419</b>	<b>551</b>	<b>66</b>	<b>142</b>	<b>198</b>	<b>367</b>	<b>487</b>	<b>624</b>
532		636	25	81	117	187	223	258	46	111	148	196	248	262
534	E. County Line Road	61	0	13	21	46	63	80	65	112	132	179	216	250
536	E. County Line Road	686	27	86	125	193	225	267	51	119	159	207	252	276
<b>915</b>		877	25	96	143	248	307	380	118	225	275	399	493	584
538	E. County Line Road	27	30	54	65	88	107	126	30	54	65	88	107	126
542		128	33	91	119	195	249	300	33	91	119	195	249	300
543		234	77	170	220	361	460	559	77	170	220	361	460	559
<b>917</b>		323	98	228	283	449	575	706	125	260	322	471	604	741
539		69	18	50	64	101	128	152	36	73	88	128	157	184
<b>919</b>		159	26	72	95	164	211	259	90	165	200	294	364	431
<b>920</b>		34	9	22	28	45	57	69	9	22	28	45	57	69
540		88	2	17	25	51	68	87	10	30	41	73	94	116
541	Lombardi Street	319	31	86	116	209	272	347	45	121	160	274	351	436
<b>921</b>		387	39	111	148	263	330	427	53	145	191	321	414	520
<b>922</b>		29	0	6	9	17	22	28	0	6	9	17	22	28
<b>923</b>		48	0	7	10	19	26	33	1	7	11	20	26	34
<b>924</b>		59	0	9	14	25	34	43	1	10	14	26	34	44
518	E. County Line Road	202	2	50	79	172	230	292	165	313	381	544	684	763
519	E. County Line Road	148	4	15	21	32	39	40	4	15	21	32	39	40
<b>925</b>		438	5	52	84	185	249	315	146	286	363	509	605	704

**Table B-4  
Detention Pond Rating Curves**

Arapahoe Ridge Filing 2 (STOR_1025)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5206.0 ft			
0.0	6,277	0.00	0.00
1.0	7,793	0.16	0.00
2.0	9,399	0.36	0.00
3.0	11,079	0.59	0.00
4.0	12,865	0.87	0.00
5.0	45,167	1.53	0.00
6.0	80,281	2.07	57.88
7.0	101,450	3.02	63.76
8.0	122,841	5.59	69.13
9.0	134,256	8.54	74.12

Arapahoe Ridge Filing 1 (STOR_1026)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5182.0 ft			
0.0	768	0.00	31.12
1.0	8,649	0.09	43.57
2.0	41,711	0.62	56.02
3.0	88,994	2.09	76.32
4.0	132,639	4.62	100.32
4.5	142,902	7.15	112.32
5.0	153,166	7.83	160.00
6.0	174,095	11.58	480.00
6.14	174,095	12.14	536.00

Orchard Glen Filing 1 (STOR_1041)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5133.6 ft			
0.0	0	0.00	0.00
0.4	5190	0.01	0.99
1.4	42795	0.56	6.46
2.4	80400	1.97	14.50
2.9	83292	2.91	19.26
3.4	86185	3.89	24.45
3.9	89078	4.89	30.04
4.4	91970	5.93	36.00
5.4	101115	8.15	85.00
5.9	105688	9.33	94.20
6.4	110260	10.57	102.00
6.9	114695	11.86	109.00
7.4	119130	13.21	115.00

Canyon Creek (STOR_1042)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5075.0 ft			
0.0	0	0.000	0.00
1.0	6,030	0.046	4.10
2.0	16,745	0.297	12.70
3.0	29,802	0.824	17.40
4.0	46,924	1.700	21.10
5.0	62,186	2.940	36.10
6.0	70,532	4.468	83.00
7.0	79,398	6.188	228.20
8.2	89,500	8.513	637.40

Orchard Glen Filing 2 (STOR_1043)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5141.0 ft			
0.0	204	0.00	0.07
1.0	11,325	0.10	1.55
2.0	36,928	0.51	5.98
3.0	61,630	1.22	14.28
4.0	80,542	2.14	27.70
5.0	94,002	3.22	117.67
6.0	102,462	4.39	130.50
7.0	110,391	5.66	142.18
7.98	114,424	6.95	152.75

Regional Detention Pond 1045 - Pond A (STOR_1045)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5046.5 ft			
0.0	0	0.00	0.00
0.5	41,818	0.24	0.50
1.5	81,022	1.65	1.50
2.5	100,624	3.73	62.50
3.5	109,336	6.14	98.76
4.5	116,741	8.74	128.24
5.5	124,582	11.51	154.67
6.5	131,987	14.45	181.10
7.5	139,828	17.58	203.31
8.5	147,668	20.87	222.00
9.5	155,509	24.35	748.00

Regional Detention Pond 1045 - Pond B (STOR_1045)			
Stage (ft)	Surface Area (ft <sup>2</sup> )	Storage (ac-ft)	Discharge (cfs)
Stage 0.0 = 5046.5 ft			
0.0	0	0.00	0.00
1.5	16,117	0.28	0.00
3.5	89,298	2.71	8.00
5.5	220,414	9.83	27.00
7.5	310,147	22.01	37.00
9.5	328,878	36.68	41.00

Diversion_1045 Regional Detention Facility 1045 Pond A to Pond B	
Inflow (cfs)	Outflow (cfs)
0	0
1	0
130	0
184	0
410	180
748	510
2,442	1,442

**ERIE DETENTION FACILITY NO. 1045  
FINAL REPORT  
ERIE, COLORADO**

**Prepared for:**

**Town of Erie  
Public Works Department  
P.O. Box 750  
Erie, Colorado 80516-0100**

**Prepared by:**

**Love & Associates, Inc.  
800 Jefferson Avenue, Suite B  
Louisville, Colorado 80027-1849  
(303) 673-9795  
Project No. 0423A**

**March 31, 2005**



March 31, 2005

Ms. Laura Kroeger, P.E.  
Urban Drainage and Flood Control District  
2480 W. 28<sup>th</sup> Avenue, Suite 156-B  
Denver, Colorado 80211

800 Jefferson Avenue, Suite B  
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Phone (303) 673-9795 FAX (303) 673-9796

Ms. Wendi Palmer, P.E.  
Public Works Department  
Town of Erie  
P.O. Box 750  
Erie, CO 80516-0100

**RE: 0423A Erie Detention Facility No. 1045, Final Report**

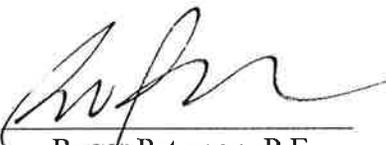
Dear Laura and Wendi:

Enclosed, please find a copy of our final report for Erie Detention Facility No. 1045, including a summary of hydrologic and hydraulic calculations and supporting information in the Appendix. These data were used for the design of the Erie Detention Facility. The hydrologic model presented in this report updates the hydrologic model for the Catchment which includes Detention Facility 1045 which was presented in the *Erie Outfall Systems Planning Preliminary Design Report*, May 2001, by Love & Associates, Inc.

It has been a pleasure to work with you on this project. Please contact us if you have any questions on our report. Thank you.

Sincerely,

LOVE & ASSOCIATES, INC.

By   
Roger Peterson, P.E.

## **Final Report Erie Detention Facility No. 1045**

### **Introduction and Description**

The Urban Drainage and Flood Control District (UDFCD) and Town of Erie, Colorado, in response to findings presented in **Erie Outfall Systems Planning Preliminary Design (OSP)** (Love & Associates, Inc., 2001) have requested Love & Associates to perform final design services and provide construction plans for a regional detention facility in the Town of Erie, labeled No. 1045 in the OSP, to reduce periodic flooding observed in the vicinity of County Line Road and the Union Pacific Railroad (UPRR) tracks. This report presents hydrologic and hydraulic design information used for the design of this regional detention facility.

Regional Detention Facility 1045 is located in a Catchment tributary to Coal Creek. Please refer to Figure 1. As reported in the OSP, development has altered the hydrologic characteristics of the Catchment, increasing the frequency and magnitude of flood peaks and causing periodic flooding in the Town. The Catchment is partially developed, and it is expected to be fully developed in the next few years.

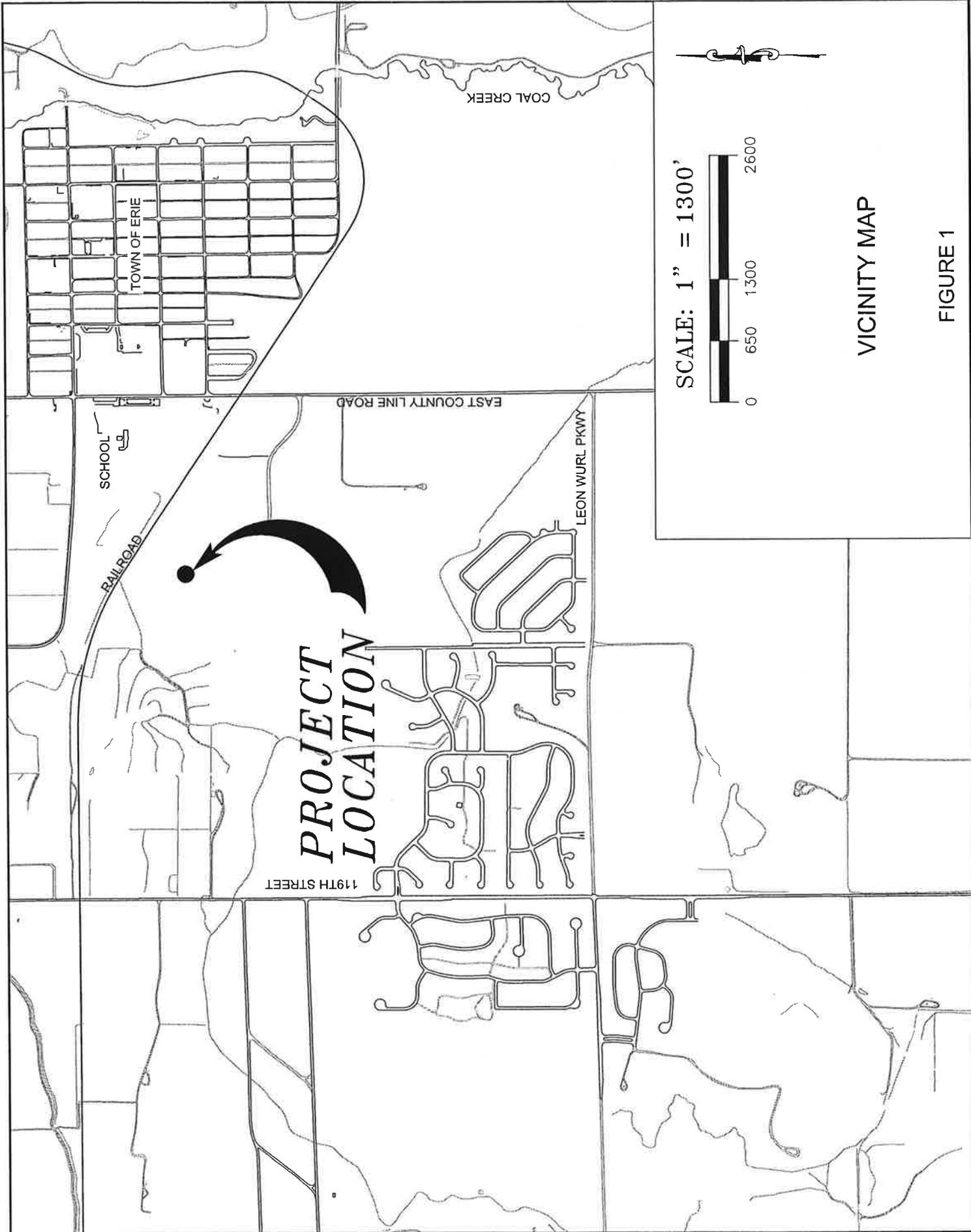
### **Special Design Criteria**

Since the OSP was completed in 2001, a number of drainage improvements have been constructed in the Catchment upstream of Regional Detention Facility 1045. These improvements include the construction of detention facilities in Orchard Glen, improvements to existing Detention Facility 1041, and construction of Regional Detention Facility 1044. The Town has received final hydraulic design information for modifications to existing Detention Facility 1042. In addition, the drainage area of the Catchment and has increased slightly due to grading in Sunwest Development. The Town requested these modifications be incorporated in the hydrologic model to design Regional Detention Facility 1045.

The Town requested Regional Detention Facility 1045 be designed to minimize the 100-year flood peak in the downstream channel, and reduce it to below the peak reported in the OSP if possible. Finally, the Town requested the facility incorporate water quality improvements into the design of Regional Detention Facility 1045.

### **Hydraulic Analysis of the Detention Facility**

To minimize the outflow from the detention facility and to maximize the potential use of the detention area by residents, the detention facility was designed with twin storage areas. The Catchment upstream of the detention facility follows an existing channel and discharges directly into the eastern storage area, called Pond A, which is designed to store approximately the 10-year event. Pond A is designed with a large outfall to allow the passage of storm flows of higher frequency without significant storage or attenuation. A



VICINITY MAP

FIGURE 1

water quality pond is incorporated into Pond A. When discharge to Pond A exceeds approximately the 10-year event, Pond A will overtop over a spillway into an adjacent storage area, Pond B. Pond B is designed with a small outfall so its discharge, when combined with Pond A discharge, does not add significantly to the peak discharge in the receiving channel. Since Pond B will not be used often for stormwater storage, it potentially can be used for recreation or other activities.

Stage/storage relationships were developed for both Ponds using the design drawings and software provided with ACAD-14. The outfall for Pond A is a 6- x 4-ft concrete box culvert (RCB) with an orifice plate reducing the opening of the outlet to 6- x 3-ft. The outfall for Pond A is a 24-inch reinforced concrete pipe (RCP). Stage/discharge relationships were developed for both ponds using HY-8 (FHWA, 2004). Stage/storage and stage/discharge relationships, including HY-8 analysis, are found in the Appendix of this report.

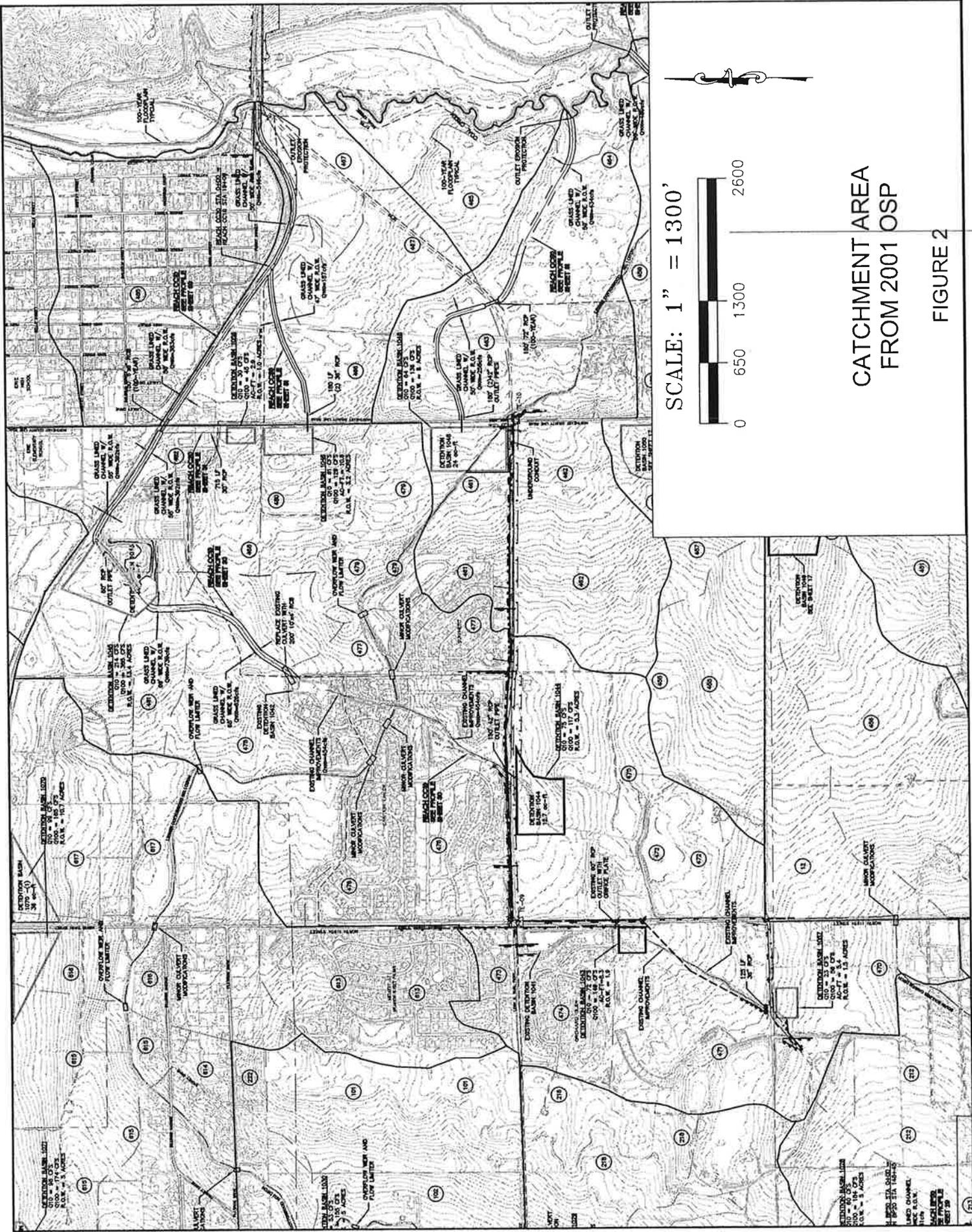
### Hydrologic Analysis

Flood peaks and hydrographs in the OSP (Love, 2001) were defined using UDSWM (UDFCD, 1998a, 2000) calibrated to CUHPF (UDFCD, 1998b, 2000). Please refer to Figure 2 for Catchments in the OSP. The hydrologic models for the 10- and 100-year events were obtained from the OSP. The UDSWM model in the OSP was initially modified to include only the new design of Regional Detention Facility 1045. The results of this analysis are found in the Appendix.

The UDSWM model in the OSP was then updated to include modifications in the Catchment upstream of the facility plus the design of Regional Detention Facility 1045. Revisions to Catchment areas are shown on Figure 3. Updated UDSWM flow charts are presented on Figure 4. The results of this analysis are presented in the Appendix and are summarized in the table below.

**Table 1. Summary of Flood Peak Discharges Used for Final Design, UDSWM, Updated Catchment and Regional Detention Facility 1045.**

UDSWM Element	Location	10-year		100-year	
		Peak (cfs)	Storage (ac-ft)	Peak (cfs)	Storage (ac-ft)
481	Inflow to Regional Detention Facility 1045	338		785	
1045	Pond A		15.8		24.1
601	Discharge From Pond A to Receiving Channel	186		237	
602	Discharge From Pond A to Pond B	7		450	
605	Pond B	1	0.3	38	29.2
532	Outflow from Regional Detention Facility 1045	186		265	



SCALE: 1" = 1300'

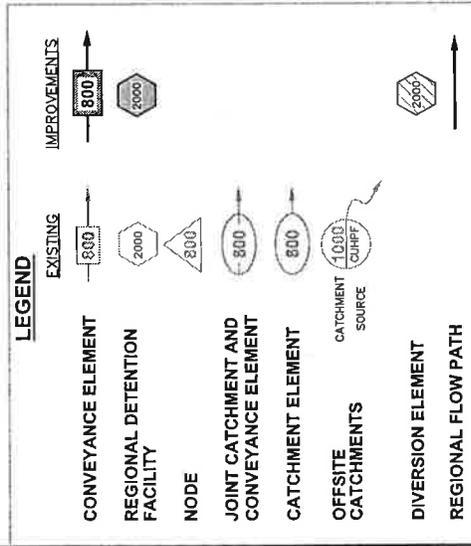
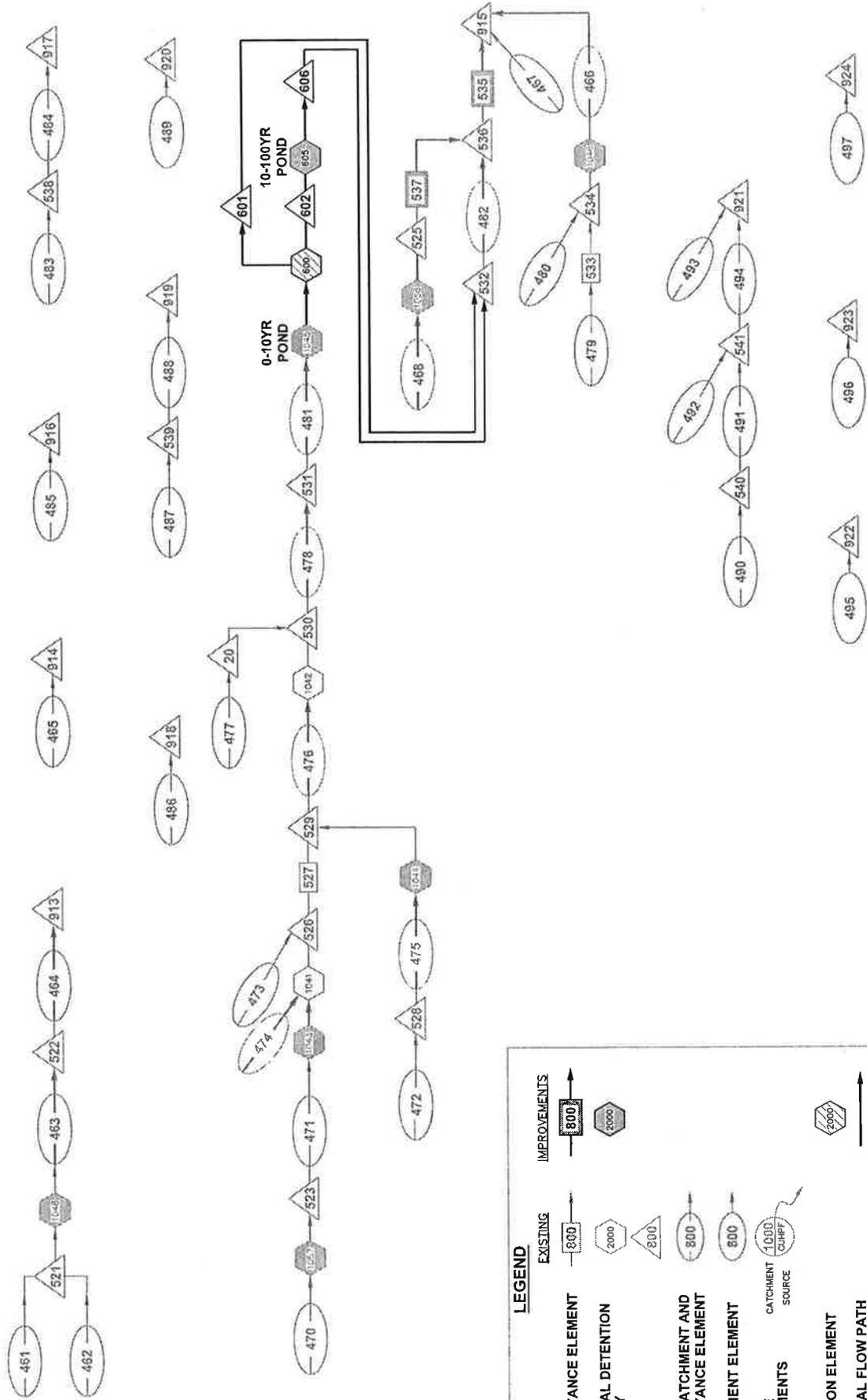


CATCHMENT AREA  
FROM 2001 OSP

FIGURE 2



# COAL CREEK TRIBUTARIES



Element 532 represents the receiving channel immediately downstream of Regional Detention Facility 1045. The 100-year flood peak discharge reported in the OSP for this channel was approximately 385 cfs. Thus, the 100-year flood peak in the receiving channel was reduced by approximately 120 cfs in the current design of the regional detention facility when compared to flood peak reported in the OSP.

### **Water Quality**

A retention type water quality treatment was designed for inclusion in Pond A. The water quality pond was designed using Urban Drainage and Flood Control District (UDFCD) spreadsheets, Version 2.03 (UDFCD, 2001 and updates) for a Retention Pond – Sedimentation Facility. There are two existing water quality ponds upstream of Pond A, identified as Ponds 1044 and 1042 in the OSP (Figure 2). The water quality volume in Pond A was estimated using the area upstream of Pond A which was not being treated by these two ponds, which is approximately 125 acres. A copy of the spreadsheet is presented in the Appendix.

### **Other Design Information**

Trickle channels and the channel between the two new drop structures within Regional Detention Facility 1045 were sized using normal depth calculations. These calculations are presented in the Appendix. Riprap was sized using UDFCD Criteria (UDFCD, 2001). The outlet of the pond is comparable to the UDFCD low tailwater basin design. Type “M” riprap was used throughout the facility; the riprap soil is used in most areas and grouted where required.

A 48-inch storm sewer discharges into the detention facility. The design discharge for the 100-year event for this storm sewer is about 55 cfs (Carroll & Lange, 2002). A concrete-lined forebay was located below the storm sewer and a grouted Type “M” riprap rundown was placed between the outlet of the storm sewer and the forebay for erosion protection. Type “M” riprap soil was also placed about the rundown for erosion protection.

### **Offsite Flows West of the Regional Detention Facility**

The area west of Regional Detention Facility 1045 is being planned for development as Canyon Creek Filing No. 7 & 8 (Civil Engineering Services, 2004), and a preliminary drainage plan for the area has been submitted to and reviewed by the Town. It is assumed this area will be graded and the subdivision will be constructed concurrently with the construction of the Regional Facility. The Town requested the engineer obtain a copy of the design of the Regional Facility from the Town so subdivision grading could be coordinated with the grading of the proposed pond. The preliminary drainage report showed much of the basin to the west will be routed to the channel entering Pond A. The very preliminary grading shown in the drainage report also indicates a few acres along the northwest corner of Pond B may be below the top of the dam whose elevation is 5057, meaning stormwater could pond adjacent to the dam. To address this area, a storm

sewer or culvert with a flap gate or equivalent discharging into the Pond could be used to drain this water, and a trickle channel has been provided along the northern berm of Pond B to accommodate this possible requirement.

### Downstream Channel Flows

Regional Detention Facility 1045 will release about 265 cfs during the 100-year event into the receiving channel. The receiving channel follows the UPRR tracks to the south, crossing County Line Road and discharging through the proposed Erie Commons subdivision before entering Coal Creek. Discharges for the 10- and 100-year at various design points shown on Figure 3 are summarized in Table 2.

**Table 2. Design Discharges for the Receiving Channel Downstream of Regional Detention Facility 1045**

UDSWM Element	Location	10-yr Peak (cfs)	100-yr Peak (cfs)
532	Outflow from Regional Detention Facility 1045 to County Line Road	186	265
536	County Line Road to Confluence with Channel 466	194	280
915	Confluence with Channel 466 to Coal Creek	251	474

A preliminary design of the receiving channel which included utility investigations was performed by others (Moser, 2001). An interim channel was constructed and as-built information for the interim channel was provided to Love by UDFCD. Love analyzed a number of as-built cross sections using normal depth equations. The minimum cross sectional areas in these sections are reported herein which represented “worst case” or minimum conveyance to determine the potential bank full discharge of the existing channel. The results are found in the Appendix. The results indicate the channel downstream of County Line Road existing Cross Sections 9 and 21 can carry 485 cfs and over 1000 cfs, respectively, at the top of bank, or can carry the 100-year event. Between County Line Road and the outlet of Regional Detention Facility 1045, at existing Cross Section 41, the channel can carry about 180 cfs at bank full discharge, or slightly less than the 10-year event. The capacity of this channel should be increased to convey the 100-year event. The two small existing culverts below County Line Road will need to be replaced to pass the 100-year event.

Using the preliminary design information, the conceptual design of the receiving channel was updated to reflect the new discharges and to reduce potential conflicts with utilities shown on the preliminary design plans. The update includes a new proposed profile for the channel, proposed channel cross sections calculated using normal depth equations, and culvert recommendations for the crossing of County Line Road. This information is found in the Appendix.

## **Recommendations**

Regional Detention Facility 1045 meets the requirements and objectives of the OSP and the Town of Erie and UDFCD and should be eligible for maintenance by UDFCD. Because of the rapidity of development in the basin, the detention facility should be constructed as soon as possible. In addition, a final design should be prepared for the receiving channel between County Line Road and the outlet of the Pond and the culverts below County Line Road, and the channel and culverts constructed as soon as possible.



Consultants in Natural Resources and the Environment

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**Natural Resources Assessment  
Canyon Creek Filing No. 7 & 8  
Northwest of Jasper Road and Telleen Avenue  
Erie, Boulder County, Colorado**

Draft

**Prepared for—**

KB Home Colorado, Inc.  
7807 East Peakview Avenue, Suite 300  
Centennial, Colorado 80111

**Prepared by—**

ERO Resources Corporation  
1842 Clarkson Street  
Denver, Colorado 80218  
(303) 830-1188  
ERO Project #7094

January 10, 2018

**Contents**

**Executive Summary**..... ii

**Introduction**..... 1

**Project Area Description** ..... 1

**Wetlands and Waters of the U.S.** ..... 5

Background ..... 5

Project Area Conditions ..... 5

**Threatened, Endangered, and Candidate Species** ..... 6

Preble’s Meadow Jumping Mouse ..... 7

Colorado Butterfly Plant ..... 8

Ute Ladies’-Tresses Orchid..... 9

**Other Species of Concern** ..... 9

Migratory Birds ..... 9

Other Wildlife..... 11

**References**..... 11

**Tables**

Table 1. Federally threatened, endangered, and candidate species potentially found in Boulder County or potentially affected by projects in Boulder County..... 6

**Figures**

Figure 1. Vicinity Map ..... 3

Figure 2. Existing Conditions ..... 4

**Appendix**

Appendix A Photo Log

## Executive Summary

KB Home Colorado, Inc. retained ERO Resources Corporation (ERO) to provide a natural resources report for the Canyon Creek Filing 7 & 8 property located in the town of Erie, Boulder County, Colorado (project area; Figure 1). ERO assessed the project area for potential wetlands and waters of the U.S., federally listed threatened and endangered species, migratory birds, and other wildlife. The following is a summary of the resources found at the project area and recommendations or future actions necessary based on the current site conditions and regulations.

The natural resources and associated regulations described in this report are valid as of the date of this report and may be relied upon for the specific use for which it was prepared by ERO under contract with KB Home Colorado, Inc. Because of their dynamic nature, site conditions and regulations should be reconfirmed by a qualified consultant before relying on this report for a use other than that for which ERO was contracted.

**Wetlands and Other Waters of the U.S.** — Four water conveyance irrigation ditches cross the property. All ditches were dry during the 2017 field visit, and likely have water during the summer months. A canal runs adjacent to the project area on the southeast boundary. Flowing water was present in the canal and dense emergent wetland vegetation was present. The ditches and canal adjacent to the project area have a direct surface connection to Coal Creek east of the project area. Because of the connection to Coal Creek east of the project area, the ditches and canal within and adjacent to the project area are likely to be considered jurisdictional under the Clean Water Act. If any work is planned within the ditches or canal within or adjacent to the project area, a Section 404 permit may be required from the U.S. Army Corps of Engineers (Corps), in addition to a habitat assessment submitted to the U.S. Fish and Wildlife Service (Service) as part of the Corps permit. If no work is planned within the ditches or canal, no further action is necessary.

**Federally Threatened and Endangered Species** — The project area does not contain suitable habitat for most of the federally listed threatened or endangered species in Boulder County. The project area falls within recommended survey guidelines for Preble's meadow jumping mouse, Ute ladies'-tresses orchid, and Colorado butterfly plant; however, the project area does not contain habitat for these species. ERO recommends submitting a habitat assessment to the Service requesting confirmation that the project area does not contain habitat for these species if such a request is not already included with any Corps permitting described above.

**Migratory Birds** — During the 2017 site visit, ERO observed one inactive raptor nest within the western cottonwood stand on the property. A pair of red-tailed hawks were present during the field survey, one of which was perched near the nest. Several small nests and cavities were observed in the western cottonwoods and smaller shrubs and trees in the cottonwood understory. Additionally, two small grass nests were visible in the willow shrubs adjacent to the detention pond in the southeast project area. An approximate 18-acre prairie dog colony in the eastern project area provides nesting habitat for

burrowing owls. Although ERO did not observe any other nests within the project area, the croplands and stands of trees in the project area provide potential nesting habitat for ground-nesting and tree-nesting migratory birds.

Both the Denver Field Office of the U.S. Fish and Wildlife Service (2009) and Colorado Department of Transportation (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring between April 1 and mid to late August. However, some birds, such as bald eagles, red-tailed hawks, and great horned owls, can occupy nests as early as December. Because of variability in breeding seasons of various bird species, ***ERO recommends, at a minimum, a nest survey be conducted within one week prior to construction to determine if any active nests are present in the project area so they can be avoided.*** If active nests are found, any work that would destroy the nests could not be conducted until the birds have vacated the nests.

In addition, because of the presence of a likely raptor nest, ERO recommends conforming to Colorado Parks and Wildlife (CPW) wildlife buffers and seasonal restrictions typically up to 1/3 mile, depending on the species, between February 15 through July 15. ERO has developed a Raptor Monitoring Approach that can be implemented prior to and during construction to provide site-specific information that can guide the development and implementation of reasonable and effective avoidance measures of an active raptor nest when there is no direct take of an active nest.

# Natural Resources Assessment Canyon Creek Filing No. 7 & 8 Northwest of Jasper Road and Telleen Avenue Erie, Colorado

January 10, 2018

## Introduction

KB Home Colorado, Inc. retained ERO Resources Corporation (ERO) to conduct a natural resources assessment for the Canyon Creek Filing 7 & 8 property located northwest of Jasper Road and Telleen Avenue in the town of Erie, Boulder County, Colorado (project area; Figure 1). On December 20, 2017, ERO biologist Aimee Way visited the project area to review potential natural resources (2017 site visit). During this assessment, activities included a review of potential wetlands and waters of the U.S., federally listed threatened and endangered species, migratory birds and other wildlife, and identification of other natural resources that might affect development of the project area. This report provides information on existing site conditions and resources, as well as current regulatory requirements related to those resources. ERO assumes the landowner or project proponent is responsible for obtaining all federal, state, and local permits for development activities in the project area.

## Project Area Description

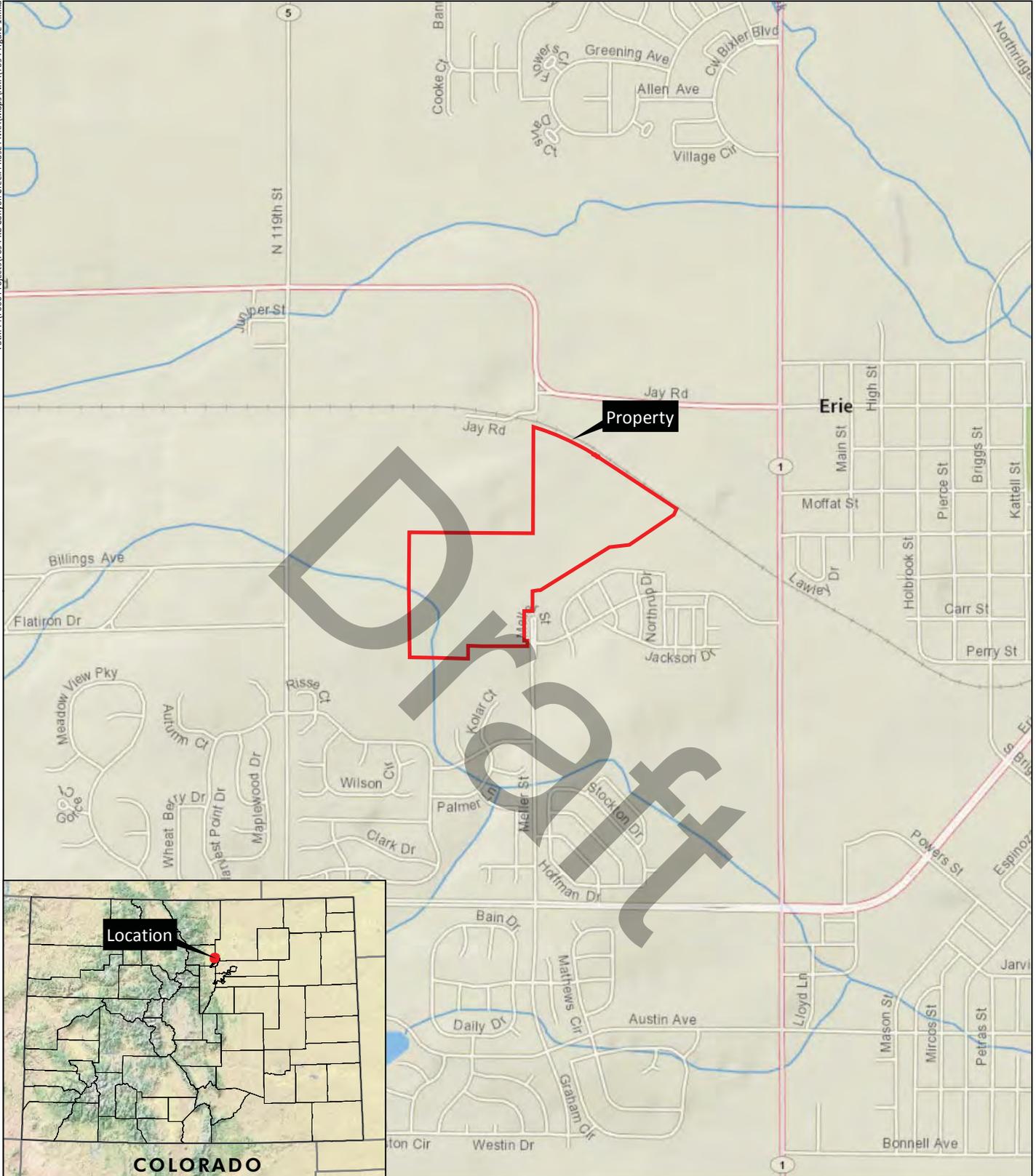
The project area is in Section 13, Township 1 North, Range 69 West of the 6<sup>th</sup> Principal Meridian in Boulder County, Colorado. The UTM coordinates of the approximate center of the project area are 494421mE, 4432992mN, Zone 13N. The longitude/latitude of the project area is 105.065400°W/40.047142°N. The elevation of the project area ranges from 5,050 to 5,110 feet above sea level. Photos of the project area are in Appendix A and photo points are shown on Figure 2.

The project area encompasses approximately 70.6 acres of land. The project area is open agricultural land (Photo 1). Plant species in the agricultural area includes smooth brome (*Bromus inermis*), slender wheatgrass (*Elymus trachycaulus*), Indian ricegrass (*Acnatherum hymenoides*), sideoats grama (*Bouteloua curtipendula*), cheatgrass (*Bromus tectorum*), sunflower (*Helianthus annuus*), Russian thistle (*Salsola tragus*), tall tumbled mustard (*Sisymbrium altissimum*), common mullein (*Verbascum thapsus*), stinkgrass (*Eragrostis cilianensis*), and old cultivated crops. An approximately 5 acre grove of mature plains cottonwoods (*Populus deltoides*) occurs on the western boundary of the project area, bisected by a large transmission line that crosses the project area diagonally (Photo 2 and 3). Plants within the cottonwood grove include coyote willow (*Salix exigua*), redosier dogwood (*Cornus sericia*), American plum (*Prunus americana*), Rocky Mountain juniper (*Juniperus scopulorum*), and Russian olive (*Elaeagnus angustifolia*) (Photo 4). Several stick nests occur within the trees, one of which is potentially an inactive red-tailed hawk nest (Figure 2, Photo 5).

A large mound of imported fill-dirt occurs on the southern property boundary, north of the Red Hawk Elementary School. An oil/gas well pad exists in the northeast corner of the project area. An approximately 18-acre active black-tailed prairie dog colony occurs directly southeast of the well pad in a depression created for a retention pond, and scattered burrows extend to a dirt access road southwest of the well pad (Figure 2 and Photo 6).

The Cottonwood Number 1 Ditch crosses through the southwestern corner of the property (Figure 2, Photo 7). Additionally, three sections of an unnamed smaller ditch cross the project area; one section is on the western boundary east of the well pad located outside of the project area (Segment 1, Photo 8); one flows north to south into the Cottonwood Number 1 Ditch (Segment 2, Photo 9); and the last section runs west to east in the northern portion of the project area north of the well pad (Segment 3, Photo 10). Several other groups of trees occur in the project area along the Cottonwood Number 1 Ditch (Siberian elm (*Ulmus pumila*)), between Segment 1 and 2 of the unnamed ditch (Russian olive and apple (*Malus* sp.)), north of Segment 3 of the unnamed ditch (cottonwoods and Siberian elm), and in the southeast corner of the project area, north of the canal (cottonwoods). A detention pond containing water with fringe wetlands occurs in the southeast project area (Photo 11). A channelized canal containing dense cattail (*Typha angustifolia*) and hardstem bulrush (*Schenoplectus acutus*) flows southwest along the property boundary from the pond, then turns south parallel to Jasper Road (Figure 2, Photo 12).

Numerous noxious weeds and weedy plants were observed on the property, including cheatgrass, musk thistle (*Carduus nutans*), common mullein, and cocklebur (*Xanthium strumarium*).



**Canyon Creek Filing No. 7 & 8, Erie, Colorado**

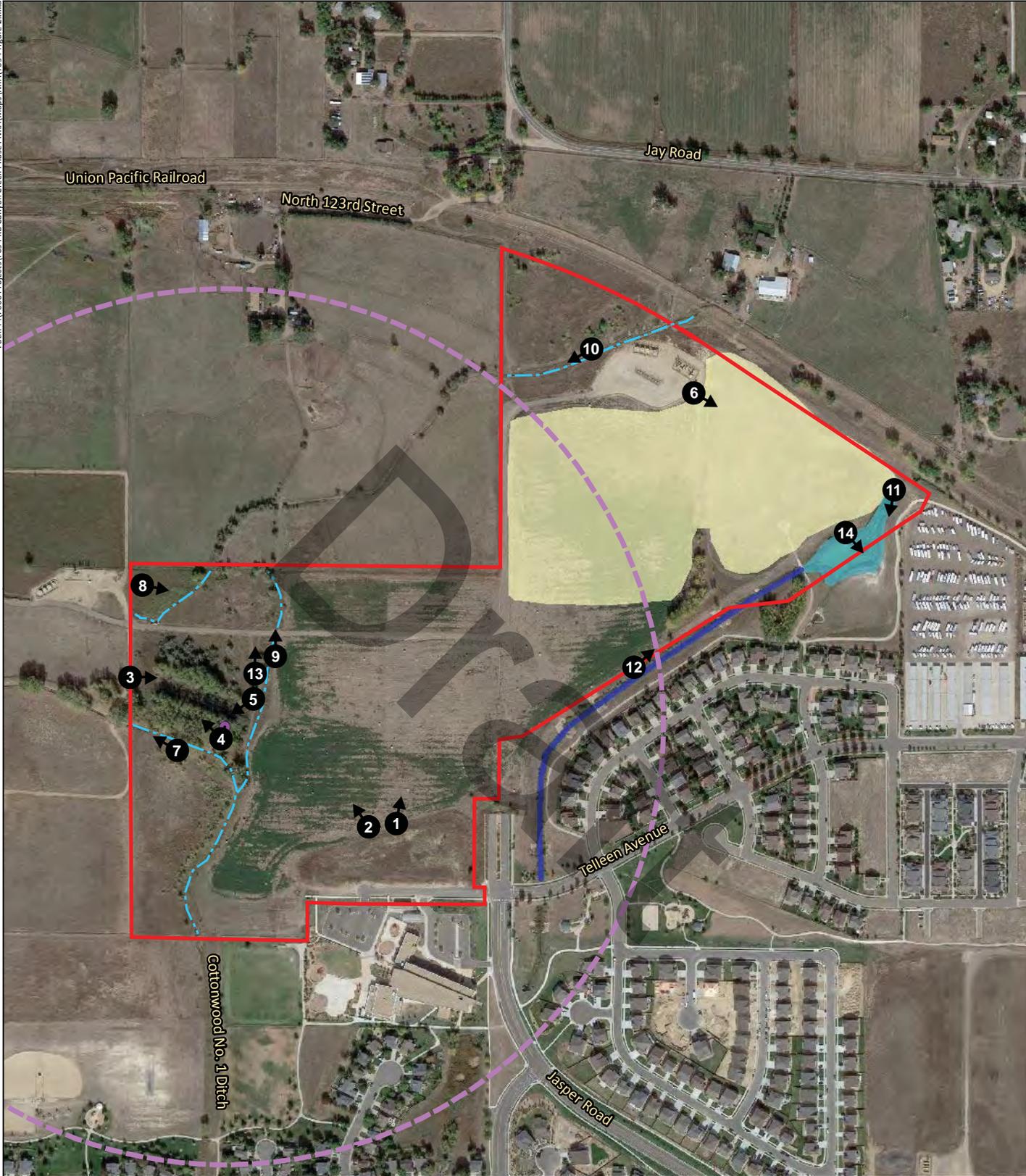
Section 13, T1N, R69W; 6th PM  
UTM NAD 83: Zone 13N; 494421mE, 4432992mN  
Longitude 105.065400°W, Latitude 40.047142°N  
USGS Erie, CO Quadrangle  
Boulder County, Colorado

Copyright: © 2013 National Geographic Society, i-cubed  
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**Figure 1  
Vicinity Map**

Prepared for: KB Home Colorado  
File: 7094 Figure 1.mxd [dlH]  
December 18, 2017





Canyon Creek Filing No. 7 & 8, Erie, Colorado

- Property
- Red-tailed Hawk 1/3-mile Nest Buffer
- Ditch
- Detention Pond
- OHWM
- Prairie Dog Colony
- Inactive Red-tailed Hawk Nest
- Photo Point

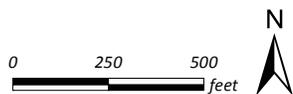


Figure 2  
Existing Conditions

Prepared for: KB Home Colorado  
File: 7094 Figure 2.mxd [dlH]  
January 8, 2018



## **Wetlands and Waters of the U.S.**

### **Background**

The Clean Water Act (CWA) protects the physical, biological, and chemical quality of waters of the U.S. The U.S. Army Corps of Engineers' (Corps) Regulatory Program administers and enforces Section 404 of the CWA. Under Section 404, a Corps permit is required for the discharge of dredged or fill material into wetlands and other waters of the U.S. The Corps defines waters of the U.S. as all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters.

On May 31, 2016, the U.S. Supreme Court concluded that approved jurisdictional determinations are judicially reviewable under the Administrative Procedure Act and, therefore, can be appealed in court. The Corps has recommended that requests for both approved and preliminary jurisdictional determinations be done using guidance outlined in Regulatory Guidance Letter (RGL) 16-01 and that the form in Appendix 1 of the RGL be completed (Corps 2016). The Corps has indicated that jurisdictional determinations associated with a Section 404 CWA Permit request will preside over stand-alone jurisdictional determination requests. While ERO may provide its opinion on the likely jurisdictional status of wetlands and waters, the Corps makes the final determination.

### **Project Area Conditions**

ERO assessed the project area for potential isolated wetlands, jurisdictional wetlands, and other waters of the U.S. The Cottonwood Number 1 Ditch crosses through the southwestern corner of the property (Figure 2, Photo 7). This ditch is approximately 6 feet wide and 5 feet deep, with a 4-foot wide flow channel. Additionally, three segments of an unnamed smaller ditch cross the project area; one section is on the western boundary east of the well pad located outside of the project area (Segment 1, Photo 8); one flows north to south into the Cottonwood Number 1 Ditch (Segment 2, Photo 9); and the last section runs west to east in the northern portion of the project area north of the well pad (Segment 3, Photo 10). This segment contains a PVC pipe within an open trench. A detention pond containing water with fringe shrub and herbaceous wetlands occurs in the southeast project area (Photo 11). A channelized canal containing dense cattail and hardstem bulrush flows southwest along the property boundary from the pond, then turns south parallel to Jasper Road (Figure 2, Photo 12). Flowing water was observed in the canal during the 2017 field visit. The ditches and canal have a surface connection to Coal Creek 0.8 mile east of the project area. Coal Creek is shown on the U.S. Geological Survey Erie topographic quadrangle as a perennial stream, which has an eventual connection to the South Platte River. The Corps has previously determined that Coal Creek is jurisdictional.

### **Recommendations**

Because of the connection from the ditches and canal within the project area to Coal Creek, the wetlands and waters of the U.S. within and adjacent to the project area would likely be considered jurisdictional by the Corps. If any work is planned within the wetlands or waters of the U.S. within or

adjacent to the project area, a Section 404 permit would likely be required from the Corps. If no work is planned within these areas, no further action is necessary.

## Threatened, Endangered, and Candidate Species

During the 2017 site visit, ERO assessed the project area for potential habitat for threatened, endangered, and candidate species under the Endangered Species Act (ESA). Federally threatened and endangered species are protected under the ESA. Adverse effects on a federally listed species or its habitat require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 or 10 of the ESA. The Service lists several threatened and endangered species with potential habitat in Boulder County, or that would be potentially affected by projects in Boulder County (Table 1).

**Table 1. Federally threatened, endangered, and candidate species potentially found in Boulder County or potentially affected by projects in Boulder County.**

Common Name	Scientific Name	Status*	Habitat	Habitat Present
<b>Mammals</b>				
Canada lynx	<i>Lynx canadensis</i>	T	Climax boreal forest with a dense understory of thickets and windfalls	No habitat
Preble's meadow jumping mouse (Preble's)	<i>Zapus hudsonius preblei</i>	T	Shrub riparian/wet meadows	No habitat
<b>Birds</b>				
Interior least tern**	<i>Sterna antillarum athalassos</i>	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No habitat, potential depletions undetermined
Mexican spotted owl	<i>Strix occidentalis</i>	T	Closed canopy forests in steep canyons	No habitat
Piping plover**	<i>Charadrius melodus</i>	T	Sandy lakeshore beaches and river sandbars	No habitat, potential depletions undetermined
Whooping crane**	<i>Grus americana</i>	E	Mudflats around reservoirs and in agricultural areas	No habitat, potential depletions undetermined
<b>Fish</b>				
Greenback cutthroat trout	<i>Oncorhynchus clarki stomias</i>	T	Cold, clear, gravel headwater streams and mountain lakes	No habitat
Pallid sturgeon**	<i>Scaphirhynchus albus</i>	E	Large, turbid, free-flowing rivers with a strong current and gravel or sandy substrate	No habitat, potential depletions undetermined

Common Name	Scientific Name	Status*	Habitat	Habitat Present
<b>Plants</b>				
Colorado butterfly plant (CBP)	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	T	Subirrigated alluvial soils on level floodplains and drainage bottoms between 5,000 and 6,400 feet in elevation	No habitat
Ute ladies'-tresses orchid (ULTO)	<i>Spiranthes diluvialis</i>	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 6,500 feet in elevation	No habitat
Western prairie fringed orchid**	<i>Platanthera praeclara</i>	T	Mesic and wet prairies, sedge meadows	No habitat, potential depletions undetermined

\*T = Federally Threatened Species; E = Federally Endangered Species.

\*\*Water depletions in the South Platte River may affect the species and/or critical habitat in downstream reaches in other counties or states.

Source: Service 2017.

### Potential Habitat and Possible Effects

The proposed project would not affect the Canada lynx, Mexican spotted owl, or greenback cutthroat trout because of the lack of potentially suitable habitat in the project area. The interior least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid are species that are affected by continued or ongoing depletions to the Platte River system. Based on ERO's current knowledge of the project, no depletions to the Platte River system would occur. If during the course of the project it is determined the project would cause depletions, coordination with the Service would be necessary.

Potential habitat for Preble's, CBP, and ULTO is generally more prevalent within areas across the Front Range. Because these species are more likely to be addressed by counties and regulatory agencies, a more detailed discussion is provided below.

### Preble's Meadow Jumping Mouse

#### Species Background

Preble's was listed as a threatened species on May 13, 1998. Under existing regulations, either a habitat assessment or a full presence/absence survey for Preble's is required for any habitat-disturbing activities within areas determined to be potential Preble's habitat (generally stream and riparian habitats along the Colorado Front Range). Typically, Preble's occurs below 7,600 feet in elevation, generally in lowlands with medium to high moisture along permanent or intermittent streams and canals (Meaney et al. 1997), and in low undergrowth consisting of grasses and forbs, in open wet meadows, riparian corridors near forests, or where multilevel shrubs and low trees provide adequate cover (Service 1999; Meaney et al. 1997).

### **Potential Habitat and Possible Effects**

During the 2017 site visit, ERO assessed the project area for potential Preble's habitat. The project area does not contain suitable habitat for Preble's because it consists primarily of disturbed uplands and cultivated fields. The Cottonwood Number 1 Ditch contains thick grasses and forbs along the banks.

Segment 1, 2, and 3 of the unnamed ditch contain shrubby willows and reed canarygrass (*Phalaris arundinacea*) sporadically in narrow bands along the ditch banks (Photo 13). Additionally the project area lacks the multistoried riparian shrub habitat typically associated with Preble's. The canal contains dense stands of cattail, not suitable for Preble's (Service 1999). The project area is isolated from known Preble's populations, with the nearest population occurring approximately 8.3 miles to the west along Boulder Creek. Because of the distance from known populations of Preble's and the presence of low quality potential habitat, Preble's is not likely to be present in the project area.

### **Recommendations**

The project area falls within the survey guidelines for potential Preble's habitat because of the presence of wetland vegetation along ditches. ERO recommends submitting a habitat assessment to the Service requesting the project area be cleared from a presence/absence survey for Preble's due to the lack of habitat in the project area. If a Corps permit is necessary, as described under the wetlands section, the habitat assessment would be included with the permit application.

## **Colorado Butterfly Plant**

### **Species Background**

The CBP is federally listed as threatened and is found in small areas in southeastern Wyoming, western Nebraska, and north-central Colorado (Service 2004). The CBP is a short-lived perennial herb found in moist areas of floodplains. It occurs on sub-irrigated alluvial soils on level or slightly sloping floodplains and drainage bottoms at elevations from 5,000 to 6,400 feet. Colonies are often found in low depressions or along bends in wide, active, meandering stream channels that are periodically disturbed. Historically, the main cause of disturbance was probably flooding (Service 2004). The CBP flowers from June to September and produces fruit from July to October (Spackman et al. 1997).

### **Potential Habitat and Possible Effects**

The Service has not established formal survey guidelines for CBP, but has indicated that areas similar to and slightly drier than ULTO habitat should be assessed. ERO determined that habitat for CBP does not occur in the project area for the same reasons as described for ULTO below.

### **Recommendations**

As discussed above, ERO recommends submitting a habitat assessment to the Service requesting the project area be cleared from a presence/absence survey for CBP due to the lack of habitat. If a Corps permit is necessary, as described under the previous section, the habitat assessment would be included with the permit application.

## **Ute Ladies'-Tresses Orchid**

### **Species Background**

ULTO is federally listed as threatened. ULTO occurs at elevations below 6,500 feet in moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil is seasonally saturated within 18 inches of the surface. Generally, the species occurs where the vegetative cover is relatively open and not overly dense or overgrazed. Once thought to be fairly common in low-elevation riparian areas in the interior western United States, ULTO is now rare (Service 1992a).

In Colorado, the Service requires surveys in areas of suitable habitat on the 100-year floodplain of the South Platte River, Fountain Creek, Roaring Fork River, and Yampa River, and their perennial tributaries; or in any area with suitable habitat in Boulder and Jefferson Counties (Service 1992a). Douglas County has a block clearance zone that extends to just outside of the project area to the northwest and northeast. ULTO does not bloom until late July to early September (depending on the year) and the timing of surveys must be synchronized with blooming (Service 1992b).

### **Potential Habitat and Possible Effects**

ERO assessed the project area for potential ULTO habitat and no habitat was found. The small amount of wetland vegetation that occurs in the project area is dominated by cattail, hardstem bulrush, and coyote willow and does not contain species usually associated with ULTO or the relatively open vegetation they prefer. In addition, the majority of the project area consists of dry uplands dominated by introduced species and does not contain the wet mesic habitat suitable for ULTO. However, the Service requires that all drainages and wetland areas in Boulder County be assessed for ULTO habitat.

### **Recommendations**

The project area falls within the survey guidelines for potential ULTO habitat because of the presence of wetland vegetation. ERO recommends submitting a habitat assessment to the Service requesting the project area be cleared from a presence/absence survey for ULTO due to the lack of habitat. If a Corps permit is necessary, as described under the previous section, the habitat assessment would be included with the permit application to the Corps.

## **Other Species of Concern**

### **Migratory Birds**

#### **Background**

Migratory birds, as well as their eggs and nests, are protected under the Migratory Bird Treaty Act (MBTA). While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal (Service 2003). The regulatory definition of a take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 Code of Federal Regulations 10.12).

Under the MBTA, the Service may issue nest depredation permits, which allow a permittee to remove an active nest. The Service, however, issues few permits and only under specific circumstances, usually related to human health and safety. Obtaining a nest depredation permit is unlikely and involves a process that may take a significant amount of time. In addition, Colorado Parks and Wildlife (CPW) has recommended buffers for nesting raptors, depending on the species (generally  $\frac{1}{3}$  or  $\frac{1}{4}$  mile) (Colorado Division of Wildlife (CDOW) 2008). The best way to comply with the MBTA is to remove vegetation outside of the active breeding season, which typically falls between March and August, depending on the species. Public awareness of the MBTA has grown in recent years, and most MBTA enforcement actions are the result of a concerned member of the community reporting noncompliance.

### **Potential Habitat and Possible Effects**

An inactive raptor nest occurs in the western cottonwood stand within the project area (Figure 2, Photo 5). During the 2017 site visit, ERO observed two red-tailed hawks perching and flying within the project area; one bird was perched within 150 feet of the nest. Although the nest was inactive during the 2017 site visit, if the nest becomes active during the red-tailed hawk breeding season (February 15 to July 15) CPW recommends a  $\frac{1}{3}$ -mile buffer when nests are active (Figure 2) (CDOW 2008). The breeding season for most birds in Colorado is March through August, with the exception of a few species that begin breeding in February, such as great horned owls and red-tailed hawks. Multiple smaller stick nests and tree cavities were observed in the cottonwood stand, likely bird nests from previous years. Additionally, two small grass cup nests were present in the willows along the edge of the detention pond (Photo 14). Active bird nests are difficult to detect and may occur within any of the tree stands or cultivated fields within the project area.

Birds observed using the project area during the survey include American kestrel (*Falco sparverius*), blue jay (*Cyanocitta cristata*), house finch (*Haemorhous mexicanus*), Eurasian collared dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), northern flicker (*Colaptes auratus*), red-tailed hawk (*Buteo jamaicensis*), and western meadowlark (*Sturnella neglecta*). An approximately 18-acre black-tailed prairie dog colony occurs in the northeastern project area. This provides potential nesting habitat for western burrowing owl (*Athene cunicularia*). Burrowing owls usually arrive on their breeding grounds about mid-March to early April and remain until September or October. Burrowing owls are present in Colorado between March 15 and October 31, with breeding from mid-April to early/mid-August (Andrews and Righter 1992; Kingery 1998).

### **Recommendations**

Vegetation removal should occur outside of the breeding season (typically September through February). Both the Denver Field Office of the Service (2009) and the Colorado Department of Transportation (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring between April 1 and mid to late August. However, some birds, such as bald eagles, red-tailed hawks, and great horned owls, can occupy nests as early as December. Because of variability in various bird species' breeding seasons, ERO recommends a nest survey be conducted within one week

prior to construction to determine if any active nests are present in the project area and need to be avoided. Nest removal may occur during the nonbreeding season to discourage future nesting and avoid violations of the MBTA. No permit or approval is necessary for removing nests during the nonbreeding season; however, nests must be destroyed and may not be collected under MBTA regulations. If active nests are found, any work that would destroy the nests could not be conducted until the birds have vacated the nests. Should an active nest be occupied by a raptor species, ERO recommends conforming to Colorado Parks and Wildlife (CPW) wildlife buffers and seasonal restrictions of a ½-mile buffer when nests are active between February 15 through July 15. ERO has developed a Raptor Monitoring Approach that can be implemented prior to and during construction to provide site-specific information that can guide the development and implementation of reasonable and effective avoidance measures of an active raptor nest when there is no direct take of an active nest.

CPW suggests conducting burrowing owl clearance surveys in prairie dog towns planned for poisoning or construction projects planned during the period from March 15 through October 31 (CDOW 2008). Active burrowing owl nests should be avoided by 150 feet until they are inactive (CDOW 2008).

## Other Wildlife

An approximately 18-acre black-tailed prairie dog colony was observed within the project area. The majority of the burrows occur in an excavated area southeast of the well pad, cleared for a detention pond (Photo 6). Prairie dog colonies provide a food source for multiple raptors and habitat for Birds of Conservation Concern, such as burrowing owl and mountain plover (*Charadrius montanus*). As with any human development, wildlife species sensitive to human disturbance are likely to decline in abundance or abandon the area, while other wildlife species adapted to development are likely to increase in abundance. Species likely to decline include some raptors and possibly coyotes. Species likely to increase include red fox, raccoon, and house mouse. Overall, surrounding and continuing development contributes to a decline in the number and diversity of wildlife species nearby and to a change in species composition to favor species that adapt better to human disturbance.

## References

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**Appendix A Photo Log**

Draft

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 1** - Open agricultural fields dominate the project area; southern boundary looking north.



**Photo 2** - Mature cottonwood stand, southern boundary looking northwest.

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 3** - Transmission line corridor through the cottonwood stand, looking southeast.



**Photo 4** - Multi-storied trees in the cottonwood understory, looking northwest.

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 5** - Potential red-tailed hawk nest; red-tailed hawk adult was perched about 150 feet southwest of the nest.



**Photo 6** - Black-tailed prairie dog colony in the northeastern project area, looking southeast.

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 7** - Cottonwood Number 1 Ditch, looking northwest.



**Photo 8** - Segment 1 of an unnamed ditch in the far western project area, looking southeast.

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 9** - Segment 2 of a north-south running unnamed ditch, looking north.



**Photo 10** - Segment 3 of the unnamed ditch in the northern project area containing a pipe in a trench, looking west.

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 11** - Water detention pond, southeast corner of the project area.



**Photo 12** - Canal with flowing water, on the southeastern boundary, looking northeast.

PHOTO LOG  
CANYON CREEK PROPERTY FILING 7 AND 8 – TOWN OF ERIE  
NATURAL RESOURCE ASSESSMENT  
BOULDER COUNTY, COLORADO  
DECEMBER 20, 2017



**Photo 13** - Shrubby willows along Segment 2 of the north-south running unnamed ditch, looking north.



**Photo 14** - Two grass cup bird nests within the willows on the edge of the detention pond, southeast corner of the project area.

# WESTERN ENVIRONMENT AND ECOLOGY, INC

February 6, 2018

Glenn D. Ohlsen  
Cole Garner Geotechnical  
1070 West 124<sup>th</sup> Avenue, Suite 300  
Westminister, Colorado 80234

Subject: Mine Subsidence Assessment Canyon Creek Filings 7 and 8, 70.59 Acres Section 13, Township 1 North, Range 69 West, Erie, Colorado. Western Environment and Ecology, Inc. Project Number 766-001-01.

Dear Mr. Ohlsen:

In accordance with your request, Western Environment and Ecology, Inc. (Western Environment) is pleased to present the results of our review of mine subsidence investigations performed on, or adjacent to, the above referenced property (Figure 1). The purpose of this assessment was to determine the impact of mapped and un-mapped workings from several abandoned coal mines on the proposed residential subdivision. The Colorado Geological Survey (CGS) identify four abandoned mines known to occur beneath the Canyon Creek project (Figure 2). These are the Chase, Jackson, Northrop and Tynon Mines. The CGS records indicated that these mines operated from 1883 to 1904. Studies performed by Western Environment and others have determined that the depths to the mines range from 108 to 169 feet.

The investigations used for this assessment are : "Proposed Elementary School #26" Western Environment Project Number 256-001-02 dated December 7, 2009; "Mine Subsidence Investigation Sunwest Subdivision" Western Environment Project Number 54-001-02 dated February 3, 1998; "Mine Subsidence Investigation Creekside Subdivision" Western Environment Project Number 83-002-02 dated February 21, 2000; Sunwest North Subdivision Mine Subsidence Investigation" Western Environment Project Number 595-001-01 dated August 13, 2012; "Preliminary Subsidence and Geotechnical Engineering Investigation Country Meadows PUD" ATEC Associates, Inc. dated April 3, 1987; and "Subsidence Investigation Canyon Creek Subdivision Filings 7 and 8" CTL Thompson Project Number 30,218 dated October 2, 2000.

Figure 2 presents the location of approximately 80 borings completed on or adjacent to the Canyon Creek project. The results of the holes confirmed the reported depths of the individual mines and determined that **collapse was complete in the majority of the borings**. However, several of the investigations identified mine workings outside of the limits shown on the original CGS mine maps. As a result, Western Environment issued a "Geologic Advisory" regarding mine workings in Section 13. This August 16, 2001 Advisory concluded that **"due to an improper or incorrect land survey likely conducted prior to 1900" the mines were mis-located 400-500 feet.**

Using this information and the previously referenced reports, Western Environment prepared the attached Figure 3 showing the Conceptual Design of the Canyon Creek Subdivision Filings 7 and 8 and the Area of Influence (AOI) of the mines. This AOI must be considered as preliminary, in particular near the Chase/Tynon and Jackson Mines. Numerous borings completed on the southern portion of the Chase Mine located workings well beyond the limits shown on the original maps. Additionally, the Jackson Mine map does not have any survey reference, resulting it its location being extrapolated from drill data only.

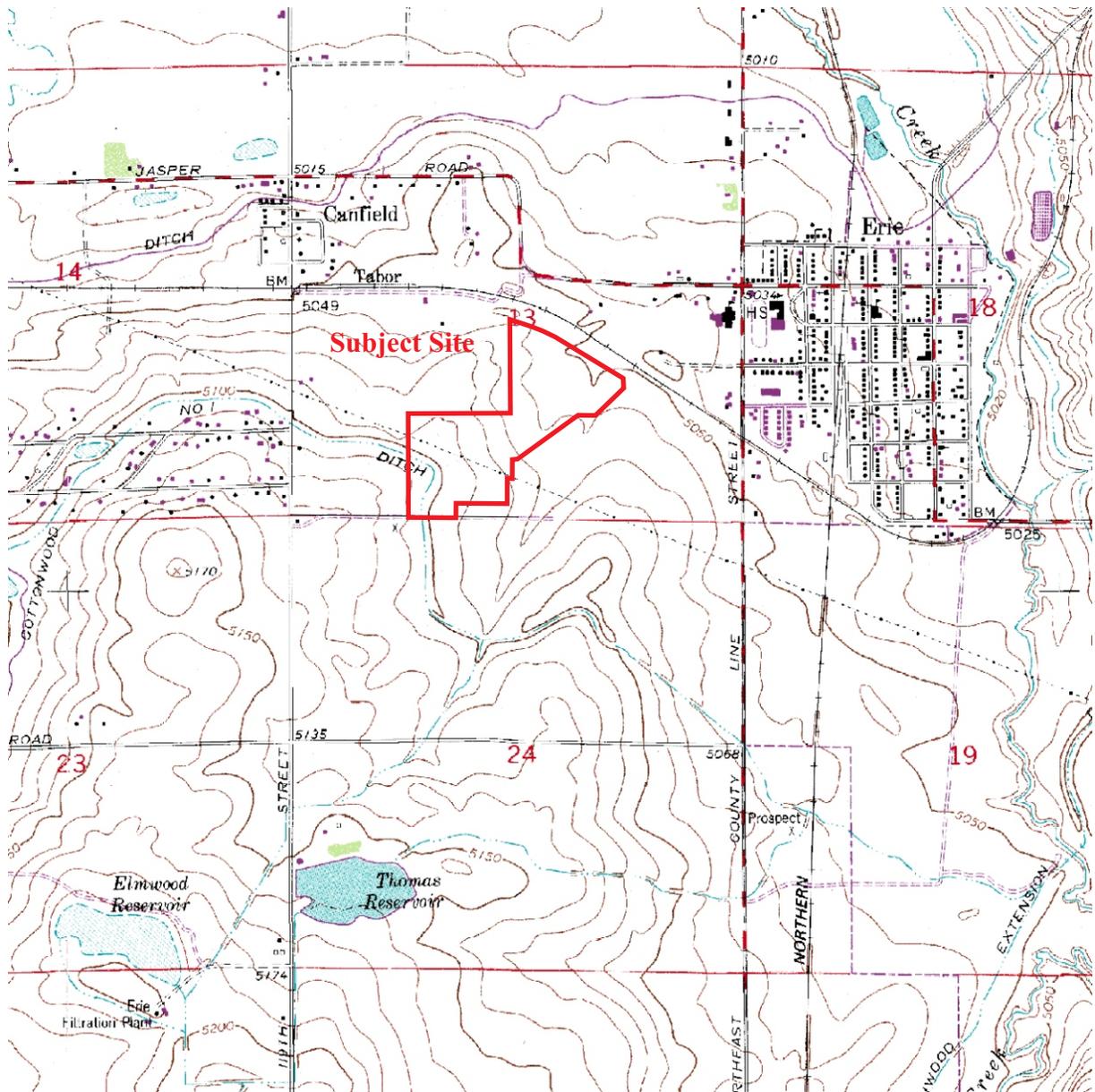
It is the opinion of Western Environment that development of the Canyon Creek Subdivision is possible with little or no subsidence related restrictions, if additional borings in undermined areas outside of the known mine workings confirm that collapse is complete. Additionally, these borings will substantiate our opinion that the majority of the project is not undermined.

Thank you for the opportunity to provide this assessment. Please do not hesitate to contact us with any questions.

Respectfully,

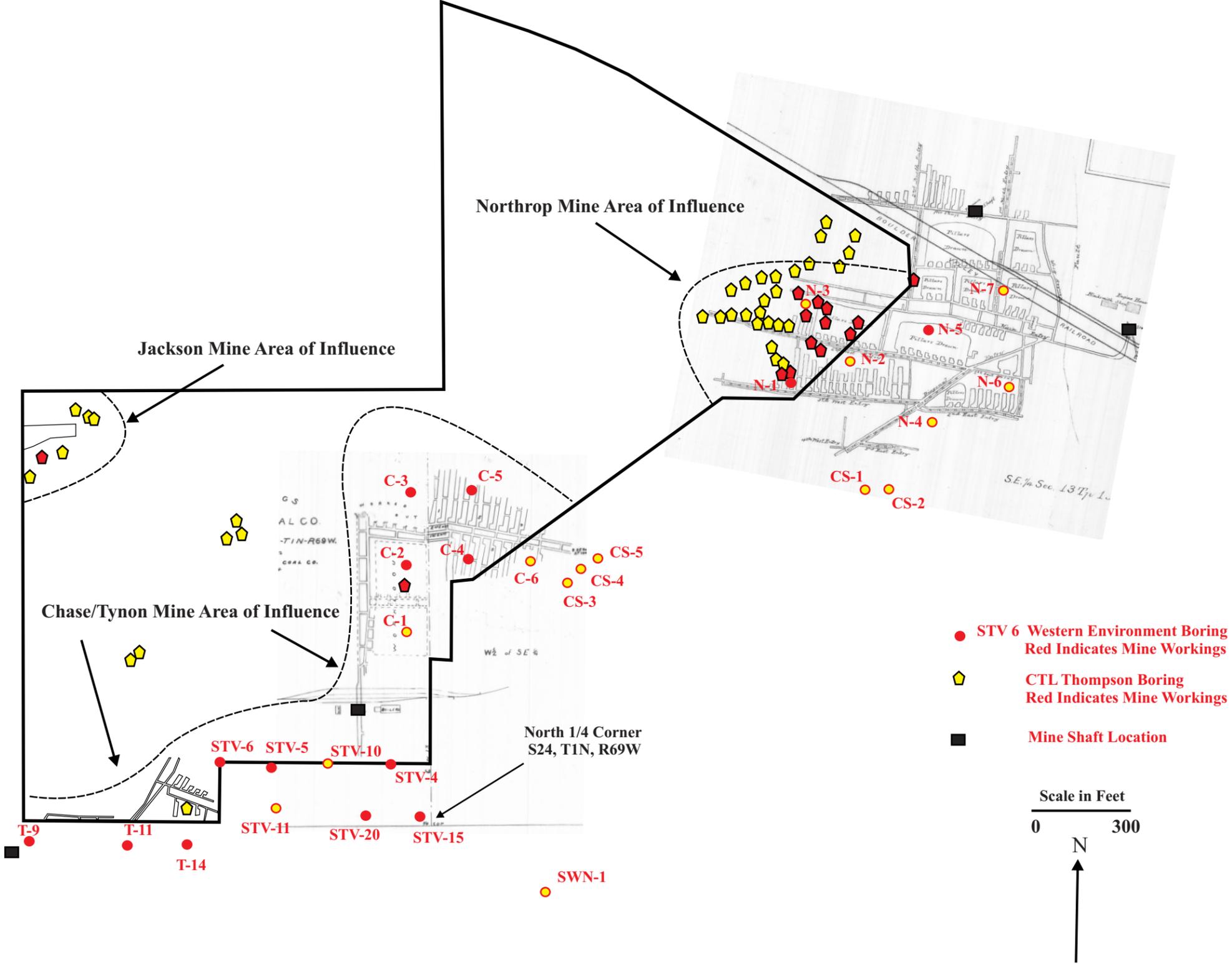
Greg D. Sherman P.G.  
President  
att.

2217 WEST POWERS AVENUE \* LITTLETON, COLORADO 80120  
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WESTERN ENVIRONMENT  
AND ECOLOGY INC.  
2217 West Powers Avenue  
Littleton, Colorado 80120

Figure 1 - Canyon Creek Filings 7&8  
Project Location Map  
Erie, Colorado



**Figure 2 - Canyon Creek Filings 7&8  
Boring Location and Mine Map  
Erie, Colorado**

**WESTERN ENVIRONMENT  
AND ECOLOGY INC.**  
2217 West Powers Avenue  
Littleton, Colorado 80120



**Figure 3 - Canyon Creek Filings 7&8  
Conceptual Site Plan  
Erie, Colorado**

**WESTERN ENVIRONMENT  
AND ECOLOGY INC.**  
2217 West Powers Avenue  
Littleton, Colorado 80120

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## **APPENDIX B**

## Right of Way Imperviousness

Jasper			I%	COMP I%	Local Streets			I%	COMP I%
ROW Width	80.00	ft			ROW Width	60.00	ft		
Pavement Width	30.00	ft			Pavement Width	30.00	ft		
Curb, Gutter and Sidewalk Width	18.00	ft			Curb, Gutter and Sidewalk Width	15.66	ft		
Lawn Width	17.00	ft			Lawn Width	14.34	ft		
ROW Length/acre	544.50	ft			ROW Length/acre	726.00	ft		
Pavement area/acre	16335	sf	100	46.154	Pavement area/acre	21780	sf	100	50
C&G + walk/acre	9801	sf	90	24.923	C&G + walk/acre	11369.16	sf	90	23.49
Lawn/acre	9256.5	sf	0	0	Lawn/acre	10410.84	sf	0	0
Total Imp Area	35392.50	sf	Total I%	71.077	Total Imp Area	43560.00	sf	Total I%	73.49

Private Road			I%	COMP I%
ROW Width	30.00	ft		
Pavement Width	20.00	ft		
Curb, Gutter and Sidewalk Width	5.66	ft		
Lawn Width	4.34	ft		
ROW Length/acre	1452.00	ft		
Pavement area/acre	29040	sf	100	66.667
C&G + walk/acre	8218.32	sf	90	16.98
Lawn/acre	6301.68	sf	0	0
Total Imp Area	43560.00	sf	Total I%	83.647

**Parcel Data Table**

**Canyon Creek Filing 7 - 8**

Fully-Developed Conditions

Job No. 130-00091  
 Date 11/9/18  
 Calculated By BEC  
 Checked By BEC

**Soil Type: B**  
**Parcel Data Table**

Area	Land Use Category	Density DU/acre	C2	C5	C10	C100	I (%)
<b>ONSITE AREAS:</b>							
Jasper ROW	Jasper Road	---	0.56	0.59	0.63	0.76	71
Local ROW	Local Roads	---	0.59	0.62	0.65	0.77	73
Private Road ROW	Private Roads	---	0.68	0.71	0.73	0.82	84
School	School	---	0.42	0.45	0.50	0.68	55
Single Family Attached	Multifamily	---	0.33	0.36	0.42	0.64	45
Open Space	Parks, Cemeteries	---	0.06	0.07	0.14	0.47	10
Small Lot	Single Family	4	0.33	0.36	0.42	0.64	45
Undeveloped	Undeveloped	---	0.33	0.36	0.42	0.64	45
Paved Area/Ponds	Parking/Roads/Ponds	---	0.84	0.86	0.87	0.90	100
Lawns	Lawns, clayey soil	---	0.01	0.01	0.07	0.44	2
Drives & Walks	Concrete areas/drives/walks	---	0.74	0.77	0.79	0.85	90

*Ref. Urban Drainage Flood Control District Table RO-3 and Table RO-5 & Figures RO-3 and RO-5*

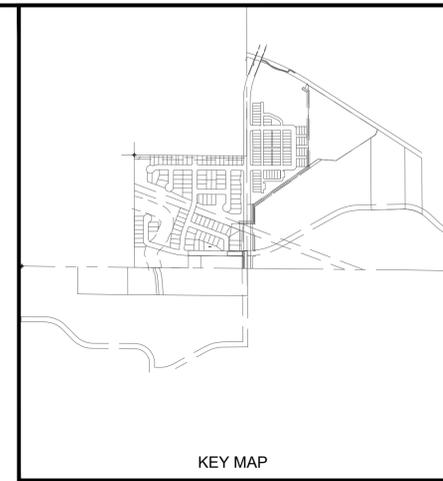
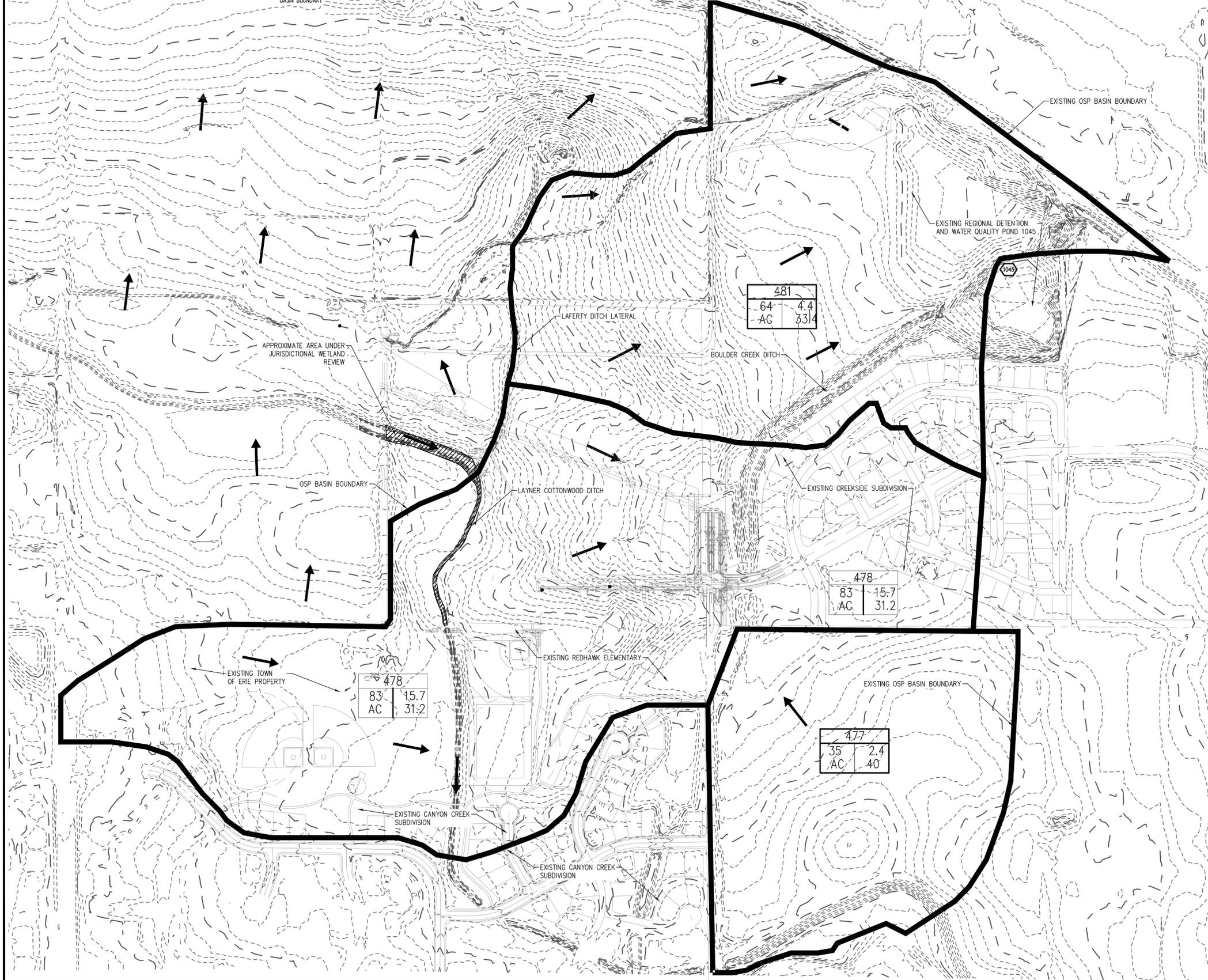
*Imperviousness values and Runoff Coefficients are from the Urban Storm Drainage Criteria Manual Volume 1*

T:\JOBS\Stratus\Canyon Creek\Engineering\Drainage\Phase 1 Drainage Report\Second\Hydrology\[Canyon Creek 7-8 - Proposed Rational - Phase 1.xls]Parcel Data

## APPENDIX C

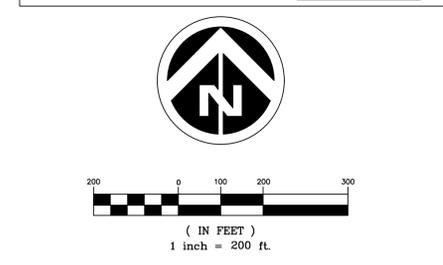
# CANYON CREEK FILING NO. 7 & 8 - SKETCH PLAN

A PARCEL OF LAND LOCATED IN THE SOUTH HALF OF SECTION 13, TOWNSHIP 1 NORTH,  
 RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN,  
 TOWN OF ERIE, COUNTY OF BOULDER, STATE OF COLORADO  
 70.62 ACRES - FILING 7 = 108 LOTS, 9 TRACTS, FILING 8 = 88 LOTS, 10 TRACTS  
 SK-1004-2018



### LEGEND

DESIGN POINT		RUNOFF COEFFICIENTS	
JUNCTION POINT		MINOR STORM C2	
MINOR BASIN		MAJOR STORM C100	
BASIN I.D.			
TRIBUTARY AREA (ACRES)			
PROPERTY BOUNDARY			
PROPOSED MAJOR & MINOR CONTOURS			
EXISTING MAJOR & MINOR CONTOURS			
SWALE			
EASEMENT LINE			
PROPOSED STORM SEWER WITH MH & INLET			
EXISTING STORM SEWER WITH MH & INLET			
PROPOSED BASIN BOUNDARY			
EXISTING OSP BOUNDARY			
LOW POINT (LP) / HIGH POINT (HP)			
FLOW ARROW			
EMERGENCY OVERTFLOW			
SECTION LETTER			
RIPRAP			
ON-SITE BASIN ANALYSIS			



**SITE BENCHMARK**  
 ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 88) FROM GPS OBSERVATIONS ORIGINATING FROM CITY OF COMMERCE CITY CONTROL DIAGRAM BY NOLTE ENGINEERING, JOB NO. DVO316 DATED 11-17-2009; CONTROL POINT NO. 50, WITH A PUBLISHED ELEVATION OF 5246.4 U.S. SURVEY FEET, AND THE ELEVATION USED WAS 5246.40 U.S. SURVEY FEET AT SAID POINT NO. 50.

NO	REVISION RECORD	DATE
1	1ST SUBMITTAL	7-11-2018
2	2ND SUBMITTAL	11-09-2018
3	3RD SUBMITTAL	03-11-2019
4		

LANDSCAPE ARCHITECT / PLANNER:

henry design group  
 Landscape Architecture • Planning • Entitlements  
 1501 Wazee Street Suite 1-C, Denver, Colorado 80202  
 303.446.2368 • hennysdesigngroup.com

ENGINEER:

CONSULTING GROUP  
 9360 Teddy Lane, Suite 203  
 Lone Tree, CO 80124  
 303.395.2700

APPLICANT:

Stratus Canyon Creek, LLC.  
 1842 Montane Drive East  
 Golden, CO 80401  
 Richard Dean  
 720.214.5000

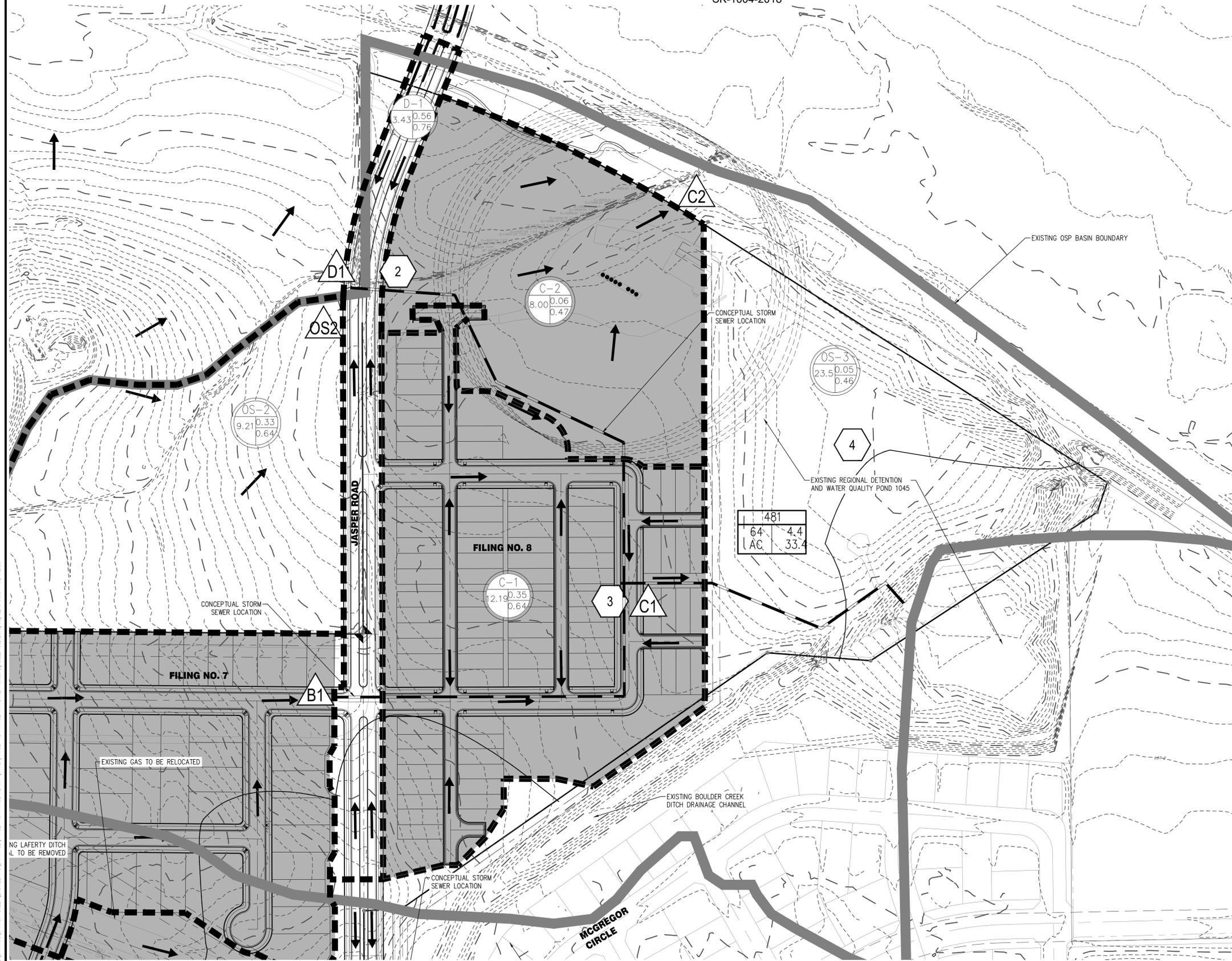
CANYON CREEK FILING NO. 7 & 8  
 SKETCH PLAN  
 ERIE, COLORADO

JOB NO.: 130-00091  
 DRAWN: TB  
 CHECKED: BW  
 ISSUE DATE: 7-23-18  
 SHEET:  
 EXISTING DRAINAGE PLAN  
 1 of 5

T. LORBS/STRATUS/CANYON CREEK/ENGINEERING/DRAINAGE PHASE 1 DRAINAGE REPORT/THROU/LEX COND DRAIN MAP.DWG, PLOTTED BY: BCLERICO, 2019/03/02, 9:57:21 AM, 1:2.58

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### LEGEND

**DESIGN POINT**

**JUNCTION POINT**

**MINOR BASIN BASIN I.D.**

**TRIBUTARY AREA (ACRES)**

**PROPERTY BOUNDARY**

**PROPOSED MAJOR & MINOR CONTOURS**

**EXISTING MAJOR & MINOR CONTOURS**

**SWALE**

**EASEMENT LINE**

**PROPOSED STORM SEWER WITH MH & INLET**

**EXISTING STORM SEWER WITH MH & INLET**

**PROPOSED BASIN BOUNDARY**

**EXISTING OSP BOUNDARY**

**LOW POINT (LP) / HIGH POINT (HP)**

**FLOW ARROW**

**EMERGENCY OVERTFLOW**

**SECTION LETTER**

**RIPRAP**

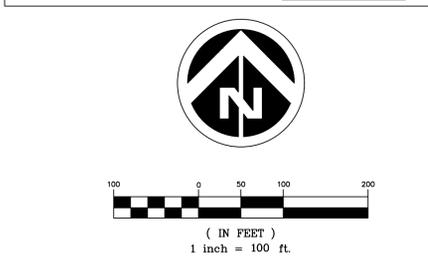
**ON-SITE BASIN ANALYSIS**

**MINOR COEFFICIENTS**  
 C2 MINOR STORM  
 C100 MAJOR STORM

**5180**  
 5180

**481**  
 64 AC 4.4  
 33.4

**A**  
 B AC C D



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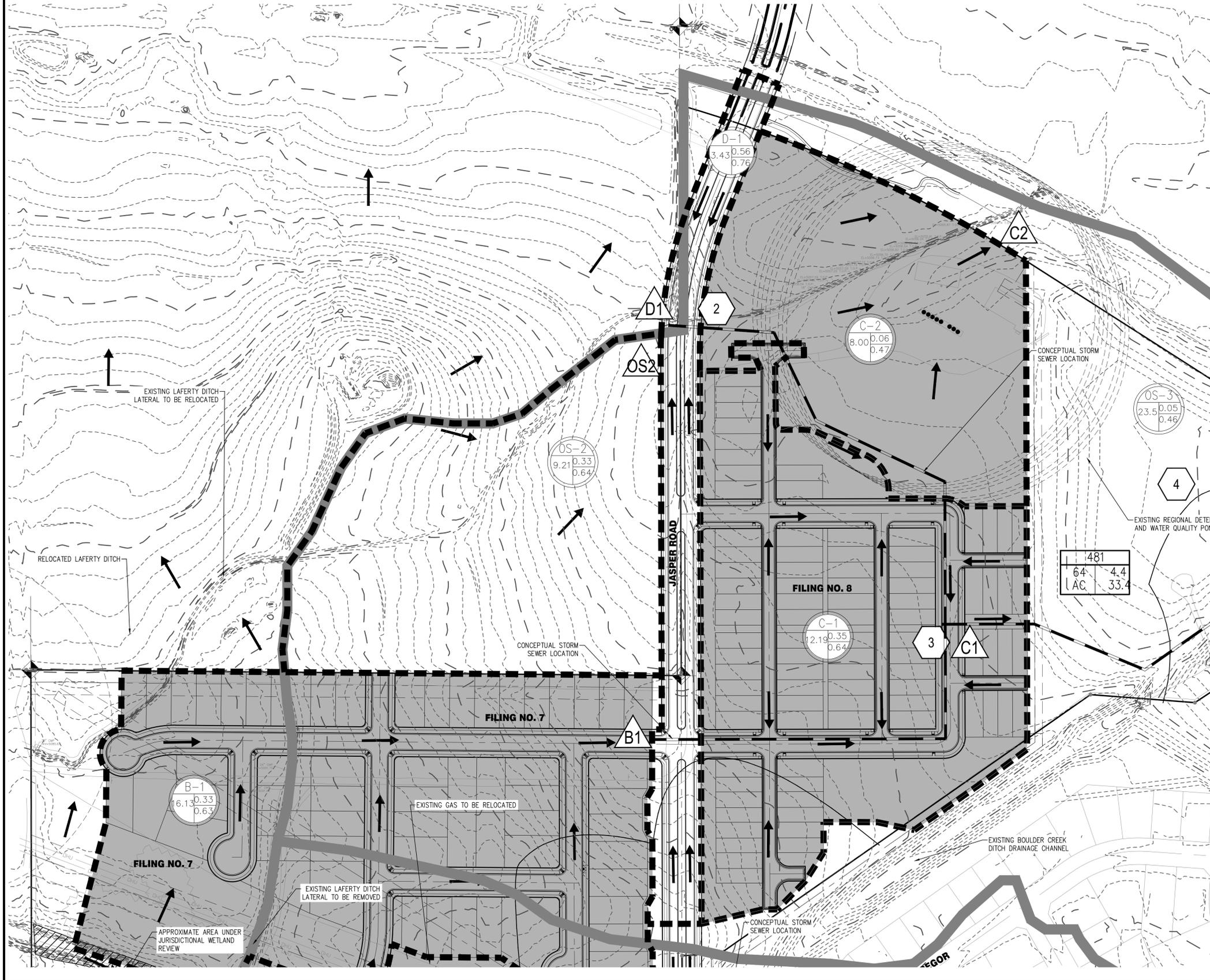
**CANYON CREEK FILING NO. 7 & 8**  
**SKETCH PLAN**  
 ERIE, COLORADO

**JOB NO.:** 130-00091  
**DRAWN:** TB  
**CHECKED:** BW  
**ISSUE DATE:** 7-23-18  
**SHEET:**  
**PROPOSED DRAINAGE PLAN**  
 2 of 5

T. LORBS/STRATUS CANYON CREEK ENGINEERING/DRAINAGE PHASE 1 DRAINAGE REPORT/THIRD PHASE 1 DRAINAGE MAP/DWG. PLOTTED BY: BICLERCO, 2019/03/12, 9:56:57 AM, 1:2:58

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**KEY MAP**

**LEGEND**

- DESIGN POINT:
- JUNCTION POINT:
- MINOR BASIN BASIN I.D.:
- TRIBUTARY AREA (ACRES):
- PROPERTY BOUNDARY:
- PROPOSED MAJOR & MINOR CONTOURS:
- EXISTING MAJOR & MINOR CONTOURS:
- SWALE:
- EASEMENT LINE:
- PROPOSED STORM SEWER WITH MH & INLET:
- EXISTING STORM SEWER WITH MH & INLET:
- PROPOSED BASIN BOUNDARY:
- EXISTING OSP BOUNDARY:
- LOW POINT (LP) / HIGH POINT (HP):
- FLOW ARROW:
- EMERGENCY OVERTFLOW:
- SECTION LETTER:
- RIPRAP:

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**CANYON CREEK FILING NO. 7 & 8**  
**SKETCH PLAN**  
 ERIE, COLORADO

**ON-SITE BASIN ANALYSIS**

A	B	C	D
OSP DEVELOPED BASIN	OSP BASIN ACREAGE	EXISTING IMPERVIOUS	DEVELOPED IMPERVIOUS

**SCALE:**  
 1 inch = 100 ft.

**SITE BENCHMARK**

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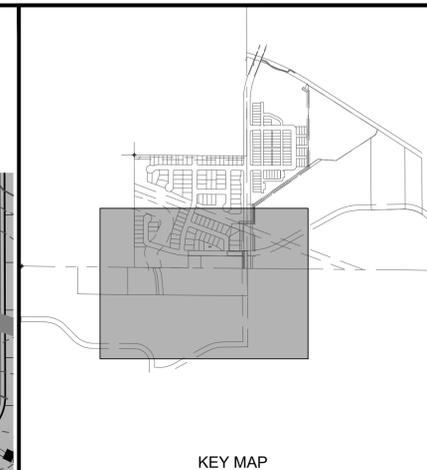
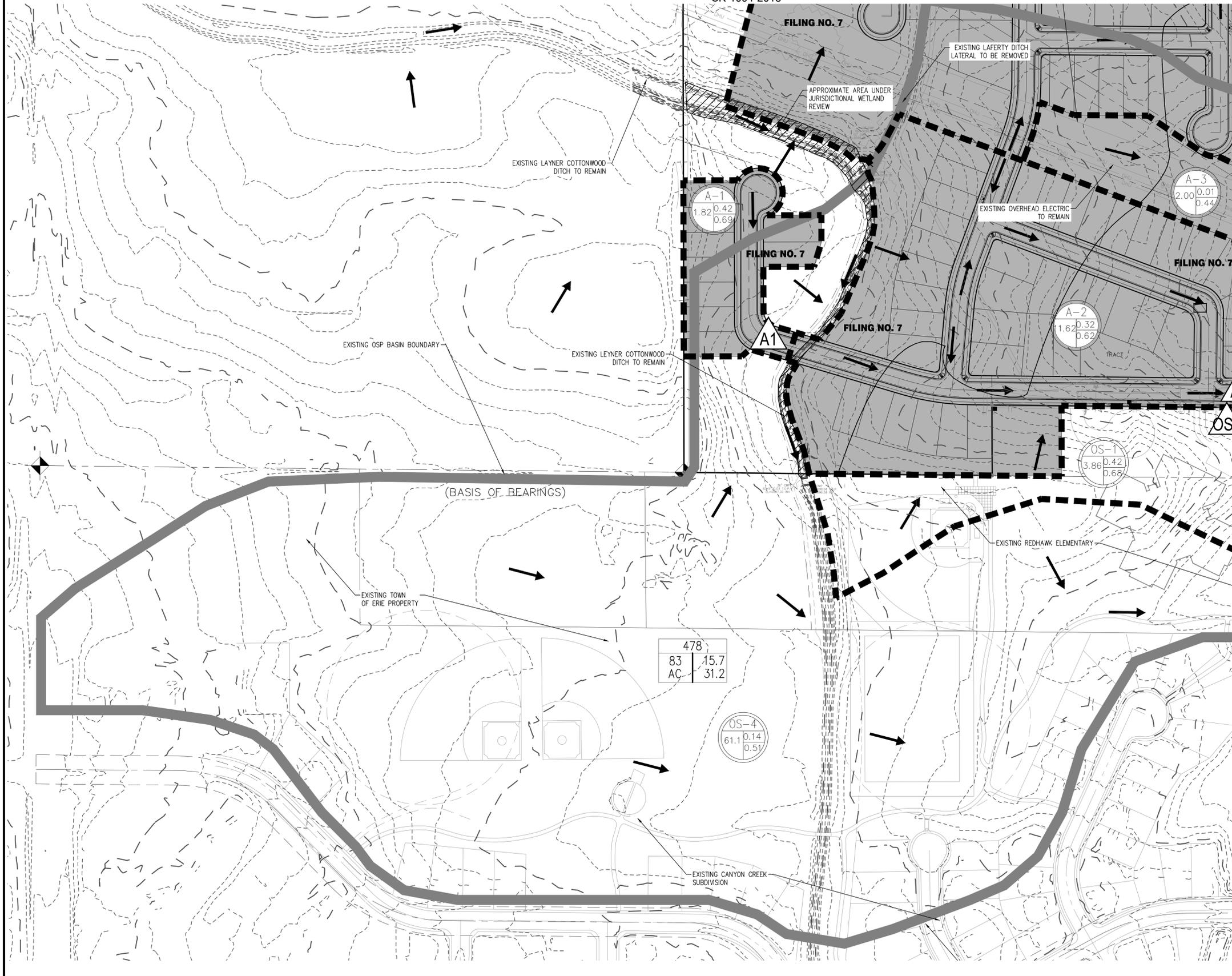
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**DRAWN:** TB  
**CHECKED:** BW  
**ISSUE DATE:** 7-23-18

**SHEET:** PROPOSED DRAINAGE PLAN  
 3 of 5

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TRIBUTARY AREA (ACRES):

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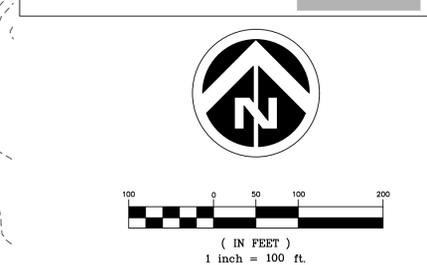
SECTION LETTER:

RIPRAP:

ON-SITE BASIN ANALYSIS:

RUNOFF COEFFICIENTS:  
 MINOR STORM C2  
 MAJOR STORM C100

A = OSP DEVELOPED BASIN  
 B = OSP BASIN ACREAGE  
 C = EXISTING IMPERVIOUS  
 D = DEVELOPED IMPERVIOUS



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T:\LDRS\STRATUS\CANYON CREEK\ENGINEERING\DRAINAGE\PHASE 1\DRAINAGE REPORT\THIRD\PHASE 1\DRAINAGE MAP.DWG, PLOTTED BY: BICLERCO, 2019/03/12, 9:58:44 AM, 1:2.58

