Please see all comments for PPR, transfer as applicable.

Please remove all documentation but the letter of intent from this file

LETTER OF INTENT

May 23, 2018

El Paso County Planning & Community
2880 International Circle
Colorado Springs, CO 80903

RE: Letter of Intent

Mountain View Electric Association, Inc.
Project EA 17205 – Yoder Substation

Dear Ladies and Gentlemen:

This Letter of Intent is submitted in support of a request for approval of:

- A subdivision exemption, pursuant to Section 7.2.2E of the El Paso County Land Development Code, from a parcel of land currently owned by Mark Kneis, II;
- Administrative relief for the remaining property after grant of the subdivision exemption, as the remaining property will comprise less than 35 acres
- Utility location for an electrical substation pursuant to Section 5.3.3
- Minor Site Development Plan, pursuant of Section 7.2.2 of the El Paso County Land Development Code

Mountain View is a Colorado cooperative electric utility rendering retail electric service in eight counties in eastern Colorado, including major portions of El Paso County. Mountain View holds a Certificate of Public Convenience and Necessity from the Colorado Public Utilities Commission for its service territory.

Mountain View owns and operates a 69kV transmission line, located one mile north of State Highway 94, and running between its Ellicott Substation and its Rush Substation. The five acre project site is located north of this transmission line and immediately adjacent to the County's reserved section line road right of way; and is approximately 775 feet east of the center line of Yoder Road.

Accompanying the Petition are exhibits that relate to this request. These exhibits are listed on page 8 of this letter.

NEED FOR THE PROJECT

All of southeastern El Paso County is served with electricity from either Mountain View's Ellicott Substation or its Rush Substation. The long distribution lines connecting these substations to the distant consumers are becoming overloaded, and it is increasingly difficult to maintain proper electrical voltage levels at the point of use of the electricity. The area is continuing to be subdivided, including into 35 acre parcels, so the electrical

needs of the area will continue to grow in the future as these parcels are developed. Mountain View has determined that the best plan to assure sufficient electrical service to the area in the future is the development of additional substation capacity east of Ellicott.

ALTERNATIVES

In making the decision to select the project described herein, Mountain View considered a number of alternatives. All alternatives that involved bringing in transmission lines from other sources were immediately eliminated as uneconomic and unacceptable from a siting and environmental stand point where the primary concern is to avoid construction of a new transmission line corridors.

The alternative of increasing distribution line capacity is only a temporary solution to the problem of load growth in the area, and will eventually result in the need for new substation capacity as the rebuilt distribution lines continue to see increasing electrical load. A new substation in the Yoder area is the best solution since: 1) a substation can be located adjacent to existing transmission lines, 2) location of a new substation source between Ellicott and Rush will allow distribution lines to be shorter, and hence carry lower levels of electric load per section; 3) a new substation will allow more consumers to receive loop service, decreasing the length of time of electrical outages due to damage to Mountain View's distribution system caused by storms or other causes.

Given the constraint of using the existing corridor, the only remaining question was the choice of location along the corridor. The proposed site was chosen since it was near the midpoint between the Ellicott and Rush Substations and was on property adjacent to Yoder Road, an all-weather road.

Finally, the no action alternative is not a viable option. Failure to upgrade Mountain View's system in the area will result in less reliable electric service and increased operational costs for the citizens of this portion of El Paso County, and could even lead to eventual moratoriums on new loads in the future. Mountain View's policy is to plan for the future and to obtain location approval and construct necessary substation facilities before development occurs.

THE PROPOSED SUBSTATION PROPERTY

Mountain View proposes to purchase a five acre substation site from Mark Kneiss II in the Southwest quarter of Section 3, Township 14 South, Range 61 West of the 6th P.M. The site is located in unplatted Tract G as shown on the Exemption Survey Plat, Exhibit C, that was recorded on January 16, 2008 at Reception No. 208900014, approximately 775 feet east of Yoder Road and approximately one mile north of Colorado Highway 94. Mountain View has a contract with Mr. Kneiss to purchase the site, conditional on

approval by the County of this Application. The proposed site is square, approximately 467 feet on a side, adjacent to the east boundary of said Tract G, and whose south line is thirty feet north of the South Line of said Section 3. Mountain View proposes that access to the site would be by a gravel access road from Yoder Road adjacent to the South Line of said Section 3. A proposed exemption plat of this site is attached hereto as Exhibit C, and a copy of the Title Commitment for the site is attached hereto as Exhibit B.

Mountain View has determined that coal on the proposed substation property was reserved by the United States Government at the time of original patent of the land in 1913, and is presently in the control of the US Bureau of Land Management.

All of said Tract G is zoned RR3, and so location approval for the substation will be required. Following purchase of the property, the substation land would become subject to Mountain View's mortgage to the Rural Utilities Service of the United States Department of Agriculture and the National Rural Utilities Finance Corporation. The site will automatically become subject to this mortgage, because of the all-after-acquired property clause contained therein, upon transfer of the land from Mr. Kneiss.

THE SUBSTATION

Since the substation site is immediately adjacent to Mountain View's existing 69kV transmission line, no additional transmission lines to serve the substation will be needed other than the short connecting spans to be located on Mountain View's property. As shown on the Site Plan, Exhibit A attached hereto, the currently proposed substation will cover one acre, 180 feet by 240 feet. It will be surrounded by a six-foot high chain link fence with an additional foot of barbed wire above the chain link. The area within the chain link fence will be rocked and kept weed-free to maintain safety and to provide a neat and clean appearance. Disturbed areas outside the chain link fence will be restored by grading and seeding with native grasses. Lighting is shown on the Illumination Plan, Exhibit J. The plan shows lighting around the substation site perimeter and will only be used at night in emergency situations.

While the existing transmission line that will serve the substation is constructed and operated at 69kV, the new substation construction will be installed for 115kV operation, anticipating future upgrade of the transmission line, but it will initially be operated at 69kV until such time as the transmission line is rebuilt for the higher voltage. The proposed substation will be low profile, with the tallest structures and mass being the transformers and the control house. The take-off structures between the transformers and the existing transmission line, and the structures supporting the lightning protection wires, will be higher; however their mass will be less significant. The elevation drawings on Exhibit E show the height of these features.

Some cut and fill work will be required to level the five acre developed area. In addition, a detention pond will be constructed on the property to the south of the fenced substation. This is all shown on the Grading, Erosion & Sediment Control Plan, attached here to as Exhibit F. Of a total developed area of 220,000 square feet, less than 400 square feet will be covered by building, scattered foundations or other impervious material. The rocked surface of the remainder of the substation area will aid in the absorption of rainwater. After completion of the substation, any storm water runoff will flow into the small detention pond as shown on Exhibit A. The project will prepare and implement a Grading, Erosion & Sediment Control Plan and a Stormwater Management Plan F as required by the Colorado Department of Public Health and Environment to address all construction activities. The plan will detail the Best Management Practices (silt fencing, straw bales) to be used to prevent siltation from stormwater runoff from impacting open waters. The Substation Drainage Report, showing the small detention pond, is attached hereto as Exhibit G.

The substation will be unattended, and will have no water or sewage requirements other than for irrigation of landscaping in accordance with the Landscape Plan, Exhibit H. The substation will not be lit except during emergency maintenance conditions shown in the Lighting Plan, Exhibit J.

Mountain View will construct a gravel access road connection to Yoder Road. After the substation is in operation, it will be unmanned, with a two-man crew visiting twice a month to inspect equipment and do necessary maintenance. The only other times personnel would be at the site would be for annual equipment maintenance and occasionally for electrical service problems. The substation will not be lighted at night, except when there are maintenance personnel present. While at the substation company vehicles will be parked in the driveways outside the fenced gates as shown on Exhibit A.

SUBSTATION CONSTRUCTION

The substation should take between three and six months to construct. The normal sequence of substation construction is:

- Grading and fencing
- Foundation installation
- Steel erection and building erection
- Placement of transformers and circuit breakers on foundations
- Installation of electrical bus work
- Completion of control wiring and testing

CONSTRUCTION STAGING AREAS

Mountain View plans on using land owned by Mountain View within the 5 acre parcel, both inside and outside the substation fence as the staging area for substation construction. These areas will be fenced and locked gates will be install. At the completion of construction, any staging area outside the substation fence will be regraded, if needed, and reseeded with approved seed mix.

ACCESS ROADS AND GATES

Yoder Road will be used for construction and maintenance of the substation as shown on Exhibit F, followed by a gravel access road in the county section-line right-of-way adjacent to the existing transmission line corridor. All construction and maintenance vehicles will follow designated routes to access the line.

CONSTRUCTION SAFETY

All contractors will be responsible for developing, obtaining and implementing OSHA and Mountain View safety requirements, including traffic flagging and signs required by the County and State Highway Departments and wildfire prevention.

IMPACTS ARE MINIMIZED

MVEA is a Rural Utility Service (RUS) borrower, and as a borrower, MVEA is responsible for complying with various RUS standards and practices. Therefore, for certain project types, MVEA must draft and submit a Borrower's Environmental Report (BER) to RUS for review, consideration, and approval. The BER specifically identifies various resource categories which are to be considered and or evaluated; to determine overall affect the Project will have on local and or regional resources. For the proposed Yoder Substation Project, the following resource categories and discussion topics are being evaluated and or addressed, respectively:

- Overall purpose and need for Project and detailed Project description and characterization of Project area,
- Discussion and determination of any other Connected Actions, if relevant,
- Description of current and general land use, and if relevant, discussions on neighboring or local Formerly Classified Lands; which are managed and or operated under the jurisdictional control of other state or federal land management agency,
- Description of and discussion on the affects the Project will pose to potential Federal Emergency Management Agency (FEMA) regulated floodplains, United States Army Corps of Engineers (USACE) jurisdictional wetlands and other waters of the U.S., under Section 404 of the Clean Water Act (CWA), State Historic Preservation Office

(SHPO) Section 106 cultural resources; within a surrounding 0.5 mile wide area of potential effect, State (Colorado Parks and Wildlife) and federal (U.S. Fish & Wildlife Service) Threatened, Endangered and Proposed Species and associated Critical or suitable Habitats; including detailed discussions on the Preble's meadow jumping mouse (Zapus hudsonius preblei), other fish and or wildlife resources protected by Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703–712 or the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), and local vegetation and habitat types, and

- Other resource categories considered and or evaluated will include affects towards air quality, water quality Section 401 of the CWA, visual aesthetics, transportation, noise, radio and television interference, human health and safety, and socioeconomic and community resources.

The substation transformer will contain mineral oil. An oil containment system will be placed around the transformer to prevent oil leaks and spills from reaching the surrounding environment. Erosion will be controlled by the ability of the substation's rocked ground surface to absorb rainwater and snow melt. There will be no significant runoff except during heavy storm and rainfall events, at which time the runoff will be similar to existing conditions; and any such runoff will flow naturally to the southeast into the detention pond as shown in Exhibit A. The substation access road will be gravel surfaced, and the road will be maintained to provide minimal impact to runoff.

The substation site is located in a sparsely populated area, and should not pose a significant visual intrusion. The substation will be secured by a gated fence. The gates in the chain link fence will be padlocked at all times unless a Mountain View employee is inside the fence performing maintenance. The use of barbed wire atop a six-foot high chain link fence will deter most potential casual trespassers, and DANGER-HIGH VOLTAGE signs (Exhibit I) will be placed on the chain link fence on all four sides of the substation.

Some soils will be disturbed during the construction process. Following the completion of construction, compacted soils will be loosened and leveled. All disturbed soils will be regraded and reseeded with native grasses to stabilize soils and minimize soil erosion.

Mountain View recognizes the public concern over the possible health effects caused by electric and magnetic fields ("EMF"). While primary exposure to magnetic fields is through normal exposure from the natural environment, such as appliances and devices in the home and at work, Mountain View realizes that there is also concern over the magnetic fields created by electric utility facilities. Even though the majority of current scientific evidence concludes that there is no link between magnetic fields and health effects, Mountain View has adopted, as corporate policy, programs that assure that our electric facilities are designed, constructed and operated in such a manner as to minimize, to the extent prudent and practicable, the amount of EMF that is created. Since the electrical loads in the area will be served by the existing transmission line, whether or not the substation is built, there would be no increase in EMF along the

transmission corridor with or without the substation. EMF levels from the substation itself should be negligible, if even measurable, outside the 5 acre substation site.

LAND OWNER CONTRACTS

A written notice of the filing of the request for Utility Location, Minor Site Development Plan, Subdivision Exemption and Administrative Relief for the remainder of Tract G, together with Notification Letter, Site Map and Exemption Survey Play was sent to all adjacent landowners, as required by the County, by certified mail, return receipt requested, on May 07, 2018. A list of the landowners receiving this notice, is attached.

COMPLIANCE WITH REGIONAL LONG RANGE PLANS

El Paso County Policy Plan

The proposed substation is not located in an area covered by any regional comprehensive plan. One goal and four policies in the El Paso County Policy Plan relate to siting of electric utility facilities.

"**Goal 7.5** – Allow for those ... transmission lines and related facilities which provide benefit to County residents in a manner which balances considerations of economics, equity and environmental sensitivity and provide for the equitable compensation to private landowners for impacts caused by these facilities."

"**Policy 7.5.1** – Encourage the multiple use of utility sites and corridors where feasible and appropriate."

"**Policy 12.4.1** – Ensure that electric ... facilities ... are located in a manner which is safe, environmentally sensitive and which does not unreasonably burden particular property owners with adverse impacts."

"**Policy 12.4.2** – Encourage burial of electric transmission and distribution lines where the cost of the activity will provide the maximum visual benefit to the most people."

"**Policy 12.4.5** – Encourage the use of existing easements for utility installation in order to reduce negative impacts in other areas"

This project is solely for the benefit of El Paso County residents in the area of southeast El Paso County.

Location of the substation in the proposed location maximizes the use of existing easements and transmission lines, and locates the facility on a safe site with a minimum of environmental issues. Property owners are not burdened with adverse impacts, since the substation is being located adjacent to an existing transmission line and away from existing residences. Burial of a substation is always economically impractical, and in this instance would provide a visual benefit to very few people because of its remote location, away from heavily traveled roads.

CRITERIA FOR APPROVAL

This proposal meets the criteria set forth in the Land Development Code for the exemption for subdivision regulations. The proposed application conforms to the requirements of Sections 5.3.3, 7.2.2 of the Land Development Code, and will be consistent with master plan documents. The exemption is not within the definitions of a subdivision set forth in C.R.S. 30-28-101.

SUMMARY

Mountain View believes that approval of this request complies with all requirements of the El Paso County Land Development Code, and that it is a benefit to the owners of the land in question and those of neighboring properties. Mountain View request approval of the Utility Location permit, Subdivision Exemption and Administrative Relief, and its proposed Exemption Plat.

Respectfully submitted,

MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC.

By: _____

David J. Waldner, Manager of Engineering

This application is for the Administrative Relief, Section 5.5.1

Exhibits to the Application:

Exhibit A:	Site Plan
Exhibit B:	Title Report
Exhibit C:	Exemption Survey Plat
Exhibit D:	Detention Basin Agreement
Exhibit E:	Elevation Drawings
Exhibit F:	Grading, Erosion & Sediment Control Plan
Exhibit G:	Drainage Report
Exhibit H:	Landscaping Plan
Exhibit I:	Danger-High Voltage Sign
Exhibit J:	Lighting Plan

LIST OF ADJOINING PROPERTY OWNERS
YODER SUBSTATION

Riverveiw, LLC
27960 Hatfield Point
Calhan, CO 80808

Parcel #1400 00 0008

Kathleen K Uhernik
1755 North Yoder Road
Yoder, CO 80864-9815

Parcel #1400 00 0513

Amy Diane Smith
20261 Coker Road
Tecumseh, OK 74873

Parcel #1410 00 0001

Marvin V Schober
Randalyne Balle-Mason
PO Box 269
Calhan, CO 80808

Parcel #1400 00 0500

Raymond O Thieman
Debra K Thieman
23001 County Road 201
Limon, CO 80828-8805

Parcel #1400 00 0436
#1400 00 0517

Mark J Kneis, II
1625 North Yoder Road
Yoder, CO 80864-9815

Parcel #1400 00 0507

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Postage	$ 1.21
Certified Fee	3.45
Return Receipt Fee (Endorsement Required)	2.75
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 7.41

THE STATE BANK CPU FALCON, CO 80831 Postmark Here MAY 9 2018

7006 0100 0006 7859 7651

Sent To: Riverview, LLC
Street, Apt. No.; or PO Box No.: 27960 Hatefield Point
City, State, ZIP+4: Calhan, CO 80808-9058

PS Form 3800, June 2002 — See Reverse for Instructions

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 7.41

THE STATE BANK CPU FALCON, CO 80831 Postmark Here MAY -9 2018

7006 0100 0006 7859 7651

Sent To: Mark J. Kneis, II
Street, Apt. No.; or PO Box No.: 1625 North Yoder Road
City, State, ZIP+4: Yoder, CO 80864-9815

PS Form 3800, June 2002 — See Reverse for Instructions

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 7.41

Postmark Here

7006 0100 0006 7859 7644

Sent To: Kathleen K Uhernik
Street, Apt. No.; or PO Box No.: 1755 North Yoder Road
City, State, ZIP+4: Yoder, CO 80864-9815

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 7.41

THE STATE BANK CPU FALCON, CO 80831 Postmark Here MAY 9 2018

7006 0100 0006 7859 7644

Sent To: Raymond & Debra Thieman
Street, Apt. No.; or PO Box No.: 23001 County Road 201
City, State, ZIP+4: Limon, CO 80828-8805

PS Form 3800, June 2002 — See Reverse for Instructions

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 7.41

THE STATE BANK CPU FALCON, CO 80831 Postmark Here MAY - 9 2018

7006 0100 0006 7859 7637

Sent To: Amy Diane Smith
Street, Apt. No.; or PO Box No.: 20261 Coker Road
City, State, ZIP+4: Tecumseh, OK 74873-5143

PS Form 3800, June 2002 — See Reverse for Instructions

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 7.41

THE STATE BANK CPU FALCON, CO 80831 Postmark Here MAY 9 2018

7006 0100 0006 7859 7637

Sent To: Marvin V Schober
Randalyne Belle-Mason
Street, Apt. No.; or PO Box No.: PO Box 269
City, State, ZIP+4: Calhan, CO 80808-0269

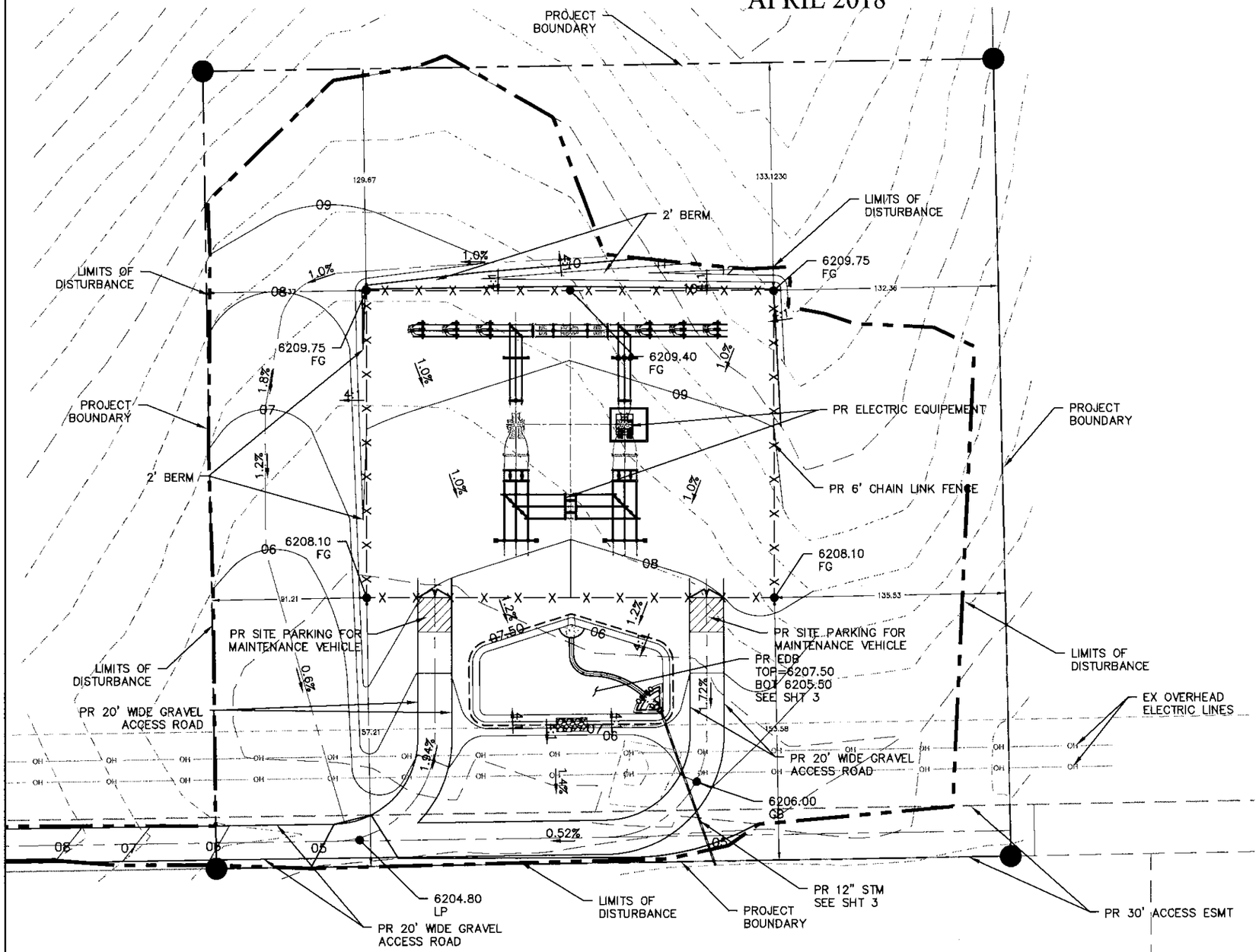
PS Form 3800, June 2002 — See Reverse for Instructions

MVEA YODER SUBSTATION

EL PASO COUNTY

SITE PLAN

APRIL 2018



LEGEND

EXISTING CONTOURS – MINOR	6132
EXISTING CONTOURS – MAJOR	6130
PROPOSED CONTOURS – MAJOR	6132
PROPOSED CONTOURS – MAJOR	6130
LIMITS OF CONSTRUCTION	
EXISTING FINISHED GROUND	EX-FG
PROPOSED FINISHED GROUND	FG
PROPOSED FLOWLINE	FL
LOW POINT	LP
HIGH POINT	HP
GRADE & DIRECTION	2.2%

N

30' 0 30' 60'

SCALE: 1"=30'

NO.	DESCRIPTION	DATE
	REVISIONS	

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: DAVID WALDNER
11140 E. WOODMAN RD.
PEYTON, CO 80931
719-495-2283

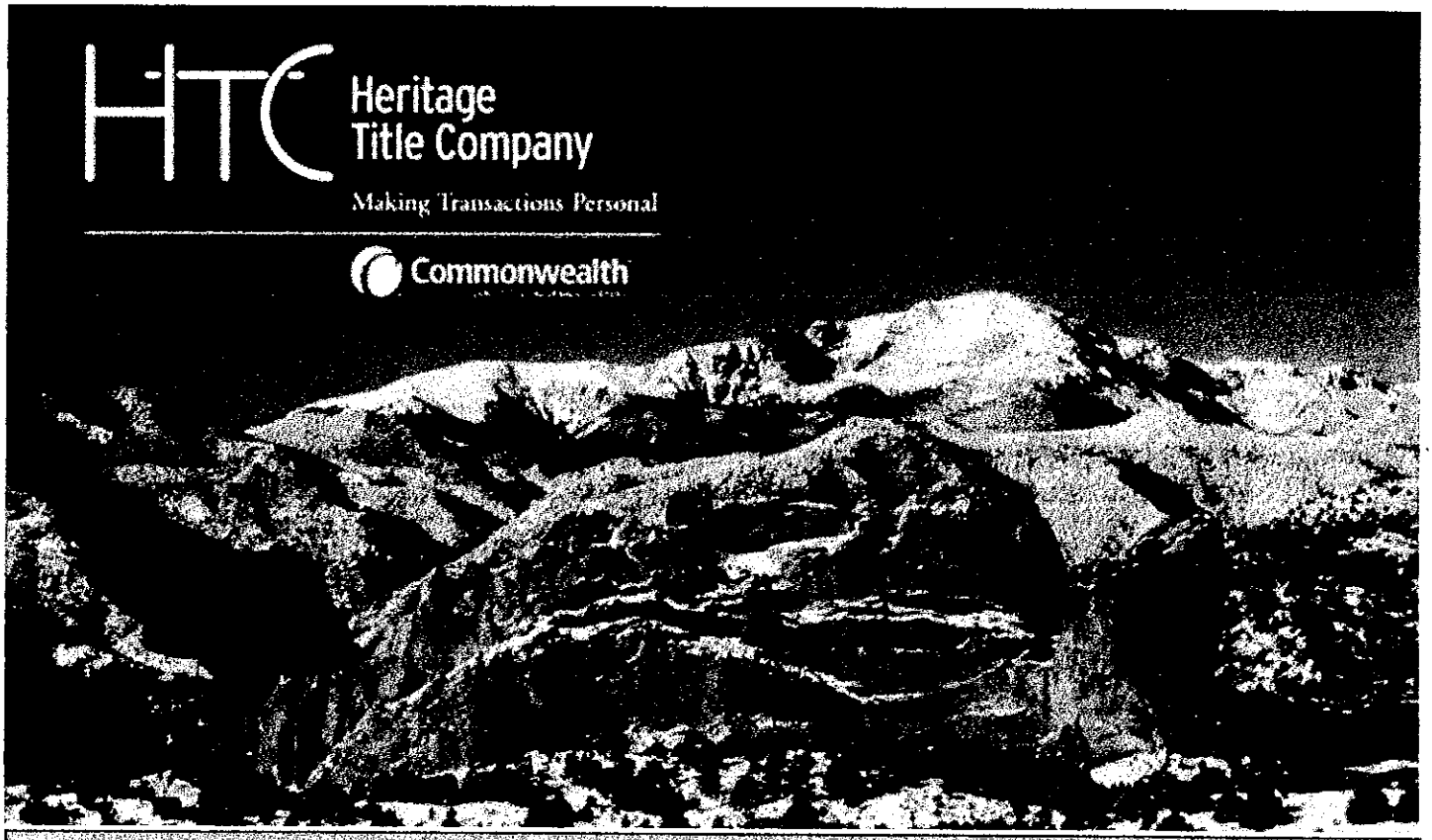
Terra Nova Engineering, Inc.
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnainc.com
Creative Civil Engineering Solutions

MVEA YODER SUBSTATION

SITE PLAN

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	4/18/18
SHEET NO.	1 OF 1

EXHIBIT A



Your Preliminary Title Commitment

Our File No. H0509782 | *Effective Date: May 8, 2018*

Property address: **1625 N Yoder Rd**

This commitment was delivered to the following parties, disclosed to the Company to be involved in this transaction:

Sharron Pearson
Phil Mazur
Admin
Debbie Coleman
Debbie Fitzgerald

The delivery/email address of each party is intentionally not displayed, in order to protect the Personal Private Information (PPI) of all.

IS THIS A SALE TRANSACTION? Are the seller's in this transaction US Citizens? If not click HERE for important information regarding FIRPTA

ONLINE FRAUD IS ON THE RISE ? Click HERE before wiring your funds

E&O Certificate ? Click HERE

Agents and Lenders ? Click HERE for the best resource to calculate net sheets, closing cost estimates and much more?

Click here for your complete Title Commitment

EXHIBIT B

PLEASE TAKE NOTE OF THE FOLLOWING REVISED TERMS CONTAINED HEREIN:

Updated The Effective date

Thank you for your new order! We truly appreciate the opportunity to work with you on your transaction. Below you will find a digital copy of your Title Commitment for the property with hyperlinks to supporting documentation. Please scroll down and click on the blue links below to view the referenced documentation. You will receive your title policy after the closing of the transaction. Should you have any questions about "What is Title Insurance?" please visit our website at www.heritagetco.com and click on the "Consumer Tab". Thank You.

WIRING INSTRUCTIONS

WIRED FUNDS ARE REQUIRED ON ALL CASH PURCHASE TRANSACTIONS. FOR WIRING INSTRUCTIONS, PLEASE CONTACT YOUR ESCROW OFFICE AS NOTED ON THE TRANSMITTAL PAGE OF THIS COMMITMENT.

NOTE: Wired funds are required on all cash purchase transactions

****Be aware! Online banking fraud is on the rise. If you receive an email containing WIRE TRANSFER INSTRUCTIONS call your escrow officer immediately to verify the information prior to sending funds.****

LEGAL DESCRIPTION

A portion of the Southwest quarter of Section 3, Township 14 South, Range 61 West of the 6th Principal Meridian, situate in El Paso County, State of Colorado, described as follows:

The basis of bearings is the South line of the Southwest quarter of said Section 3, which bears South 89°07'57? West assumed monumentation is as shown:
Beginning at the Southwest corner of said Section 3; thence North 01°00'29? West coincident with the West line of said Section 3, a distance of 1382.21 feet; thence North 89°07'57? East, a distance of 255.00 feet; thence South 01°00'29? East, a distance of 150.00 feet; thence North 89°07'57? East, a distance of 986.00 feet; thence South 01°00'29? East, distance of 1232.21 feet to the South line of said Section 3; thence South 89°07'57? West coincident with said South line of Section 3, a distance of 1241.00 feet to the Point of Beginning,
County of El Paso,
State of Colorado s

SELLERS

Mark J. Kneis, II

BUYERS

Mountain View Electric Association, Inc., a Colorado corporation

LENDER

PROPOSED COVERAGES

(a) ALTA Owners Policy 6-17-06 **$0.00**
Mountain View Electric Association, Inc., a Colorado corporation
(b) None **$**

$

ESTIMATED TITLE CHARGES

Owners Coverage: $450.00

REQUIREMENTS

a. Pay the agreed amounts for the interest in the land and/or for the mortgage to be insured.

b. Pay us the premiums, fees and charges for the policy.

c. Obtain a certificate of taxes due from the county treasurer or the county treasurer's authorized agent.

d. Evidence that any and all assessments for common expenses, if any, have been paid.

e. The Company will require that an Affidavit and Indemnity Agreement be completed by the party(s) named below before the issuance of any policy of title insurance.

Party(s): Mark J. Kneis, II

The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit.

f. Deed sufficient to convey the fee simple estate or interest in the Land described or referred to herein, to the Proposed Insured Purchaser.

g. Recordation of Updated Statement of Authority for **Mountain View Electric Association, Inc., a Colorado corporation** pursuant to Colorado Revised Statutes evidencing the existence of the entity and authority of the person(s) authorized to execute and deliver instruments affecting title to real property on behalf of the entity and containing other information required by Colorado Revised Statutes.

Note: Statement of Authority for said entity recorded May 22, 2012 at Reception No. 212058622 shows Joseph D. Martin, President.

h. Furnish for recordation a full release of deed of trust:

Amount: $359,910.00
Trustor/Grantor Mark J. Kneis, II
Trustee: Public Trustee of El Paso County
Beneficiary: V.I.P. Mortgage, Inc.
Recording Date: April 12, 2012

Recording No: Reception No. 212041434

Note: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

EXCEPTIONS

1. Any facts, rights, interests or claims that are not shown by the Public Records but which could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

3. Any encroachments, encumbrances, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by Public Records.

4. Any lien or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquires of record for the value the estate or interest or mortgage thereon covered by this Commitment.

6. Water rights, claims of title to water, whether or not these matters are shown by the Public Records.

7. All taxes and assessments, now or heretofore assessed, due or payable.

NOTE: This tax exception will be amended at policy upon satisfaction and evidence of payment of taxes.

8. Any existing leases or tenancies, and any and all parties claiming by, through or under said lessees.

9. Terms, conditions, provisions, agreements and obligations contained in the 60 foot right of way to El Paso County along all section lines as set forth in Road Record below:
Recording No.: Book A at Page 78 (Copy has been ordered)

10. Reservations contained in the Patent

From: The United States of America
Recording Date: February 13, 1914
Recording No: Book 420 at Page 582

Which among other things recites as follows:

All coal and A right of way thereon for ditches or canals constructed by the authority of the United States of America.

11. Terms, conditions, provisions, agreements and obligations contained in the Easement and Right of Way as set forth below:

Recording Date: May 21, 1971

Recording No.: Book 2410 at page 27

12. Terms, conditions, provisions, agreements and obligations contained in the Easement and Right of Way as set forth below:

Recording Date: September 18, 2007
Recording No.: Reception No. 207121428

13. Terms, conditions, provisions, agreements and obligations contained in the Non Exclusive Easement as set forth in Deed below:

Recording Date: June 21, 2006
Recording No.: Reception No. 206091228

14. Terms, conditions, provisions, agreements and obligations contained in the Resolution No. 00-260 as set forth below:

Recording Date: August 16, 2000
Recording No.: Reception No. 200097484 and re-recorded September 12, 2000 at Reception No. 200109261

15. Terms, conditions, provisions, agreements and obligations contained in the Notice for underground facilities for The El Paso County Telephone Company as set forth below:

Recording Date: June 29, 1982
Recording No.: Reception No. 841242

16. Any loss or damage arising from the fact that any fence lines on or near the perimeter of the Land may not coincide with property lines.

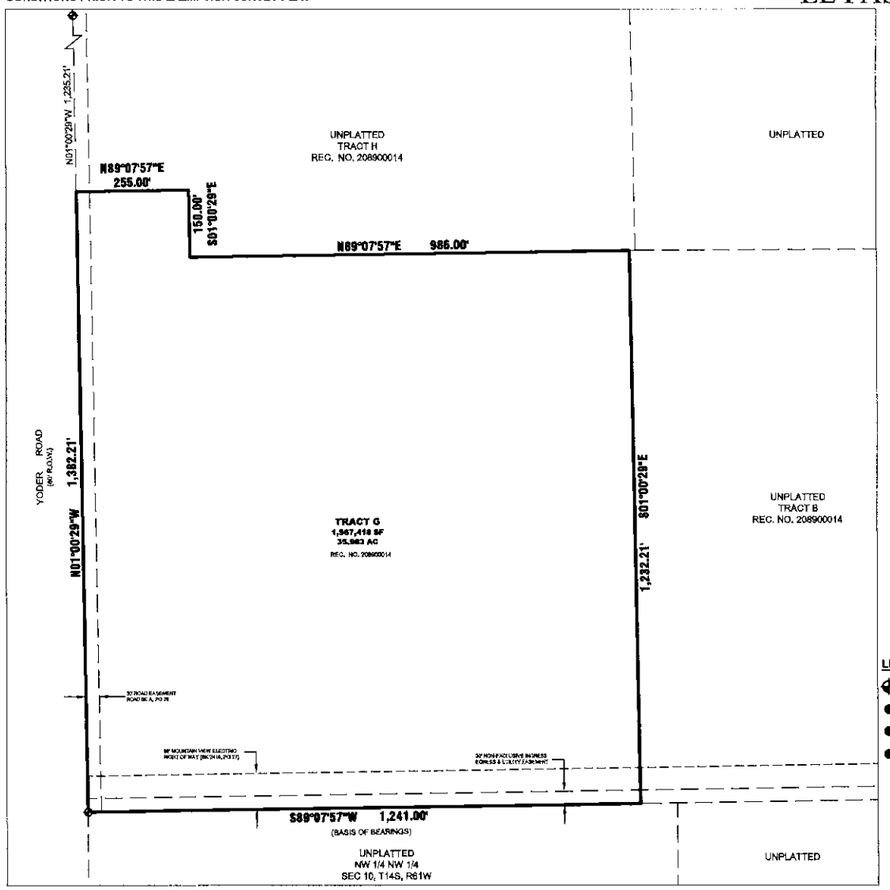
IMPORTANT CONTACTS

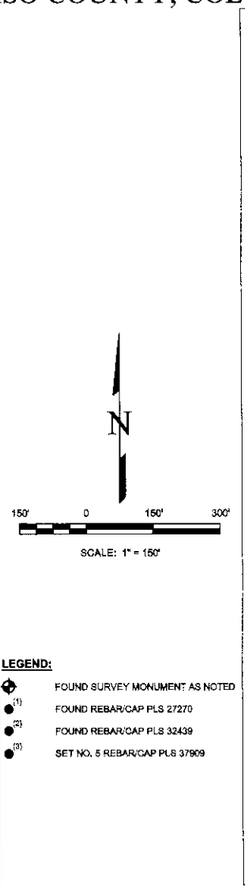
Escrow Closer: Debbie Fitzgerald
Phone: (303) 443-3333
FAX: (303) 628-1668
E-Mail: dfitzgerald@heritagetco.com
Address: 4909 Pearl East Circle, Suite 100
Boulder, CO 80301

Thank you for trusting us with your transaction!
Please contact your Escrow Closer, Closing Assistant or Title Representative with any questions, as replies to this message will not be read.

MOUNTAIN VIEW ELECTRIC
EXEMPTION SURVEY PLAT
A PORTION OF THE SOUTHWEST QUARTER SECTION 3
TOWNSHIP 14 SOUTH, RANGE 61 WEST OF THE 6TH P.M.
EL PASO COUNTY, COLORADO

CONDITIONS PRIOR TO THIS EXEMPTION SURVEY PLAT

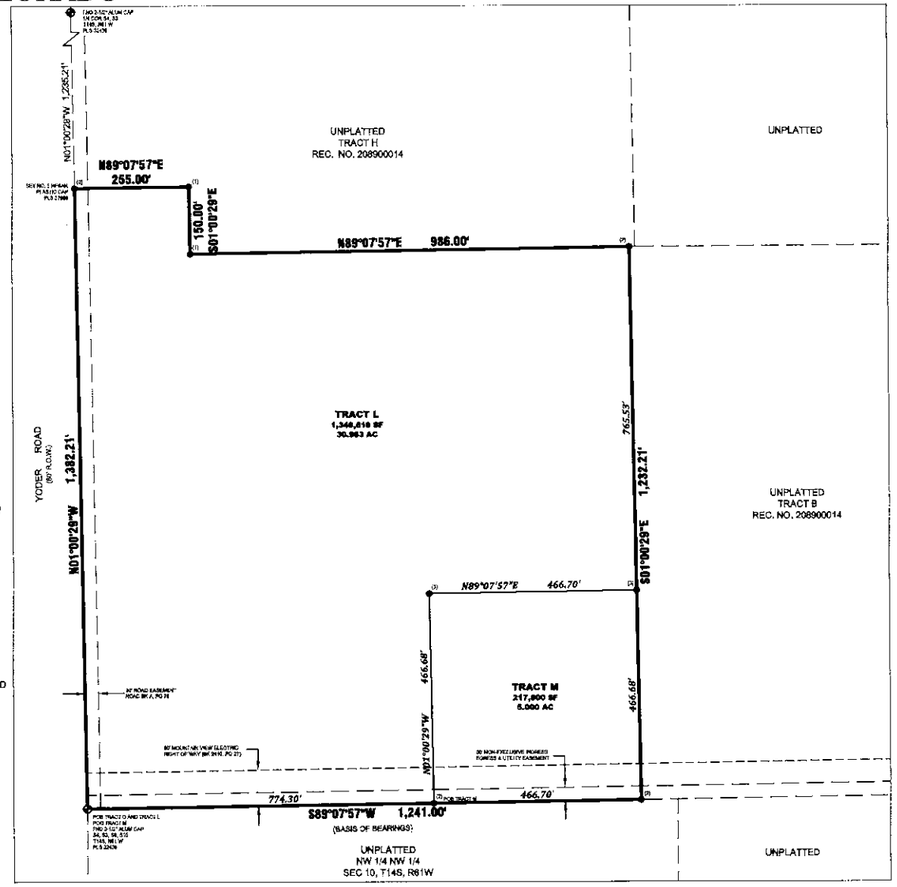




LEGEND:

- FOUND SURVEY MONUMENT AS NOTED
- (1) FOUND REBAR/CAP PLS 27270
- (2) FOUND REBAR/CAP PLS 32439
- (3) SET NO. 5 REBAR/CAP PLS 37909

CONDITIONS PER THIS EXEMPTION SURVEY PLAT



LEGAL DESCRIPTION:

TRACT G: A PORTION OF THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 14 SOUTH, RANGE 61 WEST OF THE 6TH PRINCIPAL MERIDIAN, SITUATED IN EL PASO COUNTY, STATE OF COLORADO, DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 3; THENCE N01°00'29"W COINCIDENT WITH THE WEST LINE OF SAID SECTION 3, A DISTANCE OF 1382.21 FEET; THENCE N89°07'57"E, A DISTANCE 255.00 FEET; THENCE S01°00'29"E A DISTANCE OF 150.00 FEET; THENCE N89°07'57"E, A DISTANCE OF 986.00 FEET; THENCE S01°00'25"E, A DISTANCE OF 1232.21 FEET TO THE SOUTH LINE OF SAID SECTION 3; THENCE S89°07'57"W COINCIDENT WITH SAID SOUTH LINE OF SECTION 3, A DISTANCE OF 1241.00 FEET TO THE POINT OF BEGINNING CONTAINING A CALCULATED AREA OF 35.983 ACRES MORE OR LESS.

TRACT L: A PORTION OF THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 14 SOUTH, RANGE 61 WEST OF THE 6TH PRINCIPAL MERIDIAN, SITUATED IN EL PASO COUNTY, STATE OF COLORADO, DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 3; THENCE N01°00'29"W COINCIDENT WITH THE WEST LINE OF SAID SECTION 3, A DISTANCE OF 1382.21 FEET; THENCE N89°07'57"E, A DISTANCE 255.00 FEET; THENCE S01°00'29"E A DISTANCE OF 150.00 FEET; THENCE N89°07'57"E, A DISTANCE OF 986.00 FEET; T HENCE S01°00'29"E, A DISTANCE OF 765.53 FEET; THENCE S89°07'57"W, A DISTANCE OF 466.70 FEET; THENCE S01°00'29"E, A DISTANCE OF 466.68 FEET TO THE SOUTH LINE OF SAID SECTION 3; THENCE S89°07'57"W COINCIDENT WITH SAID SOUTH LINE OF SECTION 3, A DISTANCE OF 774.30 FEET TO THE POINT OF BEGINNING, CONTAINING A CALCULATED AREA OF 30.963 ACRES MORE OR LESS.

TRACT M: A PORTION OF THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 14 SOUTH, RANGE 61 WEST OF THE 6TH PRINCIPAL MERIDIAN, SITUATED IN EL PASO COUNTY, STATE OF COLORADO, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 3; THENCE N89°07'57"E COINCIDENT WITH THE SOUTH LINE OF SAID SECTION 3, A DISTANCE OF 774.30 FEET TO THE POINT OF BEGINNING; THENCE N01°00'29"W, A DISTANCE OF 466.68 FEET; THENCE N89°07'57"E, A DISTANCE OF 466.70 FEET; THENCE S01°00'29"E, A DISTANCE OF 466.68 FEET TO THE SOUTH LINE OF SAID SECTION 3; THENCE S89°07'57"W COINCIDENT WITH SAID SOUTH LINE OF SECTION 3, A DISTANCE OF 466.70 FEET TO THE POINT OF BEGINNING, CONTAINING A CALCULATED AREA OF 5.000 ACRES MORE OR LESS.

GENERAL NOTES:

1. THIS EXEMPTION SURVEY PLAT IS BASED IN PART BY A TITLE INSURANCE POLICY PROVIDED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY TITLE REPORT NO. H0509782-043-DF2-DMT EFFECTIVE JULY 18, 2017 AT 8:00 A.M..
2. THIS EXEMPTION SURVEY PLAT IS BASED IN PART BY A PREVIOUS LAND SURVEY PLAT RECORDED UNDER RECEPTION NO. 208900014.
3. THIS EXEMPTION SURVEY PLAT IS BASED IN PART BY A PREVIOUS LAND SURVEY PLAT RECORDED UNDER RECEPTION NO. 207900240.
4. THIS EXEMPTION SURVEY PLAT IS BASED IN PART BY A PREVIOUS LAND SURVEY PLAT RECORDED UNDER RECEPTION NO. 207900223.
5. BASIS OF BEARINGS: ALL BEARINGS SHOWN HEREON ARE BASED UPON THE SOUTH BOUNDARY LINE OF TRACT G AS SHOWN ON A LAND SURVEY PLAT RECORDED UNDER RECEPTION NO.208900014 OF THE RECORDS OF EL PASO COUNTY, COLORADO; BEING MONUMENTED AT THE WEST BY A FOUND 2-1/2" ALUMINUM CAP STAMPED AS THE SOUTHWEST CORNER OF SECTION 3, TOWNSHIP 14 SOUTH, RANGE 61 WEST OF THE 6TH P.M., PLS 32439 AND AT THE EAST END BY A FOUND REBAR AND CAP, PLS 32439, MEASURED AS S88°07'57"W, 1,241.00 FEET.
6. ALL REFERENCES HEREON TO BOOKS, PAGES, MAPS AND RECEPTION NUMBERS ARE PUBLIC DOCUMENTS FILED IN THE RECORDS OF EL PASO COUNTY, STATE OF COLORADO.
7. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OF LAND MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, C.R.S.
8. ALL BEARINGS AND DISTANCES SHOWN ARE AS MEASURED IN THE FIELD AND ARE BASED UPON THE U.S. SURVEY FOOT UNLESS NOTED OTHERWISE.
9. LAST FIELD INSPECTION OF THIS SITE WAS ON OCTOBER 3, 2017.

SURVEYOR'S STATEMENT:

I, MICHAEL J. MUIRHEID, A REGISTERED LAND SURVEYOR IN THE STATE OF COLORADO, ON THE BASIS OF MY KNOWLEDGE, INFORMATION AND BELIEF, DO HEREBY STATE TO MOUNTAIN VIEW ELECTRIC THAT THIS EXEMPTION SURVEY PLAT HAS BEEN PREPARED UNDER MY RESPONSIBLE CHARGE IN OCTOBER 3, 2017 TO NORMAL STANDARDS OF CARE OF A PROFESSIONAL LAND SURVEYOR PRACTICING IN THE STATE OF COLORADO.

MICHAEL J. MUIRHEID, PROFESSIONAL LAND SURVEYOR
COLORADO P.L.S. NO. 37909
FOR AND ON BEHALF OF EDWARD-JAMES SURVEYING, INC.

MONUMENTED SURVEY PLAT DEPOSITING CERTIFICATE:

DEPOSITED THIS _____ DAY OF _____, 2017 A.D., AT _____ O'CLOCK ___M.,
IN BOOK _____ OF LAND SURVEY PLATS AT PAGE _____,
DEPOSIT NO. _____, RECORDS OF EL PASO COUNTY, COLORADO.

SIGNED: _____
TITLE: _____
BY: _____

NOTICE:

*ACCORDING TO COLORADO LAW YOU **MUST** COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.*

REVISIONS NO.	DESCRIPTION	DATE

EDWARD-JAMES SURVEYING, INC.
926 Elkton Drive
Colorado Springs, CO 80907
Office: (719) 576-1216
Fax: (719) 576-1206

4732 Eagleridge Circle
Pueblo, CO 81008
Office: (719) 545-6240
Fax: (719) 545-6247

MOUNTAIN VIEW ELECTRIC EXEMPTION SURVEY PLAT

A PORTION OF THE SW 1/4 SECTION 3, TOWNSHIP 14 SOUTH, RANGE 61 WEST COUNTY OF EL PASO, STATE OF COLORADO

DRAWN BY	MJM
CHECKED BY	JWT
H-SCALE	1"=150'
JOB NO.	1731-01
DATE CREATED	10/4/17
DATE ISSUED	10/9/17
SHEET NO	1 OF 1

EXHIBIT C

PRIVATE DETENTION BASIN /

STORMWATER QUALITY BEST MANAGEMENT PRACTICE

MAINTENANCE AGREEMENT AND EASEMENT

This PRIVATE DETENTION BASIN / STORMWATER QUALITY BEST MANAGEMENT PRACTICE MAINTENANCE AGREEMENT AND EASEMENT (Agreement) is made by and between EL PASO COUNTY by and through THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO (Board or County) and Mountain View Electric Association (Owner or Developer). The above may occasionally be referred to herein singularly as "Party" and collectively as "Parties."

Recitals

A. WHEREAS, Developer is the owner of certain real estate (the Property or Subdivision) in El Paso County, Colorado, which Property is legally described in Exhibit A attached hereto and incorporated herein by this reference; and

B. WHEREAS, Developer desires to plat and develop on the Property a subdivision/land use to be known as Mountain View Electric Exemption Survey Plat/MVEA Yoder Substation; and

C. WHEREAS, the development of this Property will substantially increase the volume of water runoff and will decrease the quality of the stormwater runoff from the Property, and, therefore, it is in the best interest of public health, safety and welfare for the County to condition approval of this subdivision/land use on Developer's promise to construct adequate drainage, water runoff control facilities, and stormwater quality structural Best Management Practices ("BMPs") for the subdivision/land use; and

D. WHEREAS, Chapter 8, Section 8.4.5 of the El Paso County Land Development Code, as periodically amended, promulgated pursuant to Section 30-28-133(1), Colorado Revised Statutes (C.R.S.), requires the County to condition approval of all subdivisions on a developer's promise to so construct adequate drainage, water runoff control facilities, and BMPs in subdivisions; and

E. WHEREAS, the Drainage Criteria Manual, Volume 2, as amended by Appendix I of the El Paso County Engineering Criteria Manual (ECM), as each may be periodically amended, promulgated pursuant to the County's Colorado Discharge Permit System General Permit (MS4 Permit) as required by Phase II of the National Pollutant Discharge Elimination System (NPDES), which MS4 Permit requires that the County take measures to protect the quality of stormwater from sediment and other contaminants, requires subdividers, developers, landowners, and owners of facilities located in the County's rights-of-way or easements to provide adequate permanent stormwater quality BMPs with new development or significant redevelopment; and

F. WHEREAS, Section 2.9 of the El Paso County Drainage Criteria Manual provides for a developer's promise to maintain a subdivision's drainage facilities in the event the County does not assume such responsibility; and

G. WHEREAS, developers in El Paso County have historically chosen water runoff detention basins as a means to provide adequate drainage and water runoff control in subdivisions,

1. Incorporation of Recitals: The Parties incorporate the Recitals above into this Agreement.

2. Covenants Running with the Land: Developer/Owner agrees that this entire Agreement and the performance thereof shall become a covenant running with the land, which land is legally described in Exhibit A attached hereto, and that this entire Agreement and the performance thereof shall be binding upon itself, its successors and assigns.

3. Construction: Developer shall construct on that portion of the Property described in Exhibit B attached hereto and incorporated herein by this reference, 1 detention basin/BMP(s). Developer shall not commence construction of the detention basin/BMP(s) until the El Paso County Planning and Community Development Department (PCD) has approved in writing the plans and specifications for the detention basin/BMP(s) and this Agreement has been signed by all Parties and returned to the PCD. Developer shall complete construction of the detention basin/BMP(s) in substantial compliance with the County-approved plans and specifications for the detention basin/BMP(s). Failure to meet these requirements shall be a material breach of this Agreement, and shall entitle the County to pursue any remedies available to it at law or in equity to enforce the same. Construction of the detention basin/BMP(s) shall be substantially completed within one (1) year (defined as 365 days), which one year period will commence to run on the date the approved plat of this Subdivision is recorded in the records of the El Paso County Clerk and Recorder. In cases where a subdivision is not required, the one year period will commence to run on the date the Erosion and Stormwater Quality Control Permit (ESQCP) is issued. Rough grading of the detention basin/BMP(s) must be completed and inspected by the El Paso County Planning and Community Development Department prior to commencing road construction.

In the event construction is not substantially completed within the one (1) year period, then the County may exercise its discretion to complete the project, and shall have the right to seek reimbursement from the Developer/Owner and its successors and assigns, for its actual costs and expenses incurred in the process of completing construction. The term actual costs and expenses shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tool and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the Provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

4. Maintenance: The Developer/Owner agrees for itself and its successors and assigns, that it will regularly and routinely inspect, clean and maintain the detention basin/BMP(s), and otherwise keep the same in good repair, all at its own cost and expense. No trees or shrubs that will impair the structural integrity of the detention basin/BMP(s) shall be planted or allowed to grow on the detention basin/BMP(s).

5. Creation of Easement: Developer/Owner hereby grants the County a non-exclusive perpetual easement upon and across that portion of the Property described in Exhibit B. The purpose of the easement is to allow the County to access, inspect, clean, repair and maintain the detention basin/BMP(s); however, the creation of the easement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

6. County's Rights and Obligations: Any time the County determines, in the sole exercise of its discretion, that the detention basin/BMP(s) is not properly cleaned, maintained and/or otherwise kept in good repair, the County shall give reasonable notice to the Developer/Owner and its successors and assigns, that the detention basin/BMP(s) needs to be cleaned, maintained and/or otherwise repaired. The notice shall provide a reasonable time to correct the problem(s). Should the responsible parties fail to correct the specified problem(s), the County may enter upon the Property to so correct the specified problem(s). Notice shall be effective to the above by the County's deposit of the same into the regular United States mail, postage pre-paid. Notwithstanding the foregoing, this Agreement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

7. Reimbursement of County's Costs / Covenant Running With the Land: The Developer/Owner agrees and covenants, for itself, its successors and assigns, that it will reimburse the County for its costs and expenses incurred in the process of completing construction of, cleaning, maintaining, and/or repairing the detention basin/BMP(s) pursuant to the provisions of this Agreement.

The term "actual costs and expenses" shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tools and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney's fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

8. Contingencies of Land Use/Land Disturbance Approval: Developer/Owner's execution of this Agreement is a condition of land use/land disturbance approval.

The County shall have the right, in the sole exercise of its discretion, to approve or disapprove any documentation submitted to it under the conditions of this Paragraph, including but not limited to, any separate agreement or amendment, if applicable, identifying any specific maintenance responsibilities not addressed herein. The County's rejection of any documentation submitted hereunder shall mean that the appropriate condition of this Agreement has not been fulfilled.

9. Agreement Monitored by El Paso County Planning and Community Development Department and/or El Paso County Department of Public Works: Any and all actions and decisions to be made hereunder by the County shall be made by the Director of the El Paso County Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works. Accordingly, any and all documents, submissions, plan approvals, inspections, etc. shall be submitted to and shall be made by the Director of the Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works.

10. Indemnification and Hold Harmless: To the extent authorized by law, Developer/Owner agrees, for itself, its successors and assigns, that it will indemnify, defend, and hold the County harmless from any and all loss, costs, damage, injury, liability, claim, lien, demand, action and causes of action whatsoever, whether at law or in equity, arising from or related to its intentional or negligent acts, errors or omissions or that of its agents, officers, servants, employees, invitees and licensees in the construction, operation, inspection, cleaning (including analyzing and disposing of any solid or

hazardous wastes as defined by State and/or Federal environmental laws and regulations), maintenance, and repair of the detention basin/BMP(s), and such obligation arising under this Paragraph shall be joint and several. Nothing in this Paragraph shall be deemed to waive or otherwise limit the defense available to the County pursuant to the Colorado Governmental Immunity Act, Sections 24-10-101, *et seq.* C.R.S., or as otherwise provided by law.

11. Severability: In the event any Court of competent jurisdiction declares any part of this Agreement to be unenforceable, such declaration shall not affect the enforceability of the remaining parts of this Agreement.

12. Third Parties: This Agreement does not and shall not be deemed to confer upon or grant to any third party any right to claim damages or to bring any lawsuit, action or other proceeding against either the County, the Developer/Owner, or their respective successors and assigns, because of any breach hereof or because of any terms, covenants, agreements or conditions contained herein.

13. Solid Waste or Hazardous Materials: Should any refuse from the detention basin/BMP(s) be suspected or identified as solid waste or petroleum products, hazardous substances or hazardous materials (collectively referred to herein as "hazardous materials"), the Developer/Owner shall take all necessary and proper steps to characterize the solid waste or hazardous materials and properly dispose of it in accordance with applicable State and/or Federal environmental laws and regulations, including, but not limited to, the following: Solid Wastes Disposal Sites and Facilities Acts, §§ 30-20-100.5 – 30-20-119, C.R.S., Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities, 6 C.C.R. 1007-2, *et seq.*, Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, and Federal Solid Waste Regulations 40 CFR Ch. I. The County shall not be responsible or liable for identifying, characterizing, cleaning up, or disposing of such solid waste or hazardous materials. Notwithstanding the previous sentence, should any refuse cleaned up and disposed of by the County be determined to be solid waste or hazardous materials, the Developer/Owner, but not the County, shall be responsible and liable as the owner, generator, and/or transporter of said solid waste or hazardous materials.

14. Applicable Law and Venue: The laws, rules, and regulations of the State of Colorado and El Paso County shall be applicable in the enforcement, interpretation, and execution of this Agreement, except that Federal law may be applicable regarding solid waste or hazardous materials. Venue shall be in the El Paso County District Court.

IN WITNESS WHEREOF, the Parties affix their signatures below.

Executed this _____ day of _____, 20___, by:Mountain View Electric Association

By: _____
David J Waldner, Engineering Manager

The foregoing instrument was acknowledged before me this _____ day of _____, 20___, by David J Waldner, Engineering Manager, Mountain View Electric Association

Witness my hand and official seal.

My commission expires: _____

_____

Notary Public

Executed this _____ day of _____, 20___, by:

BOARD OF COUNTY COMMISSIONERS
OF EL PASO COUNTY, COLORADO

By: _____
Craig Dossey, Executive Director
Planning and Community Development Department
Authorized signatory pursuant to LDC

The foregoing instrument was acknowledged before me this _____ day of _____, 2018, by _____, Executive Director of El Paso County Planning and Community Development Department.

Witness my hand and official seal.

My commission expires: _____

_____

Notary Public

Approved as to Content and Form:

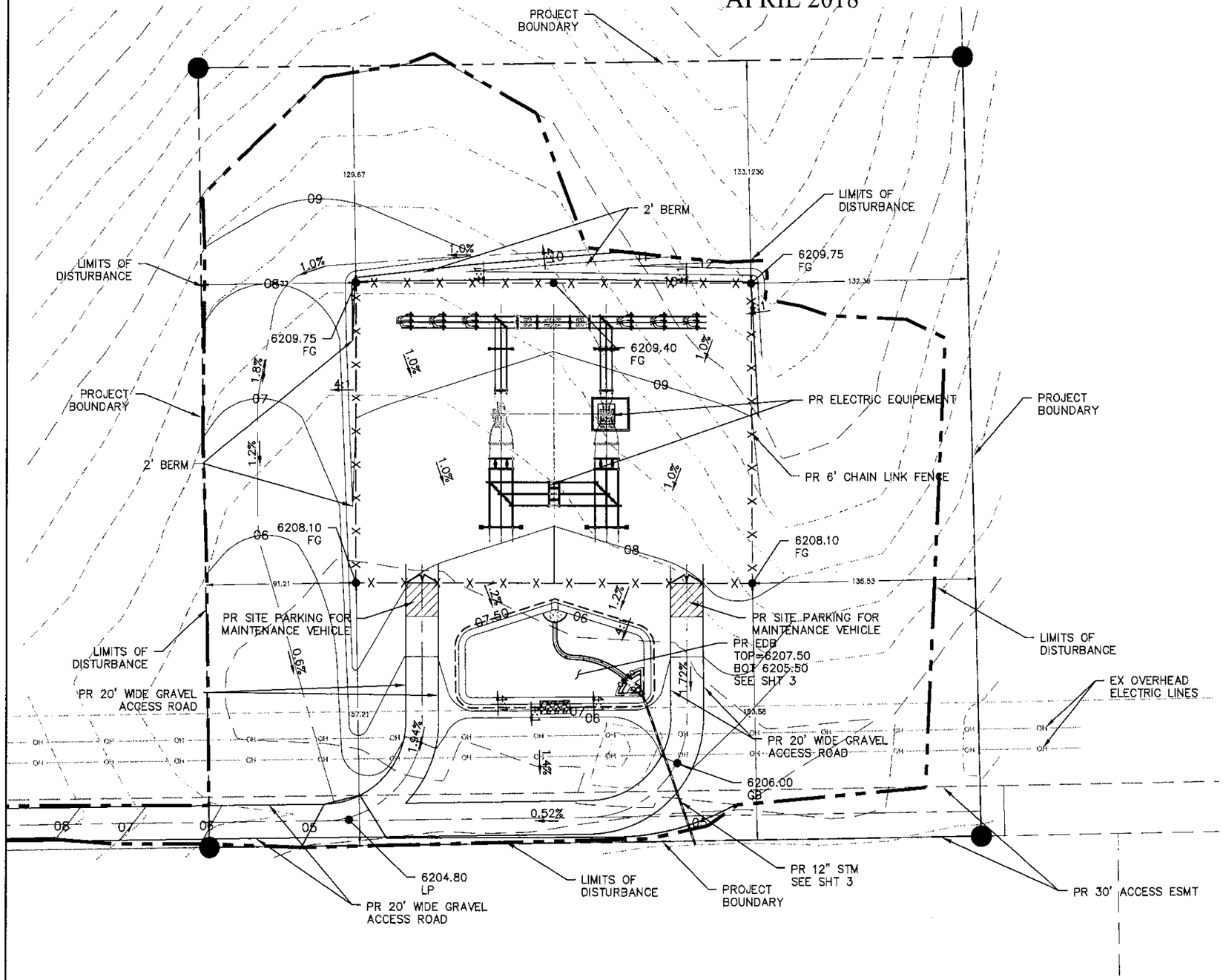
_____
Assistant County Attorney

MVEA YODER SUBSTATION

EL PASO COUNTY

SITE PLAN

APRIL 2018



LEGEND

EXISTING CONTOURS – MINOR	6132
EXISTING CONTOURS – MAJOR	6130
PROPOSED CONTOURS – MAJOR	6132
PROPOSED CONTOURS – MAJOR	6130
LIMITS OF CONSTRUCTION	
EXISTING FINISHED GROUND	EX–FG
PROPOSED FINISHED GROUND	FG
PROPOSED FLOWLINE	FL
LOW POINT	LP
HIGH POINT	HP
GRADE & DIRECTION	2.2%

N

30' 0 30' 60'

SCALE: 1"=30'

REVISIONS

NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEM FOR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: DAVID WALDNER
11140 E. WOODMAN RD.
PEYTON, CO 80931
719-495-2283

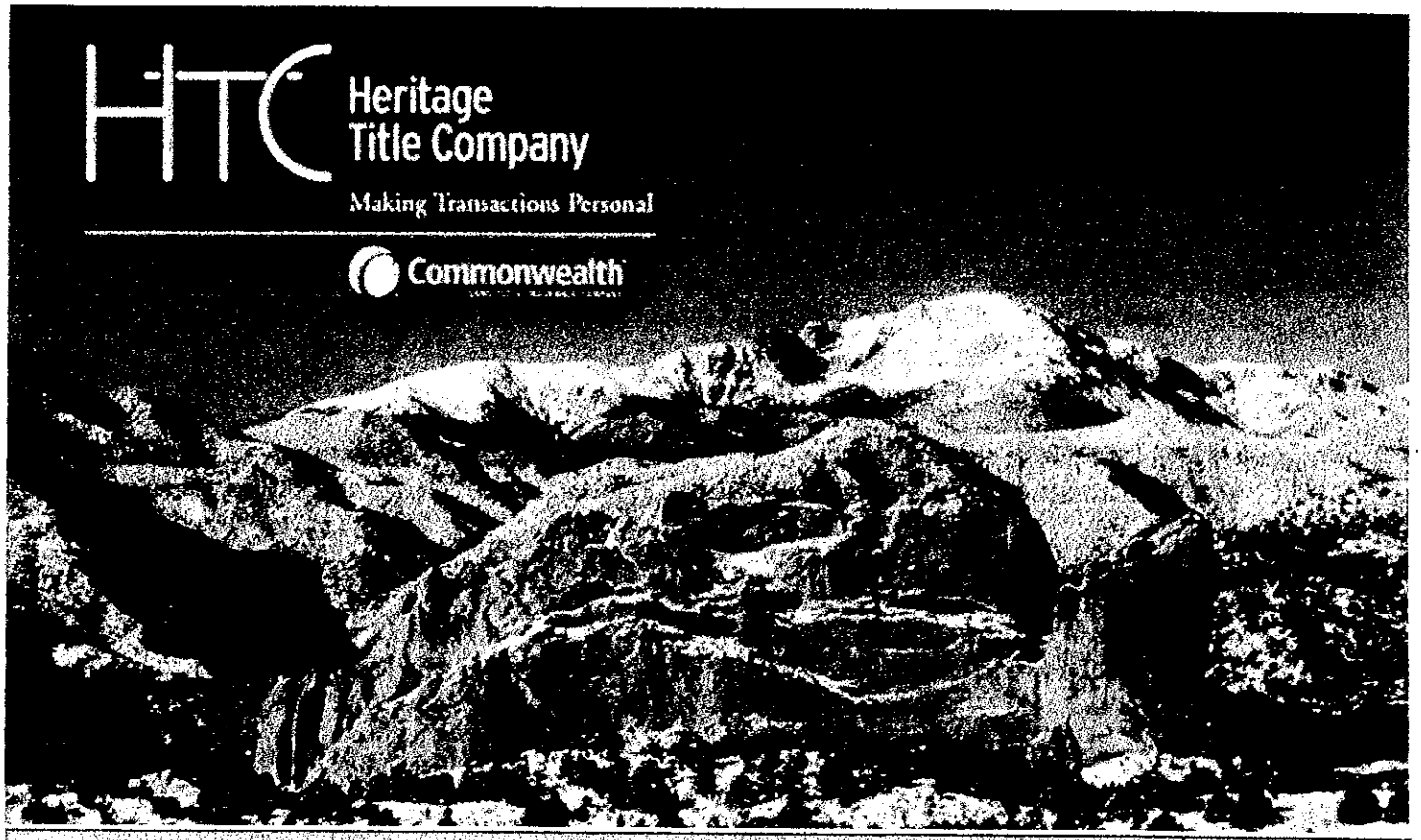
Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 20th STREET
COLORADO SPRINGS, CO 80904
OFFICE 719-635-6422
FAX: 719-635-6428
www.tnainc.com

MVEA YODER SUBSTATION

SITE PLAN

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	4/18/18
SHEET NO.	1 OF 1

EXHIBIT A



Your Preliminary Title Commitment

Our File No. H0509782 | *Effective Date: May 8, 2018*

Property address: 1625 N Yoder Rd

This commitment was delivered to the following parties, disclosed to the Company to be involved in this transaction:

Sharron Pearson
Phil Mazur
Admin
Debbie Coleman
Debbie Fitzgerald

The delivery/email address of each party is intentionally not displayed, in order to protect the Personal Private Information (PPI) of all.

IS THIS A SALE TRANSACTION? Are the seller's in this transaction US Citizens? If not click HERE for important information regarding FIRPTA

ONLINE FRAUD IS ON THE RISE ? Click HERE before wiring your funds

E&O Certificate ? Click HERE

Agents and Lenders ? Click HERE for the best resource to calculate net sheets, closing cost estimates and much more?

Click here for your complete Title Commitment

EXHIBIT B

PLEASE TAKE NOTE OF THE FOLLOWING REVISED TERMS CONTAINED HEREIN:

Updated The Effective date

Thank you for your new order! We truly appreciate the opportunity to work with you on your transaction. Below you will find a digital copy of your Title Commitment for the property with hyperlinks to supporting documentation. Please scroll down and click on the blue links below to view the referenced documentation. You will receive your title policy after the closing of the transaction. Should you have any questions about "What is Title Insurance?" please visit our website at www.heritagetco.com and click on the "Consumer Tab". Thank You.

WIRING INSTRUCTIONS

WIRED FUNDS ARE REQUIRED ON ALL CASH PURCHASE TRANSACTIONS. FOR WIRING INSTRUCTIONS, PLEASE CONTACT YOUR ESCROW OFFICE AS NOTED ON THE TRANSMITTAL PAGE OF THIS COMMITMENT.

NOTE: Wired funds are required on all cash purchase transactions

****Be aware! Online banking fraud is on the rise. If you receive an email containing WIRE TRANSFER INSTRUCTIONS call your escrow officer immediately to verify the information prior to sending funds.****

LEGAL DESCRIPTION

A portion of the Southwest quarter of Section 3, Township 14 South, Range 61 West of the 6th Principal Meridian, situate in El Paso County, State of Colorado, described as follows:

The basis of bearings is the South line of the Southwest quarter of said Section 3, which bears South 89°07'57? West assumed monumentation is as shown:
Beginning at the Southwest corner of said Section 3; thence North 01°00'29? West coincident with the West line of said Section 3, a distance of 1382.21 feet; thence North 89°07'57? East, a distance of 255.00 feet; thence South 01°00'29? East, a distance of 150.00 feet; thence North 89°07'57? East, a distance of 986.00 feet; thence South 01°00'29? East, distance of 1232.21 feet to the South line of said Section 3; thence South 89°07'57? West coincident with said South line of Section 3, a distance of 1241.00 feet to the Point of Beginning,
County of El Paso,
State of Colorado s

SELLERS

Mark J. Kneis, II

BUYERS

Mountain View Electric Association, Inc., a Colorado corporation

LENDER

PROPOSED COVERAGES

(a) ALTA Owners Policy 6-17-06 **$0.00**
Mountain View Electric Association, Inc., a Colorado corporation
(b) None **$**

$

ESTIMATED TITLE CHARGES

Owners Coverage: $450.00

REQUIREMENTS

a. Pay the agreed amounts for the interest in the land and/or for the mortgage to be insured.

b. Pay us the premiums, fees and charges for the policy.

c. Obtain a certificate of taxes due from the county treasurer or the county treasurer's authorized agent.

d. Evidence that any and all assessments for common expenses, if any, have been paid.

e. The Company will require that an Affidavit and Indemnity Agreement be completed by the party(s) named below before the issuance of any policy of title insurance.

Party(s): Mark J. Kneis, II

The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit.

f. Deed sufficient to convey the fee simple estate or interest in the Land described or referred to herein, to the Proposed Insured Purchaser.

g. Recordation of Updated Statement of Authority for **Mountain View Electric Association, Inc., a Colorado corporation** pursuant to Colorado Revised Statutes evidencing the existence of the entity and authority of the person(s) authorized to execute and deliver instruments affecting title to real property on behalf of the entity and containing other information required by Colorado Revised Statutes.

Note: Statement of Authority for said entity recorded May 22, 2012 at Reception No. 212058622 shows Joseph D. Martin, President.

h. Furnish for recordation a full release of deed of trust:

Amount: $359,910.00
Trustor/Grantor Mark J. Kneis, II
Trustee: Public Trustee of El Paso County
Beneficiary: V.I.P. Mortgage, Inc.
Recording Date: April 12, 2012

Recording No: Reception No. 212041434

Note: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

EXCEPTIONS

1. Any facts, rights, interests or claims that are not shown by the Public Records but which could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

3. Any encroachments, encumbrances, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by Public Records.

4. Any lien or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquires of record for the value the estate or interest or mortgage thereon covered by this Commitment.

6. Water rights, claims of title to water, whether or not these matters are shown by the Public Records.

7. All taxes and assessments, now or heretofore assessed, due or payable.

NOTE: This tax exception will be amended at policy upon satisfaction and evidence of payment of taxes.

8. Any existing leases or tenancies, and any and all parties claiming by, through or under said lessees.

9. Terms, conditions, provisions, agreements and obligations contained in the 60 foot right of way to El Paso County along all section lines as set forth in Road Record below:
Recording No.: Book A at Page 78 (Copy has been ordered)

10. Reservations contained in the Patent

From: The United States of America
Recording Date: February 13, 1914
Recording No: Book 420 at Page 582

Which among other things recites as follows:

All coal and A right of way thereon for ditches or canals constructed by the authority of the United States of America.

11. Terms, conditions, provisions, agreements and obligations contained in the Easement and Right of Way as set forth below:

Recording Date: May 21, 1971

Recording No.: Book 2410 at page 27

12. Terms, conditions, provisions, agreements and obligations contained in the Easement and Right of Way as set forth below:

Recording Date: September 18, 2007
Recording No.: Reception No. 207121428

13. Terms, conditions, provisions, agreements and obligations contained in the Non Exclusive Easement as set forth in Deed below:

Recording Date: June 21, 2006
Recording No.: Reception No. 206091228

14. Terms, conditions, provisions, agreements and obligations contained in the Resolution No. 00-260 as set forth below:

Recording Date: August 16, 2000
Recording No.: Reception No. 200097484 and re-recorded September 12, 2000 at Reception No. 200109261

15. Terms, conditions, provisions, agreements and obligations contained in the Notice for underground facilities for The El Paso County Telephone Company as set forth below:

Recording Date: June 29, 1982
Recording No.: Reception No. 841242

16. Any loss or damage arising from the fact that any fence lines on or near the perimeter of the Land may not coincide with property lines.

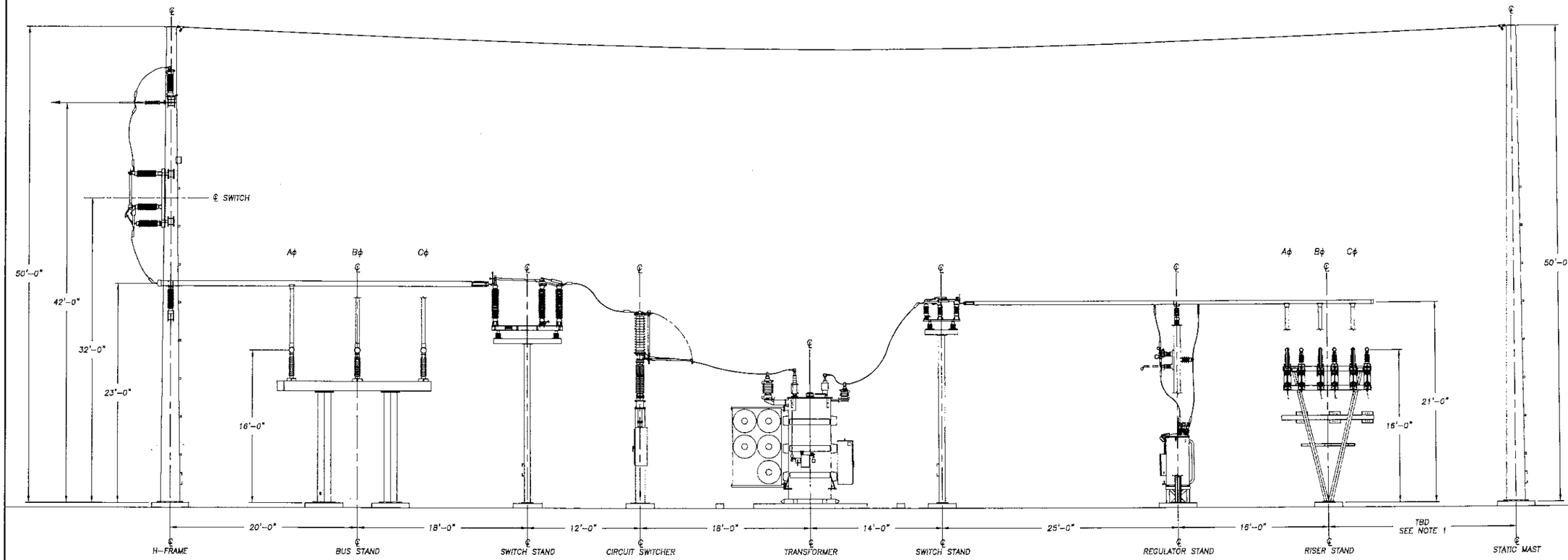
IMPORTANT CONTACTS

Escrow Closer: Debbie Fitzgerald
Phone: (303) 443-3333
FAX: (303) 628-1668
E-Mail: dfitzgerald@heritagetco.com
Address: 4909 Pearl East Circle, Suite 100
Boulder, CO 80301

Thank you for trusting us with your transaction!
Please contact your Escrow Closer, Closing Assistant or Title Representative with any questions, as replies to this message will not be read.

PRELIMINARY

NOT FOR CONSTRUCTION FOR CONCEPTUAL PURPOSES ONLY



ELEVATION A-A

ELEVATION NOTES

1. LOCATIONS OF ALL STATIC MASTS ARE DEPENDENT ON LIGHTNING STUDY.
2. THIS ELEVATION FOR PRELIMINARY DESIGN PURPOSES ONLY, ACTUAL DIMENSIONS SHALL DEPEND ON FINAL SUBSTATION DESIGN.

EXHIBIT E

No.	Date	Dwn.	Revision
A	01/22/18	BH	PRELIMINARY FOR REVIEW

Dwg. No. | Mfgr. | Drawing Title: Reference Drawings

M.K.

YODER SUBSTATION

C1 – GA AND ELEVATIONS
ELEVATION A-A

MOUNTAIN VIEW ELECTRIC ASSOCIATION, INCORPORATED

Contract:

UPDATED BY: SORENSAN 1/22/2018 8:08 AM

PATH: P:\3000\3072.001 mvea — mvea @ yoder substation preliminary design\Drawings_ME\YODER\C1-02 ELEVATION A-A.dwg

MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC.
11140 E. WOODMAN RD.
FALCON CO. 80831

Dwn:	Date:
BH	01/18/18
Appd:	Date:
–	----

C1-02

PREPARED BY: mef incorporated electric power engineering
P.O. Box 1260, (303) 121-7985, Arvada, CO 80001, www.mefeng.com

MVEA YODER SUBSTATION
EL PASO COUNTY, CO
GRADING, EROISON & SEDIMENT CONTROL PLAN
FEBRUARY 2018

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL NOTES

REVISED 8/24/16

1. CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PLANNING AND COMMUNITY DEVELOPMENT AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS.

2. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF SITE WATERS, INCLUDING WETLANDS.

3. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

4. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

5. ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY DSD INSPECTIONS STAFF.

6. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.

7. TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.

8. ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).

9. ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPS AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.

10. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.

11. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY.

12. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.

13. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.

14. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. BMP'S MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

15. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

17. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

18. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

19. NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

20. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.

21. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.

22. INDIVIDUALS SHALL COMPLY WITH THE 'COLORADO WATER QUALITY CONTROL ACT' (TITLE 25, ARTICLE 8, CRS), AND THE 'CLEAN WATER ACT' (33 USC 1344), IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

23. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.

24. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

25. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

26. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY CTL-THOMPSON AND SHALL BE CONSIDERED A PART OF THESE PLANS.

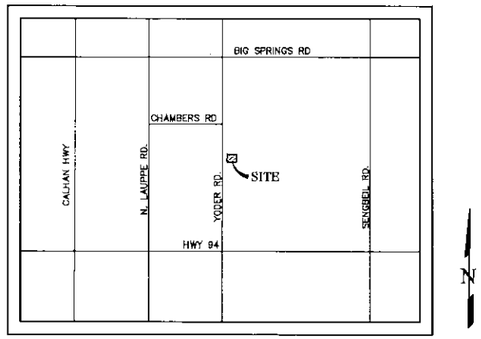
27. AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

ENGINEER'S STATEMENT:

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

NAME, P.E. # _____ DATE _____



VICINITY MAP
N.T.S.

OWNER'S STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

_____ _____
DAVID WALDNER, MANAGER OF ENGINEERING DATE

MOUNTAIN VIEW ELECTRIC ASSOCIATION
BUSINESS NAME

ADDRESS:
11140 E. WOODMAN RD
PEYTON, CO 80931

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/ OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/ OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

_____ _____
JENNIFER IRVINE, P.E. DATE
COUNTY ENGINEER/ECM ADMINISTRATOR

EL PASO COUNTY STANDARD NOTES

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2 AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).

3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   A. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   B. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2
   C. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
   D. CDOT M & S STANDARDS.

4. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.

5. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.

6. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.

7. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING OR CONSTRUCTION.

SITE DATA

OWNER/PETITIONER:
MOUNTAIN VIEW ELECTRIC ASSOCIATION
11140 E. WOODMAN RD
PEYTON, CO 80931
MR. DAVID WALDNER, (719) 495-2283

PREPARER:
TERRA NOVA ENGINEERING, INC.
125 N. WAHSATCH AVE.
COLORADO SPRINGS, CO 80903
(719) 635-6422 OFFICE
(719) 499-2255 MOBILE

DESCRIPTION OF ACTIVITIES:

THE DEVELOPER PROPOSES TO CONSTRUCT AN ELECTRIC SUBSTATION AND IMPROVE THE EXISTING DIRT ACCESS ROAD ALONG THE SOUTHERN BOUNDARY TO GRAVEL. THE SITE CONSISTS OF 5 ACRES OF UNDEVELOPED PRAIRIE AREA LOCATED WITHIN A 40 ACRE RESIDENTIAL PARCEL. A WATER QUALITY POND IS PROPOSED TO BE LOCATED ALONG THE SOUTH SIDE OF THE SITE AND ONE LOCATED AT THE SOUTHWEST CORNER.

THE SITE CURRENTLY CONSISTS OF NATIVE GRASSES AND TREES WITH AN ESTIMATED COVERAGE AREA OF APPROXIMATELY 70%. THERE ARE NO EROSION CONTROL MEASURES CURRENTLY IN PLACE.

EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IN A MANNER THAT WILL PROTECT PROPERTIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESULT OF CONSTRUCTION AND EARTHWORK ACTIVITIES. IT IS ANTICIPATED THAT CONSTRUCTION ACTIVITIES WILL OCCUR BETWEEN SUMMER OF 2018 AND FALL 2019 AT WHICH POINT IT WILL BE CONSIDERED COMPLETED.

CONSTRUCTION PHASING IS ANTICIPATED TO OCCUR AS FOLLOWS:
PHASE 1:
PRIOR TO START OF CONSTRUCTION, INITIAL EROSION CONTROL MEASURES TO BE INSTALLED INCLUDE, BUT NOT LIMITED TO VEHICLE TRACKING CONTROL (VTC) PADS AT THE SITE EXIT POINT ONTO PAVEMENT, SEDIMENT CONTROL LOGS (SCL) ALONG THE PROPERTY BOUNDARY ON THE SOUTH AND EAST SIDES OF THE SITE, A STAGING AREA (SSA) WHICH WILL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED. ALSO INCLUDED IN THIS PHASE WILL BE INSTALLATION OF SILT FENCE (SF) AROUND THE BASE OF THE DIRT STOCKPILE AREA. UNTIL THE STOCKPILE HAS BEEN REMOVED, THE SILT FENCE SHALL REMAIN IN PLACE AND BE MAINTAINED IN SUCH A WAY AS TO REDUCE TRANSFERENCE OF SEDIMENTATION OVER THE SITE.

PHASE 2:
SEDIMENT CONTROL LOGS (SCL) AND STRAW BALE BARRIERS (SBB) ALONG THE NEWLY GRADED SWALES SHALL BE INSTALLED. THE PROPOSED EDB WILL BE GRADED IN AND THE INLET PROTECTION (IP) SHALL BE PLACED AT THE OUTLET STRUCTURE. ALL PREVIOUSLY INSTALLED BMP'S SHALL REMAIN IN PLACE UNTIL A LATER PHASE.

PHASE 3:
ANY AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL BE SEEDED IN ORDER TO ESTABLISH A VEGETATIVE COVER UNTIL THE FINAL LANDSCAPING IS INSTALLED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMP'S SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND VEGETATION HAS BEEN ESTABLISHED TO 70% ON AREAS NOT COVERED BY GRAVEL. ONCE VEGETATIVE COVER HAS BEEN ESTABLISHED AT 70% OF THE DISTURBED AREAS, SILT FENCE WILL BE REMOVED FROM THE DIRT STOCKPILE AREA. THE DIRT STOCKPILE (SP) WILL BE REMOVED AND RE-VEGETATED AS PART OF THIS PHASE.

PHASE 4:
FINAL CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AT THIS POINT. THE VEHICLE TRACKING CONTROL PADS, SEDIMENT CONTROL LOGS AND STAGING AREAS HAVE ALL BEEN REMOVED AND PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

THE TOTAL SITE SIZE WITHOUT THE RIGHT-OF-WAY RESERVATION IS 3.4± ACRES. THE ENTIRE SITE IS DEVELOPED AND SHALL BE MAINTAINED TO REDUCE SEDIMENTATION FROM MIGRATING TO OFF-SITE OR DOWNSTREAM CREEK BEDS.

THE SOILS ON THIS SITE ARE NOTED AS TYPE 97, TRUCKTON SANDY LOAM W/3-9 PERCENT SLOPES. A SOILS MAP HAS BEEN INCLUDED IN THE FINAL DRAINAGE REPORT. EXISTING SITE VEGETATION CONSISTS OF NATIVE GRASSES AND TREES. THERE ARE NO WETLANDS ON THIS SITE.

THERE ARE NO POTENTIAL POLLUTANTS EXISTING OR PROPOSED FOR STORAGE ON THIS SITE.

THE RECEIVING WATERS FOR THIS AREA IS SAND CREEK. PER THE FINAL DRAINAGE REPORT, THE MAJORITY OF THE SITE (APPROXIMATELY 70%) FLOWS TO THE EAST TOWARD CANADA DRIVE. THE REMAINING PORTION OF THE SITE FLOWS TO THE SOUTH AND SOUTHWEST TOWARD A DEPRESSION AT THE SOUTHERNMOST LOT BOUNDARY.

THE PROPERTY OWNER OR OWNERS REPRESENTATIVE IS RESPONSIBLE FOR INSPECTING AND MAINTAINING THE SITE ON A REGULAR BASIS. INITIAL CRITERIA FOR THE OCCURRENCE OF INSPECTIONS IS AS FOLLOWS:
1. ONCE EVERY 14 DAYS OR
2. AFTER ANY PRECIPITATION OR SNOWMELT EVENT THAT SIGNIFICANT ENOUGH TO CAUSE SURFACE EROSION.

A WRITTEN RECORD OF INSPECTIONS SHALL BE KEPT BY THE OWNER OR OWNERS REPRESENTATIVE AND MADE AVAILABLE TO THE COUNTY UPON REQUEST. THIS WILL CONTINUE UNTIL THE SITE IS STABILIZED AND THE STOCKPILE IS NO LONGER NEEDED.

A COST ESTIMATE FOR THE BMP'S ON THIS SITE IS INCLUDED ON THIS PLAN.

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
1-800-922-1987
CITY OF COLORADO SPRINGS DEPT. OF UTILITIES GAS, ELECTRIC, WATER AND WASTEWATER

LEGAL DESCRIPTION

TRACT M: A PORTION OF THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 14 SOUTH, RANGE 61 WEST OF THE 6TH PRINCIPAL MERIDIAN, SITUATED IN EL PASO COUNTY, STATE OF COLORADO, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 3; THENCE N89°07'57"E COINCIDENT WITH THE SOUTH LINE OF SAID SECTION 3, A DISTANCE OF 774.30 FEET TO THE POINT OF BEGINNING; THENCE N01°00'29"W, A DISTANCE OF 466.68 FEET; THENCE N89°07'57"E, A DISTANCE OF 466.70 FEET; THENCE S01°00'29"E, A DISTANCE OF 466.68 FEET TO THE SOUTH LINE OF SAID SECTION 3; THENCE S89°07'57"W COINCIDENT WITH SAID SOUTH LINE OF SECTION 3, A DISTANCE OF 466.70 FEET TO THE POINT OF BEGINNING, CONTAINING A CALCULATED AREA OF 5.000 ACRES MORE OR LESS.

AREA

TOTAL AREA TO BE CLEARED, EXCAVATED, GRADED OR DISTURBED IS 4.31 ACRES.

VOLUME

TOTAL SOIL TO BE MOVED W/ 20% COMPACTION, CUT=201 CY, FILL=8,118, NET=7,918 (F)

EROSION CONTROL COST OPINION:

1.	VEHICLE TRACKING CONTROL 1 EA. @ $1625/PAD	$ 1625.00
2.	TEMPORARY SEEDING 3 AC @ $485/AC	$ 1,275.55
3.	EROSION CONTROL LOGS 961 LF @ $6.00/LF	$ 11,400.00
4.	CONCRETE WASHOUT 1 EA @ $776.00/EA	$ 776.00
5.	STRAW BALE CHECK DAMS 2 EA @ $24.00/LF	$ 48.00
6.	INLET PROTECTION 1 EA @ $153.00/LF	$ 153.00
8.	SILT FENCE 300 LF @ $3.50/LF	$ 1,050.00
9.	40% MAINTENANCE AND REPLACEMENT	$ 6,475.82
	TOTAL	$ 22,665.37

SHEET INDEX

STATEMENTS

DESIGN ENGINEER'S STATEMENT:
THESE GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

_____ _____
L DUCETT, P.E. #32339 DATE
FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

OWNER/DEVELOPERS STATEMENT:
I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

_____ _____
DAVID WALDNER DATE
MOUNTAIN VIEW ELECTRIC ASSOCIATION
11140 E. WOODMEN RD
PEYTON, CO 80831

EL PASO COUNTY:
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

_____ _____
JENNIFER IRVINE, P.E. DATE
COUNTY ENGINEER/ECM ADMINISTRATOR

GENERAL NOTES

1. THE LOCATIONS OF EXISTING UTILITIES HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATION AND VERIFICATION OF EXISTING UTILITIES PRIOR TO BEGINNING WORK. IF IT APPEARS THAT THERE COULD BE A CONFLICT WITH ANY UTILITIES, WHETHER INDICATED ON THE PLANS OR NOT, THE CONTRACTOR IS TO NOTIFY THE ENGINEER AND OWNER IMMEDIATELY. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND REPAIR (IF NECESSARY) OF ALL UTILITIES.

2. THE PREPARED EROSION/SEDIMENT CONTROL PLAN IS TO BE CONSIDERED A PART OF THESE PLANS AND ITS REQUIREMENTS ADHERED TO DURING THE CONSTRUCTION OF THIS PROJECT.

PROJ NO: PPR 16-029

NO.	REVISIONS	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE AUTHORITIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE FOR PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: DAVID WALDNER
11140 E. WOODMAN RD
PEYTON, CO 80931
719-495-2283

TERRA NOVA Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE 719-635-6422
FAX 719-635-6426
www.tnainc.com

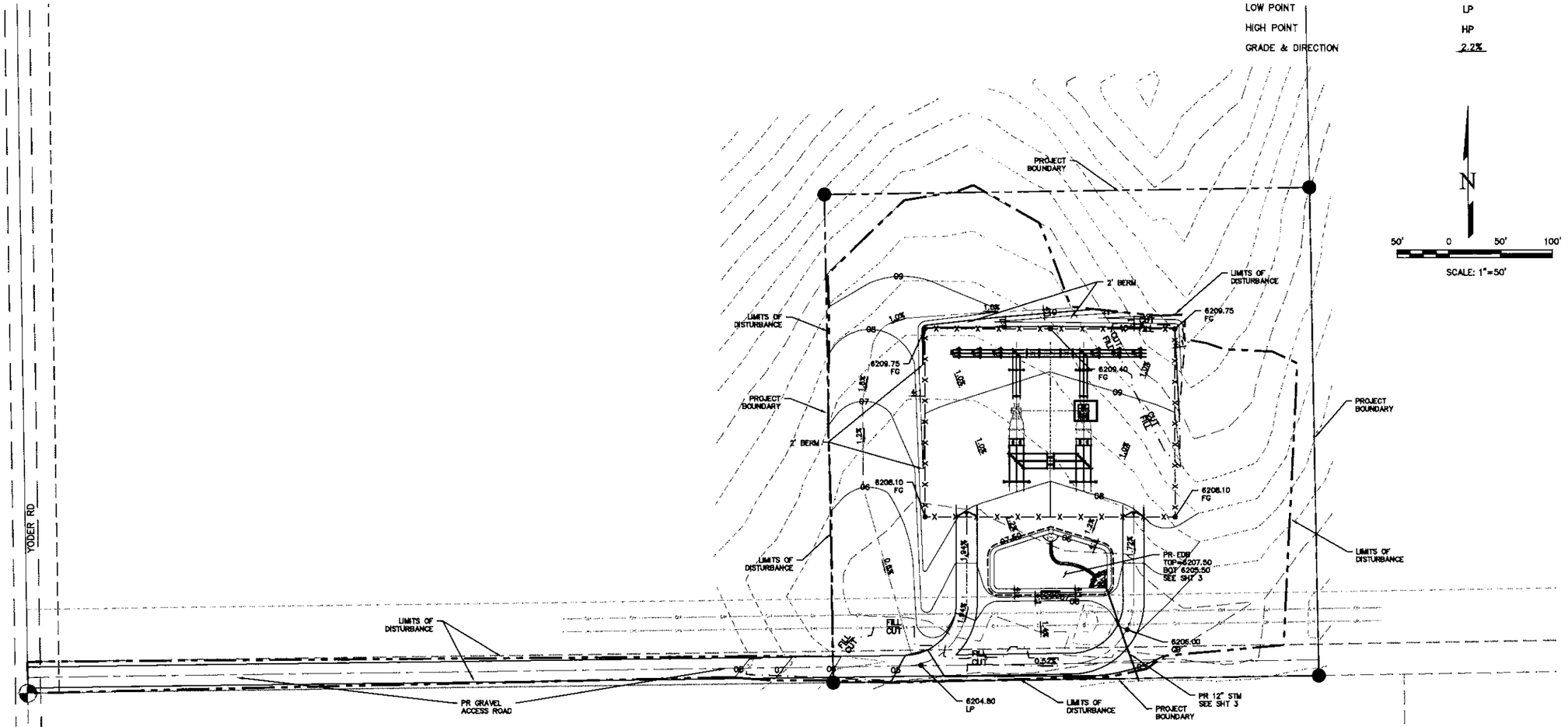
MVEA YODER SUBSTATION
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLAN

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	NA
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/16/18
SHEET NO.	1 OF 7

EXHIBIT F

GRADING LEGEND

EXISTING CONTOURS -- MINOR	6132
EXISTING CONTOURS – MAJOR	6130
PROPOSED CONTOURS – MAJOR	6132
PROPOSED CONTOURS – MAJOR	6130
LIMITS OF CONSTRUCTION	
EXISTING FINISHED GROUND	EX–FG
PROPOSED FINISHED GROUND	FG
PROPOSED FLOWLINE	FL
LOW POINT	LP
HIGH POINT	HP
GRADE & DIRECTION	2.2%



N

50' 0 50' 100'

SCALE: 1"=50'

UNPLATTED
NW 1/4 NW 1/4
SEC 10, T14S, R61W

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

L DUCETT, P.E.
COLORADO P.E. NO. 32339

NO.	REVISIONS DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REGULATORY AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE FOR ANY PURPOSE OTHER THAN THOSE DESIGNATED BY WRITTEN AUTHORIZATION.

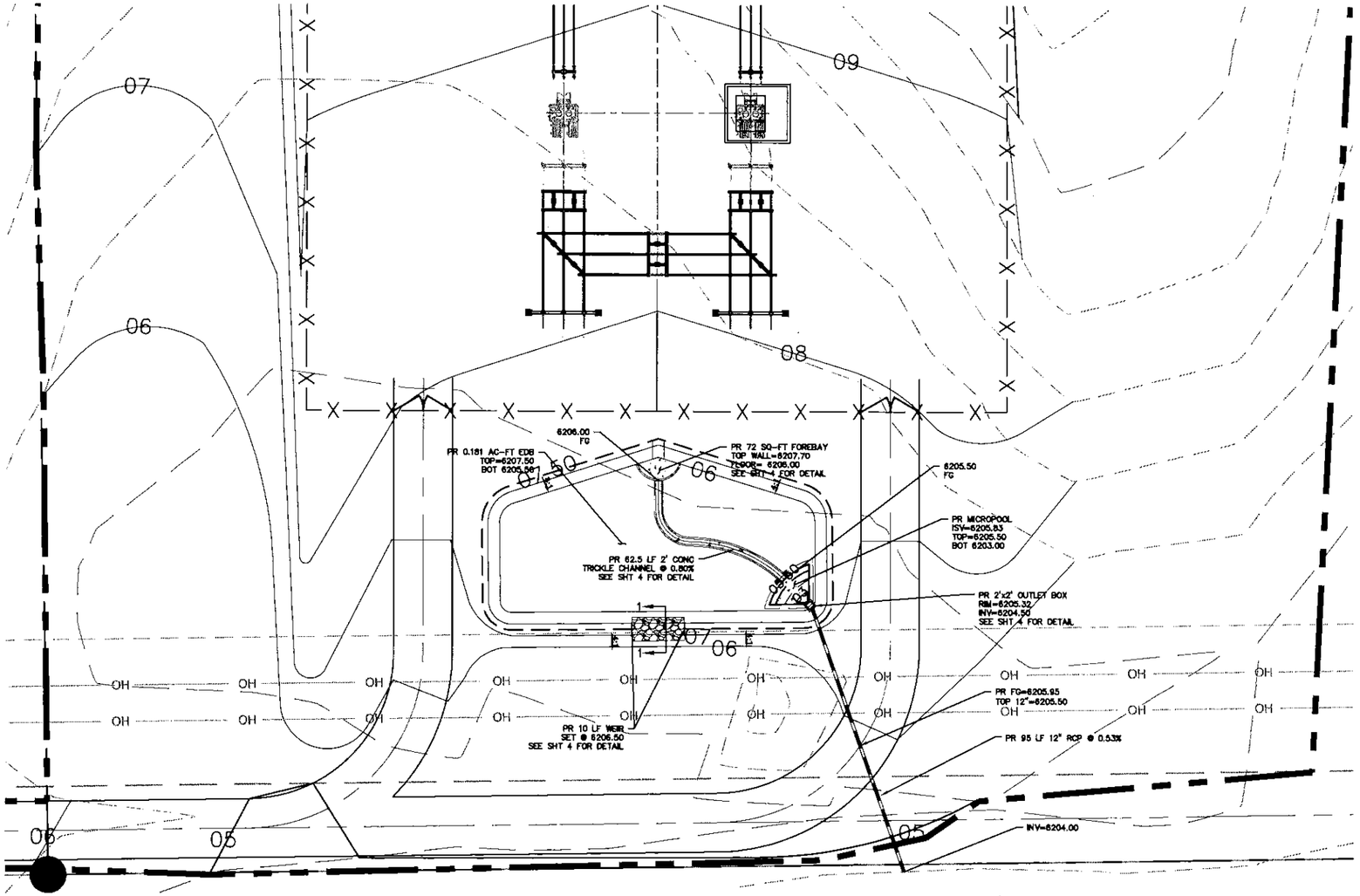
PREPARED FOR:
MVEA
ATTN: DAVID WALDNER
11140 E. WOODMAN RD.
PEYTON, CO 80931
719-495-2283

Terra Nova Engineering, Inc.
Pacific Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnepllc.com

MVEA YODER SUBSTATION

& SEDIMENT CONTROL PLAN GRADING PLAN

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/16/18
SHEET NO.	2 OF 7



GRADING LEGEND

EXISTING CONTOURS – MINOR	6132
EXISTING CONTOURS – MAJOR	6130
PROPOSED CONTOURS – MAJOR	6132
PROPOSED CONTOURS – MAJOR	6130
LIMITS OF CONSTRUCTION	
EXISTING FINISHED GROUND	EX–FG
PROPOSED FINISHED GROUND	FG
PROPOSED FLOWLINE	FL
LOW POINT	LP
HIGH POINT	HP
GRADE & DIRECTION	2.2%

N

20'. 0 20' 40'

SCALE: 1"=20'

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
MVEA
ATTN: DAVID WALDNER
11140 E. WOODMAN RD.
PEYTON, CO 80831
719-495-2283

Terra Nova Engineering, Inc.
Professional Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnsinc.com

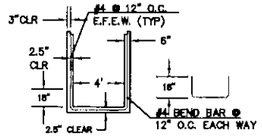
MVEA YODER SUBSTATION

GRADING, EROSION & SEDIMENT CONTROL PLAN
EXTENDED DETENTION BASIN PLAN

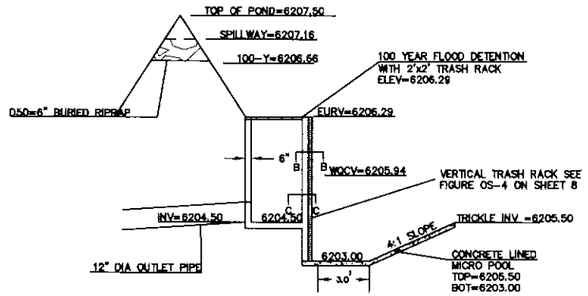
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

L DUDETT, P.E.
COLORADO P.E. NO. 32339

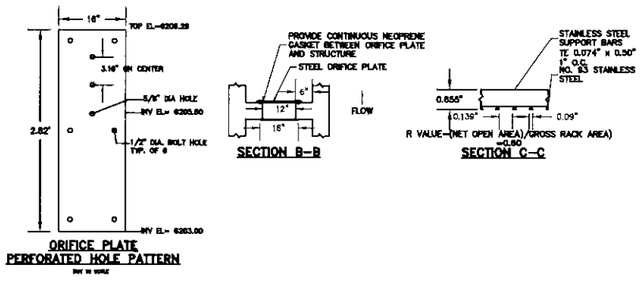
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=100'
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/16/18
SHEET NO.	3 OF 7



2'x2' OUTLET BOX STRUCTURAL DETAIL

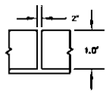


OUTLET STRUCTURE

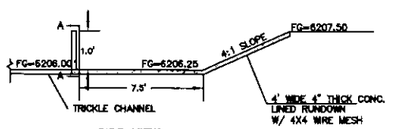


ORIFICE PLATE PERFORATED HOLE PATTERN

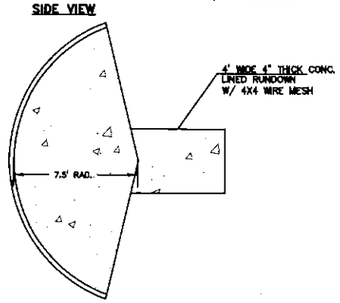
POND OUTLET OVERALL DETAIL



SECTION A-A

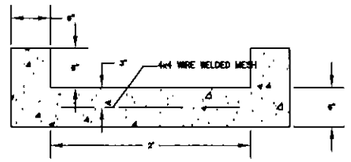


SIDE VIEW

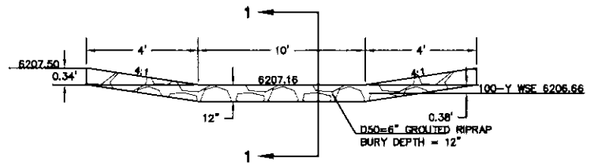


PLAN VIEW

CONCRETE FORBAY



2' CONCRETE TRICKLE CHANNEL



EMERGENCY SPILLWAY WEIR SECTION 1-1

NO.	REVISIONS (DESCRIPTION)	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REGULATORY AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE FOR CONSTRUCTION PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: LES ULFERS
11140 E. WOODMAN RD.
PEYTON, CO 80831
719-495-2283

Terra Nova Engineering, Inc.
Creative Civil Engineers Since 1996
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnesinc.com

MVEA YODER SUBSTATION

GRADING, EROSION AND SEDIMENT CONTROL PLAN
EDB DETAILS

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

L DUCETT, P.E.
COLORADO P.E. NO. 32339

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	NA
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/5/18
SHEET NO.	4 OF 7

EROSION CONTROL LEGEND

THE CITY OF COLORADO SPRINGS ENGINEERING DEPARTMENT GENERAL SPECIFICATIONS SHOULD BE USED AS A RESOURCE WHEN DEVELOPING TECHNICAL SPECIFICATIONS FOR RE-VEGETATION. GENERAL GUIDELINES AND RECOMMENDATIONS FOR RE-VEGETATION INCLUDE:

1. SEED MIXTURES SHOULD BE SOWN AT THE PROPER TIME OF YEAR FOR THE MIXTURE. GENERALLY, THERE ARE TWO OPTIMAL SEEDING PERIODS DURING THE YEAR. THE FIRST PERIOD IS IN THE SPRING, MARCH TO MAY. THE SECOND PERIOD IS IN LATE SUMMER TO EARLY FALL, AUGUST TO SEPTEMBER.
2. SEED SHOULD BE DRILL-SEEDED, WHENEVER POSSIBLE.
3. BROADCAST SEEDING OR HYDRO-SEEDING MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
4. SEEDING RATES SHOULD BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO-SEEDING.
5. BROADCAST SEED SHOULD BE LIGHTLY HAND-RAKED INTO THE SOIL.
6. SEED DEPTH SHOULD BE ¼ TO ½ INCH FOR MOST MIXTURES.
7. SEEDED AREAS SHOULD BE MULCHED, AND THE MULCH SHOULD BE ADEQUATELY SECURED.
8. IF HYDRO-SEEDING IS CONDUCTED, MULCHING SHOULD BE CONDUCTED AS A SEPARATE, SECOND OPERATION.
9. CONTAINERIZED NURSERY STOCK SHOULD BE KEPT IN A LIVE AND HEALTHY CONDITION PRIOR TO INSTALLATION.
10. CONTAINERIZED TREES AND SHRUBS SHOULD BE INSTALLED ACCORDING TO THE PLANTING DETAILS PROVIDE IN THE COLORADO SPRINGS LANDSCAPE CODE AND POLICY MANUAL, UNIT FOUR, APPENDICES FOR TREE AND SHRUB PLANTING DETAILS.
11. LIVE STAKES, POLES AND WILLOW BUNDLES SHOULD BE INSTALLED WHEN DORMANT (LATE WINTER AND EARLY SPRING).
12. IF BEAVER ARE KNOWN TO BE IN THE AREA, BEAVER PROTECTION SHOULD BE PROVIDED FOR TREES AND SHRUBS.

EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL
SCL	SEDIMENT CONTROL LOGS	SCL
VTC	VEHICLE TRACKING CONTROL	
CW	CONCRETE WASHOUT	
SM	SEEDING & MULCHING	
IP	INLET PROTECTION	
SP	STOCK PILE AREA	
SSA	CONSTRUCTION STAGING AREA	
SBB	STRAW BALE BARRIER	

GRADING LEGEND

EXISTING CONTOURS – MINOR 6132

EXISTING CONTOURS – MAJOR 6130

PROPOSED CONTOURS – MAJOR 6132

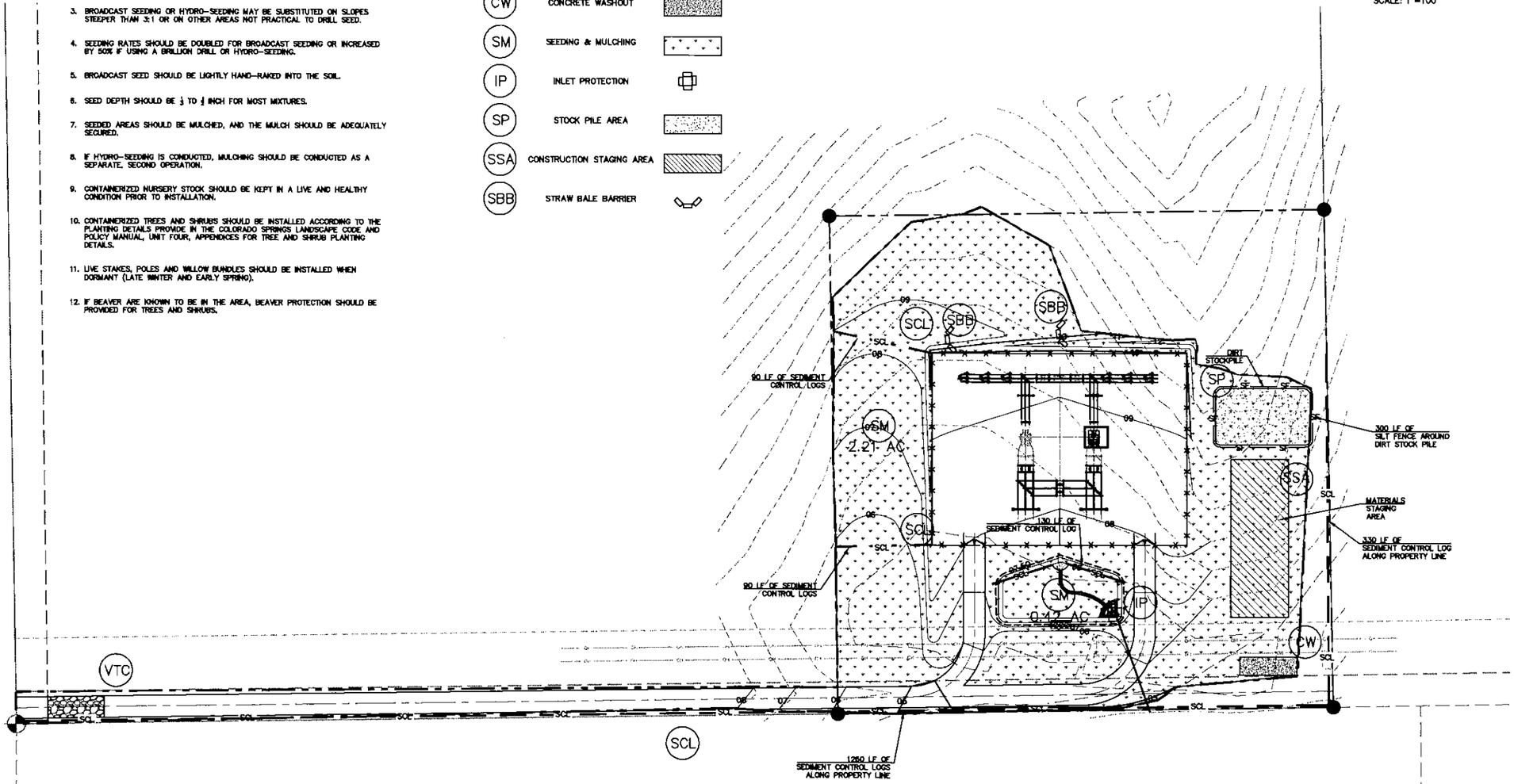
PROPOSED CONTOURS – MAJOR 6130

LIMITS OF CONSTRUCTION

N

100' 0 100' 200'

SCALE: 1"=100'



UNPLATTED
NW 1/4 NW 1/4
SEC 10, T14S, R61W

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

L DUCETT, P.E.
COLORADO P.E. NO. 32339

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
MVEA
ATTN: LES ULFERS
11140 E. WOODMAN RD.
PEYTON, CO 80831
719-495-2283

TERRA NOVA Engineering, Inc. Creative Civil Engineering Solutions
721 S. 23RD STREET
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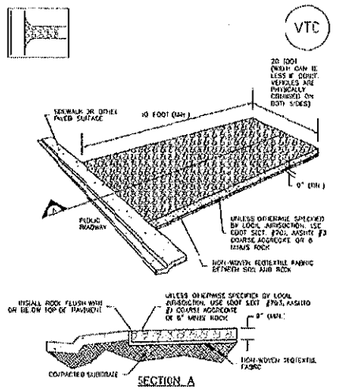
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnainc.com

MVEA YODER SUBSTATION

GRADING, EROISON AND SEDIMENT CONTROL PLAN
EROISON CONTROL PLAN

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=20'
V-SCALE	NA
JOB NO.	1732.00
DATE ISSUED	2/16/18
SHEET NO.	5 OF 7

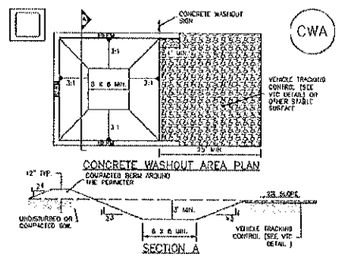
Vehicle Tracking Control (VTC) SM-4



SECTION A

VTC-1, AGGREGATE VEHICLE TRACKING CONTROL

Concrete Washout Area (CWA) MM-1



SECTION A

CWA-1, CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   —CWA INSTALLATION LOCATION

2. DO NOT LOCATE AN ENCLOSED CWA WITHIN 100' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR SPRINGS USED SOURCES. IF SITE CONSTRAINTS MAKE THIS UNFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (10 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT BINS OR A LINED ABOVE GROUND STORAGE AREA SHOULD BE USED

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'. SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'

6. HEAVIER TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. BERMS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE AT THE CWA, AND ESEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2".

5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE EXPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.

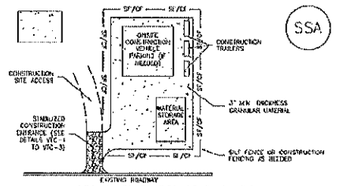
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED

7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED

Stabilized Staging Area (SSA) SM-6



SSA-1, STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   —LOCATION OF STAGING AREA(S).
   —CONTRACTOR SHOULD ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK COARSE MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SIZE #305, AASHTO #3 COARSE AGGREGATE OR 6" (US/MS) ROCK

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE

4. ROCK SHALL BE REARRANGED OR RECHARGED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED

SM-4 Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   —LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S)
   —TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTED OUT OF ROCK)

2. CONSTRUCTION USE OF ANY STABILIZED CONSTRUCTION ENTRANCE IS JUST ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY HAVING A NEAR TO 1 MONTH) WHERE IN-SITE WILL BE LIMITED VEHICULAR ACCESS

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK

6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SIZE #305 AASHTO #3 COARSE AGGREGATE OR 6" (US/MS) ROCK

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE

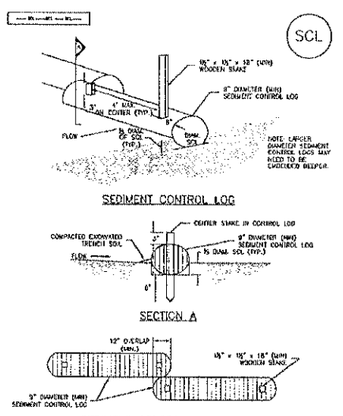
4. ROCK SHALL BE REARRANGED OR RECHARGED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING (SWEEPING MAY NOT BE ALLOWED DOWN STORM SEWER INLETS).

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

Sediment Control Log (SCL) SC-2



SCL-1, SEDIMENT CONTROL LOG

Sediment Control Log (SCL) SC-2

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS

2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY GROUNDHOG LAND-DISTURBING ACTIVITIES

3. EXTENSIVE EROSION LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR BIODEGRADABLE FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OF DEFECTS INCLUDING PIPES, HOLES AND OBVIOUS WEAR

4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY CHANNELS WHICH.

5. IF IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED, DIG THE GROUND TO A DEPTH OF APPROXIMATELY ⅓ OF THE DIAMETER OF THE LOG. IF TRENCHING IS USED, EXPECT IS HIGH FEASIBLE, AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DENSE SOIL OR BALANCE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING

6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE LIGHTLY COMPACTED INTO THE SHAPE OF A TRUE TRIANGLE USING A SHOVEL OR MINIATURE LAWN ROLLER.

7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURER'S INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED BY 4' CENTERS AND EMBEDDED A MINIMUM OF 8" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE

4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.

5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF ARVADA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND BREAKDOWN/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE CONTRACTOR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

L DUCETT, P.E.
COLORADO P.E. NO. 32339

REVISIONS NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE JURISDICTIONAL BODY(S), TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: DDAVID WALDNER
11140 E. WOODMAN RD.
PEYTON, CO 80831
719-495-2283

721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnesllc.com

MVEA YODER SUBSTATION

GRADING, EROSION & SEDIMENT CONTROL PLAN
EROSION CONTROL DETAILS

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	NA
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/16/18
SHEET NO.	6 OF 7

SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF INLET PROTECTION
   - TYPE OF INLET PROTECTION (IP-1, IP-2, IP-4, IP-5, IP-6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION (48 HOURS IS COMPLETE (TYPICALLY WITHIN 48 HOURS) IF A RAINFALL/RUNOFF EVENT IS FORECAST INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT

3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDCD STANDARD DETAILS CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WEEKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN ITS EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/2 OF THE HEIGHT FOR STRAW BALES

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN WRITING

6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION

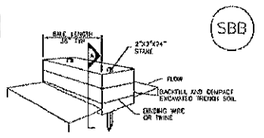
[NOTE: ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN ARCHIVE]

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

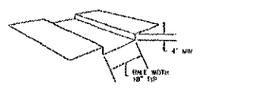
NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. WHILE PROPER PURPOSES NOT DISCOURAGED USE OF PROPRIETARY INLET PROTECTION, HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

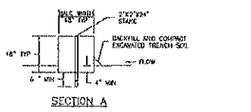
SC-3 Straw Bale Barrier (SBB)



STRAW BALE



TRENCH FOR STRAW BALE



SECTION A

SBB-1, STRAW BALE

MM-2 Stockpile Management (SM)

STOCKPILE PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WEEKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

STOCKPILE PROTECTION MAINTENANCE NOTES

4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY

5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

[DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN ARCHIVE]

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

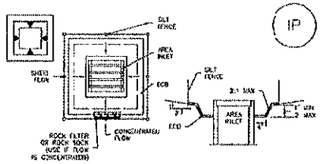
or irrigation to wet and settle the seed bed. Timing of the seedbed following seeding will improve results during dry or warm seeding times.

Table 14-9. Recommended Seed Mix for High Water Table Conditions[1]

Common Name (Variety)	Scientific Name	Growth Season	Growth Form	Seed/Lb	Lbs PLS/ Acre Drilled	Lbs PLS/Acre Broadcast or Hydroseeded
Reed top[2]	*Agrostis alba*	Warm	Sod	5,000,000	0.1	0.2
Switchgrass (Pathfinder)	*Panicum virgatum*	Warm	Sod/ Bunch	389,000	2.3	4.4
Western wheatgrass (Arriba)	*Pascopyrum smithii*	Cool	Sod	110,000	7.9	15.8
Indian ricegrass	*Distichlis spicata*	Warm	Sod	520,000	1.0	2.0
Woolly sedge	*Carex lanuginosa*	Cool	Sod	400,000	0.1	0.2
Baltic rush	*Juncus balticus*	Cool	Sod	109,500,000	0.1	0.2
Prairie cordgrass	*Spartina pectinata*	Cool	Sod	110,000	1.0	2.0
Annual rye	*Lolium multiflorum*	Cool	Cover crop	227,000	10.0	20.0
				TOTAL	22.4	44.8
Wildflowers						
Nuttall's sunflower	*Helianthus nuttallii*	—	—	250,000	0.10	0.20
Wild Sergeant	*Monarda fistulosa*	—	—	1,450,000	0.12	0.24
Yarrow	*Achillea millefolium*	—	—	2,770,000	0.06	0.12
Blue vervain	*Verbena hastata*	—	—		0.12	0.24
				TOTAL	0.40	0.80

[1]Per pound of fertilizer located near or on the bottom of where wet soil condition occur. [2]Rating of potted swamp stock wetland plants. [3]Any mountain is recommended for sites with subsoil hydrology.
[3]Nonnative

SC-6 Inlet Protection (IP)



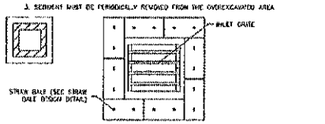
IP-6, OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA

2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN AS 2:1 SLOPE WITH LENGTH DIRECTION TOWARDS DIRECTION OF FLOW

3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA



IP-6, STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS

2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.

Straw Bale Barrier (SBB) SC-3

STRAW BALE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION(S) OF STRAW BALES

2. STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE FROST FREE BALES ARE WEED FREE.

3. STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.

4. WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER THE END OF EACH BALE SHALL BE HEAVILY ABUTTING ONE ANOTHER.

5. STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"x18"x18".

6. A TRENCHING ANCHOR EMBEDDING SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S). ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE(S) AND COMPACTED.

7. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"x2"x24". WOODEN STAKES SHALL BE DRIVEN 6" INTO THE GROUND.

STRAW BALE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTED OR DAMAGED BEYOND REPAIR.

5. SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE STRAW BALE BARRIER

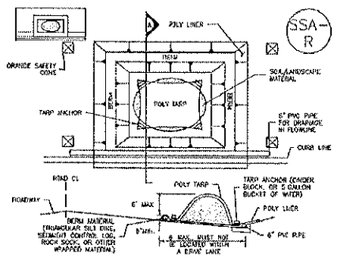
6. STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

[DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN ARCHIVE]

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Stockpile Management (SP) MM-2



SP-2, MATERIALS STAGING IN ROADWAY

MATERIALS STAGING IN ROADWAYS INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   - LOCATION OF MATERIAL STAGING AREA(S)
   - CONTRACTOR MAY ANALYZE LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION

2. FEATURE MUST BE INSTALLED PRIOR TO EXCAVATION, EARTHWORK OR DELIVERY OF MATERIALS.

3. MATERIALS MUST BE STATIONED ON THE POLY LINER. ANY INCIDENTAL MATERIALS DEPOSITED OR PLACED OUTSIDE OR ABOVE CURB LINE MUST BE CLEANED UP PROMPTLY

4. POLY LINER AND TARP COVER SHOULD BE OF SUFFICIENT THICKNESS TO PREVENT DAMAGE OR LOSS OF INTEGRITY

5. SAND BAGS MAY BE STRATEGICALLY TO ANCHOR THE COVER DROP OR PROVIDE BERMING UNDER THE BASE LINER.

6. FEATURE IS NOT INTENDED FOR USE WITH WET MATERIAL THAT WILL BE DRAINING AND/OR SPREADING OUT ON THE POLY LINER OR FOR DEWATERING MATERIALS.

7. THIS FEATURE CAN BE USED FOR:
   - UTILITY REPAIRS
   - WHEN OTHER STAGING LOCATIONS AND OPTIONS ARE LIMITED
   - OTHER LIMITED APPLICATION AND SHORT DURATION STAGING

Table 14-10. Recommended Seed Mix for Transition Areas[1]

Common Name (Variety)	Scientific Name	Growth Season	Growth Form	Seed/Lb	Lbs PLS/Acre Drilled	Lbs PLS/Acre Broadcast or Hydroseeded
Sheep fescue (Durar)	*Festuca ovina*	Cool	Bunch	680,000	1.3	2.6
Western wheatgrass (Arriba)	*Pascopyrum smithii*	Cool	Sod	110,000	7.9	15.8
Alkali sacaton	*Sporobolus airoides*	Warm	Bunch	1,758,000	0.5	1.0
Slender wheatgrass	*Elymus trachycaulus*	Cool	Bunch	150,000	5.5	11.0
Canadian bluegrass (Rugberg)[2]	*Poa compressa*	Cool	Sod	2,500,000	0.3	0.6
Switchgrass (Pathfinder)	*Panicum virgatum*	Warm	Sod/ Bunch	389,000	1.3	2.6
Annual rye	*Lolium multiflorum*	Cool	Cover crop	227,000	10.0	20.0
				TOTAL	26.8	53.6
Wildflowers						
Blanket flower	*Gaillardia aristata*	---	---	332,000	0.25	0.50
Prairie coneflower	*Ratibida columnaris*	---	---	1,210,000	0.20	0.40
Purple prairie clover	*Dalea purpurea*	---	---	210,000	0.20	0.40
Gayfeather	*Liatris punctata*	---	---	138,000	0.06	0.12
Flax	*Linum lewisii*	---	---	293,000	0.20	0.40
Penstemon	*Penstemon strictus*	---	---	592,000	0.20	0.40
Yarrow	*Achillea millefolium*	---	---	2,770,000	0.03	0.06
				TOTAL	1.14	2.28

[1]Per acre of stones or between wet and dry areas.
[2]Subclover 1.7 lbs PLS here of inland ryegrass (*Centrella spicata*) is salty soils.

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

L DUGETT, P.E.
COLORADO P.E. NO. 32339

NO.	REVISIONS DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE JURISDICTIONAL ENGINEERING, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE FOR CONSTRUCTION PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: DAVID WALDNER
11140 E. WOODMAN RD.
PEYTON, CO 80831
719-495-2283

721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnwinc.com

MVEA YODER SUBSTATION

GRADING, EROSION & SEDIMENT CONTROL PLAN
EROSION CONTROL DETAILS

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	NA
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/16/18
SHEET NO.	7 OF 7

FINAL DRAINAGE REPORT
FOR
YODER ELECTRIC SUBSTATION
EL PASO COUNTY, COLORADO

FEBRUARY 2016

Prepared For:
MOUNTAIN VIEW ELECTRIC ASSOCIATION
David Waldner
11140 E Woodmen Rd, Peyton, CO 80831
(719) 495-2283

Prepared By:

TERRA NOVA ENGINEERING, INC.
721 S 23rd Street
Colorado Springs, CO 80904
(719) 635-6422

Job No. 1802.00

EXHIBIT G

FINAL DRAINAGE REPORT
FOR
YODER ELECTRIC SUBSTATION

TABLE OF CONTENTS

REQUIRED MAPS AND DRAWINGS

CERTIFICATION STATEMENT:

Engineers Statement

This attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

_____

Quentin Armijo, P.E. 37170 Seal

Developers Statements

I, Mountain View Electric Association, the developer have read and will comply with all of the requirements specified in this drainage report and plan.

Mountain View Electric Association
Business Name

By:_____
Title:_____
Address:_____
_____

El Paso County Approval:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 & 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

_____ _____

Jennifer Irvine, Date
County Engineer / ECM Administrator

Conditions:

FINAL DRAINAGE REPORT
FOR
YODER ELECTRIC SUBSTATION

PURPOSE

The purpose of this Final Drainage Report is to identify and analyze the proposed drainage patterns, determine proposed runoff quantities, size drainage structures for conveyance of developed runoff, and present solutions to drainage impacts on-site and off-site resulting from this development.

GENERAL DESCRIPTION

This Final Drainage Report (FDR) is an analysis of approximately 5.0 acres of undeveloped land located just east of the residential house at 1625 N. Yoder Road. This site is being developed by our client to include an electric substation. The development will also include improving the dirt access road to gravel. The site is located in the southwest quarter of Section 3, Township 14 South, Range 61West of the 6th Principal Meridian currently within El Paso County, Colorado. The site is bounded to the north, west, & south by a 5 acres single family lots, and to the east by undeveloped open space. The site is contained within the Upper Pond Creek Basin.

Soils for this project are delineated by the map in the appendix as Bresser sandy loam (11) 0 to 3 percent slopes and Truckton sandy loam (97), 3 to 9 percent slopes. Soils in the study area are shown as mapped by S.C.S. in the "Soils Survey of El Paso County Area" and contains soils of Hydrologic Group B and A respectively.

FLOODPLAIN STATEMENT

No portion of this site is within a designated F.E.M.A. floodplain, as determined by Flood Insurance Rate Map No. 08041C0875 F, dated March 17, 1997 (see appendix).

EXISTING DRAINAGE CONDITIONS

The site has not been previously developed and is currently part of a 40 acre single family parcel. The site consists mostly of natural vegetative grass and weeds, with some areas of bare ground. There is a natural ridge that runs north south through the site and splits it. The site has been broken down into two existing design points 1 & 2, two existing onsite basins EXA & EXB and two existing offsite basins OS-1 & OS-2 in order to show the historic drainage flows. Below is a description of them. See appendix for calculations.

Offsite Basin OS-1 (11.85 acres; Q_5=2.7 cfs and Q_{100}=17.4 cfs) consist of undeveloped open space prairie. Drainage in this basin sheet flows from north to south and drains onto Basin EXA.

Basin EXA (3.83 acres; Q_5=1.1 cfs and Q_{100}=7.4 cfs) consist of undeveloped open space prairie. Drainage in this basin sheet flows from north to south. The combined flow (Q_5=3.5 cfs and Q_{100}=23.0 cfs) of Basin OS-1 and EXA sheet flows south in an existing broad swale and then to a low point at the south boundary (Design Point 1) where it ponds and then overtops offsite.

Offsite Basin OS-2 (0.33 acres; Q_5=0.1 cfs and Q_{100}=0.7 cfs) consist of undeveloped open space prairie. Drainage in this basin sheet flows from northwest to southeast and partially drains onto Basin EXB.

Basin EXB (1.17 acres; Q_5=0.4 cfs and Q_{100}=2.7 cfs) consist of undeveloped open space prairie. Drainage in this basin sheet flows from northwest to southeast. The combined flow (Q_5=0.5 cfs and Q_{100}=3.4 cfs) of Basin OS-2 and EXB sheet flows southeast into an existing offsite natural channel (Design Point 2).

PROPOSED DRAINAGE CONDITIONS

Runoff in the developed conditions will closely flow the historic drainage patterns with the exception of adding an Extended Detention Basin to capture and treat the runoff form the developed substation yard. For analysis the site has been broken down into three design points 1, 2, & 1A, four onsite basins A, A1 & A2, and the same two existing offsite basins OS-1 & OS-2. Below is a description of the runoff in the developed conditions and how it will be safely routed and treated. See appendix for calculations.

Offsite Basin OS-1 (11.85 acres; Q_5=2.7 cfs and Q_{100}=17.4 cfs) consist of undeveloped open space prairie. Drainage in this basin sheet flows from north to south and drains onto Basin A1.

Basin A1 (1.70 acres; Q_5=0.5 cfs and Q_{100}=3.4 cfs) consist of undeveloped open space prairie that will be inside the site boundary but will not have any improvements other than placing a 2' high berm on the north side of the yard to direct runoff to a broad swale, so the offsite flow can be routed around the substation yard. Drainage in this basin sheet flows to the broad swale (Design Point 1A). The combined flow (Q_5=3.1 cfs and Q_{100}=19.9 cfs) of Basin OS-1 and A1 is directed south in the broad swale and then to a low point at the south boundary (Design Point 1).

Basin A (1.38 acres; Q_5=1.2 cfs and Q_{100}=3.8 cfs) will consist of the proposed substation yard and is comprised of loose gravel. Drainage in this basin sheet flows south to the proposed Extended Detention Basin (EDB). At the 0.221 acre EDB the inflow point consists of concrete rundown into concrete lined forebay, with a 1' high wall. A 2" slit in the wall routes the minor flow to 2' concrete trickle channels then the runoff is routed to the 2.5' deep micropool which has a 0.004 ac-ft Initial Surcharge Volume. The 1.38 acres tributary to EDB are 40.74% impervious. Based upon this we need a WQCV of 0.021 ac-ft, an ERUV volume of 0.004 ac-ft and 100-year volume of 0.045 ac-ft for a total volume needed of 0.105 ac-ft. An outlet structure will release the flows. The Micropool bottom elevation is 6203.00, the top is at 6205.50 while the ISV elevation is at 6205.83. The WQCV orifice starts at 6205.50 with 3-5/8-inch diameter holes spaced 3.16" inches

apart. The 2'x2' outlet structure grate is set at 6206.29, which corresponds to the EURV elevation. The 100-year elevation tops out at 6206.66. No restrictor plate is needed for the 12" outlet pipe, which releases Q_5=0.0 cfs and Q_{100}=0.8 cfs. Pipe Run 1 a 12" storm drain routes the discharge to the south boundary where the historic drainage flowed (Design Point 1). A 10' long emergency spillway set at 6207.16 will safely pass the 100' developed storm in case of failure in the outlet structure.

Basin A2 (0.75 acres; Q_5=0.4 cfs and Q_{100}=1.8 cfs) will consist undeveloped land with some gravel drive in the area just south of the proposed EDB. Drainage in this basin sheet flows south to Design Point 1. The combined flow of Basins OS-1, A, A1, & A2 at Design Point 1 is Q_5=3.3 cfs and Q_{100}=21.9 cfs

As in the historic condition Offsite Basin OS-2 (0.33 acres; Q_5=0.1 cfs and Q_{100}=0.7 cfs) consist of undeveloped open space prairie. Drainage in this basin sheet flows from northwest to southeast and partially drains onto Basin EXB.

Basin B (1.17 acres; Q_5=0.4 cfs and Q_{100}=2.7 cfs) consist of undeveloped open space prairie inside the property, but is not being improved. Drainage in this basin sheet flows from northwest to southeast. The combined flow (Q_5=0.5 cfs and Q_{100}=3.4 cfs) of Basin OS-2 and EXB sheet flows southeast into an existing offsite natural channel (Design Point 2).

HYDROLOGIC CALCULATIONS

Hydrologic calculations were performed using the El Paso County Storm Drainage Design Criteria Manual - Volumes 1 & 2, latest editions. The Rational Method was used to estimate storm water runoff anticipated from design storms with 5-year and 100-year recurrence intervals. The Urban Drainage Criteria Manual was used to calculate the detention and water quality volume.

HYDRAULIC CALCULATIONS

Hydraulic calculations were estimated using the Manning's Formula and the methods described in the El Paso County Storm Drainage Design Criteria Manual – Volumes 1 & 2, latest editions. The pertinent data sheets are included in the appendix of this report.

EROSION CONTROL

An erosion control plan is included with this drainage report. Vehicle Tracking Control (VTC) will be placed at any entrance to the site. A Concrete Washout (CW) will be placed on site, as well as a Materials Staging Area (SSA) and a Dirt Stockpile (SP) location. Silt Fence (SF) will be placed around the SP and Sediment Control Logs (SCL) are to be placed at the southern border of the site to keep runoff in place.

MAINTENANCE

The Extended Detention Basins and the storm drain systems are private and therefore must be maintained by the owner. These should be cleaned and checked after any significant precipitation event and at least once every three months. The proposed erosion control measures will be repaired and maintained by the property owner or owner's representative as required.

CONSTRUCTION COST OPINION

Public Non Reimbursable

NOT APPLICABLE

Private Non Reimbursable

1. 12" HDPE	95 LF	$ 35	$ 3,325
2. EDB	1 EA	$ 10,000	$ 10,000
3. Concrete channel	65 LF	$ 25	$ 1,625
4. 2'x2' Dual Outlet	1 EA	$ 2,500	$ 2,500
		Total	**$ 17,450**

DRAINAGE FEES

The existing site is in the Upper Pond Creek Basin. It appears this is an unstudied basin and therefore no basin fees are due at the time of final plat.

SUMMARY

Development of this site will not adversely affect the surrounding development. Proposed flows, as detailed in this report, will follow the drainage patterns outlined in this report showing how runoff will be safely routed downstream. The Extended Detention Basins will control developed flow to historic levels and provide water quality for this site. These water features will need to be periodically maintained by the owner in order to maintain their effectiveness in cleaning the discharge form the site.

PREPARED BY:
TERRA NOVA ENGINEERING, INC.

Quentin Armijo, P.E.
Senior Project Manager
Jobs/1802.00/drainage/180200 - FDR.doc

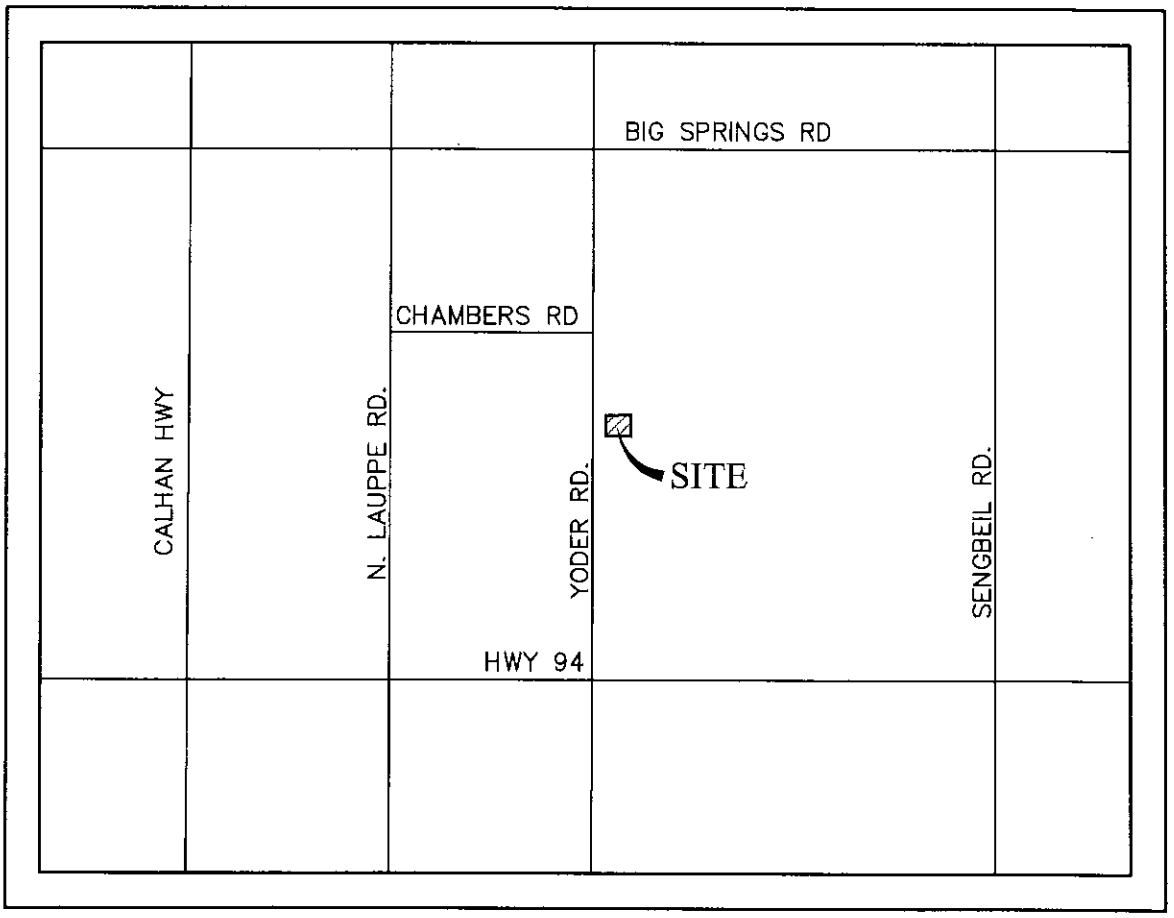
REFERENCE

"El Paso County Drainage Criteria Manual-Volumes 1 & 2, latest edition"

SCS Soils Map for El Paso County

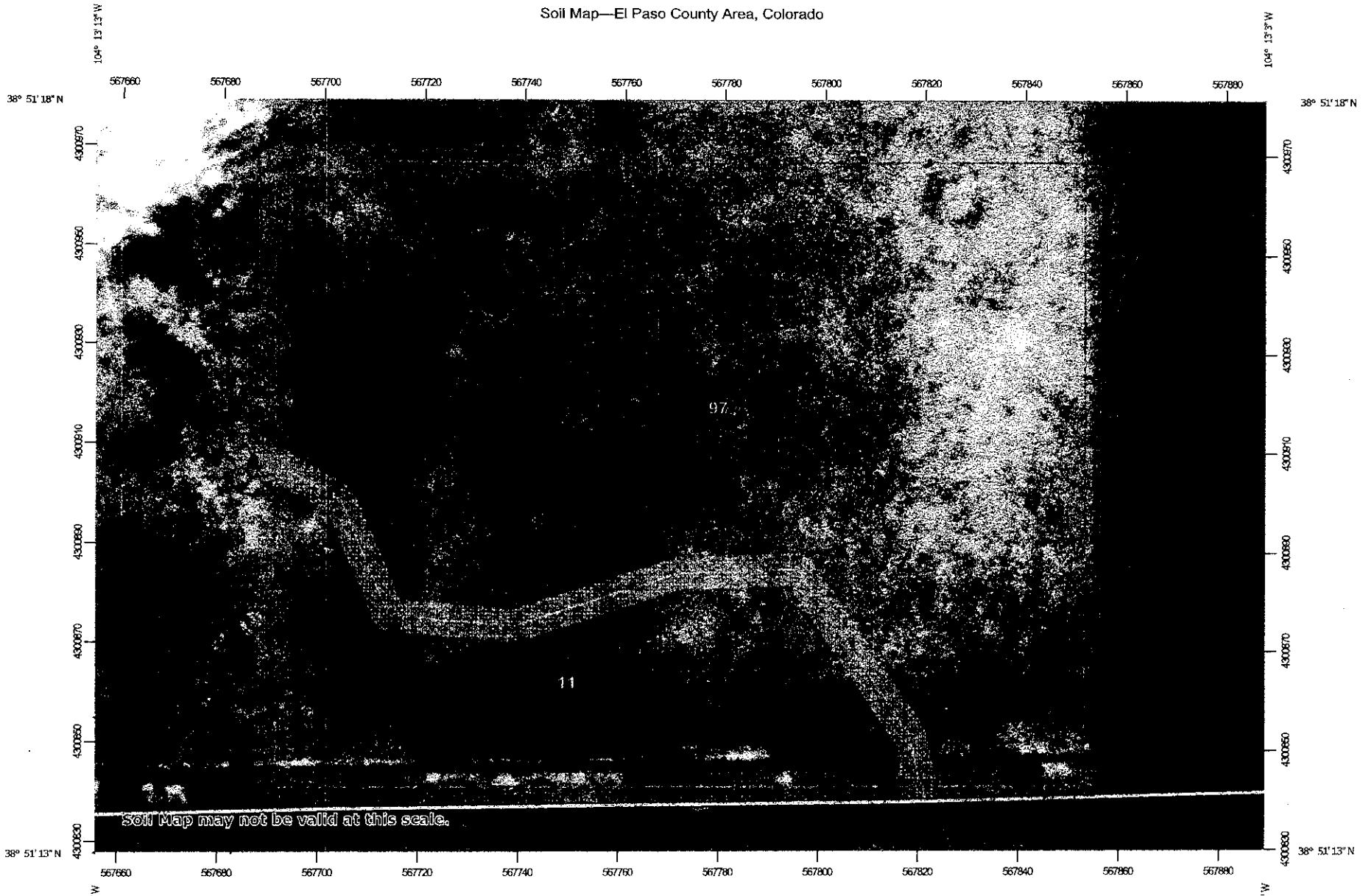
Federal Emergency Management Agency (FEMA) flood maps

VICINITY MAP



VICINITY MAP
N.T.S.

S.C.S. SOILS MAP



Map Scale: 1:1,070 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

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 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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: El Paso County Area, Colorado
Survey Area Data: Version 15, Oct 10, 2017

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

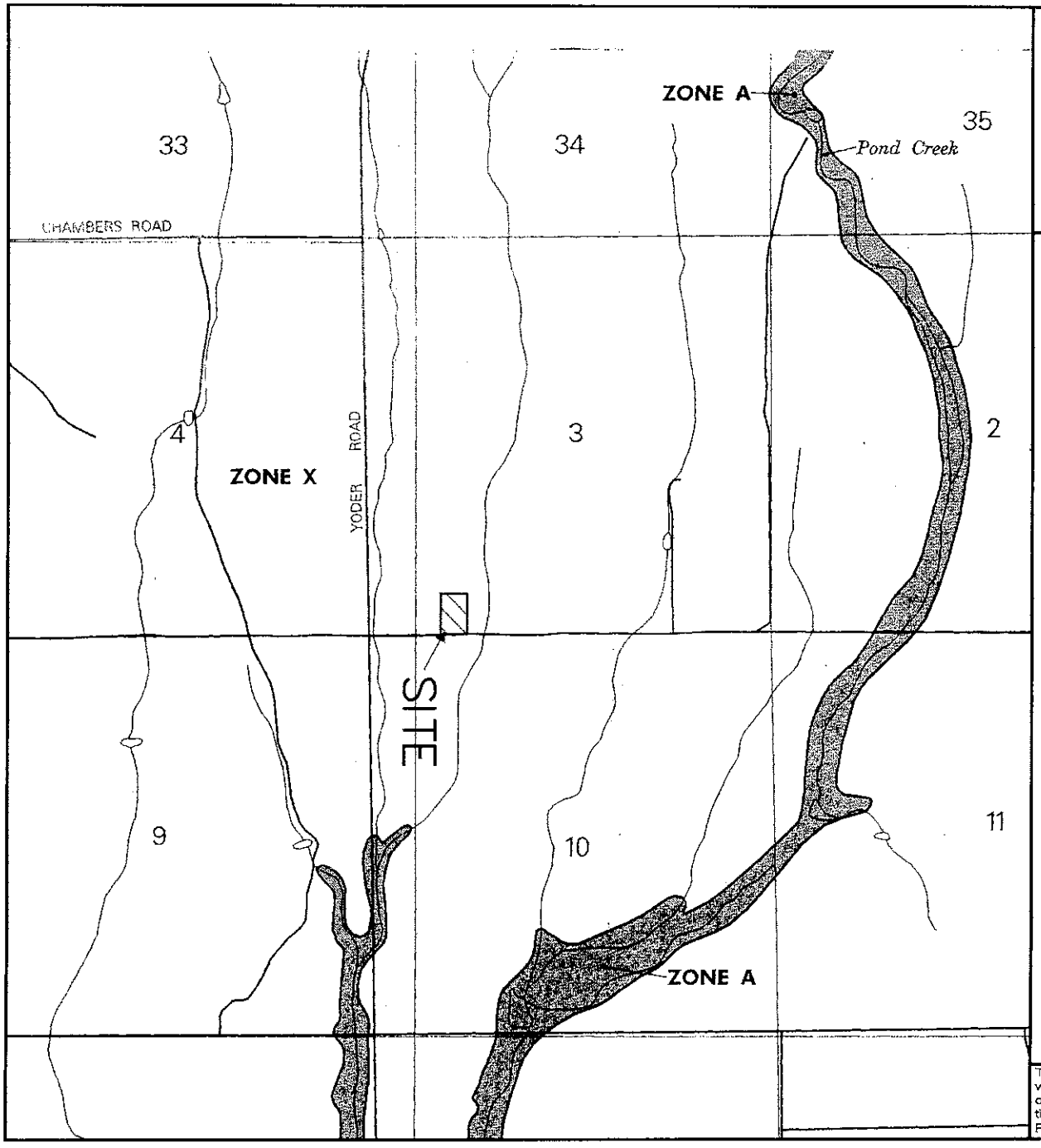
Date(s) aerial images were photographed: May 22, 2016—Mar 9, 2017

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
11	Bresser sandy loam, cool, 0 to 3 percent slopes	1.2	24.5%
97	Truckton sandy loam, 3 to 9 percent slopes	3.8	75.5%
Totals for Area of Interest		**5.0**	**100.0%**

FEMA FIRM MAP



APPROXIMATE SCALE IN FEET

2000 0 2000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 875 OF 1300

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY, UNINCORPORATED AREAS	080059	0875	F

MAP NUMBER 08041C0875 F

EFFECTIVE DATE: MARCH 17, 1997

Federal Emergency Management Agency

HYDROLOGIC CALCULATIONS

MVEA YODER SUBSTAITON
(Area Runoff Coefficient Summary)

HISTORIC

		DEVELOPED			*UNDEVELOPED*			*WEIGHTED*	
BASIN	**TOTAL AREA**	**AREA**	**C_5**	**C_{100}**	**AREA**	**C_5**	**C_{100}**	**C_5**	**C_{100}**
	(Acres)	*(Acres)*			*(Acres)*				
OS-1	11.85	0.00	0.30	0.50	11.85	0.09	0.36	0.09	0.36
OS-2	0.33	0.00	0.30	0.50	0.33	0.09	0.36	0.09	0.36
EXA	3.83	0.00	0.30	0.50	3.83	0.09	0.36	0.09	0.36
EXB	1.17	0.00	0.30	0.50	1.17	0.09	0.36	0.09	0.36

QNA
Date: 2/16/2018
Checked by: _____

DEVELOPED

		DEVELOPED			*UNDEVELOPED*			*WEIGHTED*	
BASIN	**TOTAL AREA**	**AREA**	**C_5**	**C_{100}**	**AREA**	**C_5**	**C_{100}**	**C_5**	**C_{100}**
	(Acres)	*(Acres)*			*(Acres)*				
OS-1	11.85	0.00	0.30	0.50	11.85	0.09	0.36	0.09	0.36
OS-2	0.33	0.00	0.30	0.50	0.33	0.09	0.36	0.09	0.36
A	1.38	1.02	0.30	0.50	0.36	0.09	0.36	0.25	0.46
A1	1.70	0.06	0.30	0.50	1.65	0.09	0.36	0.10	0.36
A2	0.75	0.16	0.30	0.50	0.59	0.09	0.36	0.14	0.39
B	1.17	0.00	0.30	0.50	1.17	0.09	0.36	0.09	0.36

QNA
Date: 2/16/2018
Checked by: _____

MVEA YODER SUBSTATION
AREA DRAINAGE SUMMARY

HISTORIC

BASIN	AREA TOTAL (Acres)	WEIGHTED C_5	WEIGHTED C_{100}	OVERLAND C_5	OVERLAND Length (ft)	OVERLAND Height (ft)	OVERLAND T_C (min)	STREET / CHANNEL FLOW Length (ft)	STREET / CHANNEL FLOW Slope (%)	STREET / CHANNEL FLOW Velocity (fps)	STREET / CHANNEL FLOW T_t (min)	T_t TOTAL (min)	INTENSITY I_5 (in/hr)	INTENSITY I_{100} (in/hr)	TOTAL FLOWS Q_5 (c.f.s.)	TOTAL FLOWS Q_{100} (c.f.s.)
		* For Calcs See Runoff Summary														
OS-1	11.85	0.09	0.36	0.09	100	1.2	17.8	1565	2.8%	2.2	11.9	29.6	2.5	4.1	2.7	17.4
OS-2	0.33	0.09	0.36	0.09	100	5.0	11.1	205	1.7%	2.1	1.6	12.7	3.7	6.4	0.1	0.7
EXA	3.83	0.09	0.36	0.09	86	1.9	13.5	531	1.3%	2.0	4.4	17.9	3.2	5.4	1.1	7.4
EXB	1.17	0.09	0.36	0.09	100	5.0	11.1	170	2.4%	2.6	1.1	12.2	3.8	6.5	0.4	2.7

Calculated by: QNA
Date: 2/16/2018
Checked by: _____

DEVELOPED

BASIN	AREA TOTAL (Acres)	WEIGHTED C_5	WEIGHTED C_{100}	OVERLAND C_5	OVERLAND Length (ft)	OVERLAND Height (ft)	OVERLAND T_C (min)	STREET / CHANNEL FLOW Length (ft)	STREET / CHANNEL FLOW Slope (%)	STREET / CHANNEL FLOW Velocity (fps)	STREET / CHANNEL FLOW T_t (min)	T_t TOTAL (min)	INTENSITY I_5 (in/hr)	INTENSITY I_{100} (in/hr)	TOTAL FLOWS Q_5 (c.f.s.)	TOTAL FLOWS Q_{100} (c.f.s.)
		* For Calcs See Runoff Summary														
OS-1	11.85	0.09	0.36	0.09	100	1.2	17.8	1565	2.8%	2.2	11.9	29.6	2.5	4.1	2.7	17.4
OS-2	0.33	0.09	0.36	0.09	100	5.0	11.1	205	1.7%	2.0	1.7	12.8	3.7	6.3	0.1	0.7
A	1.38	0.25	0.46	0.30	100	1.3	13.7	125	1.0%	2.0	1.0	14.8	3.5	5.9	1.2	3.8
A1	1.70	0.10	0.36	0.09	100	5.0	11.1	550	0.9%	1.5	6.1	17.2	3.3	5.5	0.5	3.4
A2	0.75	0.14	0.39	0.09	89	2.0	13.6	68	1.5%	2.1	0.5	14.2	3.6	6.1	0.4	1.8
B	1.17	0.09	0.36	0.09	100	3.0	13.1	63	5.4%	3.7	0.3	13.4	3.6	6.2	0.4	2.6

Calculated by: QNA
Date: 2/16/2018
Checked by: _____

MVEA YODER SUBSTATION
SURFACE ROUTING SUMMARY

HISTORIC									
Design Point(s)	*Contributing Basins*	*Area (Acres)*	*Equivalent* CA_5	*Equivalent* CA_{100}	*Maximum* T_C	*Intensity*		*Flow*	
						I_5	I_{100}	Q_5	Q_{100}
1	OS-1 & EXA	15.69	1.41	5.65	29.6	2.5	4.1	3.5	23.0
2	OS-2, & EXB	1.49	0.13	0.54	12.7	3.7	6.4	0.5	3.4

DEVELOPED									
Design Point(s)	*Contributing Basins*	*Area (Acres)*	*Equivalent* CA_5	*Equivalent* CA_{100}	*Maximum* T_C	*Intensity*		*Flow*	
						I_5	I_{100}	Q_5	Q_{100}
1A	OS-1 & A1	13.55	1.23	4.89	29.6	2.5	4.1	3.1	19.9
1	OS-1, A1, & A2 EDB Release	15.69	1.34	5.38	29.6	2.5	4.1	3.3	21.9
2	OS-1, & B	1.49	0.13	0.54	12.8	3.7	6.3	0.5	3.4

Date: 2/16/2018

Checked by: _____

HYDRAULIC CALCULATIONS

Free Online Manning Pipe Flow Calculator

>> Nationalism not welcome here. <<

Manning Formula Uniform Pipe Flow at Given Slope and Depth

Can you help me translate, program, or host these calculators? (../contact.php) [Hide this request]

Check out our newest spreadsheet update: Download Spreadsheet (spreadsheet/Manning-Pipe-Flow.xlsx) Open Google Sheets version (spreadsheet/Manning-Pipe-Flow.php) View All Spreadsheets (http://www.hawsedc.com/engcalcs/SpreadsheetLibrary.php)
--CAUTION: If you have downloaded the spreadsheet prior to September 24, you may have received incorrect results!--

Pipe Run 1

12" Pond outlet

Set units: m | mm | ft | in

Pipe diameter, d_0	12	in
Manning roughness, n ? (http://www.engineeringtoolbox.com/mannings-roughness-d_799.html)	.013	
Pressure slope (possibly ? (../pressureslope.php) equal to pipe slope), S_0	.5	% rise/run
Percent of (or ratio to) full depth (100% or 1 if flowing full)	39	%

Results

Flow, Q	0.8104	cfs
Velocity, v	2.8575	ft/sec
Velocity head, h_v	0.1269	ft
Flow area	0.2836	ft^2
Wetted perimeter	1.3490	ft
Hydraulic radius	0.2102	ft
Top width, T	0.9755	ft
Froude number, F	0.93	
Shear stress (tractive force), tau	0.1218	psf

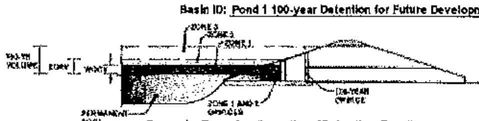
DETENTION CALCULATIONS

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

UD-Detention, Version 3.07 (February 2017)

Project: Gold Hill Mesa MDDP Amendment

Basin ID: Pond 1 100-year Detention for Future Development



Example Zone Configuration (Retention Pond)

Required Volume Calculation

Selected BMP Type =	EDB			
Watershed Area =	1.38	acres		
Watershed Length =	300	ft		
Watershed Slope =	0.010	ft/ft		
Watershed Imperviousness =	40.74%	percent		
Percentage Hydrologic Soil Group A =	75.5%	percent		
Percentage Hydrologic Soil Group B =	24.5%	percent		
Percentage Hydrologic Soil Groups C/D =	0.0%	percent		
Desired WQCV Drain Time =	40.0	hours		
Location for 1-hr Rainfall Depths =	User Input			
Water Quality Capture Volume (WQCV) =	0.021	acre-feet	Optional User Override 1-hr Precipitation	
Excess Urban Runoff Volume (EURV) =	0.061	acre-feet		
2-yr Runoff Volume (P1 = 1.19 in.) =	0.043	acre-feet	1.19	inches
5-yr Runoff Volume (P1 = 1.5 in.) =	0.057	acre-feet	1.50	inches
10-yr Runoff Volume (P1 = 1.75 in.) =	0.074	acre-feet	1.75	inches
25-yr Runoff Volume (P1 = 2 in.) =	0.099	acre-feet	2.00	inches
50-yr Runoff Volume (P1 = 2.25 in.) =	0.126	acre-feet	2.25	inches
100-yr Runoff Volume (P1 = 2.52 in.) =	0.159	acre-feet	2.52	inches
500-yr Runoff Volume (P1 = 3 in.) =	0.224	acre-feet	3.00	inches
Approximate 2-yr Detention Volume =	0.040	acre-feet		
Approximate 5-yr Detention Volume =	0.054	acre-feet		
Approximate 10-yr Detention Volume =	0.068	acre-feet		
Approximate 25-yr Detention Volume =	0.082	acre-feet		
Approximate 50-yr Detention Volume =	0.091	acre-feet		
Approximate 100-yr Detention Volume =	0.105	acre-feet		

Stage-Storage Calculation

Zone 1 Volume (WQCV) =	0.021	acre-feet
Zone 2 Volume (EURV - Zone 1) =	0.040	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	0.045	acre-feet
Total Detention Basin Volume =	0.105	acre-feet
Initial Surcharge Volume (ISV) =	user	ft^3
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	
Initial Surcharge Area (A_{ISV}) =	user	ft^2
Surcharge Volume Length (L_{ISV}) =	user	ft
Surcharge Volume Width (W_{ISV}) =	user	ft
Depth of Basin Floor (H_{FLOOR}) =	user	ft
Length of Basin Floor (L_{FLOOR}) =	user	ft
Width of Basin Floor (W_{FLOOR}) =	user	ft
Area of Basin Floor (A_{FLOOR}) =	user	ft^2
Volume of Basin Floor (V_{FLOOR}) =	user	ft^3
Depth of Main Basin (H_{MAIN}) =	user	ft
Length of Main Basin (L_{MAIN}) =	user	ft
Width of Main Basin (W_{MAIN}) =	user	ft
Area of Main Basin (A_{MAIN}) =	user	ft^2
Volume of Main Basin (V_{MAIN}) =	user	ft^3
Calculated Total Basin Volume (V_{total}) =	user	acre-feet

Depth Increment = 0.25 ft

Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	124	0.003		
	--	0.25	--	--	--	2,437	0.056	296	0.007
	--	0.50	--	--	--	4,750	0.109	1,171	0.027
	--	0.75	--	--	--	5,049	0.116	2,393	0.055
	--	1.00	--	--	--	5,348	0.123	3,690	0.085
	--	1.25	--	--	--	5,647	0.130	5,061	0.116
	--	1.50	--	--	--	5,946	0.137	6,507	0.149
	--	1.75	--	--	--	6,264	0.144	8,030	0.184
	--	2.00	--	--	--	6,582	0.151	9,633	0.221
	--		--	--	--				
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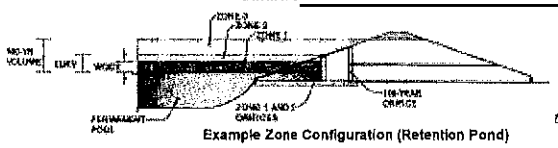
Detention Basin Outlet Structure Design

UD-Detention, Version 3.07 (February 2017)

Project: _____

Basin ID: _____



Example Zone Configuration (Retention Pond)

	Stage (ft)	Zone Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	0.44	0.021	Orifice Plate
Zone 2 (EURV)	0.79	0.040	Orifice Plate
Zone 3 (100-year)	1.16	0.045	Weir&Pipe (Restrict)
		0.105	Total

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)
Underdrain Orifice Diameter =	N/A	inches

Calculated Parameters for Underdrain

Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Centroid =	N/A	feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate =	0.79	ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing =	3.16	inches
Orifice Plate: Orifice Area per Row =	0.30	sq. inches (diameter = 5/8 inch)

Calculated Parameters for Plate

WQ Orifice Area per Row =	2.083E-03	ft^2
Elliptical Half-Width =	N/A	feet
Elliptical Slot Centroid =	N/A	feet
Elliptical Slot Area =	N/A	ft^2

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	0.30	0.60					
Orifice Area (sq. inches)	0.30	0.30	0.30					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter =	N/A	N/A	inches

Calculated Parameters for Vertical Orifice

	Not Selected	Not Selected	
Vertical Orifice Area =	N/A	N/A	ft^2
Vertical Orifice Centroid =	N/A	N/A	feet

User Input: Overflow Weir (Dropbox) and Grate (Flat or Sloped)

	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	1.16	N/A	ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length =	2.00	N/A	feet
Overflow Weir Slope =	0.00	N/A	H:V (enter zero for flat grate)
Horiz. Length of Weir Sides =	2.00	N/A	feet
Overflow Grate Open Area % =	70%	N/A	%, grate open area/total area
Debris Clogging % =	50%	N/A	%

Calculated Parameters for Overflow Weir

	Zone 3 Weir	Not Selected	
Height of Grate Upper Edge, H_t =	1.16	N/A	feet
Over Flow Weir Slope Length =	2.00	N/A	feet
Grate Open Area / 100-yr Orifice Area =	3.57	N/A	should be ≥ 4
Overflow Grate Open Area w/o Debris =	2.80	N/A	ft^2
Overflow Grate Open Area w/ Debris =	1.40	N/A	ft^2

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.52	N/A	ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter =	12.00	N/A	inches
Restrictor Plate Height Above Pipe Invert =	12.00		inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

	Zone 3 Restrictor	Not Selected	
Outlet Orifice Area =	0.79	N/A	ft^2
Outlet Orifice Centroid =	0.50	N/A	feet
Half-Central Angle of Restrictor Plate on Pipe =	3.14	N/A	radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	1.66	ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length =	10.00	feet
Spillway End Slopes =	4.00	H:V
Freeboard above Max Water Surface =	0.15	feet

Calculated Parameters for Spillway

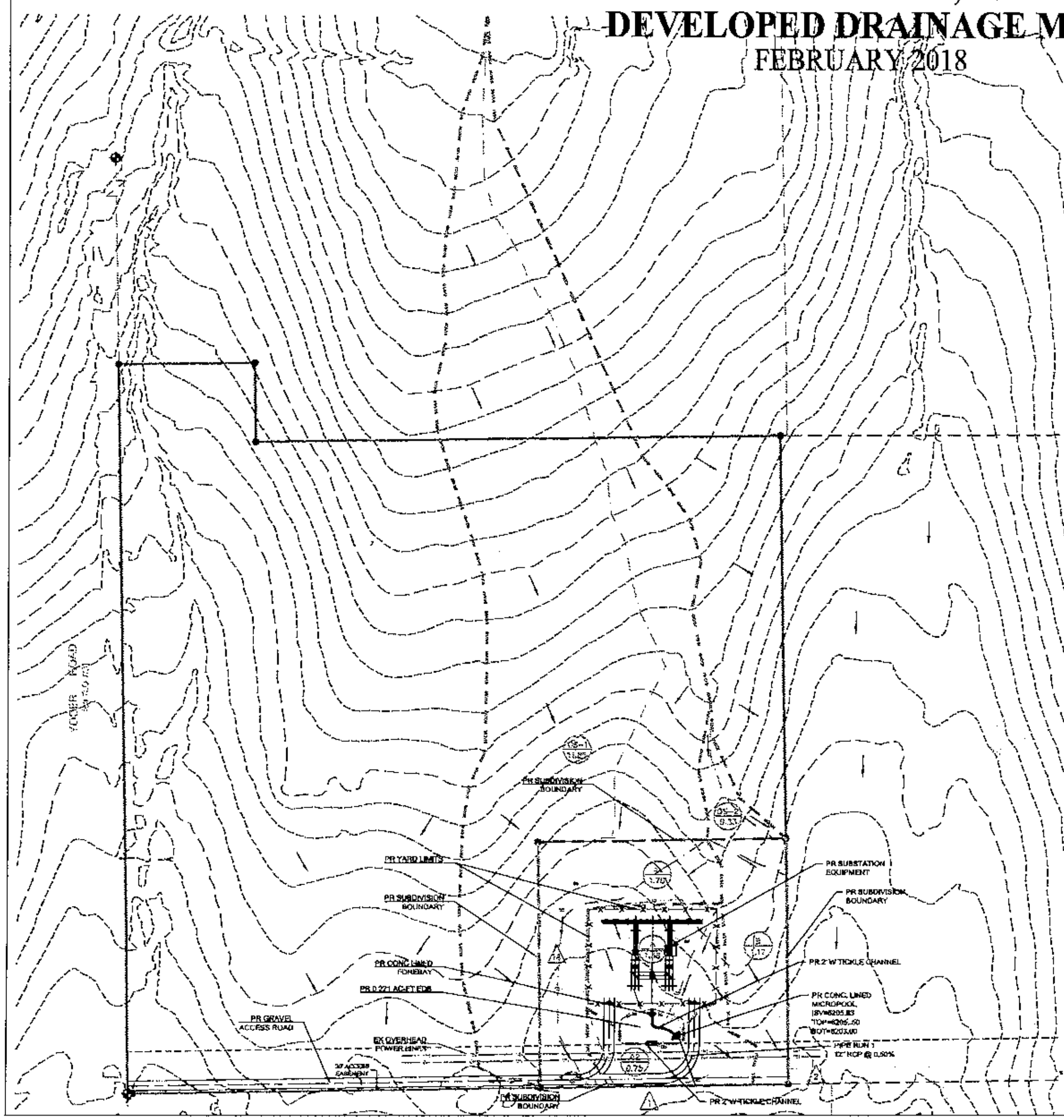
Spillway Design Flow Depth=	0.19	feet
Stage at Top of Freeboard =	2.00	feet
Basin Area at Top of Freeboard =	0.15	acres

Routed Hydrograph Results

Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	0.53	1.07	1.19	1.50	1.75	2.00	2.25	2.52	3.00
Calculated Runoff Volume (acre-ft) =	0.021	0.061	0.043	0.057	0.074	0.099	0.126	0.159	0.224
OPTIONAL Override Runoff Volume (acre-ft) =									
Inflow Hydrograph Volume (acre-ft) =	0.020	0.060	0.042	0.057	0.073	0.099	0.125	0.159	0.224
Predevelopment Unit Peak Flow, q (cfs/acre) =	0.00	0.00	0.00	0.01	0.06	0.18	0.37	0.65	1.19
Predevelopment Peak Q (cfs) =	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.9	1.6
Peak Inflow Q (cfs) =	0.4	1.0	0.7	1.0	1.2	1.7	2.1	2.6	3.7
Peak Outflow Q (cfs) =	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	1.9
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	1.5	0.3	0.1	0.4	0.9	1.1
Structure Controlling Flow =	Plate	Plate	Plate	Plate	Plate	Plate	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	0.0	0.3	0.6
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	43	72	62	70	78	88	91	89	84
Time to Drain 99% of Inflow Volume (hours) =	45	77	65	75	83	95	99	98	96
Maximum Ponding Depth (ft) =	0.41	0.76	0.61	0.73	0.87	1.07	1.21	1.29	1.39
Area at Maximum Ponding Depth (acres) =	0.09	0.12	0.11	0.12	0.12	0.12	0.13	0.13	0.13
Maximum Volume Stored (acre-ft) =	0.019	0.056	0.039	0.054	0.069	0.095	0.111	0.121	0.135

DRAINAGE MAPS

MVEA YODER SUBSTATION
EL PASO COUNTY, CO
DEVELOPED DRAINAGE MAP
FEBRUARY 2018



PIPE RUN SUMMARY

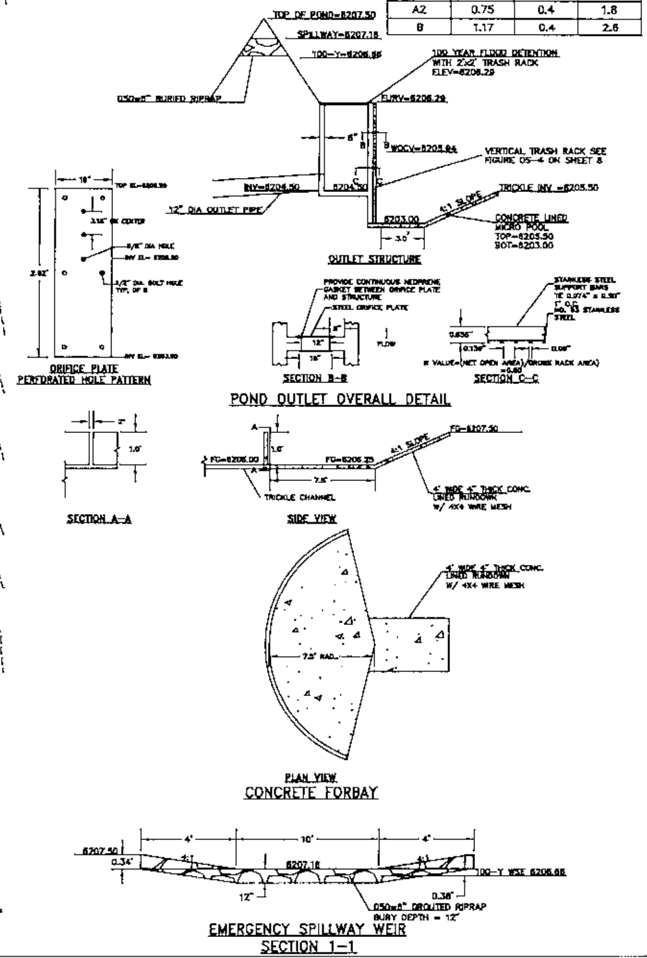
PIPE RUN	CONTRIBUTING DESIGN POINTS	AREA AC.	Q5 CFS	Q100 CFS	MIN. SLOPE	SIZE
1	POND RELEASE	1.38	0.0	0.8	0.50%	12"

DESIGN POINT SUMMARY

DP	CONTRIBUTING BASINS	AREA AC.	Q5 CFS	Q100 CFS
1A	OS-A & A1	13.55	3.1	19.9
1	OS-A, A, A1, & A2	15.69	3.3	21.9
2	OS-1 & OS-B	1.49	0.5	3.4

PROPOSED CONDITIONS

BASIN	ACRES	Q5 CFS	Q100 CFS
OS-1	11.85	2.7	17.4
OS-2	0.33	0.1	0.7
A	1.38	1.2	3.8
A1	1.70	0.5	3.4
A2	0.75	0.4	1.8
B	1.17	0.4	2.6



NO.	DESCRIPTION	DATE
	REVISIONS	

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
MVEA
ATTN: DAVE WALDNER
11140 E. WOODMEN RD
PEYTON, CO 80831
(719) 495-2283

MVEA YODER SUBSTATION

DEVELOPED DRAINAGE MAP

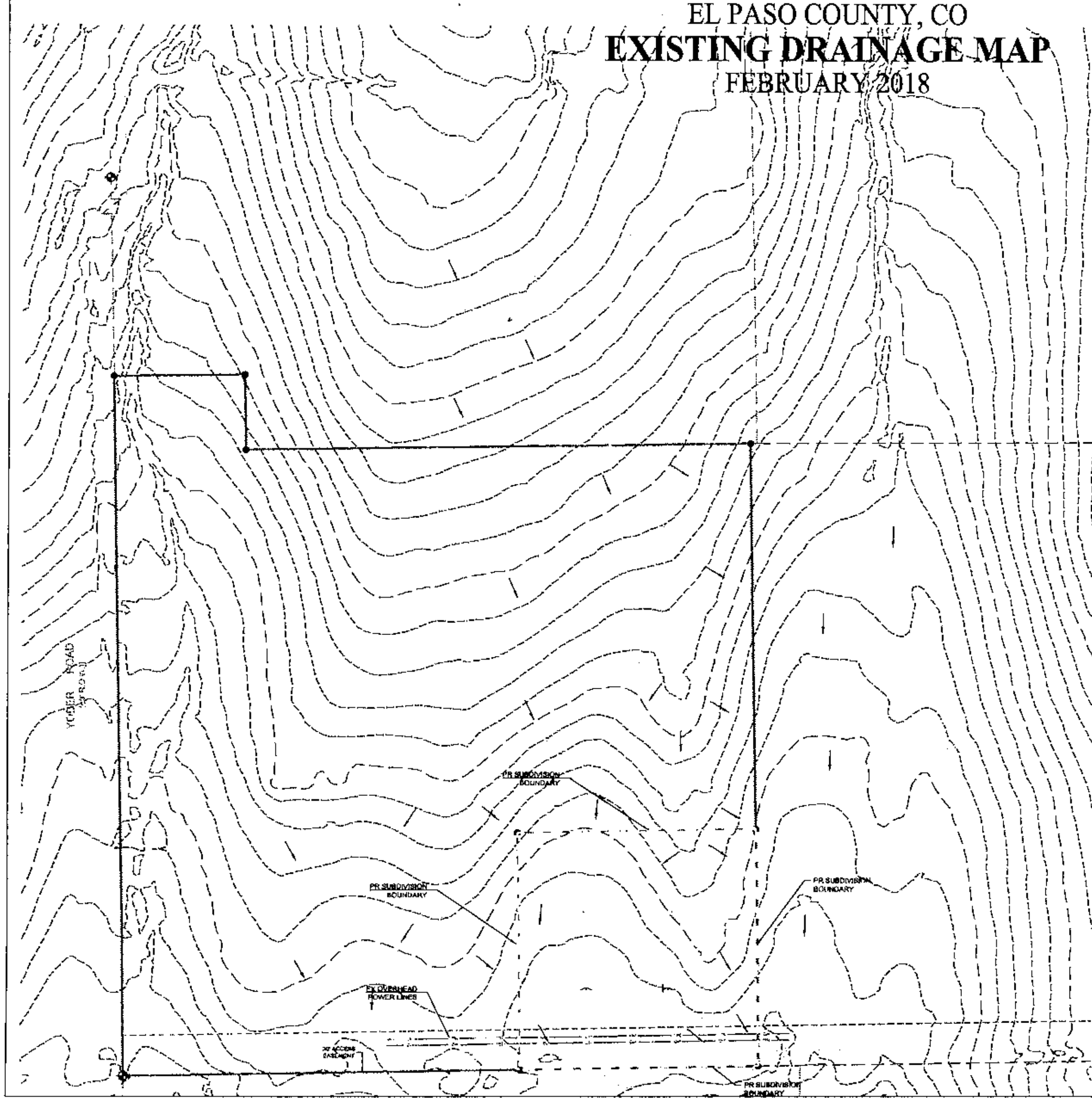
DESIGNED BY	ONA
DRAWN BY	ONA
CHECKED BY	
H-SCALE	1"=100'
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/17/18
SHEET NO.	1 OF 1

MVEA YODER SUBSTATION

EL PASO COUNTY, CO

EXISTING DRAINAGE MAP

FEBRUARY 2018



DESIGN POINT SUMMARY

DP	CONTRIBUTING BASINS	AREA AC.	Q5 CFS	Q100 CFS
1	OS-1 & EXA	15.69	3.5	23.0
2	OS-2 & EXB	1.49	0.5	3.4

PROPOSED CONDITIONS

BASIN	ACRES	Q5 CFS	Q100 CFS
OS-1	11.85	2.7	17.4
OS-2	0.33	0.1	0.7
A	1.38	1.2	3.8
A1	1.70	0.5	3.4
A2	0.75	0.4	1.8
B	1.17	0.4	2.6

LEGEND

10' EX CONTOUR — 6810
2' EX CONTOUR — 6802
10' PROP. CONTOUR — 6810
2' PROP. CONTOUR — 6802
PROPOSED FLOW DIRECTION
BASIN BOUNDARY
TIME OF CONCENTRATION
BASIN ID — A
ACREAGE — 0.37
DESIGN POINT — 3

N

100' 0 100' 200'

SCALE: 1"=100'

NO.	REVISIONS DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

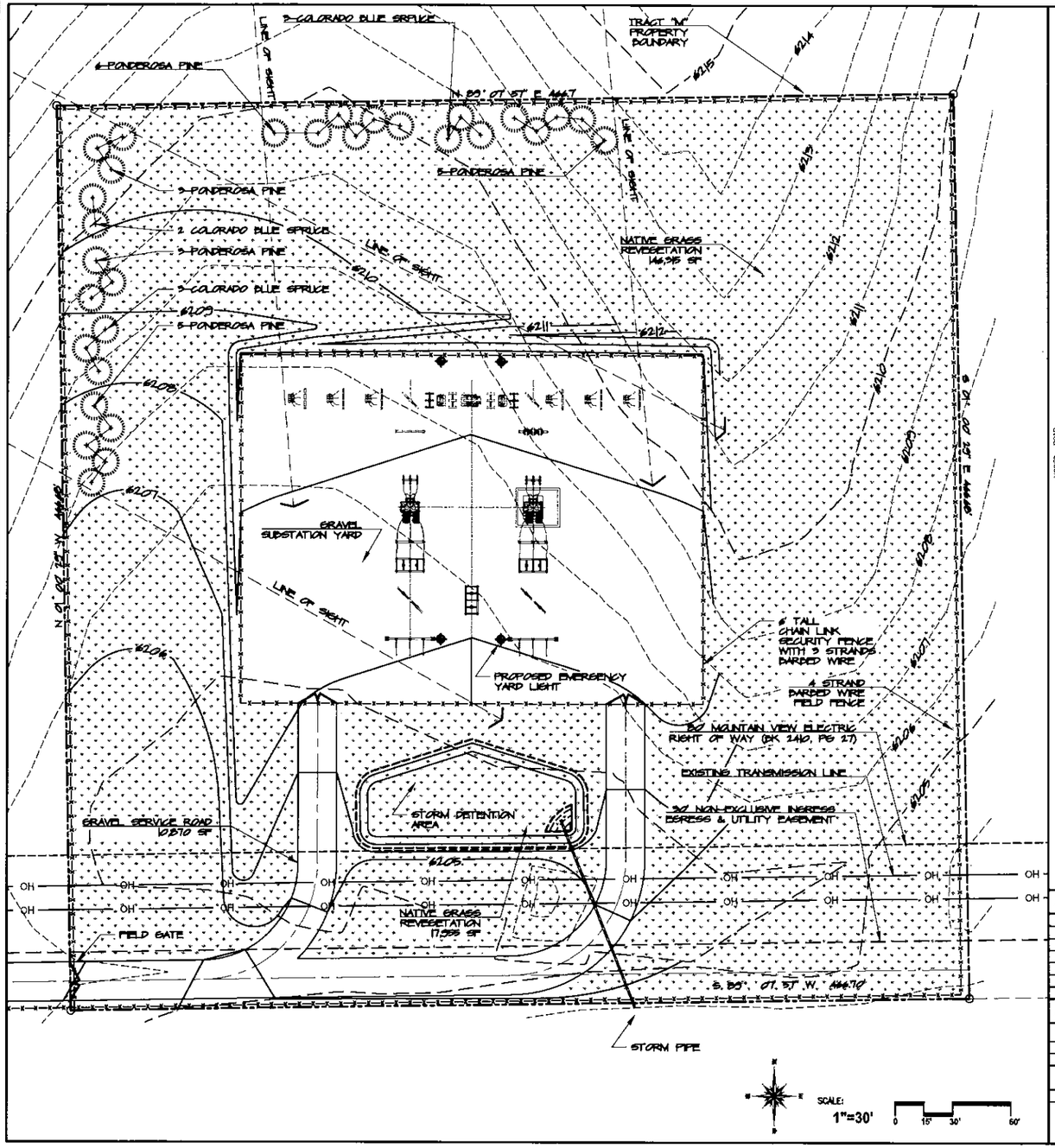
PREPARED FOR:
MVEA
ATTN: DAVE WALDNER
11140 E. WOODMEN RD
PEYTON, CO 80831
(719) 495-2283

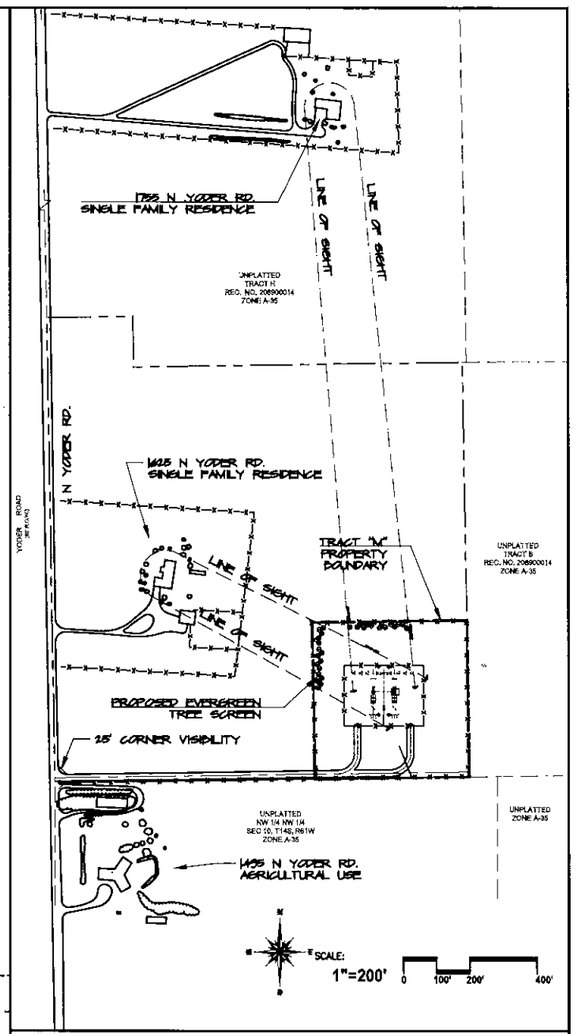
Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426

MVEA YODER SUBSTATION

EXISTING DRAINAGE MAP

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=100'
V-SCALE	NA
JOB NO.	1802.00
DATE ISSUED	2/17/18
SHEET NO.	1 OF 1





LANDSCAPE TABULATIONS

	ITEM	%	QTY	UNIT
1	GRAVEL MULCH/DRIVEWAY	22	93,890	SF
2	NATIVE SEED REVEGETATION	78	344,310	SF
3	TOTAL SITE AREA	100	371,000	SF
4	5% OF NATIVE SEED AREA	5	8,215	SF
5	MINIMUM SCREEN TREE REQUIREMENT - 1 PER 500 SF NATIVE SEED AREA		17	EA
6	PROPOSED EVERGREEN SCREEN TREES		30	EA

PLANT LIST

QTY	UNIT	COMMON NAME	BOTANICAL NAME	SIZE	NOTES	MATURE HEIGHT	MATURE SPREAD	DETAIL
22	EA	PONDEROSA PINE	PINUS PONDEROSA	6'		40-50'	20-30'	A
8	EA	COLORADO BLUE SPRUCE	PICEA PUNGENS	6'		40-50'	15'-18'	A

SEEDING SPECIFICATION

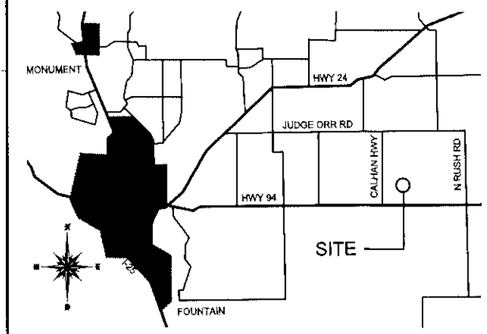
QTY	UNIT	NAME	RATE	MIX
100	LBS	LOW GROW MIX	25 LBS/ ACRE	30% Ephraim Crested Wheatgrass 25% Sheep Fescue 20% Perennial Rye. 9% Chewings Fescue 16% Canada Bluegrass

LEGEND

- PROPOSED SEEDING
- PROPOSED EVERGREEN TREE
- EXISTING OVERHEAD LINE — OH —
- EASEMENT LINE
- PROPERTY LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED FENCE LINE
- PROPOSED EMERGENCY YARD LIGHT

MARK BUTTON 659 — Original Date of Licensure — STATE OF COLORADO — LICENSED LANDSCAPE ARCHITECT

VICINITY MAP



TREE PLANTING DETAIL "A"

GENERAL NOTES

1. THESE ARE CONSTRUCTION DOCUMENT LANDSCAPE PLANS FOR THE SITE LANDSCAPING AT THE YODER STATION LOCATED APPROXIMATELY 1 MILE NORTH OF EL PASO COUNTY HIGHWAY 94 ON NORTH YODER RD, CALHAN CO.
2. THE EXTENT OF THIS LANDSCAPE INSTALLATION INCLUDES:
   - SEEDING OF NATIVE GRASSES
   - PLANTING OF TREES
3. THE EXISTING LANDSCAPE, WITHIN THE WORK AREA IS MOSTLY DRY LAND UNDEVELOPED.
4. MAINTENANCE OF THE LANDSCAPE, AFTER FINAL ACCEPTANCE, WILL BE BY CONTRACTOR TO MAINTAIN UNTIL THE END OF THE WARRANTY PERIOD AT SUCH A TIME WHEN MVEA WILL ASSUME ALL FUTURE MAINTENANCE OF TREES AND NATIVE GRASS.
4. EXISTING UTILITIES- UNDERGROUND AND OTHERWISE EXIST ALONG THE CORRIDOR AND PROJECT AREA. ALL CONTRACTORS SHALL PROTECT IN PLACE ALL EXISTING UTILITIES DURING CONSTRUCTION. EXISTING UTILITIES NOTED ON THESE DRAWINGS ARE FOR REFERENCE ONLY AND MAY NOT ILLUSTRATE ALL UTILITIES THAT EXIST. ADDITIONAL COMMUNICATION CABLES SUCH AS TELEPHONE AND CABLE TV MAY EXIST ON OR NEAR THIS PROPERTY. LANDSCAPE CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY OWNER OF ANY POTENTIAL CONFLICTS WITH PROPOSED CONSTRUCTION. ALL RESPONSIBILITY FOR DAMAGES RESULTING FROM HITTING EXISTING UTILITIES.
5. ALL CONSTRUCTION IS TO ADHERE TO EL PASO COUNTY AND STATE OF COLORADO STANDARDS UNLESS OTHERWISE NOTED.
6. SOIL PREPARATION FOR LANDSCAPE AREAS SHALL CONSIST OF RIPPING AND DRAGGING DISTURBED AND COMPACTED AREAS ONLY. DRILL SEEDING OF ENTIRE NATIVE SEED AREA, MULCHING WITH WEED FREE STRAW MULCH AND CRIMPING. INSTALL PLANTERS MIX TOPSOIL AROUND ALL TREES PER DETAILS.
7. PROPOSED EVERGREEN TREES SHALL BE HAND WATERED PERIODICALLY TO MAINTAIN TREE VIGOR.
8. YARD LIGHTING WILL ONLY BE LIT DURING EMERGENCIES.

Visual Environments
Landscape Architecture/ Planning/GIS
(303) 646-2985
P.O. 1263, Elizabeth, CO 80107

OWNER/DEVELOPER:
MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC.
Your Touchstone Energy® Cooperative
11140 E WOODMEN RD.
FALCON, CO 80831-8199
(719) 495 - 2283 VOICE
(719) 495 - 3814 FAX

811 Know what's below Call before you dig.

ENG:	MB
DWN:	MB
CHK:	MB
DATE:	2/14/18

CLIENT/PROJECT: MOUNTAIN VIEW ELECTRIC ASSOCIATION
YODER SUBSTATION

TITLE: **LANDSCAPE PLAN**

CASE ID# EA-17-205

PAGE: 1 OF 1

SHEET: L-1

REVISION: 2/14/18

EXHIBIT H

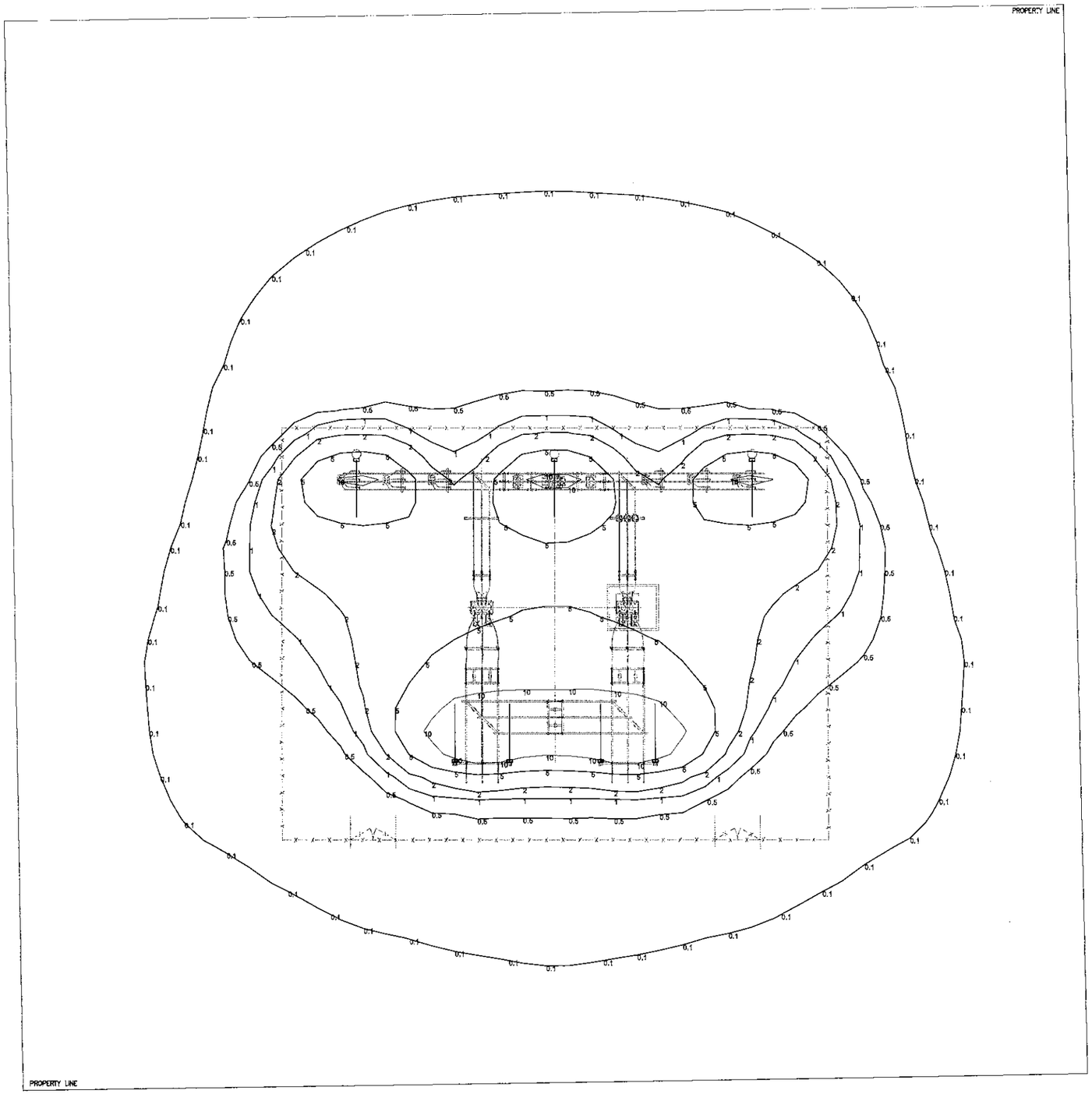
UT-3-W

LEGI-SIGN®

HIGH VOLTAGE

EXHIBIT I

PRELIMINARY
NOT FOR CONSTRUCTION FOR CONCEPTUAL PURPOSES ONLY



NOTES:
1. LIGHTING WILL BE UTILIZED FOR EMERGENCY OPERATIONS ONLY.
2. INSTALLATION: TILT ALL FIXTURES TO 45°. DIRECT LIGHT DISTRIBUTION ACCORDING TO THE AIM LINES AS INDICATED ON THIS PLAN.
3. FIXTURE INSTALLATION HEIGHT IS APPROXIMATELY 35 FEET.
4. RESULTS MEASURED AT GRADE. FOR COMPLETE TECHNICAL DETAILS AND ASSUMPTIONS, SEE THE ILLUMINATION STUDY.

LEGEND:

261W LED FLOODLIGHT
HOLOPHANE PWLED 6_SK_10A_66

—ft—ft— CONTOUR AT ?? FOOTCANDLES

No.	Date	Description	Init.
A	04/13/18	ISSUED FOR REVIEW	BF

Drawing Title: Reference Drawings
Mfgr.
Dwg. No.:

YODER SUBSTATION
69-12.47kV
ILLUMINATION PLAN

MOUNTAIN VIEW ELECTRIC ASSOCIATION, INCORPORATED
Contract:
UPDATED BY: NNOWMAN 4/13/2018 8:58 AM
PATH: P:\3000\3075.001 mveа - elmа & yoder substation preliminary design\LDrawings\LMEP\YODER\E8-01 ILLUMINATION PLAN.dwg

MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC.
Your Reliable Energy Partner
11140 E. WOODMAN RD.
FALCON CO. 80831

Dsn:	NN	Date:	4/13/18
Appd:	BF	Date:	04/13/18

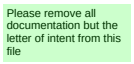
E8-01

PREPARED BY:
mEP incorporated
electric power engineering
P.O. Box 1300, Divide, CO 80814
(719) 686-1986 www.mepeng.com

EXHIBIT J

Markup Summary

Locked (2)



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Color:

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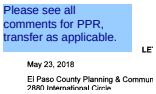

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Please see all comments for PPR, transfer as applicable.

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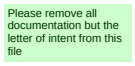

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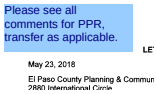

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Author: dsdsevigny
Date: 7/9/2018 12:41:48 PM
Color:

This application is for the Administrative Relief, Section 5.5.1