COMMISSION

Mike Simone, Chairperson
Bushrod White, Vice-Chairperson
Carlos Barron
Thomas Holton
Kathy Kvasnicka
Thomas Meyers
Paul Weber

Planning Commission Agenda
Regular Meeting
Fort Lupton City Hall – 130 S. McKinley Ave.*
Thursday, November 18, 2021
6:00 P.M.
(Order & Contents Subject to Change by Action of the Commission)

**** Login information on how to attend this meeting virtually (optional) is on the second page of this Agenda.***

Call to Order – Roll Call

Approval of Agenda

Consent Agenda – Consent Agenda items are considered routine and will be enacted by one motion and vote. There will be no separate discussion of Consent Agenda items unless a Commission member so requests, in which case the item may be removed from the Consent Agenda and considered at the end of the Consent Agenda.

a. Approval of the Minutes of the November 3, 2021 Meeting

Public Comment – This portion of the Agenda is provided to allow members of the audience to present comments to the Planning Commission related to items not otherwise listed on the Agenda.

Action Items

a. **P2021-026 SB Weakland Investments Amended Site Plan**

Discussion Items

a. Review of Meeting Discussion
b. Development Code Update

Future Business

a. Planning Commission Meeting on Thursday, December 9, 2021 at 6:00 PM

Adjourn

Virtual Meeting Instructions

Planning Commission Meeting

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When calling in, please be sure to mute your microphone on your computer, phone or tablet. Planning staff and/or the Chairman of the Planning Commission will provide instructions on when and how comments can be made by the public virtually.

RESOLUTION NO. P2021-026

A RESOLUTION OF THE PLANNING COMMISSION OF FORT LUPTON RECOMMENDING TO CITY COUNCIL APPROVAL OF THE SB WEAKLAND INVESTMENTS AMENDED SITE PLAN FOR THE DEPLOYMENT AND STORAGE OF SATELLITE CALIBRATION EQUIPMENT ON A PROPERTY LOCATED IN PART OF THE NORTHWEST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO.

WHEREAS, the Planning Commission held a public hearing on November 18, 2021, for the purpose of reviewing SB Weakland Investments, LLC and MAXAR Technologies, Inc.'s application for a site plan for the deployment and storage of satellite calibration equipment in addition to previously approved outdoor storage and vehicle parking; and

WHEREAS, after review of the application and supporting information, the Planning Commission finds that the site plan conforms to Colorado Revised Statutes and City codes and policies therein, and

WHEREAS, all legal requirements for the public hearing have been met including publication of the legal notice in the Fort Lupton Press, mailing of public hearing notices to adjacent property owners within 100 feet, and posting of the hearing on the site.

NOW THEREFORE BE IT RESOLVED, the Planning Commission has taken into consideration all referral comments and any citizen testimony in response to this application. Based upon the facts presented on this date, the Planning Commission hereby recommends approval of the SB Weakland Investments Amended Site Plan, conditional upon the following:

I. Prior to recording the site plan map:

A. Any redline comments provided by staff shall be made to the site plan map.

B. Applicant shall provide written acknowledgement of the comments from United Power.

C. Applicant shall provide written evidence that the comments from the Public Works Director have been adequately addressed including completion of the construction of Pond M and remaining overall drainage improvement from the previously approved site plan.

D. Applicant shall provide written acknowledgement of the comments from Jose Gonzalez with Pro Code, Inc.

E. Applicant shall provide a copy of agreement with the sanitation company for potable and black/gray water service.

F. Applicant shall enter into an Improvements Agreement which will require the site to be connected to City Water and sewer within 2 years of site plan recording.

G. The following notes shall be placed on the site plan map:

1. Dead and dying landscape material shall be replaced at the earliest reasonable date.

2. Any proposed signage shall be submitted to the City for review and permitting.

II. Applicant shall complete the above conditions of approval and provide a Mylar of the site plan within 180 days of City Council approval.

III. Prior to the release of building permits:

A. Applicant shall provide all required documents for review of the building permit(s), including the following:

1. Code Analysis stamped by Architect, specifying use, occupant load, hours, seasons of operation.

2. Accessibility compliance details.

3. Structure design information, anchorage details showing compliance with local design requirements and state insignia.

4. Electrical one-line details.

5. Copy of agreement with the sanitation company for potable and black/gray water service.

DONE THIS 18th DAY OF NOVEMBER, 2021, BY THE PLANNING COMMISSION FOR THE CITY OF FORT LUPTON, COLORADO.

_____
Chairman

ATTEST:

_____
Planning Director

Commented [ML1]: Is this the best way?

Commented [ML2]: Verify this language

SB WEAKLAND INVESTMENTS AMENDED SITE PLAN
STAFF REPORT
PROJECT NO. LUP2021-0025/ PLAN NO. SPR2021-0008

PROJECT DESCRIPTION

Project No.: LUP2021-0025 / Plan No. SPR2021-0008

Project Name: SB Weakland Investments Amended Site Plan

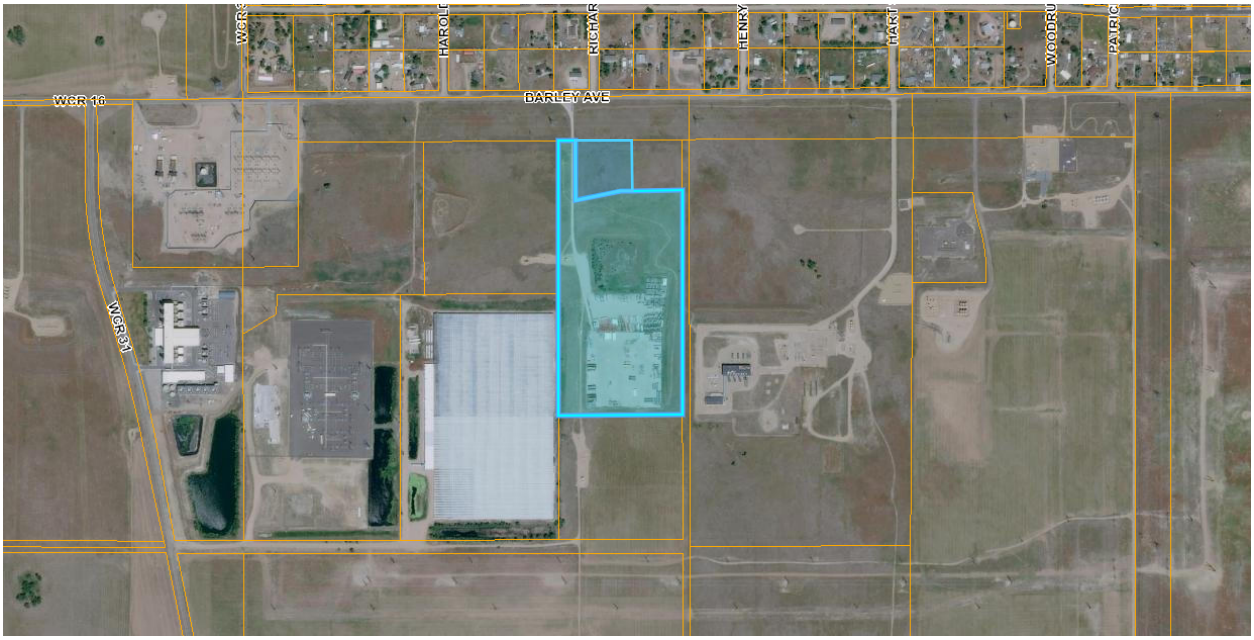
Owner: Scott and Barbara Weakland, SB Weakland Investments, LLC

User: Al Mezarina, MAXAR Technologies, Inc.

Representative: Chadwin Cox, Western Engineering Consultants, Inc. LLC

Location of Request:

The site is located in part of the Northwest Quarter of Section 34, Township 2 North, Range 66 West of the Sixth Principal Meridian, City of Fort Lupton, County of Weld, State of Colorado. The site is located approximately 0.52 Miles east of County Road 31 and 0.05 miles south of County Road 16 (the "Property").



The property is currently zoned I-2 Heavy Industrial. Adjacent properties to the north, south, and west are also zoned I-2 Heavy Industrial. To the east is unincorporated Weld County, with Agricultural zoning.

Nature of Request:

The Applicant has submitted an amended site plan application. A previous site plan, known as the SB Weakland Investments Site Plan, depicted outdoor equipment storage on Yard A and a trucking business parking yard on Yard B, both of which are unchanged in this proposal. Yard C was previously approved for outdoor storage, however this amended site plan is changing the use of Yard C. This area, which also includes the addition of 2.498 acres of "Remaining Parcel A-1" is proposed to be used by MAXAR Technologies, Inc. The proposal includes onsite and/or mobile calibration equipment operations. This type of activity includes calibration target panels which are laid out at specific times, and then stored on the property. Employees will utilize a construction trailer and/or RV as office space during the times when the target panels are layed out.

One to two employees are expected to be on site for approximately 4 hours, 1-2 times per week. After 2 years, water and sewer are required to be brought to the site.

Site Size: The Property is 25.458 acre, more or less.

Zone District: I-2 Heavy Industrial District.

Proposed Use: Deployment and storage of satellite calibration equipment, in addition to previously approved outdoor storage and commercial vehicle parking.

Existing Use: Outdoor storage of equipment and vehicles.

Hearing Dates: Planning Commission – November 18, 2021 at 6:00 PM; and
City Council – December 7, 2021 at 7:00 PM.

Hearing Location: Fort Lupton City Hall – Council Chambers, 130 S. McKinley Ave., Fort Lupton, Colorado.

Staff Recommendation: Approval with conditions listed in the proposed resolution.

APPLICATION PROCESS

The Applicant is requesting approval of a site plan. The site plan application is processed under Section 16-170 of the Fort Lupton Municipal Code ("Code"), which states that site plans are required as follows:

1) Site plans are required as a step in the building permit review process for multi-family, commercial or industrial development.
2) Site plans are required for development which, in the opinion of the Planning Department, would have an adverse environmental impact upon the surrounding area or would have a major community land use impact.
3) To change an approved site plan when the change involves additional land use, including but not limited to:
    a. Additional buildings.
    b. Increase in the size of any building as shown on an approved site plan by more than ten percent (10%) over such approved building size.
    c. Outside storage and/or display.
    d. Vacation or dedication of easements or rights-of-way.

After required public notice of the site plan application, the Planning Commission shall consider the application, referral comments and any public testimony at a public hearing and make a recommendation to City Council to approve, approve with conditions or deny the site plan. The Planning Commission's comments shall be based on the evidence presented, conformance with the Comprehensive Plan and compliance with the City's standards, regulations and policies.

The City Council shall then conduct a public hearing and evaluate the application, referral agency comments, Planning Commission recommendation and any public testimony, and shall approve, conditionally approve, continue for additional information or for further study or deny the application based on the evidence presented and compliance with the City's standards, regulations and policies and other guidelines.

NOTIFICATION REQUIREMENTS

The Zoning Regulations require published notice of the hearings at least fifteen (15) days prior to the hearings. The Planning Commission and City Council hearings were published in the Fort Lupton press November 3, 2021.

Notice of the public hearings were posted on the Property on October 29, 2021, pursuant to the Zoning Regulations, which require the Applicant post the Property with notice of the hearings at least fifteen (15) days prior to the hearings.

Notice was mailed to neighbors within one-hundred (100) feet of the Property on November 2, 2021.

CONFORMANCE WITH CITY STANDARDS, REGULATIONS AND POLICIES

The property is located within the I-2 Heavy Industrial Zone District, which permits scientific research facilities as well as storage and warehousing facilities, indoor and outdoor, provided that all outside storage is screened and subject to the site plan review and approval procedures set forth under Section 16-170 of the Fort Lupton Municipal Code (the "Code"). A site plan review requires a public hearing before Planning Commission and City Council. The intent of the site plan review is to promote orderly and sound development standards as they apply to the City and enhance and protect the community's natural as well as man-made environments.

CONFORMANCE WITH THE COMPREHENSIVE PLAN

The Fort Lupton Comprehensive Plan designates this area for industrial land uses. This designation allows for a mix of heavy and light industrial users as well as office development, intended to provide an appropriate environment for higher intensity users. These areas should be utilized to attract major employers and support economic development that will complement residential growth within the community. Developments within this designation should be carefully reviewed to account for potential impacts on adjacent land uses from high intensity operations.

The property is surrounded by uses that are similar or compatible to the proposed use. The proposed use also conforms to the designated land use type and zoning.

REFERRALS

Referrals were provided to the list below. Any comments received are enclosed with the Planning Commission packet.

Building Inspector	OMI	City Attorney
GIS Specialist	Police Chief	Public Works Director
Fort Lupton Fire Protection District	CDOT	Colorado Parks and Wildlife
United Power	Comcast	CenturyLink
Xcel Energy	Postmaster	Weld County Dept. of Planning
Weld County Dept. of Public health & Env.	NCWCD	Fulton Ditch Company

For more information on this development, please refer to the Planning Commission packet provided. Additional documents may be available for review at the Fort Lupton City Hall.

Form PLAN002

CITY OF

Fort Lupton

EST 1836

Planning & Building

130 S. McKinley Avenue
Fort Lupton, CO 80621

Phone: 303.857.6694
Fax: 303.857.0351

www.fortluptonco.gov

Project No. 100 Max

Land Use Application Form

A. CONTACT INFORMATION

1) Property Owner Name: SCOTT AND BARBARA WEAKLAND

Company: SB Weakland Investments, LLC

Phone: 303-598-1324 Email:

Address: 12420 W 18TH DR LAKEWOOD, CO 802152515

Preferred method of contact? Email: X Phone: Mail:

2) Representative Name: Chadwin F. Cox

Company: Western Engineering Consultants, inc. LLC

Phone: 720-685-9951 Email: chadwin.cox@westerneci.com

Address: 127 South Denver Avenue, Fort Lupton, CO 80621

Preferred method of contact? Email: Phone: Mail:

3) Billing Contact *(where invoices should be directed to)*: Al Mezarina

Billing Company: MAXAR

Phone: 303-684-4331 Email: al.mezarina@maxar.com

Address: 1300 W 120th Ave., Westminster, CO 80234

B. SITE DESCRIPTION

Site Address: 15450 CR 16, Fort Lupton, CO 80621

Parcel Number: 130934203001

Existing Zone Classification: I-2 Proposed Zone Classification: I-2

Water Type: RV Storage tank tap water from off site by Maxar staff Name:

Sewage Type: ~~RV Storage tank dump~~ (ie. Loves truck stop) off site by Maxar staff District Name or Location Hauled to:

C. APPLICATION TYPE (CHECK ALL THAT APPLY)

Sketch Plat	Administrative Site Plan	PUD Plan (Preliminary & Final)
Preliminary Plat	Special Use Permit	Variance
Final Plat	Oil & Gas Permit	Administrative Variance
Minor Subdivision	Annexation & Initial Zone	Appeal
Amended Plat	Change of Zone	Other:
Site Plan	Comp Plan Amendment	

Project No. 100 Max

D. PROJECT DESCRIPTION

Project Name: MAXAR

Please provide a short description of the proposed project in the space provided below:

Proposal to have a 40' mobile office Class A RV, located on site to store equipment for use as satellite calibrating station.

E. REQUIRED DOCUMENTS

For an application to be considered complete, and for planning staff to begin review and schedule any applicable public hearings, this Land Use Application Form must be fully completed and all required attachments included. Planning staff will review the application for completeness and will provide notice to the representative and/or owner whether the application has been deemed complete.

F. CERTIFICATIONS

Representative Certification

By signing this application, I attest that I am acting with the knowledge and consent of all owners of the property that is the subject of this application, and that I have been designated to act as the representative for the project described in this land use application. I further certify that all information submitted with this application is true and accurate to the best of my knowledge.

Representative: _____ Date: _____

Owner Certification

I hereby certify that I am the legal owner of record of the property that is the subject of this application. I authorize the representative listed on this application, if any, to communicate directly with City officials and to submit documentation and information regarding this application on my behalf.

Owner: Scott Weakley Date: 7-28-21

For Office Use Only

Received Date: _____

If the application is not complete, state reasons why it is incomplete:

_____

_____

_____

Deemed Complete Date: _____

Fees Submitted: _____ Escrow Submitted: _____

WESTERN ENGINEERING CONSULTANTS, Inc LLC
127 S Denver Ave. Fort Lupton, CO 80621
2501 Mill Street, Brush, CO 80723
Office: 720-685-9951
Cell. 303-913-7341, Fax 720-294-1330
Email: chadwin.cox@westerneci.com

August 27th, 2021

City of Fort Lupton
130 South McKinley Ave.
Ft. Lupton, CO 80621

RE: SB WEAKLAND INVESTMENTS SITE PLAN AMENDMENT REVIEW PROJECT NARRATIVE

City Design Review Committee:

Western Engineering Consultants Inc. LLC (WEC) has prepared this narrative letter to briefly summarize the "SB Weakland Investments Site Plan Amendment" and the addition of the 2.489 acre Remaining Parcel A-1 for SB Weakland Investments Amended Site Plan.

The subject property is part of the Northwest quarter of section 34, Township 2 North, Range 66 West of the 6th P.M., County of Weld, Colorado.

The property is located at 15450 WCR 16, City of Fort Lupton.

Maxar Technologies Inc. proposes to have an onsite OR mobile calibration equipment operation. The project is proposed in the current vacant Yard C and 2.498 acre Remaining Parcel A-1. Yard C was included in the approved SB Weakland Investments Site Plan (recorded 09/01/20) and the 2.498 acre Remaining Parcel A-1 is proposed to be added to the prior approved Site plan (same ownership). A stormwater infiltration pond (Pond A-1) is proposed to be added in the northwest corner of the 2.498 acre Remaining Parcel A-1 to capture runoff from the additional parcel.

Revision clouds have been added to the revised Construction Drawings and Amended Site Plan to indicate the small revisions added to the plans per the Maxar Site and 2.498 acre Remaining Parcel A-1 improvements.

PURPOSE / BACKGROUND

Currently the south third of the property (Yard A) is use as an outside equipment storage by Wellhead Services, the central portion (Yard B) is used as a trucking business parking yard by G&Z Trucking, and Yard C was previously approved for outdoor storage. A stormwater infiltration pond is located between Yard B and Yard C, and another is located just northwest of Yard C on the west side of the existing access road. Dedicated easements for multiple gas and electric service lines are crossing the property north of Yard C.

A structural design and tie down design will be provided for the potential use of a commercial construction trailer office. Product and specifications for a RV will be provided upon purchase. A storage container will also be utilized, specification sheets for such are attached.

Maxar Calibration Station is proposed in Yard C and the 2.498 acre Remaining Parcel A-1 (Northeast portion). See sheet 1 of Site Plan.

RELATIONSHIP TO & IMPACT UPON ADJACENT USES

To the north is WCR 16, and a Public Service dedicated land (Overhead High Voltage lines) and buried gas lines, to the west a Green House (Lupton Real Estate East LLC), Parcel # 130934200022 (Vacate Land) own by Steve & Barbara Weakland, and to the east a Gas facility (Colorado Interstate Gas Company).

Thera are no negative impacts anticipated from this development on adjacent properties after construction has been completed.

No lighting system is proposed.

Traffic from this project is minimal, 1-2 times per week for 1-2 employees on site for approximately 4 hours each activity during normal days (7:00 AM to 6:00 PM). A previous trip generation letter has been prepared and is enclosed.

COMPREHENSIVE PLAN AND ZONING COMPLIANCE
The proposed use is light industrial and will be similar in nature to the adjacent properties. City of Fort Lupton Zoning and Comprehensive Plan show this area as Heavy Industrial (I-2). See Fig 1. Below.

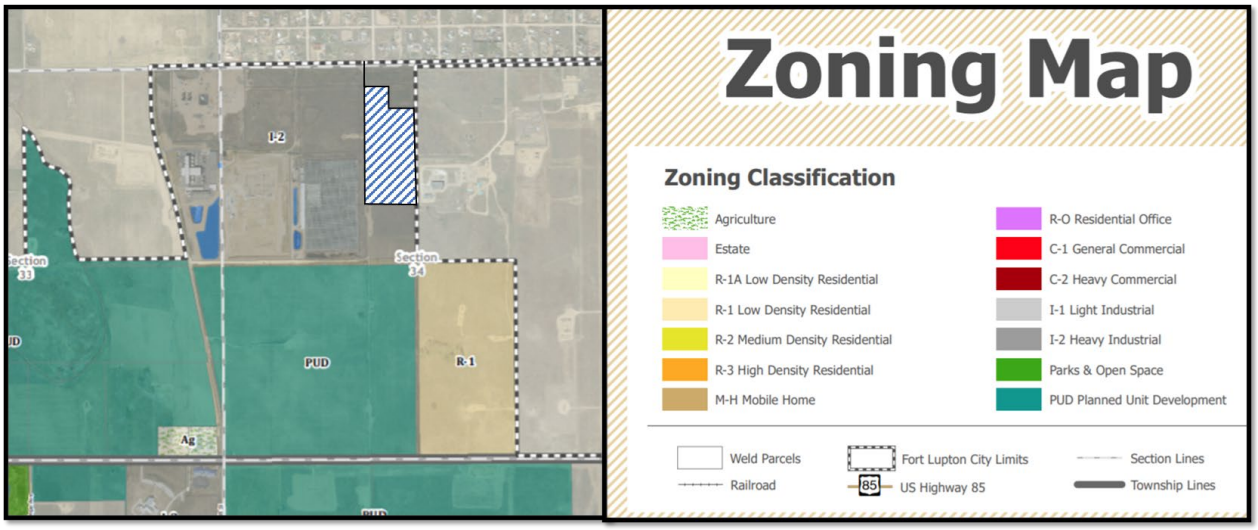


Fig.1

NOISE IMPACT
This satellite monitoring and calibrating activities do not produce noise from equipment. The team deploys the tarps by hand then uses computers to take measurements. Only normal noise produced by a car or RV accessing and leaving the site is expected.

SPECIAL REQUIREMENTS/ ANCHORAGE
During calibration, target panels (coated type 822 fabric) are used. No special anchorage is needed, target panels have black brass grommets inserted in the perimeter hem to permit the panel to be secured to the ground using metal target stakes or spikes. Tarps are installed and deployed by a four member crew. We have included a copy of the Remote Sensor Ground Calibration Panel - Technical Manual.

ACCESS LAYOUT
The proposal is entering using the existing access from Weld County Road 16 (Barley Avenue), located approximately 0.5 miles east of the WCR 16 and WCR 31 intersection.

UTILITIES
The property owner (S & B Weakland) has committed to providing public water and sewer to the property by extending said public mains within Weld County Road 16 (Barley Avenue) right of way within 2 years of the recorded approval for the ~~temporary~~ construction office or RV office.

Water for a construction office will be via a 3rd party vendor (Deep Rock or approved equal). Water for a mobile RV will be by Maxar employees filling said RV as necessary to maintain drinking water within the RV water tanks.

Sewer for a construction office will be via port-o-toilets and a 3rd party vendor (United Site Services or approved equal). Sewer for a mobile RV will be by Maxar employees dumping said RV as necessary to maintain functional toilet systems within the RV storage tanks.

Electric service for the construction office will be via the existing buried electric line within the SB Weakland Investments site.

ZONING, USE, and UTILITY DISTRICTS

The following summarizes the proposed specifics:

• Zoning	Currently zoned Heavy Industrial in Fort Lupton Zoning Map
• Proposed Use	Heavy Industrial allowable uses
• Type of structures to be built	None
• Water source	RV Storage tank tap water from Off site by Maxar Staff or If onsite construction office trailer - water will be from 3rd party vendor City of Ft Lupton service required within 24 months of Amended Site Plan approval
• Sanitary Sewer source	RV Storage tank dump from Off site by Maxar Staff (i.e. Hudson Loves Truck Stop) If onsite construction office trailer – port toilets will be used and serviced by a 3rd party vendor City of Ft Lupton service required within 24 months of Amended Site Plan approval
• Storm sewer	On Site infiltration pond as coordinated with the City of Fort Lupton.
• Gas & Electricity	No gas service needed, and United Power provides electricity.
• Fire Protection	Ft. Lupton Fire Protection District

SITE PLAN REVIEW CHECKLIST

1. Land Use Application	Enclosed
2. Application Fees - Check for $4,250.00	When required
3. Escrow Agreement	Enclosed
4. Proof of Ownership	Enclosed
5. 300 ft. Neighbors Report and Envelopes	Enclosed signed report
6. Copy of CDPHE- COR409324	Enclosed
7. Site Plan	Enclosed
8. Construction Drawings (CDs.)	Enclosed
9. Detailed Project Narrative	This document
10. Drainage Report	Enclosed
11. Screening and Landscape plan	Enclosed
12. Traffic Memorandum	Enclosed
13. Calibration Station Technical Manual	Enclosed
14. Class A RV information sheet	Enclosed
15. Container data sheet	Enclosed
16. Tarps wind statement	Enclosed

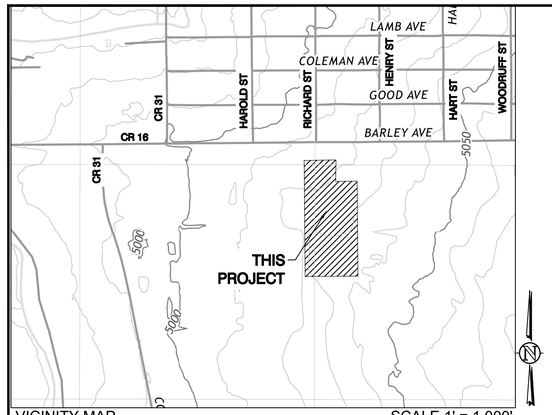
CLOSING
The Applicant is excited to continue to develop this project in the City of Fort Lupton!

Please contact me with any questions or comments you may have on this Project Narrative.

Sincerely,

Western Engineering Consultants inc., LLC
Chadwin F. Cox, P.E.
Senior Project Manager

Encl. Site Plan Review Submittal



VICINITY MAP SCALE 1' = 1,000'

NW 1/4, S34, T2N, R66W, 6th P.M.
SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

SB WEAKLAND INVESTMENTS SITE PLAN AMENDED

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008
Part of the Northwest 1/4 of Section 34,
Township 2 North, Range 66 West of the 6th P.M.,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO
ZONE I-2

ADMINISTRATIVE SITE PLAN CERTIFICATIONS

PROPERTY DESCRIPTION

A PARCEL OF LAND IN THE CITY OF FORT LUPTON, COLORADO, LOCATED IN THE NORTHWEST $\frac{1}{4}$ OF SECTION 17, T1N, R66W OF THE 6TH P.M. AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM TITLE COMMITMENT

PARCEL A:
THAT PART OF THE NW1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS:

BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34;
THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NW1/4 SECTION 34 A DISTANCE OF 1656.54 FEET TO THE SOUTHWEST CORNER OF THE N3/4 OF THE W1/2 OF THE W1/2 OF THE NW1/4 OF THE NW1/4 OF SAID SECTION 34;
THENCE NORTH 89°41'29" EAST ALONG THE SOUTH LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 331.83 FEET TO THE SOUTHEAST CORNER OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34; THENCE NORTH 00°09'47" WEST ALONG THE EAST LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 734.60 FEET TO A POINT 260.00 FEET SOUTH OF THE NORTH LINE OF NW1/4 OF SECTION 34; THENCE NORTH 89°34'30" EAST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 745.07 FEET TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00°01'29" EAST PARALLEL WITH THE EAST LINE OF SAID NW1/4 OF SECTION 34 A DISTANCE OF 2356.32 FEET TO A POINT 40.00 FEET NORTH OF THE SOUTH LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.42 FEET TO A POINT 40.00 FEET WEST OF THE EAST LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 00°01'29" WEST PARALLEL WITH SAID EAST LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 2364.68 FEET TO A POINT 260.00 FEET SOUTH OF SAID NW1/4 OF SECTION 34;
THENCE SOUTH 89°34'30" WEST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.46 FEET TO THE TRUE POINT OF BEGINNING.

SAVE AND EXCEPT THAT PART OF THE NORTHWEST 1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34; THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NORTHWEST 1/4 SECTION 34 A DISTANCE OF 40.00 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH AND 40.00 FEET NORTHERLY OF THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 1872.16 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 00°01'29" WEST PARALLEL WITH THE EAST LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 737.91 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO A POINT 40.00 FEET WESTERLY OF SAID EAST LINE OF THE NORTHWEST 1/4 OF SECTION 34; THENCE SOUTH 89°53'11" WEST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO THE TRUE POINT OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

EXCEPTING THEREFROM LOT 1, COLORADO GREENHOUSE ADDITION, RECORDED MAY 12, 1997 AT RECEPTION NO. 2547711, AND FURTHER EXCEPTING THAT PORTION KNOWN AS LOT ONE FORT LUPTON FIRE PROTECTION DISTRICT SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED MAY 5, 1999 AT RECEPTION NO. 2691823.

PARCEL 2:

LOT 1, FRONT RANGE ENERGY SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO.

PARCEL 3:

NON-EXCLUSIVE EASEMENT FOR NATURAL GAS TRANSMISSION LINES AND RELATED APPURTENANCES, AND FOR VEHICULAR AND PEDESTRIAN TRAFFIC, AS MORE PARTICULARLY SET FORTH IN EASEMENT, RECORDED MARCH 3, 1993 AT RECEPTION NO. 2323677, THEREAFTER NOTICE OF ASSIGNMENT RECORDED AUGUST 9, 2017, AT RECEPTION NO. 4325787.

BASIS OF BEARING:
THE NORTH LINE OF THE NORTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO BEARS S89°07'24"W, TAKEN FROM THE RECORDED PLAT OF FRONT RANGE ENERGY SUBDIVISION. RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO. MONUMENTS ARE AS SHOWN HEREON.

OWNER'S APPROVAL

KNOW ALL MEN BY THESE PRESENTS, THAT SB WEAKLAND INVESTMENTS BEING THE SOLE OWNER OF THE LAND DESCRIBED HEREIN, AND _____ ARE ALL OF THE MORTGAGEES AND HOLDERS OF LIENS UPON THE PROPERTY, AND EACH AND ALL HEREBY CONSENT TO THIS PLAT AND JOIN THE CONVEYANCE AND DEDICATION OF ALL STREETS, ROADS, ALLEYS, EASEMENTS, PUBLIC WAYS AND PLACES SHOWN HEREON.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS ___ DAY OF _____, 2021.

_____

STATE OF COLORADO,)
) SS
COUNTY OF WELD)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY _____ ON THIS ___ DAY OF _____, 2021. WITNESS MY HAND AND SEAL.

MY COMMISSION EXPIRES _____.

_____
NOTARY PUBLIC

CITY ENGINEER'S APPROVAL
APPROVED THIS ___ DAY OF _____, 2021.

_____
CITY ENGINEER

CITY WATER AND SEWER DEPARTMENT APPROVAL
APPROVED THIS ___ DAY OF _____, 2021.

_____
DIRECTOR OF PUBLIC WORKS

CITY ADMINISTATOR'S APPROVAL
APPROVED THIS ___ DAY OF _____, 2021.

_____
CITY ADMINISTRATOR

PLANNING COMMISSION RECOMMENDATION:
RECOMMENDED THIS 23RD DAY OF APRIL, 2020 BY RESOLUTION N0. P2020-014.

_____
CHAIRPERSON, FORT LUPTON PLANNING COMMISSION

MAYOR'S CERTIFICATE
THIS IS TO CERTIFY THAT A PLAT OF THE ABOVE-DESCRIBED PROPERTY WAS APPROVED BY RESOLUTION NO. 2020R047 OF THE CITY OF FORT LUPTON PASSED AND ADOPTED ON THE 5TH DAY OF MAY, A.D., 2020 AND THAT THE MAYOR OF THE CITY OF FORT LUPTON, AS AUTHORIZEDBY SAID RESOLUTION ON BEHALF OF THE CITY OF FORT LUPTON, HEREBY ACKNOWLEDGES AND ADOPTS THE SAID PLAT UPON WHICH THIS CERTIFICATE IS ENDORSED FOR ALL PURPOSES INDICATED THEREON.

_____
MAYOR

ATTEST:

_____
CITY CLERK

REVISIONS	SHEET	INDEX:
0 1 2 3	1	COVER SHEET
1 2 3	2	FORT LUPTON STANDARD NOTES
0 1 2 3	3	OVERALL SITE PLAN
0 1 2 3	4	YARD A SITE PLAN
0 1 2 3	5	YARD B SITE PLAN
0 1 2 3	6	YARD C SITE PLAN
0 1 2 3	7	LANDSCAPE PLAN & DETAILS
0 1 2 3	8	SITE DETAILS

0	INITIAL RELEASE:	JANUARY 21, 2020
1	REV PER 03/30/20 CITY COMMENTS:	JUNE 09, 2020
2	ADD 2.498 ACRE REMAINING PARCEL A-1:	AUGUST 27, 2021
3	REV PER 09/14/21 CITY COMMENTS:	SEPTEMBER 30, 2021

ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

YARDS A & B
NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C
PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

UTILITY MAINTENANCE STATEMENT
ALL PUBLIC WATER, STORM SEWER AND SANITARY SEWER MAINS AND APPURTENANCES LOCATED IN PUBLIC ROW SHALL BE MAINTAINED BY THE CITY OF FORT LUPTON PUBLIC WORKS DEPARTMENT. ALL PUBLIC WATER, STORM SEWER, SANITARY SEWER MAINS AND APPURTENANCES UNDER PRIVATE DRIVES ARE LOCATED IN UTILITY EASEMENTS. CITY IS RESPONSIBLE FOR MAINTENANCE OF THESE WATER, STORM AND SANITARY SEWER FACILITIES. CITY IS NOT RESPONSIBLE FOR REPAIR OR REPLACEMENT OF PRIVATE DRIVE, CURB AND GUTTER OR LANDSCAPING DAMAGED DURING UTILITY REPAIR OR MAINTENANCE.

PREPARED FOR:
SB WEAKLAND INVESTMENTS
SCOTT & BARBARA WEAKLAND
12420 W 18TH DR
LAKEWOOD, CO 80215
(720)685-9951

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UTILITY NOTIFICATION CENTER OF COLORADO

PREPARED BY:

127 SOUTH DENVER AVE.
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email@westerneci.com
(720)685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

PROJECT NO: 01-0330.001.00
INITIAL PLAN RELEASE: Jan. 21, 2020
CURRENT PLAN RELEASE: September 30, 2021
TOTAL SHEETS: 8
SHEET: 1 of 8

\\WECSERVER1\Share\0330_001_00-RLW SAND\Dwg\CDs\0330-001-WEC-SPR-Amended.dwg, 01-COVER, 9/30/2021 12:04:00 PM , AutoCAD PDF (High Quality Print).pc3, WEC 24*36, WEC 24*36

FORT LUPTON STANDARD NOTES

FORT LUPTON STANDARD CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY RULES AND REGULATIONS.

2. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEBRIS DROPPED INTO PUBLIC MANHOLES AND OTHER PUBLIC STRUCTURES. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL DEBRIS IN AFFECTED STRUCTURES. IF IT IS DETERMINED THAT DEBRIS CAUSED A BACKUP, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES.

3. THE CONTRACTOR SHALL PROVIDE ACCESS TO AND FROM ALL PRIVATE PROPERTY ADJACENT TO THE WORK THROUGHOUT THE PERIOD OF CONSTRUCTION.

4. "AS-BUILT" ELECTRONIC SUBMITTAL OR PRINTS ARE TO BE SUBMITTED TO CITY ENGINEER AT COMPLETION OF THE PROJECT. "AS-BUILT" DRAWINGS ARE TO BE REPRODUCIBLE COPIES (OR ORIGINALS) OF THE APPROVED CONSTRUCTION DRAWINGS. ANY FIELD CHANGES ARE TO BE NOTED. THE DRAWINGS WILL STATE "AS-BUILT" IN LARGE BLOCK LETTERS. THE "AS-BUILT" ELECTRONIC SUBMITTAL OR PRINTS ARE TO BE SIGNED, DATED AND STAMPED BY A COLORADO REGISTERED PROFESSIONAL ENGINEER.

5. NO WATER VALVE OR OTHER CONTROL DEVICE ON THE EXISTING PUBLIC SYSTEM WILL BE OPERATED FOR ANY PURPOSE BY ANYONE OTHER THAN THE CITY WITHOUT PRIOR WRITTEN AUTHORIZATION.

6. TO SCHEDULE AN INSPECTION DURING REGULAR BUSINESS HOURS, CONTACT PUBLIC WORKS DEPARTMENT AT 303-857-6694. FOR AFTER HOURS EMERGENCIES CALL POLICE DISPATCH AT 720-652-4222.

7. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE CITY OF FORT LUPTON 48 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTHS) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE. DAMAGED UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR, AT HIS EXPENSE.

8. PERMITTEE SHALL NOTIFY THE CITY INSPECTOR:

- TWO WORKING DAYS BEFORE COMMENCING WORK ON R.O.W.;
- WHEN SUSPENDING OPERATIONS FOR 5 OR MORE WORKING DAYS;
- TWO WORKING DAYS BEFORE RESUMING SUSPENDED WORK;
- UPON COMPLETION OF WORK.

9. CONTRACTOR SHALL MAINTAIN AT LEAST ONE COPY OF THE APPROVED PLANS, SPECIFICATIONS AND STANDARDS ON THE JOB SITE AT ALL TIMES.
10. CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE.
11. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.
12. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND/OR PERSONNEL AS REQUIRED. A TRAFFIC CONTROL PLAN (TCP) IS SUBJECT TO CITY OF FORT LUPTON AND/OR CDOT APPROVAL PRIOR TO COMMENCING WORK ON ROADWAY ROW. A COPY OF APPROVED TCPS MUST BE AVAILABLE ON SITE DURING WORK. TRAFFIC CONTROL TO BE IN ACCORDANCE WITH M.U.T.C.D., SECTION VI.
13. ALL WORK WILL BE PROPERLY BACKFILLED PRIOR TO THE END OF WORKDAY, NO OPEN HOLES ARE ALLOWED OVERNIGHT. ALL WORK IS TO BE IN ACCORDANCE WITH PERMIT REQUIREMENTS AND APPLICABLE STANDARDS.
14. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE, PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.
15. PATCH ASPHALT PAVING AS NECESSARY TO JOIN NEW GUTTERS WITH THE EXISTING PAVEMENT. REMOVAL AND REPLACEMENT OF ASPHALT SHALL BE PER THE LATEST CITY OF FORT LUPTON STANDARDS AND DETAILS.
16. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
17. PERMITTEE SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY R.O.W. AT THE CLOSE OF DAILY OPERATIONS. THE TCP MUST INCLUDE PROTECTIVE MEASURES WHERE MATERIALS AND EQUIPMENT MAY BE STORED ON R.O.W, BUT ENSURE FIVE FEET OF PEDESTRIAN CLEARANCE ON SIDEWALKS.
18. NO WORK SHALL BE PERMITTED AT NIGHT OR ON SATURDAYS, SUNDAYS, AND HOLIDAYS WITHOUT PRIOR AUTHORIZATIONS OR UNLESS OTHERWISE SPECIFIED IN THIS PERMIT. CITY MAY RESTRICT WORK ON R.O.W. DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.
19. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY RIGHT OF WAY SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.
20. SEEDING, SODDING, AND PLANTING SHALL BE AS SPECIFIED OR OTHERWISE APPROVED BY CITY. CONSTRUCTION, MAINTENANCE, AND WATERING REQUIREMENTS SHALL CONFORM WITH THE CITY STANDARD SPECIFICATIONS. WHERE LANDSCAPE RESTORATION MUST BE DELAYED DUE TO SEASONAL REQUIREMENTS, SUCH WORK MAY BE AUTHORIZED BY A SEPARATE PERMIT.

GRADING AND EROSION CONTROL NOTES

1. ALL SITE GRADING (EXCAVATION, EMBANKMENT, AND COMPACTION) SHALL CONFORM TO THE RECOMMENDATIONS OF THE LATEST SOILS INVESTIGATION FOR THIS PROPERTY AND SHALL FURTHER BE IN CONFORMANCE WITH THE CITY OF FORT LUPTON'S "SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS," LATEST EDITION.

2. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.

3. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS.

4. TEMPORARY VEGETATION SHALL BE INSTALLED ON ALL DISTURBED AREAS WHERE PERMANENT SURFACE IMPROVEMENTS ARE NOT SCHEDULED FOR INSTALLATION WITHIN THREE MONTHS. VEGETATION SHALL BE A VIGOROUS, DROUGHT TOLERANT, NATIVE SPECIES MIX. (REFER TO SECTION 2.26.00 OF CITY CONSTRUCTION SPECIFICATIONS FOR SEEDING MIX.) PROJECT SCHEDULING SHOULD TAKE ADVANTAGE OF SPRING OR FALL PLANTING SEASONS FOR NATURAL GERMINATION, BUT SEEDED AREAS SHALL BE IRRIGATED, IF CONDITIONS SO MERIT.

5. AT ALL TIMES, THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN FUGITIVE DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE OWNER/DEVELOPER SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.

6. TEMPORARY CUT/FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1 (2H:1V). PERMANENT SLOPES SHALL NOT EXCEED 4:1 (4H:1V) IN AREAS TO BE SEEDED OR SODDED.

7. THE OWNER/DEVELOPER SHALL PROVIDE ANY ADDITIONAL DUST ABATEMENT AND EROSION CONTROL MEASURES DEEMED NECESSARY BY THE CITY, SHOULD CONDITIONS MERIT THEM.

8. TEMPORARY FENCES SHALL BE INSTALLED ALONG ALL BOUNDARIES OF THE CONSTRUCTION LIMITS OR PROPERTY LINES AS SHOWN ON THE APPROVED EROSION CONTROL PLAN, TO PREVENT GRADING ON PROPERTY NOT OWNED BY THE DEVELOPER. IN ADDITION, THE CITY MAY REQUIRE ADDITIONAL TEMPORARY FENCES IF FIELD CONDITIONS SO MERIT THEM.

9. IMPERVIOUS SURFACES WHICH ARE ADJACENT TO OR CONTAINED WITHIN CONSTRUCTION SITES WILL BE SWEPT ON A DAILY BASIS OR AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ON TO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.

10. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING, OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS OR AS NEEDED THROUGHOUT THE WORK DAY. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED.

11. THE DISCHARGE OF WATER CONTAINING WASTE CEMENT TO ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., IS PROHIBITED. THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES, EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS, IS PROHIBITED AT THE JOB SITE.

Western Engineering Consultants, inc LLC
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email@westernec.com
(720) 685-9951
FAX (720) 294-1330

No.	REVISION	DATE	BY
1	REV PER 03/30/20 CITY COMMENTS	06/09/20	CFC
2	ADD 2.408 AC REMAINING PARCEL A-1	08/27/21	CFC
3	REV PER 09/14/21 CITY COMMENTS	09/20/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. 8TH DRIVE
LAKWEOD, CO 80215
(720)685-9951

CITY OF FORT LUPTON NOTES
SITE PLAN REVIEW
PARCEL B, LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

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FOR APPROVAL

ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

INITIAL PLAN RELEASE: 06/09/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0002-NOTES
SHEET 2 OF 8

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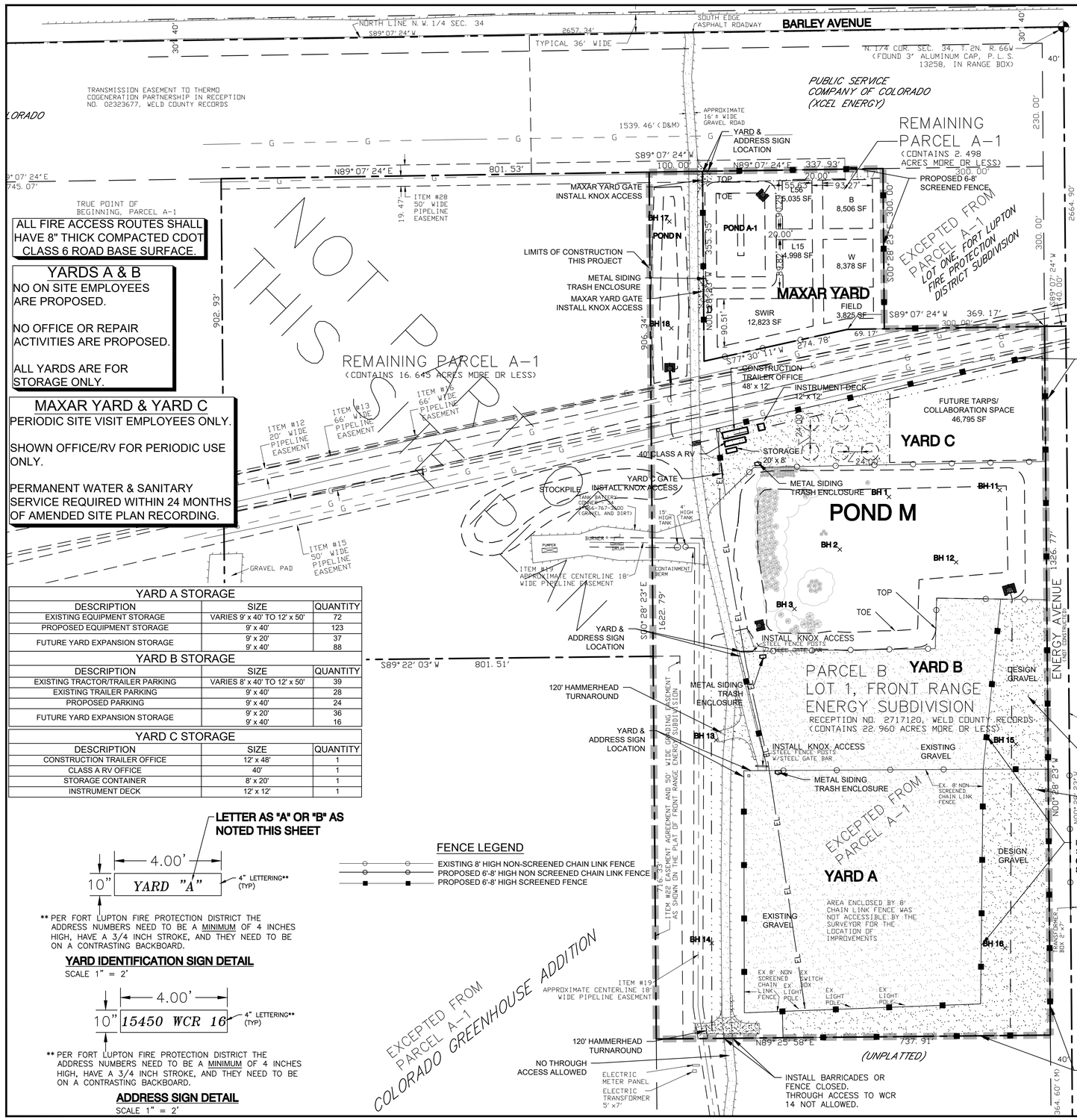
SB WEAKLAND INVESTMENTS SITE PLAN AMENDED

Project No. LUP2021-0025 & Plan No. SPR2021-0008
PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION



ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

YARD A STORAGE		
DESCRIPTION	SIZE	QUANTITY
EXISTING EQUIPMENT STORAGE	VARIES 9' x 40' TO 12' x 50'	72
PROPOSED EQUIPMENT STORAGE	9' x 40'	123
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	37 88

YARD B STORAGE		
DESCRIPTION	SIZE	QUANTITY
EXISTING TRACTOR/TRAILER PARKING	VARIES 8' x 40' TO 12' x 50'	39
EXISTING TRAILER PARKING	9' x 40'	28
PROPOSED PARKING	9' x 40'	24
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	36 16

YARD C STORAGE		
DESCRIPTION	SIZE	QUANTITY
CONSTRUCTION TRAILER OFFICE	12' x 48'	1
CLASS A RV OFFICE	40'	1
STORAGE CONTAINER	8' x 20'	1
INSTRUMENT DECK	12' x 12'	1

LOT DATA TABLE		
DESCRIPTION	AREA	%
ZONING	I-2	
LOT	1,000,127.92 sf	
EXISTING GRAVEL	351,977.65 sf	35.19%
PROPOSED CONCRETE	0 sf	
TOTAL HARDSCAPE AREA	351,977.65 sf	35.19%
PROPOSED LANDSCAPE AREA	648,150.27 sf	64.81%

MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

THE CITY RESERVES THE RIGHT TO REEVALUATE TRAFFIC IMPACTS IN THE FUTURE IF THERE IS AN INCREASE IN TRAFFIC FROM WHAT WAS REPRESENTED TO THE CITY IN EVALUATING THE SITE PLAN.

USE TABLE	
YARD	USE
A	EQUIPMENT STORAGE
B	TRUCK STORAGE/ PARKING YARD
C	SATELLITE TARP CALIBRATION SITE
MAXAR	SATELLITE TARP CALIBRATION SITE

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT OR ALL GATES

NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SOME YARD LAYOUTS NOT LEGIBLE THIS SCALE. SEE SHEETS 4-6 FOR EACH YARD LAYOUT

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

SETBACK DATA TABLE	
PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

NOTES

THIS PLAN IS INTENDED AS THE SITE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND CITY OF FORT LUPTON RESPECTIVELY.

ANY REFERENCE TO EASEMENTS, SURVEY POINTS, OR EXISTING UTILITIES AND FEATURES ARE BASED SOLELY FROM SURVEY INFORMATION PROVIDED BY R.W. BAYER & ASSOCIATES, INC. ALTA/ACSM LAND TITLE SURVEY, DATED JULY 31, 2014.

NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

FENCE LEGEND

- EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH SCREENED FENCE

LETTER AS "A" OR "B" AS NOTED THIS SHEET

4.00' × 10" — YARD "A" — 4" LETTERING** (TYP)

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

YARD IDENTIFICATION SIGN DETAIL
SCALE 1" = 2'

4.00' × 10" — 15450 WCR 16 — 4" LETTERING** (TYP)

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

ADDRESS SIGN DETAIL
SCALE 1" = 2'

SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
PROPOSED GRAVEL
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS
PROPOSED CONC

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
EXISTING BUILDING, CURB
EDGE OF ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
OHE EXISTING OVERHEAD ELEC
GA EXISTING GAS LINE

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No.	REVISION	DATE	BY
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CONTACT: SCOTT WEAKLAND
12200 W. BRIDGE ST.
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SITE PLAN
SITE PLAN REVIEW
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INITIAL PLAN RELEASE: 01/21/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0003-SITE
SHEET 3 OF 8

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SB WEAKLAND INVESTMENTS SITE PLAN AMENDED

Project No. LUP2021-0025 & Plan No. SPR2021-0008

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

YARDS A & B

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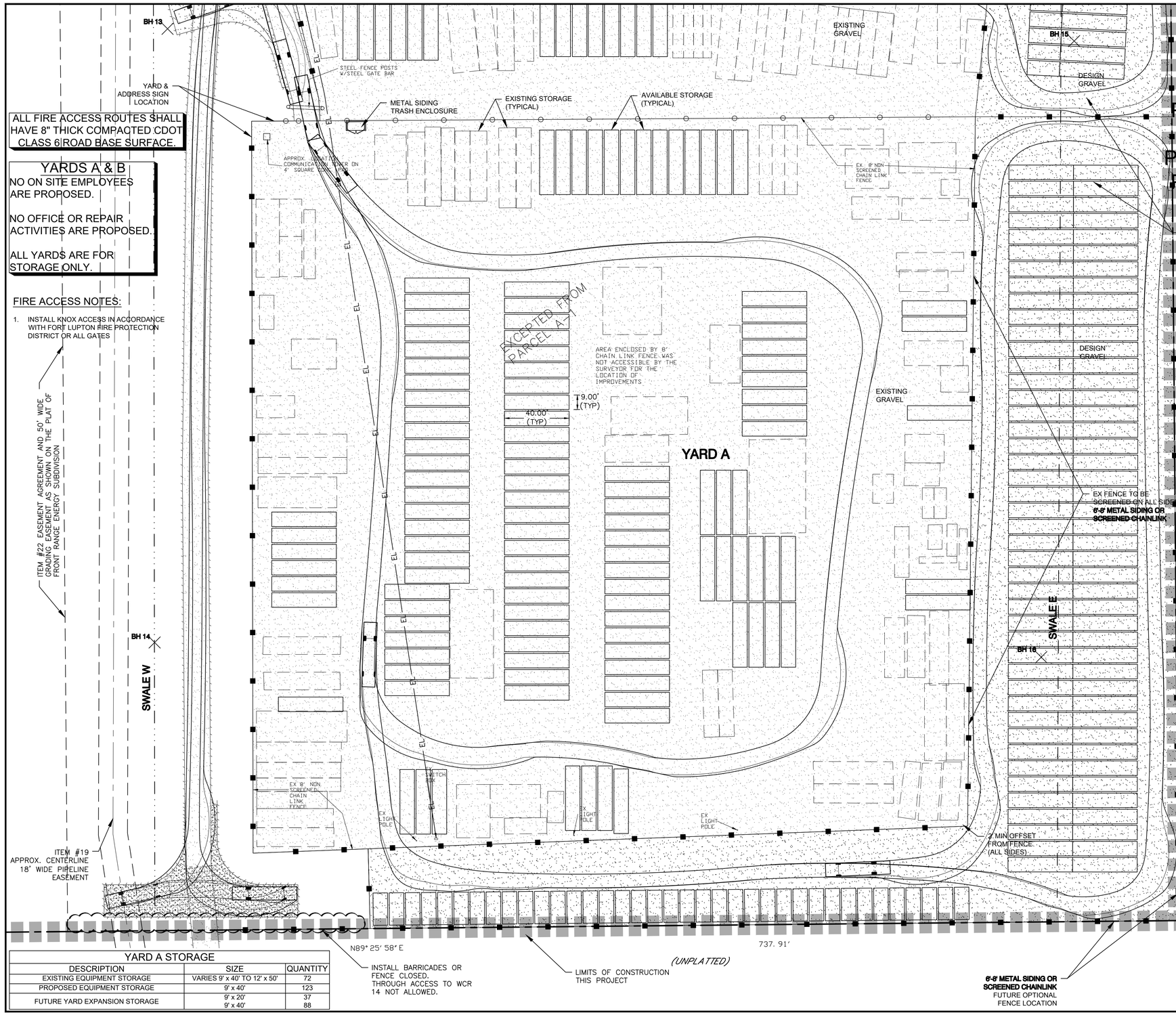

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SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

FULL SCALE: 1" = 30'
HALF SCALE: 1" = 60'

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

YARD A STORAGE

DESCRIPTION	SIZE	QUANTITY
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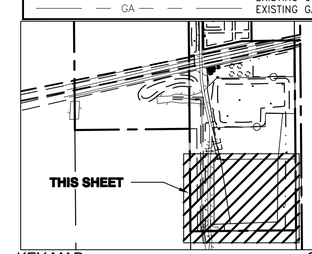
SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
OHE EXISTING OVERHEAD ELEC
GA EXISTING GAS LINE



KEY MAP
SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST, 6th P.M.

SCALE 1" = 500'

127 S. DENVER AVE
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No.	REVISION	DATE	BY
0	INITIAL RELEASE	01/21/20	CFC
1	REV PER 03/30/20 CITY COMMENTS	06/09/20	CFC
2	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC
3	REV PER 09/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. BELLEVIEW AVE.
LAKWEOOD, CO 80215
(720)685-9951

YARD A SITE PLAN
SITE PLAN REVIEW
PARCEL B, LOT 1, FRONT RANGE ENERGY SUB.
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DRAWN BY: CFC
CHECKED BY: CFC

PROJECT NO. 01-0330.001.00

DOC CON # 0004-'A' SITE

SHEET 4 OF 8

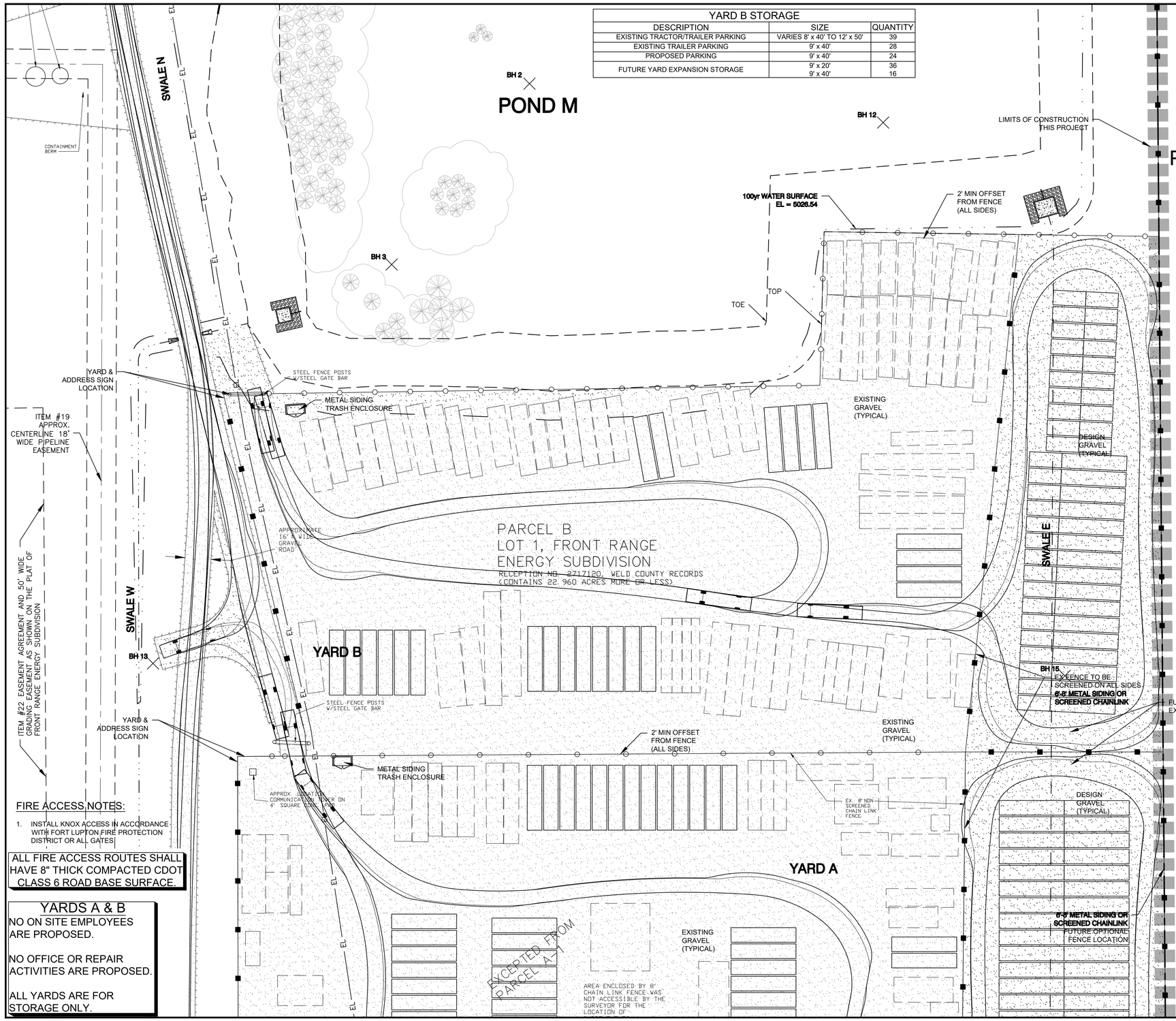
\\WECSERVER1\Share\0330_001_00-RLW SANDI\Dwg\CDs\0330-001-WEC-SPR-Amended.dwg, 04-YARD A SITE, 9/30/2021 12:04:25 PM, AutoCAD PDF (High Quality Print).pc3, WEC 24*36, WEC 24*36

SB WEAKLAND INVESTMENTS
SITE PLAN AMENDED

Project No. LUP2021-0025 & Plan No. SPR2021-0008

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

YARD B STORAGE		
DESCRIPTION	SIZE	QUANTITY
EXISTING TRACTOR/TRAILER PARKING	VARIES 8' x 40' TO 12' x 50'	39
EXISTING TRAILER PARKING	9' x 40'	28
PROPOSED PARKING	9' x 40'	24
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	36 16



NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

30 15 0 30 60

FULL SCALE: 1" = 30'
HALF SCALE: 1" = 60'

SETBACK DATA TABLE	
PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT OR ALL GATES

ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

NOTES

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SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
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BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

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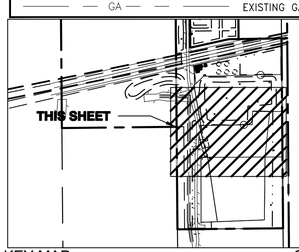

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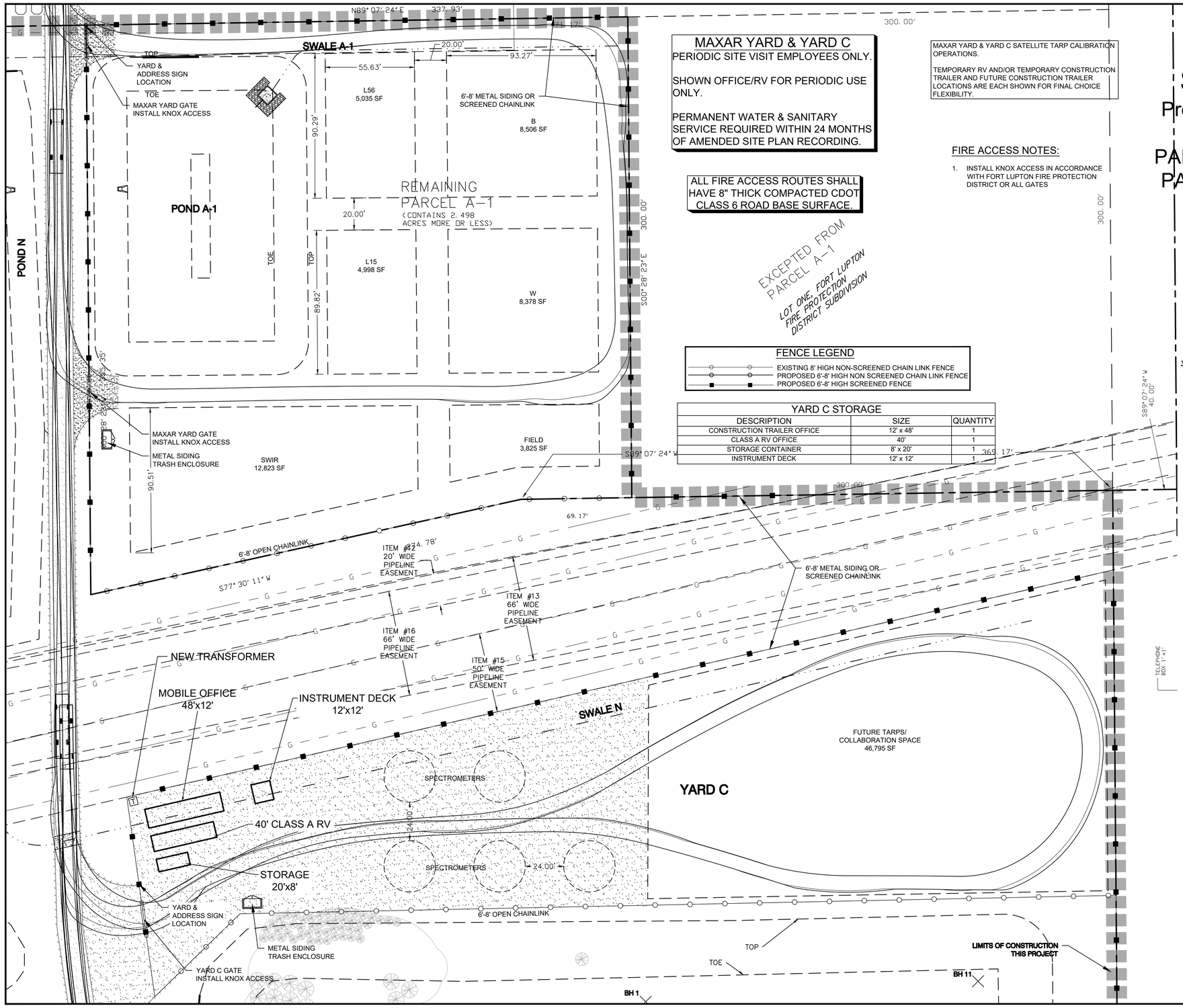
DOC CON # 0005-'B' SITE
SHEET 5 OF 8

\\WECSERVER1\Share\0330_001_00-RLW SAND\Dwgs\CDs\0330-001-WEC-SPR-Amended.dwg, 05-YARD B SITE, 9/30/2021 12:04:32 PM, AutoCAD PDF (High Quality Print).pc3, WEC 24^36, WEC 24^36

SB WEAKLAND INVESTMENTS SITE PLAN AMENDED

Project No. LUP2021-0025 & Plan No. SPR2021-0008

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION



MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

EXCEPTED FROM PARCEL A-1

LOT ONE, FORT LUPTON FIRE PROTECTION DISTRICT SUBDIVISION

MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

FIRE ACCESS NOTES:

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30 15 0 30 60

FULL SCALE: 1" = 30'
HALF SCALE: 1" = 60'

FENCE LEGEND

- EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH SCREENED FENCE

YARD C STORAGE

DESCRIPTION	SIZE	QUANTITY
CONSTRUCTION TRAILER OFFICE	12' x 48'	1
CLASS A RV OFFICE	40'	1
STORAGE CONTAINER	8' x 20'	1
INSTRUMENT DECK	12' x 12'	1

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

NOTES

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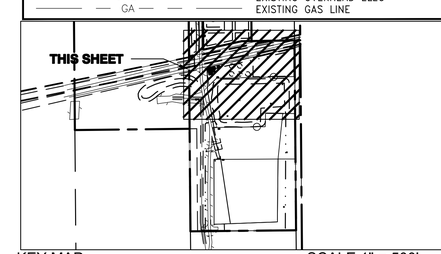

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MAXAR & YARD C SITE PLAN
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DRAWN BY: CFC
CHECKED BY: CFC

PROJECT NO. 01-0330.001.00
DOC CON # 0006-'C' SITE
SHEET 6 OF 8

\\WECSERVER1\Share\0330_001_00-RLW SAND\Dwgs\CDs\0330-001-WEC-SPR-Amended.dwg, 06-YARD C SITE, 9/30/2021 12:04:39 PM, AutoCAD PDF (High Quality Print).pc3, WEC 24*36, WEC 24*36

SB WEAKLAND INVESTMENTS
SITE PLAN AMENDED

Project No. LUP2021-0025 & Plan No. SPR2021-0008
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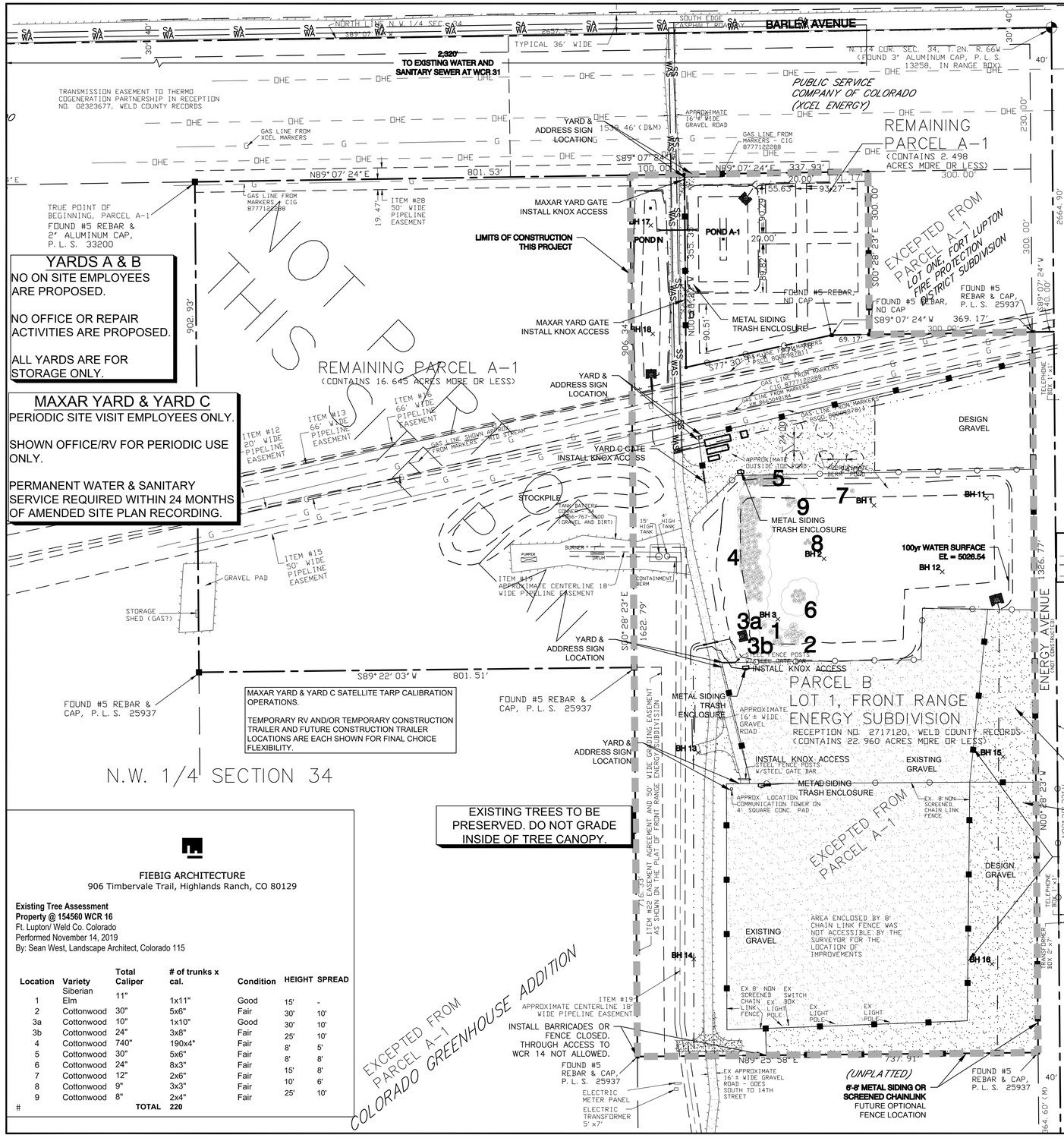


YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

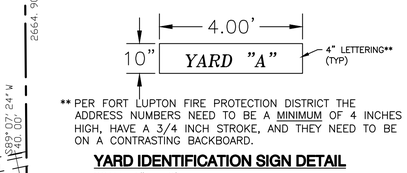
PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

EXISTING TREES TO BE PRESERVED. DO NOT GRADE INSIDE OF TREE CANOPY.

FIEBIG ARCHITECTURE
906 Timbervale Trail, Highlands Ranch, CO 80129

Existing Tree Assessment
Property @ 154560 WCR 16
Ft. Lupton/ Weld Co. Colorado
Performed November 14, 2019
By: Sean West, Landscape Architect, Colorado 115

Location	Variety	Total Caliper	# of trunks x cal.	Condition	HEIGHT	SPREAD
1	Siberian Elm	11"	1x11"	Good	15'	-
2	Cottonwood	30"	5x6"	Fair	30'	10'
3a	Cottonwood	10"	1x10"	Good	30'	10'
3b	Cottonwood	24"	3x8"	Fair	25'	10'
4	Cottonwood	740"	190x4"	Fair	8'	5'
5	Cottonwood	30"	5x6"	Fair	8'	8'
6	Cottonwood	24"	8x3"	Fair	15'	8'
7	Cottonwood	12"	2x6"	Fair	10'	6'
8	Cottonwood	9"	3x3"	Fair	25'	10'
9	Cottonwood	8"	2x4"	Fair		
#		TOTAL	220			



** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

YARD IDENTIFICATION SIGN DETAIL
SCALE 1" = 2'

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

ADDRESS SIGN DETAIL
SCALE 1" = 2'

NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SOME YARD LAYOUTS NOT LEGIBLE THIS SCALE. SEE SHEETS 4-6 FOR EACH YARD LAYOUT

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

EXISTING YARD A LIGHTING NOT TO BE USED. NONE PROPOSED FOR YARDS A, B, OR C.

NO NEW LANDSCAPE PROPOSED.

FENCE LEGEND

- EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH SCREENED FENCE

USE TABLE

YARD	USE
A	EQUIPMENT STORAGE
B	TRUCK STORAGE/ PARKING YARD
C	SATELLITE TARP CALIBRATION SITE
MAXAR	SATELLITE TARP CALIBRATION SITE

FIRE ACCESS NOTES:

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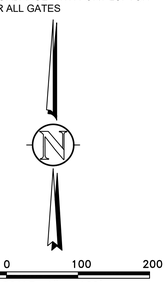

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NOTES

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EXISTING LANDSCAPE LEGEND

- EVERGREEN TREE
- DECIDUOUS TREE

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
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- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS
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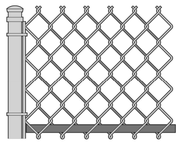
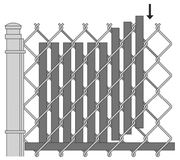
INSTALLATION INSTRUCTIONS

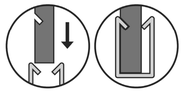
(Suggested installation instructions. Instructions vary per job site conditions)



Step 1. Insert the bottom channel horizontally into the first diamond at the bottom of the fence with open side facing up.

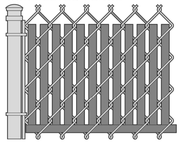


Step 2. Insert slats vertically with the beveled/notched end downward until slat engages and interlocks with the bottom channel.



Step 3. Push the vertical slat into the horizontal channel until the locking catch snaps into the cutout notch.

COMPLETED FENCE



These easy to install slats provide a beautifully finished fence.

BOTTOM LOCKING SLAT SPECIFICATIONS

SLAT NAME	SLAT WIDTH	MESH SIZE	WIRE GAUGE	COVERAGE AREA
BOTTOM LOCK 2"	1 3/32"	2"	9 OR 11	10 LINEAR FEET
BOTTOM LOCK 2 1/4"	1 1/4"	2 1/4"	11 1/2 OR 12	10 LINEAR FEET
BOTTOM LOCK 1 3/4"	7/8"	1 3/4" 2"	9 OR 11 6	10 LINEAR FEET

Bottom Locking Fence Slats

SlatSource by PrivacyLink
130 West 700 South, Smithfield, UT 84335
eprivacylink.com • 1-800-574-1076

PROJECT:	SUBMITTED BY:	DRAWING NO:
OWNER/GENERAL CONTRACTOR:	DATE:	

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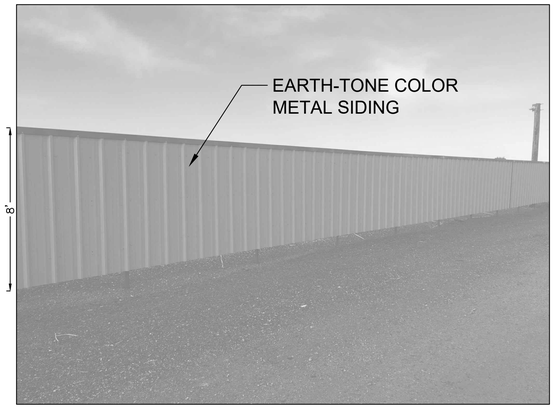
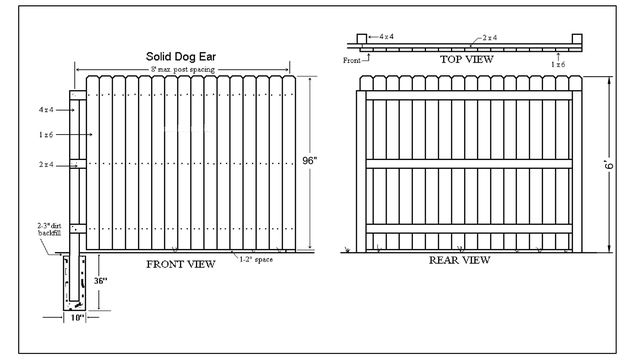
SLATTED EXISTING CHAINLINK DETAILS



METAL SIDING FENCE DETAIL

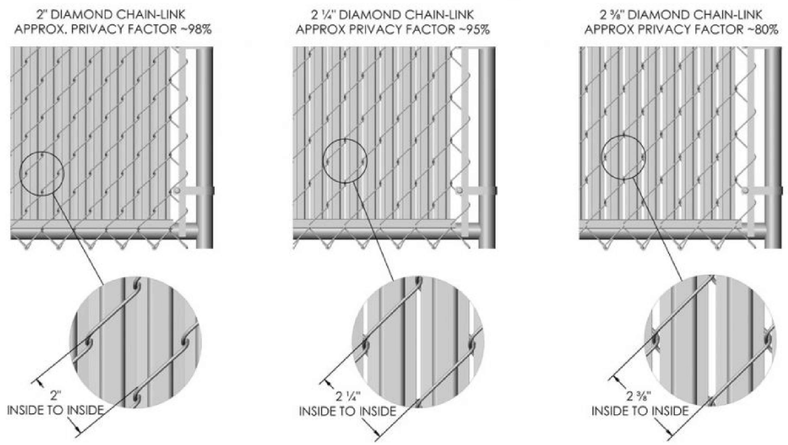
SIDING TO BE 22 GAUGE MIN.



OPAQUE WOOD FENCE DETAIL

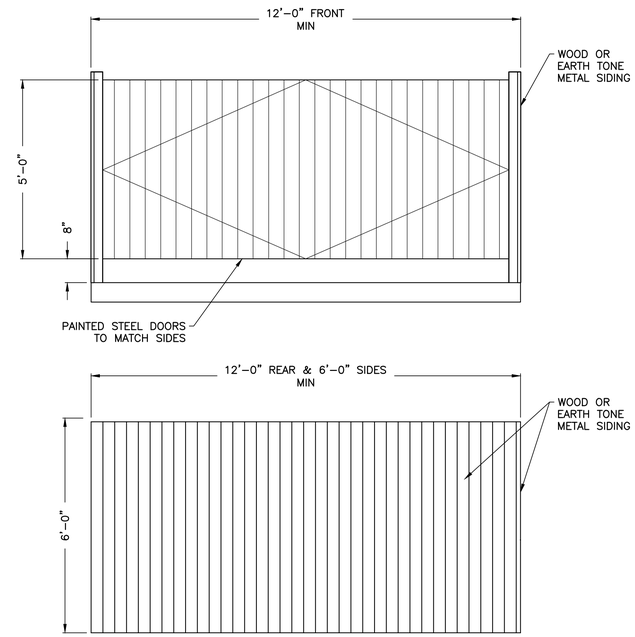
(TRASH ENCLOSURE)

SOLITUBE® SLAT PRIVACY COMPARISON
SLAT WIDTH = 1 7/16" (1.437")



NOTE: CHAIN-LINK DIAMOND SIZES MAY HAVE SLIGHT VARIATIONS BETWEEN MANUFACTURERS AND GAUGE OF WIRE USED

NEW SLATTED CHAINLINK DETAILS



TRASH ENCLOSURE

SCALE 1" = 2'

Western Engineering Consultants, inc LLC
127 S. DENVER AVE
FT. LUPTON, CO 80621
www.westernec.com
eno@westernec.com
(720) 685-9951
FAX (720) 294-1330

No.	REVISION	DATE	BY
0	INITIAL RELEASE	01/21/20	CFC
1	REV PER 03/30/20 CITY COMMENTS	06/09/20	CFC
2	ADD 2.498 AC REMAINING PARCEL A-1	06/27/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
7200 W 1ST PLACE
LAKWEOOD, CO 80215
(720)685-9951

SITE DETAILS
SITE PLAN REVIEW
PARCEL B, LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

Dig Safely.
CALL UNCC
THREE WORKING DAYS BEFORE YOU DIG
1-800-922-1987
www.uncc.org
UTILITY NOTIFICATION CENTER OF COLORADO

FOR APPROVAL

ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

INITIAL PLAN RELEASE: 01/21/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0008-DTLS
SHEET 8 OF 8

\\WECSERVER\Share\0330_001_00-RLW SAND\Dwg\CDs\0330-001-WEC-SPR-Amended.dwg, 08-DTLS, 9/30/2021 12:04:56 PM , AutoCAD PDF (High Quality Print).pc3, WEC 24*36, WEC 24*36

SB WEAKLAND INVESTMENTS
SITE ENGINEERING CONSTRUCTION PLANS

Project No. LUP2021-0025 & Plan No. SPR2021-0008

PARCEL B AND THE 2.498 REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Part of the Northwest 1/4 of Section 34,
Township 2 North, Range 66 West of the 6th P.M.,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO
ZONE I-2

VICINITY MAP SCALE 1' = 1,000'

NW 1/4, S34, T2N, R66W, 6th P.M.
SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

BASIS OF BEARING:

THE NORTH LINE OF THE NORTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO BEARS S89°07'24"W, TAKEN FROM THE RECORDED PLAT OF FRONT RANGE ENERGY SUBDIVISION. RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO. MONUMENTS ARE AS SHOWN HEREON.

UTILITY MAINTENANCE STATEMENT

ALL PUBLIC WATER, STORM SEWER AND SANITARY SEWER MAINS AND APPURTENANCES LOCATED IN PUBLIC ROW SHALL BE MAINTAINED BY THE CITY OF FORT LUPTON PUBLIC WORKS DEPARTMENT. ALL PUBLIC WATER, STORM SEWER, SANITARY SEWER MAINS AND APPURTENANCES UNDER PRIVATE DRIVES ARE LOCATED IN UTILITY EASEMENTS. CITY IS RESPONSIBLE FOR MAINTENANCE OF THESE WATER, STORM AND SANITARY SEWER FACILITIES. CITY IS NOT RESPONSIBLE FOR REPAIR OR REPLACEMENT OF PRIVATE DRIVE, CURB AND GUTTER OR LANDSCAPING DAMAGED DURING UTILITY REPAIR OR MAINTENANCE.

REVISIONS	SHEET	INDEX:
0 1 2 3 4 5	1	COVER SHEET
3	2FL	NOTES
3 4	2WEC	GENERAL NOTES
0 1 2 3	3	EXISTING CONDITIONS
0 1 2 3 4 5	3A	EXISTING CONDITIONS WITH AERIAL
0 1 2 3 4 5	4	OVERALL SITE PLAN
0 1 2 3 4 5	4F	FIRE ACCESS TRACKING
2 3 4	5	YARD A SITE PLAN
2 3 4	6	YARD B SITE PLAN
2 3 4 5	7	YARD C SITE PLAN
4 5	7A	MAXAR SITE PLAN
0 1 2 3 4 5	8	UTILITY PLAN
3 4 5	8G	UTILITY PLAN WITH TOPO
0 1 2 3 4 5	9	GRADING PLAN
0 1 2 3 4 5	10	PONDS & YARD C GRADING PLAN
0 1 2 3 4 5	11	DRAINAGE DETAILS
0 1 2 3 4	12	HISTORIC AND EXISTING DRAINAGE PLAN
0 1 2 3 4 5	13	DEVELOPED DRAINAGE PLAN
0 1 2 3 4 5	14	LANDSCAPE PLAN & DETAILS
0 1 2 3 4	15	SITE DETAILS
3 4 5	16	INITIAL EROSION CONTROL
3 4 5	17	INTERIM EROSION CONTROL
3 4 5	18	FINAL EROSION CONTROL
3	19	EROSION CONTROL DETAILS
3	20	EROSION CONTROL DETAILS
3	21	EROSION CONTROL DETAILS
3	22	EROSION CONTROL DETAILS
3	23	EROSION CONTROL DETAILS

0	INITIAL RELEASE:	DECEMBER 11, 2019
1	CITY SUBMITTAL	DECEMBER 19, 2019
2	REV PER 1/20/20 CITY COMMENTS	JANUARY 21, 2020
3	REV PER 3/30/20 CITY COMMENTS	JUNE 09, 2020
4	ADD 2.498 ACRE REMAINING PARCEL A-1	AUGUST 27, 2021
5	REV PER 9/09 AND 9/14/21 CITY COMMENTS	SEPTEMBER 30, 2021

ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

ADMINISTRATIVE SITE PLAN CERTIFICATIONS

PROPERTY DESCRIPTION

A PARCEL OF LAND IN THE CITY OF FORT LUPTON, COLORADO, LOCATED IN THE NORTHWEST ¼ OF SECTION 17, T1N, R66W OF THE 6TH P.M. AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM TITLE COMMITMENT

PARCEL A:
THAT PART OF THE NW1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS:

BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34;
THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NW1/4 SECTION 34 A DISTANCE OF 1656.54 FEET TO THE SOUTHWEST CORNER OF THE N3/4 OF THE W1/2 OF THE W1/2 OF THE NW1/4 OF THE NW1/4 OF SAID SECTION 34;
THENCE NORTH 89°41'29" EAST ALONG THE SOUTH LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 331.83 FEET TO THE SOUTHEAST CORNER OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34; THENCE NORTH 00°09'47" WEST ALONG THE EAST LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 734.60 FEET TO A POINT 260.00 FEET SOUTH OF THE NORTH LINE OF NW1/4 OF SECTION 34; THENCE NORTH 89°34'30" EAST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 745.07 FEET TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00°01'29" EAST PARALLEL WITH THE EAST LINE OF SAID NW1/4 OF SECTION 34 A DISTANCE OF 2356.32 FEET TO A POINT 40.00 FEET NORTH OF THE SOUTH LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.42 FEET TO A POINT 40.00 FEET WEST OF THE EAST LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 00°01'29" WEST PARALLEL WITH SAID EAST LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 2364.68 FEET TO A POINT 260.00 FEET SOUTH OF SAID NW1/4 OF SECTION 34;
THENCE SOUTH 89°34'30" WEST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.46 FEET TO THE TRUE POINT OF BEGINNING.

SAVE AND EXCEPT THAT PART OF THE NORTHWEST 1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34; THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NORTHWEST 1/4 SECTION 34 A DISTANCE OF 40.00 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH AND 40.00 FEET NORTHERLY OF THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 1872.16 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 00°01'29" WEST PARALLEL WITH THE EAST LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 737.91 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO A POINT 40.00 FEET WESTERLY OF SAID EAST LINE OF THE NORTHWEST 1/4 OF SECTION 34; THENCE SOUTH 89°53'11" WEST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO THE TRUE POINT OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

EXCEPTING THEREFROM LOT 1, COLORADO GREENHOUSE ADDITION, RECORDED MAY 12, 1997 AT RECEPTION NO. 2547711, AND FURTHER EXCEPTING THAT PORTION KNOWN AS LOT ONE FORT LUPTON FIRE PROTECTION DISTRICT SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED MAY 5, 1999 AT RECEPTION NO. 2691823.

PARCEL 2:

LOT 1, FRONT RANGE ENERGY SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO.

PARCEL 3:

NON-EXCLUSIVE EASEMENT FOR NATURAL GAS TRANSMISSION LINES AND RELATED APPURTENANCES, AND FOR VEHICULAR AND PEDESTRIAN TRAFFIC, AS MORE PARTICULARLY SET FORTH IN EASEMENT, RECORDED MARCH 3, 1993 AT RECEPTION NO. 2323677, THEREAFTER NOTICE OF ASSIGNMENT RECORDED AUGUST 9, 2017, AT RECEPTION NO. 4325787.

COLORADO REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER M. WEST
33802
09/30/21

PREPARED FOR:
SB WEAKLAND INVESTMENTS
SCOTT & BARBARA WEAKLAND
12420 W 18TH DR
LAKEWOOD, CO 80215
(720)685-9951

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email@westerneci.com
(720)685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

PROJECT NO: 01-0330.001.00
INITIAL PLAN RELEASE: Dec. 11, 2019
CURRENT PLAN RELEASE: September 30, 2021
TOTAL SHEETS: 29
SHEET: 1 of 23

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FORT LUPTON STANDARD NOTES

FORT LUPTON STANDARD CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY RULES AND REGULATIONS.

2. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEBRIS DROPPED INTO PUBLIC MANHOLES AND OTHER PUBLIC STRUCTURES. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL DEBRIS IN AFFECTED STRUCTURES. IF IT IS DETERMINED THAT DEBRIS CAUSED A BACKUP, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES.

3. THE CONTRACTOR SHALL PROVIDE ACCESS TO AND FROM ALL PRIVATE PROPERTY ADJACENT TO THE WORK THROUGHOUT THE PERIOD OF CONSTRUCTION.

4. "AS-BUILT" ELECTRONIC SUBMITTAL OR PRINTS ARE TO BE SUBMITTED TO CITY ENGINEER AT COMPLETION OF THE PROJECT. "AS-BUILT" DRAWINGS ARE TO BE REPRODUCIBLE COPIES (OR ORIGINALS) OF THE APPROVED CONSTRUCTION DRAWINGS. ANY FIELD CHANGES ARE TO BE NOTED. THE DRAWINGS WILL STATE "AS-BUILT" IN LARGE BLOCK LETTERS. THE "AS-BUILT" ELECTRONIC SUBMITTAL OR PRINTS ARE TO BE SIGNED, DATED AND STAMPED BY A COLORADO REGISTERED PROFESSIONAL ENGINEER.

5. NO WATER VALVE OR OTHER CONTROL DEVICE ON THE EXISTING PUBLIC SYSTEM WILL BE OPERATED FOR ANY PURPOSE BY ANYONE OTHER THAN THE CITY WITHOUT PRIOR WRITTEN AUTHORIZATION.

6. TO SCHEDULE AN INSPECTION DURING REGULAR BUSINESS HOURS, CONTACT PUBLIC WORKS DEPARTMENT AT 303-857-6694. FOR AFTER HOURS EMERGENCIES CALL POLICE DISPATCH AT 720-652-4222.

7. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE CITY OF FORT LUPTON 48 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTHS) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE. DAMAGED UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR, AT HIS EXPENSE.

8. PERMITTEE SHALL NOTIFY THE CITY INSPECTOR:

   - TWO WORKING DAYS BEFORE COMMENCING WORK ON R.O.W.;
   - WHEN SUSPENDING OPERATIONS FOR 5 OR MORE WORKING DAYS;
   - TWO WORKING DAYS BEFORE RESUMING SUSPENDED WORK;
   - UPON COMPLETION OF WORK.

9. CONTRACTOR SHALL MAINTAIN AT LEAST ONE COPY OF THE APPROVED PLANS, SPECIFICATIONS AND STANDARDS ON THE JOB SITE AT ALL TIMES.
10. CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE.
11. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.
12. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND/OR PERSONNEL AS REQUIRED. A TRAFFIC CONTROL PLAN (TCP) IS SUBJECT TO CITY OF FORT LUPTON AND/OR CDOT APPROVAL PRIOR TO COMMENCING WORK ON ROADWAY ROW. A COPY OF APPROVED TCPS MUST BE AVAILABLE ON SITE DURING WORK. TRAFFIC CONTROL TO BE IN ACCORDANCE WITH M.U.T.C.D., SECTION VI.
13. ALL WORK WILL BE PROPERLY BACKFILLED PRIOR TO THE END OF WORKDAY, NO OPEN HOLES ARE ALLOWED OVERNIGHT. ALL WORK IS TO BE IN ACCORDANCE WITH PERMIT REQUIREMENTS AND APPLICABLE STANDARDS.
14. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE, PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.
15. PATCH ASPHALT PAVING AS NECESSARY TO JOIN NEW GUTTERS WITH THE EXISTING PAVEMENT. REMOVAL AND REPLACEMENT OF ASPHALT SHALL BE PER THE LATEST CITY OF FORT LUPTON STANDARDS AND DETAILS.
16. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
17. PERMITTEE SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY R.O.W. AT THE CLOSE OF DAILY OPERATIONS. THE TCP MUST INCLUDE PROTECTIVE MEASURES WHERE MATERIALS AND EQUIPMENT MAY BE STORED ON R.O.W, BUT ENSURE FIVE FEET OF PEDESTRIAN CLEARANCE ON SIDEWALKS.
18. NO WORK SHALL BE PERMITTED AT NIGHT OR ON SATURDAYS, SUNDAYS, AND HOLIDAYS WITHOUT PRIOR AUTHORIZATIONS OR UNLESS OTHERWISE SPECIFIED IN THIS PERMIT. CITY MAY RESTRICT WORK ON R.O.W. DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.
19. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY RIGHT OF WAY SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.
20. SEEDING, SODDING, AND PLANTING SHALL BE AS SPECIFIED OR OTHERWISE APPROVED BY CITY. CONSTRUCTION, MAINTENANCE, AND WATERING REQUIREMENTS SHALL CONFORM WITH THE CITY STANDARD SPECIFICATIONS. WHERE LANDSCAPE RESTORATION MUST BE DELAYED DUE TO SEASONAL REQUIREMENTS, SUCH WORK MAY BE AUTHORIZED BY A SEPARATE PERMIT.

GRADING AND EROSION CONTROL NOTES

1. ALL SITE GRADING (EXCAVATION, EMBANKMENT, AND COMPACTION) SHALL CONFORM TO THE RECOMMENDATIONS OF THE LATEST SOILS INVESTIGATION FOR THIS PROPERTY AND SHALL FURTHER BE IN CONFORMANCE WITH THE CITY OF FORT LUPTON'S "SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS," LATEST EDITION.

2. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.

3. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS.

4. TEMPORARY VEGETATION SHALL BE INSTALLED ON ALL DISTURBED AREAS WHERE PERMANENT SURFACE IMPROVEMENTS ARE NOT SCHEDULED FOR INSTALLATION WITHIN THREE MONTHS. VEGETATION SHALL BE A VIGOROUS, DROUGHT TOLERANT, NATIVE SPECIES MIX. (REFER TO SECTION 2.26.00 OF CITY CONSTRUCTION SPECIFICATIONS FOR SEEDING MIX.) PROJECT SCHEDULING SHOULD TAKE ADVANTAGE OF SPRING OR FALL PLANTING SEASONS FOR NATURAL GERMINATION, BUT SEEDED AREAS SHALL BE IRRIGATED, IF CONDITIONS SO MERIT.

5. AT ALL TIMES, THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN FUGITIVE DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE OWNER/DEVELOPER SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.

6. TEMPORARY CUT/FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1 (2H:1V). PERMANENT SLOPES SHALL NOT EXCEED 4:1 (4H:1V) IN AREAS TO BE SEEDED OR SODDED.

7. THE OWNER/DEVELOPER SHALL PROVIDE ANY ADDITIONAL DUST ABATEMENT AND EROSION CONTROL MEASURES DEEMED NECESSARY BY THE CITY, SHOULD CONDITIONS MERIT THEM.

8. TEMPORARY FENCES SHALL BE INSTALLED ALONG ALL BOUNDARIES OF THE CONSTRUCTION LIMITS OR PROPERTY LINES AS SHOWN ON THE APPROVED EROSION CONTROL PLAN, TO PREVENT GRADING ON PROPERTY NOT OWNED BY THE DEVELOPER. IN ADDITION, THE CITY MAY REQUIRE ADDITIONAL TEMPORARY FENCES IF FIELD CONDITIONS SO MERIT THEM.

9. IMPERVIOUS SURFACES WHICH ARE ADJACENT TO OR CONTAINED WITHIN CONSTRUCTION SITES WILL BE SWEPT ON A DAILY BASIS OR AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ON TO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.

10. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING, OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS OR AS NEEDED THROUGHOUT THE WORK DAY. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED.

11. THE DISCHARGE OF WATER CONTAINING WASTE CEMENT TO ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., IS PROHIBITED. THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES, EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS, IS PROHIBITED AT THE JOB SITE.

127 S. DENVER AVE
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FAX (720) 294-1330
Western Engineering Consultants, inc LLC

No.	REVISION	DATE	BY
3	REV FOR 3/30/20 CITY COMMENTS	06/09/20	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12420 W. 6TH PKWY
LAKWEOOD, CO 80215
(720)685-9951

CITY OF FORT LUPTON NOTES
SITE ENGINEERING PLANS
PARCEL B, LOT 1, FRONT RANGE ENERGY SUB.
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INITIAL PLAN RELEASE: 06/09/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0002-FLNOTES
SHEET 2FL OF 23

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GENERAL CONSTRUCTION NOTES:

1. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY, OR EASEMENT, SHALL CONFORM TO CITY OF FORT LUPTON CONSTRUCTION SPECIFICATIONS AND DESIGN STANDARDS. IN THE CASE SUCH STANDARDS ARE NOT PROVIDED, CDOT STANDARDS SHALL APPLY.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS PRIOR TO COMMENCEMENT OF ANY WORK ON THE PROJECT.
3. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER AND THE CITY OF ANY PROBLEMS IN CONFORMING TO THE APPROVED PLANS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO ITS CONSTRUCTION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES TO RESOLVE CONSTRUCTION PROBLEMS DUE TO CHANGED CONDITIONS OR DESIGN ERRORS ENCOUNTERED BY THE CONTRACTOR DURING THE PROGRESS OF ANY PORTION OF THE PROJECT. IF, IN THE OPINION OF THE OWNER, THE MODIFICATIONS PROPOSED BY THE CONTRACTOR TO THE APPROVED PLANS INVOLVE SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK, OR TO THE FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESUBMITTING THE REVISED PLAN TO THE OWNER FOR APPROVAL PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE PROJECT. ANY IMPROVEMENTS NOT CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS, OR THE APPROVED REVISED PLANS, SHALL BE REMOVED AND RECONSTRUCTED ACCORDING TO THE APPROVED PLANS.
5. THE GRADING PLAN IS FOR ROUGH GRADING ONLY. CHANGES MAY BE NECESSARY TO BRING PLANS INTO CONFORMANCE WITH APPROVED FINAL DRAINAGE PLAN AND SITE PLAN.
6. A WATER TRUCK, IF CALLED BY THE INSPECTOR (OR PUBLIC WORKS DEPARTMENT (PWD)), WILL BE PROVIDED, BY THE CONTRACTOR, TO MAINTAIN DUST CONTROL.
7. ANY SETTLEMENT OR SOIL ACCUMULATION, BEYOND THE PROPERTY LIMITS, DUE TO GRADING OR EROSION, SHALL BE REPAIRED BY THE CONTRACTOR IMMEDIATELY.
8. NO GRADING SHALL TAKE PLACE IN DELINEATED FLOOD HAZARD AREAS UNTIL THE FINAL DRAINAGE PLAN HAS BEEN APPROVED AND ALL APPROPRIATE PERMITS HAVE BEEN OBTAINED.
9. ANY CONSTRUCTION DEBRIS OR MUD TRACKING ONTO THE PUBLIC RIGHT-OF-WAY, RESULTING FROM THE PROJECT, SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL IMMEDIATELY FIX ANY EXCAVATION OR EXCESSIVE PAVEMENT FAILURE CAUSED BY PROJECT, AND SHALL PROPERLY BARRICADE THE SITE UNTIL CONSTRUCTION IS COMPLETE. FAILURE BY THE CONTRACTOR TO CORRECT ANY OF THE ABOVE WITHIN 48 HOURS OF WRITTEN NOTICE, BY THE TOWN, SHALL CAUSE THE TOWN TO ISSUE A STOP WORK ORDER (RED TAG) AND/OR DO THE WORK AND MAKE A CLAIM AGAINST THE PROJECT'S LETTER OF CREDIT FOR ANY COSTS INCURRED BY THE TOWN.
10. THE CONTRACTOR SHALL BE SOLELY, AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT, AND ADJACENT TO, THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO, NORMAL WORKING HOURS. THE DUTY OF THE TOWN TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
12. ~~ALL UTILITY POLES SHALL BE RELOCATED PRIOR TO PLACEMENT OF ANY CONCRETE BY THE ____________ ELECTRIC DEPARTMENT. ALL FACILITIES THAT NEED RELOCATION BY THE ELECTRIC DEPARTMENT WILL BE BILLED TO THE DEVELOPER.~~
13. THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS PRIOR TO ADJUSTING ALL CLEANOUTS, MANHOLES, VALVE BOXES, SURVEY MONUMENTS, AND ANY OTHER FIXTURES TO FINISHED GRADE PRIOR TO FINAL PAVING.
14. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGPERSONS, OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY, IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
15. THE CONTRACTOR SHALL PROVIDE INGRESS AND EGRESS TO PRIVATE PROPERTY ADJACENT TO THE PROJECT THROUGHOUT THE PERIOD OF CONSTRUCTION. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL OBTAIN A WRITTEN AGREEMENT FROM THE PROPERTY OWNERS IMPACTED BY THIS ACCESS. UPON REQUEST, THE CONTRACTOR SHALL PROVIDE A COPY OF THESE WRITTEN AGREEMENTS TO THE OWNER.
16. PRIOR TO FINAL PLACEMENT OF SURFACE PAVEMENT, ALL UNDERGROUND UTILITY MAINS SHALL BE INSTALLED AND SERVICE CONNECTIONS STUBBED OUT BEYOND CURB LINE, WHEN ALLOWED BY THE UTILITY. SERVICE FROM PUBLIC UTILITIES AND FROM SANITARY SEWERS SHALL BE MADE AVAILABLE FOR EACH LOT IN SUCH A MANNER THAT WILL NOT BE NECESSARY TO DISTURB THE STREET PAVEMENT, CURB, GUTTER, AND SIDEWALK WHEN CONNECTIONS ARE MADE.
17. REPRODUCIBLE COPIES OF "AS BUILT" PLANS SHALL BE SUBMITTED TO THE TOWN PRIOR TO CONSTRUCTION ACCEPTANCE OF THE PUBLIC IMPROVEMENTS (IF ANY PUBLIC IMPROVEMENTS ARE NECESSARY).
18. THE CONTRACTOR SHALL NOTIFY THE TOWN INSPECTOR (OR PWD) AT LEAST 24 HOURS PRIOR TO DESIRED INSPECTION.
19. THE CONTRACTOR SHALL BE RESPONSIBLE TO APPROPRIATELY MARK (BY BAGGING) ALL FIRE HYDRANTS THAT ARE TAKEN OUT OF SERVICE DURING THIS PROJECT. THE CONTRACTOR SHALL NOTIFY THE TOWN FIRE DEPARTMENT AT LEAST 24 HOURS PRIOR TO REMOVING ANY FIRE HYDRANT FROM SERVICE.
20. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE WELD COUNTY AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
21. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS. AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB, ON-SITE AT ALL TIMES.
22. THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS, UNLESS SPECIFICALLY APPROVED BY THE PUBLIC WORKS INSPECTOR, AND NO SITE CONSTRUCTION ACTIVITIES ON SUNDAYS OR HOLIDAYS, UNLESS THERE IS PRIOR WRITTEN APPROVAL BY THE PUBLIC WORKS DIRECTOR.

WESTERN ENGINEERING CONSULTANTS GENERAL CONSTRUCTION NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO TOWN DESIGN & CONSTRUCTION SPECIFICATIONS. IN THE CASE SUCH STANDARDS ARE NOT PROVIDED, A PROPER SPECIFICATION SHALL BE FOLLOWED AS AGREED BETWEEN THE OWNER, ENGINEER, AND CONTRACTOR.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ELEVATION AND O.D. OF ALL EXISTING LINES AT THE POINT OF CONNECTION TO THE NEW SYSTEM PRIOR TO ORDERING MATERIALS THAT DEPEND ON THIS INFORMATION.
3. WESTERN ENGINEERING CONSULTANTS (WEC) IS NOT A GUARANTOR OF THE CONSTRUCTING CONTRACTORS OBLIGATION AND PERFORMANCE OF WORK.
4. WEC IS NOT RESPONSIBLE FOR SAFETY, IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS THERETO.
5. WEC EXERCISES NO CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS, OR OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERVISION OF THE SAME.

ARCHITECTURAL INFORMATION:

1. THESE PLANS USED THE BUILDING PLAN PREPARED BY "NAME / COMPANY" DATED "MONTH ##, 20##."
2. ANY SUBSEQUENT REVISIONS MADE BY "NAME / COMPANY" ARE NOT REFLECTED IN THIS PLAN SET. REVISIONS DESCRIBED AND DATED ON INDIVIDUAL SHEETS IN THIS PLAN SET ARE ENGINEERING REVISIONS ONLY.

UTILITY LOCATION NOTES:

1. COLORADO STATE S.B. 93-155 REQUIRES ANYONE WHO ENGAGES IN ANY TYPE OF EXCAVATION TO PROVIDE ADVANCE NOTICE OF AT LEAST TWO (2) BUSINESS DAYS NOT INCLUDING THE DAY OF ACTUAL NOTICE.

UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) 1-800-922-1987

2. NEW UTILITIES MAY HAVE BEEN INSTALLED SINCE THE LOCATES FOR THIS PROJECT WERE COMPLETED (IE NOT SHOWN ON PLANS). IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ATTAIN NEW LOCATES AS STATED BY LAW.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ADDITIONAL LOCATES IF THE STATE OR ANOTHER UTILITY ENTITY HAS UTILITIES IN THE AREA WHICH WERE NOT IDENTIFIED BY UNCC.

UTILITY POTHOLE & SURVEY NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO STARTING CONSTRUCTION. LOCATIONS WHERE EXISTING UTILITIES AND PROPOSED CONSTRUCTION CROSS OR POTENTIALLY CONFLICT SHALL BE POTHOLED BY THE CONTRACTOR, ELEVATIONS SURVEYED, AND RESULTS AND CONFLICTS PROVIDED TO WEC. WEC REQUIRES A MINIMUM OF 5 WORKING DAYS FOR RE-DESIGN OF ANY CONFLICTS DISCOVERED BY THE POTHOLE. SEE ALSO CONTRACTOR'S AS-BUILT DRAWING NOTES.
2. THE CONTRACTOR SHALL PROVIDE DRAWINGS OF EXISTING ON-SITE UNDERGROUND UTILITIES AS EXPLAINED WITHIN THE CONTRACTOR'S AS-BUILT DRAWING NOTES. THE CONTRACTOR IS REQUIRED TO PLAN AHEAD AND NOTIFY THE OWNER OF ANY CONFLICTS IN A TIMELY MANNER.

CONTRACTOR'S AS-BUILT DRAWINGS NOTES:

1. THE CONTRACTOR SHALL PROVIDE, AT THE COMPLETION OF THE PROJECT OR EACH PHASE OF THE PROJECT, A COMPLETE SET OF "AS-BUILT" DRAWINGS TO THE OWNER. THE AS-BUILT DRAWINGS WILL CONSIST OF A MARKED-UP SET OF "ISSUED FOR CONSTRUCTION" DRAWINGS VERIFYING THE FOLLOWING:
   - A) ALL LENGTHS, SIZES, AND MATERIALS OF INSTALLED PIPE, MANHOLES, AND ANY OTHER IMPROVEMENT.
   - B) HORIZONTAL LOCATIONS EITHER BY STATION AND OFFSET, OR BY NORTHING AND EASTING COORDINATES OF ALL MANHOLES, BENDS, CLEANOUTS, VALVES, TAPS, WYES, STUBS, PLUGS, TEES, ETC.
   - C) INVERT ELEVATION OF EACH CONSTRUCTED PIPE AT: STORM SEWER AND SANITARY SEWER MANHOLES, INLETS, OUTLETS, STUB ENDS, ETC. TOP OF PIPE ELEVATIONS OF EACH FOREIGN PIPE OR UTILITY CROSSING.
   - D) CONSTRUCTED SLOPE OF STORM AND SANITARY PIPES BETWEEN MANHOLES AND STRUCTURES.
   - E) TOP OF PIPE ELEVATION AT REGULAR INTERVALS AND/OR FITTINGS FOR WATER LINES, FIRE PROTECTION LINES, GAS LINES, AND ELECTRIC CONDUITS.
   - F) ELEVATIONS AT FLOWLINE OF CURB AND GUTTER AT DESIGN LOCATIONS AND GRADE BREAKS. ELEVATION OF INLET AND TRENCH DRAIN GRATES. TOP OF CURB AT CURB INLETS.
   - G) ANY OTHER VARIATIONS FROM THE CONSTRUCTION DOCUMENTS MUST BE CLEARLY NOTED AND DETAILED ON THE PLANS.
2. THE CONTRACTOR SHALL VERIFY AND SUBMIT, FOR APPROVAL BY THE OWNER, THE GROUND SURFACE ELEVATIONS AT THE FINAL COMPLETION OF THE PROJECT PRIOR TO THE FINAL ACCEPTANCE.
3. THE FINAL AS-BUILT DRAWING CERTIFICATE SHALL BE SIGNED ON EACH SHEET BY THE CONTRACTOR RESPONSIBLE FOR THE WORK.
4. CONTRACTOR AS-BUILT DRAWINGS WILL BE DUE PRIOR TO SUBMITTING THE FINAL PAY REQUEST. NON-CONFORMING AS-BUILT DRAWINGS WILL BE RETURNED TO THE CONTRACTOR FOR REVISIONS AND RESUBMITTAL. FINAL PAYMENT WILL NOT BE APPROVED UNTIL THE OWNER HAS REVIEWED AND APPROVED THE AS-BUILT DRAWINGS.
5. ALL AS-BUILT SURVEYING SHALL MEET COLORADO STANDARD OF CARE. (I.E. HORIZONTAL WITHIN 0.10-FEET AND VERTICAL WITHIN 0.05-FEET). IT IS RECOMMENDED ALL GRAVITY SYSTEMS BE DIFFERENTIAL SURVEYED TO MAINTAIN ACCEPTABLE TOLERANCES.

4

GEOTECHNICAL NOTES:

1. FOR ALL GEOTECHNICAL RELATED ISSUES (PIPE BEDDING, BACKFILL, IMPORTING FILLS, ASPHALT, ETC). REFERENCE THE PROJECT GEOTECHNICAL REPORT PREPARED BY ________ DATED ___________.
2. SEE PERCOLATION TEST RESULTS BY EARTH ENGINEERING COMPANY, DATED MAY 6, 2020 (BH 1-3) AND JUNE 8, 2020 (BH 11-18).

GEOTECHNICAL TESTING:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL TESTING IN ORDER TO MEET PROPERTY OWNER REQUIREMENTS AND TOWN DESIGN STANDARDS.
2. THE OWNER SHALL PAY FOR TESTING TO MEET THE MINIMUM REQUIRED BY TOWN STANDARDS.
3. ALL COSTS FOR FAILING TESTS WILL BE DEDUCTED FROM THE CONTRACTOR'S PAYMENT REQUEST(S).

BASIS of BEARING & BENCHMARK:

PROJECT BENCHMARK (VERTICAL DATUM): BENCHMARK: NGS BENCHMARK U 260 1993 RESET NAVD88 ELEVATION=4893.9

BASIS OF BEARINGS (HORIZONTAL DATUM): THE WEST LINE OF LOT B, RECORDED EXEMPTION NO. 1305- 28-3 RE-4605 IS ASSUMED TO BEAR NORTH 23°17639'24" EAST, AS SHOWN ON THE PLAT RECORDED AUGUST 28, 2007 AS RECEPTION NO. 3500169 IN THE RECORDS OF THE CLERK AND RECORDER FOR WELD COUNTY, COLORADO AND AS MONUMENTED HEREON, WITH ALL BEARINGS SHOWN HEREON RELATIVE THERETO.

SURVEY CONSTRUCTION NOTES:

1. PROJECT HORIZONTAL & VERTICAL CONTROL AND CONTROL NOTES ARE SHOWN ON THE HORIZONTAL BASELINE CONTROL SHEET OF THIS PLAN SET.
2. ALL PROPERTY PINS OR SURVEY MONUMENTS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE. THIS SHALL INCLUDE A SURVEY PLAT IF REQUIRED BY LAW.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIND AND IDENTIFY ALL EXISTING SURVEY MONUMENTS WHICH MAY BE DISTURBED DURING CONSTRUCTION.
4. EXISTING HORIZONTAL AND VERTICAL CONTROL SHALL BE VERIFIED BY A PROFESSIONAL LAND SURVEYOR. THE CONTRACTOR'S SURVEYOR SHALL PROVIDE WRITTEN CONFIRMATION VERIFYING THE CONTROL IS SATISFACTORY PRIOR TO BEGINNING OF CONSTRUCTION.
5. ALL CONSTRUCTION SURVEYING SHALL MEET COLORADO STANDARD OF CARE.
6. THE CONTRACTOR SHALL FIELD SURVEY THE EXISTING GROUND SURFACE ALONG THE PROPOSED ALIGNMENT, COMPARE THE SURFACE TO THE TOPOGRAPHY AS SHOWN ON THESE PLANS AND SUBMIT IN WRITING ANY CONCLUSIONS / DISCREPANCIES BETWEEN THE SURVEYS.
7. ALL FIELD STAKING SHALL BE PERFORMED AND LABELED MATCHING THE STATIONING AND OFFSET BASELINE AS SHOWN IN THIS PLAN SET. ARBITRARY BASELINE OR STATIONING (NOT MATCHING THESE DESIGN PLANS) WILL NOT BE ALLOWED.
8. CUT-SHEETS ARE REQUIRED TO BE COPIED TO THE SPECIFIC IMPROVEMENT CONTRACTOR, OWNER AND WEC WITHIN 2 DAYS OF CONSTRUCTION STAKING.
9. ANY MONUMENTS INSTALLED FOR THIS PROJECT (NEW & REVISED) SHALL BE PER CDOT DETAIL (M-629-1).

EXISTING TOPOGRAPHY and CONTOURS:

1. ALL PROFILES (THIS PLAN SET) REPRESENT A DIGITAL TERRAIN MODEL (DTM) CREATED BY WEC BASED ON FIELD SURVEY PROVIDED BY OTHERS.
2. CONTOUR LINES OF EXISTING/ORIGINAL GRADE HAVE A 2-FOOT INTERVAL ACCURACY AND ARE SHOWN FOR ILLUSTRATION ONLY.

GRADING AND COMPACTION NOTES:

1. REFERENCE THE PROJECT GEOTECHNICAL REPORT PREPARED BY SOILOGIC DATED SEPTEMBER 2017.
2. ALL EXCESS SOIL MATERIALS ARE TO BE STOCKPILED AS DIRECTED BY THE OWNER OR REMOVED AT THE CONTRACTOR'S EXPENSE. ALL CONCRETE, ASPHALT, AND OTHER REMOVED IMPROVEMENTS SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
3. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION AS A MINIMUM, UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL GRADEWORK TO ENSURE POSITIVE DRAINAGE AT ALL TIMES (MATCH ORIGINAL CONDITIONS).
5. ALL BACKFILL SHALL MEET THE TYPICAL TRENCH DETAIL SPECIFICATIONS SHOWN IN THIS PLAN SET, AND PER TOWN CRITERIA.
6. ALL OTHER SOIL PLACEMENT OVER 12-INCHES IN THICKNESS SHALL ALSO MEET THE TYPICAL TRENCH DETAIL COMPACTION SPECIFICATIONS SHOWN IN THIS PLAN SET.
7. STRIP THE TOP 6-INCHES OF ALL AREAS TO BE DISTURBED DURING CONSTRUCTION, AND STOCKPILE SEPARATE FROM TRENCH SPOILS IN LOCATION(S) AS APPROVED BY PROPERTY OWNER. REPLACE STRIPPINGS ABOVE COMPLETED PIPELINES MATCHING PRE CONSTRUCTION GRADES WHERE NO PROPOSED GRADING IS SHOWN.
8. THE CONTRACTOR SHALL MEET THE PROJECT SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT AND COORDINATE SCHEDULING THE GEOTECHNICAL TESTING FIRM IN ORDER TO MEET THE PROJECT SPECIFICATIONS AND STANDARDS.
9. FOR GRADING NOT SHOWN HERE-IN THESE PLANS, REFER TO LANDSCAPE GRADING BY OTHERS. LANDSCAPE FINAL GRADING TO BE PROVIDED BY OTHERS.
10. ROUGH GRADING VERTICAL TOLERANCES ARE ± 0.10 FT.
11. COMPACTION OF ALL HYDRANT RUN BACKFILL SHALL MEET 100% OF MAXIMUM DENSITY AND WITHIN 3% +/- OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY STANDARD PROCTOR ASTM-D-698.
12. CONTRACTOR TO PROVIDE TRAFFIC CONTROL MEASURES AS REQUIRED BY TOWN STANDARDS FOR PUBLIC RIGHT OF WAY.
13. IF NECESSARY TO ACCESS OVER EXISTING IMPROVEMENTS (IE, EXISTING ROADS, SHALLOWS, UTILITIES ETC.,) THE CONTRACTOR SHALL COORDINATE WITH THE GEOTECHNICAL CONSULTANT REGARDING PROTECTION AGAINST CONSTRUCTION TRAFFIC LOADS.

EROSION CONTROL & STORM WATER MANAGEMENT PLAN:

1. ALL EROSION CONTROL MEASURES MUST BE INSTALLED PER URBAN DRAINAGE FLOOD CONTROL DISTRICT (UDFCD) REQUIREMENTS (UNLESS OTHERWISE SHOWN HEREIN), AND ALSO STATE SWMP PERMIT REQUIREMENTS.
2. ALL DISTURBED AREAS (I.E. CONSTRUCTION WORK LIMITS) SHALL BE ENCLOSED BY SILT FENCE IF POTENTIAL FOR RUNOFF EXISTS.
3. INSTALL VEHICLE TRACKING CONTROL AT ALL ACCESS ROAD LOCATIONS ADJACENT TO ALL ENTRANCES / EXITS TO & FROM THE SITE.
4. SEE EROSION PROTECTION DETAILS AS SHOWN ON DRAWINGS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN (IE, SEASONAL SEEDING, MATERIALS, ETC.) ANY AND ALL EROSION PROTECTION NECESSARY UNTIL FINAL ACCEPTANCE OR ONCE SEEDING IS ESTABLISHED, WHICHEVER COMES FIRST.
6. THE CONTRACTOR SHALL PROVIDE SWEEPING AS NECESSARY TO KEEP PRIVATE AND PUBLIC ROADWAYS CLEAN OF DEBRIS.

SEEDING:

1. ALL SEEDING SHALL BE PER TOWN PARKS & RECREATION DESIGN STANDARDS AND AS ACCEPTABLE TO THE PROPERTY OWNER.

ADJACENT DITCH or LATERAL WORK:

1. NO WORK SHALL COMMENCE WITHIN 15-FEET OF ANY DITCH OR LATERAL TOP OF BANK EXCEPT AT THOSE CROSSING LOCATIONS AS NOTED ON THE PLANS UNLESS OTHERWISE APPROVED BY THE OWNER AND APPROPRIATE DITCH COMPANY.
2. ALL WORK WITHIN 15-FEET OF ANY DITCH OR LATERAL TOP OF BANK SHALL MEET ALL REQUIREMENTS AND SPECIFICATIONS PER THE DITCH CROSSING PERMIT.
3. CONTACT OWNER/WEC FOR ANY DITCH RELATED ISSUES.

ELECTRIC and COMMUNICATION CONDUIT CONSTRUCTION NOTES:

1. SEE ALSO ELECTRICAL PLANS FOR ELECTRIC AND COMMUNICATION DESIGN AND SPECIFICATIONS - BY OTHERS.

RELOCATION OF EXISTING LIGHT POLES AND EQUIPMENT:

1. SEE ALSO ELECTRICAL PLANS FOR REMOVAL, SALVAGE, AND RE-INSTALLATION OF EXISTING LIGHT POLES AND EXISTING SECURITY IMPROVEMENTS - BY OTHERS.

RAW WATERLINE CONSTRUCTION NOTES:

1. RAW WATERLINE PIPE SHALL BE RIGID POLYVINYL CHLORIDE (PVC) ASTM D3034 (< 15") OR ASTM 679 ($\geq$ 15") WITH WALL THICKNESS SDR 35, ADS N-12 SMOOTH INTERIOR, OR AS APPROVED BY THE ENGINEER.
2. ALL LENGTHS SHOWN ON THE PLANS ARE FROM END TO END OR PI TO PI.
3. THE CONTRACTOR SHALL INSTALL TEMPORARY PLUGS (IF NECESSARY) AT EXISTING HEAD GATES AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION ACCEPTANCE IS ISSUED, AT WHICH TIME THEY SHALL BE REMOVED BY THE CONTRACTOR.
4. INSTALL MARKER POSTS IN NON-FARMABLE AREAS OR PERMANENT SURVEY MONUMENTS IN EXISTING CONCRETE STRUCTURES WITHIN 2.0-FEET OF PIPELINE BEND LOCATIONS (ALONG THE PIPE CENTERLINE NOT OFFSET).
5. RAW WATERLINE PIPE SHALL BE AIR TESTED AT 4 PSIG OR AS APPROVED BY THE ENGINEER (SHALL DEPEND UPON PIPE MATERIAL USED).

STORM SEWER CONSTRUCTION NOTES:

1. ALL STORM SEWER PIPE TO BE A.S.T.M. C-76, CLASS III REINFORCED CONCRETE PIPE WITH RUBBER GASKETS MEETING AASHTO M-170 REQUIREMENTS. UNLESS OTHERWISE NOTED.
2. STORM SEWER MANHOLES SHALL BE 4 FEET DIAMETER FOR 30 INCH PIPE OR LESS, 5 FEET DIAMETER FOR 36 INCH PIPE. FOR SIZES ABOVE 36 INCH, CONCRETE JUNCTION BOXES, OR PRECAST MANHOLE TEES, WILL BE DETAILED BY THE ENGINEER.
3. ALL ROADWAY STORM SEWER INLETS ARE CDOT TYPE R CURB INLETS, UNLESS OTHERWISE NOTED. THE PROPOSED POND STORM SEWER OUTLET IS CDOT TYPE C.
4. ALL STORM SEWER MANHOLE AND INLET LIDS SHALL BE LABELED PER TOWN STANDARDS INCLUDING THE FOLLOWING CONFINED SPACE INFORMATION "STORM SEWER, CAUTION CONFINED SPACE, ENTRY PERMIT REQUIRED," (TO BE COORDINATED WITH TOWN INSPECTOR).
5. MANHOLE AND INLET LID LOCATION TO BE COORDINATED WITH TOWN INSPECTOR.
6. A MINIMUM OF 2.0 FEET OF COVER OVER THE TOP OF THE STORM SEWER LINES SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
7. A MINIMUM VERTICAL SEPARATION OF 18" SHALL BE MAINTAINED AT ALL CROSSINGS UNLESS OTHERWISE NOTED.
8. ALL LENGTHS OF STORM SEWER LINES SHOWN ON THE PLANS ARE MEASURED HORIZONTALLY FROM CENTER TO CENTER OF ALL STRUCTURES, MANHOLES, BENDS, TEES, AND INLETS UNLESS OTHERWISE NOTED.
9. STORM SEWER SHALL BE AIR TESTED AT 4 PSIG. CONCRETE MANHOLES SHALL BE TESTED PER MANHOLE LEAKAGE TEST.
10. ALL STORM SEWER PIPE SHALL BE LEFT SMOOTH, CLEAN, AND FREE OF OBSTRUCTIONS THROUGHOUT THE ENTIRE ALIGNMENT.
11. PIPE, BENDS, TEES, AND ALL ACCESSORIES ARE TO BE SUPPLIED BY THE SAME SUPPLIER.
12. EXCAVATION SHALL BE DEWATERED AS NECESSARY TO EXCAVATE AND PLACE PIPE WITHIN DRY TRENCH.
13. ALL INSTALLED STORM PIPING IS REQUIRED TO BE WATER JETTED CLEAN TWO WEEKS PRIOR TO THE FINAL ACCEPTANCE WALK THRU.
14. ALL STORM PIPING THIS PROJECT "PRIVATE" UNLESS OTHERWISE NOTED.

STORM DRAINAGE MAINTENANCE:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM EROSION AND SEDIMENT CONTROL MEASURES (INCLUDING PLANTINGS) AND TO MAINTAIN CONSTRUCTED DRAINAGE FACILITIES THROUGH THE CONSTRUCTION PROCESS IN A MANNER THAT PRESERVES THE INTENDED FUNCTION AND LIFE OF THE FACILITIES.

SANITARY SEWER CONSTRUCTION NOTES:

1. SEWER PIPE SHALL BE RIGID POLYVINYL CHLORIDE (PVC) ASTM D3034 (< 15") OR ASTM 679 ($\geq$ 15") WITH WALL THICKNESS SDR 35 (SDR 26 FOR DEPTHS $\geq$ 20').
2. ALL LENGTHS OF SEWER LINE SHOWN ON THE MASTER UTILITY PLAN ARE FROM THE CENTER OF MANHOLE TO THE CENTER OF MANHOLE.
3. THE CONTRACTOR SHALL INSTALL TEMPORARY PLUGS IN THE MANHOLES AT THE POINTS OF CONNECTION TO THE EXISTING SEWER SYSTEMS. PLUGS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION ACCEPTANCE IS ISSUED, AT WHICH TIME THEY SHALL BE REMOVED BY THE CONTRACTOR.
4. INSTALL MARKER POSTS IN LANDSCAPE AREAS OR PERMANENT SURVEY MONUMENTS IN EXISTING PAVED SURFACES WITHIN 2.0-FEET OF EVERY MANHOLE AND STUB LOCATION (ALONG THE PIPE CENTERLINE NOT OFFSET).

STREET CONSTRUCTION NOTES:

1. ALL STREET IMPROVEMENTS TO BE COMPLETED PER CDOT CONSTRUCTION STANDARDS & SPECIFICATIONS.
2. HANDICAP RAMPS ARE TO BE FORMED AT ALL INTERSECTIONS.

ASPHALT NOTES:

1. FULL ASPHALT DESIGN SECTION TO BE PER GEOTECHNICAL REPORT AND CITY STANDARDS (& DETAILS). SEE GEOTECHNICAL NOTES AND TYPICAL ASPHALT AND CONCRETE TRENCH PATCH DETAILS.
2. STANDARD ASPHALT INSTALLATIONS MUST FOLLOW TOWN STANDARDS.

CONSTRUCTION WORK LIMITS:

1. NO CONSTRUCTION ACTIVITIES SHALL TAKE PLACE OUTSIDE OF THE SHOWN WORK LIMITS, EXCEPT FOR ACCESS WITHIN EXISTING ACCESS ROUTES.
2. ALL EXISTING FENCE WITHIN THE CONSTRUCTION WORK LIMITS SHALL BE REMOVED, SALVAGED, AND REPLACED AS DIRECTED BY THE OWNER.
3. ANY FENCE DAMAGED DURING REMOVAL SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

STRIPING NOTES:

1. ALL STANDARD PARKING STALL STRIPING DIMENSIONS ARE 9.0 FEET WIDE BY 18.0 FEET LONG UNLESS OTHERWISE NOTED.
2. ALL STRIPING THIS PROJECT TO BE WHITE UNLESS OTHERWISE NOTED.
3. ALL HANDICAP STALLS TO BE SIGNED & STRIPED PER ADA SPECIFICATIONS, USE BLUE & WHITE SYMBOLOGY, VAN DENOTES VAN ACCESSIBLE STALLS, STD DENOTES STANDARD ACCESSIBLE STALLS.
4. STRIPING MATERIAL TO BE LATEX OR OIL BASED.
5. ALL STRIPING SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
6. REMOVAL OF EXISTING STRIPING WHICH CONFLICTS WITH THE NEW STRIPING DESIGN WILL BE REQUIRED. PAVEMENT MARKING REMOVAL AND INSTALLATION WILL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR.
7. LAYOUT OF STRIPING IN THE FIELD WILL REQUIRE APPROVAL BY THE WELD COUNTY PRIOR TO APPLICATION OF FINAL STRIPING.

FIRELINE and WATERLINE CONSTRUCTION NOTES:

1. A MINIMUM OF 4.5 FEET OF COVER OVER THE TOP OF THE WATER LINES IS TO BE MAINTAINED. (5'-0" MINIMUM OF COVER FOR FIRE PROTECTION LINES.)
2. A MINIMUM VERTICAL SEPARATION OF 18" SHALL BE MAINTAINED AT ALL CROSSINGS, UNLESS OTHERWISE NOTED.
3. ALL LENGTHS OF WATER LINE AND FIRE PROTECTION LINES SHOWN ON THE PLANS ARE MEASURED HORIZONTALLY FROM CENTER TO CENTER OF ALL VALVES, FITTINGS, BENDS, TEES, ETC. VERTICAL RISERS ARE MEASURED VERTICALLY.
4. P.V.C. FIRE PROTECTION LINES TO BE AWWA C-900, CLASS 200. D.I.P. FIRE PROTECTION LINES AND FITTINGS TO BE PRESSURE CLASS 350 AND COMPLY WITH AWWA C-110. ALL PIPELINE APPURTENANCES SHALL BE OF SIMILAR METALS (NO DISSIMILAR METALS).
5. TAPPING SADDLES TO BE USED ONLY FOR TEMPORARY BLOW OFFS.
   - A) ALL TEMPORARY BLOW OFF TAPPING SADDLES SHALL BE BRASS.
   - B) ALL TEES SHALL BE SWIVEL TEES.
6. FIRE PROTECTION AND WATER LINES SHALL BE HYDROSTATICALLY TESTED AT 150 PSI FOR 2 HOURS.
7. ALL WATER LINES, INCLUDING FIRE LINES, ARE TO BE DISINFECTED AND PRESSURE TESTED PER TOWN STANDARDS.
8. TEMPORARY TAP(S) SHALL BE INSTALLED AS REQUIRED TO FLUSH AND TEST THE LINE. THE TAPPING SADDLE SHALL BE PLUGGED WITH A BRASS PLUG UPON COMPLETION.
9. THE TOWN WATER DEPARTMENT INSPECTOR SHALL BE NOTIFIED PRIOR TO BACK- FILLING AND TESTING (DISINFECTION AND HYDROSTATIC).
10. PIPE, FITTINGS, BOLTS, WASHERS, NUTS AND ALL ACCESSORIES ARE TO BE SUPPLIED BY THE SAME MANUFACTURER.
11. EXCAVATION SHALL BE DEWATERED AS NECESSARY TO EXCAVATE AND PLACE PIPE WITHIN DRY TRENCH.
12. ~~CLAY CUT-OFF WALLS SHALL BE INSTALLED WITHIN 10-FEET OF EVERY BRANCH OF A TEE, BEND, CROSS, MANHOLE, OR PHASE ENDING. THE DISTANCE BETWEEN CLAY CUT-OFF WALLS BETWEEN FITTINGS SHALL NOT EXCEED 400 FEET ON ANY LINE.~~
13. INSTALL MARKER POSTS IN LANDSCAPE AREAS OR PERMANENT SURVEY MONUMENT IN EXISTING PAVED SURFACES ABOVE ALL HORIZONTAL BENDS AND STUB LOCATIONS.
14. ALL NEW HYDRANTS SHALL BE MUELLER.

FIRELINE and WATERLINE RESTRAINT NOTES:

1. BOTH THRUST BLOCKS AND MEGALUG RESTRAINTS (ALL JOINTS AND FITTINGS) ARE REQUIRED WITHIN RESTRAINT ZONES. NEW PIPING AND FITTINGS SHALL BE CONTINUOUSLY CONNECTED WITH MEGALUGS. ALL THRUST RESTRAINT CONCRETE SHALL BE 28 DAY COMPRESSIVE STRENGTH > 3,500 P.S.I.
2. ALL MECHANICAL JOINTS SHALL BE RESTRAINED USING MEGALUG SERIES 2000 PV (NEW JOINTS) OR 2000 SV (SPLIT VERSION) FOR EXISTING JOINTS (TIE- INTO EXISTING SYSTEM) OR UNI-FLANGE SERIES UFR 1300 C-"DIA" OR APPROVED EQUAL.
3. ALL PUSH-ON JOINTS SHALL BE RESTRAINED USING MEGALUG SERIES 1600 OR UNI-FLANGE SERIES 1390-C-"DIA" OR APPROVED EQUAL WITHIN RESTRAINT ZONES.
4. CONNECTION TO AN EXISTING SYSTEM WITH A NEW GATE VALVE SHALL BE RESTRAINED ON EACH SIDE.
5. ANY EXISTING UNRESTRAINED FIRELINE JOINTS/FITTINGS EXPOSED DURING CONSTRUCTION SHALL BE RESTRAINED USING THE APPROPRIATE MEGALUG SERIES.
6. TO INSTALL MEGALUG TO EXISTING MECHANICAL JOINT FITTINGS AND VALVES, REMOVE BOLTS AND SLIDE EXISTING RETAINER GLAND AWAY FROM FITTING. INSTALL MEGALUG SERIES 2000 PER MANUFACTURER'S SPECIFICATIONS. DO NOT ATTEMPT TO REMOVE THE EXISTING FOLLOWER GLAND.
7. EXISTING THRUST BLOCKS THAT ARE DISTURBED DURING THE CONSTRUCTION OF THE NEW FIRE PROTECTION LINE SHALL BE REINSTALLED (USING FORMS IF NECESSARY TO CREATE BLOCKING THAT WILL BEAR ON UNDISTURBED SOIL).

SUPPLEMENTAL SPECIAL CONDITIONS:

1. ALL POINTS OF CONNECTION TO ANY EXISTING PIPE AND ALL EXISTING UTILITY CROSSINGS SHALL BE POTHOLED AND THE LOCATION, ELEVATION, PIPE MATERIAL, PIPE DIAMETER, AND ANY OTHER EXISTING INFORMATION SHALL BE NOTED AND FORWARDED TO WEC PRIOR TO ORDERING MATERIALS WHICH DEPEND ON THIS INFORMATION. ALL POTHOLE LOCATIONS ARE SHOWN ON THE PLANS.
2. FOLLOWING SUCCESSFUL PRESSURE TESTING, ALL NEWLY PLACED PIPE SHALL BE LOCATED USING NEW TRACING WIRE AND SURVEYED BY THE CONTRACTOR AS ADDITIONAL AS-BUILT INFORMATION.
3. WEEKLY PROGRESS MEETINGS WILL BE HELD. PROJECT ENGINEER, CONTRACTOR SUPERINTENDENT (SITE SUPERINTENDENT), SUBCONTRACTORS AND OWNER SHALL ATTEND.
4. ALL ADJACENT PROPERTY OWNER RELATIONS & CORRESPONDENCE MUST BE ROUTED THROUGH AND APPROVED BY THE OWNER.
5. ALL PROPOSED PIPE INSTALLATION SHALL BE WITH FULL LENGTHS OF PIPE. NO SHORT OR CUT PIPE SHALL BE INSTALLED UNLESS OTHERWISE APPROVED AND SHOWN ON THE PLANS (I.E. CLOSURE PIECES, FABRICATED BEND LOCATIONS AND AT MANHOLES).

	OBTAINED BY
FORT LUPTON BUILDING PERMIT	OWNER/CONTRACTOR
STATE STORMWATER MANAGEMENT PLAN PERMIT OR WAIVER	OWNER/CONTRACTOR
STATE GROUNDWATER DISCHARGE PERMIT	CONTRACTOR
~~NATIONAL PERMIT~~	~~OWNER~~
FORT LUPTON GRADING PERMIT	OWNER OR CONTRACTOR

REQUIRED SUBMITTALS:

1. ALL CATALOG CUT SHEETS FOR ALL IMPROVEMENTS, GRADATIONS, MIX DESIGNS, PROCTOR TESTS, TACK COATS, ETC. ARE REQUIRED SUBMITTALS AND MUST BE APPROVED BY ENGINEER AND SUBMITTED TO THE TOWN.
2. ALL PROPOSED IMPROVEMENT MATERIALS AS APPROVED BY THE ENGINEER SHALL BE SUBMITTED TO THE TOWN. (MATERIAL SPECIFICATIONS AND PRODUCT DATA SHEETS ONLY).

PROJECT CLOSE OUT:

1. IT IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO PERFORM EROSION CONTROL MEASURES (INCLUDING PLANTINGS) AND TO MAINTAIN CONSTRUCTION FACILITIES THROUGH THE CONSTRUCTION PROCESS IN A MANNER THAT PRESERVES THE INTENDED FUNCTION AND LIFE OF THE FACILITIES.
2. IT IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO OBTAIN FINAL ACCEPTANCE FROM THE TOWN AFTER WHICH THE 1-YEAR WARRANTY PERIOD REGARDING ANY PUBLIC IMPROVEMENTS AND RELATED CONSTRUCTION WILL BEGIN.

ADA NOTES:

1. ALL HANDICAP PARKING STALLS, RAMPS, AND ROUTES SHALL MEET CURRENT ADA STANDARDS.

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FAX (720) 294-1330
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No.	REVISION	DATE	BY
3	REV PER 3/30/20 CITY COMMENTS	06/09/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12420 W 18TH DRIVE
LAKWEOOD, CO 80215
(720)685-9951

WEC GENERAL NOTES
SITE ENGINEERING PLANS
PARCEL B & 2.498 AC REMAINING PARCEL A-1,
LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

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CHADWIN F. COX
33802
08/27/21
PROFESSIONAL ENGINEER
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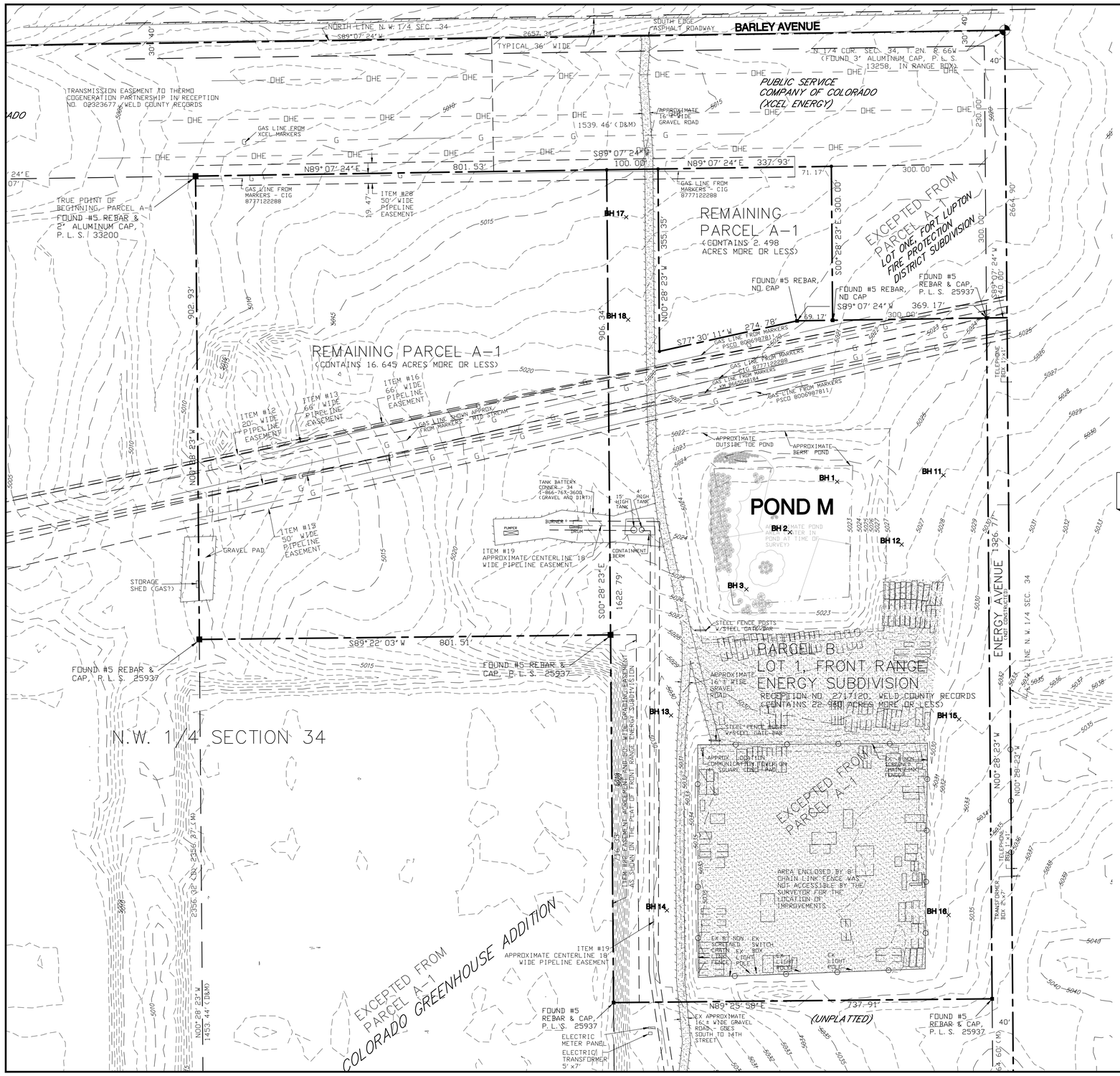
INITIAL PLAN RELEASE: 06/09/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0002-NOTES
SHEET 2WEC OF 23

SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2020-0009 & Plan No. SPR2020-0002



BH	EX GR	DES FG	PERC. TOP	PERC. BOTTOM	PERC. RATE
*1, 2, 3	5023	5024.5, 5024, 5024.75	5023	IN BEDROCK	240 MIN/IN*
11, 12	5027	5024.75, 5024	5024.75, 5024		
13, 14	5030	5026, 5028	5026, 5028		
15, 16	5032, 5034	5030.5, 5033.5	5030.5, 5033.5		
17, 18	5016, 5017.5	5010.5, 5010.5	5010.5, 5010.5		

*POND WAS REDESIGNED TO RAISE BOTTOM FROM BEDROCK.

100 50 0 100 200

FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

NO DEMO IS CURRENTLY PROPOSED.

NOTES

THIS PLAN IS INTENDED AS THE EXISTING CONDITIONS AND DEMO PLAN FOR PARCEL B, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND CITY OF FORT LUPTON RESPECTIVELY.

ANY REFERENCE TO EASEMENTS, SURVEY POINTS, OR EXISTING UTILITIES AND FEATURES ARE BASED SOLELY FROM SURVEY INFORMATION PROVIDED BY R.W. BAYER & ASSOCIATES, INC. ALTA/ACSM LAND TITLE SURVEY, DATED JULY 31, 2014.

NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
- MANHOLE W/ FLOW DIRECTION
- RD ROOF DRAIN
- PROPOSED GRAVEL
- EXISTING CONC
- PROPOSED CONC
- EXISTING ASPHALT
- PROPOSED ASPHALT
- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- SETBACK
- TO BE ABANDONED LOT LINE
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- EXISTING CHAINLINK FENCE
- EXISTING WIRE FENCE
- POND WQ W/S
- SWALE
- OHE — EXISTING OVERHEAD ELEC
- EL — EXISTING ELECTRICAL LINE
- EXISTING STORM LINE
- SA — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- GA — EXISTING GAS LINE
- FO — EXISTING FIBER OPTIC LINE
- T — EXISTING TELEPHONE LINE
- SA — PROPOSED SANITARY LINE
- SS — PROPOSED SANITARY SERVICE
- ST — PROPOSED STORM LINE
- WA — PROPOSED WATER LINE
- WAS — PROPOSED WATER SERVICE
- GA — PROPOSED GAS LINE
- EL — PROPOSED ELECTRIC LINE
- T — PROPOSED TELEPHONE LINE

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No.	REVISION	DATE	BY
0	INITIAL RELEASE	12/11/19	CFC
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2	REV. PER 1/20/20 CITY COMMENTS	01/21/20	CFC
3	REV. PER 7/30/20 CITY COMMENTS	08/09/20	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12420 W. 14TH AVE.
LAKEWOOD, CO 80215
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EX. COND. & DEMO PLAN SITE ENGINEERING PLANS

PARCEL B, LOT 1, FRONT RANGE ENERGY SUB.

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CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0003-EX CON
SHEET 3 OF 23

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SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008

BH	EX GR	DES FG	PERC. TOP	PERC. BOTTOM	PERC. RATE
*1, 2, 3	5023	5024.5, 5024, 5024.75	5023	IN BEDROCK	240 MIN/IN*
11, 12	5027	5024.75, 5024	5024.75, 5024		
13, 14	5030	5026, 5028	5026, 5028		
15, 16	5032, 5034	5030.5, 5033.5	5030.5, 5033.5		
17, 18	5016, 5017.5	5010.5, 5010.5	5010.5, 5010.5		

*POND WAS REDESIGNED TO RAISE BOTTOM FROM BEDROCK.

FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

NO DEMO IS CURRENTLY PROPOSED.

NOTES

THIS PLAN IS INTENDED AS THE EXISTING CONDITIONS AND DEMO PLAN WITH AERIAL FOR PARCEL B, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND CITY OF FORT LUPTON RESPECTIVELY.

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SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
SETBACK
TO BE ABANDONED LOT LINE
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
SWALE
OHE EXISTING OVERHEAD ELEC
EL EXISTING ELECTRICAL LINE
ST EXISTING STORM LINE
SA EXISTING SANITARY LINE
W EXISTING WATER LINE
GA EXISTING GAS LINE
FO EXISTING FIBER OPTIC LINE
T EXISTING TELEPHONE LINE
SA PROPOSED SANITARY LINE
SS PROPOSED SANITARY SERVICE
ST PROPOSED STORM LINE
WA PROPOSED WATER LINE
WAS PROPOSED WATER SERVICE
GA PROPOSED GAS LINE
EL PROPOSED ELECTRIC LINE
T PROPOSED TELEPHONE LINE

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2	REV PER 1/20/20 CITY COMMENTS	01/21/20	CFC
3	REV PER 6/8/20 CITY COMMENTS	06/09/20	CFC
4	ADD 3.498 AC REMAINING PARCEL A-1	08/27/21	CFC
5	REV PER 9/7/9 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. I-70 FRONTAGE RD.
LAKEWOOD, CO 80215
(720)685-9951

EX. COND & DEMO W/ AERIAL SITE ENGINEERING PLANS

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CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 003A-EX CON
SHEET 3A OF 23

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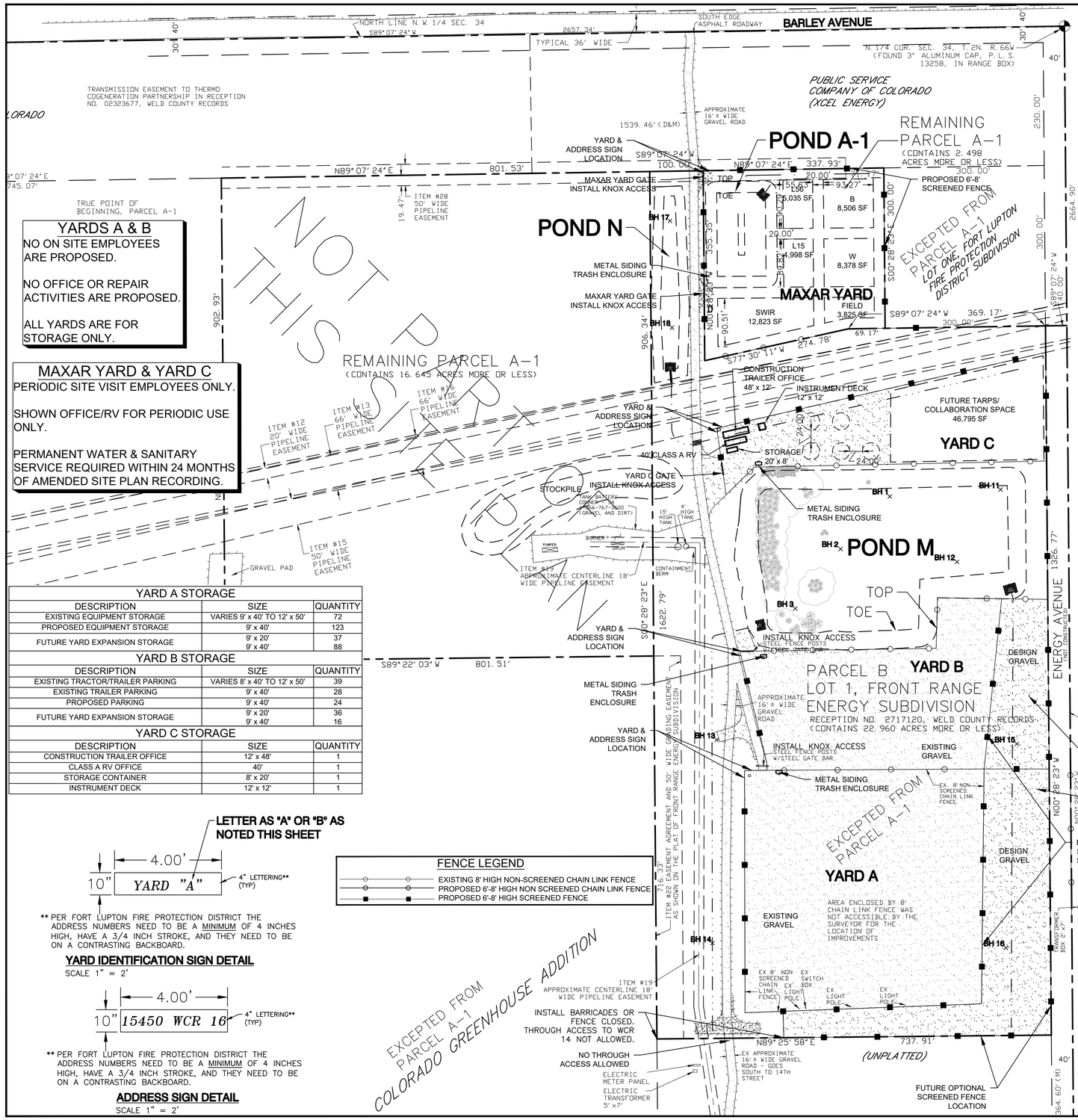
SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

THE CITY RESERVES THE RIGHT TO RE-EVALUATE TRAFFIC IMPACTS IN THE FUTURE IF THERE IS AN INCREASE IN TRAFFIC FROM WHAT WAS REPRESENTED TO THE CITY IN EVALUATING THE SITE PLAN.

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

LOT DATA TABLE

DESCRIPTION	AREA	%
ZONING	I-2	
LOT	1,000,127.92 sf	
EXISTING GRAVEL	351,977.65 sf	35.19%
PROPOSED CONCRETE	0 sf	
TOTAL HARDSCAPE AREA	351,977.65 sf	35.19%
PROPOSED LANDSCAPE AREA	648,150.27 sf	64.81%

USE TABLE

YARD	USE
A	EQUIPMENT STORAGE
B	TRUCK STORAGE/ PARKING YARD
C	SATELLITE TARP CALIBRATION SITE
MAXAR	SATELLITE TARP CALIBRATION SITE

YARD A STORAGE

DESCRIPTION	SIZE	QUANTITY
EXISTING EQUIPMENT STORAGE	VARIES 9' x 40' TO 12' x 50'	72
PROPOSED EQUIPMENT STORAGE	9' x 40'	123
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	37 88

YARD B STORAGE

DESCRIPTION	SIZE	QUANTITY
EXISTING TRACTOR/TRAILER PARKING	VARIES 8' x 40' TO 12' x 50'	39
EXISTING TRAILER PARKING	9' x 40'	28
PROPOSED PARKING	9' x 40'	24
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	36 16

YARD C STORAGE

DESCRIPTION	SIZE	QUANTITY
CONSTRUCTION TRAILER OFFICE	12' x 48'	1
CLASS A RV OFFICE	40'	1
STORAGE CONTAINER	8' x 20'	1
INSTRUMENT DECK	12' x 12'	1

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SOME YARD LAYOUTS NOT LEGIBLE THIS SCALE. SEE SHEETS 5-7A FOR EACH YARD LAYOUT.

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

NOTES

THIS PLAN IS INTENDED AS THE SITE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND CITY OF FORT LUPTON RESPECTIVELY.

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SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

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RIGHT OF WAY LINE
EASEMENT
SETBACK
TO BE ABANDONED LOT LINE
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EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
SWALE
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EXISTING SANITARY LINE
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EXISTING FIBER OPTIC LINE
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FUTURE SANITARY LINE
FUTURE SANITARY SERVICE
PROPOSED STORM LINE
FUTURE WATER LINE
FUTURE WATER SERVICE
PROPOSED GAS LINE
PROPOSED ELECTRIC LINE
PROPOSED OVERHEAD ELECTRIC
PROPOSED TELEPHONE LINE

FENCE LEGEND

EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
PROPOSED 6'-8' HIGH SCREENED FENCE

LETTER AS "A" OR "B" AS NOTED THIS SHEET

4.00' — 10" — YARD "A" — 4" LETTERING** (TYP)

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

YARD IDENTIFICATION SIGN DETAIL

SCALE 1" = 2'

4.00' — 10" — 15450 WCR 16 — 4" LETTERING** (TYP)

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

ADDRESS SIGN DETAIL

SCALE 1" = 2'

100 50 0 100 200

FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

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No.	REVISION	DATE	BY
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2	REV PER 1/20/20 CITY COMMENTS	01/21/20	CFC
3	REV PER 8/7/20 CITY COMMENTS	08/07/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	09/22/21	CFC
5	REV PER 9/7/9 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. I-70 FRONTAGE RD.
LAKEWOOD, CO 80215
(720)685-9951

SITE PLAN
SITE ENGINEERING PLANS
PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

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COLORADO REGISTERED PROFESSIONAL ENGINEER CHARLIN F. CHOY 33802 09/30/21
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INITIAL PLAN RELEASE: 12/11/19
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0004-SITE
SHEET 4 OF 23

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SB WEAKLAND INVESTMENTS
SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008

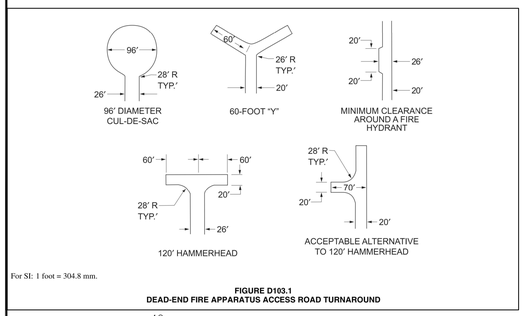
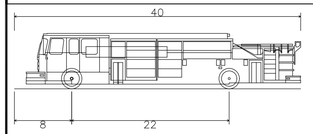
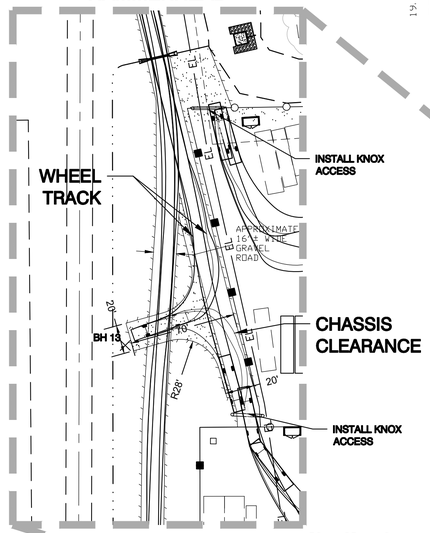


FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

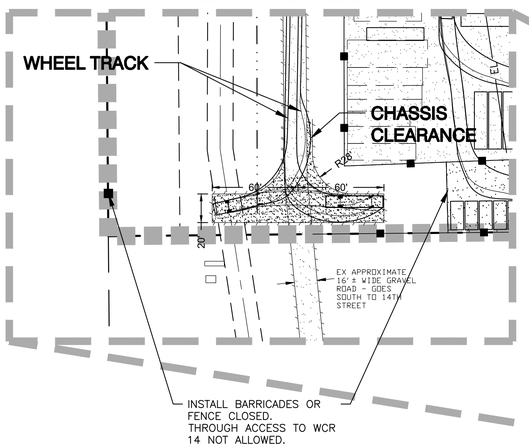


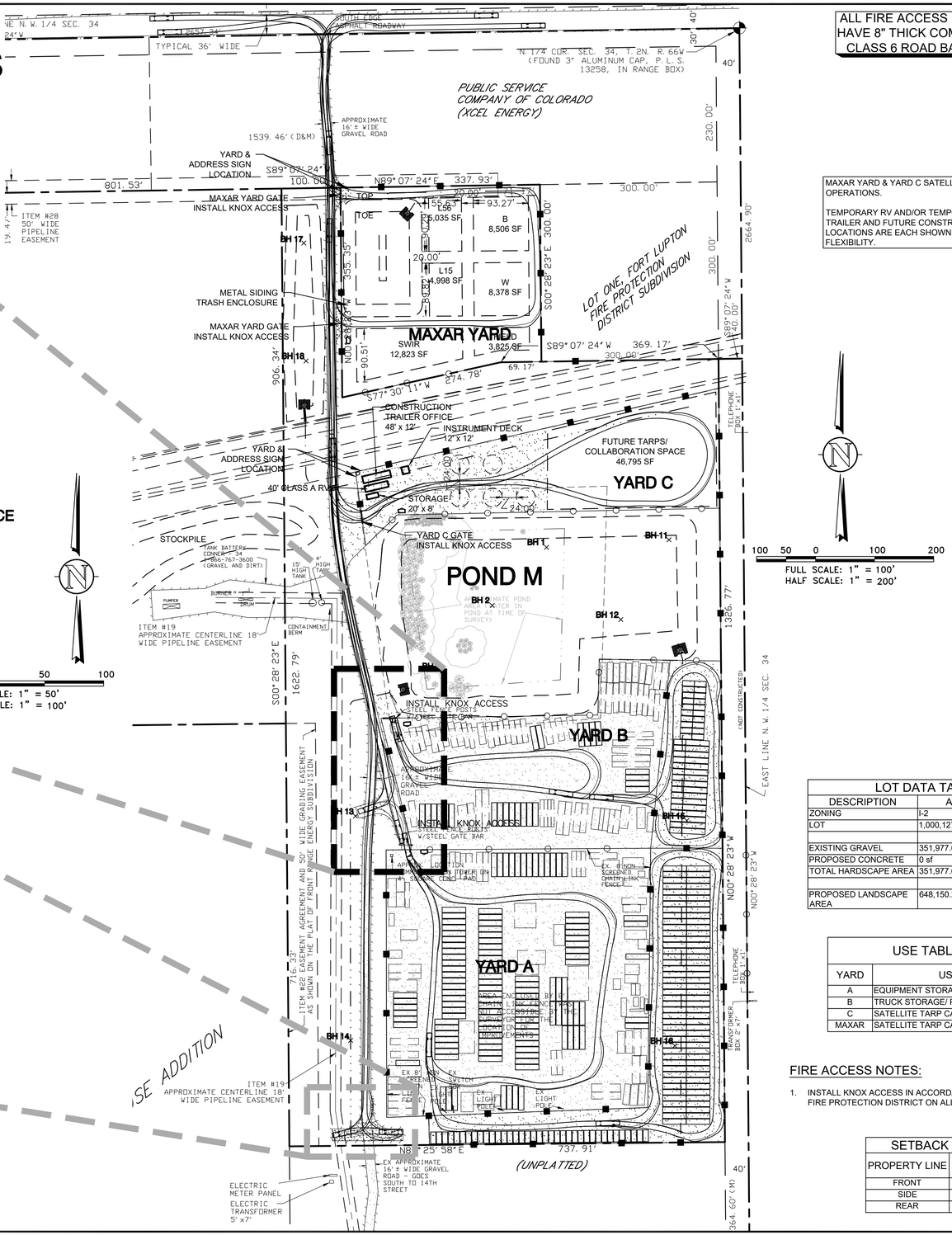
Pumper Fire Truck	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

YARD B ALTERNATIVE 120' HAMMERHEAD



YARD A 120' HAMMERHEAD





ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

YARDS A & B
NO ON SITE EMPLOYEES ARE PROPOSED. NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED. ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C
PERIODIC SITE VISIT EMPLOYEES ONLY. SHOWN OFFICE/RV FOR PERIODIC USE ONLY. PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

LOT DATA TABLE

DESCRIPTION	AREA	%
ZONING	I-2	
LOT	1,000,127.92 sf	
EXISTING GRAVEL	351,977.65 sf	35.19%
PROPOSED CONCRETE	0 sf	
TOTAL HARDSCAPE AREA	351,977.65 sf	35.19%
PROPOSED LANDSCAPE AREA	648,150.27 sf	64.81%

USE TABLE

YARD	USE
A	EQUIPMENT STORAGE
B	TRUCK STORAGE/ PARKING YARD
C	SATELLITE TARP CALIBRATION SITE
MAXAR	SATELLITE TARP CALIBRATION SITE

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

127 S. DENVER AVE
FT. LUPTON, CO 80621
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email@westernec.com
(720) 685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

No.	REVISION	DATE	BY
0	INITIAL RELEASE	12/11/19	CFC
1	CITY SUBMITTAL	12/19/19	CFC
2	REV PER 1/20/20 CITY COMMENTS	01/21/20	CFC
3	REV PER 10/26/20 CITY COMMENTS	10/30/20	CFC
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SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
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LAKEWOOD, CO 80215
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FIRE ACCESS PLAN
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PARCEL B & 2.498 AC REMAINING PARCEL A-1,
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33802
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DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 004F-FIRE
SHEET 4F OF 23

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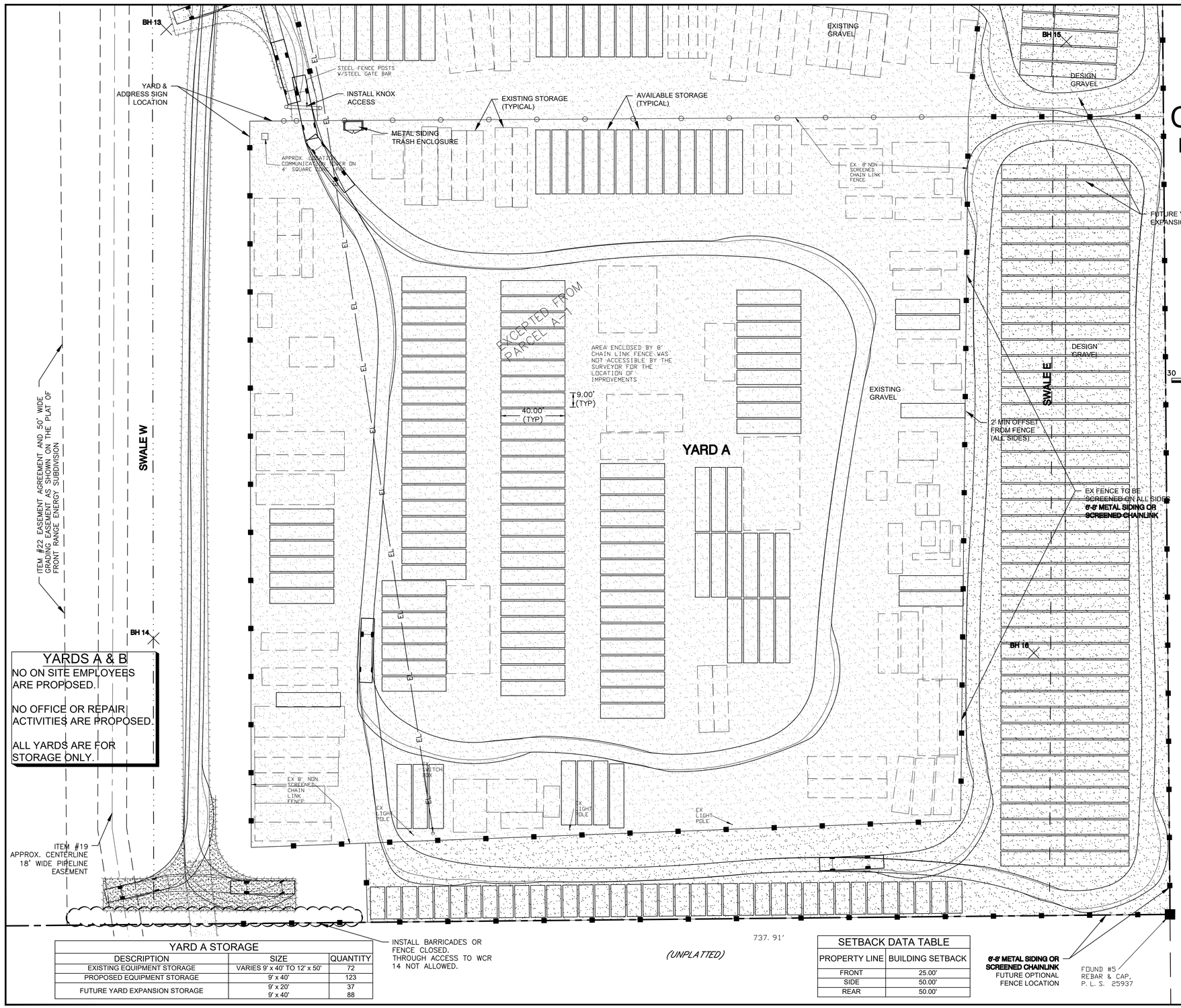
SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

30 15 0 30 60

FULL SCALE: 1" = 30'
HALF SCALE: 1" = 60'

NOTES

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ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

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NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
- MANHOLE W/ FLOW DIRECTION
- RD ROOF DRAIN
- EXISTING GRAVEL
- EXISTING CONC
- EXISTING ASPHALT
- PROPOSED GRAVEL
- PROPOSED CONC
- PROPOSED ASPHALT
- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

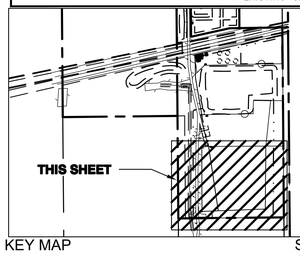
- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- EXISTING CHAINLINK FENCE
- X — X EXISTING WIRE FENCE
- POND WQ W/S
- OHE EXISTING OVERHEAD ELEC
- GA EXISTING GAS LINE

YARD A STORAGE

DESCRIPTION	SIZE	QUANTITY
EXISTING EQUIPMENT STORAGE	VARIES 9' x 40' TO 12' x 50'	72
PROPOSED EQUIPMENT STORAGE	9' x 40'	123
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	37 88

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'



KEY MAP SCALE 1" = 500'
SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST, 6th P.M.

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FAX (720) 294-1330
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No.	REVISION	DATE	BY
2	REV PER 1/20/20 CDT COMMENTS	01/21/20	CFC
3	REV PER 3/30/20 CDT COMMENTS	06/09/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. I-70 FRONTAGE RD N
LAKWEOOD, CO 80215
(720)685-9951

YARD A SITE PLAN
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PARCEL B & 2.498 AC REMAINING PARCEL A-1,
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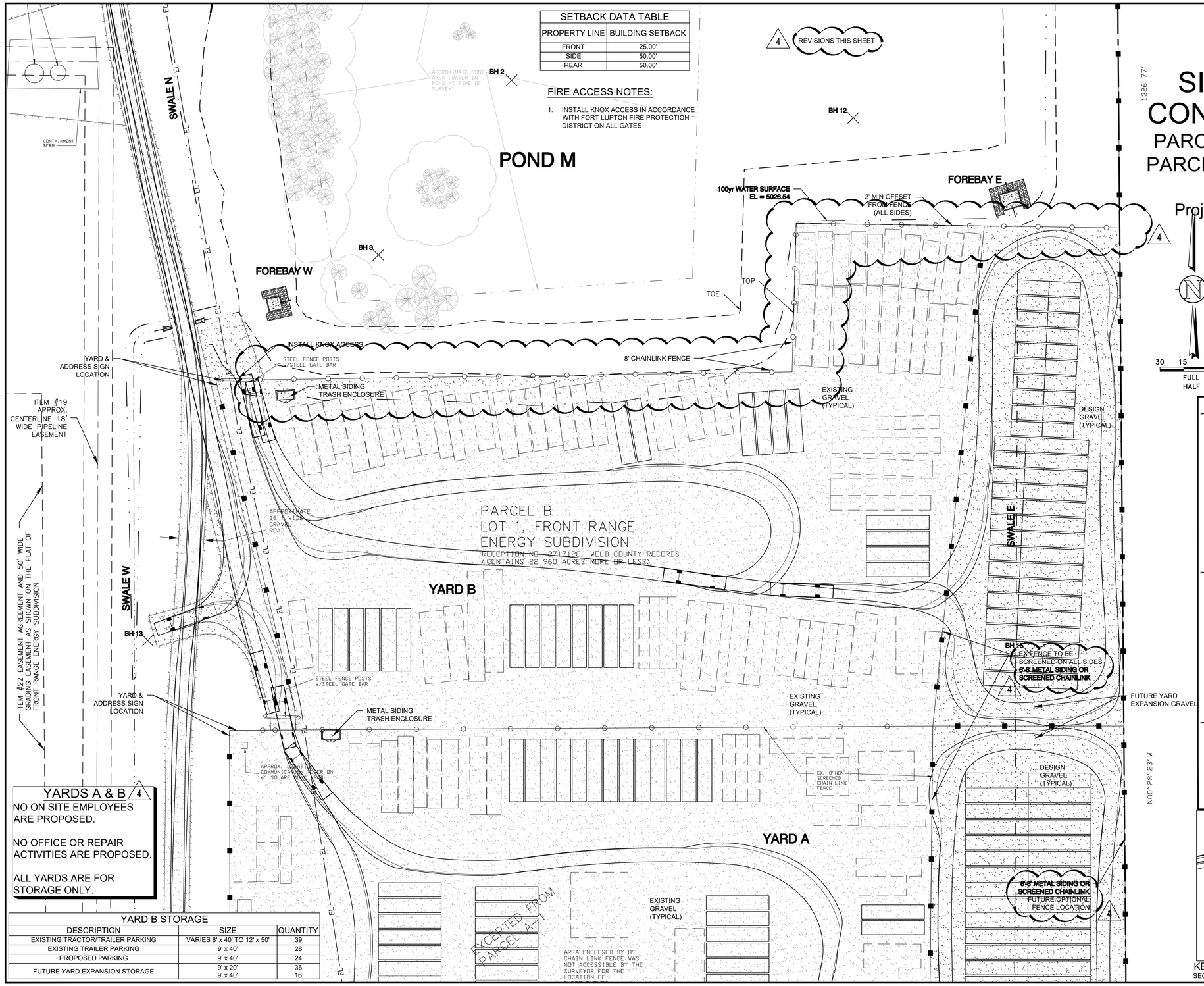
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC. CON. # 0005-'A' SITE
SHEET 5 OF 23

T:\0330_001_00-RLW SANDI\Dwg\CDs\0330-002-WEC-CDs.dwg, 05-YARD A SITE, 8/26/2021 8:53:57 PM, AutoCAD PDF (General Documentation).pc3, ARCH expand D (36.00 x 24.00 Inches), WEC 24'36, WEC 24'36

SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



SETBACK DATA TABLE	
PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

YARD B STORAGE		
DESCRIPTION	SIZE	QUANTITY
EXISTING TRACTOR/TRAILER PARKING	VARIES 8' x 40' TO 12' x 50'	39
EXISTING TRAILER PARKING	9' x 40'	28
PROPOSED PARKING	9' x 40'	24
FUTURE YARD EXPANSION STORAGE	9' x 20' 9' x 40'	36 16

NOTES

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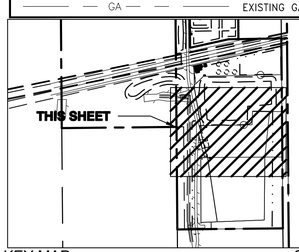
SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
EXISTING OVERHEAD ELEC
EXISTING GAS LINE



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No.	REVISION	BY	DATE
2	REV PER 1/20/20 CDT COMMENTS	CFC	01/21/20
3	REV PER 3/30/20 CDT COMMENTS	CFC	06/09/20
4	ADD 2.498 AC REMAINING PARCEL A-1	CFC	06/27/21

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W 1ST PLACE
LAKWEOOD, CO 80215
(720)685-9951

YARD B SITE PLAN
SITE ENGINEERING PLANS
PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

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CHARLES F. CRAIN
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DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0006-'B' SITE
SHEET 6 OF 23

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SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008

FENCE LEGEND

- EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH SCREENED FENCE

SETBACK DATA TABLE

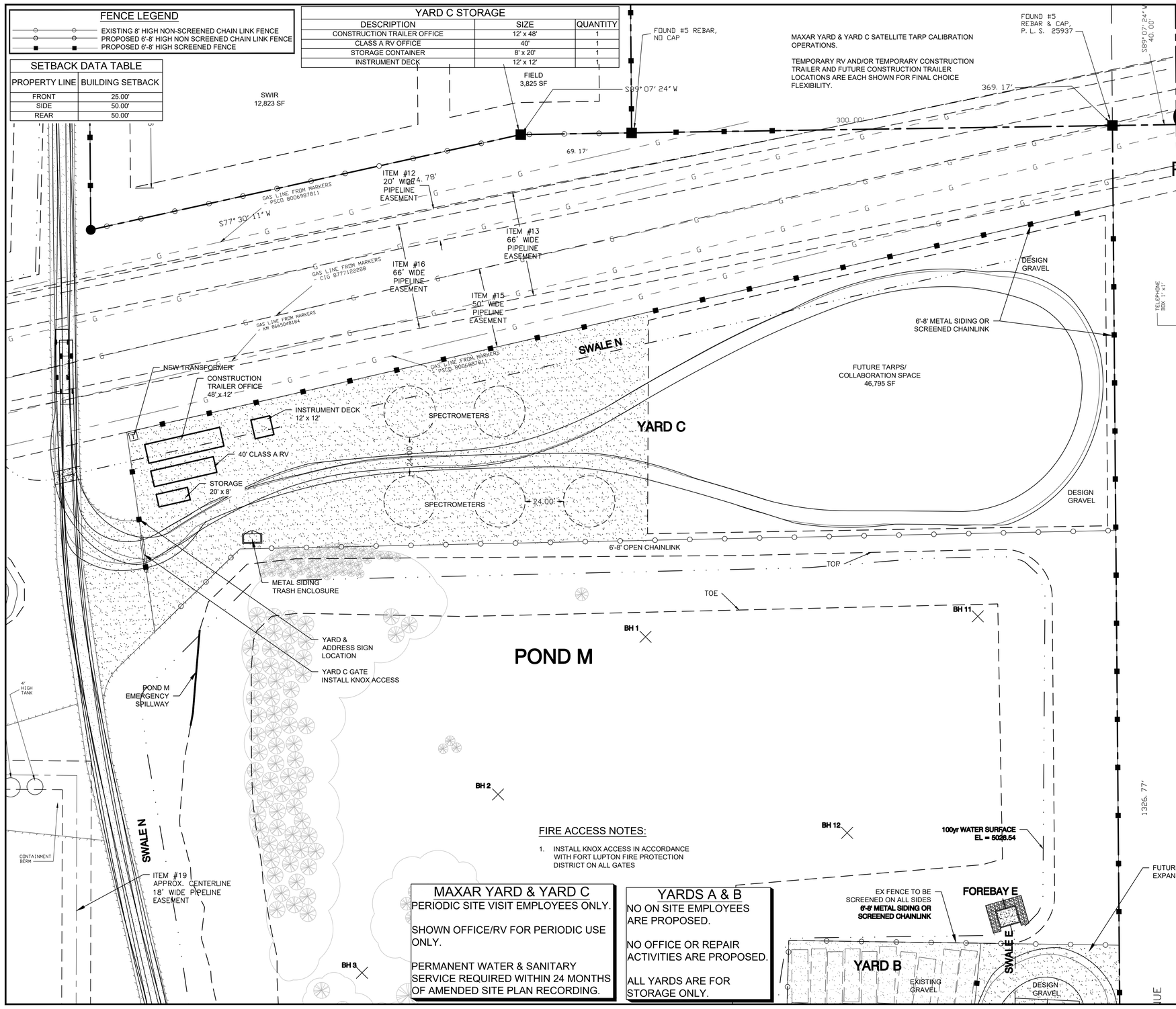
PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

YARD C STORAGE

DESCRIPTION	SIZE	QUANTITY
CONSTRUCTION TRAILER OFFICE	12' x 48'	1
CLASS A RV OFFICE	40'	1
STORAGE CONTAINER	8' x 20'	1
INSTRUMENT DECK	12' x 12'	1

MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.



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30 15 0 30 60

FULL SCALE: 1" = 30'
HALF SCALE: 1" = 60'

FIRE ACCESS NOTES:

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MAXAR YARD & YARD C

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YARDS A & B

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NOTES

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SYMBOL LEGEND

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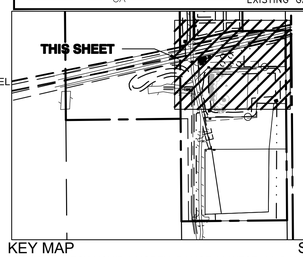
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
- MANHOLE W/ FLOW DIRECTION
- RD ROOF DRAIN
- EXISTING GRAVEL
- EXISTING CONC
- EXISTING ASPHALT
- PROPOSED GRAVEL
- PROPOSED CONC
- PROPOSED ASPHALT
- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- EXISTING CHAINLINK FENCE
- EXISTING WIRE FENCE
- POND WQ W/S
- OHE EXISTING OVERHEAD ELEC
- GA EXISTING GAS LINE



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SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W I-70 FRONTAGE RD
LAKWEOD, CO 80215
(720)685-9951

YARD C SITE PLAN
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WELD COUNTY, COLORADO

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CHRISTIAN F. CORY
33802
09/30/21
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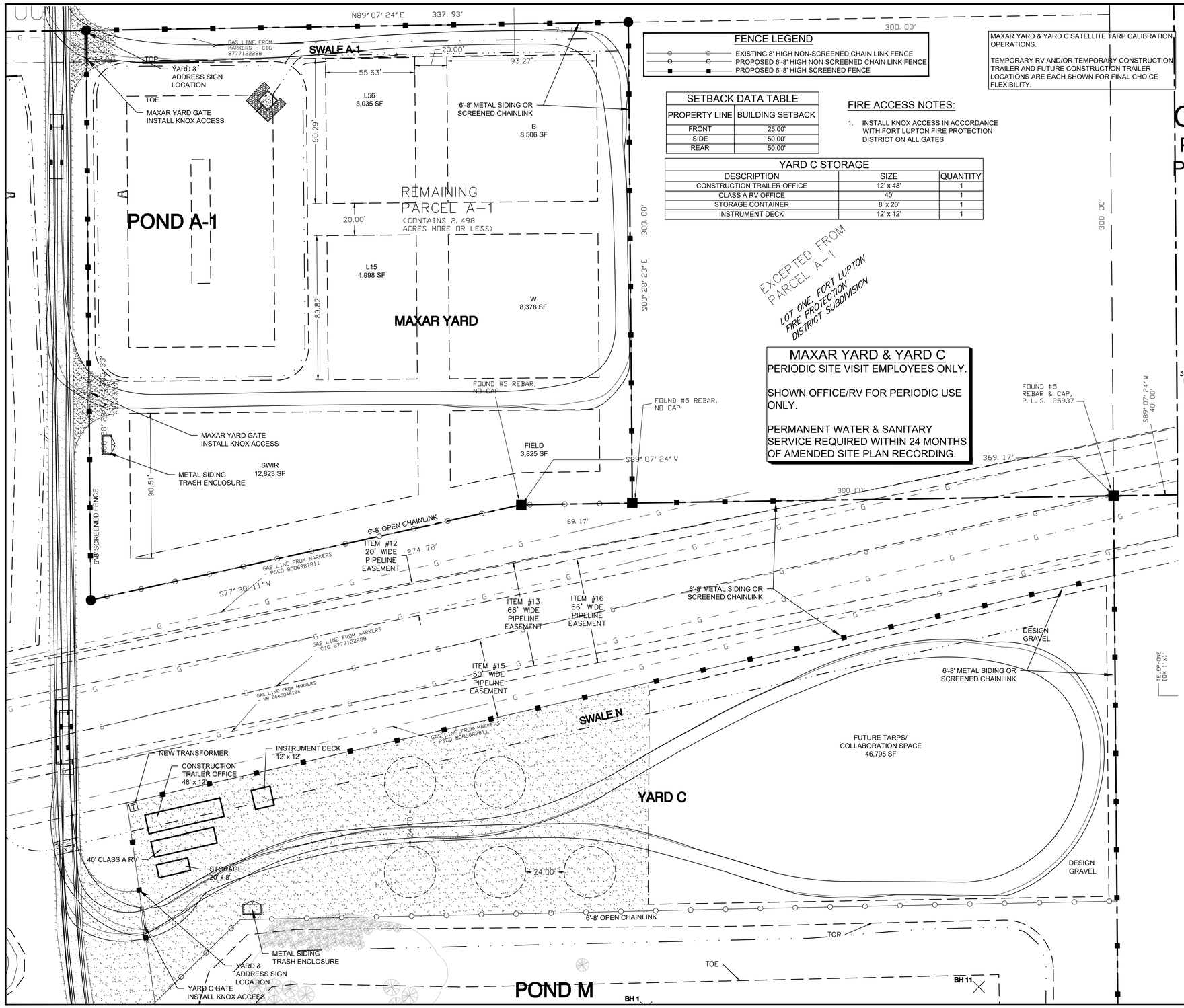
INITIAL PLAN RELEASE: 01/21/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0007-'C' SITE
SHEET 7 OF 23

\\WECSERVER1\Share\0330_001_00-RLW SANDD\Dwg\CDs\0330-002-WEC-CDs.dwg, 07-YARD C SITE, 9/30/2021 11:37:27 AM, AutoCAD PDF (High Quality Print).pc3, WEC 24*36, WEC 24*36

SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



FENCE LEGEND

- EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH SCREENED FENCE

MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

SETBACK DATA TABLE

PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

YARD C STORAGE

DESCRIPTION	SIZE	QUANTITY
CONSTRUCTION TRAILER OFFICE	12' x 48'	1
CLASS A RV OFFICE	40'	1
STORAGE CONTAINER	8' x 20'	1
INSTRUMENT DECK	12' x 12'	1

EXCEPTED FROM PARCEL A-1

LOT ONE, FORT LUPTON FIRE PROTECTION DISTRICT SUBDIVISION

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND.

30 15 0 30 60

FULL SCALE: 1" = 30'
HALF SCALE: 1" = 60'

NOTES

THIS PLAN IS INTENDED AS THE MAXAR SITE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND CITY OF FORT LUPTON RESPECTIVELY.

ANY REFERENCE TO EASEMENTS, SURVEY POINTS, OR EXISTING UTILITIES AND FEATURES ARE BASED SOLELY FROM SURVEY INFORMATION PROVIDED BY R.W. BAYER & ASSOCIATES, INC. ALTA/ACSM LAND TITLE SURVEY, DATED JULY 31, 2014.

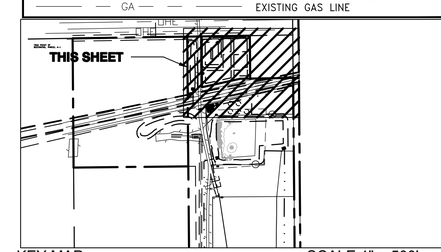
NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
OHE EXISTING OVERHEAD ELEC
GA EXISTING GAS LINE



KEY MAP SCALE 1" = 500'
SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST, 6th P.M.

127 S. DENVER AVE
FT. LUPTON, CO 80621
www.westernec.com
email@westernec.com
(720) 685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

No.	REVISION	DATE	BY
4	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC
3	REV PER 9/09 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. I-70 FRONTAGE RD N
LAKEWOOD, CO 80215
(720)685-9951

MAXAR SITE PLAN
SITE ENGINEERING PLANS
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WELD COUNTY, COLORADO

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CHRISTIN F. COTT
33802
09/30/21
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INITIAL PLAN RELEASE: 08/27/21
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 007A-MAXAR SITE
SHEET 7A OF 23

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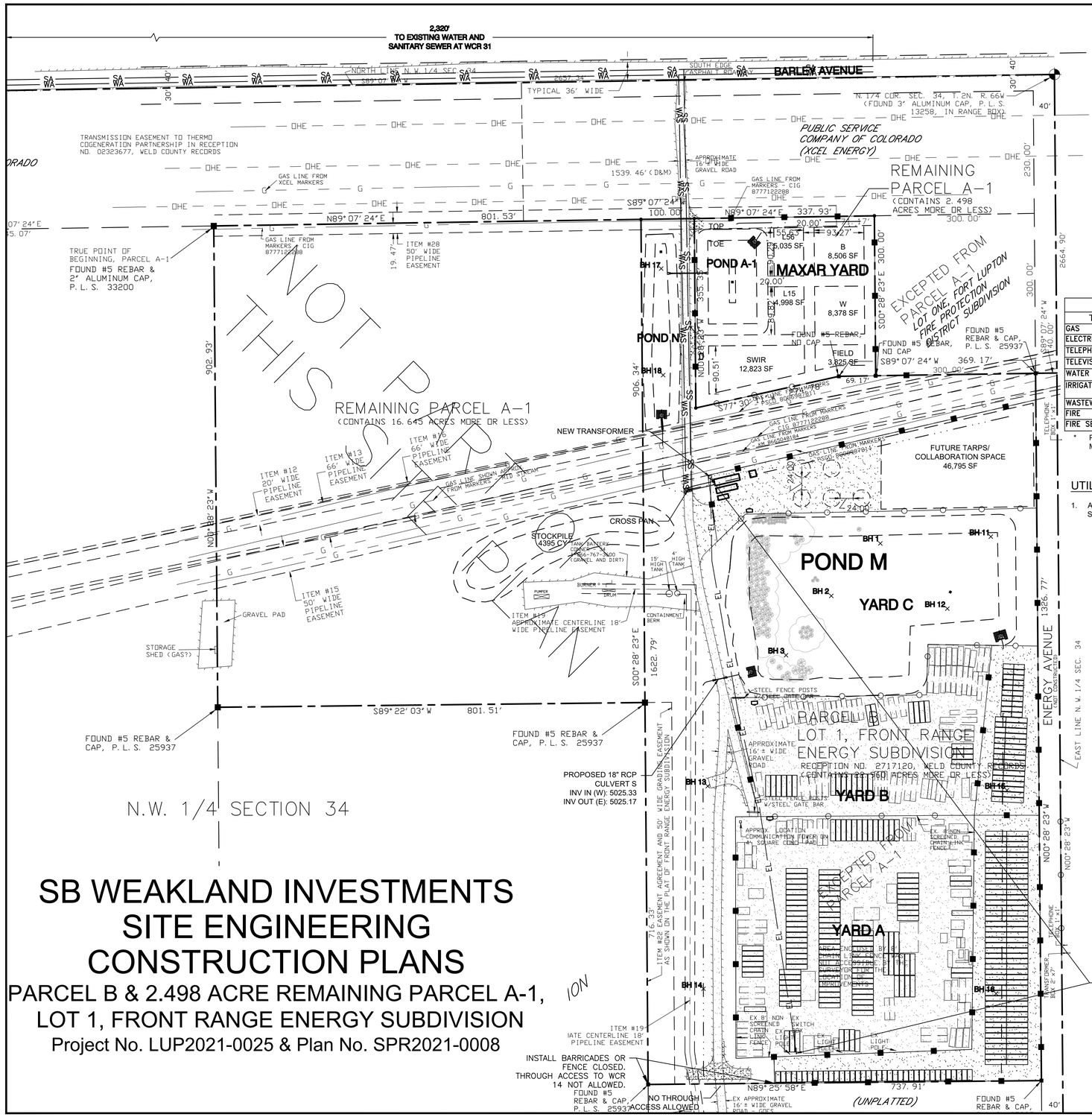

VICINITY MAP SCALE 1' = 1,000'

SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

UTILITY SERVICE SUMMARY

TYPE	SIZE	COMMENT
GAS	TBD	PER EXCEL
ELECTRICAL	TBD	UNITED POWER
TELEPHONE	PER CENTURY LINK	CENTURY LINK
TELEVISION	PER COMCAST	N/A
WATER SERVICE	3"	CITY OF FT LUPTON *
IRRIGATION	3"	LANDSCAPE IRRIGATION TAP FROM DOMESTIC SERVICE
WASTEWATER	4"	CITY OF FT LUPTON *
FIRE		PER FT. LUPTON FIRE DISTRICT
FIRE SERVICE	N/A	N/A

* PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

UTILITY NOTES:

1. ANY FUTURE UTILITIES SHALL MEET ALL CITY OF FORT LUPTON STANDARDS

NOTES

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YARDS A & B

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MAXAR YARD & YARD C

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- 22.5 DEG BEND
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- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
- MANHOLE W/ FLOW DIRECTION
- RD ROOF DRAIN
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- PROPOSED GRAVEL
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(720) 685-9951
FAX (720) 294-1330
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No.	REVISION	DATE	BY
0	INITIAL RELEASE	12/11/19	CFC
1	CITY SUBMITTAL	12/19/19	CFC
2	REV PER 1/20/20 CITY COMMENTS	01/21/20	CFC
3	REV PER 11/10/20 CITY COMMENTS	11/10/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC
5	REV PER 8/19 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. CENTER AVE
LAKEWOOD, CO 80215
(720)685-9951

UTILITY PLAN
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DOC CON # 0008-UTIL
SHEET 8 OF 23

SB WEAKLAND INVESTMENTS
SITE ENGINEERING CONSTRUCTION PLANS
PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION
Project No. LUP2021-0025 & Plan No. SPR2021-0008

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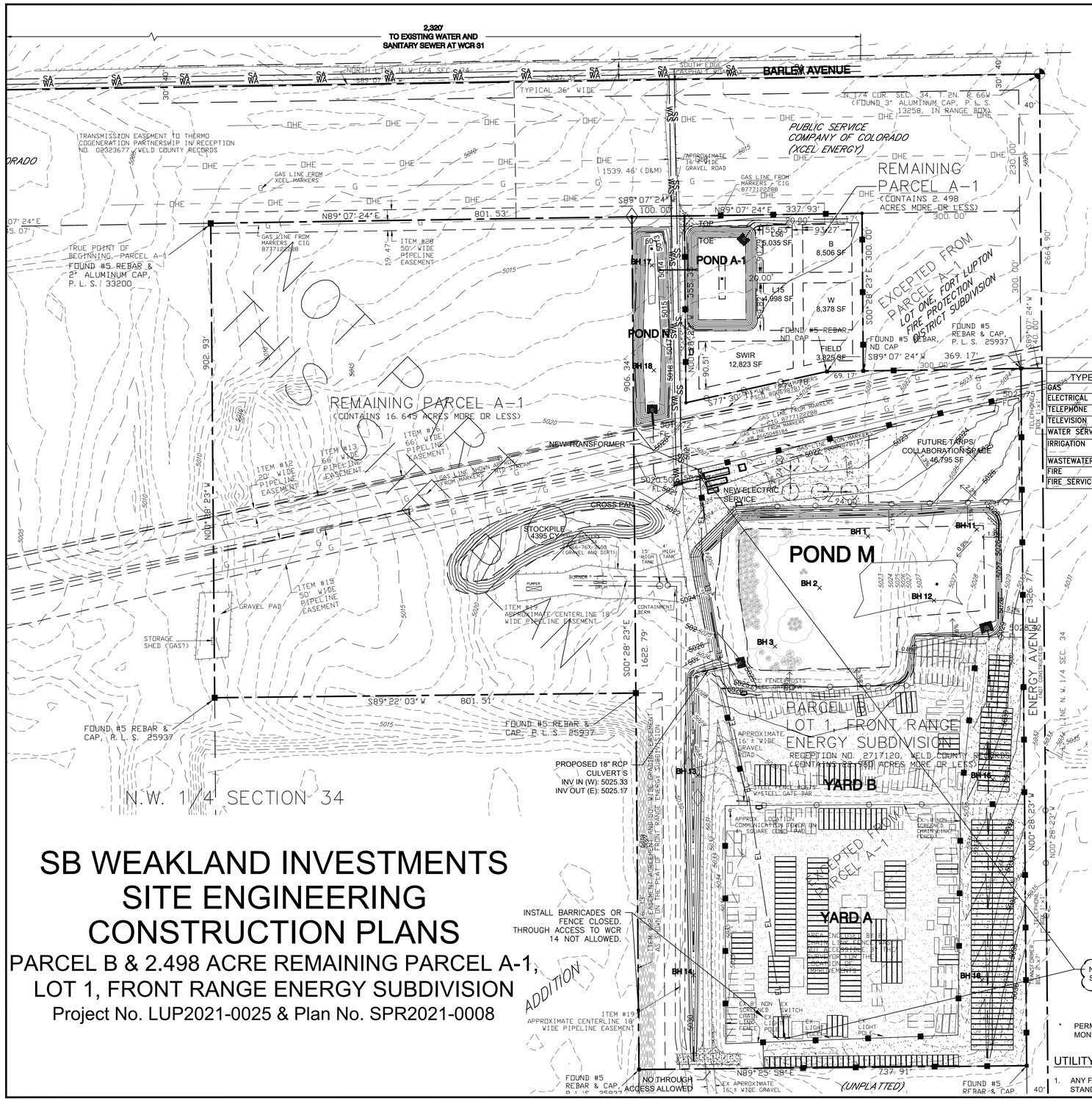

VICINITY MAP SCALE 1' = 1,000'

SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

100 50 0 100 200

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TELEVISION	PER COMCAST	N/A
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IRRIGATION	¾"	LANDSCAPE IRRIGATION TAP FROM DOMESTIC SERVICE
WASTEWATER	4"	CITY OF FT LUPTON *
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BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

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SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008

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www.westernec.com
email@westernec.com
(720) 685-9951
FAX (720) 294-1330
Western Engineering Consultants, inc LLC

No.	REVISION	DATE	BY
3	REV PER 3/30/20 CITY COMMENTS	06/09/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	09/27/21	CFC
5	REV PER 9/08 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
7200 W. 38TH AVENUE
LAKWEOOD, CO 80215
(720)685-9951

UTILITY PLAN WITH TOPO SITE ENGINEERING PLANS

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CHRISTIAN F. CARPENTER
33802
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INITIAL PLAN RELEASE: 06/09/20
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CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0008G-UTILTPO
SHEET 8G OF 23

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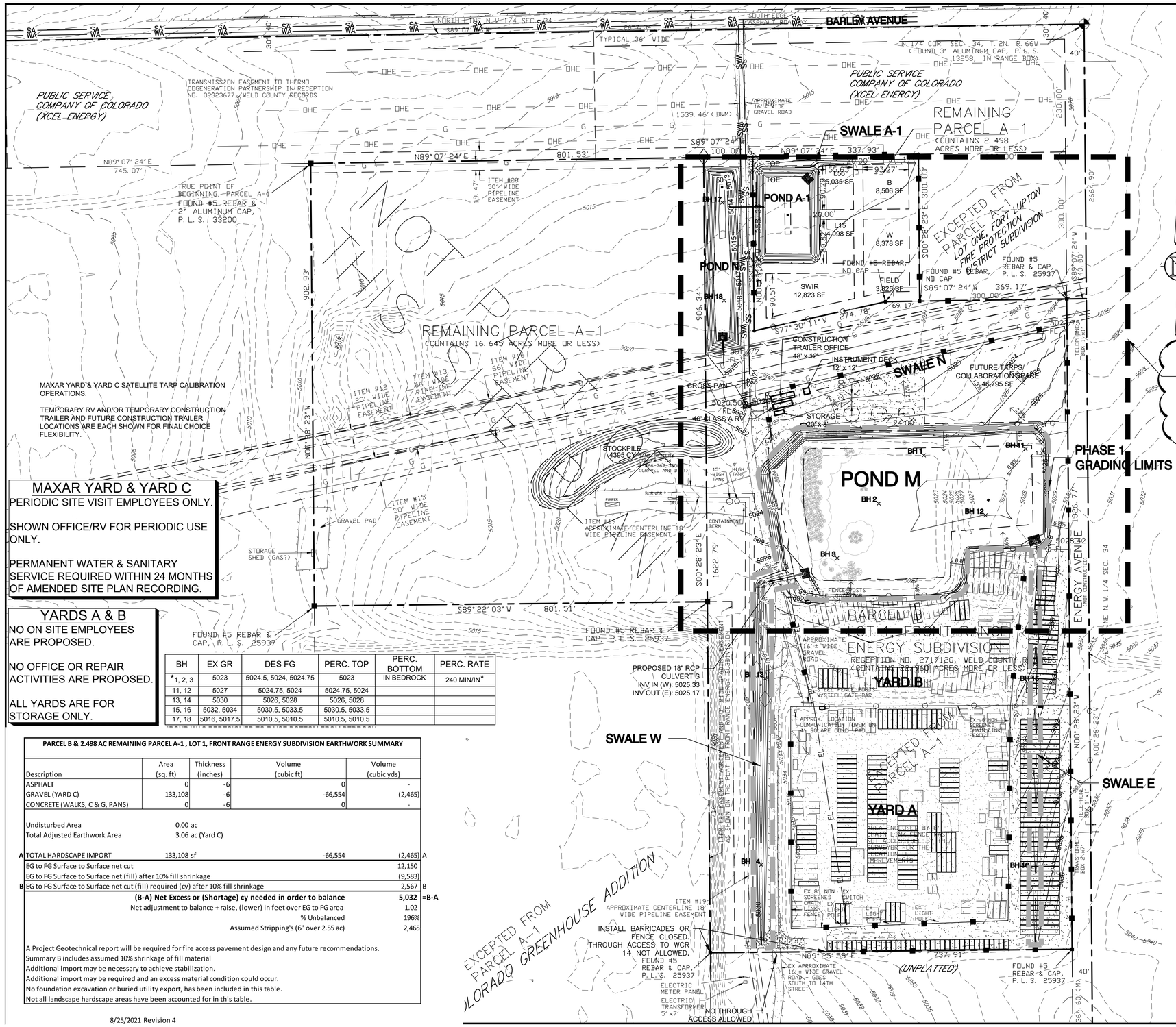

BH	EX GR	DES FG	PERC. TOP	PERC. BOTTOM IN BEDROCK	PERC. RATE
*1, 2, 3	5023	5024.5, 5024, 5024.75	5023		240 MIN/IN*
11, 12	5027	5024.75, 5024	5024.75, 5024		
13, 14	5030	5026, 5028	5026, 5028		
15, 16	5032, 5034	5030.5, 5033.5	5030.5, 5033.5		
17, 18	5016, 5017.5	5010.5, 5010.5	5010.5, 5010.5		

PARCEL B & 2.498 AC REMAINING PARCEL A-1 , LOT 1, FRONT RANGE ENERGY SUBDIVISION EARTHWORK SUMMARY

	Description	Area (sq. ft)	Thickness (inches)	Volume (cubic ft)	Volume (cubic yds)	
	ASPHALT	0	-6	0	-	
	GRAVEL (YARD C)	133,108	-6	-66,554	(2,465)	
	CONCRETE (WALKS, C & G, PANS)	0	-6	0	-	
	Undisturbed Area	0.00 ac				
	Total Adjusted Earthwork Area	3.06 ac (Yard C)				
A	TOTAL HARDSCAPE IMPORT	133,108 sf		-66,554	(2,465)	A
	EG to FG Surface to Surface net cut				12,150	
	EG to FG Surface to Surface net (fill) after 10% fill shrinkage				(9,583)	
B	EG to FG Surface to Surface net cut (fill) required (cy) after 10% fill shrinkage				2,567	B
	(B-A) Net Excess or (Shortage) cy needed in order to balance				**5,032**	**=B-A**
	Net adjustment to balance + raise, (lower) in feet over EG to FG area				1.02	
	% Unbalanced				196%	
	Assumed Stripping's (6" over 2.55 ac)				2,465	

A Project Geotechnical report will be required for fire access pavement design and any future recommendations.
Summary B includes assumed 10% shrinkage of fill material
Additional import may be necessary to achieve stabilization.
Additional import may be required and an excess material condition could occur.
No foundation excavation or buried utility export, has been included in this table.
Not all landscape hardscape areas have been accounted for in this table.

8/25/2021 Revision 4

FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

NOTES

THIS PLAN IS INTENDED AS THE GRADING PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

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EXISTING TREES TO BE PRESERVED. DO NOT GRADE INSIDE OF TREE CANOPY.

SYMBOL LEGEND

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- 22.5 DEG BEND
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- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
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- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

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FAX (720) 294-1330
Western Engineering Consultants, inc LLC

No.	REVISION	DATE	BY
0	INITIAL RELEASE	12/11/19	CFC
1	CITY SUBMITTAL	12/19/19	CFC
2	REV PER 1/20/20 CITY COMMENTS	01/23/20	CFC
3	REV PER 6/9/20 CITY COMMENTS	06/09/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC
5	REV PER 9/7/9 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. 70TH AVE.
LAKEWOOD, CO 80215
(720)685-9951

OVERALL GRADING PLAN SITE ENGINEERING PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

Dig Safely.
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THREE WORKING DAYS BEFORE YOU DIG
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www.uncc.org
UTILITY NOTIFICATION CENTER OF COLORADO

FOR CONSTRUCTION
COLORADO REGISTERED PROFESSIONAL ENGINEER CHARLIN F. PORT 33802 09/30/21
ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

INITIAL PLAN RELEASE: 12/11/19
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DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC CON # 0009-GRD
SHEET 9 OF 23

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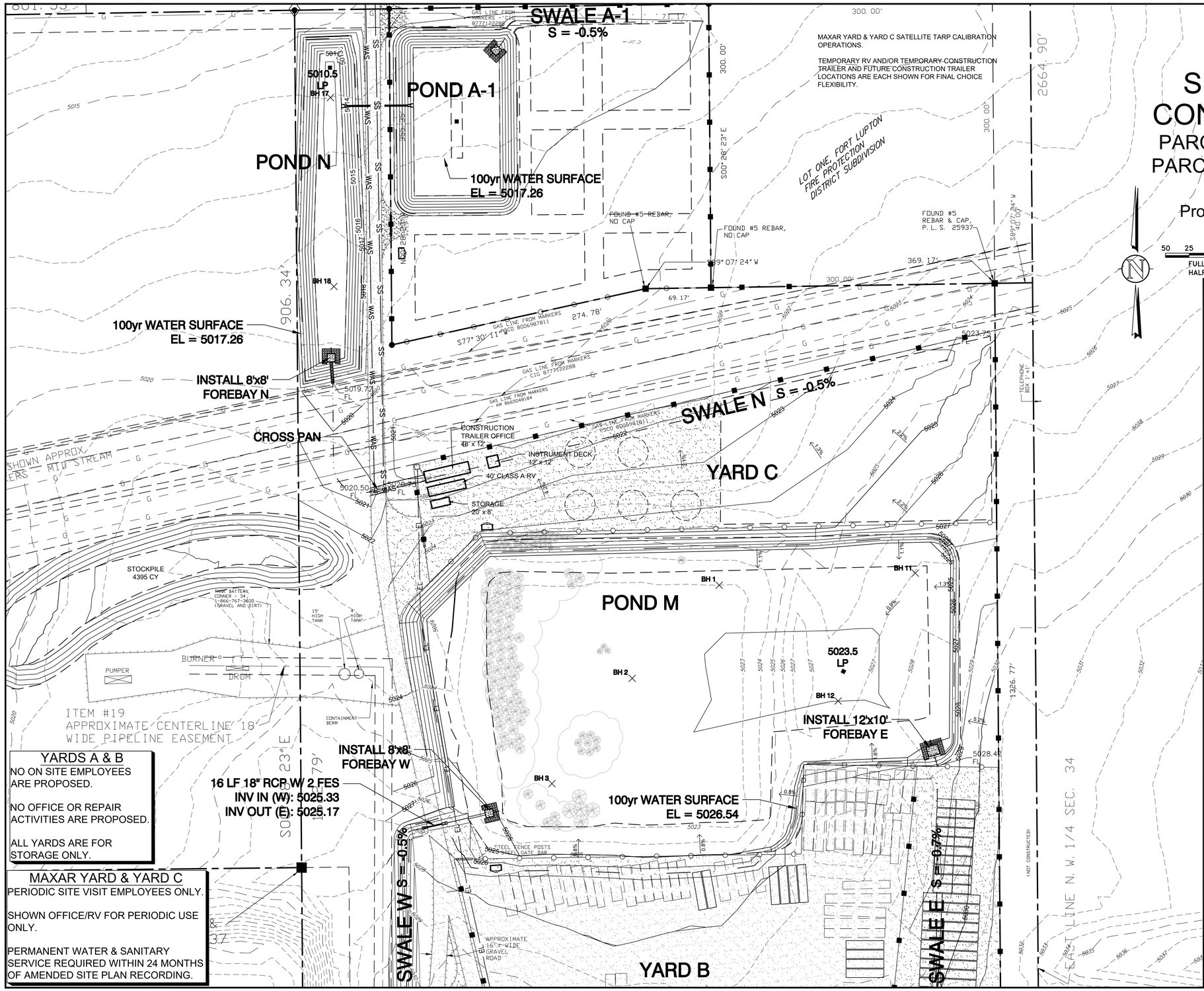
SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



FULL SCALE: 1" = 50'
HALF SCALE: 1" = 100'

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

NOTES

THIS PLAN IS INTENDED AS THE GRADING DETAIL FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

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EXISTING TREES TO BE PRESERVED. DO NOT GRADE INSIDE OF TREE CANOPY.

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
- MANHOLE W/ FLOW DIRECTION
- RD ROOF DRAIN
- EXISTING GRAVEL
- EXISTING CONC
- EXISTING ASPHALT
- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS
- PROPOSED GRAVEL
- PROPOSED CONC
- PROPOSED ASPHALT

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- SETBACK
- TO BE ABANDONED LOT LINE
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- EXISTING CHAINLINK FENCE
- EXISTING WIRE FENCE
- POND WQ W/S
- SWALE
- OHE — EXISTING OVERHEAD ELEC
- EL — EXISTING ELECTRICAL LINE
- ST — EXISTING STORM LINE
- SA — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- GA — EXISTING GAS LINE
- FO — EXISTING FIBER OPTIC LINE
- T — EXISTING TELEPHONE LINE
- SA — FUTURE SANITARY LINE
- SS — FUTURE SANITARY SERVICE
- ST — PROPOSED STORM LINE
- WA — FUTURE WATER LINE
- WAS — FUTURE WATER SERVICE
- GA — PROPOSED GAS LINE
- EL — PROPOSED ELECTRIC LINE
- OHE — PROPOSED OVERHEAD ELECTRIC
- T — PROPOSED TELEPHONE LINE

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POND & YARD C GRADING SITE ENGINEERING PLANS
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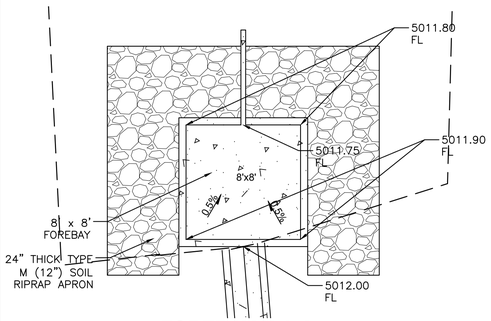
PROJECT NO. 01-0330.001.00
DOC CON # 0010-GRD DTL
SHEET 10 OF 23

\\WECSERVER1\Share\0330_001_00-RLW SAND\Dwg\CDs\0330-002-WEC-CDs.dwg, 10-GRDDTL, 9/30/2021 11:38:04 AM, AutoCAD PDF (High Quality Print).pc3, WEC 24*36, WEC 24*36

SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

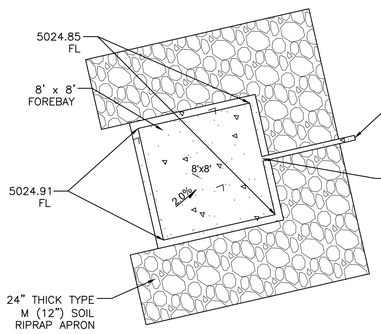
PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



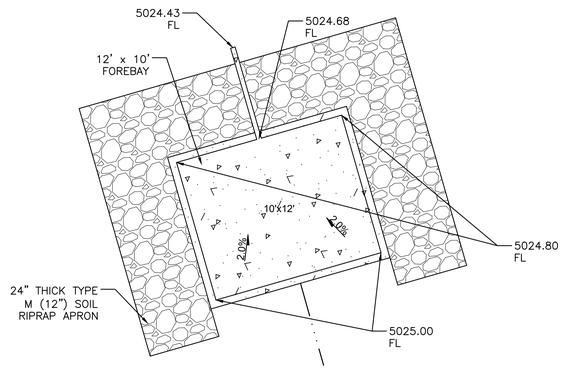
FOREBAY N & A-1

SCALE: 1" = 5'



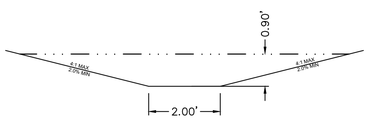
FOREBAY W

SCALE: 1" = 5'



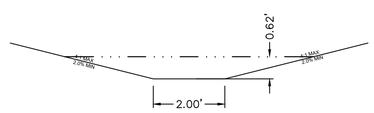
FOREBAY E

SCALE: 1" = 5'



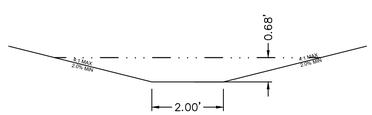
SWALE W,E CROSS SECTION

SCALE: 1" = 2'



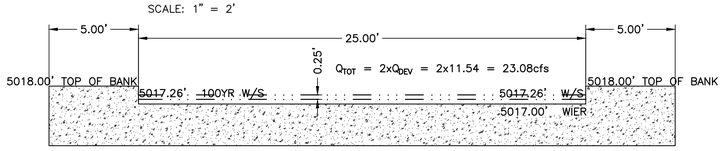
SWALE N CROSS SECTION

SCALE: 1" = 2'



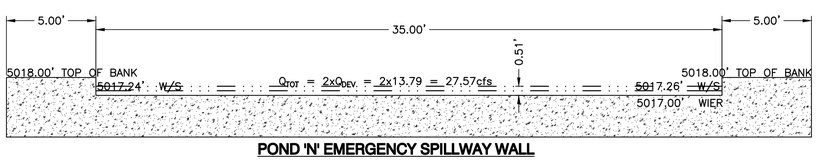
SWALE A-1 CROSS SECTION

SCALE: 1" = 2'



POND 'A-1' EMERGENCY SPILLWAY WALL

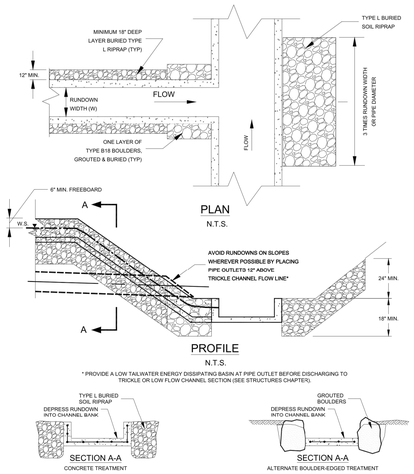
SCALE 1" = 4'



POND 'N' EMERGENCY SPILLWAY WALL

SCALE 1" = 4'

DRAINAGE CRITERIA MANUAL (V. 2) HYDRAULIC STRUCTURES



CHANNEL RUNDOWN DETAILS

N.T.S.

DETAILS BASED ON THOSEPROVIDEDTO DISTRICT BY CITY OF THORNTON, COLORADO

* Provide a low tailwater energy dissipating basin at end of pipe before discharging to trickle or low-flow channel section.

Figure HS-27—Rundown

Rev. 2008-04
Urban Drainage & Flood Control District

HS-105

BEDDING GRADATION

UDFCD Table MD-11

U.S. Standard Sieve Size	Percent Weight by Passing Square-Mesh Sieves: Type I CDOT Sect. 703.01	Type II CDOT Sect. 703.09 Class A
3 inches	-----	90-100
1 1/2 inches	-----	-----
3/4 inches	-----	20-90
3/8 inches	100	-----
#4	95-100	0-20
#16	45-80	-----
#50	10-30	-----
#100	2-10	-----
#200	0-2	0-3

RIPRAP BEDDING REQUIREMENTS

UDFCD Table MD-12 (Volume 1)

Riprap Designation	Minimum Bedding Thickness (inches): Fine-Grained Soils* Type I	Fine-Grained Soils* Type II	Coarse-Grained soils** Type II
VL (d_{50} =6 in), L (d_{50}=9 in)	4	4	6
M (d_{50} =12 in)	4	4	6
H (d_{50} =18 in)	4	6	8
VH (d_{50} =24 in)	4	6	8

* May substitute one 12-inch layer of type II bedding. The substitution of one layer of type II bedding shall not be permitted at drop structures. The use of a combination of filter fabric and Type II bedding at drop structures is acceptable.

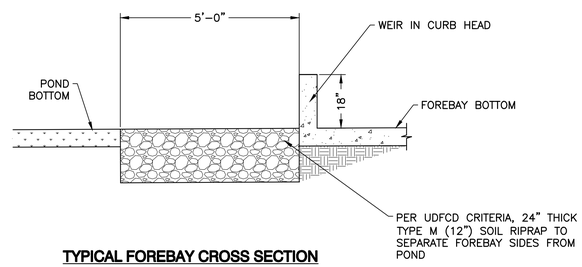
**Fifty percent or more by weight retained on the #40 sieve.

Classification & Gradation of Ordinary Riprap UDFCD Table MD-7

Riprap Designation	% Smaller Than Given Size by Weight	Intermediate Rock Dimensions (inches)	d50 (inches)*
Type VL	70–100 50–70 35–50 2–10	12 9 6 2	6**
Type L	70–100 50–70 35–50 2–10	15 12 9 3	9**
Type M	70–100 50–70 35–50 2–10	21 18 12 4	12**
Type H	70–100 50–70 35–50 2–10	30 24 18 6	18

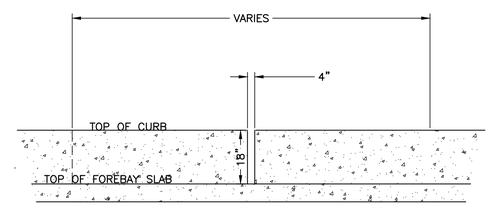
SOIL RIPRAP

70%-75% RIPRAP
25%-30% SOIL



TYPICAL FOREBAY CROSS SECTION

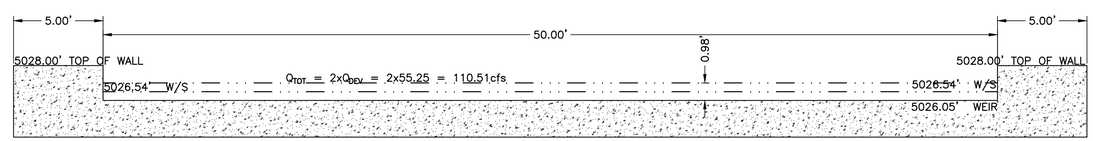
SCALE 1" = 2'



2.45" WEIR FOR RELEASE FROM FOREBAY PER UDFCD EQN. SO–13 SEE DRAINAGE REPORT APPENDIX FOR CALCULATIONS

TYPICAL FOREBAY WEIR

SCALE 1" = 2'



POND 'M' EMERGENCY SPILLWAY WALL

SCALE 1" = 4'

127 S. DENVER AVE
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CONTACT: SCOTT WEAKLAND
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SHEET 11 OF 23

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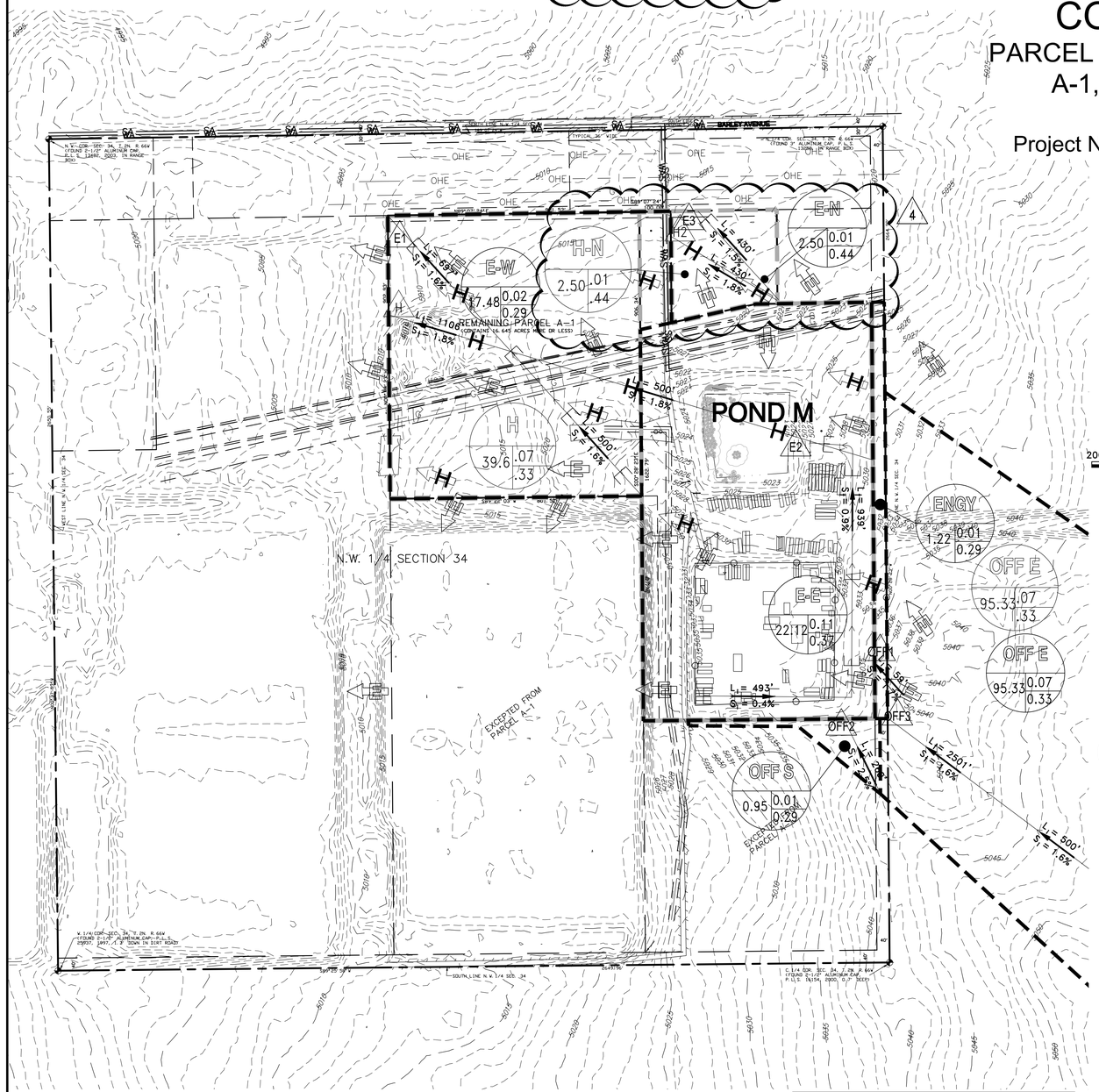
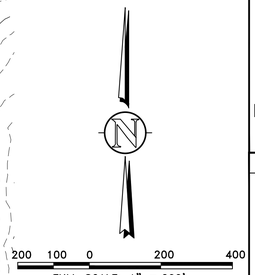
PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION
Project No. LUP2020-0009 & Plan No. SPR2020-0002

4 MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.





VICINITY MAP SCALE 1' = 1,000'

SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

EXISTING DRAINAGE LEGEND

E — EXISTING SUB-BASIN DESIGNATION
1.12 .73 .83 — C10 / C100
AREA IN ACRES
8 — DESIGN POINT
EXISTING BASIN
EXISTING DRAINAGE PATTERN

HISTORIC DRAINAGE LEGEND

H — HISTORIC SUB-BASIN DESIGNATION
1.12 .73 .83 — C10 / C100
AREA IN ACRES
HISTORIC BASIN
HISTORIC DRAINAGE PATTERN

HISTORIC RUNOFF TABLE (Parcel B, Lot 1, Front Range Energy Sub)

BASIN	Impervious	C-YR	I	A	CIA(YR-historic)	Flow	DESIGN POINT
H							
C_5 (UDFCD 2017)	9.72	0.07	1.30	39.61	3.49	cfs	H1
C_{100}	9.72	0.33	3.08	39.61	40.52	cfs	
OFF E							
C_5 (UDFCD 2017)	2.00	0.01	1.00	95.33	0.95	cfs	OFF3
C_{100}	2.00	0.29	2.38	95.33	64.62	cfs	
H-N							
C_5	2.00	0.01	1.74	2.50	0.04	cfs	H2
C_{100}	2.00	0.44	4.14	2.50	4.55	cfs	

EXISTING RUNOFF TABLE (Parcel B, Lot 1, Front Range Energy Sub)

BASIN	Impervious	C-YR	I	A	CIA(YR-existing)	Flow	DESIGN POINT
EW							
C5 (UDFCD 2017)	2.77	0.02	1.58	17.48	0.43	cfs	E1
C_{100}	2.77	0.29	3.75	17.48	18.99	cfs	
EE							
C5 (UDFCD 2017)	15.22	0.11	1.49	22.12	3.60	cfs	E2
C_{100}	15.22	0.37	3.55	22.12	28.67	cfs	
ENGY							
C5 (UDFCD 2017)	2.00	0.01	2.70	1.22	0.03	cfs	OFF1
C_{100}	2.00	0.29	6.43	1.22	2.23	cfs	
OFF S							
C5 (UDFCD 2017)	2.00	0.01	1.99	0.95	0.02	cfs	OFF2
C_{100}	2.00	0.29	4.74	0.95	1.28	cfs	
OFF E							
C5 (UDFCD 2017)	10.00	0.07	1.18	95.33	8.01	cfs	OFF3
C_{100}	10.00	0.33	2.80	95.33	88.91	cfs	
EN							
C5 (UDFCD 2017)	2.00	0.01	1.83	2.50	0.05	cfs	E3
C_{100}	2.00	0.44	4.35	2.50	4.78	cfs	

L_i - INITIAL LENGTH
S_i - INTIAL SLOPE
L_t - TRAVEL LENGTH
S_t - TRAVEL SLOPE
* AVERAGE SLOPE INCLUDES ROOF SLOPE OF 8.33%

$L_i = L_t$, $S_i = S_t$

$L_i = L_i$, $S_i = S_i$

NOTES

THIS PLAN IS INTENDED AS THE HISTORIC & EXISTING DRAINAGE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.
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22.5 DEG BEND
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RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
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3	REV. PER 8/26/20 CITY COMMENTS	08/26/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	08/27/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
7200 W. 38TH AVENUE
LAKWEOOD, CO 80215
(720)685-9951

HIST. & EX. DRAINAGE PLAN
SITE ENGINEERING PLANS
PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUB.
WELD COUNTY, COLORADO

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DOC CON # 0012-HIST&EXDRNG
SHEET 12 OF 23

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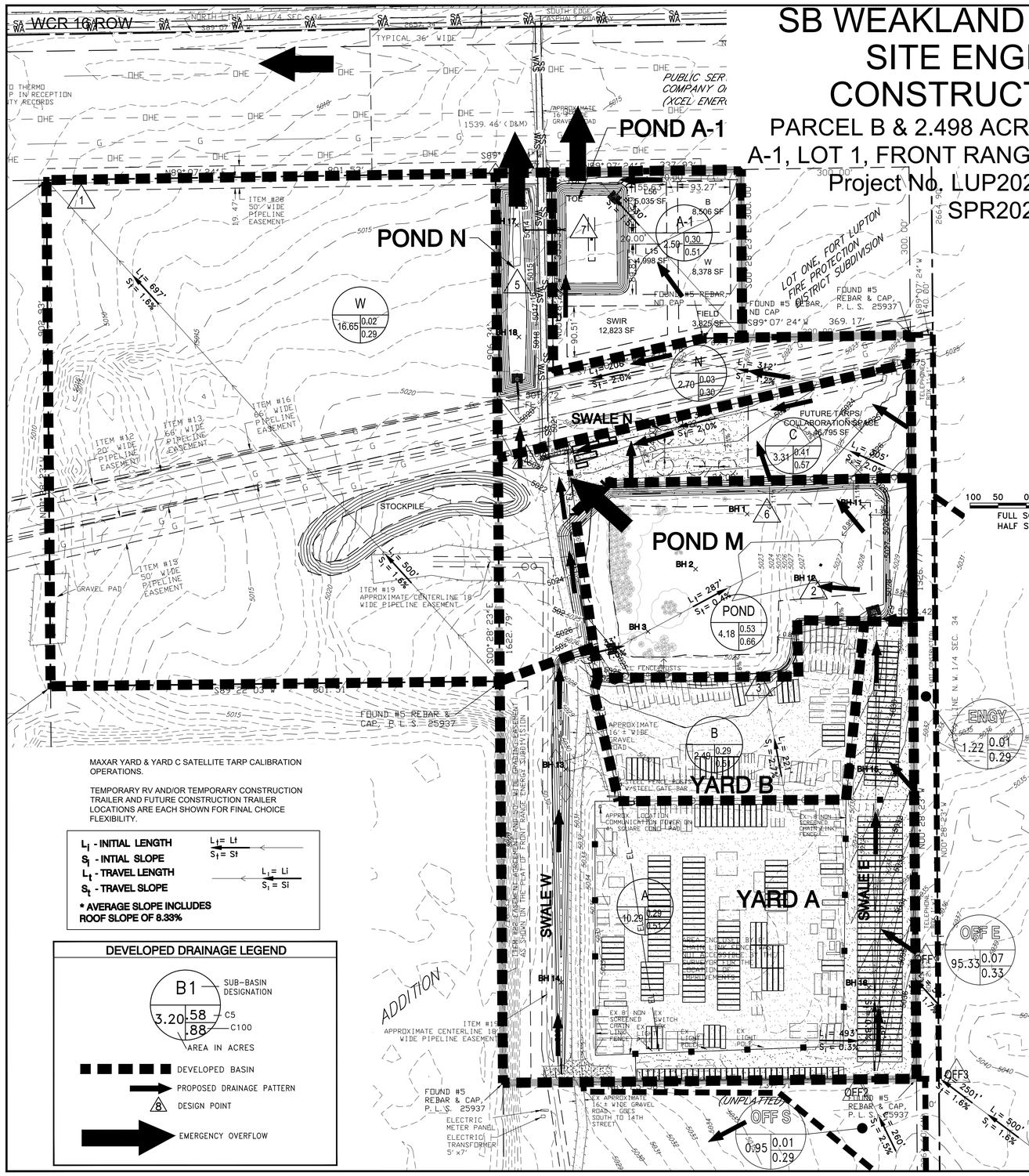
SB WEAKLAND INVESTMENTS
SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 ACRE REMAINING PARCEL
A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

L_I - INITIAL LENGTH
S_I - INTIAL SLOPE
L_t - TRAVEL LENGTH
S_t - TRAVEL SLOPE

$L_I = L_t$, $S_I = S_t$

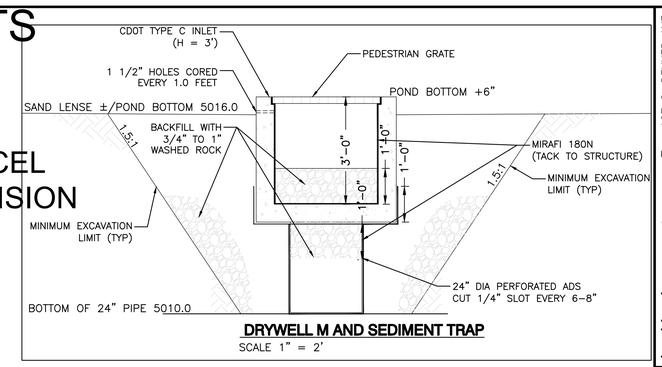
$L_t = L_i$, $S_t = S_i$

* AVERAGE SLOPE INCLUDES ROOF SLOPE OF 8.33%

DEVELOPED DRAINAGE LEGEND

B1 — SUB-BASIN DESIGNATION
3.20 — AREA IN ACRES
58 — C5
.88 — C100

DEVELOPED BASIN
PROPOSED DRAINAGE PATTERN
8 — DESIGN POINT
EMERGENCY OVERFLOW



DRYWELL M AND SEDIMENT TRAP
SCALE 1" = 2'

A DRYWELL WILL BE REQUIRED IF BOTTOM OF POND IS NOT IN NATIVE GRAVEL OR SAND.

POND M WATER SURFACE TABLE		
DESCRIPTION	ELEVATION	VOLUME (cft)
1x 100yr 24hr VOLUME	5026.54	319,245
TOP OVERFLOW	5027.50	520,570

POND N WATER SURFACE TABLE		
DESCRIPTION	ELEVATION	VOLUME (cft)
1x 100yr 24hr VOLUME	5017.91	100,292
TOP OVERFLOW	5018.00	101,243

POND A-1 WATER SURFACE TABLE		
DESCRIPTION	ELEVATION	VOLUME (cft)
1x 100yr 24hr VOLUME	5016.40	41,712
TOP OVERFLOW	5017.00	47,856

DEVELOPED RUNOFF TABLE (Parcel B, Lot 1, Front Range Energy Sub)

BASIN	Impervious	C-YR	I	A	CIA(YR-DEVELOPED)	cfs	DESIGN POINT
W							
C5 (UDFCD 2017)	2.81	0.02	1.58	16.65	0.42	cfs	1
C_{100}	2.81	0.29	3.75	16.65	18.10	cfs	1
A							
C_5	39.81	0.29	1.72	10.29	5.20	cfs	2
C_{100}	39.81	0.51	4.09	10.29	21.65	cfs	2
B							
C_5	39.56	0.29	2.46	2.49	1.78	cfs	3
C_{100}	39.56	0.51	5.85	2.49	7.45	cfs	3
C							
C_5	38.75	0.29	2.14	3.30	2.02	cfs	4
C_{100}	38.75	0.51	5.10	3.30	8.55	cfs	4
N							
C_5	4.53	0.03	1.80	2.70	0.14	cfs	5
C_{100}	4.53	0.30	4.29	2.70	3.48	cfs	5
POND							
C_5	62.17	0.53	2.91	4.18	6.46	cfs	6
C_{100}	62.17	0.66	6.92	4.18	18.97	cfs	6
ENGY							
C_5	2.00	0.01	2.70	1.22	0.03	cfs	OFF1
C_{100}	2.00	0.29	6.43	1.22	2.23	cfs	OFF1
OFF S							
C_5	2.00	0.01	1.99	0.95	0.02	cfs	OFF2
C_{100}	2.00	0.29	4.74	0.95	1.28	cfs	OFF2
OFF E							
C_5	10.00	0.07	1.18	95.33	8.01	cfs	OFF3
C_{100}	10.00	0.33	2.80	95.33	88.91	cfs	OFF3
A-1							
C_5	39.32	0.30	2.05	2.50	1.54	cfs	7
C_{100}	39.32	0.51	4.89	2.50	6.25	cfs	7

NOTES

THIS PLAN IS INTENDED AS THE DEVELOPED DRAINAGE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

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SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1x BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
SETBACK
TO BE ABANDONED LOT LINE
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
SWALE
EXISTING OVERHEAD ELEC
EXISTING ELECTRICAL LINE
EXISTING STORM LINE
EXISTING SANITARY LINE
EXISTING WATER LINE
EXISTING GAS LINE
EXISTING FIBER OPTIC LINE
EXISTING TELEPHONE LINE
FUTURE SANITARY LINE
FUTURE SANITARY SERVICE
PROPOSED STORM LINE
FUTURE WATER LINE
FUTURE WATER SERVICE
PROPOSED GAS LINE
PROPOSED ELECTRIC LINE
PROPOSED OVERHEAD ELECTRIC
PROPOSED TELEPHONE LINE

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CONTACT: SCOTT WEAKLAND
12200 W. I-70 FRONTAGE RD. N.
LAKEWOOD, CO 80215
(720)685-9951

DEVELOPED DRAINAGE PLAN
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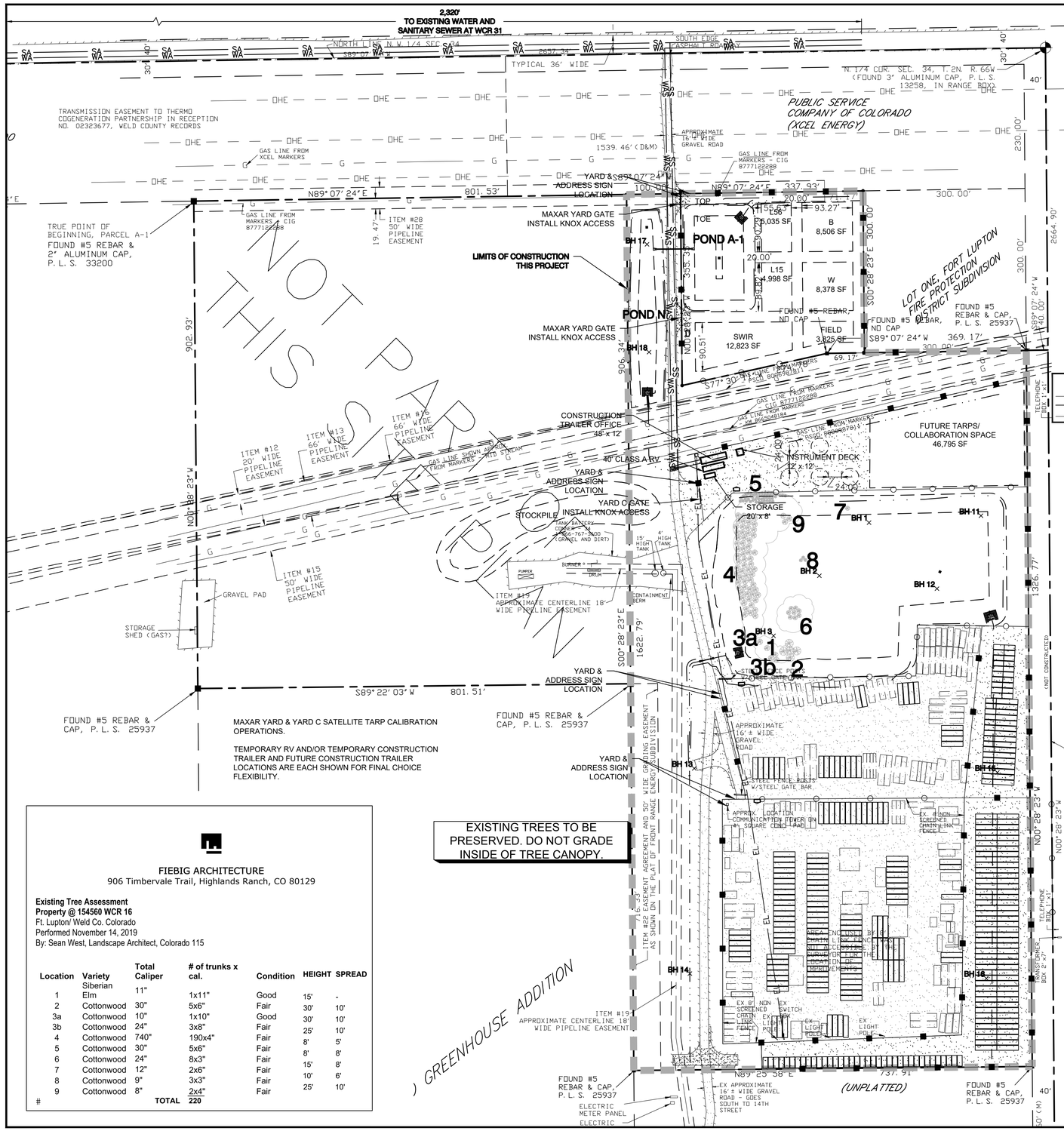
SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 AC REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



FULL SCALE: 1" = 100'
HALF SCALE: 1" = 200'

NO NEW LANDSCAPE PROPOSED.

FENCE LEGEND

- EXISTING 8' HIGH NON-SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH NON SCREENED CHAIN LINK FENCE
- PROPOSED 6'-8' HIGH SCREENED FENCE

YARDS A & B

NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C

PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

USE TABLE

YARD	USE
A	EQUIPMENT STORAGE
B	TRUCK STORAGE/ PARKING YARD
C	SATELLITE TARP CALIBRATION SITE
MAXAR	SATELLITE TARP CALIBRATION SITE

EXISTING TREES TO BE PRESERVED. DO NOT GRADE INSIDE OF TREE CANOPY.

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

YARD IDENTIFICATION SIGN DETAIL

SCALE 1" = 2'

** PER FORT LUPTON FIRE PROTECTION DISTRICT THE ADDRESS NUMBERS NEED TO BE A MINIMUM OF 4 INCHES HIGH, HAVE A 3/4 INCH STROKE, AND THEY NEED TO BE ON A CONTRASTING BACKBOARD.

ADDRESS SIGN DETAIL

SCALE 1" = 2'

NOTES

THIS PLAN IS INTENDED AS THE LANDSCAPE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

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EXISTING LANDSCAPE LEGEND

- EVERGREEN TREE
- DECIDUOUS TREE

SYMBOL LEGEND

- 45 DEG BEND
- 22.5 DEG BEND
- RESTRAINED PLUG
- RESTRAINED TEE
- WATER METER
- RESTRAINED CROSS
- FIRE HYDRANT
- RESTRAINED VALVE
- THRUST BLOCK TB
- GATE VALVE GV
- CURB STOP
- PIPE CROSSING
- MANHOLE
- MANHOLE W/ FLOW DIRECTION
- RD ROOF DRAIN
- EXISTING GRAVEL
- EXISTING CONC
- EXISTING ASPHALT
- PROPOSED GRAVEL
- PROPOSED CONC
- PROPOSED ASPHALT
- BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

- LOT / PROPERTY / SECTION LINE
- RIGHT OF WAY LINE
- EASEMENT
- SETBACK
- TO BE ABANDONED LOT LINE
- EXISTING BUILDING, CURB
- EDGE of ASPHALT or GRAVEL RD
- EXISTING CHAINLINK FENCE
- EXISTING WIRE FENCE
- POND WQ W/S
- SWALE
- OHE — EXISTING OVERHEAD ELEC
- EL — EXISTING ELECTRICAL LINE
- SS — EXISTING STORM LINE
- SA — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- GA — EXISTING GAS LINE
- FO — EXISTING FIBER OPTIC LINE
- T — EXISTING TELEPHONE LINE
- SA — FUTURE SANITARY LINE
- SS — FUTURE SANITARY SERVICE
- SS — PROPOSED STORM LINE
- WA — FUTURE WATER LINE
- WAS — FUTURE WATER SERVICE
- GA — PROPOSED GAS LINE
- EL — PROPOSED ELECTRIC LINE
- OHE — PROPOSED OVERHEAD ELECTRIC
- T — PROPOSED TELEPHONE LINE

FIEBIG ARCHITECTURE
906 Timbervale Trail, Highlands Ranch, CO 80129

Existing Tree Assessment
Property @ 154560 WCR 16
Ft. Lupton/ Weld Co. Colorado
Performed November 14, 2019
By: Sean West, Landscape Architect, Colorado 115

#	Location	Variety	Total Caliper	# of trunks x cal.	Condition	HEIGHT	SPREAD
1		Siberian Elm	11"	1x11"	Good	15'	-
2		Cottonwood	30"	5x6"	Fair	30'	10'
3a		Cottonwood	10"	1x10"	Good	30'	10'
3b		Cottonwood	24"	3x8"	Fair	25'	10'
4		Cottonwood	740"	190x4"	Fair	8'	5'
5		Cottonwood	30"	5x6"	Fair	8'	8'
6		Cottonwood	24"	8x3"	Fair	15'	8'
7		Cottonwood	12"	2x6"	Fair	10'	6'
8		Cottonwood	9"	3x3"	Fair	25'	10'
9		Cottonwood	8"	2x4"	Fair		
			TOTAL	220			

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LANDSCAPE/SCREENING PLANS
SITE ENGINEERING PLANS
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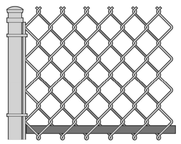
SB WEAKLAND INVESTMENTS
SITE PLAN AMENDED

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

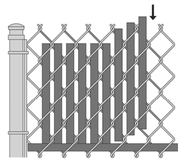
Project No. LUP2020-0009 & Plan No. SPR2020-0002

INSTALLATION INSTRUCTIONS

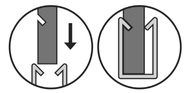
(Suggested installation instructions. Instructions vary per job site conditions)



Step 1. Insert the bottom channel horizontally into the first diamond at the bottom of the fence with open side facing up.

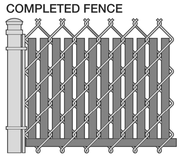


Step 2. Insert slats vertically with the beveled/notched end downward until slat engages and interlocks with the bottom channel.



Step 3. Push the vertical slat into the horizontal channel until the locking catch snaps into the cutout notch.

COMPLETED FENCE



These easy to install slats provide a beautifully finished fence.

BOTTOM LOCKING SLAT SPECIFICATIONS

SLAT NAME	SLAT WIDTH	MESH SIZE	WIRE GAUGE	COVERAGE AREA
BOTTOM LOCK 2"	1 3/32"	2"	9 OR 11	10 LINEAR FEET
BOTTOM LOCK 2 1/4"	1 1/4"	2 1/4"	11 1/2 OR 12	10 LINEAR FEET
BOTTOM LOCK 1 3/4"	7/8"	1 3/4" 2"	9 OR 11 6	10 LINEAR FEET

Bottom Locking Fence Slats

SlatSource by PrivacyLink
130 West 700 South, Smithfield, UT 84335
eprivacylink.com • 1-800-574-1076

PROJECT:	SUBMITTED BY:	DRAWING NO:
OWNER/GENERAL CONTRACTOR:	DATE:	

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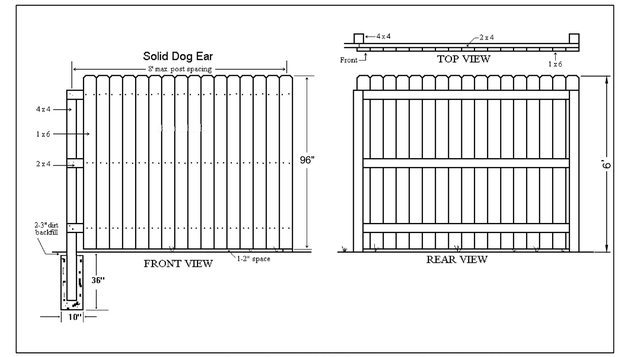
SLATTED EXISTING CHAINLINK DETAILS

METAL SIDING FENCE DETAIL

SIDING TO BE 22 GAUGE MIN.

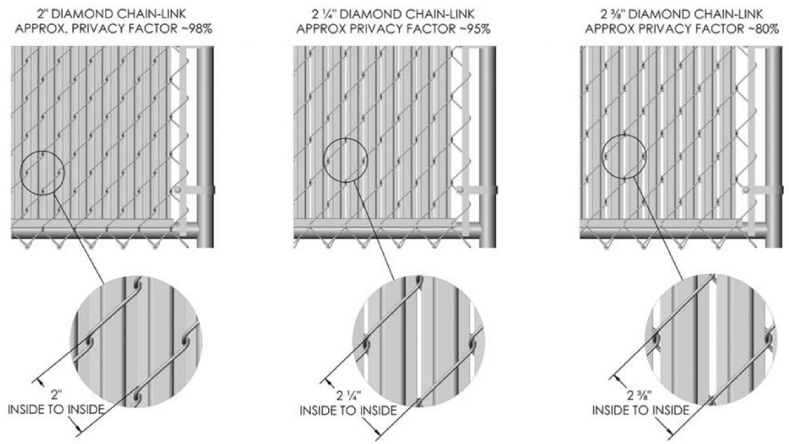


OPAQUE WOOD FENCE DETAIL

(TRASH ENCLOSURE)

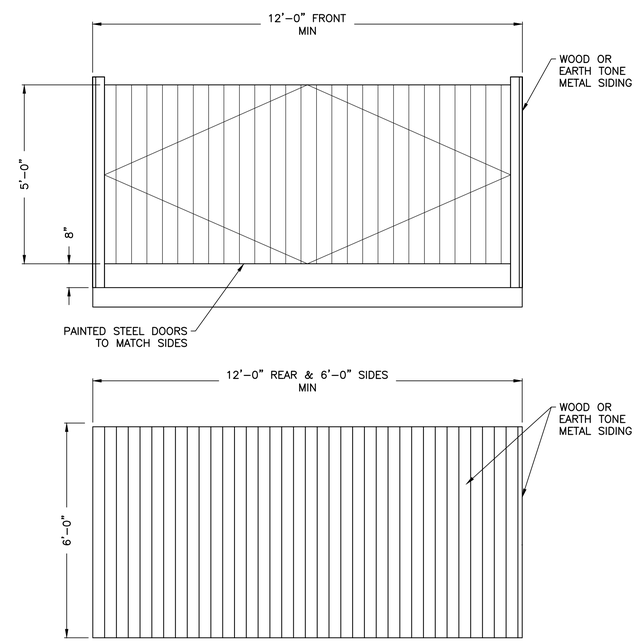
4

SOLITUBE® SLAT PRIVACY COMPARISON
SLAT WIDTH = 1 7/16" (1.437")



NOTE: CHAIN-LINK DIAMOND SIZES MAY HAVE SLIGHT VARIATIONS BETWEEN MANUFACTURERS AND GAUGE OF WIRE USED

NEW SLATTED CHAINLINK DETAILS



TRASH ENCLOSURE

SCALE 1" = 2'

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SHEET 15 OF 23

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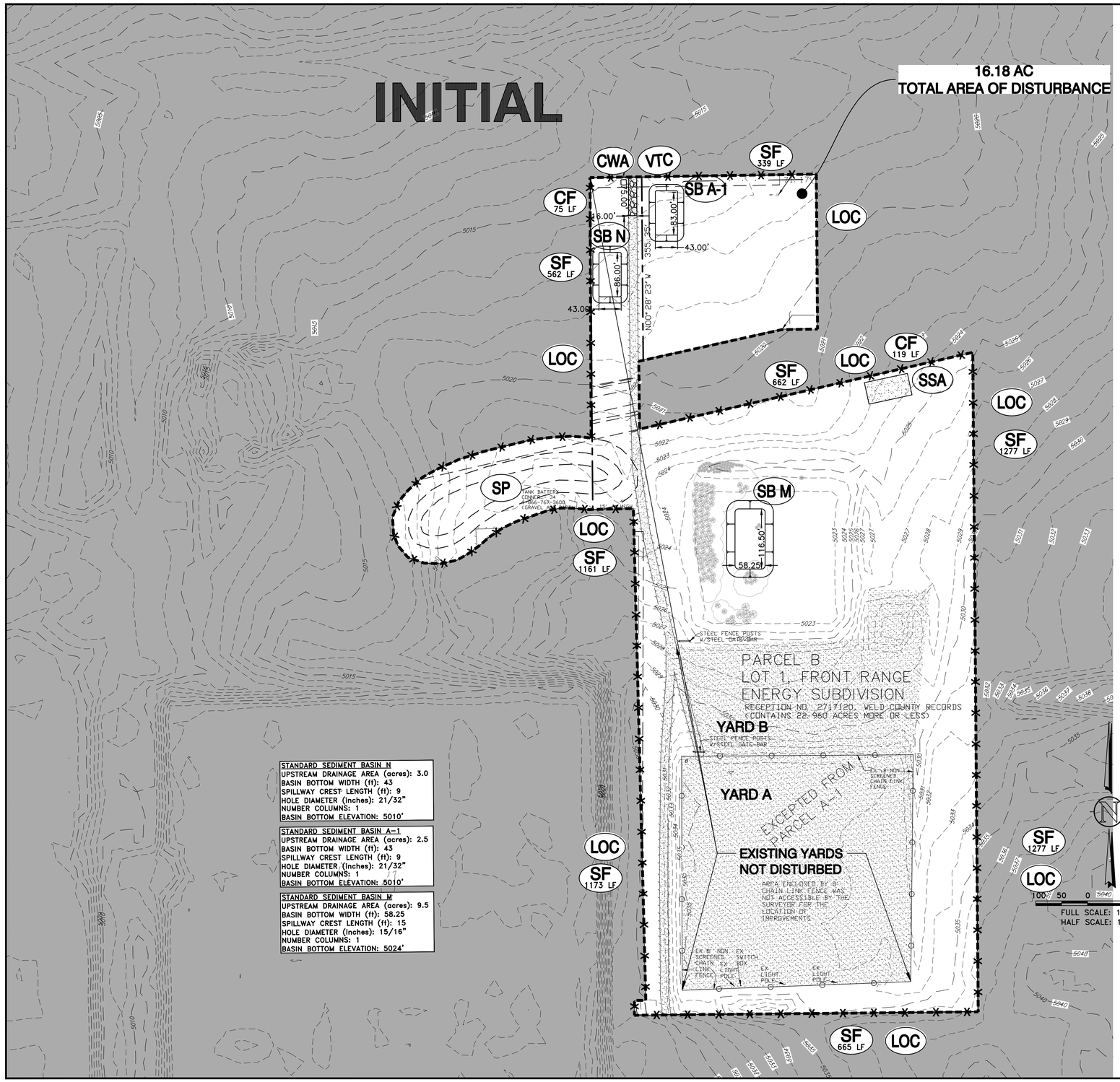
SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



STANDARD SEDIMENT BASIN N
UPSTREAM DRAINAGE AREA (acres): 3.0
BASIN BOTTOM WIDTH (ft): 43
SPILLWAY CREST LENGTH (ft): 9
HOLE DIAMETER (inches): 21/32"
NUMBER COLUMNS: 1
BASIN BOTTOM ELEVATION: 5010'

STANDARD SEDIMENT BASIN A-1
UPSTREAM DRAINAGE AREA (acres): 2.5
BASIN BOTTOM WIDTH (ft): 43
SPILLWAY CREST LENGTH (ft): 9
HOLE DIAMETER (inches): 21/32"
NUMBER COLUMNS: 1
BASIN BOTTOM ELEVATION: 5010'

STANDARD SEDIMENT BASIN M
UPSTREAM DRAINAGE AREA (acres): 9.5
BASIN BOTTOM WIDTH (ft): 58.25
SPILLWAY CREST LENGTH (ft): 15
HOLE DIAMETER (inches): 15/16"
NUMBER COLUMNS: 1
BASIN BOTTOM ELEVATION: 5024'

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

4 MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY.

BMP LEGEND

CWA	CONCRETE WASHOUT AREA
CF	CONSTRUCTION FENCE
CM	CONSTRUCTION MARKER
CIP	CULVERT INLET PROTECTION
DC	WIND EROSION & DUST CONTROL
DD	DRAINAGE DITCH
GH	GOOD HOUSEKEEPING PRACTICE
IP	INLET PROTECTION
LOC	LIMITS OF CONSTRUCTION
LS	PERMANENT LANDSCAPING
PS	PERMANENT SEEDING
RS	ROCK SOCK
SB	SEDIMENT BASIN
SCL	SEDIMENT CONTROL LOG
SF	SILT FENCE
SM	SEED & MULCH
SS	STREET SWEEPING VACUMMING
SSA	STABILIZED STAGING AREA
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TOP	TEMPORARY OUTLET PROTECTION
VB	VEGETATED BUFFER
VTC	VEHICLE TRACKING CONTROL

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FAX (720) 294-1330
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No.	REVISION	DATE	BY
3	REV PER 3/30/20 CITY COMMENTS	06/09/20	CFC
4	ADD 2.498 AC REMAINING PARCEL A-1	09/27/21	CFC
5	REV PER 9/09 AND 9/14/21 CITY COMMENTS	09/30/21	CFC

SB WEAKLAND INVESTMENTS
CONTACT: SCOTT WEAKLAND
12200 W. I-70 FRONTAGE RD.
LAKWEOOD, CO 80215
(720)685-9951

INITIAL EROSION CONTROL SITE ENGINEERING PLANS
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CHRISTIAN F. CARPENTER
33802
09/30/21
PROFESSIONAL ENGINEER
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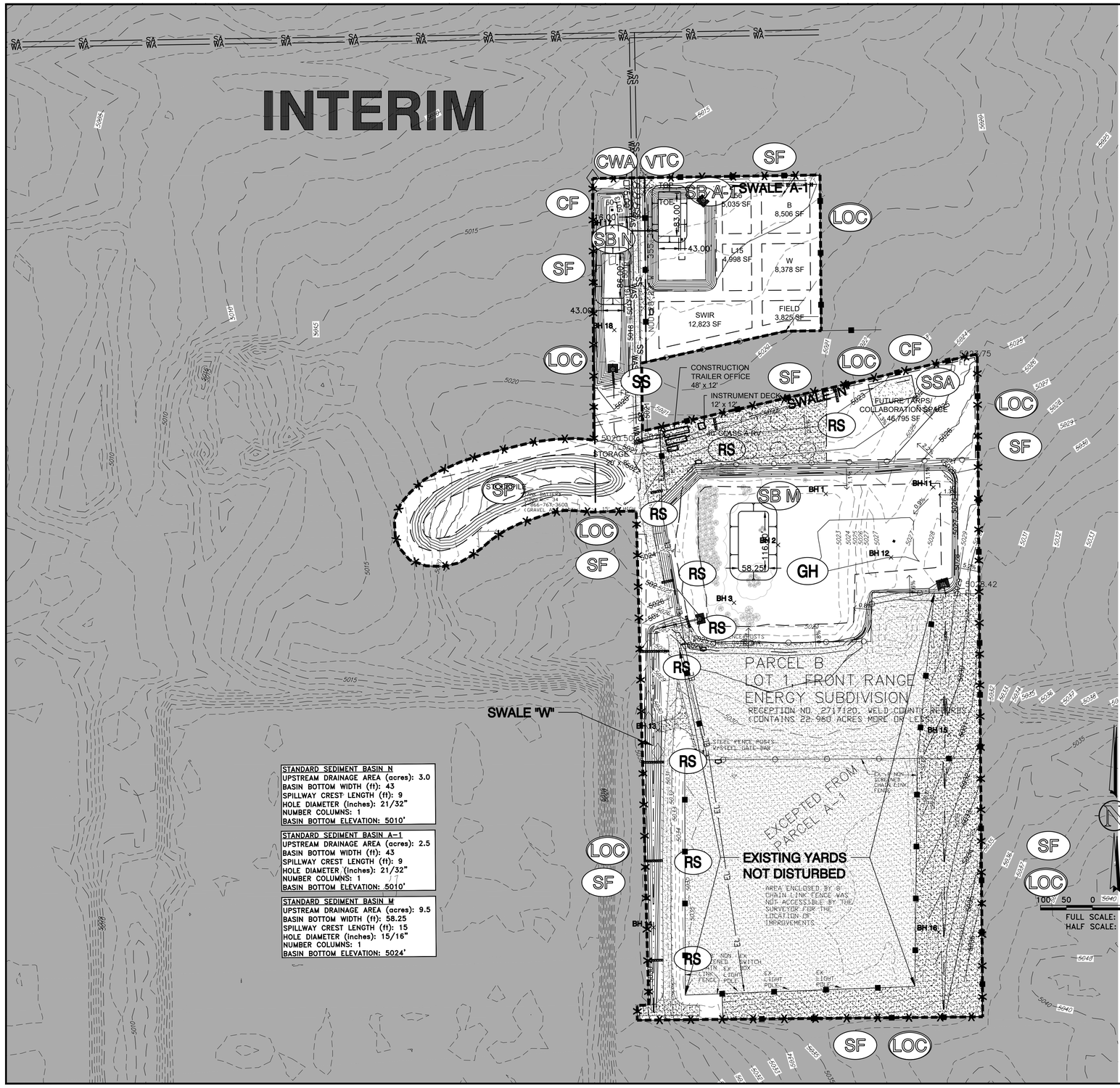

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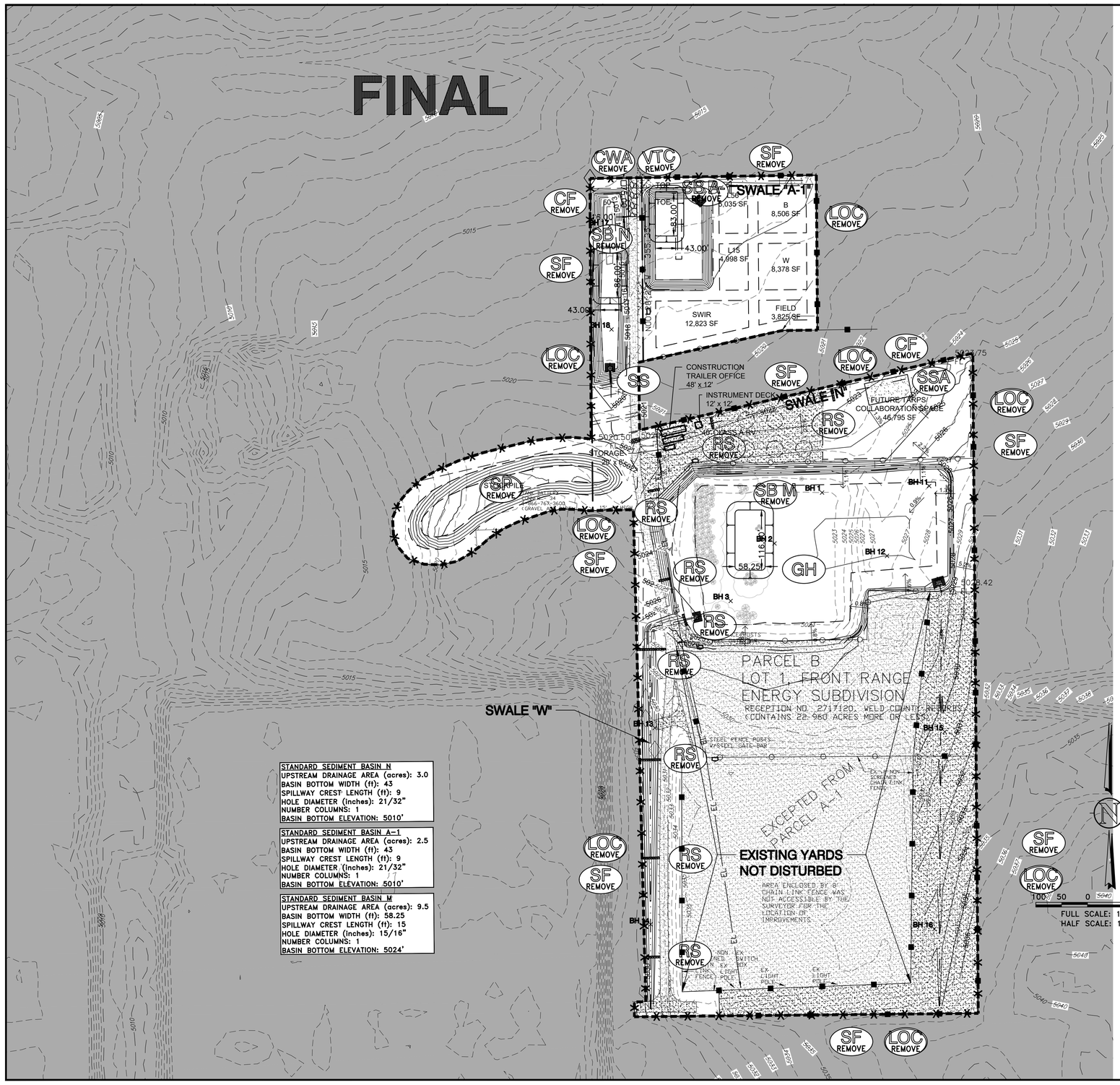

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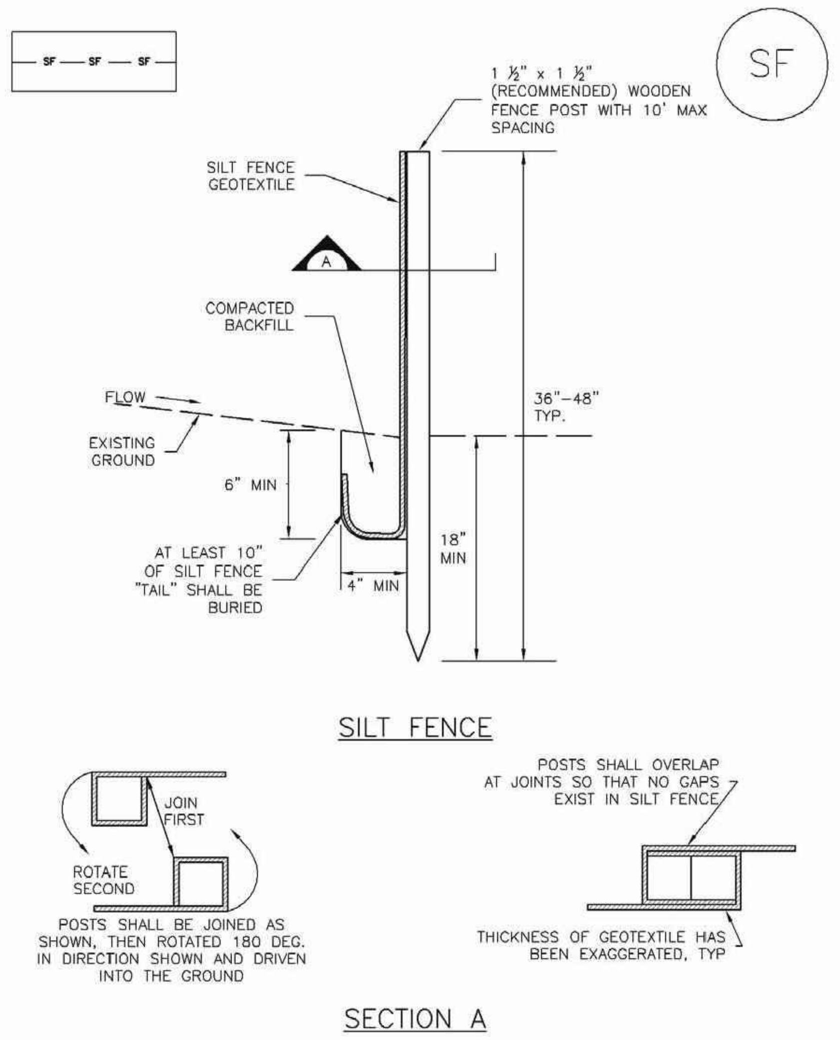
Silt Fence (SF) SC-1



SF–1. SILT FENCE

SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2–5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J–HOOK." THE "J–HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' – 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

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

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

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

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

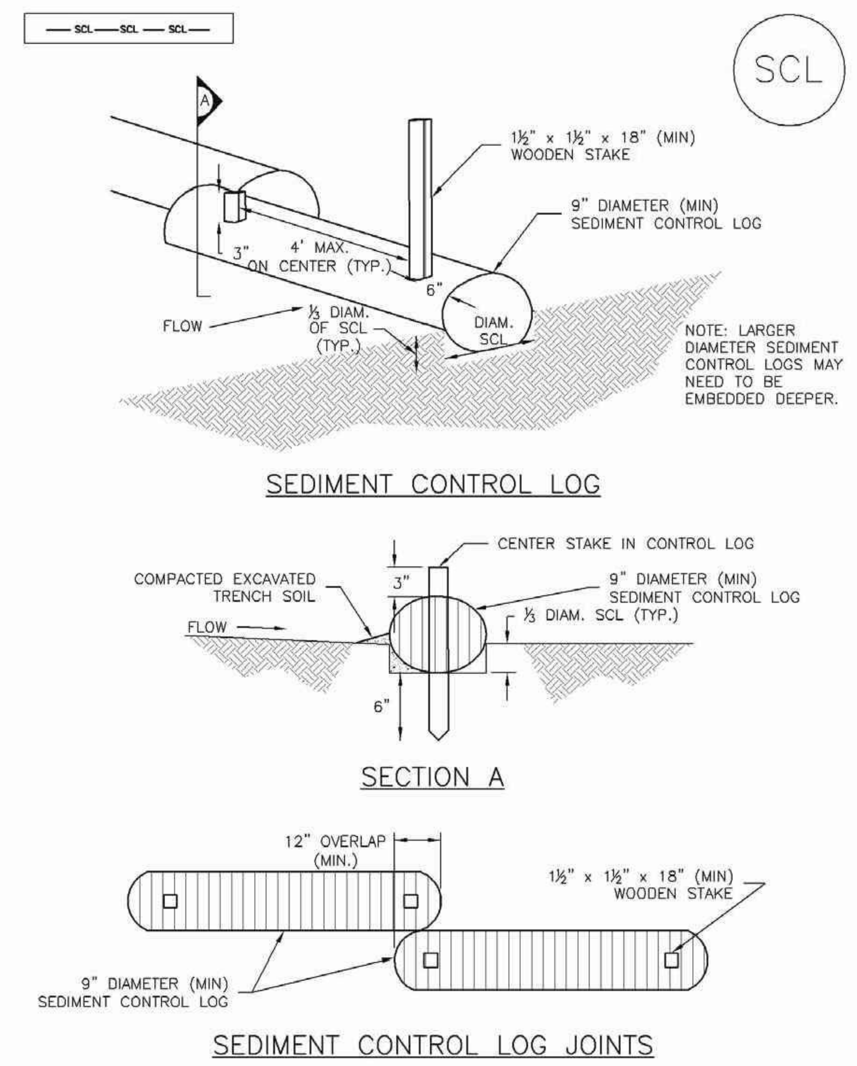
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

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

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

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

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 UPGRADIENT LAND–DISTURBING ACTIVITIES.

3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, 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 DRAINAGE WAYS.

5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ⅓ OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE 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 TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.

7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" 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.

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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 AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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Sediment Control Log (SCL) SC-2

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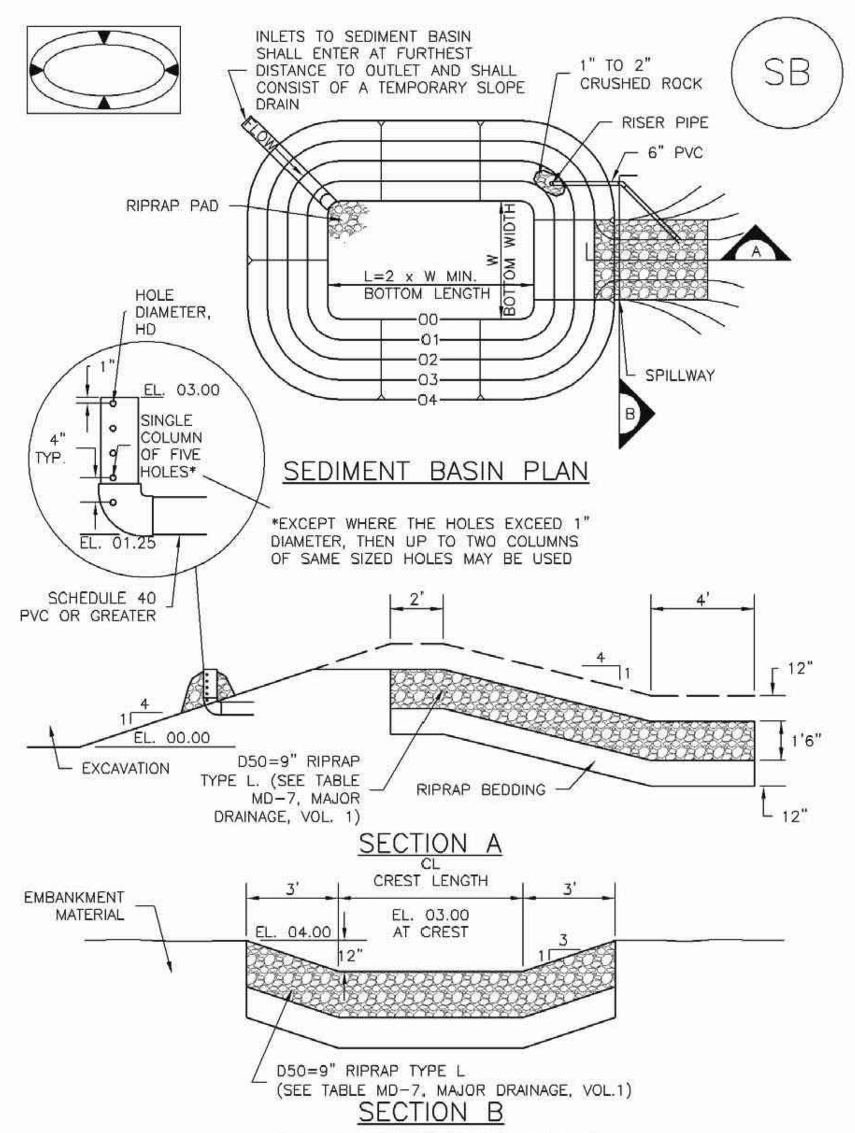
Sediment Basin (SB) SC-7



SB–1. SEDIMENT BASIN

SC-7 Sediment Basin (SB)

TABLE SB–1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN

Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (HD), (in)
1	12 ½	2	9/32
2	21	3	13/16
3	28	5	½
4	33 ½	6	9/16
5	38 ½	8	21/32
6 (TSB 'N')	43	9	21/32
7	47 ¼	11	25/32
8	51	12	27/32
9	55	13	7/8
10 (TSB 'M')	58 ¼	15	15/16
11	61	16	31/32
12	64	18	1
13	67 ½	19	1 1/16
14	70 ½	21	1 1/8
15	73 ¼	22	1 3/16

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - –LOCATION OF SEDIMENT BASIN.
   - –TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
   - –FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
   - –FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.

2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.

3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND–DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL.

4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.

5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

6. PIPE SCH 40 OR GREATER SHALL BE USED.

7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

Sediment Basin (SB) SC-7

SEDIMENT BASIN 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 IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).

5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.

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

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)

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.

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No.	REVISION	DATE	BY
3	REV PER 3/30/20 CITY COMMENTS	06/09/20	CFC

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COLORADO REGISTERED CHADWIN F. COX 33802 06/09/20 PROFESSIONAL ENGINEER
ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

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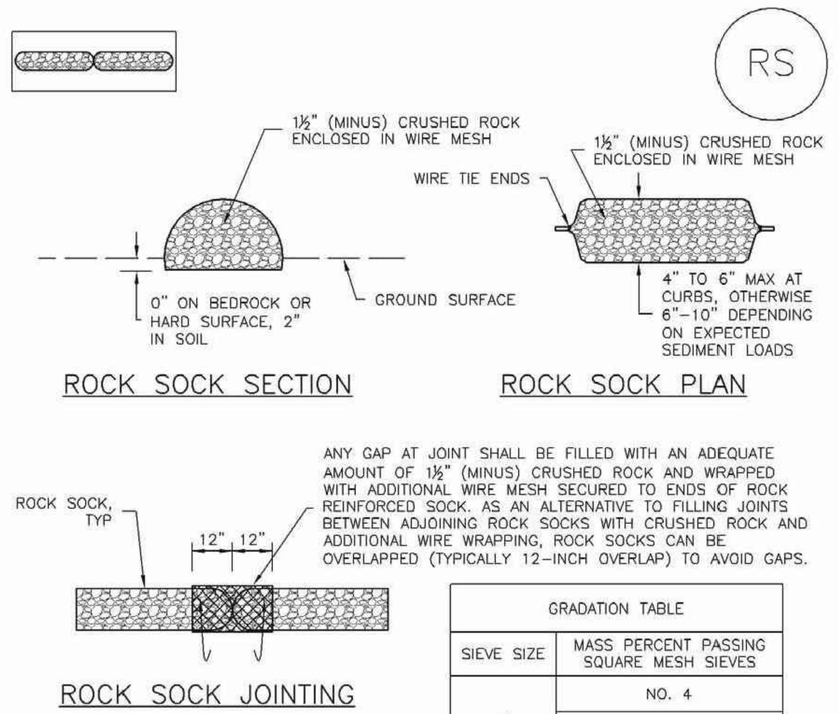
SC-5 Rock Sock (RS)



GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2" 1½" 1" ¾" ⅜"	100 90 – 100 20 – 55 0 – 15 0 – 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

ROCK SOCK INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION(S) OF ROCK SOCKS.

2. CRUSHED ROCK SHALL BE 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1½" MINUS).

3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF ½", RECOMMENDED MINIMUM ROLL WIDTH OF 48"

4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.

5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS–1. ROCK SOCK PERIMETER CONTROL

Rock Sock (RS) SC-5

ROCK SOCK 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 SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.

5. SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS 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 ROCK SOCK.

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

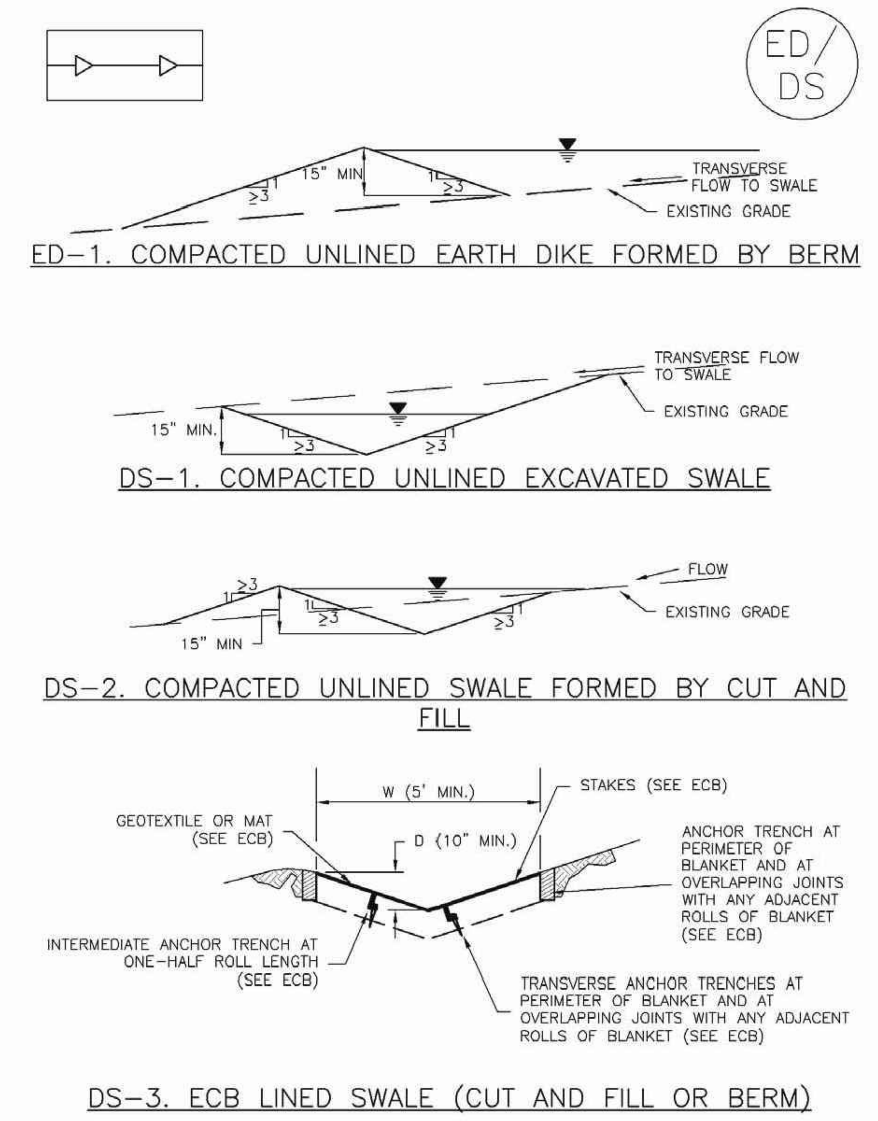
7. WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

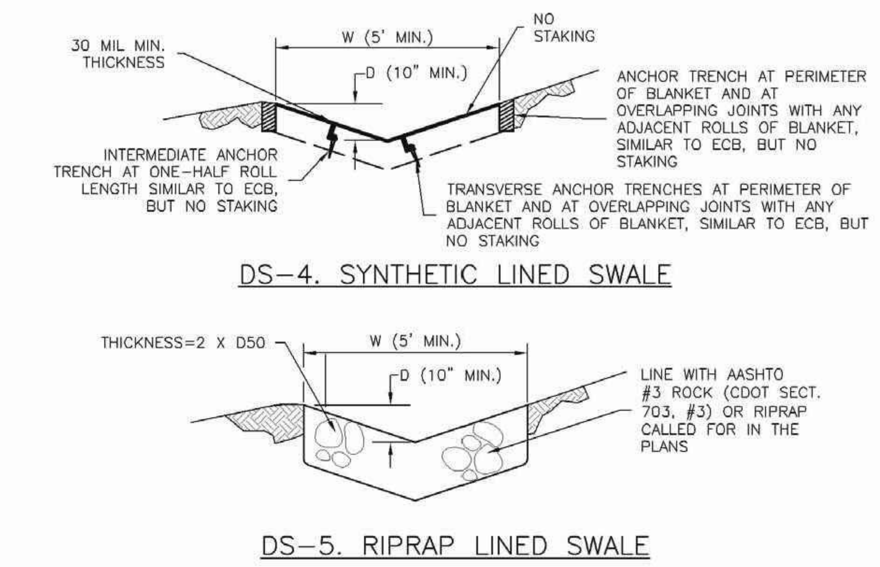
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER NDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; 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.

Earth Dikes and Drainage Swales (ED/DS) EC-10



EC-10 Earth Dikes and Drainage Swales (ED/DS)



EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

1. SEE SITE PLAN FOR:
   - LOCATION OF DIVERSION SWALE
   - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
   - LENGTH OF EACH SWALE.
   - DEPTH, D, AND WIDTH, W DIMENSIONS.
   - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.

2. SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.

3. EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.

4. EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.

5. SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.

6. FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.

7. WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

Earth Dikes and Drainage Swales (ED/DS) EC-10

EARTH DIKE AND DRAINAGE SWALE 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.

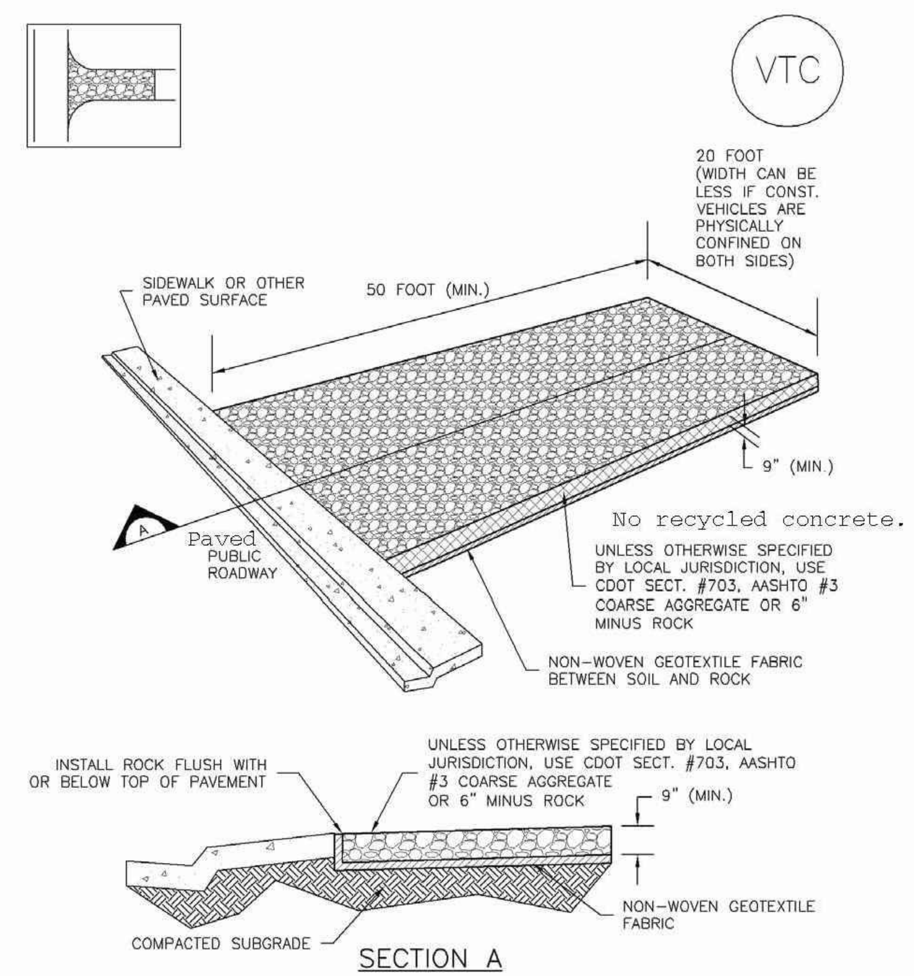
4. SWALES SHALL REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION; IF APPROVED BY LOCAL JURISDICTION, SWALES MAY BE LEFT IN PLACE.

5. WHEN A SWALE IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF COLORADO SPRINGS, 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.

Vehicle Tracking Control (VTC) SM-4



VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

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)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE 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 SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK. Recycled concrete is not allowed.

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 REAPPLIED OR REGRADED 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. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

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)

Temporary and Permanent Seeding (TS/PS) EC-2

Description

Temporary seeding can be used to stabilize disturbed areas that will be inactive for an extended period. Permanent seeding should be used to stabilize areas at final grade that will not be otherwise stabilized. Effective seeding includes preparation of a seedbed, selection of an appropriate seed mixture, proper planting techniques, and protection of the seeded area with mulch, geotextiles, or other appropriate measures.

Photograph TS/PS -1. Equipment used to drill seed. Photo courtesy of Douglas County.

Appropriate Uses

When the soil surface is disturbed and will remain inactive for an extended period (typically 30 days or longer), proactive stabilization measures should be implemented. If the inactive period is short-lived (on the order of two weeks), techniques such as surface roughening may be appropriate. For longer periods of inactivity, temporary seeding and mulching can provide effective erosion control. Permanent seeding should be used on finished areas that have not been otherwise stabilized.

Typically, local governments have their own seed mixes and timelines for seeding. Check jurisdictional requirements for seeding and temporary stabilization.

Design and Installation

Effective seeding requires proper seedbed preparation, selection of an appropriate seed mixture, use of appropriate seeding equipment to ensure proper coverage and density, and protection with mulch or fabric until plants are established.

The USDCM Volume 2 *Revegetation* Chapter contains detailed seed mix, soil preparations, and seeding and mulching recommendations that may be referenced to supplement this Fact Sheet.

Drill seeding is the preferred seeding method. Hydroseeding is not recommended except in areas where steep slopes prevent use of drill seeding equipment, and even in these instances it is preferable to hand seed and mulch. Some jurisdictions do not allow hydroseeding or hydromulching.

Seedbed Preparation

Prior to seeding, ensure that areas to be revegetated have soil conditions capable of supporting vegetation. Overlot grading can result in loss of topsoil, resulting in poor quality subsoils at the ground surface that have low nutrient value, little organic matter content, few soil microorganisms, rooting restrictions, and conditions less conducive to infiltration of precipitation. As a result, it is typically necessary to provide stockpiled topsoil, compost, or other

Temporary and Permanent Seeding	
Functions	
Erosion Control	Yes
Sediment Control	No
Site/Material Management	No

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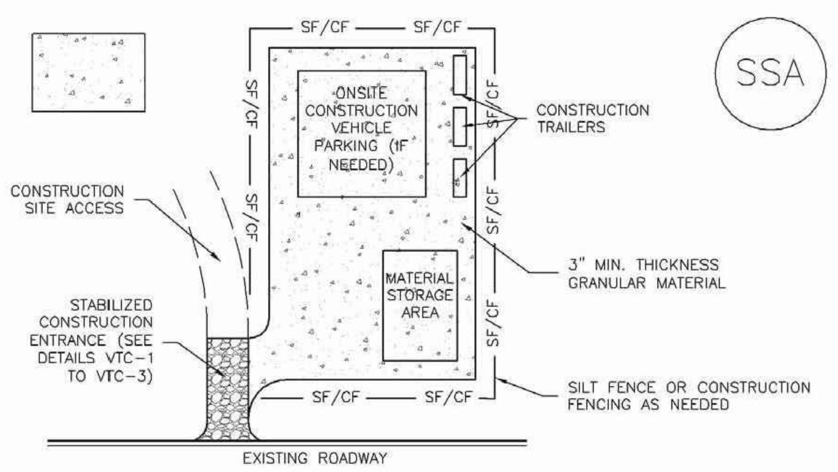
Stabilized Staging Area (SSA) SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   - –LOCATION OF STAGING AREA(S).
   - –CONTRACTOR MAY 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 GRANULAR MATERIAL.
5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) 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 REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

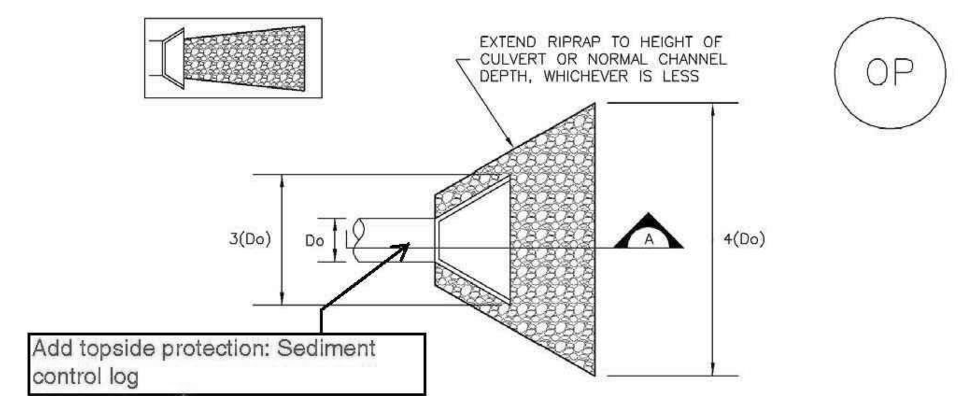
5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES 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.

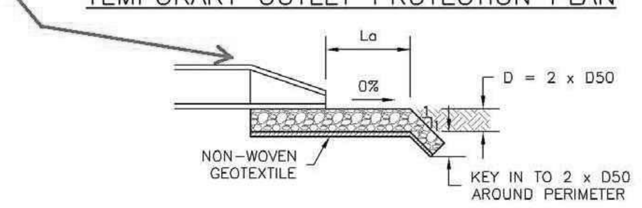
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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

EC-8 Temporary Outlet Protection (TOP)



TEMPORARY OUTLET PROTECTION PLAN



SECTION A

TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE

PIPE DIAMETER, Do (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)
8	2.5 5	5 10	4 6
12	5 10	10 13	4 6
18	10 20 30 40	10 16 23 26	6 9 12 16
24	30 40 50 60	16 26 26 30	9 9 12 16

OP-1. TEMPORARY OUTLET PROTECTION

Temporary Outlet Protection (TOP) EC-8

TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   - –LOCATION OF OUTLET PROTECTION.
   - –DIMENSIONS OF OUTLET PROTECTION.
2. DETAIL IS INTENDED FOR PIPES WITH SLOPE ≤ 10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.
3. TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

TEMPORARY OUTLET PROTECTION INSPECTION AND 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.
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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.

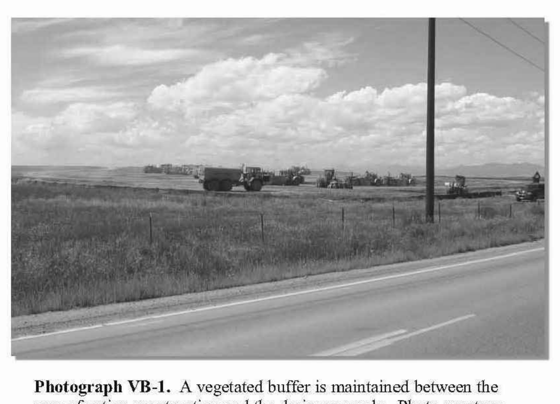
(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)

Place a sediment control log at the top of the flared end section to prevent sediment from migrating down into the pipe.
(8/5/11 LR Comment)

Vegetated Buffers (VB) SC-9

Description

Buffer strips of preserved natural vegetation or grass help protect waterways and wetlands from land disturbing activities. Vegetated buffers improve stormwater runoff quality by straining sediment, promoting infiltration, and slowing runoff velocities.



Photograph VB-1. A vegetated buffer is maintained between the area of active construction and the drainage swale. Photo courtesy of WWE.

Appropriate Uses

Vegetated buffers can be used to separate land disturbing activities and natural surface waters or conveyances. In many jurisdictions, local governments require some type of setback from natural waterways. Concentrated flow should not be directed through a buffer; instead, runoff should be in the form of sheet flow. Vegetated buffers are typically used in combination with other perimeter control BMPs such as sediment control logs or silt fence for multi-layered protection.

Design and Installation

Minimum buffer widths may vary based on local regulations. Clearly delineate the boundary of the natural buffer area using construction fencing, silt fence, or a comparable technique. In areas that have been cleared and graded, vegetated buffers such as sod can also be installed to create or restore a vegetated buffer around the perimeter of the site.

Maintenance and Removal

Inspect buffer areas for signs of erosion such as gullies or rills. Stabilize eroding areas, as needed. If erosion is due to concentrated flow conditions, it may be necessary to install a level spreader or other technique to restore sheet flow conditions. Inspect perimeter controls delineating the vegetative buffer and repair or replace as needed.

Vegetated Buffers	
Functions	
Erosion Control	Moderate
Sediment Control	Yes
Site/Material Management	Yes

Wind Erosion/Dust Control (DC) EC-14

Description

Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. These BMPs include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered.

Photograph DC-1. Water truck used for dust suppression. Photo courtesy of Douglas County.

Appropriate Uses

Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.

Design and Installation

The following construction BMPs can be used for dust control:

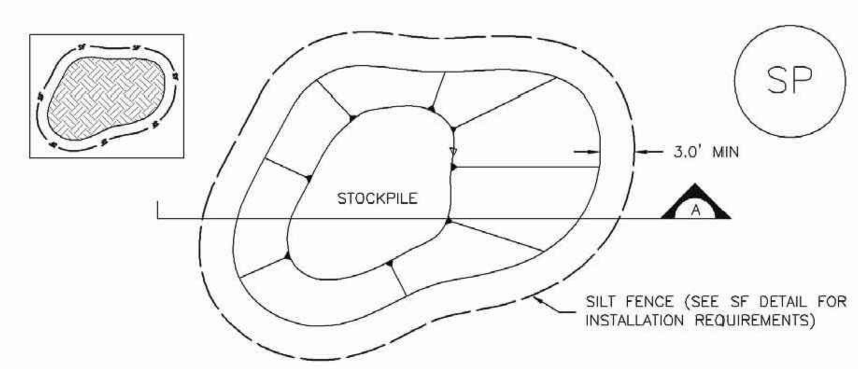
- An irrigation/sprinkler system can be used to wet the top layer of disturbed soil to help keep dry soil particles from becoming airborne.
- Seeding and mulching can be used to stabilize disturbed surfaces and reduce dust emissions.
- Protecting existing vegetation can help to slow wind velocities across the ground surface, thereby limiting the likelihood of soil particles to become airborne.
- Spray-on soil binders form a bond between soil particles keeping them grounded. Chemical treatments may require additional permitting requirements. Potential impacts to surrounding waterways and habitat must be considered prior to use.
- Placing rock on construction roadways and entrances will help keep dust to a minimum across the construction site.
- Wind fences can be installed on site to reduce wind speeds. Install fences perpendicular to the prevailing wind direction for maximum effectiveness.

Maintenance and Removal

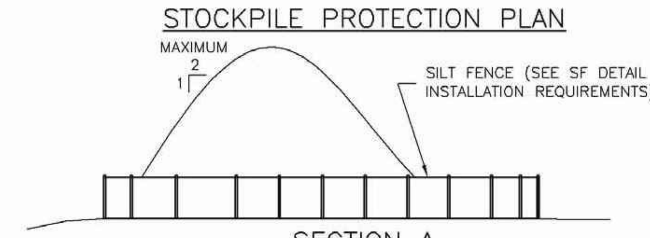
When using an irrigation/sprinkler control system to aid in dust control, be careful not to overwater. Overwatering will cause construction vehicles to track mud off-site.

Wind Erosion Control/ Dust Control	
Functions	
Erosion Control	Yes
Sediment Control	No
Site/Material Management	Moderate

Stockpile Management (SP) MM-2



STOCKPILE PROTECTION PLAN



SECTION A

SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - –LOCATION OF STOCKPILES.
   - –TYPE OF STOCKPILE PROTECTION.
2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30–60 DAYS).
4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

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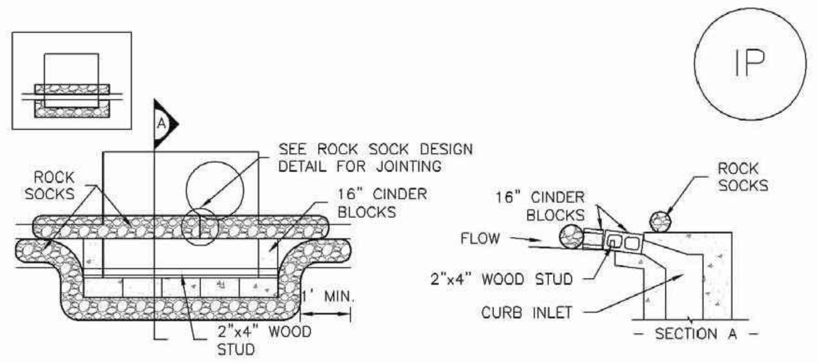
SC-6 Inlet Protection (IP)



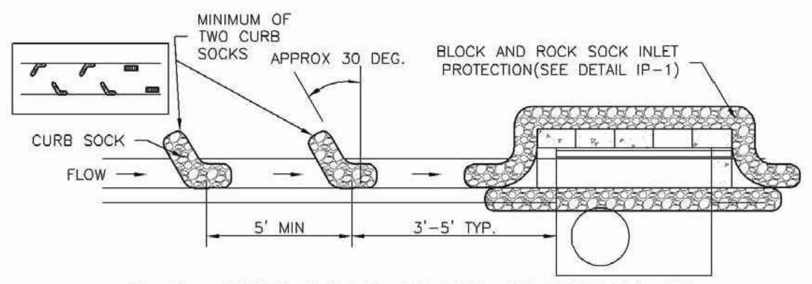
IP–1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.

3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP–2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

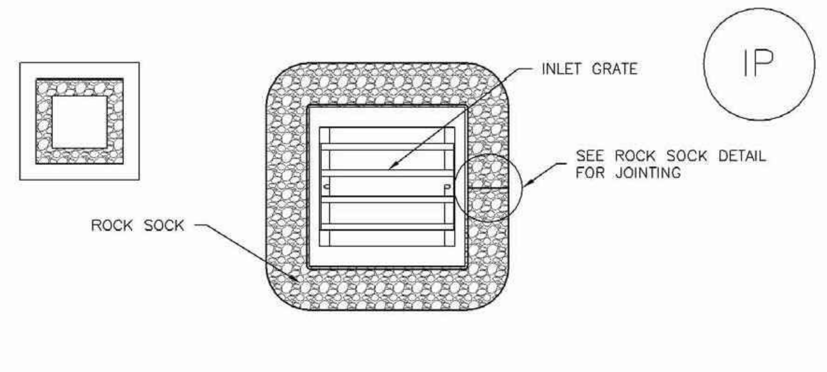
1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.

2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.

3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.

4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON–GRADE INLETS.

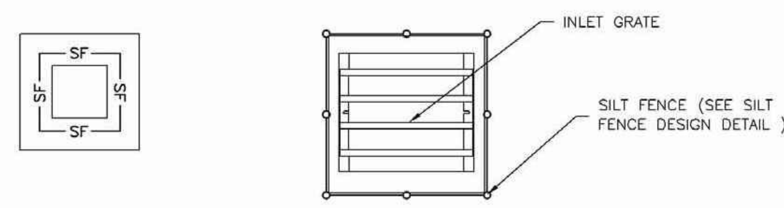
Inlet Protection (IP) SC-6



IP–3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP–4. SILT FENCE FOR SUMP INLET PROTECTION

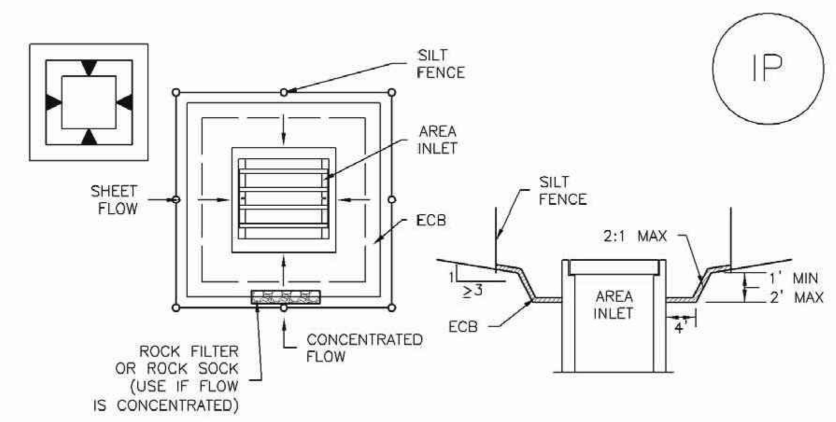
SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

SC-6 Inlet Protection (IP)



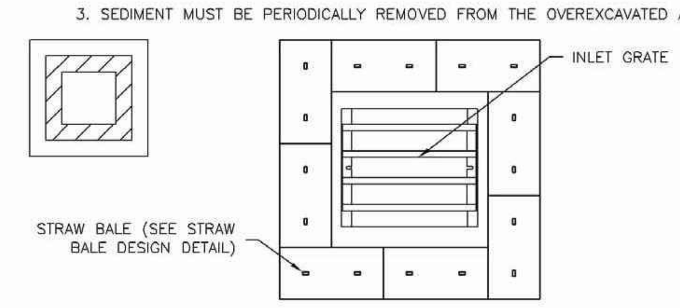
IP–5. OVEREXCAVATION INLET PROTECTION

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 IN 2:1 RATIO WITH LENGTH ORIENTED 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.

Inlet Protection (IP) SC-6

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 –LOCATION OF INLET PROTECTION.
 –TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING 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 UDFCD 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 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 INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ 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 STREETS.

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.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, 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.

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. UDFCD NEITHER ENDORSES NOR DISCOURAGES 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.

Mulching (MU) EC-4

Description

Photograph MU-1. An area that was recently seeded, mulched, and crimped.

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways.

Do not apply mulch during windy conditions.

Design and Installation

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking with heavy equipment typically compacts the soil.

A variety of mulches can be used effectively at construction sites. Consider the following:

Mulch	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

EC-4 Mulching (MU)

- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration.
- Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).
- On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.
- Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)
- Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

Maintenance and Removal

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.

Street Sweeping and Vacuuming (SS) SM-7

Description

Photograph SS-1. A street sweeper removes sediment and potential pollutants along the curb line at a construction site. Photo courtesy of Tom Gore.

Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway.

Appropriate Uses

Use this practice at construction sites where vehicles may track sediment offsite onto paved roadways.

Design and Installation

Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming.

On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

Maintenance and Removal

- Inspect paved roads around the perimeter of the construction site on a daily basis and more frequently, as needed. Remove accumulated sediment, as needed.
- Following street sweeping, check inlet protection that may have been displaced during street sweeping.
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.

Street Sweeping/ Vacuuming	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	Yes

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Description

Photograph GH-1. Use dry clean-up methods to remove spilled materials. Photo courtesy of Colorado Nonpoint Source Program.

Good housekeeping practices are designed to maintain a clean and orderly work environment. The most effective first steps towards preventing pollution in stormwater from work sites simply involve using common sense to improve the facility's basic housekeeping methods. Poor housekeeping practices result in increased waste and potential for stormwater contamination.

A clean and orderly work site reduces the possibility of accidental spills caused by mishandling of chemicals and equipment and should reduce safety hazards to personnel. A well-maintained material and chemical storage area will reduce the possibility of stormwater mixing with pollutants.

Some simple procedures a facility can use to promote good housekeeping include improved operation and maintenance of machinery and processes, material storage practices, material inventory controls, routine and regular clean-up schedules, maintaining well organized work areas, signage, and educational programs for employees and the general public about all of these practices.

Appropriate Uses

Good housekeeping practices require education and training, typically targeted to industries and businesses, municipal employees, as well as the general public.

Practice Guidelines

Good housekeeping practices include these general areas:

- Operation and Maintenance
- Material Storage
- Material Inventory
- Training and Participation.

Operation and Maintenance

Consider implementing the following practices:

- Maintain dry and clean floors and ground surfaces by using brooms, shovels, vacuums or cleaning machines, rather than wet clean-up methods.
- Regularly collect and dispose of garbage and waste material.

- Routinely inspect equipment to ensure that it is functioning properly without leaking and conduct preventative maintenance and needed repairs.
- Train employees on proper clean up and spill response procedures.
- Designate separate areas of the site for auto parking, vehicle refueling and routine maintenance.
- Promptly clean up leaks, drips and other spills.
- Cover and maintain dumpsters and waste receptacles. Add additional dumpsters or increase frequency of waste collection if overflowing conditions reoccur.
- Where outdoor painting and sanding occur, implement these practices:
  - Conduct these activities in designated areas that provide adequate protection to prevent overspray and uncontrolled emissions. All operations should be conducted on paved surfaces to facilitate cleanup.
  - Use portable containment as necessary for outside operations.
  - Clean up and properly dispose of excess paint, paint chips, protective coatings, grit waste, etc.
- Maintain vegetation on facility grounds in a manner that minimizes erosion. Follow the Landscape Maintenance and Pesticide, Herbicide and Fertilizer Usage BMPs to ensure that minimum amounts of chemicals needed for healthy vegetation are applied in a manner that minimizes transport of these materials in runoff.

Material Storage Practices

Proper storage techniques include the following:

- Provide adequate aisle space to facilitate material transfer and ease of access for inspection.
- Store containers, drums, and bags away from direct traffic routes to reduce container damage resulting in accidental spills.
- Stack containers according to manufacturer's instructions to avoid damaging the containers from improper weight distribution. Also store materials in accordance with directions in Material Safety Data Sheets (MSDSs).
- Store containers on pallets or similar devices to prevent corrosion of containers that results from containers coming in contact with moisture on the ground.
- Store toxic or hazardous liquids within curbed areas or secondary containers.

Material Inventory Practices

An up-to-date materials inventory can keep material costs down by preventing overstocking, track how materials are stored and handled onsite, and identify which materials and activities pose the most risk to the environment. Assign responsibility of hazardous material inventory to individuals trained to handle such materials. A material inventory should include these steps:

- Identify all chemical substances present at work site. Perform a walk-through of the site, review

purchase orders, list all chemical substances used and obtain Material Safety Data Sheets (MSDS) for all chemicals.

- Label all containers. Labels should provide name and type of substance, stock number, expiration date, health hazards, handling suggestions, and first aid information. Much of, this information can be found on an MSDS.
- Clearly identify special handling, storage, use and disposal considerations for hazardous materials on the material inventory.
- Institute a shelf-life program to improve material tracking and inventory that can reduce the amount of materials that are overstocked and ensure proper disposal of expired materials. Careful tracking of materials ordered can result in more efficient materials use. Decisions on the amounts of hazardous materials that are stored on site should include an evaluation of any emergency control systems that are in place. All storage areas for hazardous materials should be designed to contain spills.

Training and Participation

Frequent and proper training in good housekeeping techniques reduces the likelihood that chemicals or equipment will be mishandled. To promote good housekeeping, consider implementing these practices:

- Discuss good housekeeping practices in training programs and meetings.
- Publicize pollution prevention concepts through posters or signs.
- Post bulletin boards with updated good housekeeping procedures, tips and reminders.

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WESTERN ENGINEERING CONSULTANTS, Inc LLC
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September 30, 2021

Roy Vestal
Director of Public Works
City of Fort Lupton
130 South McKinley Ave.
Fort Lupton, CO 80621

RE: REMAINING PARCEL A-1 (2.498 ac), LOT 1, FRONT RANGE ENERGY SUBDIVISION DRAINAGE NARRATIVE LETTER ADDENDUM

Dear Mr. Vestal:

Western Engineering Consultants inc. LLC (WEC) appreciates the opportunity to submit this Drainage Narrative Letter Addendum on behalf of SB Weakland Investments, LLC.

The 2.498 ac overall property owned by SB Weakland Investments, LLC. consists of two parcels (Remaining Parcel A-1 and Parcel B). The Remaining Parcel A-1 is split into two parcels by a flagpole extension of Parcel B towards WCR 16 (Barley Ave.). The 16.645 ac Remaining Parcel A-1 west of Parcel B is not part of the Amended SPR or this narrative (it is to remain undeveloped and vacant).

The original drainage narrative submitted June 09, 2020 summarized the drainage impact from the proposed 22.96 acre Parcel B improvements and the proposed gravel yards and drainage features. This letter includes the drainage impact from the proposed additional 2.5 acre Remaining Parcel A-1 (north of Parcel B) improvements.

Attached to this letter are the following:

- Vicinity Map
- Key map (Google Exhibit)
- FEMA Firmette
- NRCS Soils Report
- WEC Drainage Plans
- Rational Method Runoff Calculations
- Infiltration Calculations

FLOODPLAIN
Pursuant to the attached exhibit (the current FEMA) – the entire Parcel A-1 is **not** within a current or expected amended floodplain. It is located within an Area of Minimal Flood Hazard (Zone X) as seen in FIRM panel 08123C2110E dated January 20, 2016.

PARCEL DESCRIPTION
The overall property lies approximately 2.5 miles east of Highway 85 with Weld County Road 16 just to the north. The entire parcel was noted as in the NW ¼ of Section 34, Township 2 North, Range 66 West of the 6th P.M. The existing site consists of a gravel road connecting WCR 16 along its west boundary as well as existing gas line easements along its south boundary.

PROPOSED IMPROVEMENTS

The proposed added 2.50 acre portion of the Remaining Parcel A-1 has been designed to adequately convey developed runoff from the proposed improvements to a designed infiltration pond (Pond A-1) in the northwest corner of the parcel. The proposed improvements for Remaining Parcel A-1 (2.498 ac) includes gravel cover to the lot.

The overall 22.96 acre Parcel B has been designed to adequately convey developed runoff from the proposed improvements to one of the two designed infiltration ponds (Pond M & Pond N). Pond M shall extend the existing pond east in order to be large enough to hold the increased runoff from the proposed improvements with the pond bottom at an acceptable percolation (drain) elevation. Pond N will be located to the north, along the west side of the gravel access road.

The existing gravel access road is to remain unchanged and provide access to the site. A drainage swale (A-1) has been designed along the north property line to prevent runoff from leaving the site. The swale has been designed to handle the entirety of Basin A-1 runoff (11.54 cfs) even though it is unlikely that it will reach this capacity based on the anticipated flow patterns of the basin.

The only other modification this revision was for Pond N to meet 1.5 times the 100yr runoff from the 24 hr storm. Pond M already met the criteria.

WEC has prepared and analyzed preliminary grading concepts for each basin and enclosed drainage calculations based on the proposed improvements of the overall City property.

HISTORIC / EXISTING RATIONAL DRAINAGE DESCRIPTION

The entire additional 2.5 acre property has been mapped as a single Historic Basin. This parcel was not previously included in the historic / existing drainage analysis as the existing topo of this area primarily directs runoff directly off-site to the north (away from the previous development).

Historically, the site drained from southeast to northwest at roughly 1.8% (per USGS Fort Lupton Quad Map). The runoff calculated for the 2.5 acre Remaining Parcel A-1 Historic Basin is 0.04 cfs and 4.55 cfs for the minor (5yr) and major (100yr) storm events, respectively.

The site was broken into a single Existing Basins (E-N). All tributary off-site basins were modified with the previous development (Parcel B) and thus, no off-site flow is anticipated to enter the site.

Basin E-N (portion of the Remaining Parcel A-1 north of Parcel B) generally drains from the southeast corner northwest at roughly 1.5%. The existing effective imperviousness for the basin is 2.00% as the entirety of the basin is undeveloped. The runoff calculated is 0.05 cfs and 4.78 cfs for the minor (5yr) and major (100yr) storm events, respectively.

DEVELOPED RATIONAL DRAINAGE ANALYSIS

Appendix B includes all Rational Method runoff calculations summarizing the 5, 10, and 100 year event runoff for the proposed additional 2.5 acre Remaining Parcel A-1 Developed Basin.

Currently, the grading and drainage design is intended to convey all runoff on site to the proposed infiltration pond through the use of overland runoff and a drainage swale.

The site was analyzed as a single 2.5 acre developed basin (A-1).

Basin A-1 (portion of the Remaining Parcel A-1 north of Parcel B) includes the 2.5 acre Remaining Parcel A-1 north of the existing gas easements and east of the existing access road. The proposed improvements within this basin are the gravel ground cover, Parcel A-1, and the Infiltration Pond A-1 in the northwest corner. The basin will follow existing runoff patterns of flowing northwest from the south of the basin at roughly 1.5%. Runoff from this basin will be directed to Pond A-1 either by overland runoff or via Swale A-1. The developed effective imperviousness for the basin is 39.32% as

the Pond A-1 100yr water surface has been modeled at 100%. The runoff calculated is 3.84 cfs and 11.54 cfs for the minor (5yr) and major (100yr) storm events, respectively

CONVEYANCE DESIGN & ANALYSIS

Drainage swales have been designed to adequately convey the developed runoff to the proposed Infiltration Ponds.

Swale A-1 is located along the north boundary of Remaining Parcel A-1, flowing east to west towards the designed Infiltration Pond A-1. Based on existing and design grading of Basin A-1, Swale A-1 will only convey roughly 50% of the basin runoff (50% of 11.54 cfs = 5.77 cfs) but has the capacity to handle the entire basin runoff. The remainder of the site will be captured by the existing channel adjacent to the existing access road and be conveyed north to the pond.

Swale N is unaltered by this proposal.

Swale cross sections are in the Final Construction Drawings for the SB Weakland Investments, LLC site.

INFILTRATION POND DESIGN & ANALYSIS

The proposed Infiltration Pond A-1 has been designed in accordance with MHFD Volume 3 BMPs and CFSCM Infiltration Volume criteria.

Per Colorado Floodplain and Stormwater Criteria Manual, the proposed Infiltration Pond A-1 is required to provide a minimum of 62,568.1 cubic feet to retain 1.5 times the 100 yr runoff from the 24 hr storm (4.60 inches). Pond A-1 has also been connected to the previously approved Pond N by a 24" RCP pipe to provide a combined minimum of 213,006 cubic feet (62,568.1 cubic feet Pond A-1, 150,437.4 cubic feet Pond N) to retain 1.5 times the 100 yr runoff from the 24 hr storm (4.60 inches).

Percolation testing was performed throughout the site by Earth Engineering Company, inc. dated June 08, 2020.

BH-17 was drilled approximately 100 feet west of Pond A-1 and was drilled to a depth that exceeds the pond bottom elevation. BH-17 had a percolation rate of 24.0 min/in, and thus will result in a drain time for the 100 year storm of 30.7 hours. Using a more conservative percolation rate (similar to Pond N), 72 min/in would result in a drain time of 92.2 hours. Colorado Statute 37-92-602(8) requires the 100 year storm to be drained within 120 hours.

An Emergency Spillway was designed for the pond to handle two (2) times the 100 year flow rate. The spillway will release flows downstream per the historic and existing flow paths.

Additional Rundown, Forebay, Emergency Spillway, and Dry Well details are in the Final Construction Drawings for the SB Weakland Investments, LLC site.

CONCLUSION

The proposed Remaining Parcel A-1 (2.50 acre site north of Parcel B) improvements for the SB Weakland Investments, LLC site will create additional imperviousness, however the attached drainage plan and supporting calculations enhance and significantly improve the current existing runoff conditions by providing runoff storage as if the entire remainder of the parcel was 100% impervious. The attached designs are intended to meet or exceed the minimum requirements of City of Fort Lupton Storm Drainage and MHFD criteria.

Please contact me with any questions or comments you may have on the development project!

Sincerely,

Western Engineering Consultants inc., LLC
Chadwin F. Cox, P.E.
Senior Project Manager

Encl. Google Site Plan Exhibit, USGS Vicinity Map, NRCS Soils Report, Percolation Testing Results, WEC Drainage Plans, WEC Historic, Existing, & Developed Rational Drainage Calcs, and WEC Infiltration Calcs

APPENDIX A

Vicinity Map (USGS) / Key Map / FEMA Firmette / Legal Description / Soil Survey Map & Soil Legend / Geotechnical Study / Percolation Tests

VICINITY MAP

SCALE 1' = 1,000'

NW 1/4, S34, T2N, R66W, 6th P.M.

SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

S&B INVESTMENTS, LLC
Legend
15450 Co Rd 16
RLW SAND
Lamb Ave
Coleman Ave
Harold St
Richard Ave
Henry St
Hart St
Patrick St
Flint St
Jade St
Barley Ave
16
31
REMAINING
PARCEL A-1
Yard B
RLW SAND
15450 Co Rd 16
Yard A
Google Earth
© 2018 Google
N
1000 ft

National Flood Hazard Layer FIRMette

FEMA

S&B Investments 15450 WCR 16

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

0 250 500 1,000 1,500 2,000 Feet 1:6,000

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/9/2019 at 11:19:29 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

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LEGAL DESCRIPTION PARCEL # 130934203001

According to ALTA Commitment fir Title Insurance. File No. NCS-986994-PHX1 dated October 20, 2019

Parcel 1:
(Balance of Thermo Annexation Parcel)
That part of the NW1/4 of Section 34, Township 2 North, Range 66 West of the 6th P.M., County of Weld, State of Colorado, more particularly described as:
Beginning at the West 1/4 corner of Section 34;
thence North 00 degrees 10 minutes 58 seconds West on an assumed bearing along the West line of said NW1/4 Section 34 a distance of 1656.54 feet to the Southwest corner of the N3/4 of the W1/2 of the W1/2 of the NW1/4 of the NW1/4 of said Section 34;
thence North 89 degrees 41 minutes 29 seconds East along the South line of said N3/4 W1/2 W1/2 NW1/4 NW1/4 of Section 34 a distance of 331.83 feet to the Southeast corner of said N3/4 W1/2 W1/2 NW1/4 NW1/4 of Section 34;
thence North 00 degrees 09 minutes 47 seconds West along the East line of said N3/4 W1/2 W1/2 NW1/4 NW1/4 of Section 34 a distance of 734.60 feet to a point 260.00 feet South of the North line of NW1/4 of Section 34; thence North 89 degrees 34 minutes 30 seconds East parallel with and 260.00 feet South of said North line of the NW1/4 of Section 34 a distance of 745.07 feet to the True Point of Beginning;
thence South 00 degrees 01 minute 29 seconds East parallel with the East line of said NW1/4 of Section 34 a distance of 2356.32 feet to a point 40.00 feet North of the South line of said NW1/4 of Section 34; thence North 89 degrees 53 minutes 11 seconds East parallel with said South line of the NW1/4 of Section 34 a distance of 1539.42 feet to a point 40.00 feet West of the East line of said NW1/4 of Section 34; thence North 00 degrees 01 minute 29 seconds West parallel with said East line of the NW1/4 of Section 34 a distance of 2364.68 feet to a point 260.00 feet South of said NW1/4 of Section 34;
thence South 89 degrees 34 minutes 30 seconds West parallel with and 260.00 feet South of said North line of the NW1/4 of Section 34 a distance of 1539.46 feet to the True Point of Beginning.
Save and except that part of the Northwest 1/4 of Section 34, Township 2 North, Range 66 West of the Sixth Principal Meridian, County of Weld, State of Colorado, more particularly described as follows:
Beginning at the West 1/4 corner of Section 34; thence North 00 degrees 10 minutes 58 seconds West on an assumed bearing along the West line of said Northwest 1/4 Section 34 a distance of 40.00 feet; thence North 89 degrees 53 minutes 11 seconds East parallel with and 40.00 feet northerly of the South line of said Northwest 1/4 of Section 34 a distance of 1872.16 feet to the true point of beginning; thence North 00 degrees 01 minute 29 seconds West parallel with the East line of said Northwest 1/4 of Section 34 a distance of 737.91 feet; thence North 89 degrees 53 minutes 11 seconds East parallel with said South line of the Northwest 1/4 of said Section 34 a distance of 737.91 feet to a point 40.00 feet westerly of said East line of the Northwest 1/4 of Section 34; thence South 00 degrees 01 minute 29 seconds East parallel with and 40.00 feet westerly of said East line of the Northwest 1/4 of Section 34 a distance of 737.91 feet to a point 40.00 feet northerly South line of the Northwest 1/4 of Section 34; thence South 89 degrees 53 minutes 11 seconds West parallel with said South line of the Northwest 1/4 of said Section 34 a distance of 737.91 feet to the true point of beginning, County of Weld, State of Colorado.
Excepting therefrom Lot 1, Colorado Greenhouse Addition, recorded May 12, 1997 at Reception No. 2547711,

And Further excepting that portion known as Lot 1, Front Range Energy Subdivision according to the Plat thereof recorded August 30, 1999 at Reception No. 2717120,
And further excepting that portion known as Lot One Fort Lupton Fire Protection District Subdivision according to the Plat thereof recorded May 5, 1999 at Reception No. 2691823.

United States Department of Agriculture

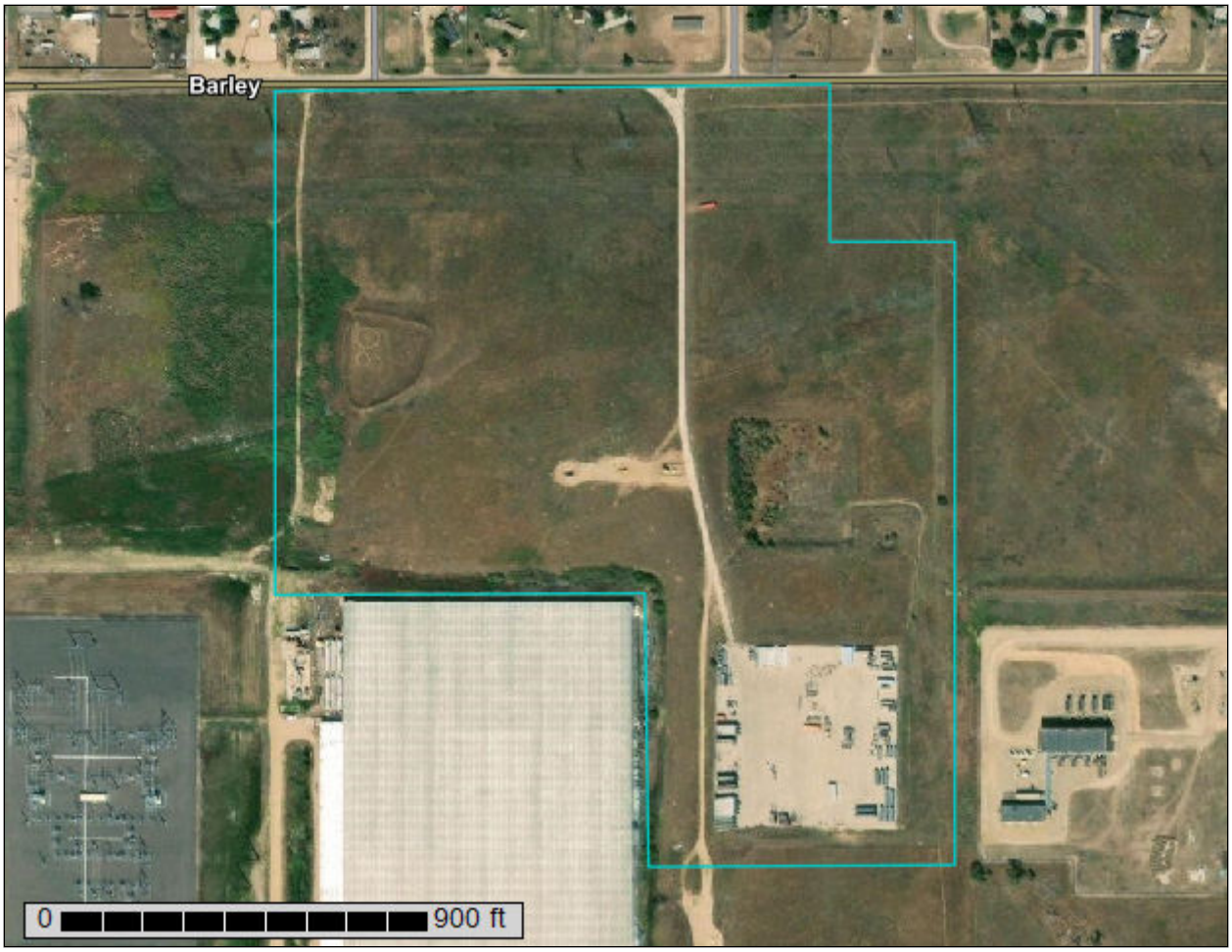
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

S&B Investments

15450 County Road 16



October 9, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface..... 2
How Soil Surveys Are Made..... 5
Soil Map..... 8
Soil Map (RLW Sand County Road 16, Fort Lupton CO)..... 9
Legend..... 10
Map Unit Legend (RLW Sand County Road 16, Fort Lupton CO)..... 11
Map Unit Descriptions (RLW Sand County Road 16, Fort Lupton CO)..... 11
Weld County, Colorado, Southern Part..... 13
44—Olney loamy sand, 1 to 3 percent slopes..... 13
69—Valent sand, 0 to 3 percent slopes..... 14
70—Valent sand, 3 to 9 percent slopes..... 16
72—Vona loamy sand, 0 to 3 percent slopes..... 17
References..... 19

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Map Scale: 1:3,940 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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: Weld County, Colorado, Southern Part
Survey Area Data: Version 18, Sep 13, 2019

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

Date(s) aerial images were photographed: Jul 17, 2015—Oct 21, 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 (RLW Sand County Road 16, Fort Lupton CO)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
44	Olney loamy sand, 1 to 3 percent slopes	30.2	53.4%
69	Valent sand, 0 to 3 percent slopes	25.6	45.4%
70	Valent sand, 3 to 9 percent slopes	0.7	1.2%
72	Vona loamy sand, 0 to 3 percent slopes	0.0	0.0%
Totals for Area of Interest		**56.5**	**100.0%**

Map Unit Descriptions (RLW Sand County Road 16, Fort Lupton CO)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Weld County, Colorado, Southern Part

44—Olney loamy sand, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 362r
Elevation: 4,600 to 5,200 feet
Mean annual precipitation: 11 to 15 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 125 to 175 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Olney and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Olney

Setting

Landform: Plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed deposit outwash

Typical profile

H1 - 0 to 10 inches: loamy sand
H2 - 10 to 20 inches: sandy clay loam
H3 - 20 to 25 inches: sandy clay loam
H4 - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: Sandy Plains (R067BY024CO)
Hydric soil rating: No

Minor Components

Vona

Percent of map unit: 8 percent
Hydric soil rating: No

Zigweid

Percent of map unit: 7 percent
Hydric soil rating: No

69—Valent sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tczd
Elevation: 3,000 to 5,210 feet
Mean annual precipitation: 13 to 20 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 130 to 166 days
Farmland classification: Farmland of local importance

Map Unit Composition

Valent and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Valent

Setting

Landform: Interdunes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Noncalcareous eolian sands

Typical profile

A - 0 to 5 inches: sand
AC - 5 to 12 inches: sand
C1 - 12 to 30 inches: sand
C2 - 30 to 80 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 39.96 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.1 to 1.9 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Deep Sand (R067BY015CO), Sands (North) (PE 16-20) (R072XA021KS)
Hydric soil rating: No

Minor Components

Julesburg

Percent of map unit: 5 percent
Landform: Interdunes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R067BY024CO), Sandy (North) Draft (April 2010) (PE 16-20) (R072XA022KS)
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Landform: Interdunes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R067BY024CO), Sandy (North) Draft (April 2010) (PE 16-20) (R072XA022KS)
Hydric soil rating: No

Dailey

Percent of map unit: 5 percent
Landform: Interdunes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Deep Sand (R067BY015CO), Sandy (North) Draft (April 2010) (PE 16-20) (R072XA022KS)
Hydric soil rating: No

70—Valent sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tczf
Elevation: 3,050 to 5,150 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Valent and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Valent

Setting

Landform: Dunes, hills
Landform position (two-dimensional): Shoulder, backslope, summit, footslope
Landform position (three-dimensional): Crest, side slope, head slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Noncalcareous eolian sands

Typical profile

A - 0 to 5 inches: sand
AC - 5 to 12 inches: sand
C1 - 12 to 30 inches: sand
C2 - 30 to 80 inches: sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 39.96 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Deep Sand (R067BY015CO), Rolling Sands (R072XY109KS)

Hydric soil rating: No

Minor Components

Dailey

Percent of map unit: 10 percent
Landform: Interdunes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Deep Sand (R067BY015CO), Sands (North) (PE 16-20) (R072XA021KS)
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Footslope, backslope, shoulder
Landform position (three-dimensional): Side slope, head slope, nose slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R067BY024CO), Sandy (North) Draft (April 2010) (PE 16-20) (R072XA022KS)
Hydric soil rating: No

Haxtun

Percent of map unit: 5 percent
Landform: Interdunes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Sandy Plains (R067BY024CO), Sandy Plains (R072XY111KS)
Hydric soil rating: No

72—Vona loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 363r
Elevation: 4,600 to 5,200 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 130 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

Vona and similar soils: 85 percent
Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vona

Setting

Landform: Terraces, plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 6 inches: loamy sand
H2 - 6 to 28 inches: fine sandy loam
H3 - 28 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: Sandy Plains (R067BY024CO)
Hydric soil rating: No

Minor Components

Remmit

Percent of map unit: 10 percent
Hydric soil rating: No

Valent

Percent of map unit: 5 percent
Hydric soil rating: No

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June 8, 2020

Western Engineering Consultants Inc., LLC
127 South Denver Avenue
Fort Lupton, Colorado 80621

Attn: Chadwin Cox (chadwin.cox@westerneci.com)

Re: Percolation Testing Results
Proposed Retention Ponds
Parcel B, Lot 1 – Front Range Energy Subdivision
Fort Lupton, Colorado
EEC Project No. 20-01-057

Mr. Cox:

As requested, Earth Engineering Company, Inc. (EEC) personnel have completed the percolation testing services for the referenced project. We understand this project involves the construction of a storm water retention ponds for the proposed development located at the referenced parcel located in Fort Lupton, Weld County, Colorado. The purpose of the percolation testing is to provide water absorption data for use by others in the stormwater absorption analysis for the referenced project.

On June 2nd and June 3rd, 2020, EEC personnel completed the percolation testing at the eight (8) sites you requested for the above referenced project. To complete the site percolation testing, EEC personnel advanced one (1) percolation test hole at each of the eight (8) designated locations on the site. The percolation test holes were advanced to depths of approximately 2 to 7 feet below grade at various locations in order to evaluate the absorption characteristics below the base of the proposed retention ponds. After the percolation test holes had presoaked for approximately 24 hours, EEC personnel returned to the site to perform the percolation test in the boreholes. The results of the percolation testing and log of the percolation test holes are included with this report.

The materials encountered in the percolation test holes at the percolation test sites consisted of brown sandy loam (Soil Type 2A), sandy clay (Soil Type 4A) and sandy clay loam (Soil Type 3A) soils at various locations which extended to the bottom of the percolation test holes at a depth of approximately 2 to 7 feet below grade. At the time of drilling, no groundwater was observed in the percolation test holes.

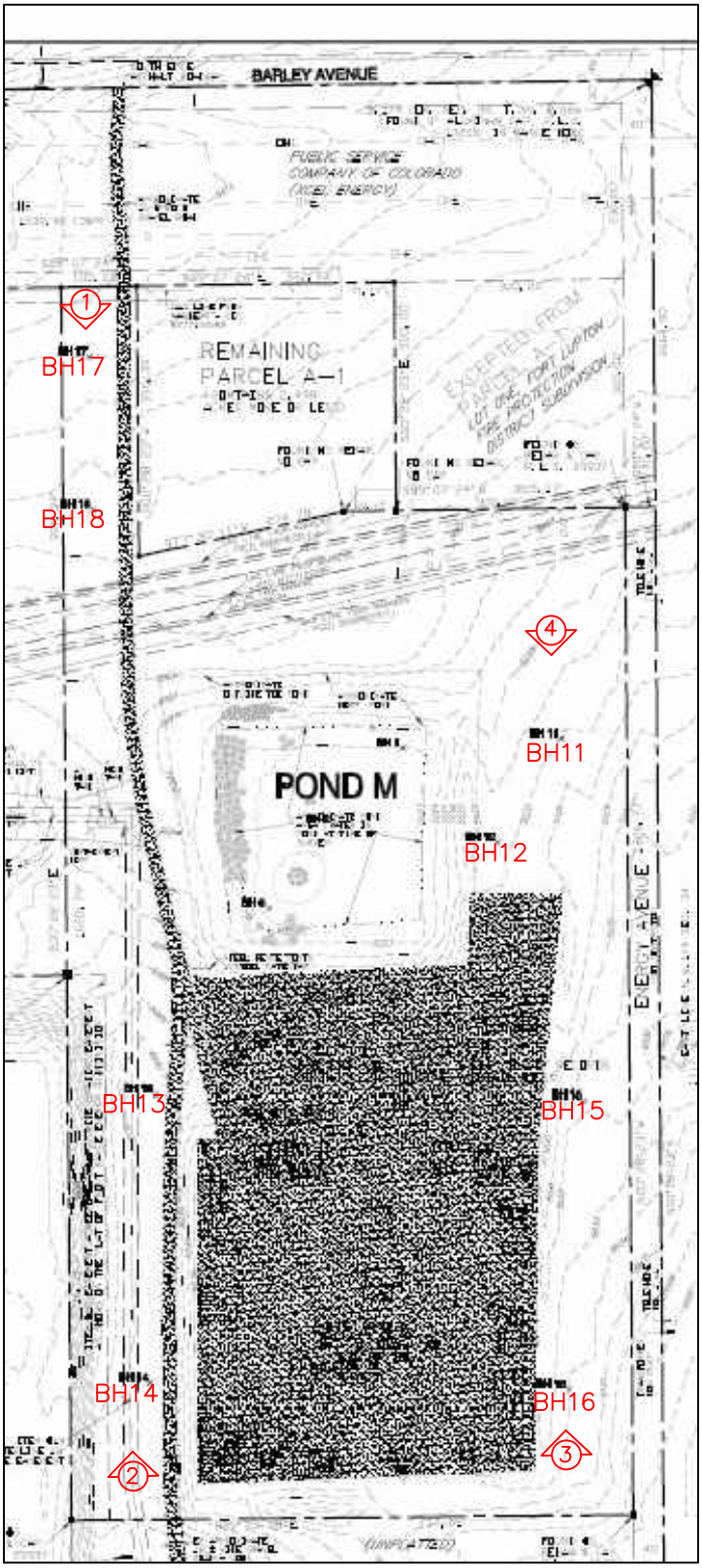
The percolation tests performed indicated average percolation rates of 2.1 to 120 minutes per inch at various locations. The results of the percolation testing as outlined above are summarized on the attached diagram and percolation test hole logs.

We appreciate the opportunity to be of service to you in this project. If you have any questions regarding this report or if we can be of further service to you in any way, please do not hesitate to contact us.

Very truly yours,
Earth Engineering Company, Inc.

Michael J. Coley, P.E.
Principal Engineer

N
Not To Scale



PERCOLATION TEST RESULTS

BH 17--24.0 MIN/INCH
BH 18--120.0 MIN/INCH
BH 13--10.9 MIN/INCH
BH 14--2.1 MIN/INCH
BH 16--24.0 MIN/INCH
BH 15--12.0 MIN/INCH
BH 12--120 MIN/INCH
BH 11--60.0 MIN/INCH

LEGEND

BH17	PERCOLATION TEST HOLE LOCATION
1	SITE PHOTOS

PHOTOS TAKEN FROM APPROXIMATE SYMBOL LOCATION IN DIRECTION OF ARROW

PERCOLATION TEST LOCATION DIAGRAM
PARCEL B, LOT 1 – FRONT ENERGY SERVICES
FORT LUPTON, COLORADO
PROJECT NUMBER: 20-01-057 DATE: JUNE 2020

PARCEL B, LOT 1
FRONT RANGE ENERCY
FORT LUPTON, CO
EEC PROJECT No. 20-01-057
JUNE 2020

EARTH ENGINEERING COMPANY, INC.

PARCEL B, LOT 1
FRONT RANGE ENERCY
FORT LUPTON, CO
EEC PROJECT No. 20-01-057
JUNE 2020

EARTH ENGINEERING COMPANY, INC.

PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057				DATE: JUNE 2020	
	LOG OF BORING BH-11				
RIG TYPE: GEO PROBE	SHEET 1 OF 1			WATER DEPTH	
FOREMAN: SM	START DATE		6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE		6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE		60.0 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY LOAM (SOIL TYPE 3A) brown		1									
		2									
	BS		--	--	13.2						
2.5' BOTTOM OF PERCOLATION TEST HOLE		3									
		4									
		5									
		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

Earth Engineering Company

PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057				DATE: JUNE 2020	
	LOG OF BORING BH-12				
RIG TYPE: GEO PROBE	SHEET 1 OF 1			WATER DEPTH	
FOREMAN: SM	START DATE		6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE		6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE		120.0 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY (SOIL TYPE 4A) brown		1									
		2									
	BS	3	--	--	11.3						
3' BOTTOM OF PERCOLATION TEST HOLE		4									
		5									
		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057				DATE: JUNE 2020	
	LOG OF BORING BH-13				
RIG TYPE: GEO PROBE	SHEET 1 OF 1			WATER DEPTH	
FOREMAN: SM	START DATE		6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE		6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE		10.9 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LOAM (SOIL TYPE 2A) brown		1									
		2									
		3									
	BS	4	--	--	6.3						
4' BOTTOM OF PERCOLATION TEST HOLE		5									
		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057				DATE: JUNE 2020	
	LOG OF BORING BH-14				
RIG TYPE: GEO PROBE	SHEET 1 OF 1			WATER DEPTH	
FOREMAN: SM	START DATE		6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE		6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE		2.1 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LOAM (SOIL TYPE 2A) brown		1									
	BS	2	--	--	4.0						
2' BOTTOM OF PERCOLATION TEST HOLE		3									
		4									
		5									
		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
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		20									
		21									
		22									
		23									
		24									
		25									

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PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057		DATE: JUNE 2020	
	LOG OF BORING BH-15		
RIG TYPE: GEO PROBE	SHEET 1 OF 1	WATER DEPTH	
FOREMAN: SM	START DATE 6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE 6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE 120.0 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY LOAM (SOIL TYPE 3A) brown		1									
	BS	2	--	--	13.5						
2' BOTTOM OF PERCOLATION TEST HOLE		3									
		4									
		5									
		6									
		7									
		8									
		9									
		10									
		11									
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		23									
		24									
		25									

Earth Engineering Company

PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057				DATE: JUNE 2020	
	LOG OF BORING BH-16				
RIG TYPE: GEO PROBE	SHEET 1 OF 1			WATER DEPTH	
FOREMAN: SM	START DATE		6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE		6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE		24.0 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LOAM (SOIL TYPE 2A) brown		1									
	BS	2	--	--	12.8						
2' BOTTOM OF PERCOLATION TEST HOLE		3									
		4									
		5									
		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057		DATE: JUNE 2020	
	LOG OF BORING BH-17		
RIG TYPE: GEO PROBE	SHEET 1 OF 1	WATER DEPTH	
FOREMAN: SM	START DATE 6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE 6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE 24.0 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LOAM (SOIL TYPE 2A) brown		1									
		2									
		3									
		4									
		5									
	BS		--	--	6.9						
5.5' BOTTOM OF PERCOLATION TEST HOLE		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

Earth Engineering Company

PARCEL B, LOT 1 - FRONT RANGE ENERGY SERVICES
FORT LUPTON, COLORADO

PROJECT NO: 20-01-057		DATE: JUNE 2020	
	LOG OF BORING BH-18		
RIG TYPE: GEO PROBE	SHEET 1 OF 1	WATER DEPTH	
FOREMAN: SM	START DATE 6/2/2020	WHILE DRILLING	None
AUGER TYPE: 6" CFA	FINISH DATE 6/2/2020	AFTER DRILLING	None
SPT HAMMER: AUTO	PERCOLATION TEST RATE 120.0 MPI	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY (SOIL TYPE 4A) brown		1									
		2									
		3									
		4									
		5									
		6									
	BS	7	--	--	**18.1**						
7' BOTTOM OF PERCOLATION TEST HOLE		8									
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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APPENDIX B

UDFCD Runoff & Rational Method References / NOAA Atlas Rainfall / WEC Rational Method Runoff Calculations

2.4.1 Initial or Overland Flow Time

The initial or overland flow time, t_i, may be calculated using Equation 6-3:

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S_o^{0.33}} \qquad \text{Equation 6-3}$$

Where:

t_i = overland (initial) flow time (minutes)
C_5 = runoff coefficient for 5-year frequency (from Table 6-4)
L_i = length of overland flow (ft)
S_o = average slope along the overland flow path (ft/ft).

Equation 6-3 is adequate for distances up to 300 feet in urban areas and 500 feet in rural areas. Note that in a highly urbanized catchment, the overland flow length is typically shorter than 300 feet due to effective man-made drainage systems that collect and convey runoff.

2.4.2 Channelized Flow Time

The channelized flow time (travel time) is calculated using the hydraulic properties of the conveyance element. The channelized flow time, t_t, is estimated by dividing the length of conveyance by the velocity. The following equation, Equation 6-4 (Guo 2013), can be used to determine the flow velocity in conjunction with Table 6-2 for the conveyance factor.

$$t_t = \frac{L_t}{60K\sqrt{S_o}} = \frac{L_t}{60V_t} \qquad \text{Equation 6-4}$$

Where:

t_t = channelized flow time (travel time, min)
L_t = waterway length (ft)
S_o = waterway slope (ft/ft)
V_t = travel time velocity (ft/sec) = $K\sqrt{S_o}$
K = NRCS conveyance factor (see Table 6-2).

Table 6-2. NRCS Conveyance factors, K

Type of Land Surface	Conveyance Factor, K
Heavy meadow	2.5
Tillage/field	5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

The time of concentration, t_c, is the sum of the initial (overland) flow time, t_i, and the channelized flow time, t_t, as per Equation 6-2.

2.4.3 First Design Point Time of Concentration in Urban Catchments

Equation 6-4 was solely determined by the waterway characteristics and using a set of empirical formulas. A calibration study between the Rational Method and the Colorado Urban Hydrograph Procedure (CUHP) suggests that the time of concentration shall be the lesser of the values calculated by Equation 6-2 and Equation 6-5 (Guo and Urbonas 2013).

$$t_c = (26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}} \qquad \text{Equation 6-5}$$

Where:

t_c = minimum time of concentration for first design point when less than t_c from Equation 6-1.
L_t = length of channelized flow path (ft)
i = imperviousness (expressed as a decimal)
S_t = slope of the channelized flow path (ft/ft).

Equation 6-5 is the regional time of concentration that warrants the best agreement on peak flow predictions between the Rational Method and CUHP when the imperviousness of the tributary area is greater than 20 percent. It was developed using the UDFCD database that includes 295 sample urban catchments under 2-, 5-, 10-, 50, and 100-yr storm events (MacKenzie 2010). It suggests that both initial flow time and channelized flow velocity are directly related to the catchment's imperviousness (Guo and MacKenzie 2013).

The first design point is defined as a node where surface runoff enters the storm drain system. For example, all inlets are "first design points" because inlets are designed to accept flow into the storm drain.

Typically, but not always, Equation 6-5 will result in a lesser time of concentration at the first design point and will govern in an urbanized watershed. For subsequent design points, add the travel time for each relevant segment downstream.

2.4.4 Minimum Time of Concentration

Use a minimum t_c value of 5 minutes for urbanized areas and a minimum t_c value of 10 minutes for areas that are not considered urban. Use minimum values even when calculations result in a lesser time of concentration.

2.4.5 Common Errors in Calculating Time of Concentration

A common mistake in urbanized areas is to assume travel velocities that are too slow. Another common error is to not check the runoff peak resulting from only part of the catchment. Sometimes a lower portion of the catchment or a highly impervious area produces a larger peak than that computed for the whole catchment. This error is most often encountered when the catchment is long or the upper portion contains grassy open land and the lower portion is more developed.

Table 6-5. Runoff coefficients, *c*

Total or Effective % Impervious	NRCS Hydrologic Soil Group A						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.01	0.01	0.01	0.04	0.13	0.27
5%	0.02	0.02	0.02	0.03	0.07	0.15	0.29
10%	0.04	0.05	0.05	0.07	0.11	0.19	0.32
15%	0.07	0.08	0.08	0.1	0.15	0.23	0.35
20%	0.1	0.11	0.12	0.14	0.2	0.27	0.38
25%	0.14	0.15	0.16	0.19	0.24	0.3	0.42
30%	0.18	0.19	0.2	0.23	0.28	0.34	0.45
35%	0.21	0.23	0.24	0.27	0.32	0.38	0.48
40%	0.25	0.27	0.28	0.32	0.37	0.42	0.51
45%	0.3	0.31	0.33	0.36	0.41	0.46	0.54
50%	0.34	0.36	0.37	0.41	0.45	0.5	0.58
55%	0.39	0.4	0.42	0.45	0.49	0.54	0.61
60%	0.43	0.45	0.47	0.5	0.54	0.58	0.64
65%	0.48	0.5	0.51	0.54	0.58	0.62	0.67
70%	0.53	0.55	0.56	0.59	0.62	0.65	0.71
75%	0.58	0.6	0.61	0.64	0.66	0.69	0.74
80%	0.63	0.65	0.66	0.69	0.71	0.73	0.77
85%	0.68	0.7	0.71	0.74	0.75	0.77	0.8
90%	0.73	0.75	0.77	0.79	0.79	0.81	0.84
95%	0.79	0.81	0.82	0.83	0.84	0.85	0.87
100%	0.84	0.86	0.87	0.88	0.88	0.89	0.9
Total or Effective % Impervious	**NRCS Hydrologic Soil Group B**						
	2-Year	**5-Year**	**10-Year**	**25-Year**	**50-Year**	**100-Year**	**500-Year**
2%	0.01	0.01	0.07	0.26	0.34	0.44	0.54
5%	0.03	0.03	0.1	0.28	0.36	0.45	0.55
10%	0.06	0.07	0.14	0.31	0.38	0.47	0.57
15%	0.09	0.11	0.18	0.34	0.41	0.5	0.59
20%	0.13	0.15	0.22	0.38	0.44	0.52	0.61
25%	0.17	0.19	0.26	0.41	0.47	0.54	0.63
30%	0.2	0.23	0.3	0.44	0.49	0.57	0.65
35%	0.24	0.27	0.34	0.47	0.52	0.59	0.66
40%	0.29	0.32	0.38	0.5	0.55	0.61	0.68
45%	0.33	0.36	0.42	0.53	0.58	0.64	0.7
50%	0.37	0.4	0.46	0.56	0.61	0.66	0.72
55%	0.42	0.45	0.5	0.6	0.63	0.68	0.74
60%	0.46	0.49	0.54	0.63	0.66	0.71	0.76
65%	0.5	0.54	0.58	0.66	0.69	0.73	0.77
70%	0.55	0.58	0.62	0.69	0.72	0.75	0.79
75%	0.6	0.63	0.66	0.72	0.75	0.78	0.81
80%	0.64	0.67	0.7	0.75	0.77	0.8	0.83
85%	0.69	0.72	0.74	0.78	0.8	0.82	0.85
90%	0.74	0.76	0.78	0.81	0.83	0.84	0.87
95%	0.79	0.81	0.82	0.85	0.86	0.87	0.88
100%	0.84	0.86	0.86	0.88	0.89	0.89	0.9

Table 6-5. Runoff coefficients, *c* (continued)

Total or Effective % Impervious	NRCS Hydrologic Soil Group C						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.05	0.15	0.33	0.40	0.49	0.59
5%	0.03	0.08	0.17	0.35	0.42	0.5	0.6
10%	0.06	0.12	0.21	0.37	0.44	0.52	0.62
15%	0.1	0.16	0.24	0.4	0.47	0.55	0.64
20%	0.14	0.2	0.28	0.43	0.49	0.57	0.65
25%	0.18	0.24	0.32	0.46	0.52	0.59	0.67
30%	0.22	0.28	0.35	0.49	0.54	0.61	0.68
35%	0.26	0.32	0.39	0.51	0.57	0.63	0.7
40%	0.3	0.36	0.43	0.54	0.59	0.65	0.71
45%	0.34	0.4	0.46	0.57	0.62	0.67	0.73
50%	0.38	0.44	0.5	0.6	0.64	0.69	0.75
55%	0.43	0.48	0.54	0.63	0.66	0.71	0.76
60%	0.47	0.52	0.57	0.65	0.69	0.73	0.78
65%	0.51	0.56	0.61	0.68	0.71	0.75	0.79
70%	0.56	0.61	0.65	0.71	0.74	0.77	0.81
75%	0.6	0.65	0.68	0.74	0.76	0.79	0.82
80%	0.65	0.69	0.72	0.77	0.79	0.81	0.84
85%	0.7	0.73	0.76	0.79	0.81	0.83	0.86
90%	0.74	0.77	0.79	0.82	0.84	0.85	0.87
95%	0.79	0.81	0.83	0.85	0.86	0.87	0.89
100%	0.83	0.85	0.87	0.88	0.89	0.89	0.9

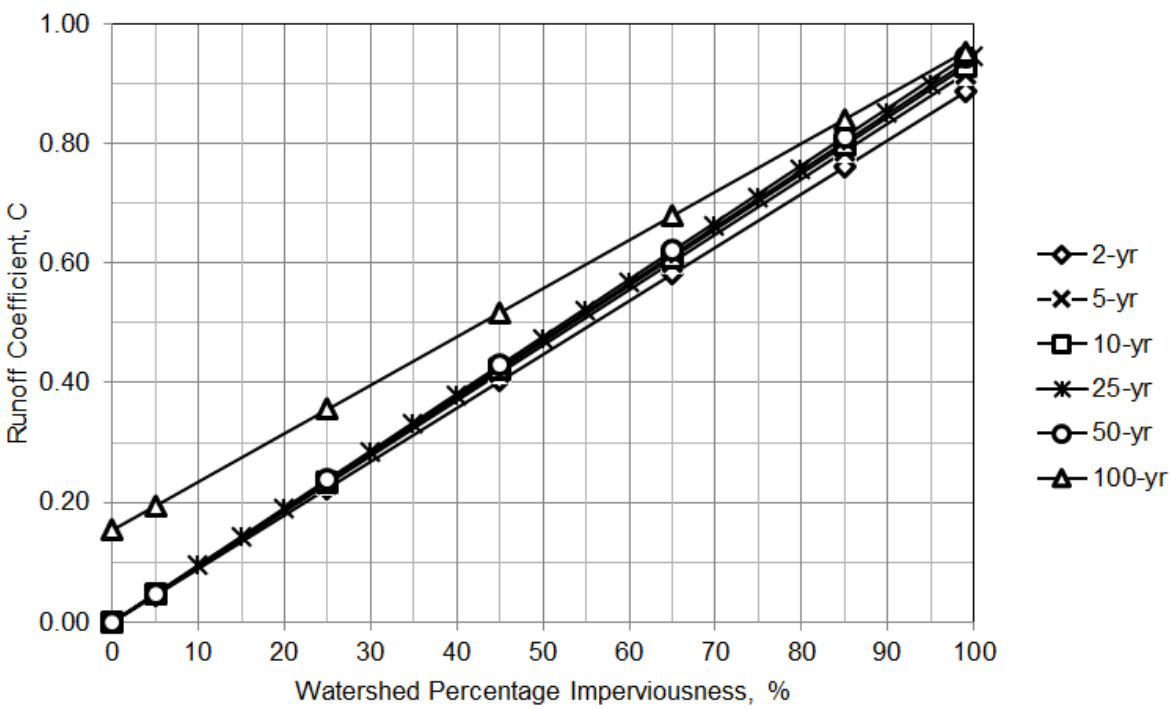


Figure 6-1. Runoff coefficient vs. watershed imperviousness NRCS HSG A

NOAA Atlas 14, Volume 8, Version 2
Location name: Fort Lupton, Colorado, USA*
Latitude: 40.0973°, Longitude: -104.77°
Elevation: 5003.16 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.234 (0.182-0.301)	0.284 (0.221-0.366)	0.381 (0.295-0.492)	0.474 (0.365-0.615)	0.623 (0.473-0.860)	0.753 (0.555-1.05)	0.897 (0.638-1.27)	1.06 (0.721-1.54)	1.29 (0.845-1.92)	1.48 (0.939-2.21)
10-min	0.342 (0.266-0.440)	0.416 (0.323-0.536)	0.557 (0.432-0.720)	0.694 (0.535-0.901)	0.912 (0.693-1.26)	1.10 (0.812-1.53)	1.31 (0.934-1.86)	1.55 (1.06-2.25)	1.89 (1.24-2.81)	2.17 (1.38-3.24)
15-min	0.417 (0.325-0.537)	0.507 (0.394-0.654)	0.680 (0.526-0.878)	0.847 (0.652-1.10)	1.11 (0.845-1.54)	1.35 (0.991-1.87)	1.60 (1.14-2.27)	1.89 (1.29-2.74)	2.31 (1.51-3.43)	2.65 (1.68-3.95)
30-min	0.565 (0.440-0.728)	0.684 (0.532-0.882)	0.913 (0.707-1.18)	1.14 (0.875-1.48)	1.49 (1.14-2.07)	1.81 (1.33-2.51)	2.16 (1.53-3.06)	2.55 (1.74-3.70)	3.11 (2.04-4.63)	3.58 (2.27-5.34)
60-min	0.691 (0.538-0.890)	0.832 (0.647-1.07)	1.11 (0.859-1.43)	1.38 (1.07-1.79)	1.82 (1.39-2.53)	2.22 (1.63-3.08)	2.65 (1.89-3.77)	3.14 (2.14-4.57)	3.86 (2.53-5.74)	4.45 (2.82-6.63)
2-hr	0.817 (0.642-1.04)	0.980 (0.769-1.25)	1.31 (1.02-1.67)	1.63 (1.27-2.09)	2.15 (1.66-2.96)	2.62 (1.96-3.61)	3.15 (2.26-4.42)	3.73 (2.58-5.37)	4.60 (3.05-6.76)	5.32 (3.40-7.81)
3-hr	0.886 (0.700-1.12)	1.06 (0.835-1.34)	1.40 (1.10-1.78)	1.75 (1.37-2.23)	2.31 (1.79-3.15)	2.81 (2.11-3.85)	3.38 (2.44-4.71)	4.01 (2.79-5.73)	4.95 (3.30-7.22)	5.72 (3.69-8.35)
6-hr	1.05 (0.836-1.31)	1.23 (0.982-1.54)	1.60 (1.27-2.01)	1.98 (1.56-2.49)	2.59 (2.02-3.48)	3.13 (2.37-4.23)	3.74 (2.74-5.16)	4.43 (3.11-6.25)	5.45 (3.67-7.85)	6.30 (4.10-9.06)
12-hr	1.28 (1.03-1.58)	1.48 (1.20-1.84)	1.89 (1.52-2.35)	2.29 (1.82-2.85)	2.92 (2.30-3.87)	3.49 (2.67-4.63)	4.12 (3.04-5.58)	4.82 (3.41-6.68)	5.84 (3.98-8.28)	6.69 (4.41-9.49)
24-hr	1.51 (1.23-1.85)	1.78 (1.45-2.18)	2.27 (1.84-2.78)	2.71 (2.19-3.35)	3.40 (2.68-4.39)	3.98 (3.06-5.18)	4.60 (3.42-6.12)	5.28 (3.77-7.19)	6.26 (4.29-8.71)	7.04 (4.69-9.86)
2-day	1.71 (1.41-2.07)	2.08 (1.71-2.51)	2.69 (2.20-3.26)	3.22 (2.62-3.92)	3.97 (3.14-5.00)	4.57 (3.53-5.82)	5.19 (3.88-6.75)	5.84 (4.19-7.78)	6.72 (4.65-9.17)	7.42 (4.99-10.2)
3-day	1.87 (1.55-2.25)	2.24 (1.85-2.70)	2.87 (2.36-3.46)	3.40 (2.79-4.12)	4.17 (3.31-5.21)	4.77 (3.71-6.03)	5.40 (4.06-6.97)	6.05 (4.38-8.00)	6.95 (4.83-9.40)	7.64 (5.18-10.5)
4-day	2.00 (1.66-2.39)	2.37 (1.97-2.83)	2.99 (2.47-3.59)	3.52 (2.90-4.24)	4.29 (3.43-5.34)	4.90 (3.83-6.17)	5.53 (4.18-7.11)	6.20 (4.50-8.14)	7.10 (4.97-9.56)	7.81 (5.32-10.6)
7-day	2.29 (1.92-2.72)	2.68 (2.24-3.17)	3.32 (2.77-3.95)	3.87 (3.22-4.62)	4.66 (3.76-5.73)	5.29 (4.17-6.57)	5.93 (4.52-7.53)	6.60 (4.84-8.57)	7.51 (5.30-9.98)	8.22 (5.66-11.1)
10-day	2.54 (2.14-2.99)	2.95 (2.48-3.47)	3.62 (3.04-4.28)	4.20 (3.51-4.98)	5.01 (4.06-6.11)	5.65 (4.47-6.96)	6.30 (4.83-7.93)	6.97 (5.13-8.97)	7.88 (5.59-10.4)	8.58 (5.94-11.5)
20-day	3.25 (2.77-3.78)	3.71 (3.16-4.33)	4.48 (3.80-5.23)	5.12 (4.32-6.00)	6.00 (4.91-7.21)	6.69 (5.35-8.12)	7.37 (5.71-9.14)	8.07 (6.01-10.2)	9.00 (6.46-11.7)	9.71 (6.80-12.8)
30-day	3.81 (3.27-4.40)	4.34 (3.72-5.02)	5.20 (4.45-6.03)	5.92 (5.03-6.88)	6.89 (5.66-8.19)	7.63 (6.14-9.18)	8.37 (6.52-10.3)	9.11 (6.82-11.4)	10.1 (7.27-12.9)	10.8 (7.61-14.1)
45-day	4.48 (3.87-5.14)	5.11 (4.41-5.88)	6.14 (5.28-7.07)	6.97 (5.96-8.05)	8.08 (6.67-9.52)	8.92 (7.21-10.6)	9.74 (7.63-11.8)	10.5 (7.94-13.1)	11.6 (8.41-14.7)	12.4 (8.77-15.9)
60-day	5.02 (4.36-5.74)	5.77 (5.00-6.59)	6.95 (6.00-7.96)	7.90 (6.78-9.07)	9.15 (7.59-10.7)	10.1 (8.19-11.9)	11.0 (8.64-13.3)	11.9 (8.98-14.6)	13.0 (9.47-16.4)	13.8 (9.84-17.7)

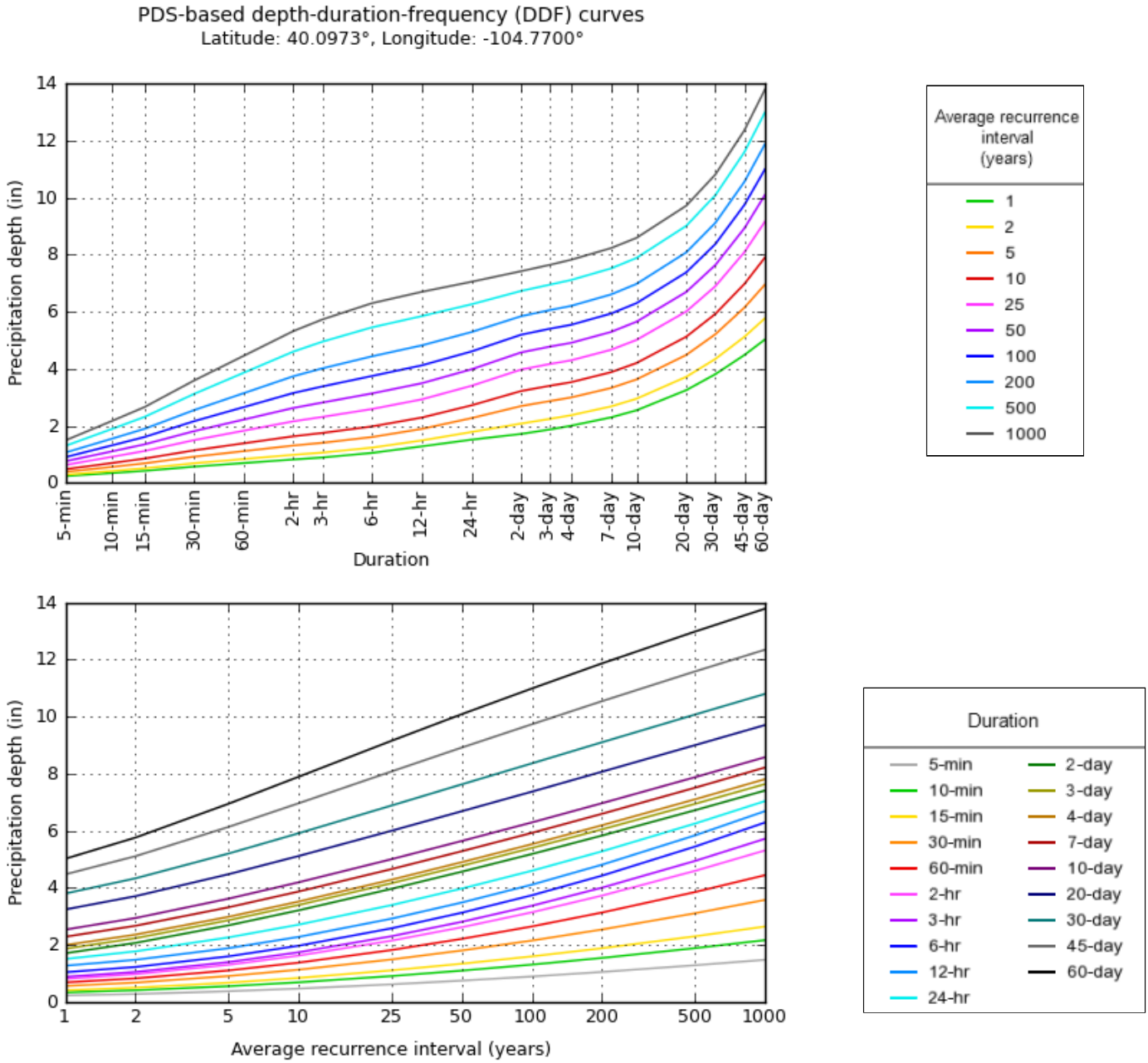
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



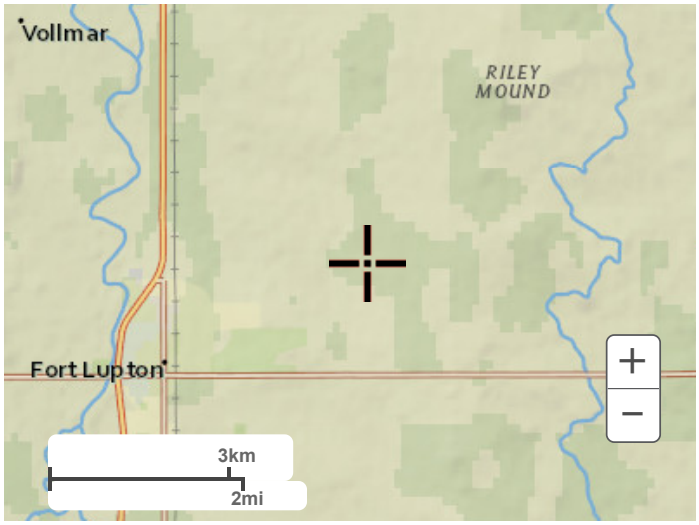
NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Tue Dec 10 18:07:35 2019

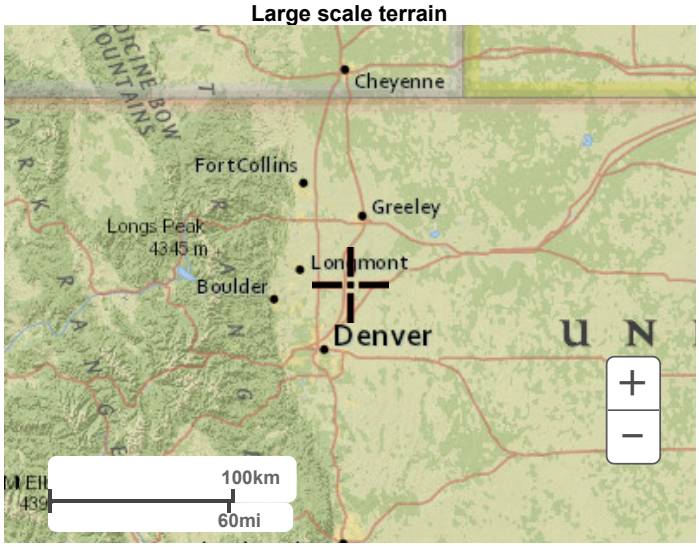
Back to Top

Maps & aerials

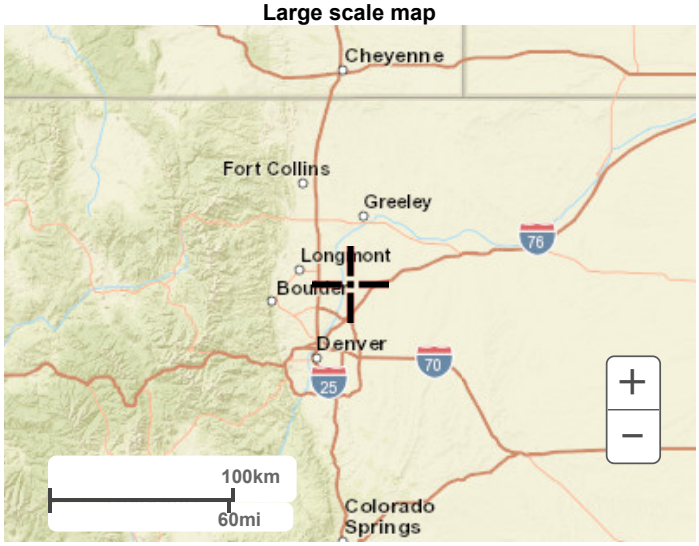
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

HISTORIC RUNOFF TABLE (Remaining Parcel A-1, Lot 1, Front Range Energy Sub)							
BASIN	Impervious	C-YR	I	A	CIA(YR-historic)	Flow	DESIGN POINT
H-N							
C_5	2.00	0.01	1.74	2.50	0.04	cfs	H2
C_{100}	2.00	0.44	4.14	2.50	4.55	cfs	

Remaining Parcel A-1, Lot 1, Front Range Energy Sub - HISTORIC RUNOFF CALCS

for D soils - C_5 C_{10} C_{100} = from Table RO-5

**for Ti calculations - only C_5 is used

Ti= (.395*(1.1-C_{yr})*(L^.5)) / (S)^.333
From UDFCD 2018, Equation 6-3

	5	10	100
1-Hour Point Rainfall	**1.11**	**1.38**	**2.64**

H-N — **Developed -5, 10, 100 yr** — **2.498** acres

Use NCS Type B

		Length	Slope	C_{yr} - see frequency left	Ti**	Velocity	Tt	Tc	Use Tc	I	A	$CIA_{5\ existing}$	
5yr	initial	300	0.018	0.01	28.42	1.34	1.61	30.03	30.03	1.74	2.50		0.04 **cfs**
	travel	130	0.018									$CIA_{10\ existing}$	
10yr		430		0.07	28.42	1.34	1.61	30.03	30.03	2.16	2.50		0.38 **cfs**
	Overland flow											$CIA_{100\ existing}$	
100yr	300 ft max for urban, 500 ft max for rural Remainder carried as travel	Cv=	10	0.44	28.42	1.34	1.61	30.03	30.03	4.14	2.50		4.55 **cfs**

2.498 acres

H-N	**Undeveloped**	**Building**	**Asphalt**	**Concrete**	**Gravel (packed)**	**EFFECTIVE**
Use NCS Type B						
Imperviousness %	2	90.00	100.00	90.00	40.00	**2.00**
C5	0.01	0.76	0.86	0.76	0.32	**0.01**
C10	0.07	0.78	0.86	0.78	0.38	**0.07**
C100	0.44	0.84	0.89	0.84	0.61	**0.44**
AREA	2.498	0.00	0.00	0.00	0.00	2.50

TABLE RO-2 (taken from UDFCD Manual - Vol. I)	
Type of Land Surface	Conveyance coefficient, Cv
Heavy Meadow	2.5
Tillage/field	5
Short pasture/Lawns	7
Nearly Bare Ground	10.00
Grassed Waterway	15.00
Paved areas and shallow paved swales	20.00

EXISTING RUNOFF TABLE (Remaining Parcel A-1, Lot 1, Front Range Energy Sub)							
BASIN	Impervious	C-YR	I	A	CIA(YR-existing)	Flow	DESIGN POINT
EN							
C5 (UDFCD 2017)	2.00	0.01	1.83	2.50	0.05	cfs	E3
C_{100}	2.00	0.44	4.35	2.50	4.78	cfs	

Remaining Parcel A-1, Lot 1, Front Range Energy Sub - EXISTING RUNOFF CALCS

for D soils - C_5 C_{10} C_{100} = from Table RO-5

**for Ti calculations - only C_5 is used

Ti= (.395*(1.1-C_{yr})*(L^.5)) / (S)^.333
From UDFCD 2018, Equation 6-3

	5	10	100
1-Hour Point Rainfall	1.11	1.38	2.64

2018 UDFCD >>> Tc Check = (26-17i) + [Ltravel / (60*(14i + 9)(So)^.5)]

EN		Developed -5, 10, 100 yr			2.498 acres								
		Use NCS Type B		C_{yr} - see frequency left	Ti**	Velocity	Tt	Tc	check	Use Tc	I	A	CIA_5 existing
5yr		Length	Slope	0.01	30.20	1.22	1.77	31.96	27.57	27.57	1.83	2.50	0.05 **cfs**
	initial	300	0.015										
	travel	130	0.015										CIA_{10} existing
10yr		430		0.07	30.20	1.22	1.77	31.96	27.57	27.57	2.27	2.50	0.40 **cfs**
	Overland flow												
	300 ft max for urban, 500 ft max for rural												CIA_{100} existing
100yr	Remainder carried as travel	Cv=	10	0.44	30.20	1.22	1.77	31.96	27.57	27.57	4.35	2.50	4.78 **cfs**

~~ENGY~~		1.219 acres				
	Undeveloped	**Building**	**Asphalt**	**Concrete**	**Gravel (packed)**	**EFFECTIVE**
~~50% NCS A, 50% TYPE B~~						
~~Imperviousness %~~	~~2~~	~~90.00~~	~~100.00~~	~~90.00~~	~~40.00~~	**2.00**
~~C5~~	~~0.01~~	~~0.755~~	~~0.86~~	~~0.755~~	~~0.295~~	**0.01**
~~**C10**~~	~~0.04~~	~~0.775~~	~~0.865~~	~~0.775~~	~~0.33~~	**0.04**
~~**C100**~~	~~0.285~~	~~0.825~~	~~0.89~~	~~0.825~~	~~0.515~~	**0.29**
~~AREA~~	~~1.219~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~1.22~~

EN		2.498 acres				
	Undeveloped	**Building**	**Asphalt**	**Concrete**	**Gravel (packed)**	**EFFECTIVE**
Use NCS Type B						
I	2	90.00	100.00	90.00	40.00	**2.00**
C5	0.01	0.76	0.86	0.76	0.32	**0.01**
C10	0.07	0.78	0.86	0.78	0.38	**0.07**
C100	0.44	0.84	0.89	0.84	0.61	**0.44**
AREA	2.498	0.00	0.00	0.00	0.00	2.50

TABLE RO-2 (taken from UDFCD Manual - Vol. I)	
Type of Land Surface	Conveyance coefficient, Cv
Heavy Meadow	2.5
Tillage/field	5
Short pasture/Lawns	7
Nearly Bare Ground	10.00
Grassed Waterway	15.00
Paved areas and shallow paved swales	20.00

DEVELOPED RUNOFF TABLE (Remaining Parcel A-1, Lot 1, Front Range Energy Sub)							
BASIN	Impervious	C-YR	I	A	CIA(YR-DEVELOPED)	cfs	DESIGN POINT
A-1							
C_5	39.32	0.60	2.58	2.50	3.84	cfs	7
C_{100}	39.32	0.75	6.14	2.50	11.54	cfs	7

Remaining Parcel A-1, Lot 1, Front Range Energy Sub - DEVELOPED RUNOFF CALCS (% Max Bldg-Pavement)

See below for effective C values as calculated from Table RO-5

**for Ti calculations - only C_5 is used

Ti= (.395*(1.1-C_{yr})*(L^.5)) / (S)^.333
From UDFCD 2018, Equation 6-3

	5	10	100
Point Rainfall	**1.11**	**1.38**	**2.64**

2018 UDFCD >>> Tc Check = (26-17i) + [Ltravel / (60*(14i + 9)(So)^.5)]

A-1 **Developed -5, 10, 100 yr** **2.50** acres
100% NCS TYPE B

		Length	Slope	C_5	Ti	Velocity	Tt	Tc	check	Use Tc	C_{yr} - see above	I	A	**CIA_5 developed**
5yr				0.60	13.98	1.84	0.27	14.25	19.60	14.25	0.60	2.58	2.50	3.84 **cfs**
	initial	300	0.015											
	travel	30	0.015											**CIA_{10} developed**
10yr	Overland flow			0.60	13.98	1.84	0.27	14.25	19.60	14.25	0.63	3.21	2.50	5.01 **cfs**
	300 ft max for urban, 500 ft max for rural													
	Remainder carried as	Cv=	15.00											**CIA_{100} developed**
100yr				0.60	13.98	1.84	0.27	14.25	19.60	14.25	0.75	6.14	2.50	11.54 **cfs**

TOTAL AREA **1.219** acres

ENGY	**Landscaping**	**Gravel**	**Building**	**Concrete**	**Asphalt**	
50% NCS A, 50% TYPE B						**EFFECTIVE**
I	2	40.00	90.00	90.00	100.00	**2.00**
C5	0.01	0.295	0.755	0.755	0.86	**0.01**
C10	0.04	0.33	0.775	0.775	0.865	**0.04**
C100	0.285	0.515	0.825	0.825	0.89	**0.29**
AREA	1.22	0.00	0.00	0.00	0.00	1.219

TOTAL AREA **2.498** acres

A-1	**Landscaping**	**Gravel**	**Building**	**Concrete**	**Asphalt**	
100% NCS TYPE B						**EFFECTIVE**
I	2	40.00	90.00	90.00	100.00	**39.32**
C5	0.01	0.76	0.86	0.76	0.32	**0.60**
C10	0.07	0.78	0.86	0.78	0.38	**0.63**
C100	0.44	0.84	0.89	0.84	0.61	**0.75**
AREA	0.41	1.85	0.00	0.00	0.23	2.498

TABLE RO-2 (taken from UDFCD Manual - Vol. I)

Type of Land Surface	Conveyance coefficient, Cv
Heavy Meadow	2.5
Tillage/field	5
Short pasture/Lawns	7
Nearly Bare Ground	10.00
Grassed Waterway	15.00
Paved areas and shallow paved swales	20.00

APPENDIX C

Empirical Infiltration Calculations / Design Pond Volume / Channel Capacities

REQUIRED INFILTRATION (EMPIRICAL) per CFSCM & UDFCD

Per NOAA Atlas - 24 hr 100 yr rate of 4.60 inches
Per Colorado Floodplain & Stormwater Criteria Manual (CFSCM) - Retention / Infiltration is Tributary area X rainfall depth
Per UDFCD Volume II - Storage - 3.3.4 Retention / Infiltration Facilities - factor by 2.0

					CFSCM	1.5 Factor of Safety	UDFCD Factored 2.0	UDFCD
A-1		2.50	108,814	4.6	41,712	62,568.1	83,424.1	1.9
POND A-1	**TOTAL**	**2.5**	**108,814.1**	**4.6**	41,712	**62,568.1**	**83,424.1**	**1.9**

INFILTRATION POND N & A-1
100 YEAR INFILTRATION VOLUME - WATER SURFACE
ESTIMATED POND (TYPICAL) VOLUME vs ELEVATION

REQUIRED 1x100 yr Ret. Volume*:	**142,003.7**	**ft^3**	**5015.66**	**ELEVATION**	***CFSCM**
REQUIRED 1.5x100 yr Ret. Volume:**	**213,005.5**	**ft^3**	**5017.26**	**ELEVATION**	43560
REQUIRED 2x100 yr Ret. Volume*:**	**284,007.3**	**ft^4**	**N/A**	**ELEVATION**	***UDFCD**

ELEV	AREA	t	VOL	ACCUM	ACUM (ac-ft)
5,010.50	921.0				
		0.50	3,389.7	3,389.7	0.08
5,011.00	15,623.8				
		1.00	20,278.5	23,668.2	0.54
5,012.00	25,321.5				
		1.00	27,142.8	50,811.1	1.17
5,013.00	29,005.9				
		1.00	30,902.1	81,713.2	1.88
5,014.00	32,838.0				
		1.00	34,800.3	116,513.4	2.67
5,015.00	36,800.2				
		1.00	38,828.3	155,341.8	3.57
5,016.00	40,892.5				
		1.00	43,122.9	198,464.6	4.56
5,017.00	45,392.4				
		1.00	56,609.0	255,073.6	5.86
5,018.00	68,622.7				

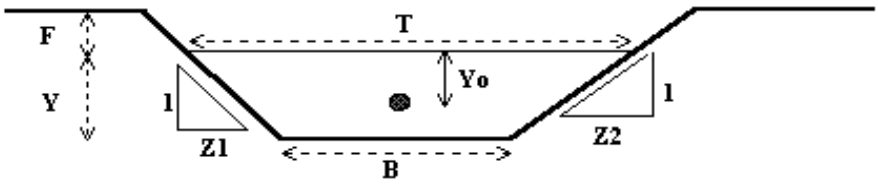
* - Per Colorado Floodplain and Stormwater Criteria Manual
*** - Per Urban Drainage Flood Control District Manual - Volume II

Infiltration Rate:

Using 24 min per inch >>	5015.66	100 yr W/S	Using 72 min per inch >>	5015.66	100 yr W/S
	5,010.50	Bottom ELEV		5,010.50	Bottom ELEV
	5.16	Head (ft)		5.16	Head (ft)
24 min per inch =	0.208	ft per hour percolation	72 min per inch =	0.069	ft per hour percolation
	24.8	hours to drain 100 yr W/S		74.3	hours to drain 100 yr W/S

Normal Flow Analysis - Trapezoidal Channel

Project:	**Remaining Parcel A-1, Lot 1, Front Range Energy Sub**
Channel ID:	**Swale A-1**

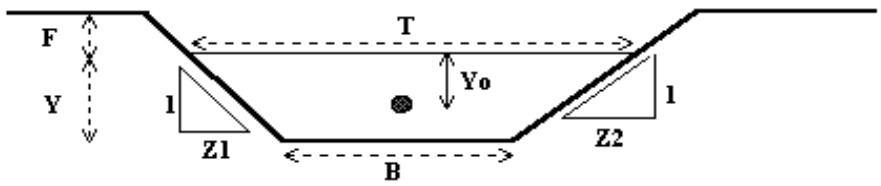


Design Information (Input)			
Channel Invert Slope	So =	0.0050	ft/ft
Manning's n	n =	0.016	
Bottom Width	B =	2.00	ft
Left Side Slope	Z1 =	4.00	ft/ft
Right Side Slope	Z2 =	4.00	ft/ft
Freeboard Height	F =	0.00	ft
Design Water Depth	Y =	**0.68**	ft

Normal Flow Condtion (Calculated)			
Discharge	**Q =**	**11.89**	cfs
Froude Number	**Fr =**	**0.99**	
Flow Velocity	**V =**	**3.70**	fps
Flow Area	A =	3.21	sq ft
Top Width	T =	7.44	ft
Wetted Perimeter	P =	7.61	ft
Hydraulic Radius	R =	0.42	ft
Hydraulic Depth	D =	0.43	ft
Specific Energy	Es =	0.89	ft
Centroid of Flow Area	Yo =	0.27	ft
Specific Force	Fs =	0.14	kip

Critical Flow Analysis - Trapezoidal Channel

Project: Remaining Parcel A-1, Lot 1, Front Range Energy Sub
Channel ID: Swale A-1

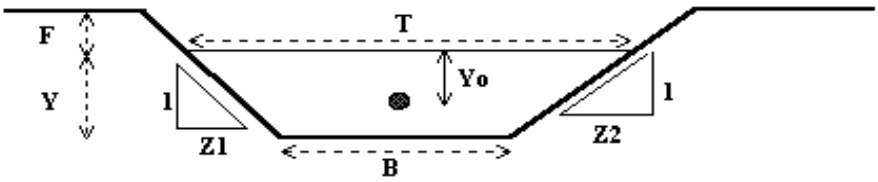


Design Information (Input)			
Bottom Width	B =	2.00	ft
Left Side Slope	Z1 =	4.00	ft/ft
Right Side Slope	Z2 =	4.00	ft/ft
Design Discharge	Q =	**11.54**	cfs

Critical Flow Condition (Calculated)			
Critical Flow Depth	**Y =**	**0.67**	ft
Critical Flow Area	A =	3.10	sq ft
Critical Top Width	T =	7.32	ft
Critical Hydraulic Depth	D =	0.42	ft
Critical Flow Velocity	V =	3.72	fps
Froude Number	**Fr =**	**1.01**	
Critical Wetted Perimeter	P =	7.48	ft
Critical Hydraulic Radius	R =	0.41	ft
Critical (min) Specific Energy	Esc =	0.88	ft
Centroid on the Critical Flow Area	Yoc =	0.21	ft
Critical (min) Specific Force	Fsc =	0.12	kip

Normal Flow Analysis - Trapezoidal Channel

Project:	**Remaining Parcel A1, Lot 1, Front Range Energy Sub**
Channel ID:	**POND 'A-1' SPILLWAY**



Design Information (Input)			
Channel Invert Slope	So =	0.0050	ft/ft
Manning's n	n =	0.012	
Bottom Width	B =	25.00	ft
Left Side Slope	Z1 =	0.00	ft/ft
Right Side Slope	Z2 =	0.00	ft/ft
Freeboard Height	F =	0.50	ft
Design Water Depth	Y =	**0.25**	ft

Normal Flow Condtion (Calculated)			
Discharge	**Q =**	**21.49**	cfs
Froude Number	**Fr =**	**1.21**	
Flow Velocity	**V =**	**3.44**	fps
Flow Area	A =	6.25	sq ft
Top Width	T =	25.00	ft
Wetted Perimeter	P =	25.50	ft
Hydraulic Radius	R =	0.25	ft
Hydraulic Depth	D =	0.25	ft
Specific Energy	Es =	0.43	ft
Centroid of Flow Area	Yo =	0.13	ft
Specific Force	Fs =	0.19	kip

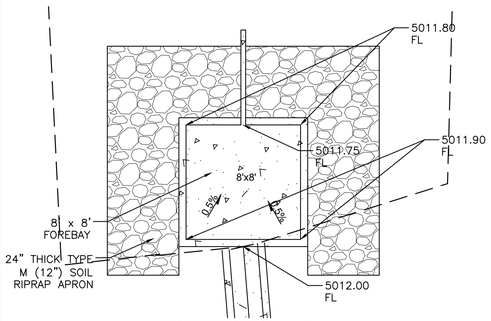
APPENDIX D

WEC Drainage Sheets

SB WEAKLAND INVESTMENTS SITE ENGINEERING CONSTRUCTION PLANS

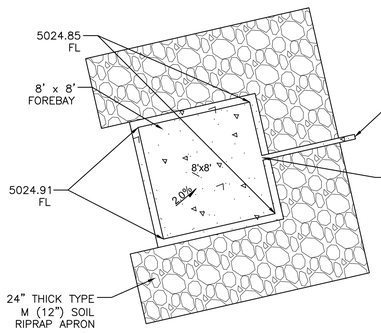
PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



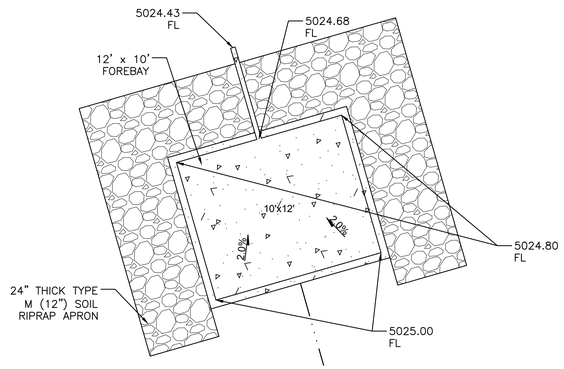
FOREBAY N & A-1

SCALE: 1" = 5'



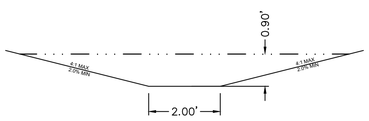
FOREBAY W

SCALE: 1" = 5'



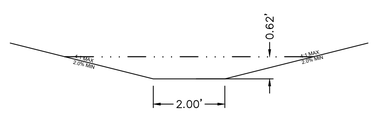
FOREBAY E

SCALE: 1" = 5'



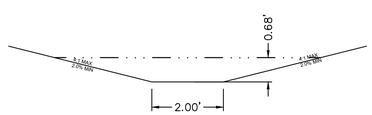
SWALE W,E CROSS SECTION

SCALE: 1" = 2'



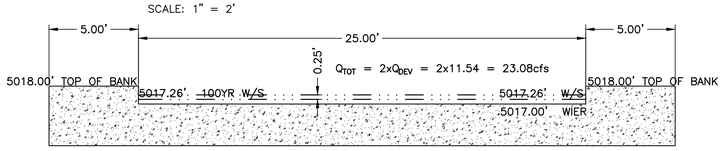
SWALE N CROSS SECTION

SCALE: 1" = 2'



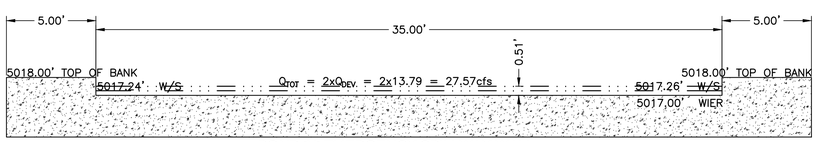
SWALE A-1 CROSS SECTION

SCALE: 1" = 2'



POND 'A-1' EMERGENCY SPILLWAY WALL

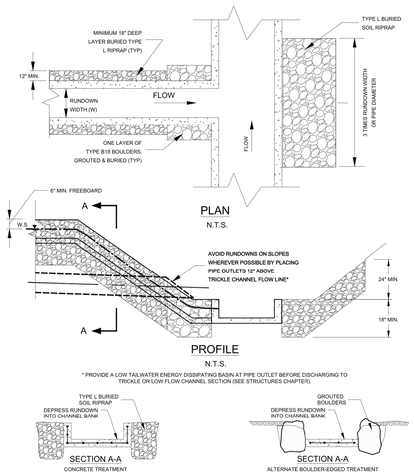
SCALE 1" = 4'



POND 'N' EMERGENCY SPILLWAY WALL

SCALE 1" = 4'

DRAINAGE CRITERIA MANUAL (V. 2) HYDRAULIC STRUCTURES



CHANNEL RUNDOWN DETAILS

N.T.S.

DETAILS BASED ON THOSEPROVIDEDTO DISTRICT BY CITY OF THORNTON, COLORADO

* Provide a low tailwater energy dissipating basin at end of pipe before discharging to trickle or low-flow channel section.

Figure HS-27—Rundown

Rev. 2008-04
Urban Drainage & Flood Control District

HS-105

BEDDING GRADATION

UDFCD Table MD-11

U.S. Standard Sieve Size	Percent Weight by Passing Square-Mesh Sieves: Type I CDOT Sect. 703.01	Type II CDOT Sect. 703.09 Class A
3 inches	-----	90-100
1 1/2 inches	-----	-----
3/4 inches	-----	20-90
3/8 inches	100	-----
#4	95-100	0-20
#16	45-80	-----
#50	10-30	-----
#100	2-10	-----
#200	0-2	0-3

RIPRAP BEDDING REQUIREMENTS

UDFCD Table MD-12 (Volume 1)

Riprap Designation	Minimum Bedding Thickness (inches): Fine-Grained Soils* Type I	Fine-Grained Soils* Type II	Coarse-Grained soils** Type II
VL (d_{50} =6 in), L (d_{50}=9 in)	4	4	6
M (d_{50} =12 in)	4	4	6
H (d_{50} =18 in)	4	6	8
VH (d_{50} =24 in)	4	6	8

* May substitute one 12-inch layer of type II bedding. The substitution of one layer of type II bedding shall not be permitted at drop structures. The use of a combination of filter fabric and Type II bedding at drop structures is acceptable.

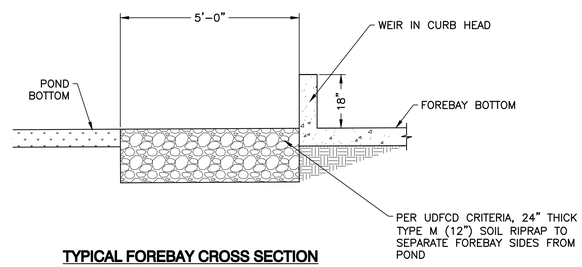
**Fifty percent or more by weight retained on the #40 sieve.

Classification & Gradation of Ordinary Riprap UDFCD Table MD-7

Riprap Designation	% Smaller Than Given Size by Weight	Intermediate Rock Dimensions (inches)	d50 (inches)*
Type VL	70–100 50–70 35–50 2–10	12 9 6 2	6**
Type L	70–100 50–70 35–50 2–10	15 12 9 3	9**
Type M	70–100 50–70 35–50 2–10	21 18 12 4	12**
Type H	70–100 50–70 35–50 2–10	30 24 18 6	18

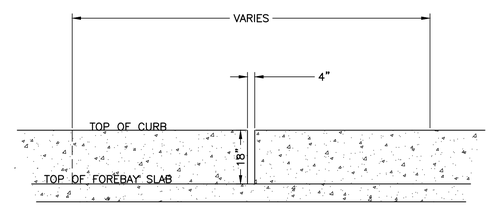
SOIL RIPRAP

70%-75% RIPRAP
25%-30% SOIL



TYPICAL FOREBAY CROSS SECTION

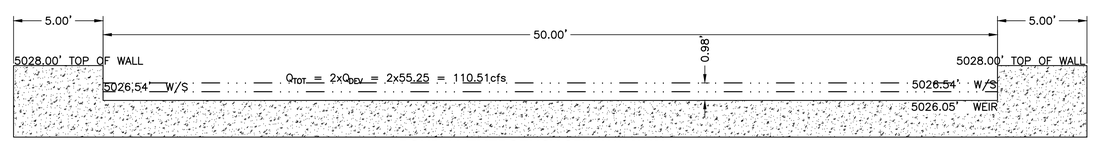
SCALE 1" = 2'



2.45" WEIR FOR RELEASE FROM FOREBAY PER UDFCD EQN. SO-13 SEE DRAINAGE REPORT APPENDIX FOR CALCULATIONS

TYPICAL FOREBAY WEIR

SCALE 1" = 2'



POND 'M' EMERGENCY SPILLWAY WALL

SCALE 1" = 4'

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4	ADD 2.498 AC REMAINING PARCEL A-1	09/22/21	CFC
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DRAINAGE DETAILS
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PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2020-0009 & Plan No. SPR2020-0002

4 MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS.

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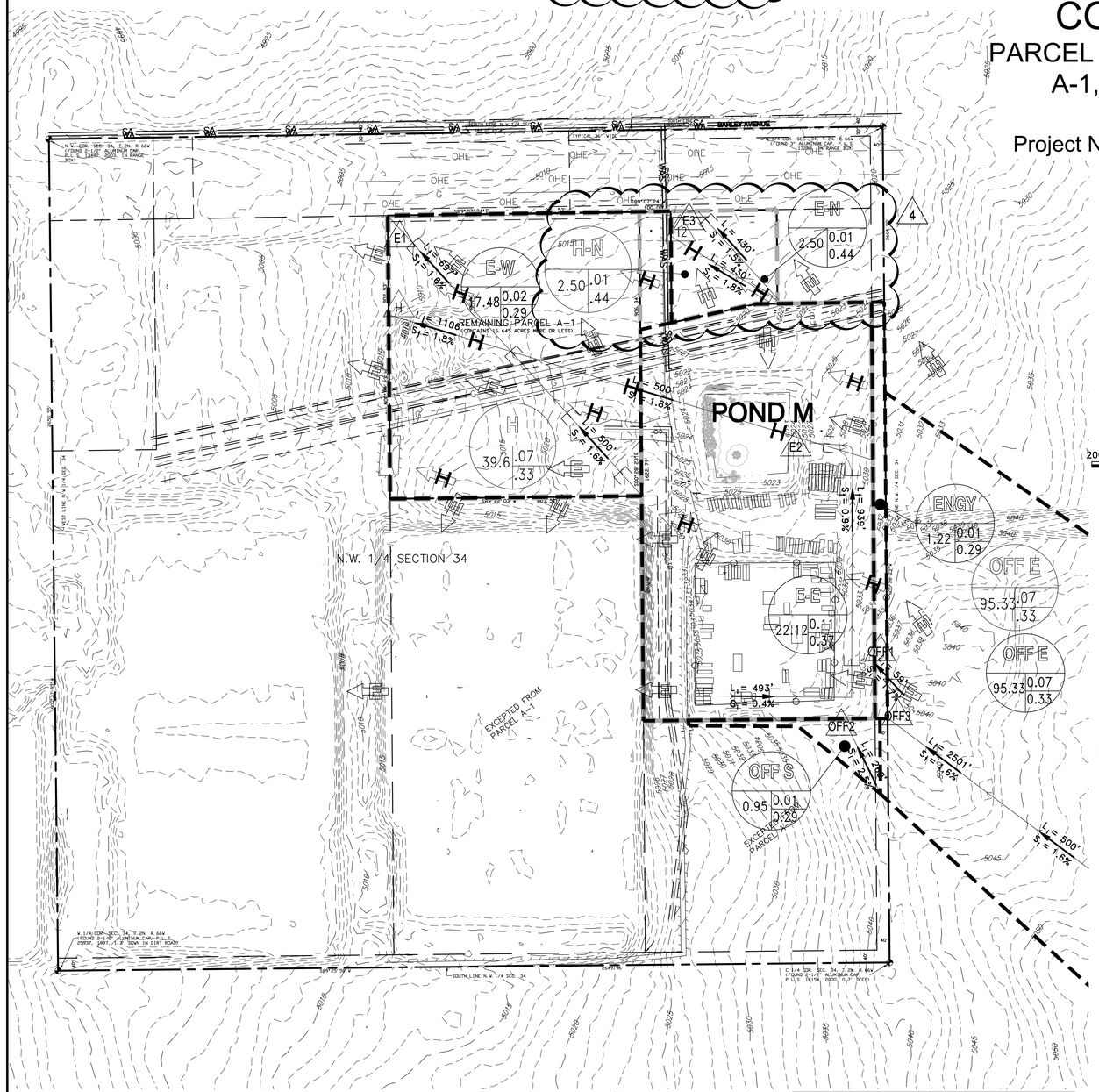

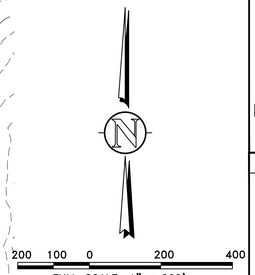

EXISTING DRAINAGE LEGEND

E — EXISTING SUB-BASIN DESIGNATION
1.12 .73 .83 — C10, C100, AREA IN ACRES
8 — DESIGN POINT
EXISTING BASIN
EXISTING DRAINAGE PATTERN

HISTORIC DRAINAGE LEGEND

H — HISTORIC SUB-BASIN DESIGNATION
1.12 .73 .83 — C10, C100, AREA IN ACRES
HISTORIC BASIN
HISTORIC DRAINAGE PATTERN

HISTORIC RUNOFF TABLE (Parcel B, Lot 1, Front Range Energy Sub)

BASIN	Impervious	C-YR	I	A	CIA(YR-historic)	Flow	DESIGN POINT
H							
C_5 (UDFCD 2017)	9.72	0.07	1.30	39.61	3.49	cfs	H1
C_{100}	9.72	0.33	3.08	39.61	40.52	cfs	
OFF E							
C_5 (UDFCD 2017)	2.00	0.01	1.00	95.33	0.95	cfs	OFF3
C_{100}	2.00	0.29	2.38	95.33	64.62	cfs	
H-N							
C_5	2.00	0.01	1.74	2.50	0.04	cfs	H2
C_{100}	2.00	0.44	4.14	2.50	4.55	cfs	

4

EXISTING RUNOFF TABLE (Parcel B, Lot 1, Front Range Energy Sub)

BASIN	Impervious	C-YR	I	A	CIA(YR-existing)	Flow	DESIGN POINT
EW							
C5 (UDFCD 2017)	2.77	0.02	1.58	17.48	0.43	cfs	E1
C_{100}	2.77	0.29	3.75	17.48	18.99	cfs	
EE							
C5 (UDFCD 2017)	15.22	0.11	1.49	22.12	3.60	cfs	E2
C_{100}	15.22	0.37	3.55	22.12	28.67	cfs	
ENGY							
C5 (UDFCD 2017)	2.00	0.01	2.70	1.22	0.03	cfs	OFF1
C_{100}	2.00	0.29	6.43	1.22	2.23	cfs	
OFF S							
C5 (UDFCD 2017)	2.00	0.01	1.99	0.95	0.02	cfs	OFF2
C_{100}	2.00	0.29	4.74	0.95	1.28	cfs	
OFF E							
C5 (UDFCD 2017)	10.00	0.07	1.18	95.33	8.01	cfs	OFF3
C_{100}	10.00	0.33	2.80	95.33	88.91	cfs	
EN							
C5 (UDFCD 2017)	2.00	0.01	1.83	2.50	0.05	cfs	E3
C_{100}	2.00	0.44	4.35	2.50	4.78	cfs	

4

L_i - INITIAL LENGTH
S_i - INTIAL SLOPE
L_t - TRAVEL LENGTH
S_t - TRAVEL SLOPE

$L_i = L_t$, $S_i = S_t$
$L_i = L_i$, $S_i = S_i$

* AVERAGE SLOPE INCLUDES ROOF SLOPE OF 8.33%

VICINITY MAP — SCALE 1' = 1,000'

SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

NOTES

THIS PLAN IS INTENDED AS THE HISTORIC & EXISTING DRAINAGE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.
ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

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SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
SETBACK
TO BE ABANDONED LOT LINE
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
SWALE
OHE — EXISTING OVERHEAD ELEC
EL — EXISTING ELECTRICAL LINE
ST — EXISTING STORM LINE
SA — EXISTING SANITARY LINE
W — EXISTING WATER LINE
GA — EXISTING GAS LINE
FO — EXISTING FIBER OPTIC LINE
T — EXISTING TELEPHONE LINE
SA — FUTURE SANITARY LINE
SS — FUTURE SANITARY SERVICE
ST — PROPOSED STORM LINE
WA — FUTURE WATER LINE
WAS — FUTURE WATER SERVICE
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HIST. & EX. DRAINAGE PLAN
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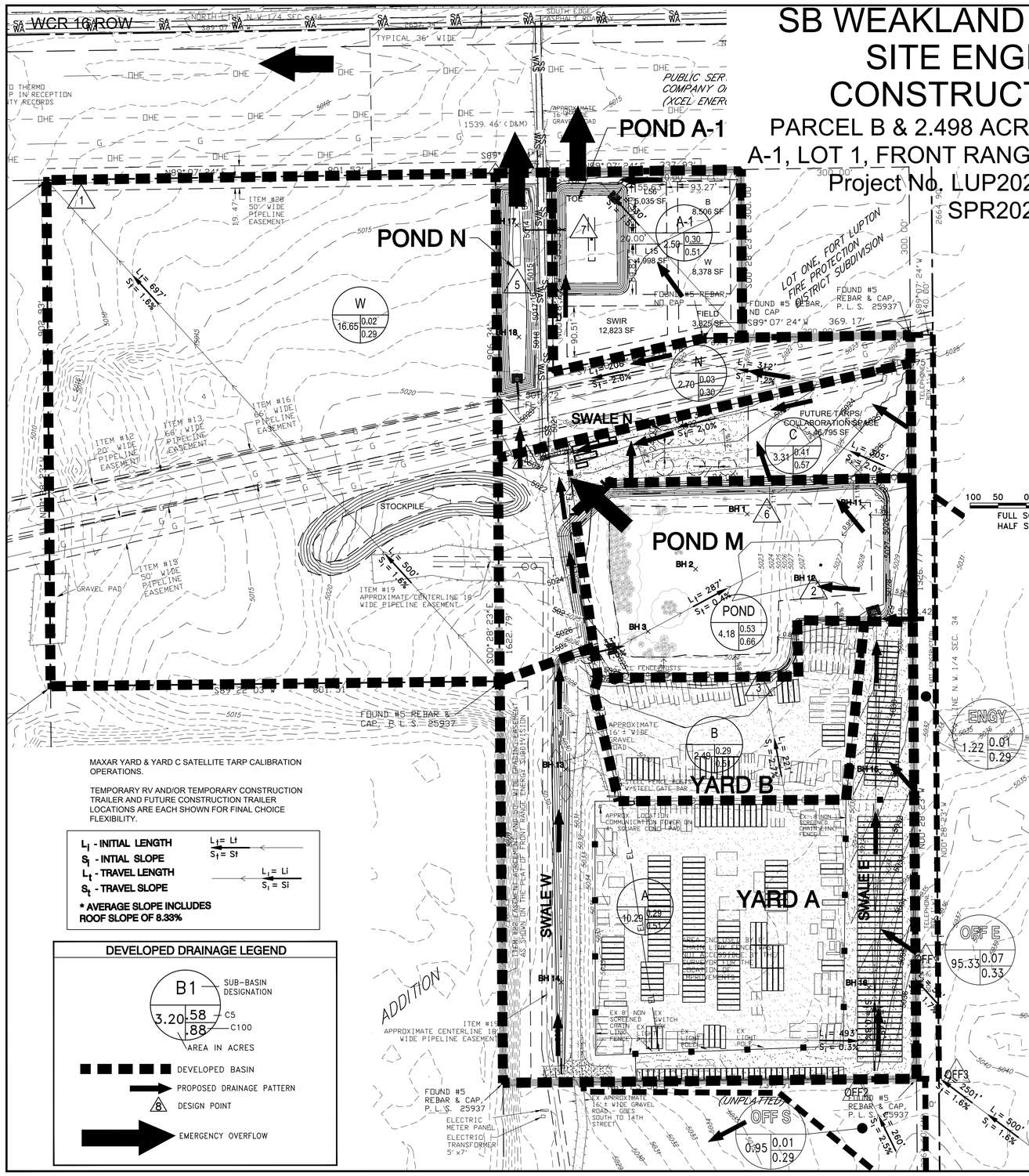
SITE ENGINEERING CONSTRUCTION PLANS

PARCEL B & 2.498 ACRE REMAINING PARCEL
A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008



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L_t - TRAVEL LENGTH
S_t - TRAVEL SLOPE

$L_I = L_t$, $S_I = S_t$

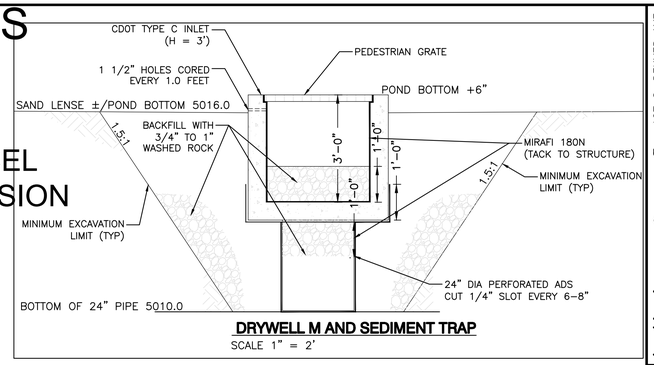
$L_t = L_i$, $S_t = S_i$

* AVERAGE SLOPE INCLUDES ROOF SLOPE OF 8.33%

DEVELOPED DRAINAGE LEGEND

B1 — SUB-BASIN DESIGNATION
3.20 — AREA IN ACRES
58 — C5
.88 — C100

DEVELOPED BASIN
PROPOSED DRAINAGE PATTERN
8 — DESIGN POINT
EMERGENCY OVERFLOW



DRYWELL M AND SEDIMENT TRAP
SCALE 1" = 2'

A DRYWELL WILL BE REQUIRED IF BOTTOM OF POND IS NOT IN NATIVE GRAVEL OR SAND.

POND M WATER SURFACE TABLE

DESCRIPTION	ELEVATION	VOLUME (cft)
1x 100yr 24hr VOLUME	5026.54	319,245
TOP OVERFLOW	5027.50	520,570

POND N WATER SURFACE TABLE

DESCRIPTION	ELEVATION	VOLUME (cft)
1x 100yr 24hr VOLUME	5017.91	100,292
TOP OVERFLOW	5018.00	101,243

POND A-1 WATER SURFACE TABLE

DESCRIPTION	ELEVATION	VOLUME (cft)
1x 100yr 24hr VOLUME	5016.40	41,712
TOP OVERFLOW	5017.00	47,856

DEVELOPED RUNOFF TABLE (Parcel B, Lot 1, Front Range Energy Sub)

BASIN	Impervious	C-YR	I	A	CIA(YR-DEVELOPED)	cfs	DESIGN POINT
W							
C5 (UDFCD 2017)	2.81	0.02	1.58	16.65	0.42	cfs	1
C_{100}	2.81	0.29	3.75	16.65	18.10	cfs	1
A							
C_5	39.81	0.29	1.72	10.29	5.20	cfs	2
C_{100}	39.81	0.51	4.09	10.29	21.65	cfs	2
B							
C_5	39.56	0.29	2.46	2.49	1.78	cfs	3
C_{100}	39.56	0.51	5.85	2.49	7.45	cfs	3
C							
C_5	38.75	0.29	2.14	3.30	2.02	cfs	4
C_{100}	38.75	0.51	5.10	3.30	8.55	cfs	4
N							
C_5	4.53	0.03	1.80	2.70	0.14	cfs	5
C_{100}	4.53	0.30	4.29	2.70	3.48	cfs	5
POND							
C_5	62.17	0.53	2.91	4.18	6.46	cfs	6
C_{100}	62.17	0.66	6.92	4.18	18.97	cfs	6
ENGY							
C_5	2.00	0.01	2.70	1.22	0.03	cfs	OFF1
C_{100}	2.00	0.29	6.43	1.22	2.23	cfs	OFF1
OFF S							
C_5	2.00	0.01	1.99	0.95	0.02	cfs	OFF2
C_{100}	2.00	0.29	4.74	0.95	1.28	cfs	OFF2
OFF E							
C_5	10.00	0.07	1.18	95.33	8.01	cfs	OFF3
C_{100}	10.00	0.33	2.80	95.33	88.91	cfs	OFF3
A-1							
C_5	39.32	0.30	2.05	2.50	1.54	cfs	7
C_{100}	39.32	0.51	4.89	2.50	6.25	cfs	7

NOTES

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RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
RD ROOF DRAIN
EXISTING GRAVEL
EXISTING CONC
EXISTING ASPHALT
PROPOSED GRAVEL
PROPOSED CONC
PROPOSED ASPHALT
BH 1x BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
SETBACK
TO BE ABANDONED LOT LINE
EXISTING BUILDING, CURB
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Sustainable Traffic Solutions
Joseph L. Henderson PE, PTOE
Traffic Engineer / Principal

October 25, 2019

Mr. Chadwin F. Cox, PE
Western Engineering Consultants
127 South Denver Avenue
Fort Lupton, CO 80735

RE: Trip Generation Estimate for the SB Investments Development in Fort Lupton

Dear Chad,

This letter contains a trip generation estimate for the SB Investments development at 15450 Weld County Road 16 in Fort Lupton. The property is used to park semi-tractor trailers and for outside storage. Figure 1 contains a vicinity map that shows the location of the site on the south side of WCR 16 and east of WCR 31. A site plan is contained in Figure 2 that shows the site access on WCR 16.

The trip generation for the development was estimated using rates that are contained in the Institute of Transportation Engineers (ITE) Trip Generation[1] manual. The development is expected to generate approximately 16 trips on an average weekday, two trips during the morning peak hour, and three trips during the evening peak hour (see Table 1).

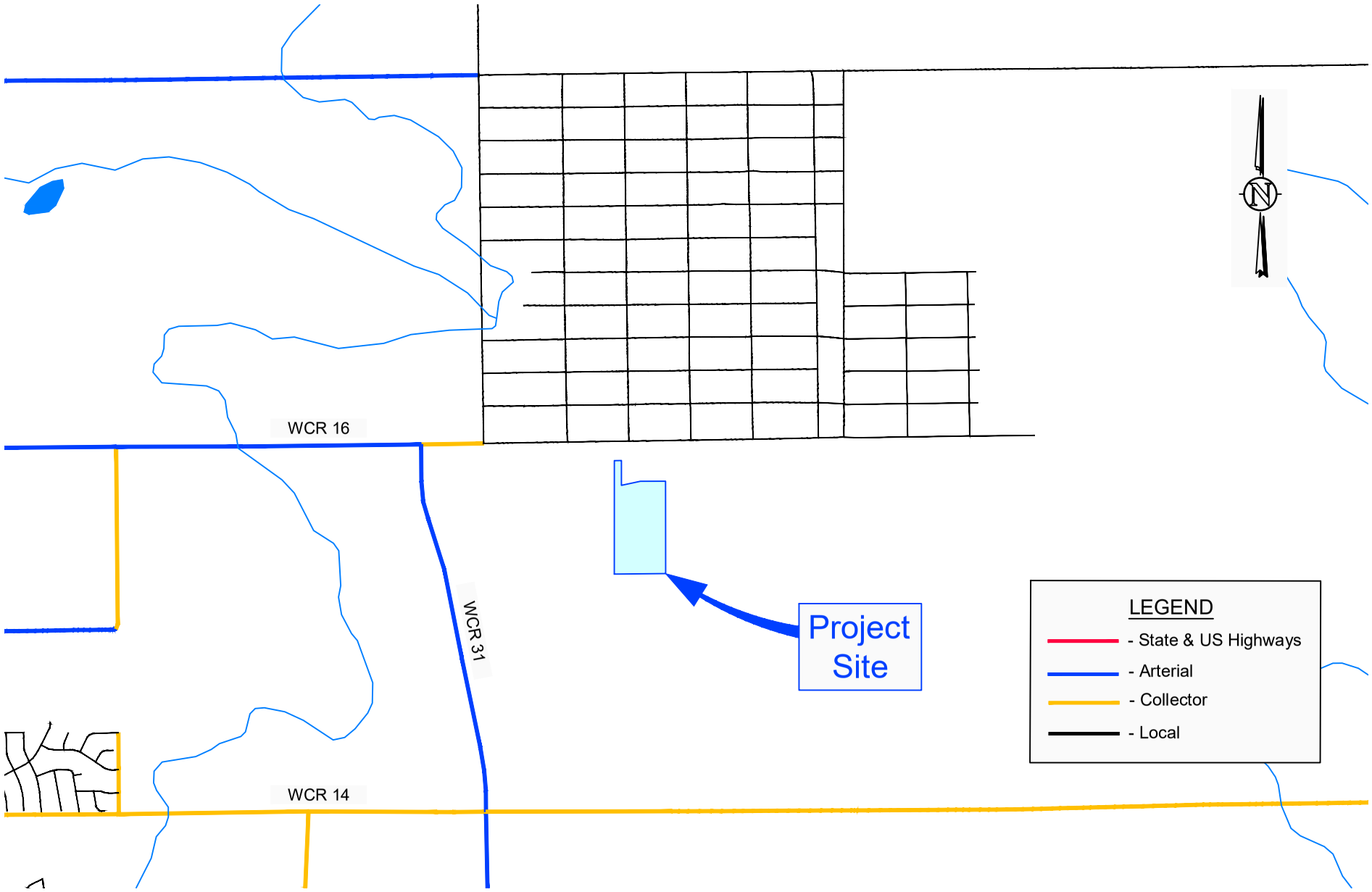
Feel free to contact me to discuss the contents of this report.

Sincerely,

Joseph L. Henderson, PE, PTOE
Project Manager / Principal
SB Investments Trip Generation Letter

[1] Trip Generation, 10th Edition. Institute of Transportation Engineers. September 2017.

823 West 124th Drive Westminster, Colorado 80234 303.589.6875 joe@sustainabletrafficsolutions.com



SB Investments Trip Generation Letter
VICINITY MAP

Scale	1" = 2,000'	Date	October 25, 2019	Drawn by	JLH	Job #	Western Engineering	Figure	1

SB Investments Trip Generation Letter

SITE PLAN

Scale	NTS	Date	October 25, 2019	Drawn by	JLH	Job #	Western Engineering	Figure	2

Table 1. Trip Generation Estimate

Land Use [2]	ITE Code [1]	Size	Unit	Average Daily Trips				Morning Peak Hour Trips				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
General Light Industrial	110	5	Employees	3.05	16	8	8	0.52	2	2	0	0.49	3	1	2
Total	---	5	---	---	16	8	8	---	2	2	0	---	3	1	2

Notes:

1. Trip generation estimates are based on rates contained in Trip Generation, 10th Edition (Institute of Transportation Engineers, September 2017).

2. The land use was provided by Western Engineering Consultants.

TECHNICAL MANUAL

REMOTE SENSOR
GROUND CALIBRATION PANEL
Type 822 - 20 Meter Two Level Gray Scale
Reflectivity - 3% & 48%

1.0 INTRODUCTION

The deployment of deterministic ground targets of various types and designs has, for many years, been a means of assessing the performance of image forming systems that operate over a considerable stand-off range. The personnel of Group VIII Technology, Inc., have been designing and constructing such test articles and calibration arrays for more than 45 years and have developed paints, coatings and coated fabrics that are utilized to manufacture these fixed and mobile target arrays for image assessment purposes. This Technical Manual discusses the attributes and general procedures we recommend be employed when utilizing portable image assessment targets manufactured using coated fabric material produced by Group VIII. The Type 822 fabric is a moderate weight woven polyester substrate that has excellent long-term durability when deployed under a wide range of field conditions. The coated Type 822 fabric provides a directionally uniform, portable, large area reflective surface that permits assessment of the performance of overhead reconnaissance and remote sensing systems, and other image forming sensors. The target material has the mechanical strength and durability to be deployed under field conditions and sustain the physical dynamics of moderate winds and precipitation.

Target panels manufactured using these fabrics have black brass grommets inserted in the perimeter hem to permit the panel to be secured to the ground using metal target stakes or spikes. These grommets are on common centers so that multiple panels may be deployed with the edge hem overlapped to form a complete target display (gray scale or resolution array). Each 20 meter x 20 meter target panel is comprised of two 10 meter x 20 meter subpanels to ease deployability and handling under windy conditions. The two subpanels are deployed with the common 20 meter long hems overlapped to form the continuous 20 meter square reflecting surface. The 3% and 48% panels may also be deployed with hems overlapped to form an edge target for assessment of the spatial frequency response of the imaging system.

This manual provides guidance regarding the handling, maintenance and safety issues that should be observed when using these calibration targets. The final section of this document provides the as-coated spectral reflectivity calibration of the two levels of band averaged reflectivity comprising the two 20 x 20 meter calibration panels fabricated for DigitalGlobe, Inc., Longmont, Colorado.

2.0 OPERATIONAL CONSIDERATIONS

2.1 Fading or Changes In Reflectance

All target panels, when exposed to sunlight and weathering, tend to change reflectance with time and use. Target areas higher than 12% average reflectance tend to decrease, and areas lower than 12% tend to increase. The rate of change, in either case, is dependent upon sunlight exposure and the type of dirt and dust which may contaminate the surface. The coatings utilized on the Type 822 targets contain UV absorbers and light stabilizers to mitigate changes in reflectivity over time due to exposure to solar radiation. They have been used to coat target fabrics for over 30 years and some of these targets are still in use.

Additional solar exposure tolerance tests have been conducted upon the coated Type 822 target fabric. These solar exposure tests were conducted in accordance with MIL-STD 810F, Method 505.4., Procedure II. A solar exposure test chamber was used to control the irradiance output of a Xenon source to provide an integrated total irradiance of $1120W/M^2$ upon the fabrics across the wavelength domain of 320nm to 1000nm. Deionized water spray was programmed to occur during the dark portion of the 24 hour cycle. During this time the test chamber was programmed to spray a fine mist of deionized water on the test fabrics for five seconds during each minute of the programmed dark step which was four hours in duration. The solar exposure test consisted of a 24 hour cycle, run in ten sequential cycles for a total exposure of 240 hours. The change in reflectivity of the target materials was less than $\pm 0.025R_0$, where R_0 was the initial reflectivity of the coated fabric before the test.

2.2 Folding And Storing

When storing the ground calibration targets, re-fold in the same manner as each was shipped. Keep the coated surface interior to the folds so that the reflective surface is protected. This simple procedure will extend the service life of the target.

Even though preservatives are incorporated into the target coatings, the target fabric may be attacked by certain mildew and molds which may use the polyester or acrylic components for substrates on which to grow. Thus, storage in a dry location is advised, whenever possible, to avoid the growth of such organisms.

2.3 Display Considerations

2.3.1 Display Technique

Blackened brass grommets have been inserted into the perimeter of each of the target panels. The grommet positions are on common centers so that panel edges may be overlapped to form a gray scale array. These grommets will accept steel stakes to secure the target to the ground, and it is recommended that one stake be placed in each grommet position when the target is deployed. These steel stakes (Type R10) have been furnished to DigitalGlobe in adequate quantity for a stake to be placed in each grommet location.

The selected target deployment area should be free of rocks and debris that can produce irregularities in the target surface. Irregularities in the surface produce shadows which reduce the apparent reflectivity of the surface when viewed or imaged from altitude. Deploy the target sufficiently far from elevated structures that could cast a shadow on the target panels as the solar elevation angle and azimuth changes throughout the image acquisition period. If deploying in crop or pastureland, be advised that the lower reflectivity level panels (i.e. 3%) will become very warm under direct sunlight and high ambient air temperatures, and the elevated temperature beneath the panel can wilt or kill vegetation over which it is deployed.

The recommended procedure for deploying large target panels is as follows. A four person deployment crew is recommended.

(1) Establish an azimuth line using a compass and a stringline at least 30 meters long. Stake one end of the stringline to the ground using a R10 target stake and pull the stringline taut when aligned with the compass sighted azimuth (compensated for the local magnetic declination) and stake the far end of the line to the ground.

(2) The stringline provides a reference to which the subpanels will be aligned. If the panels are to be deployed to form an edge target then the stringline will be used to ensure the edge transition is straight and correctly oriented relative to the sensor acquisition geometry. If the targets are deployed as individual gray scale panels, the stringline will ensure alignment and orientation of the two subpanels comprising each 20 meter x 20 meter target.

(3) Each target subpanel (10 meter x 20 meter) is rolled and individually packed in its own target transport bag which has been stenciled with the reflectance level and panel position (left or right). Place the bag containing the left panel to the left and approximately 10 meters away from the bottom end (compass end) of the stringline. Place the bag containing the right hand panel next to and to the right of the bottom end (compass end) of the stringline.

(4) Open the bags and remove each panel. There is an identifying stencil on the back of each panel. Once deployment has been accomplished, this stencil will be located at the upper left-hand corner of the deployed panel.

(5) Unroll the 20 meter length of each panel parallel to the string line. This is a two person effort. The left panel will be 10 meters away from the stringline and the right panel next to the stringline.

(6) Locate the four corner grommets on the left panel and insert a stake through each grommet to be used as a handle for opening the target subpanel. This is a four person effort. Pull the target panel open using the stakes as handles. Make certain the reflective surface is facing upwards. Note: DO NOT insert fingers through the target grommets as wind can billow and whip the target and significant injury to fingers can occur.

(7) Pull the open target to the stringline. Individuals at opposite ends of the 20 meter length can pump the corners up and down to introduce air beneath the panel which makes it much easier to move across the ground.

(8) Slide the 10cm (4") hem of the left panel under the stringline, tension the panel under the stringline and drive a temporary stake through each end grommets. If windy, it may be necessary to drive stakes through other perimeter grommets to keep the panel from flipping.

(9) Unroll and open the right hand target subpanel with the stencil at the upper left corner. Slide the 2" narrow hem under the stringline and on top of the 4" hem of the left hand panel. (See Figure 1).

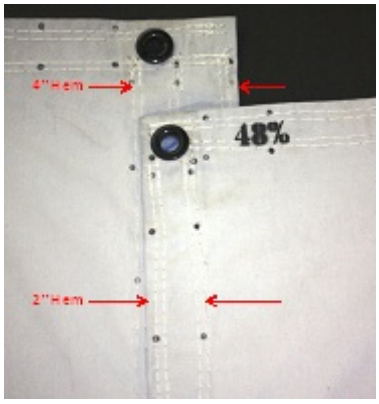


Figure 1: Two inch wide panel hem placed over the four inch wide hem.

(10) Remove one of the temporary end stakes, overlay the two end corner grommets and drive a stake through both grommets into the ground. It will be necessary to walk upon the target reflecting surface to do this. Wear protective shoe covers or stocking feet when walking on the target.

(11) Proceed to tension and stake the remaining grommet pairs in the common overlaid hem, keeping the hem aligned with the stringline. Use the stakes as levers to tension the target in the stringline direction.

(12) Extend the remainder of the two target panels and stake the outside corner grommets first. Use the stakes as levels to tension the panels. Adjust the panels to lay as flat as possible and free of stretch lines. Generally, the 20 meter long outer hems of the panels are staked first, followed by the shorter perimeter hems.

(13) Remove the stringline.

(14) It may be necessary to "walk the target" to push entrapped air from beneath the panels. It will be necessary to remove certain stakes to allow entrapped air to escape at the panel edges. Wear protective shoe covers or stocking feet when walking on the target. If the target billows under sustained winds, the downwind stakes must be removed to allow air to escape. A billowing target is an airfoil and will lift and pull stakes from the ground and potentially damaging the target or cause injury to personnel.

(15) When retrieving the target, first pull the perimeter stakes leaving the "stringline edge" staked. Fold the long edge of each panel to the stringline. The reflecting surface must be to the inside of the folded target. Continue to fold the panel along the long edge until the bundle is approximately 1 to 2 meters wide x 20 meters long. Then, using two people, pick up the end of the folded target and carry it to the stenciled end. Roll the target bundle towards the stenciled end, so that the stencil is readable when the bundle is complete.

(16) If significant winds are encountered when retrieving a large target panel, then modify the procedures in (15) above. Leave the upwind stakes in-place and fold the target into the wind. Keep the leading free edge of the target low to the ground, so the full size cross-section of the target cannot become a wind loaded sail. Use the stakes, inserted through the grommets, as handles. DO NOT put fingers through the grommets.

2.3.2 Washing

It is recommended that the target panels be washed when they appear dirty, and it is likely that the reflectivity has changed because of dirt build-up. Washing of these target panels may be accomplished by spraying the target with clean tap water from a hose and applying a mild detergent. A soft bristle push broom may be utilized to gently move the soap solution across the surface of the target to remove embedded dirt, if necessary.

The recommended washing procedure is to unfold the target, face-up (reflective surface facing upwards) on a clean concrete surface during a calm, sunny day. The target surface should first be sprayed with clean water from a hose. The target surface may then be sprayed with a diluted detergent or soap solution (Ivory dish washing liquid detergent) and the target surface cleaned. The target must then be rinsed with clean water from the hose and pulled to a clean, dry area away from the wet wash area and allowed to air-dry.

When the target is dry on both sides (bottom and top), roll up or fold the panel in a display ready bundle. Note that the higher reflectivity panels will dry more slowly than the darker panels, therefore, be certain to check the back of the target to ensure it has dried before folding the panel for storage. Do not store a wet or damp target. Make certain target panels are dry before folding or mildew may occur even though preservatives and biocides have been added to the coatings.

2.3.3 Wind Hazard Condition

Wind is frequently troublesome particularly when individual panel dimensions are in excess of three meters per side. Particular attention to conditions and due caution should be observed when using targets near active runways or near aircraft, so that wind, jet blast and vortexes from active aircraft do not release or tear the target from the ground and generate a visibility and physical hazard for aircraft, or create foreign object damage (FOD).

Deploying and re-folding large target panels under windy conditions (in excess of 10 kts) requires a crew size sufficient to control the panel. Although two people can deploy and retrieve target panels up to 6 meters in size under calm conditions, if light or moderate winds are encountered with 10 meter x 20 meter panels we recommend at least a four person crew be employed to ensure that damage does not occur to the panel, or that field personnel are not injured. If wind is billowing the target and the target is in jeopardy of tearing at the grommet lines, entrapped air must be released from under the panel to minimize the lift resulting from the airfoil shape of the billow. Entrapped air can be released by removing the downwind target stakes from the grommets, allowing the downwind edge to flap freely.

Field personnel must not insert fingers through target grommets when deploying or retrieving target panels. Wind loads on the panel can tear a panel from the strongest grasp and can break a finger if it is inserted through a grommet hole.

2.3.4 Field Crew Safety

Do not insert fingers through grommet holes when deploying or retrieving target panels.

Wear safety glasses when hammering stakes into hard or frozen terrain. Hardened steel target holddown stakes have shattered under cold weather conditions and severe eye injury has occurred.

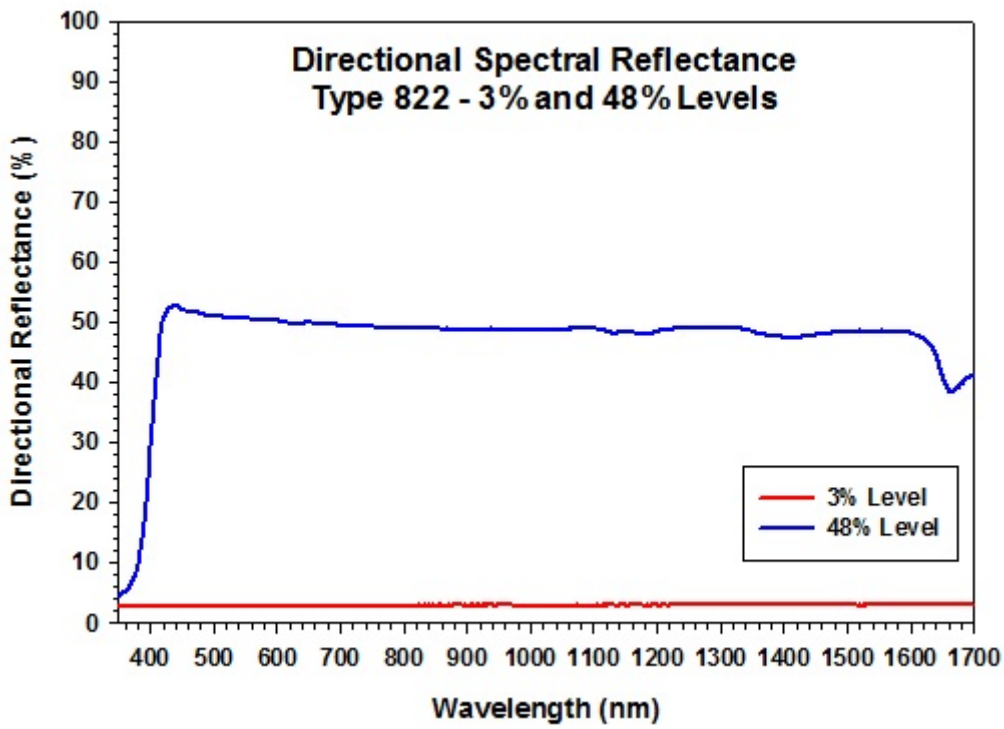
Be alert and use caution when working near deployed targets under windy conditions. Under moderate wind conditions a billowing target can pull perimeter holddown stakes from the ground and throw them some distance with considerable velocity.

3.0 REFLECTIVITY DATA

Directional spectral reflectivity (DSR) data were collected from the specific lots of coated material used to fabricate the two Type 822- 20 meter calibration targets for DigitalGlobe, Inc. These reflectance data were collected using an ASD field spectrophotometer with a directional sample probe that had a field-of-view of 18°. Each scan was referenced to a calibrated Spectralon® (registered trademark of Labsphere, Inc.) reflectance standard. Measurements were acquired at a standoff distance of 50cm, so that the field of regard on the fabric was approximately 16 cm diameter. The measurement geometry was 5°xazi plus 5° along solar azimuth for a compound angle of 7.1° from NADIR. Measurements were acquired at local solar noon in Provo, Utah at a solar elevation angle of 72° and a solar azimuth of 180°True (± 2°).

The resulting averaged DSR curve is provided at the end of this document. DSR data and and averages will vary when the target is measured under different ambient atmospheric and solar irradiance conditions and at different measurement geometries. It is recommended for highest system calibration accuracy, the as-deployed reflectivity of the panel should be measured at or near the time of sensor acquisition along the acquisition vector. These ground truth measurements may be acquired from extra coated fabric which has been furnished with the 20 meter target panels.

Band average reflectivity values of the calibration target were calculated across three spectral regions. These three band averages are represented as $\mathbf{R}_{420\text{-}700}$, $\mathbf{R}_{420\text{-}1050}$, and $\mathbf{R}_{900\text{-}1700}$ which correspond to the spectral sensitivity or bandpass limits of the visible region of the spectrum, the full spectral sensitivity domain of an unfiltered silicon detector, and an InGaAs detector, respectively. These band averages are tabulated below, accompanying the diffuse hemispherical spectral reflectivity plot. This plot shows that the reflective surface was devoid of spectral content from 420nm to 1640nm and was neutral (gray) across this spectral domain. The lower wavelength limit of 420nm is that spectral point where the white pigment (titanium dioxide) in the target coating begins to absorb strongly. The reflectivity manufacturing tolerance is 5% of the specified band average reflectivity level from 420 to 1050nm: $R_{tolerance} = R_{420\text{-}1050} \pm 0.05 \bullet R_{420\text{-}1050}$.



Reflectance Level	Band Average Directional Reflectance (%)		
	420-700nm	420-1050nm	900-1700nm
3%	2.9	2.9	3.0
48%	50.7	49.7	47.8

MAXAR

August 11, 2021

Fort Lupton Planning Department
130 S. McKinley Ave.
Fort Lupton, CO 80621

To whom it may concern,

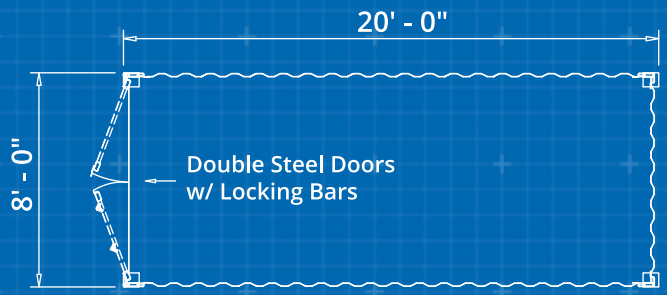
Regarding the city's request for technical data and standard operating procedures for Maxar's calibration targets in the form of large specialized tarps to be deployed at 15460 County Road 16, Fort Lupton, Colorado—Maxar Technologies Inc. plans to use said targets for radiometric calibration of their spaceborne Earth observing satellites. In doing so, Maxar's policy is to avoid deployment of these tarps when wind gusts are forecasted to be greater than 30 mph for that day.

Sincerely,

Dr. M. Kuester
Absolute Radiometric Calibration
Maxar Technologies Inc.

20' x 8' STORAGE CONTAINER

In addition to your storage solution, we can provide additional products and services that complete your space- creating a more productive, comfortable, and safe work environment.



CUSTOMIZATION

Shelf brackets

Pipe racks

Secure locking systems

Dimensions

20' Long

8' Wide

Features

High security steel

Ground level entry

Doors

Double steel doors with locking bar at one or both ends

Other

Immediate availability with local service

Short or long term on-site storage

** Photos are representational; actual products vary. Additional floor plans and specifications may vary from those shown and are subject to in-stock availability*

SALES CONTRACT

Accounts Receivable:
4646 East Van Buren
Phoenix, AZ 85008
Phone: (800) 456-1751

Bill To Account Number: 10472279	**Deliver To:**	**Date:**	06/10/2021
MAXAR TECHNOLOGIES INC. 1300 W 120TH AVE WESTMINSTER CO 80234-2726	MAXAR TECHNOLOGIES INC. 1300 W 120TH AVE DENVER CO 80234-2726	**Delivery Date:**	07/14/2021
		PO #:	TBD
		Contract #:	**1001574570**

Terms: Net 10 Days Sales Person: Sean Thomas

Product Description	**Qty**	**Amount**
20WS 20' CONTAINER	1	$ 4133.62
MMI#:_____ ISO#:_____		
	Total Sales Charges	$ 4133.62
	Total Misc. Charges	$ 0.00
	Tax	$ 355.49
	Total	$ 4489.11

DELIVERY INFORMATION

Door Location: TBD Delivery Time: Call First: Call First
Instructions:WE ARE SELLING A WS BOX. SERIAL NUMBER OWL-26594. THIS IS A PURCHASE.
XStreet1: 120th Ave XStreet2:
Site Contact:Al Mazarina Phone: (303) 684-4331 Cell:

DRIVER SECTION

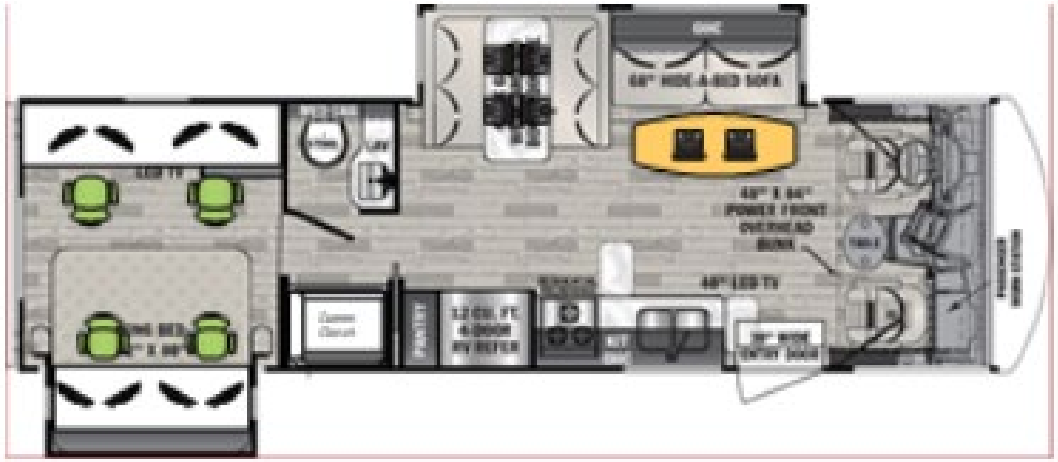
Condition of Unit:_____
Driver Notes:_____
Additional Charges:_____
Money Collected: Amount $_____ Type of Money: CASH [ ] CHECK [ ] OTHER [ ]
Was Site Access Agreement Signed: YES/NO
Driver Name:_____ Delivery Date:_____
Unit Damaged Upon Delivery: YES/NO Description:_____

The person signing for the Customer represents and warrants the he(she) has the authority to execute this contract.

_____	_____	_____
Customer Signature Mobile Mini, Inc.	Name/Title	Signature Date
_____	_____	_____
By	Title	Date

Customer hereby purchases from MMI,all of MMI's right,title and interest in the units. Customer agrees that the unit and other items delivered to customer are delivered "as is, where is" with all faults and defects. MMI hereby expressly disclaims, and customer hereby walves and releases, all obligations and liabilities of MMI, and rights,claims and remediesf contractualliens on Customer's property contained in of customer against MMI,express or implied,with respect to any faultor defect in the units or other item delivered persuant to hereto,including,but not limited to,any implied warranty of merchantibility or fitness for a particular purpose,performance,quality,design,condition or compliance with law. There are no warranties which extend beyond the description on the face hereof.This warranty is not transferable by Customer.Please visit www.mobilemini.com/customercare for helpful hints,safety tips,FAQ's and a copy of the Contract Terms & Conditions. You hereby request and invite Mobile Mini to enter the area where units will be placed and warrant you have surveyed and inspected the location site and concluded it is appropriate for our trucks and Units. If no one is at the deliverysite,you request that Mobile Mini deliver Units without supervision and hereby release and hold Mobile Mini harmless from all claims for damages,costs,or liabilities,to roadways,grounds,buildings, and personal property in or around the Unit's location.

MAXAR- PROPOSED 40’ CLASS A RV



COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: **COR409324**

This Certification to Discharge specifically authorizes:

Owner SB Weakland Investments, LLC
Operator SB Weakland Investments, LLC
to discharge stormwater from the facility identified as

SB WEAKLAND INVESTMENTS-15450 CR 16

To the waters of the State of Colorado, including, but not limited to:

South Platte River

Facility Activity :	other Industrial Equipment- Outside Storage
Disturbed Acres:	11.00 acres
Facility Located at:	15450 County Road 16 Fort Lupton CO 90621 Weld County Latitude 40.098 Longitude -104.765
Specific Information (if applicable):	

Certification is issued and effective: 6/11/2020
Expiration date of general permit: 3/31/2024

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Meg Parish, Section Manager
Permits Section
Water Quality Control Division

November 3, 2021

Fort Lupton Planning Department
130 S. McKinley Avenue
Fort Lupton, CO 80621
www.fortlupton.org

Re: SB Weakland Amended Site Plan Project No. LUP2021-0025; & Plan No. SPR2021-0008

Dear Mr. Hodges and Ms. Knutson:

On behalf of United Power, Inc., thank you for inviting us to review and comment on the SB Weakland Amended Site Plan. After review of the information, United Power has no concerns or objection to the proposed Plan Project No. LUP2021-0025; & Plan No. SPR2021-0008; contingent upon United Power's ability to maintain all existing rights, facilities/equipment, and existing easements. This request should not hinder our ability for future expansion, including all present and any future accommodations for electrical distribution.

Please note, the property owner/developer/contractor must submit an application along with CAD data for new electric service via https://www.unitedpower.com/construction. United Power would like to work with these persons early in the construction process on getting an electric design prepared so that we can request any additional easements needed and hopefully have those easements dedicated on the plat rather than obtaining separate document(s). Obtaining easements via a separate document can be time consuming and could cause delays.

As a Reminder: No permanent structures are acceptable within the dry utility easement(s); such as, window wells, wing walls, retaining walls, basement walls, roof overhang, anything affixed to the house like decks, etc. United Power considers any structure that impedes the access, maintenance, and safety of our facilities a permanent structure. No exceptions will be allowed, and any encroachments could result in penalties.

Service will be provided according to the rules, regulations, and policies in effect by United Power at the time service is requested. We look forward to safely and efficiently providing reliable electric power and outstanding service.

Thank you,

Amber Mendoza

Amber Mendoza, RWA
ROW Agent
720.249.9315 | platreferral@unitedpower.com

Maria Lancto

From: Jose Gonzalez <jgonzalez@procodeinc.net>
Sent: Friday, November 5, 2021 11:12 AM
To: Maria Lancto
Cc: Jonathan Gesick
Subject: RE: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Hi Maria,

I have reviewed the emails and comments from Jon and Kelly.

I think we should ask for the following on the building permit:

1-Code Analysis stamped by architect, specifying use, occupant load, hours, seasons of operation.
2-Accesibility compliance details.
3-Structure design information, anchorage details showing compliance with local design requirements, and state insignia.
4-Electrical one-line details.
5- Copy of agreement with sanitation company for potable and black/gray water service

The use of the RV cannot be regulated by building codes as it is considered a vehicle. Connection to power source should be via plug-in ready but not hard wired.

I am thinking the conditional use will be regulated via Special Use Permit.

Jon,

Do you have anything else to add? Not sure if the tarps fall under the scope of the IBC.

Thank you

From: Maria Lancto <MLancto@Fortluptonco.gov>
Sent: Thursday, November 4, 2021 4:45 PM
To: Jose Gonzalez <jgonzalez@procodeinc.net>
Subject: RE: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

No worries! At the earliest I will send out the planning commission packet next Thursday, but usually it's not ready until Friday.

Maria Lancto
Planner I
130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720.466.6107
Cell: 303.718.0172

From: Jose Gonzalez <jgonzalez@procodeinc.net>
Sent: Thursday, November 4, 2021 4:44 PM
To: Maria Lancto <MLancto@Fortluptonco.gov>
Subject: Re: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Oops sorry Maria. I spaced it. I will work on it. Thanks for the reminder!

Get Outlook for iOS

From: Maria Lancto <MLancto@Fortluptonco.gov>
Sent: Thursday, November 4, 2021 4:36:02 PM
To: Jose Gonzalez <jgonzalez@procodeinc.net>
Subject: RE: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Hi Jose,

I will be working on the packet for Planning Commission next week for this project. If you are able to let me know what concerns you have, I would be happy to include those as a condition of approval on the Special Use Permit.

Thanks,

Maria Lancto
Planner I
130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720.466.6107
Cell: 303.718.0172

From: Maria Lancto
Sent: Thursday, October 28, 2021 4:32 PM
To: 'Jose Gonzalez' <jgonzalez@procodeinc.net>
Subject: FW: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Hi Jose,

Below is the link to application for the S. B. Weakland Amended Site Plan that we discussed this morning. I am also attaching a few email chains pertaining to this project to provide you with some background. The first includes some questions from the applicant that Jonathan answered. The second email chain includes some discussion on the project and requirements that Kelly had been thinking about for this project.

For your background, I think Building and Public Works were primarily concerned with utilities being brought to the site and the use of an office trailer or RV as a permanent office.

Let me know what other information would be helpful.
Have a good night,

Maria Lancto
Planner I

130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720.466.6107
Cell: 303.718.0172

From: Magaly Morales-Tejada <MMTejada@Fortluptonco.gov>
Sent: Wednesday, October 13, 2021 2:46 PM
Cc: Maria Lancto <MLancto@Fortluptonco.gov>; Todd Hodges <thodges@Fortluptonco.gov>; Alyssa Knutson <AKnutson@Fortluptonco.gov>
Subject: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Good Afternoon,

The documentation located at the following link is submitted to you for review and recommendation for an amended site plan being reviewed by the City of Fort Lupton. The application documents can be reviewed at the following link: https://www.fortlupton.org/DocumentCenter/Index/621.

Any comments you consider relevant to this request would be appreciated. Please reply by **November 3, 2021**, so that we may give full consideration to your recommendation. Any response not received before or on this date may be deemed to be a favorable response to the Planning & Building Department.

The Public Hearings for this matter are scheduled for:

- Planning Commission: Thursday, November 18, 2021 at 6:00 PM; and
- City Council: Tuesday, December 7, 2021 at 7:00 PM

Your time in this matter is greatly appreciated!

Magaly Morales-Tejada
Planning assistant
130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720-466-6111

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This email was sent outside of your organization

Please be cautious
This email was sent outside of your organization

Magaly Morales-Tejada

From: Taw Tamlin <ttamlin@ftluptonfire.com>
Sent: Friday, October 22, 2021 11:01 AM
To: Magaly Morales-Tejada
Cc: Maria Lancto; Todd Hodges; Alyssa Knutson
Subject: RE: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

I have no comments or concerns with this project.

Taw Tamlin

Fire Marshal

Fort Lupton Fire Protection District

1121 Denver Ave.

303-857-4603

www.fortluptonfire.org

From: Magaly Morales-Tejada <MMTejada@Fortluptonco.gov>
Sent: Wednesday, October 13, 2021 2:46 PM
Cc: Maria Lancto <MLancto@Fortluptonco.gov>; Todd Hodges <thodges@Fortluptonco.gov>; Alyssa Knutson <AKnutson@Fortluptonco.gov>
Subject: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

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Magaly Morales-Tejada
Planning assistant

130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720-466-6111

The information transmitted is intended only for the person or entity to which it is addressed and may contain CONFIDENTIAL material. If you receive this information in error, please delete or destroy the information.

Magaly Morales-Tejada

From: John Fryar
Sent: Wednesday, October 13, 2021 3:57 PM
To: Magaly Morales-Tejada
Subject: RE: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

No law enforcement concerns.

Chief John Fryar

From: Magaly Morales-Tejada
Sent: Wednesday, October 13, 2021 2:46 PM
Cc: Maria Lancto; Todd Hodges; Alyssa Knutson
Subject: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Good Afternoon,

The documentation located at the following link is submitted to you for review and recommendation for an amended site plan being reviewed by the City of Fort Lupton. The application documents can be reviewed at the following link: https://www.fortlupton.org/DocumentCenter/Index/621.

Any comments you consider relevant to this request would be appreciated. Please reply by **November 3, 2021**, so that we may give full consideration to your recommendation. Any response not received before or on this date may be deemed to be a favorable response to the Planning & Building Department.

The Public Hearings for this matter are scheduled for:

- Planning Commission: Thursday, November 18, 2021 at 6:00 PM; and
- City Council: Tuesday, December 7, 2021 at 7:00 PM

Your time in this matter is greatly appreciated!

Magaly Morales-Tejada
Planning assistant
130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720-466-6111

Magaly Morales-Tejada

From: Lauren Light <llight@weldgov.com>
Sent: Thursday, October 21, 2021 9:39 AM
To: Magaly Morales-Tejada
Cc: Maria Lancto; Todd Hodges; Alyssa Knutson
Subject: RE: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

No concerns with this project.

Lauren Light, M.B.S.
Program Manager/Environmental Planner, Environmental Health Services
Weld County Department of Public Health & Environment
1555 N. 17th Ave.
Greeley, CO 80631
llight@weldgov.com
970-400-2211 (office)

Confidentiality Notice: This electronic transmission and any attached documents or other writings are intended only for the person or entity to which it is addressed and may contain information that is privileged, confidential or otherwise protected from disclosure. If you have received this communication in error, please immediately notify sender by return e-mail and destroy the communication. Any disclosure, copying, distribution or the taking of any action concerning the contents of this communication or any attachments by anyone other than the named recipient is strictly prohibited.

From: Magaly Morales-Tejada <MMTejada@Fortluptonco.gov>
Sent: Wednesday, October 13, 2021 2:46 PM
Cc: Maria Lancto <MLancto@Fortluptonco.gov>; Todd Hodges <thodges@Fortluptonco.gov>; Alyssa Knutson <AKnutson@Fortluptonco.gov>
Subject: Referral Response Request: SB Weakland Amended Site Plan (LUP2021-0025)

Caution: This email originated from outside of Weld County Government. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Afternoon,

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Magaly Morales-Tejada
Planning assistant
130 S. McKinley Ave.
Fort Lupton, CO 80621
Direct: 720-466-6111

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CITY OF Fort Lupton EST 1836
COME PAINT YOUR FUTURE WITH US

Public Works

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303-857-6694
Fax: 303.857.0351
www.fortlupton.org

MEMO

To: Todd Hodges
Alyssa Knutson
CC: Chad Cox, PE (WEA)

From: Roy Vestal

Date: September 9, 2021

Subject: SB Weakland Investments Maxar Site Plan;
Public Works Review

Public Works has reviewed the submitted documents for the above referenced development project with the following comments for inclusion with the Final Site Plan submittal.

Be advised, review of construction drawings is for general compliance with city standards. There may be additional concerns as this design develops.

1. **Drainage**
    a. Drainage Letter as submitted requires some revisions.
        i. Retention Criteria.
            1. Retention facilities must be designed to contain **1.5** times the volume of the runoff generated by the 24-hour, 100-year storm, plus 1 foot of freeboard.
            2. The design of the retention facility must include an emergency spillway and must show that a spill will not adversely impact downstream properties or residences. Identify the overflow routing and receiving conveyance.
    b. **Construction of Pond M and remaining overall drainage improvements from the previously approved site plan must be done at this time as a condition of approval for the Maxar site**.

2. **Transportation**
    a. Transportation Letter and Trip generation analysis is acceptable. No additional improvements to CR 16 are required.

3. **Landscape / Grading** - *Chapter 2 Design Standards*
    a. CDPS Stormwater certificate was received.

Final approval of drawings does not infer the drawings are error free. The City shall have full authority to review and approve all submittals and construction for compliance with these DESIGN STANDARDS and CONSTRUCTION SPECIFICATIONS. An approval or acceptance by the City does not relieve the owner, engineer, designer, or contractor from responsibility for ensuring that the calculations, plans, specifications, construction, and record drawings are in compliance with these DESIGN STANDARDS. Any approval or acceptance by the City shall not result in any liability to the City or its employees for any claim, suit, loss, damage, or injury resulting from the use or implementation of the approved documents. Nothing in these DESIGN STANDARDS shall be construed to circumvent any sections of the City of Fort Lupton Code or sub codes, pertaining to responsibility for reports, studies, designs, and construction.

CITY OF Fort Lupton EST 1836
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Public Works

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303-857-6694
Fax: 303.857.0351
www.fortlupton.org

MEMO

To: Todd Hodges
Alyssa Knutson
CC: Chad Cox, PE (WEA)

From: Roy Vestal

Date: October 29, 2021

Subject: SB Weakland Amended Site Plan (LUP2021-0025) - Maxar Site Plan; Public Works Review

---

Public Works has reviewed the submitted documents for the above referenced development project with the following comments for inclusion with the Final Site Plan submittal. Be advised, review of construction drawings is for general compliance with city standards. There may be additional concerns as this design develops.

1. **Drainage**
    a. Drainage Letter as submitted is acceptable.
    b. **Construction of Pond M and remaining overall drainage improvements from the previously approved site plan must be done at this time as a condition of approval for the Maxar site**.
2. **Transportation**
    a. Transportation Letter and Trip generation analysis is acceptable. No additional improvements to CR 16 are required.
3. **Landscape / Grading** - *Chapter 2 Design Standards*
    a. CDPS Stormwater certificate was received.

Final approval of drawings does not infer the drawings are error free. The City shall have full authority to review and approve all submittals and construction for compliance with these DESIGN STANDARDS and CONSTRUCTION SPECIFICATIONS. An approval or acceptance by the City does not relieve the owner, engineer, designer, or contractor from responsibility for ensuring that the calculations, plans, specifications, construction, and record drawings are in compliance with these DESIGN STANDARDS. Any approval or acceptance by the City shall not result in any liability to the City or its employees for any claim, suit, loss, damage, or injury resulting from the use or implementation of the approved documents. Nothing in these DESIGN STANDARDS shall be construed to circumvent any sections of the City of Fort Lupton Code or sub codes, pertaining to responsibility for reports, studies, designs, and construction.

CITY OF
Fort Lupton
EST 1836
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Planning & Building

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303.857.6694
Fax: 303.857.0351
www.fortluptonco.gov

Sign Posting Affidavit

SB Weakland Amended Site Plan

Project No. Project No. LUP2021-0025 & Plan No. SPR2021-0008

County Road 16 ½ (Barley Ave.)

I, Scott Weakland hereby knowledge that the aforementioned property was posted in accordance with City Codes. Said public hearing notice was posted on this 29th day of October, 2021.

Signature of Owner or Owner's Representative

The foregoing instrument was acknowledged before me by Scott Weakland, this 1st. day of November, 2021. Witness my hand and seal.

My commission expires 05/30/2023.

Notary Public

CARMEN L. MALDONADO CEDILLO
Notary Public
State of Colorado
Notary ID # 20194020252
My Commission Expires 05-30-2023

Colorado Community Media
750 W. Hampden Ave. Suite 225
Englewood, CO 80110

City of Fort Lupton Legals***
130 S McKinley Avenue
Fort Lupton CO 80621

Description: FLP439 Notice of Hearing

AFFIDAVIT OF PUBLICATION

State of Colorado }
County of Weld } ss

This Affidavit of Publication for the Fort Lupton Press, a weekly newspaper, printed and published for the County of Weld, State of Colorado, hereby certifies that the attached legal notice was published in said newspaper once in each week, for 1 successive week(s), the last of which publication was made 11/3/2021, and that copies of each number of said paper in which said Public Notice was published were delivered by carriers or transmitted by mail to each of the subscribers of said paper, according to their accustomed mode of business in this office.

For the Fort Lupton Press

State of Colorado }
County of Weld } ss

The above Affidavit and Certificate of Publication was subscribed and sworn to before me by the above named Linda Shapley, publisher of said newspaper, who is personally known to me to be the identical person in the above certificate on 11/3/2021. Linda Shapley has verified to me that she has adopted an electronic signature to function as her signature on this document.

20004025550-470765

Carla Bethke
Notary Public
My commission ends April 11, 2022

CARLA BETHKE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20004025550
MY COMMISSION EXPIRES APRIL 11, 2022

Public Notice

CITY OF FORT LUPTON
NOTICE OF PUBLIC HEARING

Notice is hereby given that the City of Fort Lupton is in receipt of an application for an amended site plan referred to as the SB Weakland Amended Site Plan located at 15450 County Road 16 Fort Lupton, Colorado, pursuant to the City of Fort Lupton Municipal Code Notice Requirements.
The public hearings are to be held before the Planning Commission on November 18, 2021, at 6:00 P.M., and before the City Council on December 7, 2021, at 7:00 P.M. or as soon as possible thereafter.
The public hearings shall be held at the Fort Lupton City Hall, 130 S. McKinley Avenue in Fort Lupton, Colorado. In the event that the City Hall remains closed at the time of the hearings, the public hearings will be held remotely, accessible to the public by phone and internet. Information on how to attend the hearings will be provided in the agenda as posted on the City's website, www.fortluptonco.gov.
Further information is available through the City Planning and Building Department at (303) 857-6694.
ALL INTERESTED PERSONS MAY ATTEND.

LEGAL DESCRIPTION

A PARCEL OF LAND IN THE CITY OF FORT LUPTON, COLORADO, LOCATED IN THE NORTHWEST ¼ OF SECTION 17, T1N, R66W OF THE 6TH P.M. AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:
FROM TITLE COMMITMENT
PARCEL A:
THAT PART OF THE NW1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS:
BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34;
THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NW1/4 SECTION 34 A DISTANCE OF 1656.54 FEET TO THE SOUTHWEST CORNER OF THE N3/4 OF THE W1/2 OF THE W1/2 OF THE NW1/4 OF THE NW1/4 OF SAID SECTION 34;
THENCE NORTH 89°41'29" EAST ALONG THE SOUTH LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 331.83 FEET TO THE SOUTHEAST CORNER OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34; THENCE NORTH 00°09'47" WEST ALONG THE EAST LINE OF SAIDN3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 734.60 FEET TO A POINT 260.00 FEET SOUTH OF THE NORTH LINE OF NW1/4 OF SECTION 34; THENCE NORTH 89°34'30" EAST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 745.07 FEET TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00°01'29" EAST PARALLEL WITH THE EAST LINE OF SAID NW1/4 OF SECTION 34 A DISTANCE OF 2356.32 FEET TO A POINT 40.00 FEET NORTH OF THE SOUTH LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.42 FEET TO A POINT 40.00 FEET WEST OF THE EAST LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 00°01'29" WEST PARALLEL WITH SAID EAST LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 2364.68 FEET TO A POINT 260.00 FEET SOUTH OF SAID NW1/4 OF SECTION 34;
THENCE SOUTH 89°34'30" WEST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.46 FEET TO THE TRUE POINT OF BEGINNING.
SAVE AND EXCEPT THAT PART OF THE NORTHWEST 1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34; THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NORTHWEST 1/4 SECTION 34 A DISTANCE OF 40.00 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH AND 40.00 FEET NORTHERLY OF THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 1872.16 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 00°01'29" WEST PARALLEL WITH THE EAST LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 737.91 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO A POINT 40.00 FEET WESTERLY OF SAID EAST LINE OF THE NORTHWEST 1/4 OF SECTION 34; THENCE SOUTH 89°53'11" WEST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO THE TRUE POINT OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.
EXCEPTING THEREFROM LOT 1, COLORADO GREENHOUSE ADDITION, RECORDED MAY 12, 1997 AT RECEPTION NO. 2547711, AND FURTHER EXCEPTING THAT PORTION KNOWN AS LOT ONE FORT LUPTON FIRE PROTECTION DISTRICT SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED MAY 5, 1999 AT RECEPTION NO. 2691823.
PARCEL 2:
LOT 1, FRONT RANGE ENERGY SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO.
PARCEL 3:
NON-EXCLUSIVE EASEMENT FOR NATURAL GAS TRANSMISSION LINES AND RELATED APPURTENANCES, AND FOR VEHICULAR AND PEDESTRIAN TRAFFIC, AS MORE PARTICULARLY SET FORTH IN EASEMENT, RECORDED MARCH 3, 1993 AT RECEPTION NO. 2323677, THEREAFTER NOTICE OF ASSIGNMENT RECORDED AUGUST 9, 2017, AT RECEPTION NO. 4325787.

Legal Notice No. FLP439
First Publication: November 3, 2021
Last Publication: November 3, 2021
Publisher: Fort Lupton Press

CITY OF

Fort Lupton

EST 1836

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CERTIFICATE OF MAILING

I, the undersigned, hereby certify that on the 2nd day of November 2021, a true and correct copy of the foregoing Notice of Public Hearings and Site Plan Map for the SB Weakland Amended Site Plan was sent via U.S. Mail, postage pre-paid, to the following addresses:

LUPTON REAL ESTATE EAST LLC
PO BOX 208
FORT LUPTON, CO 80621

TAX SERVICE DEPARTMENT
PO BOX 1979
DENVER, CO 80201

COLORADO INTERSTATE GAS COMPANY
PO BOX 1087
COLORADO SPRINGS, CO 80901

FORT LUPTON FIRE PROTECTION DISTRICT
1121 DENVER AVE
FORT LUPTON, CO 80621

GREENLAND GROUP LLC
999 S LOGAN ST
STE 300
DENVER, CO 80209

City Official

CITY OF
Fort Lupton
EST 1836

Planning & Building

130 S. McKinley Avenue
Fort Lupton, CO 80621
Phone: 303.857.6694
Fax: 303.857.0351
www.fortluptonco.gov

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Further information is available through the City Planning and Building Department at (303) 857-6694.

ADDITIONAL INFORMATION AND DOCUMENTS ON THIS APPLICATION CAN BE FOUND AT BIT.LY/FLDEVELOPMENT AND SCROLLING DOWN TO THE ROW TITLED: SB WEAKLAND AMENDED SITE PLAN.

ALL INTERESTED PERSONS MAY ATTEND.

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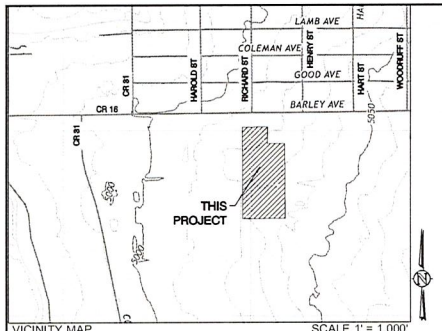
PARCEL 2:

LOT 1, FRONT RANGE ENERGY SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO.

PARCEL 3:

NON-EXCLUSIVE EASEMENT FOR NATURAL GAS TRANSMISSION LINES AND RELATED APPURTENANCES, AND FOR VEHICULAR AND PEDESTRIAN TRAFFIC, AS MORE PARTICULARLY SET FORTH IN EASEMENT, RECORDED MARCH 3, 1993 AT RECEPTION NO. 2323677, THEREAFTER NOTICE OF ASSIGNMENT RECORDED AUGUST 9, 2017, AT RECEPTION NO. 4325787.

ADDITIONAL INFORMATION AND DOCUMENTS ON THIS APPLICATION CAN BE FOUND AT BIT.LY/FLDEVELOPMENT AND SCROLLING DOWN TO THE ROW TITLED: SB WEAKLAND AMENDED SITE PLAN.



VICINITY MAP SCALE 1' = 1,000'

NW 1/4, S34, T2N, R66W, 6th P.M.
SHOWN VICINITY MAP TAKEN FROM USGS QUAD MAPS - FORT LUPTON, CO

SB WEAKLAND INVESTMENTS SITE PLAN AMENDED

PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION

Project No. LUP2021-0025 & Plan No. SPR2021-0008
Part of the Northwest 1/4 of Section 34,
Township 2 North, Range 66 West of the 6th P.M.,
CITY OF FORT LUPTON, COUNTY OF WELD, STATE OF COLORADO
ZONE I-2

BASIS OF BEARING:

THE NORTH LINE OF THE NORTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO BEARS S89°07'24"W, TAKEN FROM THE RECORDED PLAT OF FRONT RANGE ENERGY SUBDIVISION, RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO. MONUMENTS ARE AS SHOWN HEREON.

OWNER'S APPROVAL

KNOW ALL MEN BY THESE PRESENTS, THAT SB WEAKLAND INVESTMENTS BEING THE SOLE OWNER OF THE LAND DESCRIBED HEREIN, AND _____ ARE ALL OF THE MORTGAGEES AND HOLDERS OF LIENS UPON THE PROPERTY, AND EACH AND ALL HEREBY CONSENT TO THIS PLAT AND JOIN THE CONVEYANCE AND DEDICATION OF ALL STREETS, ROADS, ALLEYS, EASEMENTS, PUBLIC WAYS AND PLACES SHOWN HEREON.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS ___ DAY OF _____, 2021.

_____

STATE OF COLORADO, }
} SS
COUNTY OF WELD }

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY _____ ON THIS ___ DAY OF _____, 2021. WITNESS MY HAND AND SEAL.

MY COMMISSION EXPIRES _____.

_____
NOTARY PUBLIC

CITY ENGINEER'S APPROVAL
APPROVED THIS ___ DAY OF _____, 2021.

_____
CITY ENGINEER

CITY WATER AND SEWER DEPARTMENT APPROVAL
APPROVED THIS ___ DAY OF _____, 2021.

_____
DIRECTOR OF PUBLIC WORKS

CITY ADMINISTATOR'S APPROVAL
APPROVED THIS ___ DAY OF _____, 2021.

_____
CITY ADMINISTRATOR

PLANNING COMMISSION RECOMMENDATION:
RECOMMENDED THIS 23RD DAY OF APRIL, 2020 BY RESOLUTION NO. P2020-014.

_____
CHAIRPERSON, FORT LUPTON PLANNING COMMISSION

MAYOR'S CERTIFICATE
THIS IS TO CERTIFY THAT A PLAT OF THE ABOVE-DESCRIBED PROPERTY WAS APPROVED BY RESOLUTION NO. 2020R047 OF THE CITY OF FORT LUPTON PASSED AND ADOPTED ON THE 5TH DAY OF MAY, A.D., 2020 AND THAT THE MAYOR OF THE CITY OF FORT LUPTON, AS AUTHORIZEDBY SAID RESOLUTION ON BEHALF OF THE CITY OF FORT LUPTON, HEREBY ACKNOWLEDGES AND ADOPTS THE SAID PLAT UPON WHICH THIS CERTIFICATE IS ENDORSED FOR ALL PURPOSES INDICATED THEREON.

_____
MAYOR

ATTEST:

_____
CITY CLERK

REVISIONS	SHEET	INDEX:
0 1 2 3	1	COVER SHEET
1 2 3	2	FORT LUPTON STANDARD NOTES
0 1 2 3	3	OVERALL SITE PLAN
0 1 2 3	4	YARD A SITE PLAN
0 1 2 3	5	YARD B SITE PLAN
0 1 2 3	6	YARD C SITE PLAN
0 1 2 3	7	LANDSCAPE PLAN & DETAILS
0 1 2 3	8	SITE DETAILS

0	INITIAL RELEASE:	JANUARY 21, 2020
1	REV PER 03/30/20 CITY COMMENTS:	JUNE 09, 2020
2	ADD 2.498 ACRE REMAINING PARCEL A-1:	AUGUST 27, 2021
3	REV PER 09/14/21 CITY COMMENTS:	SEPTEMBER 30, 2021

ALL FIRE ACCESS ROUTES SHALL HAVE 8" THICK COMPACTED CDOT CLASS 6 ROAD BASE SURFACE.

YARDS A & B
NO ON SITE EMPLOYEES ARE PROPOSED.

NO OFFICE OR REPAIR ACTIVITIES ARE PROPOSED.

ALL YARDS ARE FOR STORAGE ONLY.

MAXAR YARD & YARD C
PERIODIC SITE VISIT EMPLOYEES ONLY.

SHOWN OFFICE/RV FOR PERIODIC USE ONLY.

PERMANENT WATER & SANITARY SERVICE REQUIRED WITHIN 24 MONTHS OF AMENDED SITE PLAN RECORDING.

ADMINISTRATIVE SITE PLAN CERTIFICATIONS

PROPERTY DESCRIPTION

A PARCEL OF LAND IN THE CITY OF FORT LUPTON, COLORADO, LOCATED IN THE NORTHWEST ¼ OF SECTION 17, T1N, R66W OF THE 6TH P.M. AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM TITLE COMMITMENT

PARCEL A:
THAT PART OF THE NW1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS:

BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34;
THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NW1/4 SECTION 34 A DISTANCE OF 1656.54 FEET TO THE SOUTHWEST CORNER OF THE N3/4 OF THE W1/2 OF THE W1/2 OF THE NW1/4 OF THE NW1/4 OF SAID SECTION 34;
THENCE NORTH 89°41'29" EAST ALONG THE SOUTH LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 331.83 FEET TO THE SOUTHEAST CORNER OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34; THENCE NORTH 00°09'47" WEST ALONG THE EAST LINE OF SAID N3/4 W1/2 W1/2 NW1/4 NW1/4 OF SECTION 34 A DISTANCE OF 734.60 FEET TO A POINT 260.00 FEET SOUTH OF THE NORTH LINE OF NW1/4 OF SECTION 34; THENCE NORTH 89°34'30" EAST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 745.07 FEET TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00°01'29" EAST PARALLEL WITH THE EAST LINE OF SAID NW1/4 OF SECTION 34 A DISTANCE OF 2356.32 FEET TO A POINT 40.00 FEET NORTH OF THE SOUTH LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.42 FEET TO A POINT 40.00 FEET WEST OF THE EAST LINE OF SAID NW1/4 OF SECTION 34; THENCE NORTH 00°01'29" WEST PARALLEL WITH SAID EAST LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 2364.68 FEET TO A POINT 260.00 FEET SOUTH OF SAID NW1/4 OF SECTION 34;
THENCE SOUTH 89°34'30" WEST PARALLEL WITH AND 260.00 FEET SOUTH OF SAID NORTH LINE OF THE NW1/4 OF SECTION 34 A DISTANCE OF 1539.46 FEET TO THE TRUE POINT OF BEGINNING.

SAVE AND EXCEPT THAT PART OF THE NORTHWEST 1/4 OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE WEST 1/4 CORNER OF SECTION 34; THENCE NORTH 00°10'58" WEST ON AN ASSUMED BEARING ALONG THE WEST LINE OF SAID NORTHWEST 1/4 SECTION 34 A DISTANCE OF 40.00 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH AND 40.00 FEET NORTHERLY OF THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 1872.16 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 00°01'29" WEST PARALLEL WITH THE EAST LINE OF SAID NORTHWEST 1/4 OF SECTION 34 A DISTANCE OF 737.91 FEET; THENCE NORTH 89°53'11" EAST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO A POINT 40.00 FEET WESTERLY OF SAID EAST LINE OF THE NORTHWEST 1/4 OF SECTION 34; THENCE SOUTH 89°53'11" WEST PARALLEL WITH SAID SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 34 A DISTANCE OF 737.91 FEET TO THE TRUE POINT OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

EXCEPTING THEREFROM LOT 1, COLORADO GREENHOUSE ADDITION, RECORDED MAY 12, 1997 AT RECEPTION NO. 2547711, AND FURTHER EXCEPTING THAT PORTION KNOWN AS LOT ONE FORT LUPTON FIRE PROTECTION DISTRICT SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED MAY 5, 1999 AT RECEPTION NO. 2691823.

PARCEL 2:

LOT 1, FRONT RANGE EMERGY SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 30, 1999 AT RECEPTION NO. 2717120, COUNTY OF WELD, STATE OF COLORADO.

PARCEL 3:

NON-EXCLUSIVE EASEMENT FOR NATURAL GAS TRANSMISSION LINES AND RELATED APPURTENANCES, AND FOR VEHICULAR AND PEDESTRIAN TRAFFIC, AS MORE PARTICULARLY SET FORTH IN EASEMENT, RECORDED MARCH 3, 1993 AT RECEPTION NO. 2323677, THEREAFTER NOTICE OF ASSIGNMENT RECORDED AUGUST 9, 2017, AT RECEPTION NO. 4325787.

UTILITY MAINTENANCE STATEMENT
ALL PUBLIC WATER, STORM SEWER AND SANITARY SEWER MAINS AND APPURTENANCES LOCATED IN PUBLIC ROW SHALL BE MAINTAINED BY THE CITY OF FORT LUPTON PUBLIC WORKS DEPARTMENT. ALL PUBLIC WATER, STORM SEWER, SANITARY SEWER MAINS AND APPURTENANCES UNDER PRIVATE DRIVES ARE LOCATED IN UTILITY EASEMENTS. CITY IS RESPONSIBLE FOR MAINTENANCE OF THESE WATER, STORM AND SANITARY SEWER FACILITIES. CITY IS NOT RESPONSIBLE FOR REPAIR OR REPLACEMENT OF PRIVATE DRIVE, CURB AND GUTTER OR LANDSCAPING DAMAGED DURING UTILITY REPAIR OR MAINTENANCE.

PREPARED FOR:
SB WEAKLAND INVESTMENTS
SCOTT & BARBARA WEAKLAND
12420 W 18TH DR
LAKEWOOD, CO 80215
(720)685-9951

PREPARED BY:
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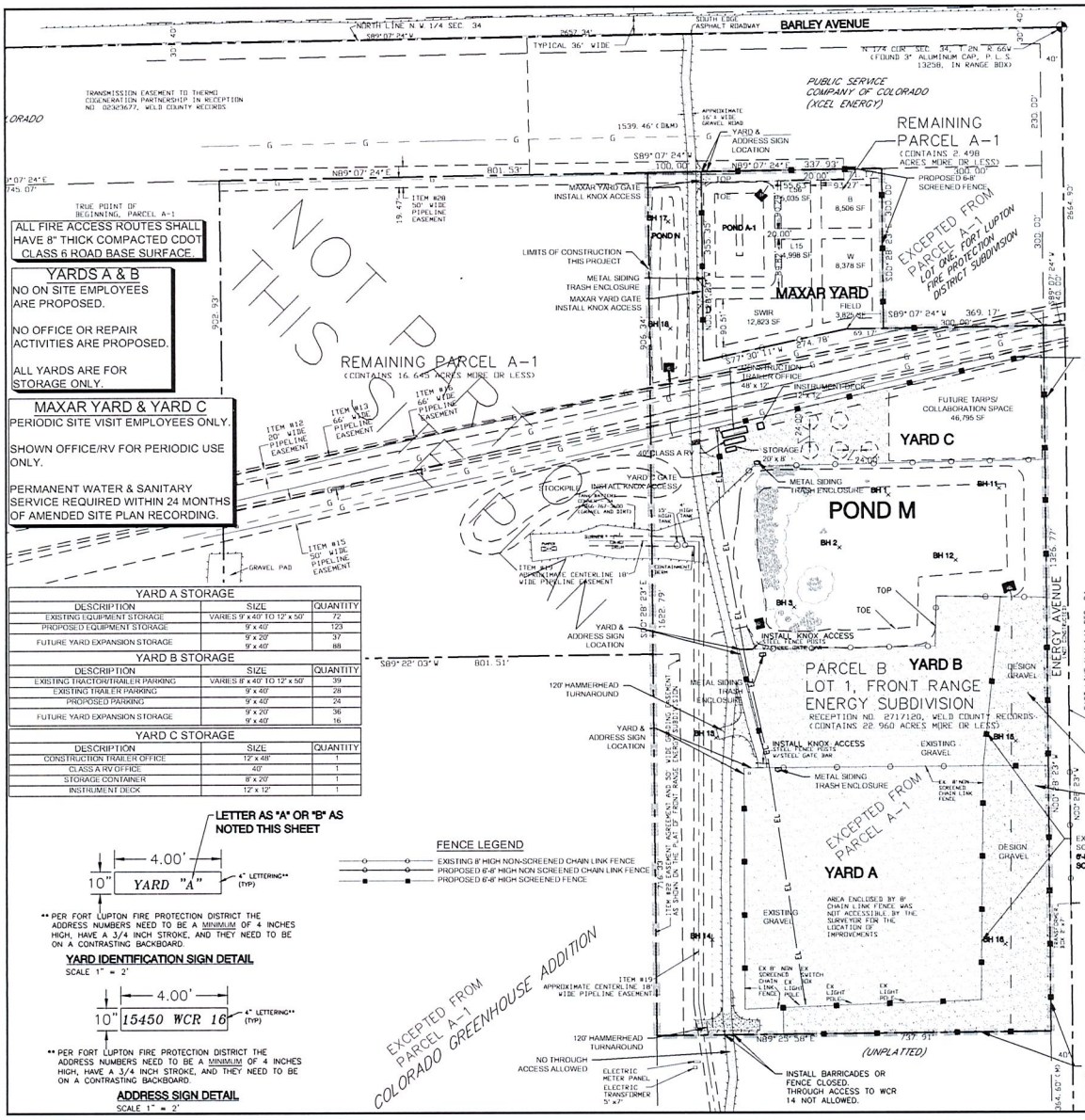
Dig Safely. CALL UNCC THREE WORKING DAYS BEFORE YOU DIG 1-800-922-1987 www.uncc.org UTILITY NOTIFICATION CENTER OF COLORADO

PROJECT NO: 01-0330.001.00
INITIAL PLAN RELEASE: Jan. 21, 2020
CURRENT PLAN RELEASE: September 30, 2021
TOTAL SHEETS: 8
SHEET: 1 of 8

\\WESERVER\Share\0330_001_00 KW SAND\Dwg\Civil\330_001-WEC SPR Amended.dwg 01 COVER, 9/30/2021 12:04:00 PM , AutoCAD PDF (High Quality Print).pc3, WEC 24"X36, WEC 24"X36

SB WEAKLAND INVESTMENTS
SITE PLAN AMENDED

Project No. LUP2021-0025 & Plan No. SPR2021-0008
PARCEL B & 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION



YARD A STORAGE		
DESCRIPTION	SIZE	QUANTITY
EXISTING EQUIPMENT STORAGE	VARIES 9' x 40' TO 12' x 50'	72
PROPOSED EQUIPMENT STORAGE	9' x 40'	123
FUTURE YARD EXPANSION STORAGE	9' x 20'	37
	9' x 40'	88

YARD B STORAGE		
DESCRIPTION	SIZE	QUANTITY
EXISTING TRACTOR/TRAILER PARKING	VARIES 8' x 40' TO 12' x 50'	39
EXISTING TRAILER PARKING	9' x 40'	28
PROPOSED PARKING	9' x 40'	24
FUTURE YARD EXPANSION STORAGE	9' x 20'	36
	9' x 40'	16

YARD C STORAGE		
DESCRIPTION	SIZE	QUANTITY
CONSTRUCTION TRAILER OFFICE	12' x 48'	1
CLASS A RV OFFICE	40'	1
STORAGE CONTAINER	8' x 20'	1
INSTRUMENT DECK	12' x 12'	1

LOT DATA TABLE		
DESCRIPTION	AREA	%
ZONING	I-2	
LOT	1,000,127.92 sf	
EXISTING GRAVEL	351,977.65 sf	35.19%
PROPOSED CONCRETE	0 sf	
TOTAL HARDSCAPE AREA	351,977.65 sf	35.19%
PROPOSED LANDSCAPE AREA	648,150.27 sf	64.81%

USE TABLE	
YARD	USE
A	EQUIPMENT STORAGE
B	THUCK STORAGE/ PARKING YARD
C	SATELLITE TARP CALIBRATION SITE
MAXAR	SATELLITE TARP CALIBRATION SITE

MAXAR YARD & YARD C SATELLITE TARP CALIBRATION OPERATIONS

TEMPORARY RV AND/OR TEMPORARY CONSTRUCTION TRAILER AND FUTURE CONSTRUCTION TRAILER LOCATIONS ARE EACH SHOWN FOR FINAL CHOICE FLEXIBILITY

THE CITY RESERVES THE RIGHT TO REEVALUATE TRAFFIC IMPACTS IN THE FUTURE IF THERE IS AN INCREASE IN TRAFFIC FROM WHAT WAS REPRESENTED TO THE CITY IN EVALUATING THE SITE PLAN.

NO LIGHTING IS PROPOSED ON PROPERTY. YARD A EXISTING LIGHT SYSTEM IS NOT ACTIVE AND WILL NOT BE USED.

SOME YARD LAYOUTS NOT LEGIBLE THIS SCALE. SEE SHEETS 4-6 FOR EACH YARD LAYOUT

SNOW PLACEMENT SHALL OCCUR IN OPEN AREAS SUCH AS THE INFILTRATION POND

FIRE ACCESS NOTES:

1. INSTALL KNOX ACCESS IN ACCORDANCE WITH FORT LUPTON FIRE PROTECTION DISTRICT ON ALL GATES

SETBACK DATA TABLE	
PROPERTY LINE	BUILDING SETBACK
FRONT	25.00'
SIDE	50.00'
REAR	50.00'

NOTES

THIS PLAN IS INTENDED AS THE SITE PLAN FOR PARCEL B AND THE 2.498 ACRE REMAINING PARCEL A-1, LOT 1, FRONT RANGE ENERGY SUBDIVISION.

ALL IMPROVEMENTS ARE PROPOSED UNLESS NOTED AS EXISTING.

IT IS THE OWNER AND/OR THE CONTRACTOR'S RESPONSIBILITY TO ATTAIN ALL APPROPRIATE PERMITS AND REVIEW APPROVALS FROM THE STATE OF COLORADO AND CITY OF FORT LUPTON RESPECTIVELY.

ANY REFERENCE TO EASEMENTS, SURVEY POINTS, OR EXISTING UTILITIES AND FEATURES ARE BASED SOLELY FROM SURVEY INFORMATION PROVIDED BY R.W. BAYER & ASSOCIATES, INC. ALTA/ACSM LAND TITLE SURVEY, DATED JULY 31, 2014.

NOT ALL UNCC UTILITY LOCATES HAVE BEEN PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES ARE LOCATED AND SURVEY PROVIDED TO THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION DRAWING RELEASE.

SYMBOL LEGEND

45 DEG BEND
22.5 DEG BEND
RESTRAINED PLUG
RESTRAINED TEE
WATER METER
RESTRAINED CROSS
FIRE HYDRANT
RESTRAINED VALVE
THRUST BLOCK TB
GATE VALVE GV
CURB STOP
PIPE CROSSING
MANHOLE
MANHOLE W/ FLOW DIRECTION
ROOF DRAIN
EXISTING GRAVEL
PROPOSED GRAVEL
BH 1 BOREHOLE LOCATION PER JUNE 8, 2020 PERCOLATION TESTS
PROPOSED CONC

LINETYPE LEGEND

LOT / PROPERTY / SECTION LINE
RIGHT OF WAY LINE
EASEMENT
EXISTING BUILDING, CURB
EDGE of ASPHALT or GRAVEL RD
EXISTING CHAINLINK FENCE
EXISTING WIRE FENCE
POND WQ W/S
EXISTING OVERHEAD ELEC
EXISTING GAS LINE

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FAX (720) 294-1330

NO.	REVISIONS	BY
1	1ST FDR SUBMITTAL COMMENTS	EJC
2	2ND FDR SUBMITTAL COMMENTS	EJC
3	3RD FDR SUBMITTAL COMMENTS	EJC

SB WEAKLAND INVESTMENTS
12420 W. 5TH AVENUE
LAKEWOOD, CO 80215
CONTACT: SCOTT WEAKLAND
(720)685-9951

SITE PLAN
SITE PLAN REVIEW
PARCEL B, LOT 1, FRONT RANGE ENERGY SUB
WELD COUNTY, COLORADO

Dig Safely. CALL UNCC THREE WORKING DAYS BEFORE YOU DIG 1-800-922-1987 www.uncc.com UTILITY NOTIFICATION CENTER OF COLORADO

FOR APPROVAL

ONLY VALID FOR CONSTRUCTION IF SEAL & ORIGINAL SIGNATURE ARE ON EACH SHEET

INITIAL PLAN RELEASE: 01/21/20
DESIGNED BY: CFC
DRAWN BY: CFC
CHECKED BY: CFC
PROJECT NO. 01-0330.001.00
DOC. CON. # 0003-SITE
SHEET 3 OF 8