# Development Review Staff Report



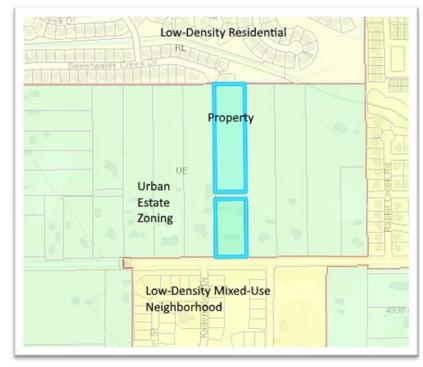
Administrative Hearing: July 27, 2021

Hill Single-Family - Single-Family Residence, FDP210005

#### **Summary of Request**

This is a request for a combined Projects Development Plan/Final Plan to construct a new single-family residence. The plan also intends to establish urban agriculture, farm animals and barn as accessory/miscellaneous uses. The applicant is also seeking a Modification of Standard to Section 3.2.2(J), which stipulates a 5-foot setback requirement for a driveway longer than 1,800 feet.

#### **Zoning Map**



#### **Next Steps**

Upon approval from the Administrative Hearing Officer, the applicant would be eligible to submit final plans for recording with Larimer County and the City and apply for a building permit.

#### Site Location

2400 Kechter Road, Lot 2. Located on the north side of Kechter Road approximately 1700 feet east of S Timberline Road.

#### Zoning

Urban Estate (U-E)

#### **Property Owner**

Chris Hill 4112 Lakefront Drive Loveland, CO 80537

#### Applicant/Representative

Chris Hill 4112 Lakefront Drive Loveland, CO 80537 p. (970) 227-3112 CHILL004@yahoo.com

#### Staff

Sylvia Tatman-Burruss, City Planner, AICP p. (970) 221-6343 Statman-burruss@fcgov.com

#### Contents

2. 3.	Project Introduction
5.	Public Outreach Error! Bookmark not
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6.	Findings of Fact/Conclusion10
7.	Recommendation10
8.	Attachments 10

#### **Staff Recommendation**

Approval



#### 1. Project Introduction

#### A. SUMMARY OF PROJECT & PROCESS

This is a request to construct a single-family residence and establish the accessory/miscellaneous uses of urban agriculture, farm animals and pole barn on a property located at 2400 Kechter Road. The project is located on 4.0 acres of land.

The project dedicates 51 feet of public Right-of-Way on the south side of the lot for the future east to west connection of Sage Creek Road. The property is currently zoned Urban Estate (U-E).

The request complies with the applicable requirements of the Land Use Code:

- Procedural requirements located in Division 2.1 General Procedural Requirements
- Division 2.2 Common Development Review Procedures for Development Applications
- Division 2.4 Project Development Plan located in Article 2 Administration
- Standards and requirements located in Section 3.3.1 Plat Standards in Article 3 General Development Standards
- Applicable standards located in Section 4.2(D) Land Use Standards and Section 4.2(E) Development Standards in Article 4 Districts, Division 4.2 Urban Estate District.
- A modification of standard is being sought for division 3.2.2(J) to allow a 4 foot setback for the driveway
  on the southern lot and no setback for the driveway on the northern portion. A justification of the
  modification is attached.

#### **B. SITE CHARACTERISTICS**

#### 1. Current Conditions

#### **Natural Features**

The property is planted with a combination of 23 trees which will not be impacted by the development associated with this plan. The site generally slopes from the south to north behind the existing Kechter Road right-of-way.

#### **Historic and Cultural Facilities**

There are no historic or cultural features on the site.

#### Road, Pedestrian and Bike Network

The property takes access from Kechter Road through the adjoining lot. The driveway is proposed to serve the existing home on the southern lot and the proposed home on the northern lot. Sidewalks do not exist within the immediate vicinity and are expected to be installed through a capital project or larger redevelopment of the area. The improvement/construction of Kechter and Sage Creek Roads have been deferred until time of future development/redevelopment.

#### **Utilities**

The existing water and sewer service from Kechter Road will be extended to the new residence and continue to be provided by the Fort Collins Loveland Water District and the South Fort Collins Sanitation District. The new residence will be served by Fort Collins Light & Power.



## 2. Surrounding Zoning and Land Use

	North	South	East	West
Zoning	Low-Density Residential (RL)	Low-Density Mixed-Use Neighborhood (LMN)	Urban Estate (U-E)	Urban Estate (U-E)
Land Use	Single-family detached residence	Single-family detached residence	Single-family detached residence	Single-family detached residence

#### 3. History

- 2400 Kechter Road was originally part of the Blehm Subdivision 2<sup>nd</sup> Filing
- The property was subdivided and platted through a separate minor subdivision (Basic Development Review) Approved October 7, 2020.
- The property contained within 2400 Kechter Road was originally subdivided in Larimer County.
- 2400 Kechter Road was part of the Mail Creek Crossing Second Enclave Annexation in 2017.
- There is an 20' existing access, emergency access and utility easement that will remain on the southern lot. This easement is detailed on the plat.

## 2. Comprehensive Plan Background – Applicable Standards

## A. CITY PLAN (2019)

The Structure Plan Map in *City Plan* provides a framework for the ultimate buildout of Fort Collins. It focuses on the physical form and development pattern of the community, illustrating areas where new greenfield development, infill, and redevelopment are likely to occur, as well as the types of land uses and intensities to encourage. The Structure Plan:

- Guides future growth and reinvestment and serves as the official Land Use Plan for the City;
- Informs planning for infrastructure and services;
- Fosters coordinated land use and transportation decisions within the city and region; and
- Helps implement principles and policies.
  - This project is within the "Mixed Neighborhood" area outlined on the Structure Plan Map for City Plan.
  - Principal Land Uses include single-family detached homes, duplexes, triplexes and townhomes.
  - The "Mixed Neighborhood" guidelines state that, "while many existing Mixed-Neighborhoods may consist predominantly of single-family detached homes today, opportunities to incorporate ADUs or other attached housing options of a compatible scale and intensity may be feasible in some locations."
  - Subdivision of the larger existing lot and increasing the density within this area does fit with the guidance outlined within the Structure Plan.
  - Further, on p. 42 the plan states the following:
  - Policy LIV 4.1 NEW NEIGHBORHOODS. Encourage creativity in the design and construction of new neighborhoods that: Provides a unifying and interconnected framework of streets, sidewalks, walkway spines and other public spaces; Expands housing options, including higher density and mixed-use buildings; Offers opportunities to age in place; Improves access to services and amenities; and Incorporates unique site conditions.



## 3. Article 2 – Applicable Standards

#### A. BACKGROUND

This section provides a summary of procedural action as required by Article 2. This includes background on conceptual reviews, previous approvals, neighborhood meetings, and any other significant procedural events.

#### B. PROJECT DEVELOPMENT PLAN PROCEDURAL OVERVIEW

#### 1. Conceptual Review (November 12, 2020)

A conceptual review meeting was held on November 12, 2020

#### 2. Community Outreach

No neighborhood meeting was required. Notification letters were sent for the prior minor subdivision process and for the Project Development Plan hearing. No public comments have been received to-date. Any comments received prior to the hearing will be forwarded to the Hearing Officer for inclusion in the record.

#### 3. Submittal (March 24, 2021)

The project was submitted as a combined Project Development Plan/Final Plan on March 24, 2021. The project was subsequently routed to all reviewing departments. There were three rounds of review for this project.

#### 4. Notice (Posted, Written and Published)

Posted notice: Sign # 623

Written notice: July 13<sup>th</sup>, 2021, 800-foot notification boundary, 198 letters sent Published Notice: Notice published July 12<sup>th</sup>, 2021, Fort Collins Coloradoan



#### C. DIVISION 2.8 - MODIFICATION OF STANDARDS

The applicant requests one modification of a standard to Section 3.2.2(J) - Access, Circulation and Parking.

The Land Use Code is adopted with the recognition that there will be instances where a project would support the implementation of City Plan, but due to unique and unforeseen circumstances would not meet a specific standard of the Land Use Code as stated. The modification process and criteria in Land Use Code Division 2.8.2(H) provide for evaluation of these instances on a case-by-case basis, as follows:

#### Land Use Code Modification Criteria:

- "The decision maker may grant a modification of standards only if it finds that the granting of the modification would not be detrimental to the public good, and that:
- (1) the plan as submitted will promote the general purpose of the standard for which the modification is requested equally well or better than would a plan which complies with the standard for which a modification is requested; or
- (2) the granting of a modification from the strict application of any standard would, without impairing the intent and purpose of this Land Use Code, substantially alleviate an existing, defined and described problem of city-wide concern or would result in a substantial benefit to the city by reason of the fact that the proposed project would substantially address an important community need specifically and expressly defined and described in the city's Comprehensive Plan or in an adopted policy, ordinance or resolution of the City Council, and the strict application of such a standard would render the project practically infeasible; or
- (3) by reason of exceptional physical conditions or other extraordinary and exceptional situations, unique to such property, including, but not limited to, physical conditions such as exceptional narrowness, shallowness or topography, or physical conditions which hinder the owner's ability to install a solar energy system, the strict application of the standard sought to be modified would result in unusual and exceptional practical difficulties, or exceptional or undue hardship upon the owner of such property, provided that such difficulties or hardship are not caused by the act or omission of the applicant; or
- (4) the plan as submitted will not diverge from the standards of the Land Use Code that are authorized by this Division to be modified except in a nominal, inconsequential way when considered from the perspective of the entire development plan and will continue to advance the purposes of the Land Use Code as contained in Section 1.2.2.

Any finding made under subparagraph (1), (2), (3) or (4) above shall be supported by specific findings showing how the plan, as submitted, meets the requirements and criteria of said subparagraph (1), (2), (3) or (4).

#### 1. Applicant's Justification

The applicant's request provides justification based upon numbered criteria 3.2.2(J), along with lack of detriment to the public good. The request is attached and thoroughly explains the proposed justifications. Key points are:

- The applicant states that allowing the driveway to be located along the property line will allow utilities to placed next to the road and will be in keeping with the existing neighborhood character.
- The applicant has received two letters of support from the adjoining neighbors stating that they
  approve of the driveway and acknowledge that their properties may be disturbed during
  construction of the driveway.



#### 2. Staff's Analysis of Modification Request

Staff finds that the requested Modification of Standard to allow a 4-foot setback for the driveway along the western portion of the southern lot and zero setback for the driveway for the northern lot would not be detrimental to the public good and is justified by criterion 4 in Land Use Code Section 3.2.2(J).

Staff finds that the plan addresses Criterion 4, "as nominal or inconsequential" by providing the following:

- The plan is not a detriment to the public good because the driveway easement along the southern lot
  maximizes the use of the existing lot and does not disturb the existing single-family residence.
- The plan to build the driveway with no setback along the northern lot is not a detriment to the public
  good because it is in keeping with the neighborhood character, will not disturb the neighbor to the east
  (see attached letter of support) and allows the owner to maximize the building area of the narrow lot.
- The driveway setback is only required because the driveway is more than 1,800 square feet. Otherwise, no setback requirements would exist for single-family homes and driveways.
- The plan is consistent with other lots in the neighborhood, both to the east and west, where driveways
  exist along the property lines without setbacks.
- Both of the neighbors, to the east and west, have acknowledged the possible disturbance to their land during construction. Those letters are attached to this staff report.

Recommendation: Staff recommends approval of modification to 3.2.2(J) - Access, Circulation and Parking



# 4. Article 3 - Applicable Standards

## A. DIVISION 3.2 - SITE PLANNING AND DESIGN

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings	
3.2.1 Landscaping and Tree Protection	standards in Section 3.2.1. The applicant has met with the City Forestry Department and is proposing to preserve all existing trees on the site. The combined site and landscape		
3.2.2(K)(1)(c) Residential Parking Requirements Requirements Requirements  Vehicle parking requirements for single-family detached houses are a minimum of 1 off- street parking space on lots with greater than 40 feet of street frontage. There is no maximum number of parking spaces for a single-family detached house. Six (6) parking spaces are proposed on the site, which exceeds the residential parking standards as outlined in 3.2.2(K).		Complies	
3.2.2(J) Residential Parking and Access - Setbacks	Residential shall be set back from the street right-of-way and the side and rear yard lot line. The minimum width of setback along a lot line is 5 feet. The applicant is requesting a modification to allow a 4-foot setback along the southern portion of the driveway and a		

## **B. DIVISION 3.3 - ENGINEERING**

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
3.3.1 Plat Standards	The plat demonstrates proper lot size, access to a public street, dedication of rights-of-way for public streets and utility easements. The applicant has satisfactorily coordinated utility requirements with the relevant outside utility providers, including the Fort Collins-Loveland Water District, Poudre Valley Rural Electric Association. The proposed house will be served by an onsite septic system and will be required to complete necessary steps pursuant to the On-site Wastewater Treatment System Act, 25-10-101 and as described by the Larimer County Health Department.	Complies



## **C. DIVISION 3.5 - BUILDING**

Applicable Code Standard	Summary of Code Requirement and Analysis			
3.5.2(E)(5) Maximum Size of Detached Accessory Buildings	On lots greater than 1-acre in size, any detached accessory building that is incidental to a single-family residence can contain a maximum floor area of six (6) percent of the total lot area. As proposed, the development contains 4.0 acres of land; therefore, the maximum floor area of a detached accessory building is 10,454 feet. The proposed barn is 1,000 square feet and the proposed single-family home is 3,000 square feet, thus meeting the requirement.	Complies		

## D. DIVISION 3.6 - TRANSPORTATION & CIRCULATION

Applicable Code Standard	Code	
3.6.2(J) Streets right-of- way	alignment of Sage Creek Road on the north. Right-of-Way for Sage Creek Road has been	
3.6.2(O) Easements		
3.6.6 Emergency Access	The proposal meets the emergency access standards of the Land Use Code and the requirements of the Poudre Fire Authority. A 20-foot emergency access easement is shown along the driveway on the southern lot (Lot 1) and a16-foot emergency access easement is shown along the driveway to the north (Lot 2) to provide access to both existing and future residences. All other requirements have been resolved in regard to fire sprinkler, addressing and wayfinding.	Complies



# 5. Article 4 – Applicable Standards:

# **DIVISION 4.2 – URBAN ESTATE DISTRICT (U-E)**

Applicable Code Standard	Summary of Code Requirement and Analysis  Single-family detached dwelling, accessory building, farm animals and urban agriculture are expressly permitted uses in the Urban Estate (U-E) zone district, all subject to Administrative (Type 1) Review. The final development plan as proposed meets this standard.				
4.1(B)(2)(a) Permitted Uses					
4.2(D)(1) Density/Intensity	The final development plan meets the density/intensity standards of the Urban Estate District. The proposed project provides the following characteristics, in compliance with the standards:				
	<ul> <li>Standard: Overall average density cannot exceed 2 dwelling units/gross acre.         Proposed: 0.25 dwelling units/gross acre.     </li> <li>Standard: Lot size must be one-half (1/2) acre or larger. Proposed: 4.0 acres.</li> </ul>				
4.2(D)(2) Dimensional Standards	The final development plan meets the dimensional standards of the Urban Estate District. The proposed project provides the following characteristics, in compliance with the standards:				
	<ul> <li>Minimum lot width: 100 feet, Provided: 227 feet.</li> <li>Minimum front yard depth: 30 feet. Provided: 571 feet.</li> <li>Minimum rear yard depth: 25 feet. Provided: 101 feet.</li> <li>Minimum side yard width: 20 feet. Provided: 76 feet (west side yard) and 80 feet (east side yard).</li> <li>Maximum building height: three (3) stories. Proposed: two (2) stories.</li> </ul>				
4.2(E)(1) Street Connectivity and Design	Any development within the Urban Estate District require compliance with the standards contained in Section 3.6.3, Street Pattern and Connectivity Standards. The proposed development dedicates the necessary Right-of-Way for the future extension of Sage Creek Road. Sage Creek Road is an east-west local street that will connect South Timberline Road to the Sage Creek Subdivision.	Complies			



#### 6. Findings of Fact/Conclusion

In evaluating the request for the Hill Single-Family Final Development Plan, FDP210005, staff makes the following findings of fact:

- A. The Hill Single-Family Final Development Plan conforms to the Structure Plan place type designation and policy guidance of *City Plan* and the Structure Plan Map.
- B. The modification of standards to section 3.2.2 (J) proposed with this project development plan meets the application requirements and criteria of section 2.8.2(h)(4), and the granting of the modification would not be detrimental to the public good.
- C. The Hill Single-Family Final Development Plan complies with process located in Division 2.2 Common Development Review Procedures for Development Applications of Article 2 Administration.
- D. The Hill Single-Family Final Development Plan complies with relevant standards located in Article 3 General Development Standards, provided that the Modification of Standard to section 3.2.2(J) is approved.
- E. The Hill Single-Family Final Development Plan complies with relevant standards located in Division 4.2, Urban Estate District (U-E) of Article 4.

#### 7. Recommendation

Staff recommends approval of the Modification of Standard to Section 3.2.2(J) and approval of the Hill Single-Family Final Development Plan, FDP210005, based on the aforementioned Findings of Fact.

#### 8. Attachments

- 1. Planning Set (site and landscape)
- 2. Subdivision Plat
- 3. BDR Manager's Decision 2400 Kechter Rd Minor Subdivision
- 4. Utility Plans
- 5. Drainage and Erosion Control Report
- 6. Modification Justification Letter
- 7. Letters of Support from adjoining neighbors

# FINAL DEVELOPMENT PLAN Lot 2, Blehm Subdivision 2nd Filing

Being a Replat of Lot 5, Blehm Subdivision

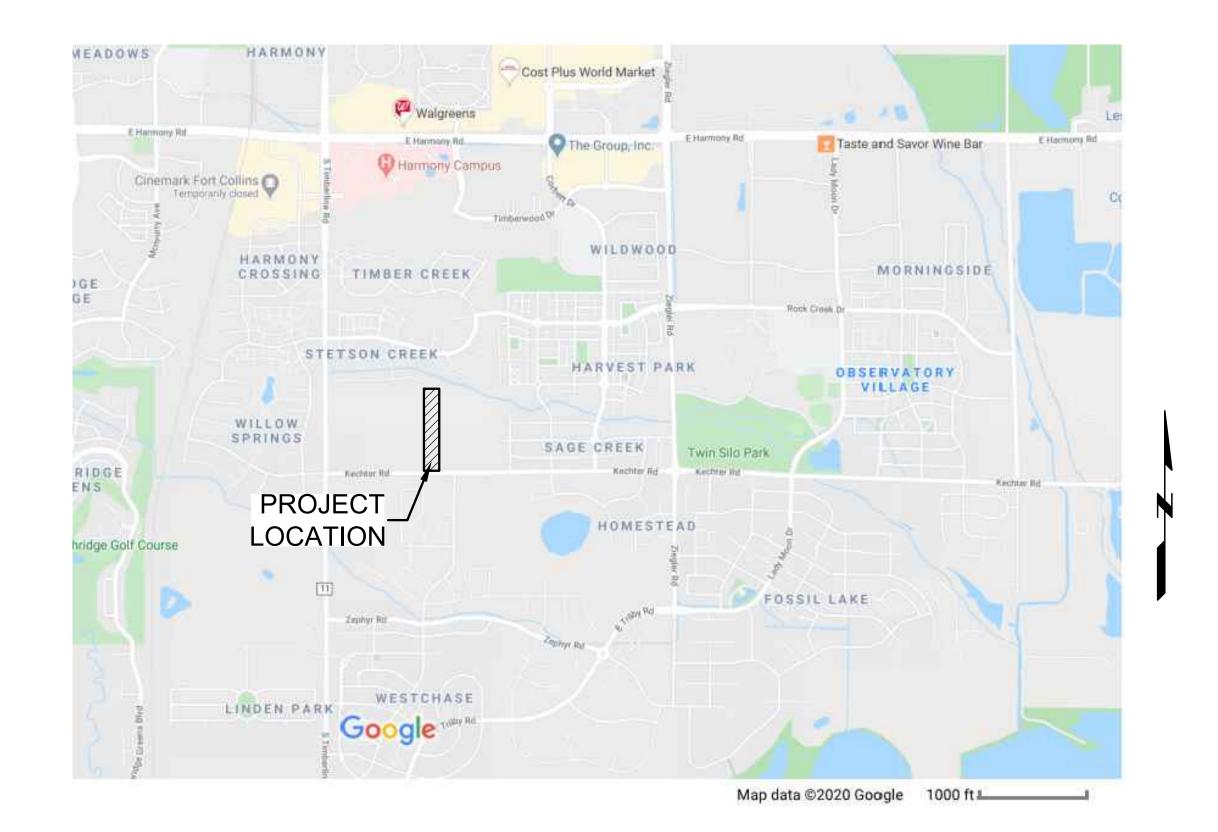
Situate in the Southwest Quarter of Section 5, Township 6 North, Range 68 West of the 6th P.M.

City of Fort Collins, County of Larimer, State of Colorado

**JUNE 2021** 

# SITE PLAN NOTES:

- REFER TO FINAL UTILITY PLANS FOR EXACT LOCATIONS AND CONSTRUCTION INFORMATION FOR STORM DRAINAGE STRUCTURES, UTILITY MAINS AND SERVICES, PROPOSED TOPOGRAPHY, STREET IMPROVEMENTS.
- 2. REFER TO THE SUBDIVISION PLAT AND UTILITY PLANS FOR EXACT LOCATIONS, AREAS AND DIMENSIONS OF ALL EASEMENTS, LOTS, TRACTS, STREETS, WALKS AND OTHER SURVEY INFORMATION.
- 3. THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FINAL PLANS. AMENDMENTS TO THE PLANS MUST BE REVIEWED AND APPROVED BY THE CITY PRIOR TO THE IMPLEMENTATION OF ANY CHANGES TO THE PLANS.
- 4. ALL ROOFTOP AND GROUND MOUNTED MECHANICAL EQUIPMENT MUST BE SCREENED FROM VIEW FROM ADJACENT PROPERTY AND PUBLIC STREETS. IN CASES WHERE BUILDING PARAPETS DO NOT ACCOMPLISH SUFFICIENT SCREENING, THEN FREE-STANDING SCREEN WALLS MATCHING THE PREDOMINANT COLOR OF THE BUILDING SHALL BE CONSTRUCTED. OTHER MINOR EQUIPMENT SUCH AS CONDUIT, METERS AND PLUMBING VENTS SHALL BE SCREENED OR PAINTED TO MATCH SURROUNDING BUILDING SURFACES.
- 5. ALL CONSTRUCTION WITH THIS DEVELOPMENT PLAN MUST BE COMPLETED IN ONE PHASE UNLESS A PHASING PLAN IS SHOWN WITH THESE PLANS.
- 6. ALL SINGLE FAMILY DETACHED HOMES SHALL MEET OR EXCEED THE GARAGE DOOR STANDARDS AS OUTLINED IN 3.5.2(E) OF THE LAND USE CODE.
- 7. ALL EXTERIOR LIGHTING PROVIDED SHALL COMPLY WITH THE FOOT-CANDLE REQUIREMENTS IN SECTION 3.2.4 OF THE LAND USE CODE AND SHALL USE A CONCEALED, FULLY SHIELDED LIGHT SOURCE WITH SHARP CUT-OFF CAPABILITY SO AS TO MINIMIZE UP-LIGHT, SPILL LIGHT, GLARE AND UNNECESSARY DIFFUSION.
- 8. SIGNAGE AND ADDRESSING ARE NOT PERMITTED WITH THIS PLANNING DOCUMENT AND MUST BE APPROVED BY SEPARATE CITY PERMIT PRIOR TO CONSTRUCTION. SIGNS MUST COMPLY WITH CITY SIGN CODE UNLESS A SPECIFIC VARIANCE IS GRANTED BY THE CITY.
- 9. FIRE HYDRANTS MUST MEET OR EXCEED POUDRE FIRE AUTHORITY STANDARDS. ALL BUILDINGS MUST PROVIDE AN APPROVED FIRE EXTINGUISHING SYSTEM.
- 10.DESIGN AND INSTALLATION OF ALL PARKWAY/TREE LAWN AND MEDIAN AREAS IN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH CITY STANDARDS. UNLESS OTHERWISE AGREED TO BY THE CITY WITH THE FINAL PLANS, ALL ONGOING MAINTENANCE OF SUCH AREAS IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER.
- 11.ALL SIDEWALKS AND RAMPS MUST CONFORM TO CITY STANDARDS. ACCESSIBLE RAMPS MUST BE PROVIDED AT ALL STREET AND DRIVE INTERSECTIONS AND AT ALL DESIGNATED ACCESSIBLE PARKING SPACES. ACCESSIBLE PARKING SPACES MUST SLOPE NO MORE THAN 1:48 IN ANY DIRECTION. ALL ACCESSIBLE ROUTES MUST SLOPE NO MORE THAN 1:20 IN DIRECTION OF TRAVEL AND WITH NO MORE THAN 1:48 CROSS SLOPE.
- 12.COMMON OPEN SPACE AREAS AND LANDSCAPING WITHIN RIGHT OF WAYS, STREET MEDIANS, AND TRAFFIC CIRCLES ADJACENT TO COMMON OPEN SPACE AREAS ARE REQUIRED TO BE MAINTAINED BY THE PROPERTY OWNER OF THE COMMON AREA. THE PROPERTY OWNER IS RESPONSIBLE FOR SNOW REMOVAL ON ALL ADJACENT STREET SIDEWALKS AND SIDEWALKS IN COMMON OPEN SPACE AREAS.
- 13.DESIGN AND INSTALLATION OF ALL PARKWAY/TREE LAWN AND MEDIAN AREAS IN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH CITY STANDARDS. UNLESS OTHERWISE AGREED TO BY THE CITY WITH THE FINAL PLANS, ALL ONGOING MAINTENANCE OF SUCH AREAS IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER.
- 14.THE PROPERTY OWNER FOR EACH RESIDENTIAL LOT IS RESPONSIBLE FOR SNOW REMOVAL ON ALL STREET SIDEWALKS ADJACENT TO EACH RESIDENTIAL LOT.
- 15.PRIVATE CONDITIONS, COVENANTS, AND RESTRICTIONS (CC&R'S), OR ANY OTHER PRIVATE RESTRICTIVE COVENANT IMPOSED ON LANDOWNERS WITHIN THE DEVELOPMENT, MAY NOT BE CREATED OR ENFORCED HAVING THE EFFECT OF PROHIBITING OR LIMITING THE INSTALLATION OF XERISCAPE LANDSCAPING, SOLAR/PHOTO-VOLTAIC COLLECTORS (IF MOUNTED FLUSH UPON ANY ESTABLISHED ROOF LINE), CLOTHES LINES (IF LOCATED IN BACK YARDS), ODOR- CONTROLLED COMPOST BINS, OR WHICH HAVE THE EFFECT OF REQUIRING THAT A PORTION OF ANY INDIVIDUAL LOT BE PLANTED IN TURF GRASS.
- 16.ANY DAMAGED CURB, GUTTER AND SIDEWALK EXISTING PRIOR TO CONSTRUCTION, AS WELL AS STREETS, SIDEWALKS, CURBS AND GUTTERS, DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED OR RESTORED TO CITY OF FORT COLLINS STANDARDS AT THE DEVELOPER'S EXPENSE PRIOR TO THE ACCEPTANCE OF COMPLETED IMPROVEMENTS AND/OR PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY.
- 17. FIRE LANE MARKING: A FIRE LANE MARKING PLAN MUST BE REVIEWED AND APPROVED BY THE FIRE OFFICIAL PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. WHERE REQUIRED BY THE FIRE CODE OFFICIAL, APPROVED SIGNS OR OTHER APPROVED NOTICES THAT INCLUDE THE WORDS NO PARKING FIRE LANE SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF. THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AD BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.



# OWNER:

CHRIS HILL 4112 LAKEFRONT DRIVE LOVELAND, COLORADO 80537 (970) 227-3112 CHILL004@YAHOO.COM

# CIVIL ENGINEER:

KEEFE CIVIL, INC. MEGAN KEEFE, P.E. 3125 CROCKETT STREET FORT COLLINS, COLORADO 80526 (970) 215-6808 MEG@KEEFECIVIL.COM

# SURVEYOR:

MAJESTIC SURVEYING STEVEN PARKS, PLS 1111 DIAMOND VALLEY DRIVE #104 WINDSOR, CO 80550 (970) 443-0882 STEVENP@MAJESTICSURVEYING.COM

# GEOTECHNICAL ENGINEER:

EARTH ENGINEERING COMPANY, INC.
MICHAEL J. COLEY, P.E.
P.O. BOX 271428
FORT COLLINS, COLORADO 80527
(970) 775-2004
MIKEC@EARTHENGINEERINGCOMPANY.COM

# ARCHITECT:

KENNEY LEE ARCHITECTURE GROUP KRIS LEE 209 EAST 4TH STREET LOVELAND, COLORADO 80537 (970) 663-0548 KML@KENNEYLEEARCH.COM

PROPOSED LAND USES				
SINGLE-FAMILY DETACHED DWELLINGS	1 TOTAL			
ACCESSORY BUILDINGS	1 TOTAL			
FARM ANIMALS				
URBAN AGRICULTURE				

Sheet Title	Sheet Number
COVER SHEET	1
SITE AND LANDSCAPE PLAN	2
GENERAL NOTES	3

LAND USE TABLE

ZONE DISTRICT: URBAN ESTATE (U-E)
EXISTING SINGLE-FAMILY RESIDENCE STORIES: 0
NEW SINGLE-FAMILY RESIDENCE STORIES: 2
ALLOWABLE DENSITY: 2 UNITS / GROSS ACRE
PROPOSED DENSITY: 0.25 UNITS / GROSS ACRE

PD000 LOT 017E: 4 011 A0DE0

NEW RESIDENTIAL BUILDING FOOTPRINT TO BE ADDED: 0.954 ACRES
NEW STORAGE AND ACCESSORY BUILDING(S) TO BE ADDED: 0.100 ACRES
NET BUILDING COVERAGE: 1.054 ACRES

GRAVEL AREAS: 0.048 ACRES
CONCRETE AREAS: 0.051 ACRES
FIRE LANE AREAS: 0.435 ACRES
LANDSCAPING AND OPEN AREAS: 2.423 ACRES

PARKING SUMMARY
REQUIRED: 1 / SINGLE-FAMILY DETACHED DWELLING
PROVIDED: 3

# PLANNING CERTIFICATE

APPROVED BY THE DIRECTOR OF COMMUNITY DEVELOPMENT AND
NEIGHBORHOOD SERVICES OF THE CITY OF FORT COLLINS, COLORADO
ON THIS DAY OF, 20
Director Signature

# OWNER'S CERTIFICATE

THE UNDERSIGNED DOES/DO HEREBY CERTIFY THAT I/WE ARE THE LAWFUL OWNERS OF THE REAL PROPERTY DESCRIBED ON THIS SITE PLAN AND DO HEREBY CERTIFY THAT I/WE ACCEPT THE CONDITIONS AND RESTRICTIONS SET FORTH ON SAID SITE PLAN.					
OWNER (SIGNED)	Date				
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED B	· · -				
(PRINT NAME)					
AS					
MY COMMISSION EXPIRES:					
WITNESS MY HAND AND OFFICIAL SEAL.					
NOTARY PUBLIC	ADDRESS				

 7

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 4

 3

 2

 1

 DATE
 NO.

 DATE
 OATE

 JOB NO. 2020-016

KEEFE CIVIL, INC.
3125 CROCKETT STREET
FORT COLLINS, CO 80526
(970) 215-6808
MEG@KEEFECIVIL.COM

AD FILING, BEING A REFAISION PLANNING SET

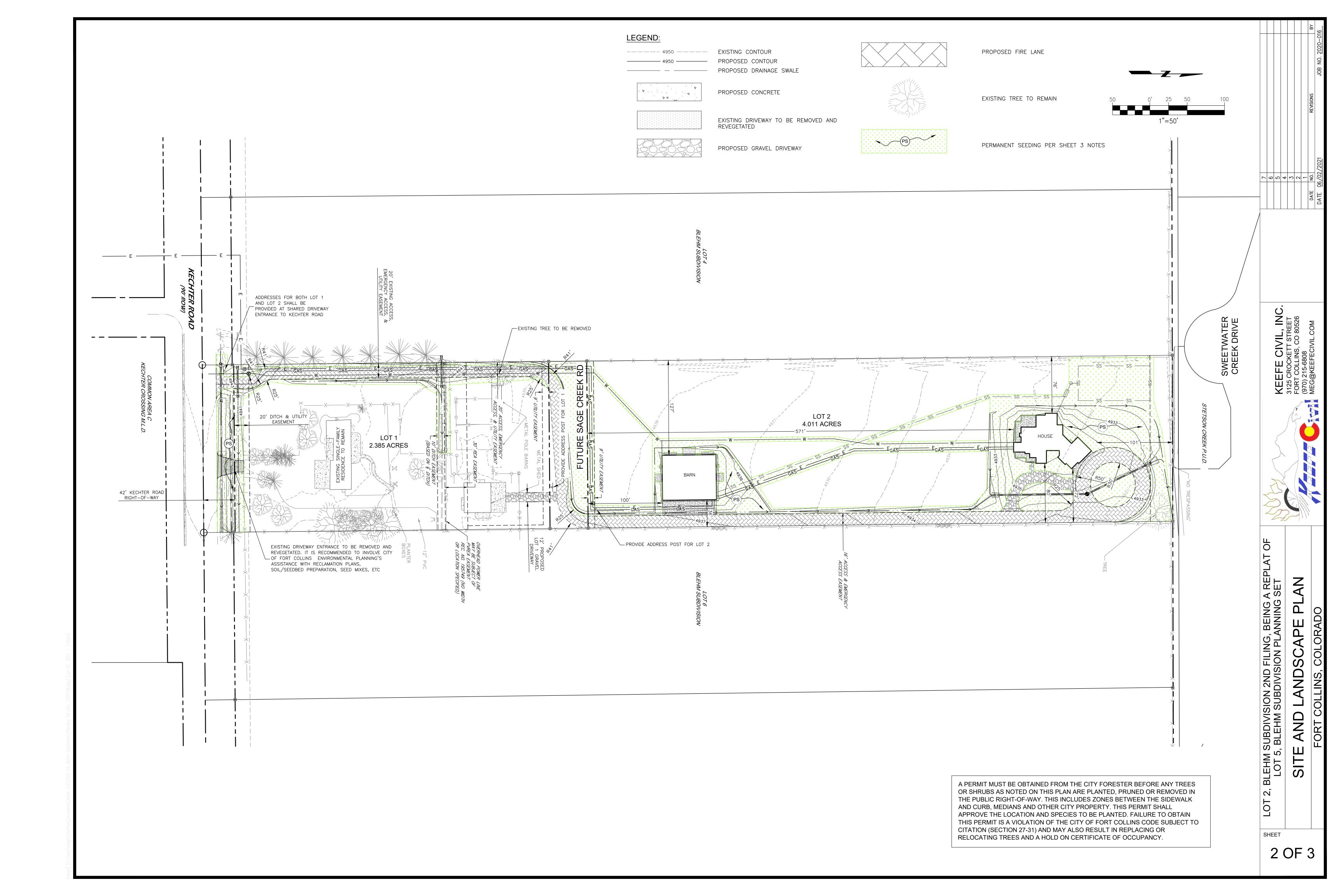
EHM SUBDIVISION

COVER SHI

T 2, BLEHM SUBDIVISION LOT 5, BLEHM SUBI

SHEET

1 OF 3



Tree Inventory and Mitigation Lot - 2400 Kechter Rd									
#									
1	Honeylocust	10"	Fair	2					
2	Honeylocust	11"	Fair	2					
3	Crabapple	25"	Fair	2.5					
4	Cherry	10"	Dead	0					
5	Crabapple	11"	Fair	1.5					
6	Cherry	12"	Fair	1.5					
7	Crabapple	6"	Fair	1					
8	Cherry	10"	Fair	1.5					
9	Redbud	14"	Fair	2					
10	Cherry	8"	Fair	1.5					
11	Redbud	18"	Fair plus	2.5					
12	Ash	13"	Fair plus	2					
13	Bur oak	17"	Fair plus	2.5					
14	Spruce	13"	Fair plus	2					
15	White poplar	58"	Fair minus	3					
16	Juniper	12"	Fair	2					
17	Honeylocust	18"	Fair minus	1.5					
18	Honeylocust	18"	Fair minus	1.5					
19	Mugo pine		Fair plus	3		~30 stems			
20	Plum	10"	Fair minus	1.5					
21	Plum	11"	Fair	2					
22	Plum	9"	Fair minus	1.5		measured below 4.5'			
23	Mugo pine		Fair	2		6 stems			

# NATIVE SEED MIX NOTES

- 1. NATIVE SEED MIX PER UPLAND MIX SHOWN HEREIN.
- 2. PREPARE SOIL AS NECESSARY AND APPROPRIATE FOR NATIVE SEED MIX SPECIES THROUGH AERATION AND ADDITION OF AMENDMENTS, THEN SEED IN TWO DIRECTIONS TO DISTRIBUTE SEED EVENLY OVER ENTIRE AREA. DRILL SEED ALL INDICATED AREAS AS SOON AS POSSIBLE AFTER COMPLETION OF GRADING OPERATIONS.
- 3. IF CHANGES ARE TO BE MADE TO SEED MIX BASED ON SITE CONDITIONS THEN APPROVAL MUST BE PROVIDED BY CITY ENVIRONMENTAL PLANNER.
- 4. APPROPRIATE NATIVE SEEDING EQUIPMENT WILL BE USED (STANDARD TURF SEEDING EQUIPMENT OR AGRICULTURE EQUIPMENT SHALL NOT BE USED).
- 5. DRILL SEED APPLICATION RECOMMENDED PER SPECIFIED APPLICATION RATE TO NO MORE THAN ½ INCH DEPTH (OR APPROPRIATE DEPTH FOR SELECTED SPECIES). FOR BROADCAST SEEDING INSTEAD OF DRILL SEEDING METHOD DOUBLE SPECIFIED APPLICATION RATE. REFER TO NATIVE SEED MIX TABLE FOR SPECIES, PERCENTAGES AND APPLICATION RATES.
- 6. PREPARE A WEED MANAGEMENT PLAN TO ENSURE THAT WEEDS ARE PROPERLY MANAGED BEFORE, DURING AND AFTER SEEDING ACTIVITIES.
- 7. AFTER SEEDING THE AREA SHALL BE COVERED WITH CRIMPED STRAW, JUTE MESH, OR OTHER APPROPRIATE METHODS.
- 8. WHERE NEEDED, TEMPORARY IRRIGATION SHOULD BE PROVIDED UNTIL SEED IS ESTABLISHED. IF IRRIGATION IS USED, THE IRRIGATION SYSTEM FOR SEEDED AREAS SHALL BE FULLY OPERATIONAL AT THE TIME OF SEEDING AND SHALL ENSURE 100% HEAD-TO-HEAD COVERAGE OVER ALL SEEDED AREAS. ALL METHODS AND REQUIREMENTS IN THE APPROVED IRRIGATION PLAN SHALL BE FOLLOWED.
- 9. CONTRACTOR SHALL MONITOR SEEDED AREA FOR PROPER IRRIGATION, EROSION CONTROL, GERMINATION AND RESEEDING AS NEEDED TO ESTABLISH COVER.
- 10.THE APPROVED SEED MIX AREA IS INTENDED TO BE MAINTAINED IN A NATURAL LIKE LANDSCAPE AESTHETIC. IF AND WHEN MOWING OCCURS IN NATIVE GRASS SEED MIX AREAS DO NOT MOW LOWER THAN 6 TO 8 INCHES IN HEIGHT TO AVOID INHIBITING NATIVE PLANT GROWTH.
- 11.NATIVE SEED AREA WILL BE CONSIDERED ESTABLISHED WHEN SEVENTY PERCENT VEGETATIVE COVER IS REACHED WITH NO LARGER THAN ONE FOOT SQUARE BARE SPOTS AND/OR UNTIL DEEMED ESTABLISHED BY CITY PLANNING SERVICES AND EROSION CONTROL.
- 12.THE DEVELOPER AND/OR LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ADEQUATE SEEDLING COVERAGE AND GROWTH AT THE TIME OF FINAL STABILIZATION, AS DEFINED BY STATE AND LOCAL AGENCIES. IF FINAL STABILIZATION IS NOT ACHIEVED TO THE SATISFACTION OF THE AGENCY, THE DEVELOPER AND/OR LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL CORRECTIVE MEASURES TO SATISFY FINAL VEGETATIVE REQUIREMENTS FOR CLOSEOUT.

		UPLAND MIX	
	Common Name	Scientific Name	lbs/PLS/Acre
	Plains coreopsis	Coreopsis tinctoria	0.17
Wil	Purple prairie clover	Dalea purpurea	0.81
Wildflowers	Indian blanketflower	Gaillardia aristata	1.85
vers	Rocky. Mtn. penstemon	Penstemon strictus	0.35
	Mexican hat	Ratibida columnifera	0.2
	Indian ricegrass	Achnatherum hymenoides	1.13
	Sideoats grama	Bouteloua curtipendula	1.15
	Buffalograss	Bouteloua dactyloides	3.27
	Blue grama	Bouteloua gracilis	0.25
Grasses	Bottlebrush squirreltail	Elymus elymoides	0.95
sses	Prairie Junegrass	Koeleria macrantha	0.08
	Green needlegrass	Nassella viridula	1.01
	Switchgrass	Panicum virgatum	0.71
	Western wheat	Poscopyrum smithii	1.61
	Sand dropseed	Sporobolus cryptandrus	0.04
		Total for Upland Mix	13.58 lbs/PLS/Acre
	ACCEPTABLE SUBSTITUTES FOR WILDF	LOWERS	
	Fringed sage (Artemisio frigida) 0.03 lbs/PL	S/Acre	
Sı	Blue flax (Linnut lewisii) 0.41 lbs/PLS/Acre		
ıbst	Prairie aster (Machaeranthera tanacetifolia)	0.25 lbs/PLS/Acre	
Substitutes	ACCEPTABLE SUBSTITUTES FOR GRASSI	žS.	
S	Canada wildrye (Elymus canadensis) 1.59 lbs	s/PLS/Acre	
	Inland saltgrass (Distichlis stricta) 0.35 lbs/H	LS/Acre	
	Mountain muhly (Muhlenbergia montana) 0	.11 lbs/PLS/Acre	
Requirements	missing species with the acceptable substiturequired for project. This mix is based on 70 drill seed application. Mix should be doubled purchase. Please note that the pounds per ac	urchasing all species listed in mix. If a species can't be locions (listed above). Contractor is responsible for provid seeds/square foot and is only calculated for one acre. The if hand broadcasted. Contractor is responsible for calcure are in PLS (Pure Live Seed) and must be ordered that the Article III, Section 21-40 of the Code of the City of Forth	ling seed tags to appropriate City staff, if his mix is based on the contractor using a lating the appropriate seed amounts to way. All materials furnished shall be free

# STREET TREE NOTES:

- 1. A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-31) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.
- 2. CONTACT THE CITY FORESTER TO INSPECT ALL STREET TREE PLANTINGS AT THE COMPLETION OF EACH PHASE OF THE DEVELOPMENT. ALL MUST BE INSTALLED AS SHOWN ON THE LANDSCAPE PLAN. APPROVAL OF STREET TREE PLANTING IS REQUIRED BEFORE FINAL APPROVAL OF EACH PHASE.
- 3. STREET LANDSCAPING, INCLUDING STREET TREES, SHALL BE SELECTED IN ACCORDANCE WITH ALL CITY CODES AND POLICIES. ALL TREE PRUNING AND REMOVAL WORKS SHALL BE PERFORMED BY A CITY OF FORT COLLINS LICENSED ARBORS WHERE REQUIRED BY CODE.STREET TREES SHALL BE SUPPLIED AND PLANTED BY THE DEVELOPER USING A QUALIFIED LANDSCAPE CONTRACTOR.
- 4. THE DEVELOPER SHALL REPLACE DEAD OR DYING STREET TREES AFTER PLANTING UNTIL FINAL MAINTENANCE INSPECTION AND ACCEPTANCE BY THE CITY OF FORT COLLINS FORESTRY DIVISION.
  ALL STREET TREES IN THE PROJECT MUST BE ESTABLISHED, WITH AN APPROVED SPECIES AND OF ACCEPTABLE CONDITION PRIOR TO ACCEPTANCE.
- 5. SUBJECT TO APPROVAL BY THE CITY FORESTER -- STREET TREE LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE DRIVEWAY LOCATIONS, UTILITY SEPARATIONS BETWEEN TREES, STREET SIGNS AND STREET LIGHTS. STREET TREES TO BE CENTERED IN THE MIDDLE OF THE LOT TO THE EXTENT FEASIBLE. QUANTITIES SHOWN ON PLAN MUST BE INSTALLED UNLESS A REDUCTION IS APPROVED BY THE CITY TO MEET SEPARATION STANDARDS.

#### TREE PROTECTION NOTES:

- 1. ALL EXISTING TREES WITHIN THE LIMITS OF THE DEVELOPMENT AND WITHIN ANY NATURAL AREA BUFFER ZONES SHALL REMAIN AND BE PROTECTED UNLESS NOTED ON THESE PLANS FOR REMOVAL
- 2. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER A FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.
- 3. ALL PROTECTED EXISTING TREES SHALL BE PRUNED TO THE CITY OF FORT COLLINS FORESTRY STANDARDS. TREE PRUNING AND REMOVAL SHALL BE PERFORMED BY A BUSINESS THAT HOLDS A CURRENT CITY OF FORT COLLINS ARBORIST LICENSE WHERE REQUIRED BY CODE.
- 4. PRIOR TO AND DURING CONSTRUCTION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED EXISTING TREES WITH SUCH BARRIERS TO BE OF ORANGE FENCING A MINIMUM OF FOUR (4) FEET IN HEIGHT, SECURED WITH METAL T- POSTS, NO CLOSER THAN SIX (6) FEET FROM THE TRUNK OR ONE-HALF (½) OF THE DRIP LINE, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE.
- 5. DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE APPLICANT SHALL PREVENT THE CLEANING OF EQUIPMENT OR MATERIAL OR THE STORAGE AND DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OILS, SOLVENTS, ASPHALT, CONCRETE, MOTOR OIL OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY PROTECTED TREE OR GROUP OF TREES.
- 6. NO DAMAGING ATTACHMENT, WIRES, SIGNS OR PERMITS MAY BE FASTENED TO ANY PROTECTED TREE.
- 7. LARGE PROPERTY AREAS CONTAINING PROTECTED TREES AND SEPARATED FROM CONSTRUCTION OR LAND CLEARING AREAS, ROAD RIGHTS-OF-WAY AND UTILITY EASEMENTS MAY BE "RIBBONED OFF," RATHER THAN ERECTING PROTECTIVE FENCING AROUND EACH TREE AS REQUIRED IN SUBSECTION (G)(3) ABOVE. THIS MAY BE ACCOMPLISHED BY PLACING METAL T-POST STAKES A MAXIMUM OF FIFTY (50) FEET APART AND TYING RIBBON OR ROPE FROM STAKE- TO-STAKE ALONG THE OUTSIDE PERIMETERS OF SUCH AREAS BEING CLEARED.
- 8. THE INSTALLATION OF UTILITIES, IRRIGATION LINES OR ANY UNDERGROUND FIXTURE REQUIRING EXCAVATION DEEPER THAN SIX (6) INCHES SHALL BE ACCOMPLISHED BY BORING UNDER THE ROOT SYSTEM OF PROTECTED EXISTING TREES AT A MINIMUM DEPTH OF TWENTY-FOUR (24) INCHES. THE AUGER DISTANCE IS ESTABLISHED FROM THE FACE OF THE TREE (OUTER BARK) AND IS SCALED FROM TREE DIAMETER AT BREAST HEIGHT AS DESCRIBED IN THE CHART BELOW:

Tree-Diameter-at-Breast-Height- (inches)¤	Auger-Distance·From·Face·of· Tree·(feet)¤
0-2¤	1¤
3-4¤	2¤
5-9¤	5¤
10-14¤	10¤
15-19¤	12¤
Over-19¤	15¤

9. ALL TREE REMOVAL SHOWN SHALL BE COMPLETED OUTSIDE OF THE SONGBIRD NESTING SEASON (FEB 1 - JULY 31) OR CONDUCT A SURVEY OF TREES ENSURING NO ACTIVE NESTS IN THE AREA.

# GENERAL LANDSCAPE NOTES:

- 1. PLANT QUALITY: ALL PLANT MATERIAL SHALL BE A-GRADE OR NO. 1 GRADE FREE OF ANY DEFECTS, OF NORMAL HEALTH, HEIGHT, LEAF DENSITY AND SPREAD APPROPRIATE TO THE SPECIES AS DEFINED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. ALL TREES SHALL BE BALL AND BURLAP OR EQUIVALENT.
- 2. IRRIGATION: ALL LANDSCAPE AREAS WITHIN THE SITE INCLUDING TURF, SHRUB BEDS AND TREE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM. THE IRRIGATION PLAN MUST BE REVIEWED AND APPROVED BY THE CITY OF FORT COLLINS WATER UTILITIES DEPARTMENT PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. ALL TURF AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC POP-UP IRRIGATION SYSTEM. ALL SHRUB BEDS AND TREES, INCLUDING IN NATIVE SEED AREAS, SHALL BE IRRIGATED WITH AN AUTOMATIC DRIP (TRICKLE) IRRIGATION SYSTEM, OR WITH AN ACCEPTABLE ALTERNATIVE APPROVED BY THE CITY WITH THE IRRIGATION PLANS. THE IRRIGATION SYSTEM SHALL BE ADJUSTED TO MEET THE WATER REQUIREMENTS OF THE INDIVIDUAL PLANT MATERIAL. IRRIGATION SYSTEMS TO BE TURNED OVER TO THE CITY PARKS DEPARTMENT FOR MAINTENANCE MUST BE APPROVED BY THE PARKS MANAGER AND MEET PARKS IRRIGATION STANDARDS. DESIGN REVIEW SHALL OCCUR DURING UTILITIES DEPARTMENT IRRIGATION REVIEW PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND CONSTRUCTION OBSERVATION AND INSPECTION BY PARKS SHALL BE INCORPORATED INTO THE CONSTRUCTION PROCESS.
- 3. TOPSOIL: TO THE MAXIMUM EXTENT FEASIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE CONSERVED FOR LATER USE ON AREAS REQUIRING REVEGETATION AND LANDSCAPING.
- 4. <u>SOIL AMENDMENTS</u>: SOIL AMENDMENTS SHALL BE PROVIDED AND DOCUMENTED IN ACCORDANCE WITH CITY CODE SECTION 12-132. THE SOIL IN ALL LANDSCAPE AREAS, INCLUDING PARKWAYS AND MEDIANS, SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF NOT LESS THAN EIGHT(8) INCHES AND SOIL AMENDMENT SHALL BE THOROUGHLY INCORPORATED INTO THE SOIL OF ALL LANDSCAPE AREAS TO A DEPTH OF AT LEAST SIX(6) INCHES BY TILLING, DISCING OR OTHER SUITABLE METHOD, AT A RATE OF AT LEAST THREE (3) CUBIC YARDS OF SOIL AMENDMENT PER ONE THOUSAND (1,000) SQUARE FEET OF LANDSCAPE AREA. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, A WRITTEN CERTIFICATION MUST BE SUBMITTED TO THE CITY THAT ALL PLANTED AREAS, OR AREAS TO BE PLANTED, HAVE BEEN THOROUGHLY LOOSENED AND THE SOIL AMENDED, CONSISTENT WITH THE REQUIREMENTS SET FORTH IN SECTION 12-132.
- 5. <u>INSTALLATION AND GUARANTEE</u>: ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND HORTICULTURAL PRACTICES IN A MANNER DESIGNED TO ENCOURAGE QUICK ESTABLISHMENT AND HEALTHY GROWTH. ALL LANDSCAPING FOR EACH PHASE MUST BE EITHER INSTALLED OR THE INSTALLATION MUST BE SECURED WITH AN IRREVOCABLE LETTER OF CREDIT, PERFORMANCE BOND, OR ESCROW ACCOUNT FOR 125% OF THE VALUATION OF THE MATERIALS AND LABOR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING IN SUCH PHASE.
- 6. MAINTENANCE: TREES AND VEGETATION, IRRIGATION SYSTEMS, FENCES, WALLS AND OTHER LANDSCAPE ELEMENTS WITH THESE FINAL PLANS SHALL BE CONSIDERED AS ELEMENTS OF THE PROJECT IN THE SAME MANNER AS PARKING, BUILDING MATERIALS AND OTHER SITE DETAILS. THE APPLICANT, LANDOWNER OR SUCCESSORS IN INTEREST SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE REGULAR MAINTENANCE OF ALL LANDSCAPING ELEMENTS IN GOOD CONDITION. ALL LANDSCAPING SHALL BE MAINTAINED FREE FROM DISEASE, PESTS, WEEDS AND LITTER, AND ALL LANDSCAPE STRUCTURES SUCH AS FENCES AND WALLS SHALL BE REPAIRED AND REPLACED PERIODICALLY TO MAINTAIN A STRUCTURALLY SOUND CONDITION.
- 7. REPLACEMENT: ANY LANDSCAPE ELEMENT THAT DIES, OR IS OTHERWISE REMOVED, SHALL BE PROMPTLY REPLACED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS.
- 8. THE FOLLOWING SEPARATIONS SHALL BE PROVIDED BETWEEN TREES/SHRUBS AND UTILITIES:
- 40 FEET BETWEEN CANOPY TREES AND STREET LIGHTS
- 15 FEET BETWEEN ORNAMENTAL TREES AND STREETLIGHTS
- 10 FEET BETWEEN TREES AND PUBLIC WATER, SANITARY AND STORM SEWER MAIN LINES
  6 FEET BETWEEN TREES AND PUBLIC WATER, SANITARY AND STORM SEWER SERVICE LINES.
- 4 FEET BETWEEN SHRUBS AND PUBLIC WATER, SANITARY AND STORM SEWER SERVICE LINES
- 4 FEET BETWEEN TREES AND GAS LINES
- 9. ALL STREET TREES SHALL BE PLACED A MINIMUM EIGHT (8) FEET AWAY FROM THE EDGES OF DRIVEWAYS AND ALLEYS PER LUC 3.2.1(D)(2)(A).
- 10.PLACEMENT OF ALL LANDSCAPING SHALL BE IN ACCORDANCE WITH THE SIGHT DISTANCE CRITERIA AS SPECIFIED BY THE CITY OF FORT COLLINS. NO STRUCTURES OR LANDSCAPE ELEMENTS GREATER THAN 24" SHALL BE ALLOWED WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENTS WITH THE EXCEPTION OF DECIDUOUS TREES PROVIDED THAT THE LOWEST BRANCH IS AT LEAST 6' FROM GRADE. ANY FENCES WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENT MUST BE NOT MORE THAN 42" IN HEIGHT AND OF AN OPEN DESIGN.
- 11.THE FINAL LANDSCAPE PLAN SHALL BE COORDINATED WITH ALL OTHER FINAL PLAN ELEMENTS SO THAT THE PROPOSED GRADING, STORM DRAINAGE, AND OTHER DEVELOPMENT IMPROVEMENTS DO NOT CONFLICT WITH NOR PRECLUDE INSTALLATION AND MAINTENANCE OF LANDSCAPE ELEMENTS ON THIS PLAN.
- 12.MINOR CHANGES IN SPECIES AND PLANT LOCATIONS MAY BE MADE DURING CONSTRUCTION -- AS REQUIRED BY SITE CONDITIONS OR PLANT AVAILABILITY. OVERALL QUANTITY, QUALITY, AND DESIGN CONCEPT MUST BE CONSISTENT WITH THE APPROVED PLANS. IN THE EVENT OF CONFLICT WITH THE QUANTITIES INCLUDED IN THE PLANT LIST, SPECIES AND QUANTITIES ILLUSTRATED SHALL BE PROVIDED. ALL CHANGES OF PLANT SPECIES AND LOCATION MUST HAVE WRITTEN APPROVAL BY THE CITY PRIOR TO INSTALLATION.
- 13.ALL PLANTING BEDS SHALL BE MULCHED TO A MINIMUM DEPTH OF THREE INCHES.

7
7 6 5 5 4 4 3 2 2 1 DATE 06/02/2021
DATE 06/
DATE

KEEFE CIVIL, INC 3125 CROCKETT STREET FORT COLLINS, CO 80526 (970) 215-6808 MEG@KEEFECIVIL.COM



RAL NOTES

A W

BEING /

SLEHM SUBDIVISION 2ND LOT 5, BLEHM SUBDIVISI

SHEET

3 OF 3

# BLEHM SUBDIVISION 2ND FILING

# Being a Replat of Lot 5, Blehm Subdivision, Situate in the Southwest Quarter of Section 5, Township 6 North, Range 68 West of the 6th P.M.

# CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO

A parcel of land situate in the Southwest Quarter of Section Fiv of the Sixth Principal Meridian (6th P.M.), City of Fort Collins, described as follows:				
Lot Five, Blehm Subdivision, as recorded February 23, 1976 as	Reception No. 1427	795 of the Lari	imer County Clerk	α and Recorder.
(which above described tract contains 6.658 acres, more or	•		•	
for themselves and their successors in interest (collectively, "Ow subdivided into lots, tracts and streets as shown on this Plat to b "Development"), subject to all easements and rights-of-way now obligations of the Plat shall run with the land.	vner") have caused be known as BLEHM	I SUBDIVISI	ON 2ND FILING	the
BY: AS:				
NOTARIAL CERTIFICATE				
STATE OF COLORADO)				
ss COUNTY OF LARIMER) The foregoing instrument was acknowledged before me by	as	this	day of	, 20
Witness my Hand and Official Seal.				
My commission expires:				
LIENHOLDERS				
By: As:				
Witness my hand and seal this day of, 20	··			
NOTARIAL CERTIFICATE				
STATE OF COLORADO) ss				
COUNTY OF LARIMER) The foregoing instrument was acknowledged before me by	as	this	day of	, 20
Witness my Hand and Official Seal.				
My commission expires:				
CERTIFICATE OF DEDICATION:				

Plat; provided, however, that (1) acceptance by the City of this dedication of Easements does not impose upon the City a duty to maintain the Easements so dedicated, and (2) acceptance by the City of this dedication of streets does not impose upon the City a duty to maintain streets so dedicated until such time as the provisions of the Maintenance Guarantee have been fully satisfied. The streets dedicated on this Plat are the fee property of the City as provided in Section 31-23-107 C.R.S. The City's rights under the Easements include the right to install, operate, access, maintain, repair, reconstruct, remove and replace within the Easements public improvements consistent with the intended purpose of the Easements; the right to install, maintain and use gates in any fences that cross the Easements; the right to mark the location of the Easements with suitable markers; and the right to permit other public utilities to exercise these same rights. Owner reserves the right to use the Easements for purposes that do not interfere with the full enjoyment of the rights hereby granted. The City is responsible for maintenance of its own improvements and for repairing any damage caused by its activities in the Easements, but by acceptance of this dedication, the City does not accept the duty of maintenance of the Easements, or of improvements in the Easements that are not owned by the City. Owner will maintain the surface of the Easements in a sanitary condition in compliance with any applicable weed, nuisance or other legal requirements. Except as expressly permitted in an approved plan of development or other written agreement with the City, Owner will not install on the Easements, or approved plan of development or other written agreement with the City, owner will not install on the Easements.

compliance with any applicable weed, nuisance or other legal requirements. Except as expressly permitted in an approved plan of development or other written agreement with the City, Owner will not install on the Easements, or permit the installation on the Easements, of any building, structure, improvement, fence, retaining wall, sidewalk, tree or other landscaping (other than usual and customary grasses and other ground cover). In the event such obstacles are installed in the Easements, the City has the right to require the Owner to remove such obstacles from the Easements. If Owner does not remove such obstacles, the City may remove such obstacles without any liability or obligation for repair and replacement thereof, and charge the Owner the City's costs for such removal. If the City chooses not to remove the obstacles, the City will not be liable for any damage to the obstacles or any other property to which they are attached. The rights granted to the City by this Plat inure to the benefit of the City's agents, licensees, permittees and assigns.

# MAINTENANCE GUARANTEE:

The Owner hereby warrants and guarantees to the City, for a period of two (2) years from the date of completion and first acceptance by the City of the improvements warranted hereunder, the full and complete maintenance and repair of the improvements to be constructed in connection with the Development which is the subject of this Plat. This warranty and guarantee is made in accordance with the City Land Use Code and/or the Transitional Land Use Regulations, as applicable. This guarantee applies to the streets and all other appurtenant structures and amenities lying within the rights-of-way, Easements and other public properties, including, without limitation, all curbing, sidewalks, bike paths, drainage pipes, culverts, catch basins, drainage ditches and landscaping. Any maintenance and/or repair required on utilities shall be coordinated with the owning utility company or department.

The Owner shall maintain said improvements in a manner that will assure compliance on a consistent basis with all construction standards, safety requirements and environmental protection requirements of the City. The Owner shall also correct and repair, or cause to be corrected and repaired, all damages to said improvements resulting from development-related or building-related activities. In the event the Owner fails to correct any damages within thirty (30) days after written notice thereof, then said damages may be corrected by the City and all costs and charges billed to and paid by the Owner. The City shall also have any other remedies available to it as authorized by law. Any damages which occurred prior to the end of said two (2) year period and which are unrepaired at the termination of said period shall remain the responsibility of the Owner.

# REPAIR GUARANTE

In consideration of the approval of this final Plat and other valuable consideration, the Owner does hereby agree to hold the City harmless for a five (5) year period, commencing upon the date of completion and first acceptance by the City of the improvements to be constructed in connection with the development which is the subject of this Plat, from any and all claims, damages, or demands arising on account of the design and construction of public improvements of the property shown herein; and the Owner furthermore commits to make necessary repairs to said public improvements, to include, without limitation, the roads, streets, fills, embankments, ditches, cross pans, sub-drains, culverts, walls and bridges within the right-of-way, Easements and other public properties, resulting from failures caused by design and/or construction defects. This agreement to hold the City harmless includes defects in materials and workmanship, as well as defects caused by or consisting of settling trenches, fills or excavations.

Further, the Owner warrants that he/she owns fee simple title to the property shown hereon and agrees that the City shall not be liable to the Owner or his/her successors in interest during the warranty period, for any claim of damages resulting from negligence in exercising engineering techniques and due caution in the construction of cross drains, drives, structures or buildings, the changing of courses of streams and rivers, flooding from natural creeks and rivers, and any other matter whatsoever on private property. Any and all monetary liability occurring under this paragraph shall be the liability of the Owner. I further warrant that I have the right to convey said land according to this Plat.

APPROVED AS TO	FORM,	CITY	<b>ENGINE</b>	ER

City Engineer		

By the Director of Community Development and Neighborhood Services, City of Fort Collins, Colorado this day of

# Director of Community Development and Neighborhood Services

# ATTORNEY'S CERTIFICATION:

PLANNING APPROVAL

I hereby certify that this Subdivision Plat has been duly executed as required pursuant to Section 2.2.3(C)(3)(a) through (e) inclusive of the Land Use Code of the City of Fort Collins and that all persons signing this Subdivision Plat on behalf of a corporation or other entity are duly authorized signatories under the laws of the State of Colorado. This Certification is based upon the records of the Clerk and Recorder of Larimer County, Colorado as of the date of execution of the Plat and other information discovered by me through reasonable inquiry and is limited as authorized by Section 2.2.3(C)(3)(f) of the Land Use Code.

# address:

# Registration No.:

## BASIS OF BEARINGS AND LINEAL UNIT DEFINITION

Assuming the South line of the Southwest Quarter of Section 5, Township, 6 North, Range 68 West of the 6th P.M., monumented as shown on this drawing, as bearing South 89°29'33" West, being a Grid Bearing of the Colorado State Plane, North Zone, North American Datum 1983/2011, a distance of 2705.28 feet and with all other bearings contained herein relative thereto.

# The lineal dimensions as contained herein are based upon the "U.S. Survey Foot".

# NOTICE

According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon. (13-80-105 C.R.S. 2012)

# TITLE COMMITMENT NOTE

For all information regarding easements, rights-of-way and title of records, Majestic Surveying, LLC relied upon Title Commitment Number 998GTG, dated March 9, 2020, as prepared by Guaranteed Title Group, LLC to delineate the aforesaid information. This survey does not constitute a title search by Majestic Surveying, LLC to determine ownership or easements of record.

# Notice of Other Documents:

All persons take notice that the Owner has executed certain documents pertaining to this Development which create certain rights and obligations of the Development, the Owner and/or subsequent Owners of all or portions of the Development site, many of which obligations constitute promises and covenants that, along with the obligations under this Plat, run with the land. The said documents may also be amended from time to time and may include, without limitation, the Development Agreement, Site And Landscape Covenants, Final Site Plan, Final Landscape Plan, and Architectural Elevations, which documents are on file in the office of the clerk of the City and should be closely examined by all persons interested in purchasing any portion of the Development site.

# EXISTING EASEMENTS NOTE

In the event that the geometry shown for existing easements on this plat conflicts with the original dedicating instrument, the original document information shall supersede.

# NOTE

Dead-end fire apparatus access roads cannot exceed 660 feet in length. Dead-end roads are permitted to exceed this length when any residence beyond 660 is equipped with a residential fire sprinkler system. Any residence built on Lot 2 prior to the construction of Sage Creek Road will therefore exceed the maximum allowable 660 distance and require a sprinkler system.

# <u>NOTE</u>

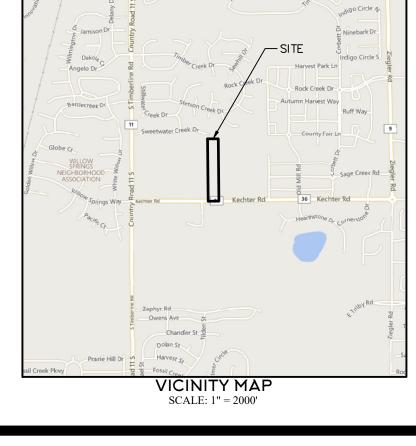
There shall be no private conditions, covenants or restrictions that prohibit or limit the installation of resource conserving equipment or landscaping that are allowed by Sections 12-120 & 12-122 of the City Code.

# SURVEYOR'S CERTIFICATE

I, Steven Parks, a Colorado Licensed Professional Land Surveyor, do hereby state that this Subdivision Plat was prepared from an actual survey under my personal supervision, that the monumentation as indicated hereon were found or set as shown, and that the forgoing Plat is an accurate representation thereof, all this to the best of my knowledge, information and belief.

# PRELIMINARY

Steven Parks - On Behalf of Majestic Surveying, LLC Colorado Licensed Professional Land Surveyor #38348



ALL RESPONSIBILITIES AND COSTS OF OPERATION, MAINTENANCE AND

STREETS AND/OR DRIVES AS PUBLIC STREETS OR DRIVES.

RECONSTRUCTION OF THE PRIVATE STREETS AND/OR DRIVES LOCATED ON THE PRIVATE

PROPERTY THAT IS THE SUBJECT OF THIS PLAT SHALL BE BORNE BY THE OWNERS OF SAID PROPERTY, EITHER INDIVIDUALLY, OR COLLECTIVELY, THROUGH A PROPERTY

OWNERS' ASSOCIATION, IF APPLICABLE. THE CITY OF FORT COLLINS SHALL HAVE NO

OBLIGATION OF OPERATION, MAINTENANCE OR RECONSTRUCTION OF SUCH PRIVATE STREETS AND/OR DRIVES NOR SHALL THE CITY HAVE ANY OBLIGATION TO ACCEPT SUCH

LEGEND

 CURVE TABLE

 CURVE
 LENGTH
 RADIUS
 DELTA
 CHORD
 CH BEARING

 C1
 42.28'
 25.00'
 96\*53'22"
 37.42'
 N49\*06'42"W

 C2
 242.21'
 50.00'
 277\*33'23"
 65.90'
 N41\*13'18"E

 C3
 17.72'
 25.00'
 40\*36'22"
 17.35'
 N20\*48'38"W

 C4
 17.69'
 25.00'
 40\*32'09"
 17.32'
 N20\*50'45"W

	ALIQUOT CORNER AS DESCRIBED		BOUNDARY LINE
	FOUND MONUMENT AS DESCRIBED		EASEMENT LINE
0	CALCULATED POSITION		RIGHT OF WAY LINE
•	SET 24" OF #4 REBAR WITH RED PLASTIC CAP LS 38348		SECTION LINE
ø	POWER POLE	OHE	OVERHEAD ELECTRIC LINE
(M)	MEASURED VALUE	X	FENCE
(P)	PLATTED VALUE		

		CREET	P.U.D.2ND FILING	7		
	LOT 19 LOT 20	DAVER	LOT 21 2.6'¬		14'	_
· \.		4.3'	N89°53'30"W 222.36 (P) N89°50'36"E 222.36'(M)	Mea 20 20 E Zoal		
SOUTH 1/16TH CORNER SECTION 5, T.6N., R.68W. FOUND #6 REBAR WITH 3 1/4" ALUMINUM CAP LS 34995	LOT 19 LOT 20	2.4'	P.U.D.2ND FILING LOT 21  N89°53′30″W 222.36 (P) N89°50′36″E 222.36′(M)  N89°50′36″E 222.36′(M)		CEN 1/16 SECTION 5, T FOUNI	NTER—SOUTH STH CORNER .6N., R.68W. D #6 REBAR WITH 2 1/2" JMINUM CAP LS 17662
S00'12'29"E	LOT 4 BLEHM SUBDIV	NO0°31'15"W 1298.41 (P) NO0°31'15"W 1299.19'(W)  NO0°34'40"W 1299.19'(W)	<u> </u>	ROW DEDICATED BY THIS PLAT 11,404 SQ. FT. 0.262 ACRES		S00*50'00"E 1292.44"
		X X X X X X X X X X X X X X X X X X X	-9' UTILITY EASEMENT -534'38'11"W 28.83'  -36.63'  30' REA EASEMENT REC. NO. 142795	OVERHEAD POWER LINE MAY BE SUBJECT OF PVREA EASEMENT REC. NO. 195749 (NO WIDTH OR LOCATION SPECIFIED)		
SOUTHWEST CORNER SECTION 5, T.6N., R.68 FOUND #6 REBAR WITH ALUMINUM CAP LS 17497	N89*29'33"E  FOUND #4  REBAR  1594.20'	FOUND #4 REBAR 224.31'  **CECHTER ROAD  (90' ROW)  **TOWN TOWN TOWN TOWN TOWN TOWN TOWN TOWN	20' DITCH LATERAL EASEMENT REC. NO. 142795  20' UTILITY EASEMENT 2' S89'29'33"W 224.30'  40' ROW REC. NO. 142795  S89'32'56"W 224.37 (P)  COMMON AREA C RECHTER CROSSING M.L.D.	KEBA	— — — — SECTION 5 FOI	ARTER CORNER , T.6N., R.68W. JND #6 REBAR WITH 2 1/2" ALUMINUM CAP LS 38348
	PROJECT	· · · · · · · · · · · · · · · · · · ·	OJECT NAME: 2400 KECHTER	REVISIONS:	DATE:	



ROJECT NO: 2020177	PROJECT NAME: 2400 KECHTER	REVISIONS:	DATE:	
ATE: 7-1-2020	CLIENT: HILL			
RAWN BY: SIP	FILE NAME: 2020177			
HECKED BY: SIP	SCALE: 1" = 80'			

SHEET 1 OF 1



October 7, 2020

Christopher Hill 2400 Kechter Rd. Fort Collins, CO 80528

RE: 2400 Kechter Rd Minor Subdivision – Manager's Decision

Dear Christopher:

On August 14, 2020, the City of Fort Collins Development Review Division received and processed a request for the 2400 Kechter Road Minor Subdivision, being a request for a Basic Development Review to establish two parcels through a plat, splitting the original 2400 Kechter Road parcel zoned U-E into two lots and dedicating public right of way. The existing zoning remaining U-E for both lots. This request has been processed in accordance with Section 2.18.2 – Basic Development Review Procedures, of the City of Fort Collins Land Use Code pursuant to the applicable standards in the Land Use Code.

**Development Review Center** 281 North College Avenue

Fort Collins, CO 80522-0580

fcgov.com/DevelopmentReview

PO Box 580

970-221-6689

The Development Review Manager hereby makes the following findings of fact:

- 1. 2400 Kechter Road Minor Subdivision, BDR200013, has been accepted and properly processed in accordance with the requirements of Section 2.18 of the Land Use Code.
- 2. 2400 Kechter Road Minor Subdivision, BDR200013, complies with the applicable sections of Article Three, General Development Standards, of the Land Use Code.
- 3. 2400 Kechter Road Minor Subdivision, BDR200013, complies with the requirements of Article Four, Division 4.2 Urban Estate Zone District.

Based on these findings of fact, the Development Review Manager of the City of Fort Collins makes the following decision:

APPROVED	October 7, 2020
Decision	Date
Mod Beals	
Noah Beals	

City of Fort Collins, Development Review Manager

This final decision of the Development Review Manager may be appealed to the Planning & Zoning Board, in accordance with Article II, Division 2.18.3(L) of the Land Use Code, within 14 calendar days of the date of final action by the Development Review Manager. Guidelines explaining the appeal process, including the Code provisions previously referenced, can be found online at <a href="fcgov.com/cityclerk/appeals.php">fcgov.com/cityclerk/appeals.php</a>, or may be obtained in the City Clerk's Office at 300 Laporte Avenue.

# UTILITY PLANS

FOR

# LOT 2, BLEHM SUBDIVISION 2ND FILING

# BEING A REPLAT OF LOT 5, BLEHM SUBDIVISION

Situate in the Southwest Quarter of Section 5, Township 6 North, Range 68 West of the 6th P.M. City of Fort Collins, County of Larimer, State of Colorado

**JUNE 2021** 

HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE CITY OF FORT COLLINS AND STATE OF COLORADO STANDARDS AND STATUTES, RESPECTIVELY; ANI THAT I AM FULLY RESPONSIBLE FOR THE ACCURACY OF ALL DESIGN, REVISIONS, AND RECORD CONDITIONS THAT I HAVE NOTED ON THESE PLANS.



## GENERAL INDEMNIFICATION STATEMENT

THESE PLANS HAVE BEEN REVIEWED BY THE LOCAL ENTITY FOR CONCEPT ONLY. THE REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE REVIEWING DEPARTMENT, THE LOCAL ENTITY ENGINEER, OR THE LOCAL ENTITY FOR ACCURACY AND CORRECTNESS OF THE CALCULATIONS. FURTHERMORE, THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED IN ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE LOCAL ENTITY FOR ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.

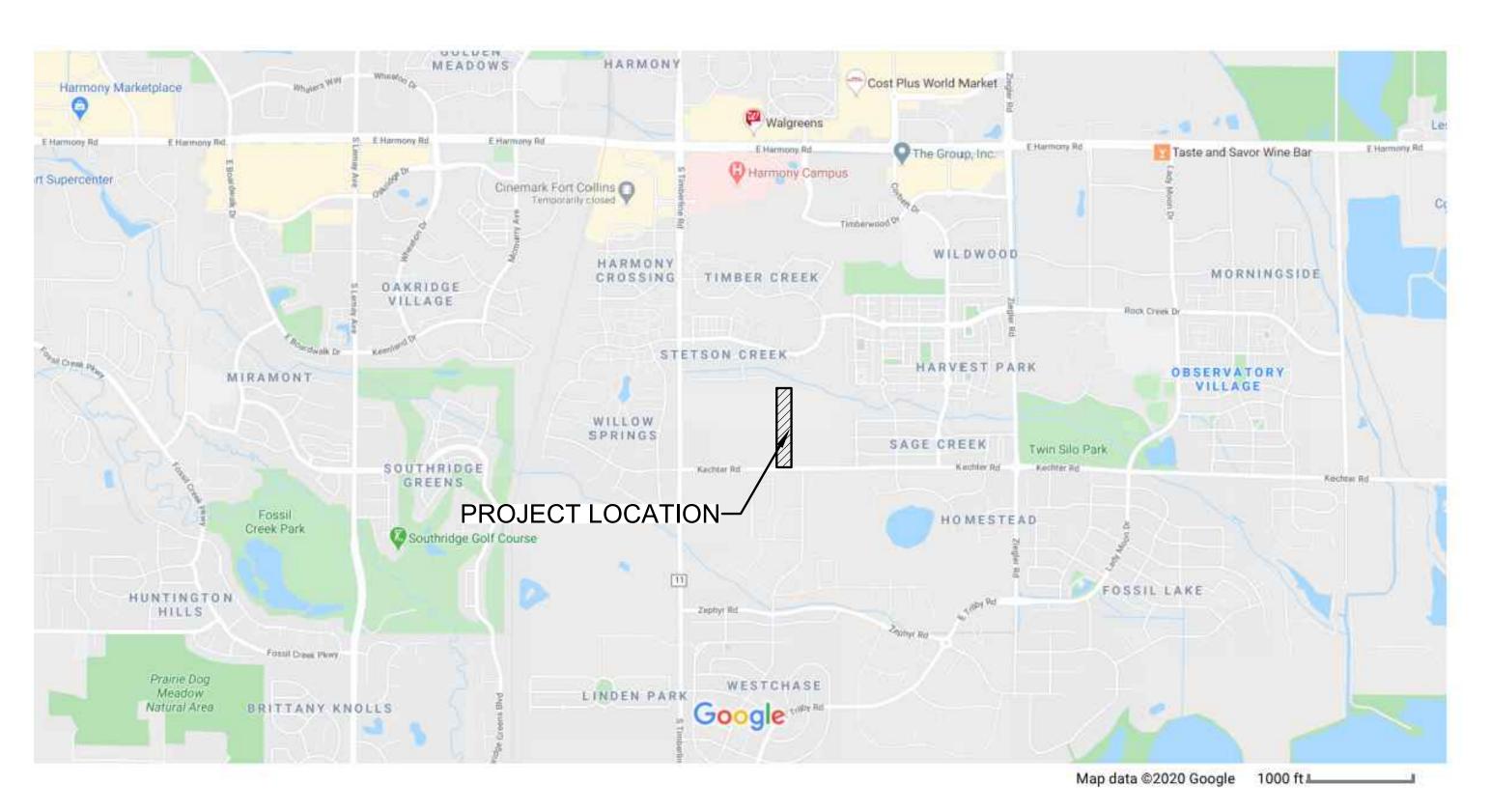
# PROJECT BENCHMARK

PROJECT DATUM: NAVD88

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. ELEVATION: 4956.98 FEET

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM.
SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY
OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

IF NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) IS REQUIRED FOR ANY PURPOSE, THE FOLLOWING EQUATION SHOULD BE USED:
NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) = NAVD88 - 3.19'.



Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL NOTES
3	UTILITY PLAN
4	GRADING & EROSION CONTROL PLAN
5	GRADING & EROSION CONTROL PLAN
6	CULVERT PLAN AND PROFILE
7	CULVERT PLAN AND PROFILE
8	DRAINAGE EXHIBIT
9	UTILITY DETAIL SHEET
10	EROSION CONTROL NOTES
11	EROSION CONTROL DETAILS

# /NER:

CHRIS HILL
4112 LAKEFRONT DRIVE
LOVELAND, COLORADO 80537
(970) 227-3112
CHILL004@YAHOO.COM

# CIVIL ENGINEER:

KEEFE CIVIL
MEGAN KEEFE, P.E.
3125 CROCKETT STREET
FORT COLLINS, COLORADO 80526
(970) 215-6808
MEG@KEEFECIVIL.COM

# SURVEYOR:

MAJESTIC SURVEYING STEVEN PARKS, PLS (970) 443-0882 STEVENP@MAJESTICSURVEYING.COM

> FORT COLLINS - LOVELAND WATER DISTRICT SOUTH FORT COLLINS SANITATION DISTRICT

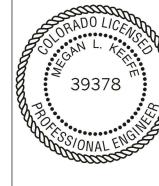
District Engineer Date

All changes, addendums, additions, deletions and modifications to these drawings must be approved, in writing, by the Fort Collins-Loveland

Water District and the South Fort Collins Sanitation District.

	City of Fort Collins UTILITY PLAN A		
APPROVED:			
	City Engineer,	Approved Sheets	Date
APPROVED:			
_	Water & Wastewater Utility,	Approved Sheets	Date
APPROVED:			
	Stormwater Utility,	Approved Sheets	Date
APPROVED:			
	Park Planning and Development,	Approved Sheets	Date
APPROVED:			
	Traffic Operations,	Approved Sheets	Date
APPROVED:			
	Environmental Planner,	Approved Sheets	Date









SHEET SHERN

BLEHM SUBDIVISION 2ND FIL LOT 5, BLEHM SUBDIVISION COVER SH

LOT 2, BLEH

1 OF 11

## **GENERAL NOTES:**

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF PUBLIC IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE LARIMER COUNTY URBAN AREA STREET STANDARDS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE MOST RESTRICTIVE STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE LOCAL ENTITY.

2. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.

3. THESE PUBLIC IMPROVEMENT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF THREE YEARS FROM THE DATE OF APPROVAL BY THE LOCAL ENTITY ENGINEER. USE OF THESE PLANS AFTER THE EXPIRATION DATE WILL REQUIRE A NEW REVIEW AND APPROVAL PROCESS BY THE LOCAL ENTITY PRIOR TO COMMENCEMENT OF ANY WORK SHOWN IN THESE PLANS.

4. THE ENGINEER WHO HAS PREPARED THESE PLANS, BY EXECUTION AND/OR SEAL HEREOF, DOES HEREBY AFFIRM RESPONSIBILITY TO THE LOCAL ENTITY, AS BENEFICIARY OF SAID ENGINEER'S WORK, FOR ANY ERRORS AND OMISSIONS CONTAINED IN THESE PLANS, AND APPROVAL OF THESE PLANS BY THE LOCAL ENTITY ENGINEER SHALL NOT RELIEVE THE ENGINEER WHO HAS PREPARED THESE PLANS OF ALL SUCH RESPONSIBILITY. FURTHER, TO THE EXTENT PERMITTED BY LAW, THE ENGINEER HEREBY AGREES TO HOLD HARMLESS AND INDEMNIFY THE LOCAL ENTITY, AND ITS OFFICERS AND EMPLOYEES, FROM AND AGAINST ALL LIABILITIES, CLAIMS, AND DEMANDS WHICH MAY ARISE FROM ANY ERRORS AND OMISSIONS CONTAINED IN THESE PLANS.

5. ALL SANITARY SEWER, STORM SEWER, AND WATER LINE CONSTRUCTION, AS WELL AS POWER AND OTHER "DRY" UTILITY INSTALLATIONS, SHALL CONFORM TO THE LOCAL ENTITY STANDARDS AND SPECIFICATIONS CURRENT AT THE DATE OF APPROVAL OF THE PLANS BY THE LOCAL ENTITY ENGINEER.

6. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR UNKNOWN UNDERGROUND UTILITIES.

7. THE ENGINEER SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING, TO HAVE ALL REGISTERED UTILITY LOCATIONS MARKED. OTHER UNREGISTERED UTILITY ENTITIES (I.E. DITCH / IRRIGATION COMPANY) ARE TO BE LOCATED BY CONTACTING THE RESPECTIVE REPRESENTATIVE. UTILITY SERVICE LATERALS ARE ALSO TO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

8. THE DEVELOPER SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES DURING CONSTRUCTION AND FOR COORDINATING WITH THE APPROPRIATE UTILITY COMPANY FOR ANY UTILITY CROSSINGS REQUIRED.

9. IF A CONFLICT EXISTS BETWEEN EXISTING AND PROPOSED UTILITIES AND/OR A DESIGN MODIFICATION IS REQUIRED, THE DEVELOPER SHALL COORDINATE WITH THE ENGINEER TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVE D BY THE LOCAL ENTITY PRIOR TO BEGINNING CONSTRUCTION.

10. THE DEVELOPER SHALL COORDINATE AND COOPERATE WITH THE LOCAL ENTITY, AND ALL UTILITY COMPANIES INVOLVED, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE DEVELOPER SHALL BE RESPONSIBLE FOR CONTACTING, IN ADVANCE, ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE AS WELL AS THE UTILITY COMPANIES.

11. NO WORK MAY COMMENCE WITHIN ANY PUBLIC STORM WATER, SANITARY SEWER OR POTABLE WATER SYSTEM UNTIL THE DEVELOPER NOTIFIES THE UTILITY PROVIDER. NOTIFICATION SHALL BE A MINIMUM OF 2 WORKING DAYS PRIOR TO COMMENCEMENT OF ANY WORK. AT THE DISCRETION OF THE WATER UTILITY PROVIDER, A PRE-CONSTRUCTION MEETING MAY BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORK.

12. THE DEVELOPER SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF THE WATER LINES AND DRY UTILITIES.

13. THE MINIMUM COVER OVER WATER LINES IS 4.5 FEET AND THE MAXIMUM COVER IS 5.5 FEET UNLESS OTHERWISE NOTED IN THE PLAN S AND APPROVED BY THE WATER UTILITY.

14. A STATE CONSTRUCTION DEWATERING WASTEWATER DISCHARGE PERMIT IS REQUIRED IF DEWATERING IS REQUIRED IN ORDER TO INSTALL UTILITIES OR WATER IS DISCHARGED INTO A STORM SEWER, CHANNEL, IRRIGATION DITCH OR ANY WATERS OF THE UNITED STATES.

15. THE DEVELOPER SHALL COMPLY WITH ALL TERMS AND CONDITIONS OF THE COLORADO PERMIT FOR STORM WATER DISCHARGE (CONTACT COLORADO DEPARTMENT OF HEALTH, WATER QUALITY CONTROL DIVISION, (303) 692-3590), THE STORM WATER MANAGEMENT PLAN, AND THE EROSION CONTROL PLAN.

16. THE LOCAL ENTITY SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF STORM DRAINAGE FACILITIES LOCATED ON PRIVATE PROPERTY. MAINTENANCE OF ONSITE DRAINAGE FACILITIES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER(S).

17. PRIOR TO FINAL INSPECTION AND ACCEPTANCE BY THE LOCAL ENTITY, CERTIFICATION OF THE DRAINAGE FACILITIES, BY A REGISTERED ENGINEER, MUST BE SUBMITTED TO AND APPROVED BY THE STORMWATER UTILITY DEPARTMENT. CERTIFICATION SHALL BE SUBMITTED TO THE STORMWATER UTILITY DEPARTMENT AT LEAST TWO WEEKS PRIOR TO THE RELEASE OF A CERTIFICATE OF OCCUPANCY FOR SINGLE FAMILY UNITS. FOR COMMERCIAL PROPERTIES, CERTIFICATION SHALL BE SUBMITTED TO THE STORMWATER UTILITY DEPARTMENT AT LEAST TWO WEEKS PRIOR TO THE RELEASE OF ANY BUILDING PERMITS IN EXCESS OF THOSE ALLOWED PRIOR TO CERTIFICATION PER THE DEVELOPMENT AGREEMENT.

18. THE LOCAL ENTITY SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES OR INJURIES SUSTAINED IN THIS DEVELOPMENT AS A RESULT OF GROUNDWATER SEEPAGE, WHETHER RESULTING FROM GROUNDWATER FLOODING, STRUCTURAL DAMAGE OR OTHER DAMAGE UNLESS SUCH DAMAGE OR INJURIES ARE SUSTAINED AS A RESULT OF THE LOCAL ENTITY FAILURE TO PROPERLY MAINTAIN ITS WATER, WASTEWATER, AND/OR STORM DRAINAGE FACILITIES IN THE DEVELOPMENT.

19. ALL RECOMMENDATIONS OF THE FINAL DRAINAGE MEMO DATED JUNE 2, 2021 BY KEEFE CIVIL SHALL BE FOLLOWED AND IMPLEMENTED.

20. TEMPORARY EROSION CONTROL DURING CONSTRUCTION SHALL BE PROVIDED AS SHOWN ON THE EROSION CONTROL PLAN. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE DEVELOPER, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS IS STABILIZED WITH HARD SURFACE OR LANDSCAPING.

21. THE DEVELOPER SHALL BE RESPONSIBLE FOR INSURING THAT NO MUD OR DEBRIS SHALL BE TRACKED ONTO THE EXISTING PUBLIC STREET SYSTEM. MUD AND DEBRIS MUST BE REMOVED WITHIN 24 HOURS BY AN APPROPRIATE MECHANICAL METHOD (I.E. MACHINE BROOM SWEEP, LIGHT DUTY FRONT-END LOADER, ETC.) OR AS APPROVED BY THE LOCAL ENTITY STREET INSPECTOR.

22. NO WORK MAY COMMENCE WITHIN ANY IMPROVED OR UNIMPROVED PUBLIC RIGHT-OF-WAY UNTIL A RIGHT-OF-WAY PERMIT OR DEVELOPMENT CONSTRUCTION PERMIT IS OBTAINED, IF APPLICABLE.

23. THE DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ALL APPLICABLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE DEVELOPER SHALL NOTIFY THE LOCAL ENTITY ENGINEERING INSPECTOR (FORT COLLINS - 221-6605) AND THE LOCAL ENTITY EROSION CONTROL INSPECTOR (FORT COLLINS - 221-6700) AT LEAST 2 WORKING DAYS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY, OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS. IF THE LOCAL ENTITY ENGINEER IS NOT AVAILABLE AFTER PROPER NOTICE OF CONSTRUCTION ACTIVITY HAS BEEN PROVIDED, THE DEVELOPER MAY COMMENCE WORK IN THE ENGINEER ABSENCE. HOWEVER, THE LOCAL ENTITY RESERVES THE RIGHT NOT TO ACCEPT THE IMPROVEMENT IF SUBSEQUENT TESTING REVEALS AN IMPROPER INSTALLATION.

24. THE DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING SOILS TESTS WITHIN THE PUBLIC RIGHT-OF-WAY AFTER RIGHT-OF-WAY GRADING AND ALL UTILITY TRENCH WORK IS COMPLETE AND PRIOR TO THE PLACEMENT OF CURB, GUTTER, SIDEWALK AND PAVEMENT. IF THE FINAL SOILS/PAVEMENT DESIGN REPORT DOES NOT CORRESPOND WITH THE RESULTS OF THE ORIGINAL GEOTECHNICAL REPORT, THE DEVELOPER SHALL BE RESPONSIBLE FOR A RE-DESIGN OF THE SUBJECT PAVEMENT SECTION OR, THE DEVELOPER MAY USE THE LOCAL ENTITY'S DEFAULT PAVEMENT THICKNESS SECTION(S). REGARDLESS OF THE OPTION USED, ALL FINAL SOILS/PAVEMENT DESIGN REPORTS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER. THE FINAL REPORT SHALL BE SUBMITTED TO THE INSPECTOR A MINIMUM OF 10 WORKING DAYS PRIOR TO PLACEMENT OF BASE AND ASPHALT. PLACEMENT OF CURB, GUTTER, SIDEWALK, BASE AND ASPHALT SHALL NOT OCCUR UNTIL THE LOCAL ENTITY ENGINEER APPROVES THE FINAL REPORT.

25. THE CONTRACTOR SHALL HIRE A LICENSED ENGINEER OR LAND SURVEYOR TO SURVEY THE CONSTRUCTED ELEVATIONS OF THE STREET SUBGRADE AND THE GUTTER FLOWLINE AT ALL INTERSECTIONS, INLETS, AND OTHER LOCATIONS REQUESTED BY THE LOCAL ENTITY INSPECTOR. THE ENGINEER OR SURVEYOR MUST CERTIFY IN A LETTER TO THE LOCAL ENTITY THAT THESE ELEVATIONS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS. ANY DEVIATIONS SHALL BE NOTED IN THE LETTER AND THEN RESOLVED WITH THE LOCAL ENTITY BEFORE INSTALLATION OF BASE COURSE OR ASPHALT WILL BE ALLOWED ON THE STREETS.

26. ALL UTILITY INSTALLATIONS WITHIN OR ACROSS THE ROADBED OF NEW RESIDENTIAL ROADS MUST BE COMPLETED PRIOR TO THE FINAL STAGES OF ROAD CONSTRUCTION. FOR THE PURPOSES OF THESE STANDARDS, ANY WORK EXCEPT C/G ABOVE THE SUBGRADE IS CONSIDERED FINAL STAGE WORK. ALL SERVICE LINES MUST BE STUBBED TO THE PROPERTY LINES AND MARKED SO AS TO REDUCE THE EXCAVATION NECESSARY FOR BUILDING CONNECTIONS.

27. PORTIONS OF LARIMER COUNTY ARE WITHIN OVERLAY DISTRICTS. THE LARIMER COUNTY FLOODPLAIN RESOLUTION SHOULD BE REFERRED TO FOR ADDITIONAL CRITERIA FOR ROADS WITHIN THESE DISTRICTS.

28. ALL ROAD CONSTRUCTION IN AREAS DESIGNATED AS WILD FIRE HAZARD AREAS SHALL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION CRITERIA AS ESTABLISHED IN THE WILD FIRE HAZARD AREA MITIGATION REGULATIONS IN FORCE AT THE TIME OF FINAL PLAT APPROVAL.

29. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LOCAL ENTITY FORESTER TO SCHEDULE A SITE INSPECTION FOR ANY TREE REMOVAL REQUIRING A PERMIT.

30. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY. REFER TO OSHA PUBLICATION 2226, EXCAVATING AND TRENCHING.

31. THE DEVELOPER SHALL SUBMIT A CONSTRUCTION TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH MUTCD, TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY.

(LOCAL ENTITY, COUNTY OR STATE), FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.

32. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION THAT WILL AFFECT TRAFFIC SIGNS OF ANY TYPE, THE CONTRACTOR SHALL CONTACT LOCAL ENTITY TRAFFIC OPERATIONS DEPARTMENT, WHO WILL TEMPORARILY REMOVE OR RELOCATE THE SIGN AT NO COST TO THE CONTRACTOR; HOWEVER, IF THE CONTRACTOR MOVES THE TRAFFIC SIGN THEN THE CONTRACTOR WILL BE CHARGED FOR THE LABOR, MATERIALS AND EQUIPMENT TO REINSTALL THE SIGN AS NEEDED.

33. THE DEVELOPER IS RESPONSIBLE FOR ALL COSTS FOR THE INITIAL INSTALLATION OF TRAFFIC SIGNING AND STRIPING FOR THE DEVELOPMENT RELATED TO THE DEVELOPMENT'S LOCAL STREET OPERATIONS. IN ADDITION, THE DEVELOPER IS RESPONSIBLE FOR ALL COSTS FOR TRAFFIC SIGNING AND STRIPING RELATED TO DIRECTING TRAFFIC ACCESS TO AND FROM THE DEVELOPMENT.

34. THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS, UNLESS SPECIFICALLY APPROVED BY THE LOCAL ENTITY ENGINEER, AND NO SITE CONSTRUCTION ACTIVITIES ON SUNDAYS OR HOLIDAYS, UNLESS THERE IS PRIOR WRITTEN APPROVAL BY THE LOCAL ENTITY.

35. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS, SHOWN ON THESE DRAWINGS, OR DESIGNATED TO BE PROVIDED, INSTALLED, OR CONSTRUCTED, UNLESS SPECIFICALLY NOTED OTHERWISE.

36. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE DESIGNER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.

37. THE DEVELOPER SHALL HAVE, ONSITE AT ALL TIMES, 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.

38. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE DEVELOPER SHALL CONTACT THE DESIGNER AND THE LOCAL ENTITY ENGINEER IMMEDIATELY.

39. THE DEVELOPER SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE LOCAL ENTITY'S INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR(S) SHALL SUBMIT RECORD DRAWINGS TO THE LOCAL ENTITY ENGINEER.

40. THE DESIGNER SHALL PROVIDE, IN THIS LOCATION ON THE PLAN, THE LOCATION AND DESCRIPTION OF THE NEAREST SURVEY BENCHMARKS (2) FOR THE PROJECT AS WELL AS THE BASIS OF BEARINGS. THE INFORMATION SHALL BE AS FOLLOWS:

## PROJECT DATUM: NAVD88

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET.
ELEVATION: 4956.98 FEET

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

IF NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) IS REQUIRED FOR ANY PURPOSE, THE FOLLOWING EQUATION SHOULD BE USED: NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) = NAVD88 - 3.19'.

41. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.

42. DAMAGED CURB, GUTTER AND SIDEWALK EXISTING PRIOR TO CONSTRUCTION, AS WELL AS EXISTING FENCES, TREES, STREETS, SIDEWALKS, CURBS AND GUTTERS, LANDSCAPING, STRUCTURES, AND IMPROVEMENTS DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED OR RESTORED IN LIKE KIND AT THE DEVELOPER'S EXPENSE, UNLESS OTHERWISE INDICATED ON THESE PLANS, PRIOR TO THE ACCEPTANCE OF COMPLETED IMPROVEMENTS AND/OR PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY.

43. WHEN AN EXISTING ASPHALT STREET MUST BE CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BY THE LOCAL ENTITY CONSTRUCTION INSPECTOR BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ENTITY STREET REPAIR STANDARDS. THE FINISHED PATCH SHALL BLEND IN SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE. IN STREETS WHERE MORE THAN ONE CUT IS MADE, AN OVERLAY OF THE ENTIRE STREET WIDTH, INCLUDING THE PATCHED AREA, MAY BE REQUIRED. THE DETERMINATION OF NEED FOR A COMPLETE OVERLAY SHALL BE MADE BY THE LOCAL ENTITY ENGINEER AND/OR THE LOCAL ENTITY INSPECTOR AT THE TIME THE CUTS ARE MADE.

44. UPON COMPLETION OF CONSTRUCTION, THE SITE SHALL BE CLEANED AND RESTORED TO A CONDITION EQUAL TO, OR BETTER THAN, THAT WHICH EXISTED BEFORE CONSTRUCTION, OR TO THE GRADES AND CONDITION AS REQUIRED BY THESE PLANS.

45. STANDARD HANDICAP RAMPS ARE TO BE CONSTRUCTED AT ALL CURB RETURNS AND AT ALL "T" INTERSECTIONS.

46. AFTER ACCEPTANCE BY THE LOCAL ENTITY, PUBLIC IMPROVEMENTS DEPICTED IN THESE PLANS SHALL BE GUARANTEED TO BE FREE FROM MATERIAL AND WORKMANSHIP DEFECTS FOR A MINIMUM PERIOD OF TWO YEARS FROM THE DATE OF ACCEPTANCE.

47. THE LOCAL ENTITY SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF ROADWAY AND APPURTENANT IMPROVEMENTS, INCLUDING STORM DRAINAGE STRUCTURES AND PIPES, FOR THE FOLLOWING PRIVATE STREETS: NOT APPLICABLE.

48. APPROVED VARIANCES ARE LISTED AS FOLLOWS: NOT APPLICABLE.

# FORT COLLINS - LOVELAND WATER DISTRICT AND SOUTH FORT COLLINS SANITATION DISTRICT NOTES:

49. ALL WATER AND SANITARY SEWER CONSTRUCTION SHALL BE PERFORMED ACCORDING TO THE FORT COLLINS-LOVELAND WATER DISTRICT AND THE SOUTH FORT COLLINS SANITATION DISTRICT STANDARDS AND SPECIFICATIONS.

50. CONSTRUCTION OF WATER AND SEWER FACILITIES REQUIRE A PRECON MEETING WITH DISTRICT OPERATIONS STAFF PRIOR TO CONSTRUCTION.

51. CONTRACTOR SHALL NOTIFY DISTRICT INSPECTORS PRIOR TO STARTING WORK.

52. CONTRACTOR SHALL CONTACT THE SANITATION DISTRICT FOR SEWER INSPECTION 48 HOURS PRIOR TO CONNECTING TO EXISTING SEWER STUBS

53. IF GROUNDWATER IS ENCOUNTERED WITHIN DEPTH OF SEWER CONSTRUCTION, MANHOLES MUST BE WATER-PROOFED.

54. CONTRACTOR SHALL CONTACT THE WATER DISTRICT FOR WATER INSPECTION 48 HOURS PRIOR TO CONNECTING TO EXISTING INFRASTRUCTURE.

55. ALL COMMERCIAL DOMESTIC SERVICES REQUIRE A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE.

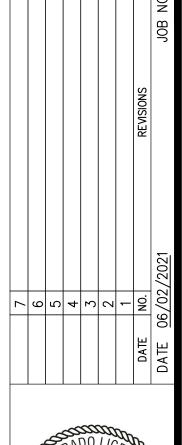
56. ALL WATER LINES SHALL BE A MINIMUM OF (5) FIVE FEET AND A MAXIMUM OF (6) SIX FEET BELOW FINAL GRADE.

57. ALL DISTRICT VALVES SHALL ONLY BE OPERATED BY DISTRICT OPERATIONS STAFF.

58. PIPE PRESSURE AND VACUUM TESTING SHALL BE WITNESSED BY DISTRICT INSPECTORS. WATERLINE BACTERIA TESTS SHALL ALSO BE TAKEN BY DISTRICT INSPECTORS.

59. ONCE THE SYSTEM IS OPERATIONAL AND ALL TESTS HAVE PASSED, CONTRACTOR SHALL REQUEST SUBSTANTIAL COMPLETION WITH A LETTER TO THE DISTRICT THAT INCLUDES THE DOLLAR VALUE OF THE WATER AND SEWER IMPROVEMENTS LISTED SEPARATELY.

60. AS-BUILTS SHALL BE SUBMITTED IN PDF AND DWG TO THE DISTRICT FOR FINAL APPROVAL.









A 2ND FILING, BEING A RESDIVISION UTILITY PLANS

OT 5, BLEHM SUBDIVISION CAN BE THE COT 5, BLEHM SUBDIVISION CAN BE

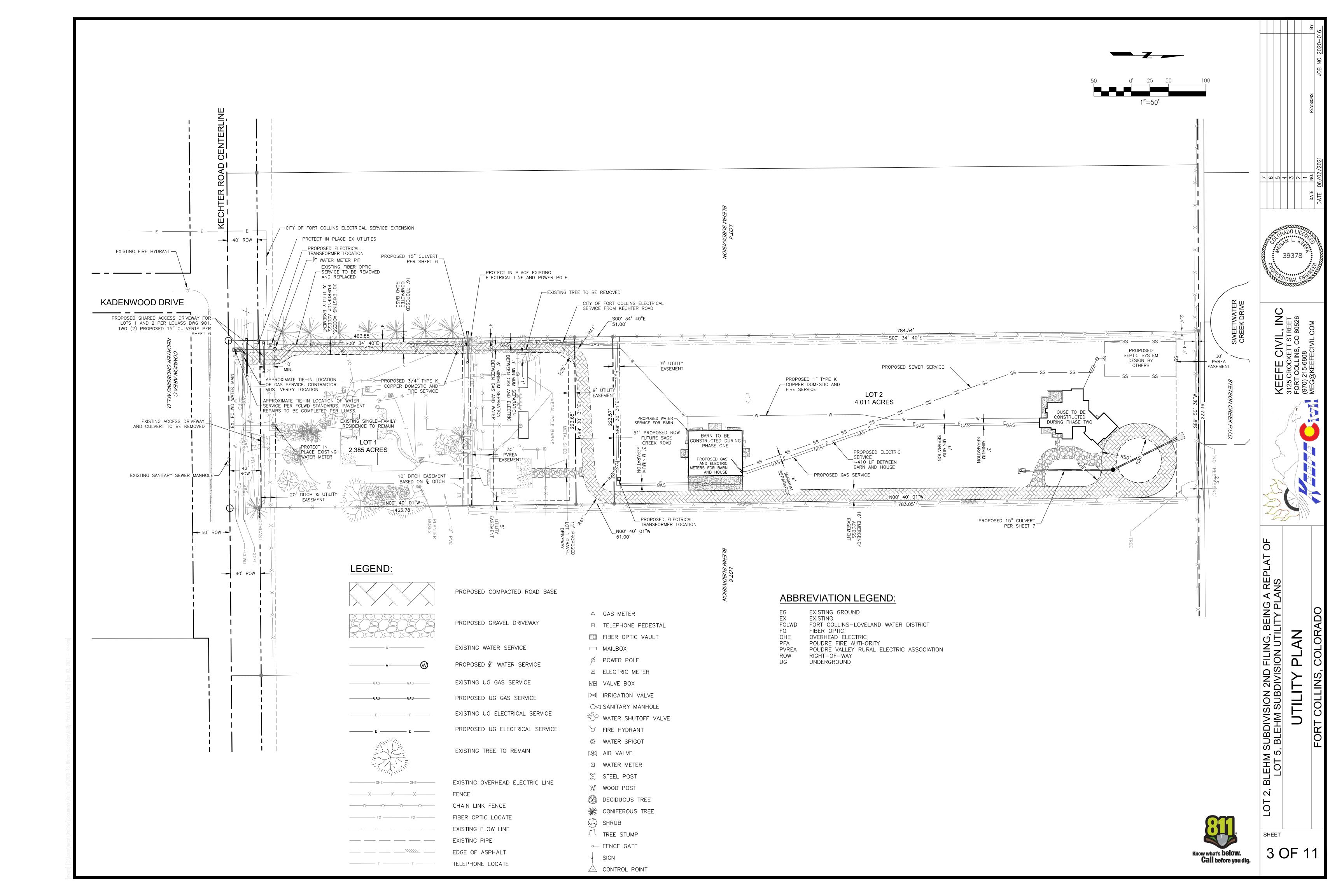
SHEET

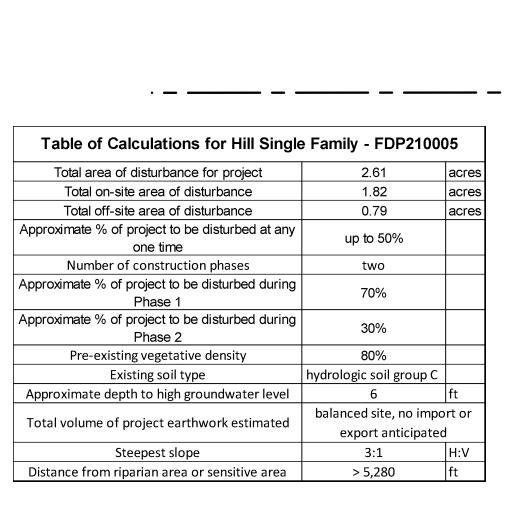
**Call** before you dig.

BL

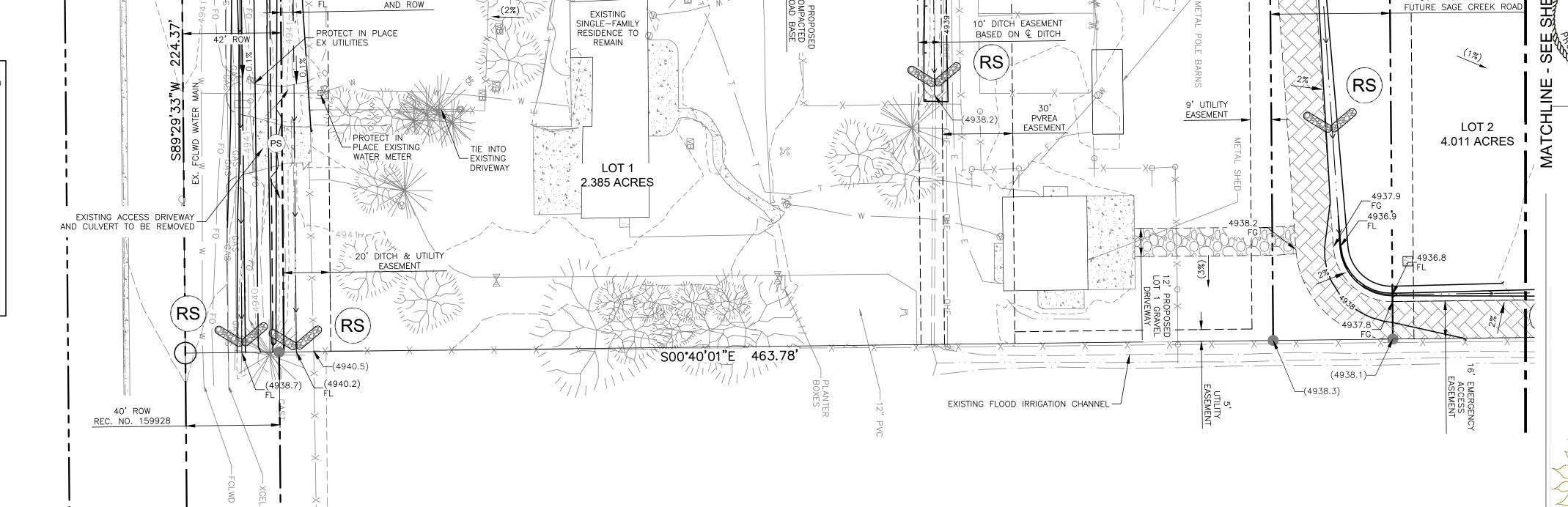
2

2 OF 1





				Utilities	Flat work	Vertical			
	Mobilization	Demolition	Grading	Installation	Installation	Installation	Landscape	Demobilization	(Construction Phas
Best Management Practices (BMPs)									
Structural "Installation"									]
Silt Fence Barriers*									]
Contour Furrows (Ripping / Disking)									]
Sediment Trap / Filter									]
Vehicle Tracking Pad*									]
Flow Barriers (Wattles)*									]
Inlet Filter Bags*	Any prior inlets	that could use p	rotecting						]
Rock Bags*	Any prior inlets that could use protecting							]	
Rip Rap									
Collecting Asphalt / Concrete Saw Cutting Waste									]
*All BMPs to be Removed once Construction is Complete.									]
									<u> </u>
Vegetative									_
Temporary Seeding Planting	Any time the site will sit dorment longer than 30 Days.								
Mulching/Sealant	Any time the site will sit dorment longer than 30 Days.								
Permanent Seeding Planting									
Sod Installation									
Rolled Products : Netting/Blankets/Mats	Any time the site will sit dorment longer than 30 Days.								
Other:									1



PROTECT IN PLACE EXISTING ELECTRIC

# **GRADING AND UTILITY NOTES:**

- 1. TOP OF FOUNDATION MUST BE AT LEAST 6" ABOVE THE HIGHEST GRADE SURROUNDING ALL BUILDINGS.
- 2. THERE MUST BE A MINIMUM GRADE OF 5% AWAY FROM THE BUILDINGS WITHIN THE FIRST 5 TO 10 FEET ADJACENT TO THE RESIDENCE.
- 3. ALL SLOPES MUST MEET THE MINIMUM REQUIREMENT OF 2% AND ARE NOT TO BE STEEPER THAN 33% (3:1). 4. THIS DRAWING IS AT MODIFIED STATE PLANE. TO REDUCE TO STATE PLANE COORDINATES, SCALE X,Y ONLY AT 0.99973537
- (1.00026470) ABOUT THE ORIGIN 0,0.
- 5. ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED DURING CONSTRUCTION MUST BE REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.
- 6. ALL CONTROL SHOWN SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION OR OTHER IMPROVEMENTS. 7. THE MINIMUM COVER OVER WATER LINES IS 4.5 FT AND THE MAXIMUM COVER IS 5.5 FT UNLESS OTHERWISE NOTED IN THE
- PLANS AND APPROVED BY THE WATER UTILITY. 8. MINIMUM SEPARATION BETWEEN PROPOSED WATER SERVICE AND ALL OTHER DRY UTILITY LINES IS 10 FT.

# PROJECT BENCHMARK

PROJECT DATUM: NAVD88

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. ELEVATION: 4956.98 FEET

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

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- 6. ANY LOT LINES, RIGHTS OF WAY OR EASEMENTS SHOWN ARE APPROXIMATE AND ARE NOT TO BE RELIED UPON FOR FUTURE IMPROVEMENTS.

# LEGEND:

PROPOSED SHARED ACCESS

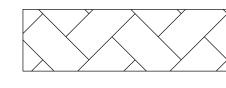
LCUASS DWG 901.

PER DETAIL SHEET 6

(4940.95)

DRIVEWAY FOR LOTS 1 AND 2 PER

TWO PROPOSED 15" CULVERTS



PROPOSED COMPACTED ROAD BASE

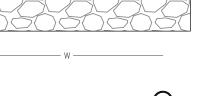
4940.5

**(**4941.3)

EX FLOWLINE



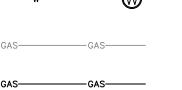
PROPOSED GRAVEL DRIVEWAY



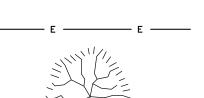
EXISTING WATER SERVICE

PROPOSED 3" WATER SERVICE

EXISTING UG GAS SERVICE



PROPOSED UG GAS SERVICE EXISTING UG ELECTRICAL SERVICE



EXISTING OVERHEAD ELECTRIC LINE

EXISTING TREE TO REMAIN

PROPOSED UG ELECTRICAL SERVICE

CHAIN LINK FENCE FIBER OPTIC LOCATE EXISTING FLOW LINE EXISTING PIPE EDGE OF ASPHALT TELEPHONE LOCATE

# △ GAS METER

▼ TELEPHONE PEDESTAL

FO FIBER OPTIC VAULT ☐ MAILBOX

Ø POWER POLE VB VALVE BOX

IRRIGATION VALVE ○ SANITARY MANHOLE

WATER SHUTOFF VALVE ∀ FIRE HYDRANT

D AIR VALVE

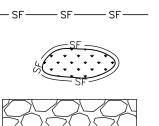
WATER METER S STEEL POST ₩ WOOD POST

DECIDUOUS TREE CONIFEROUS TREE

SHRUB TREE STUMP → FENCE GATE

SIGN CONTROL POINT

# **BMP CONTROLS:**



SILT FENCE

\*\*CAUTION: OVERHEAD POWER LINES\*\* PROTECT IN PLACE EXISTING POWER POLE

(4939.2)

EXISTING TREE TO BE REMOVED

EXISTING FLOOD IRRIGATION CHANNEL —

UTILITY

EASEMENT

51' PROPOSED ROW

4937.7

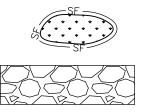
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PROPOSED 15" CULVERT

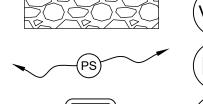
PER DETAIL SHEET 6

<del>---(</del>4939.9)

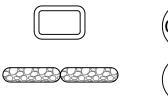
4938.4 X X



STOCKPILE MANAGEMENT WITH PROTECTION VEHICLE TRACKING CONTROL



PERMANENT SEEDING PER LANDSCAPE PLANS



CONCRETE WASHOUT AREA

OVERLAPPING ROCK SOCK



EROSION LOG PER STD. PLAN NO. M-208-1, SHEET NO. 6 OF 11 ON DETAIL SHEET 11 OF THESE CONSTRUCTION DRAWINGS

# **ABBREVIATION LEGEND:**

BEST MANAGEMENT PRACTICES EG EXISTING GROUND **EXISTING** FORT COLLINS-LOVELAND WATER DISTRICT

FINISHED GRADE FLOWLINE FIBER OPTIC

UNDERGROUND

FINISHED SURFACE (CONCRETE) GRADE BREAK HIGH POINT INV

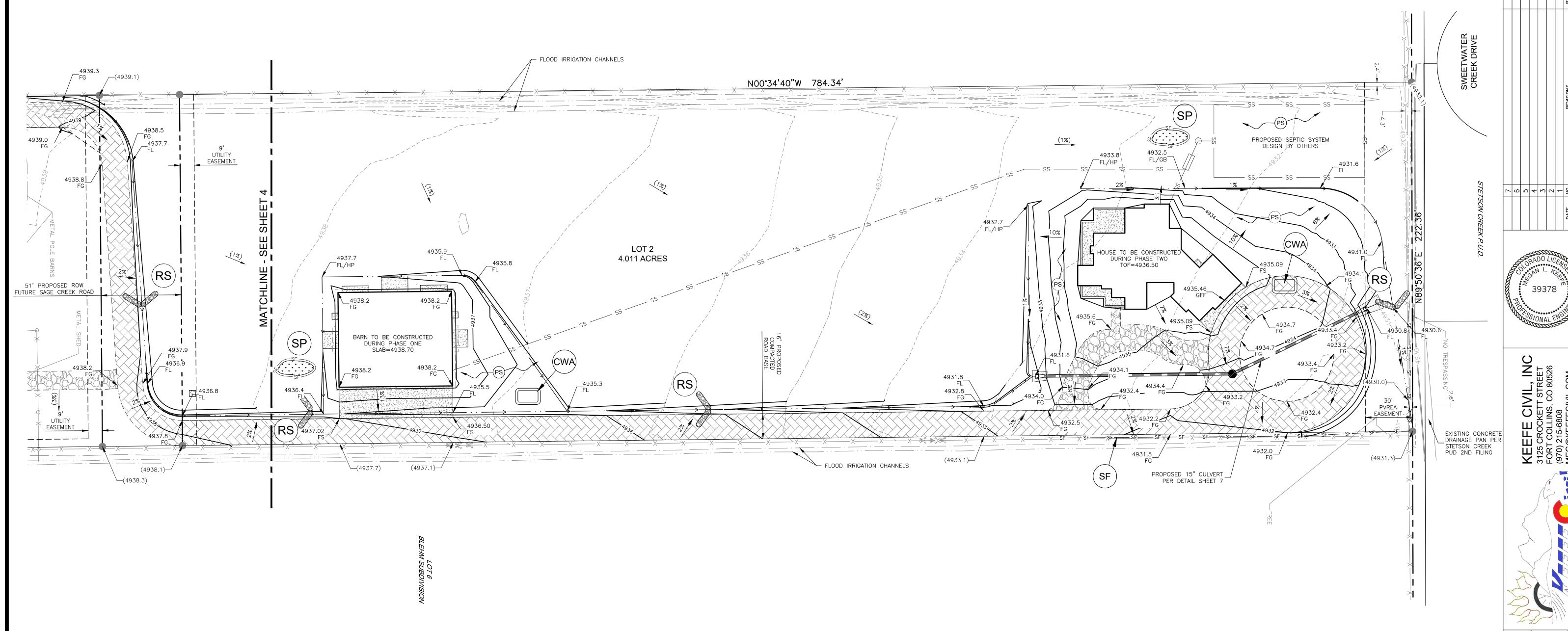
OHE OVERHEAD ELECTRIC PFA POUDRE FIRE AUTHORITY **PVREA** POUDRE VALLEY RURAL ELECTRIC ASSOCIATION ROW RIGHT-OF-WAY

Know what's **below. Call** before you dig.

0

0

RADIN



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# PROJECT DATUM: NAVD88

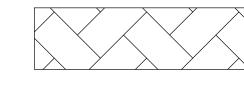
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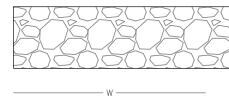
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# LEGEND:

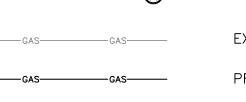


PROPOSED COMPACTED ROAD BASE

PROPOSED GRAVEL DRIVEWAY



EXISTING WATER SERVICE



EXISTING UG GAS SERVICE PROPOSED UG GAS SERVICE EXISTING UG ELECTRICAL SERVICE

PROPOSED UG ELECTRICAL SERVICE



CHAIN LINK FENCE EXISTING FLOW LINE EXISTING PIPE EDGE OF ASPHALT

☐ MAILBOX Ø POWER POLE PROPOSED 3" WATER SERVICE

■ ELECTRIC METER

EXISTING TREE TO REMAIN

EXISTING OVERHEAD ELECTRIC LINE FIBER OPTIC LOCATE

TELEPHONE LOCATE

△ GAS METER

▼ TELEPHONE PEDESTAL

FO FIBER OPTIC VAULT

VB VALVE BOX № IRRIGATION VALVE

SANITARY MANHOLE

WATER SHUTOFF VALVE TIRE HYDRANT

D AIR VALVE S STEEL POST

> DECIDUOUS TREE CONIFEROUS TREE SHRUB TREE STUMP

₩ WOOD POST

SIGN 

→ FENCE GATE

# **ABBREVIATION LEGEND:**

EXISTING GROUND EXISTING FORT COLLINS-LOVELAND WATER DISTRICT FINISHED GRADE

FLOWLINE FIBER OPTIC

RIGHT-OF-WAY

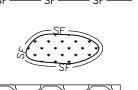
UNDERGROUND

FINISHED SURFACE (CONCRETE) GRADE BREAK HIGH POINT

INVERT INV OHE OVERHEAD ELECTRIC POUDRE FIRE AUTHORITY POUDRE VALLEY RURAL ELECTRIC ASSOCIATION PVREA

# **BMP CONTROLS:**

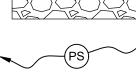
ROW



SILT FENCE



STOCKPILE MANAGEMENT WITH PROTECTION



VEHICLE TRACKING CONTROL



PERMANENT SEEDING PER LANDSCAPE PLANS



OVERLAPPING ROCK SOCK

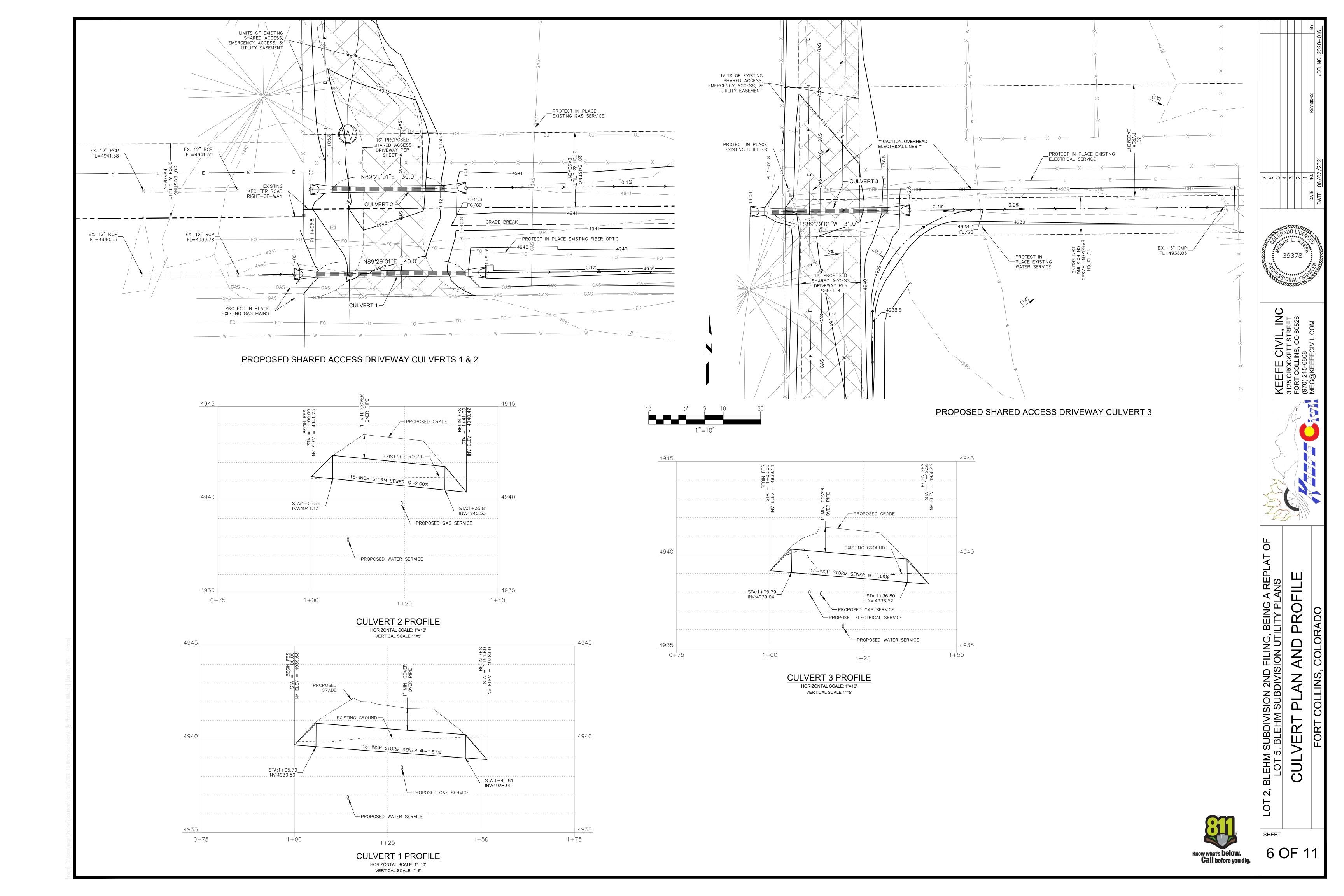
CONCRETE WASHOUT AREA

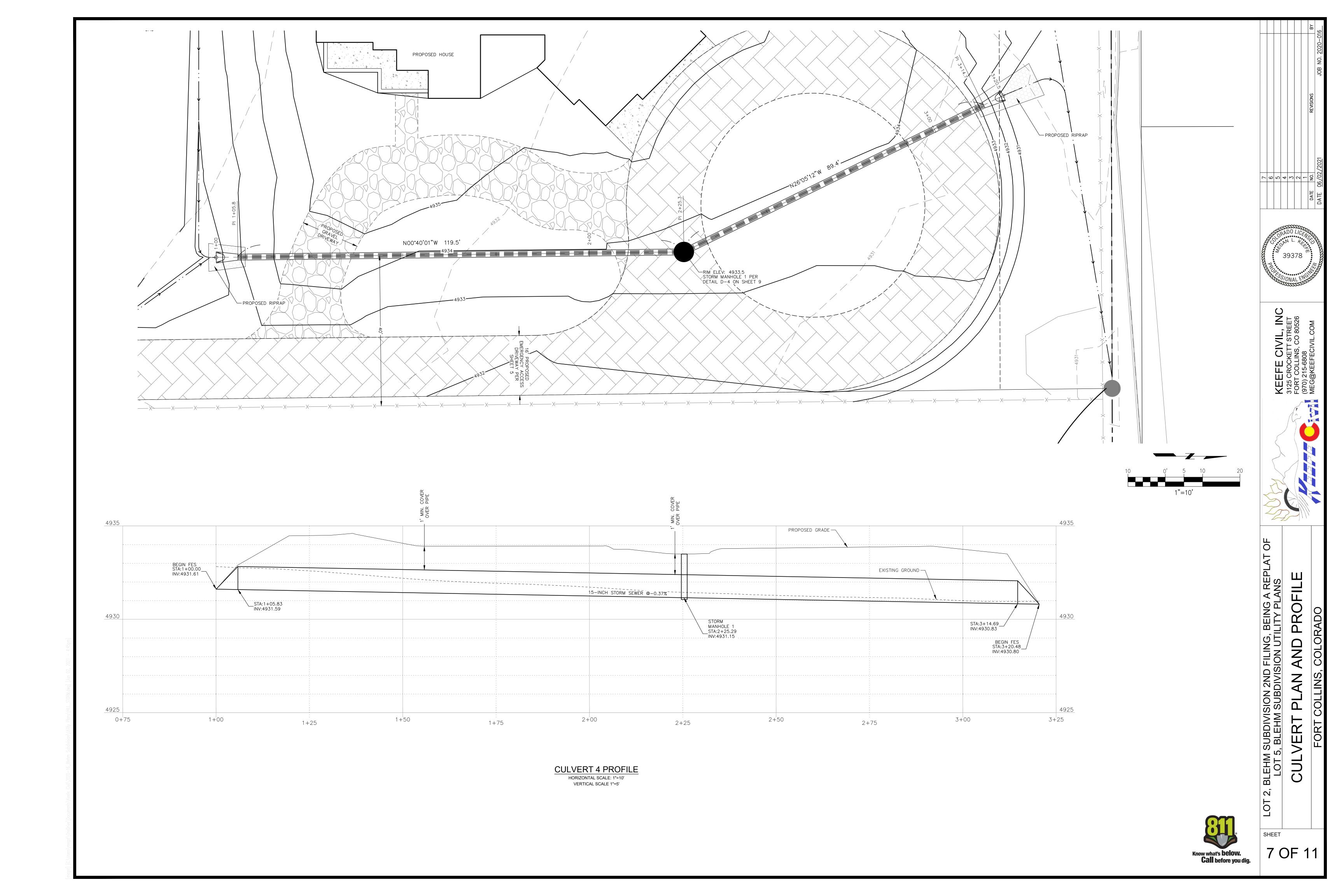


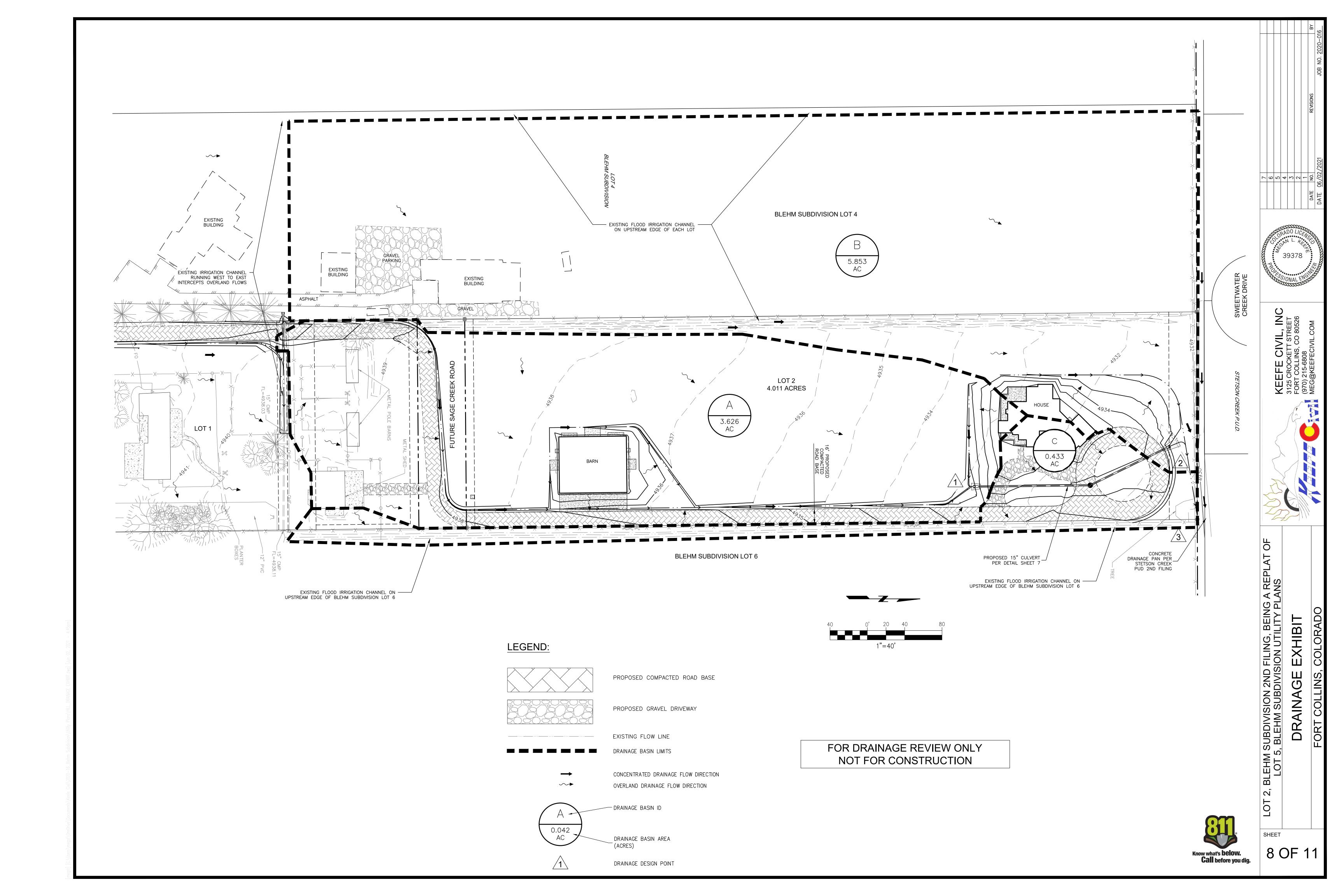
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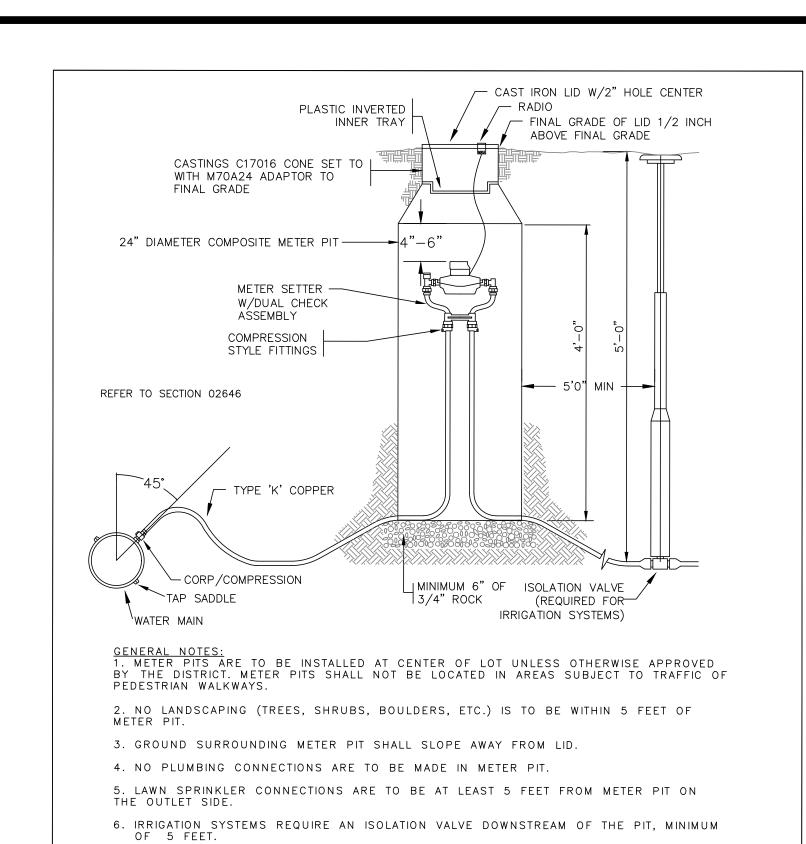
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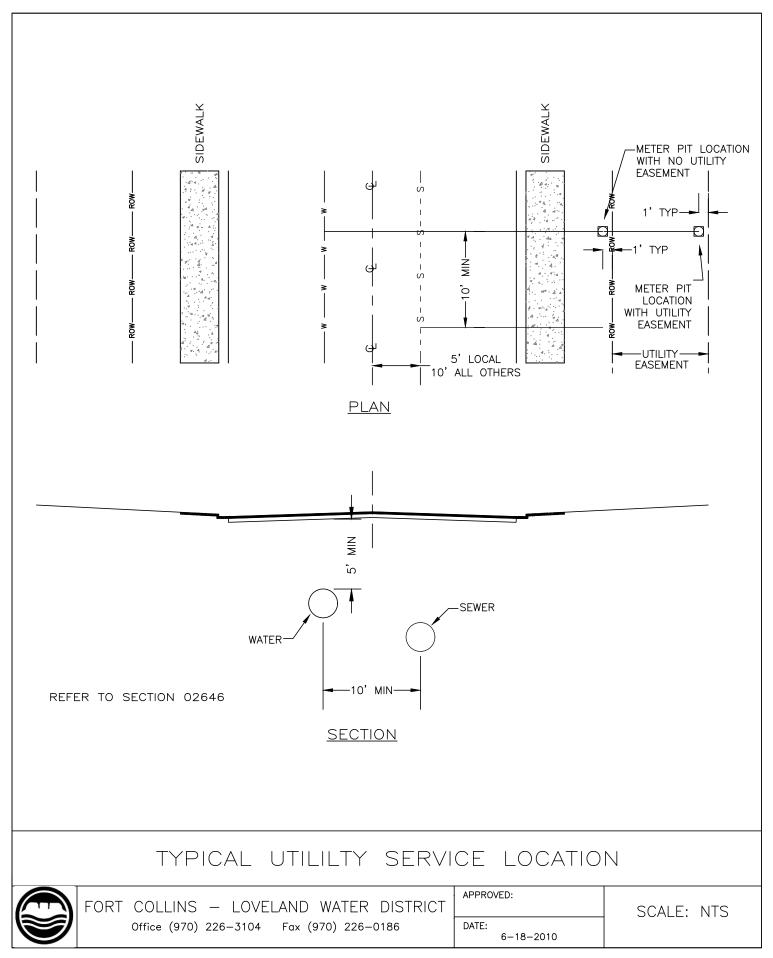


# TYPICAL METER PIT INSTALLATION FORT COLLINS — LOVELAND WATER DISTRICT SCALE: NTS Office (970) 226-3104 Fax (970) 226-0186

9/25/2017

7. VALVES TO BE OPERATED BY DISTRICT PERSONNEL ONLY, WITH EXCEPTION TO THE

IRRIGATION ISOLATION VALVES.



F.E.S. END VIEW

Roadway

<u>PLAN VIEW</u>

SECTION A-A

req'd. in Ft. Collins City Limits. Drain pipe to be 15" minimum diameter.

ACCESS ON RURAL ROADWAYS (W/O CURB AND GUTTER)

DATE:

CONSTRUCTION

DRAWINGS

2. F.E.S. required for each end of pipe. Reinforced concrete F.E.S.

3. Ditch must be no more than 4:1 sideslope & sodded throughout.

1. Asphalt or concrete driveway.

LARIMER COUNTY

URBAN AREA

STREET STANDARDS

SECTION X-X

Flared End Section (F.E.S.)

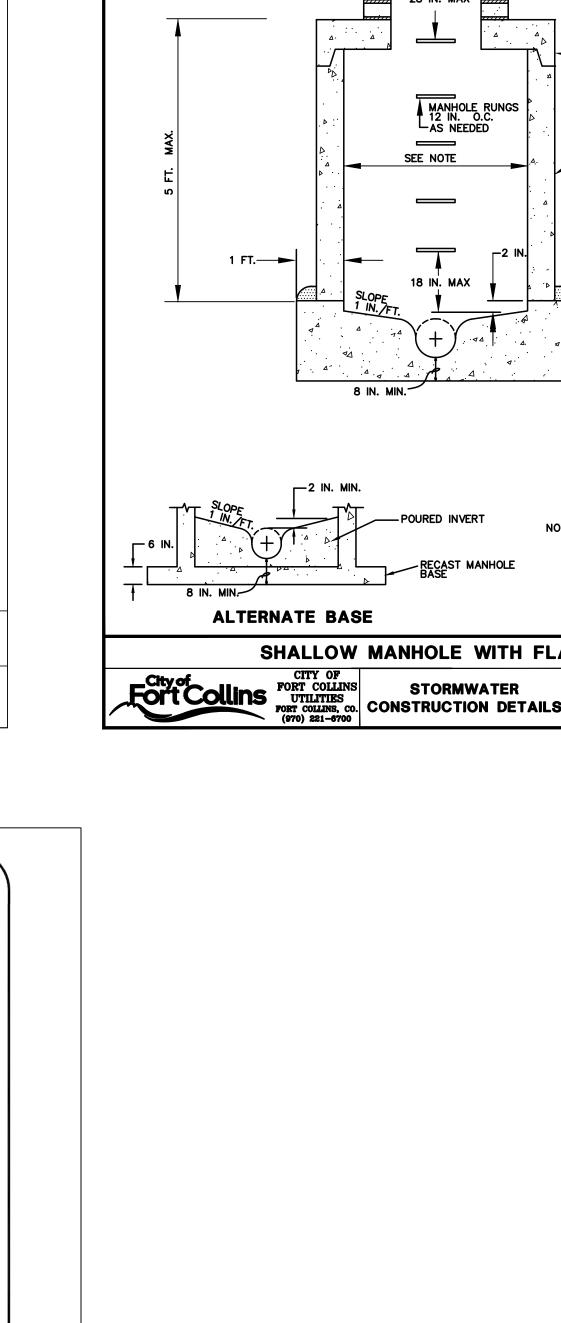
SECTION B-B

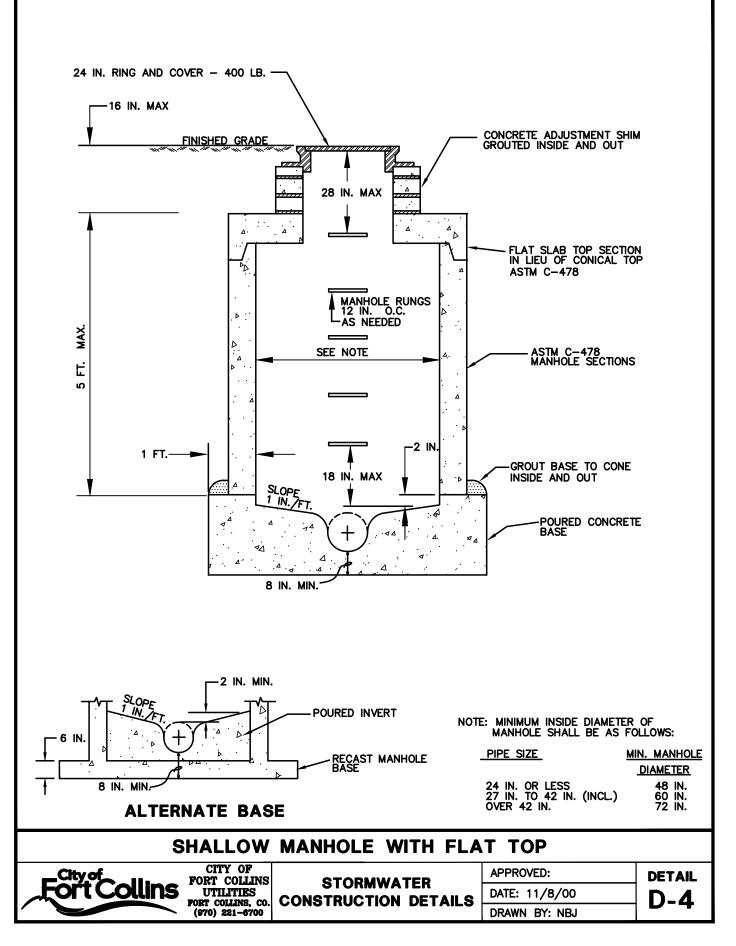
DRAWING

Aggregate Base Course A.B.C. 6" (min.)

Flared End Section (F.E.S.)

04/01/07







SHEET

**DETAIL** 

V 9 7 4 8 7 - 8





## **GENERAL EROSION CONTROL NOTES:**

- 1) THE PROPERTY OWNER, OWNER'S REPRESENTATIVE, DEVELOPER, DESIGN ENGINEER, GENERAL CONTRACTOR SUB-CONTRACTORS, OR SIMILAR TITLE FOR THE DEVELOPING ENTITY (HERE AFTER REFERRED TO AS THE DEVELOPER) HAS PROVIDED THESE EROSION CONTROL MATERIALS IN ACCORDANCE WITH EROSION CONTROL CRITERIA SET FORTH IN THE MANUAL AS AN ATTEMPT TO IDENTIFY EROSION, SEDIMENT, AND OTHER POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH THESE CONSTRUCTION ACTIVITIES AND PREVENTING THOSE POLLUTANTS FROM LEAVING THE PROJECT SITE AS AN ILLICIT DISCHARGE. FULL CITY REQUIREMENTS AND ARE OUTLINED AND CLARIFIED IN THE MANUAL UNDER CHAPTER 4: CONSTRUCTION CONTROL MEASURES AND SHOULD BE USED TO IDENTIFY AND DEFINE WHAT IS NEEDED ON A PROJECT.
- 2) THE DEVELOPER SHALL MAKE THEMSELVES THOROUGHLY FAMILIAR WITH THE PROVISIONS AND THE CONTENT OF THE SPECIFICATIONS LAID OUT IN THE MANUAL, THE DEVELOPMENT AGREEMENT, THE EROSION CONTROL MATERIALS COMPILED FOR THIS PROJECT, AND THE FOLLOWING NOTES AS ALL THESE MATERIALS ARE APPLICABLE
- 3) THE DEVELOPER SHALL IMPLEMENT AND MAINTAIN CONTROL MEASURES FOR ALL POTENTIAL POLLUTANTS FROM THE START OF LAND DISTURBING ACTIVITIES UNTIL FINAL STABILIZATION OF THE CONSTRUCTION SITE.
- 4) THE CITY EROSION CONTROL INSPECTOR SHALL BE NOTIFIED AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE DESIRED START OF ANY CONSTRUCTION ACTIVITIES ON THIS SITE TO ALLOW ADEQUATE TIME FOR ON-SITE CONFIRMATION (INITIAL INSPECTION WHICH CAN TAKE UP TO TWO BUSINESS DAYS AFTER RECEIVING THE REQUEST) THAT THE SITE IS IN FACT PROTECTED FROM SEDIMENT AND POLLUTANTS DISCHARGES OFF SITE. PLEASE CONTACT EROSION@FCGOV.COM EARLY TO SCHEDULE THOSE INITIAL EROSION CONTROL INSPECTIONS WELL IN ADVANCE SO THAT DEMOLITION, CLEARING, GRUBBING, TREE REMOVAL, AND SCRAPING MAY BEGIN WITHOUT DELAY. FAILURE TO RECEIVE AN ON-SITE CONFIRMATION BEFORE CONSTRUCTION ACTIVITIES COMMENCE IS AN AUTOMATIC "NOTICE OF VIOLATION" AND CAN RESULT IN FURTHER ENFORCEMENT ACTIONS.
- 5) THE DEVELOPER SHALL PROACTIVELY PROVIDE ALL APPROPRIATE CONTROL MEASURES TO PREVENT DAMAGE TO ADJACENT DOWNSTREAM AND LEEWARD PROPERTIES. THIS INCLUDES BUT IS NOT LIMITED TO: TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES, CREEKS, WETLANDS, STREAMS, RIVERS, AND UTILITIES THAT ARE NOT DESIGNED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.
- 6) AT ALL TIMES THE DEVELOPER SHALL BE RESPONSIBLE TO ENSURE ADEQUATE CONTROL MEASURES ARE DESIGNED, SELECTED, INSTALLED, MAINTAIN, REPAIRED, REPLACED, AND ULTIMATELY REMOVED IN ORDER TO PREVENT AND CONTROL EROSION SUSPENSION, SEDIMENT TRANSPORTATION, AND POLLUTANT DISCHARGE AS A
- RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT. 7) ALL APPLICABLE CONTROL MEASURES BASED UPON THE SEQUENCING AND/OR PHASING OF THE PROJECT SHALL BE INSTALLED PRIOR TO THOSE CONSTRUCTION ACTIVITIES COMMENCING.
- 8) AS DYNAMIC CONDITIONS (DUE TO THE NATURE, TIMING, SEQUENCE, AND PHASING OF CONSTRUCTION) IN THE FIELD MAY WARRANT CONTROL MEASURES IN ADDITION, OR DIFFERENT, TO WHAT IS SHOWN ON THESE PLANS, THE DEVELOPER SHALL AT ALL TIMES BE RESPONSIBLE TO IMPLEMENT THE CONTROL MEASURES THAT ARE MOST EFFECTIVE WITH THE CURRENT STATE AND PROGRESS OF CONSTRUCTION. THE DEVELOPER SHALL IMPLEMENT WHATEVER MEASURES ARE DETERMINED NECESSARY, AND/OR AS DIRECTED BY THE CITY EROSION CONTROL INSPECTOR. THE DEVELOPER SHALL INSURE THAT ALL EROSION CONTROL PLANS (MAPS) OR SWMP DOCUMENTS ARE UPDATED TO REFLECT THE CURRENT SITE CONDITIONS, WITH UPDATES BEING INITIALED AND DATED. THESE SITE INSPECTIONS AND SITE CONDITION UPDATES SHALL BE MADE AVAILABLE UPON REQUEST BY THE CITY.
- 9) ALL LISTINGS, PROVISIONS, MATERIALS, PROCEDURES, ACTIVITIES, SITE WORK AND THE LIKE ARTICULATED IN THIS OR OTHER WRITTEN SITE-SPECIFIC DOCUMENTS (INCLUDING BUT NOT LIMITED TO THE EROSION CONTROL REPORTS, DEVELOPMENT AGREEMENTS, LANDSCAPE, AND DRAINAGE MATERIALS) SHALL MEET OR EXCEED THE MOST RESTRICTIVE LANGUAGE FOR CITY, COUNTY, STATE, AND FEDERAL REGULATIONS WITH REGARDS TO EROSION, SEDIMENT, POLLUTANT, AND OTHER POLLUTION SOURCE CONTROL MEASURES. THE DEVELOPER SHALL BE RESPONSIBLE TO COMPLY WITH ALL OF THESE AFOREMENTIONED LAWS AND REGULATIONS.
- 10) THE DEVELOPER SHALL ENSURE THAT ALL APPROPRIATE PERMITS (CDPS GENERAL PERMIT STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, DEWATERING, CLEAN WATER ACT, ARMY CORPS OF ENGINEERS' 404 WETLANDS MITIGATION PERMIT, ETC.) HAVE BEEN ATTAINED PRIOR TO THE RELEVANT ACTIVITY HAS BEGUN. THESE PERMITS OR COPIES SHALL BE MADE AVAILABLE UPON REQUEST BY THE CITY.
- 11) THE DEVELOPER SHALL FURNISH ALL CONVENIENCES AND ASSISTANCE TO AID THE EROSION CONTROL INSPECTORS OF MATERIALS, WORKMANSHIP, RECORDS, AND SELF-INSPECTIONS, ETC. OF THE CONTROL MEASURES INVOLVED IN THE CONSTRUCTION ACTIVITIES.
- 12) THE DEVELOPER SHALL REQUEST CLARIFICATION OF ALL APPARENT SITE CONSTRUCTION ISSUES THAT MAY ARISE DUE TO INCONSISTENCIES IN CONSTRUCTION PLANS FOR THE SITE OR SITE CONDITIONS AROUND THE SELECTED CONTROL MEASURES BY CONTACTING THE EROSION CONTROL INSPECTOR. THE EROSION CONTROL INSPECTOR WILL NOT BE RESPONSIBLE FOR ANY EXPLANATIONS, INTERPRETATIONS, OR SUPPLEMENTARY DATA PROVIDED BY
- 13) ALL CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL
- 14) THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL CONTROL MEASURES AS SITE CONDITIONS WARRANT, TO THE EXTENT AUTHORIZED BY RELEVANT LEGAL AUTHORITY.
- 15) AS WITH ANY CONSTRUCTION STANDARDS, OCCASIONS MAY ARISE WHERE THE MINIMUM EROSION CONTROL STANDARDS ARE EITHER INAPPROPRIATE OR CANNOT BE JUSTIFIED. IN THESE CASES, A VARIANCE TO THESE STANDARDS MAY BE APPLIED FOR PURSUANT TO THE TERMS, CONDITIONS, AND PROCEDURES OF THE MANUAL.
- 16) INSPECTION. THE CONTRACTOR SHALL INSPECT SITE POLLUTANT SOURCES AND IMPLEMENT CONTROL MEASURES AT A MINIMUM OF ONCE EVERY TWO WEEKS DURING CONSTRUCTION AND WITHIN 24 HOURS FOLLOWING A PRECIPITATION EVENT. DOCUMENTATION OF EACH INSPECTION SHALL BE RECORDED AND RETAINED BY THE CONTRACTOR.
- 17) ALL TEMPORARY CONTROL MEASURES SHALL BE CLEANED, REPAIRED, OR RECONSTRUCTED AS NECESSARY IN ORDER TO ASSURE CONTINUAL PERFORMANCE OF THEIR INTENDED FUNCTION. ALL RETAINED SEDIMENTS, PARTICULARLY THOSE ON PAVED ROADWAY SURFACES, SHALL BE REMOVED AND DISPOSED OF IN A MANNER AND LOCATION SO AS NOT TO CAUSE THEIR RELEASE INTO ANY DRAINAGE WAY
- 18) ANY CONTROL MEASURE MAY BE SUBSTITUTED FOR ANOTHER STANDARD CONTROL MEASURE SO LONG AS THAT CONTROL MEASURE IS EQUAL TO, OR OF GREATER PROTECTION THAN THE ORIGINAL CONTROL MEASURE THAT WAS TO BE USED IN THAT LOCATION. (EX. SILT FENCE, FOR WATTLES, OR FOR COMPACT BERMS) WATTLE ALONE ON COMMERCIAL CONSTRUCTION SITES HAVE SHOWN TO BE AN INEFFECTIVE SUBSTITUTE FOR SILT FENCE OR COMPACT BERMS UNLESS IT IS ACCOMPANIED BY A CONSTRUCTION FENCE TO PREVENT VEHICLE TRAFFIC.
- 19) ANY IMPLEMENTATION OR REPLACEMENT OF EXISTING CONTROL MEASURES FOR A NON-STANDARD CONTROL, OR ALTERNATIVE CONTROL MEASURE, SHALL REQUIRE THE REVIEW AND ACCEPTANCE BY THE CITY EROSION CONTROL STAFF BEFORE THE MEASURE WILL BE ALLOWED TO BE USED ON THIS PROJECT. THESE CONTROL MEASURES' DETAILS SHALL BE SUBMITTED, REVIEWED AND ACCEPTED TO BE IN ACCORDANCE WITH THE EROSION CONTROL CRITERIA BASED UPON THE FUNCTIONALITY AND EFFECTIVENESS IN ACCORDANCE WITH SOUND ENGINEERING AND HYDROLOGICAL PRACTICES.

# LAND DISTURBANCE, STOCKPILES, AND STORAGE OF SOILS

- 20) THERE SHALL BE NO EARTH-DISTURBING ACTIVITY OUTSIDE THE LIMITS DESIGNATED ON THE ACCEPTED PLANS. OFF ROAD STAGING AREAS OR STOCKPILES MUST BE PREAPPROVED BY THE CITY. DISTURBANCES BEYOND THESE LIMITS WILL BE RESTORED TO ORIGINAL CONDITION.
- 21) PRE-DISTURBANCE VEGETATION SHALL BE IDENTIFIED, PROTECTED, AND RETAINED WHEREVER POSSIBLE REMOVAL OR DISTURBANCE OF EXISTING VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS, AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME. THIS SHOULD INCLUDE SEQUENCING AND PHASING CONSTRUCTION ACTIVITIES IN A WAY SO THAT THE SOIL IS NOT EXPOSED FOR LONG PERIODS OF TIME BY SCHEDULE OR LIMIT GRADING TO SMALL AREAS. THIS SHOULD ALSO INCLUDE WHEN PRACTICAL ADVANCING THE SCHEDULE ON STABILIZATION ACTIVITIES SUCH THAT LANDSCAPING TAKES PLACE SHORTLY IF NOT IMMEDIATELY AFTER GRADING HAS OCCURRED. VEGETATION EFFORTS SHALL START AS SOON AS POSSIBLE TO RETURN THE SITE TO A STABILIZED CONDITION. SENSITIVE AREAS SHOULD AVOID CLEARING AND GRADING ACTIVITIES AS MUCH POSSIBLE.
- 22) ALL EXPOSED SOILS OR DISTURBED AREAS ARE CONSIDERED A POTENTIAL POLLUTANT AND SHALL HAVE CONTROL MEASURES IMPLEMENTED ON THE SITE TO PREVENT MATERIALS FROM LEAVING THE SITE.
- 23) ALL SOILS EXPOSED DURING LAND DISTURBING ACTIVITY (STRIPPING, GRADING, UTILITY INSTALLATIONS, STOCKPILING, FILLING, ETC.) SHALL BE KEPT IN A ROUGHENED CONDITION AT ALL TIMES BY EQUIPMENT TRACKING, SCARIFYING OR DISKING THE SURFACE ON A CONTOUR WITH A 2 TO 4 INCH MINIMUM VARIATION IN SOIL SURFACE UNTIL MULCH, VEGETATION, AND/OR OTHER PERMANENT EROSION CONTROL IS INSTALLED.
- 24) NO SOIL STOCKPILE SHALL EXCEED TEN (10) FEET IN HEIGHT. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT THROUGH THE USE OF SURFACE ROUGHENING, WATERING, AND DOWN GRADIENT PERIMETER CONTROLS. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT BY WIND IN ACCORDANCE WITH MUNICIPAL CODE §12-150. ALL STOCKPILES SHALL BE FLATTENED TO MEET GRADE OR REMOVED FROM SITE AS SOON AS PRACTICAL, AND NO LATER THAN THE COMPLETION OF CONSTRUCTION ACTIVITIES OR ABANDONMENT OF THE PROJECT. ALL OFF-SITE STOCKPILE STORAGE LOCATIONS IN CITY LIMITS SHALL HAVE A STOCKPILE PERMIT FROM THE CITY ENGINEERING DEPARTMENT PRIOR TO USING THE AREA TO STORE MATERIAL. IF FREQUENT ACCESS FROM HARDSCAPE TO THE STOCKPILE IS NEEDED A STRUCTURAL TRACKING CONTROL MEASURE SHALL BE IMPLEMENTED.
- 25) ALL REQUIRED CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY (STOCKPILING, STRIPPING, GRADING, ETC.). ALL OF THE REQUIRED EROSION CONTROL MEASURES MUST BE INSTALLED AT THE

- APPROPRIATE TIME IN THE CONSTRUCTION SEQUENCE AS INDICATED IN THE APPROVED PROJECT SCHEDULE, CONSTRUCTION PLANS, AND EROSION CONTROL REPORT.
- 26) ALL INLETS, CURB-CUTS, CULVERTS, AND OTHER STORM SEWER INFRASTRUCTURE WHICH COULD BE POTENTIALLY IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE PROTECTED WITH CONTROL MEASURES. MATERIAL ACCUMULATED FROM THIS CONTROL MEASURE SHALL BE PROMPTLY REMOVED AND IN CASES WHERE THE PROTECTION HAS FAILED, THE PIPES SHALL BE THOROUGHLY CLEANED OUT.
- 27) ALL STREAMS, STREAM CORRIDORS, BUFFERS, WOODLANDS, WETLANDS, OR OTHER SENSITIVE AREAS SHALL BE PROTECTED FROM IMPACT BY ANY CONSTRUCTION ACTIVITY THROUGH THE USE OF CONTROL MEASURES.
- 28) ALL EXPOSED DIRT SHALL HAVE PERIMETER CONTROL. ANY PERIMETER CONTROLS THAT DRAIN OFF OR HAS THE ABILITY TO BE TRACKED ONTO THE NEARBY HARDSCAPE SHALL HAVE SOME FORM OF EFFECTIVE SEDIMENT CONTROL AS THE, OR AS PART OF THE, PERIMETER CONTROL.
- 29) ALL EXPOSED SLOPES SHOULD BE PROTECTED. ALL EXPOSED STEEP SLOPES (STEEPER THAN 3:1 H:V) SHALL BE PROTECTED FROM EROSION AND SEDIMENT TRANSPORT THROUGH USE OF CONTROL MEASURES.
- 30) NO SOILS SHALL REMAIN EXPOSED BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS AFTER ACTIVITY HAS CEASED BEFORE REQUIRED TEMPORARY SEEDING OR PERMANENT EROSION CONTROL (E.G. SEED/MULCH, LANDSCAPING, ETC.) IS INSTALLED. THIS IS NOT JUST LIMITED TO PROJECTS THAT ARE ABANDONED; THIS INCLUDES ANY PROJECT THAT IS TEMPORARILY HALTED AND NO IMMEDIATE ACTIVITY IS TO RESUME WITHIN THE NEXT THIRTY (30) DAYS, UNLESS OTHERWISE APPROVED BY THE CITY EROSION CONTROL INSPECTOR. DURING A SEASON WHEN SEEDING DOES NOT PRODUCE VEGETATIVE COVER, ANOTHER TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED WITH OR UNTIL TEMPORARY SEEDING OR PERMANENT EROSION CONTROL CAN BE
- 31) ALL INDIVIDUAL LOTS SHALL HAVE EFFECTIVE SEDIMENT CONTROLS LOCATED ON THE STREET SIDE AND ANY DOWN GRADIENT SIDE. TYPICALLY MOST LOTS DRAIN TO THE FRONT YET ON THOSE CASES WHERE HOUSES ARE ALONG A POND OR DRAINAGE SWALE HAVE THE LOT DRAIN IN A DIFFERENT DIRECTION THAN THE STREET, THOSE INDIVIDUAL LOTS WILL NEED PROTECTION ON THAT DOWN GRADIENT SIDE TO PREVENT SEDIMENT FROM LEAVING THE LOT. SEE THE INDIVIDUAL LOT DETAILS FOR FURTHER CLARIFICATION.

#### VEHICLE TRACKING

- 32) AT ALL POINTS WHERE VEHICLES EXIT OR LEAVE THE EXPOSED DIRT AREA ON TO A HARDSCAPE OR SEMI HARDSCAPE (CONCRETE, ASPHALT, ROAD BASE, ETC.) SHALL HAVE INSTALLED AT LEAST ONE STRUCTURAL TRACKING CONTROL MEASURE TO PREVENT VEHICLE TRACKING. ALL AREAS NOT PROTECTED BY AN ADEQUATE PERIMETER CONTROL SHALL BE CONSIDERED A POINT WHERE VEHICLES EXIT THE SITE. ACCESS POINTS SHOULD BE LIMITED TO AS FEW ENTRANCES AS POSSIBLE (ALL PERIMETER AREAS SHALL BE PROTECTED FROM TRACKING ACTIVITIES).
- 33) IN ALL AREAS THAT THE STRUCTURAL TRACKING CONTROL MEASURES FAIL TO PREVENT VEHICLE TRACKING, COLLECTION AND PROPER DISPOSAL OF THAT MATERIAL IS REQUIRED. ALL INLETS LOCATED NEAR ACCESS POINTS AND AFFECTED BY TRACKING ACTIVITIES SHALL BE PREVENTED FROM THE INTRODUCTION OF SEDIMENT INTO THE
- 34) CITY MUNICIPAL CODE §20-62, AMONG OTHER THINGS, PROHIBITS THE TRACKING, DROPPING, OR DEPOSITING OF SOILS OR ANY OTHER MATERIAL ONTO CITY STREETS BY OR FROM ANY SOURCE. CITY MUNICIPAL CODE, §26-498, AMONG OTHER THINGS, PROHIBITS THE DISCHARGE OF POLLUTANTS ON PUBLIC OR PRIVATE PROPERTY IF THERE IS A SIGNIFICANT POTENTIAL FOR MIGRATION OF SUCH POLLUTANT. THEREFORE, ALL TRACKED OR DEPOSITED MATERIALS (INTENTIONAL OR INADVERTENT) ARE NOT PERMITTED TO REMAIN ON THE STREET OR GUTTER AND SHALL BE REMOVED AND LEGALLY DISPOSED OF BY THE DEVELOPER IN A TIMELY AND IMMEDIATE MANNER. DIRT RAMPS INSTALLED IN THE CURB-LINES ARE NOT EXEMPT TO THESE SECTIONS OF CODE AND SHALL NOT BE PERMITTED IN THE STREET RIGHT OF WAY (PUBLIC OR PRIVATE).
- 35) IF REPEATED DEPOSIT OF MATERIAL OCCURS ON A SITE, ADDITIONAL STRUCTURAL TRACKING CONTROLS MAY BE REQUIRED OF THE DEVELOPER BY THE CITY EROSION CONTROL INSPECTOR.

#### LOADING AND UNLOADING OPERATIONS

36) THE DEVELOPER SHALL APPLY CONTROL MEASURE TO LIMIT TRAFFIC (SITE WORKER OR PUBLIC) IMPACTS AND PROACTIVELY LOCATE MATERIAL DELIVERED TO THE SITE IN CLOSE PROXIMITY TO THE WORK AREA OR IMMEDIATELY INCORPORATED IN THE CONSTRUCTION TO LIMIT OPERATIONAL IMPACTS TO DISTURBED AREAS, VEHICLE TRACKING, AND SEDIMENT DEPOSITION THAT COULD IMPACT WATER QUALITY.

# OUTDOOR STORAGE OR CONSTRUCTION SITE MATERIALS, BUILDING MATERIALS, FERTILIZERS, AND CHEMICALS

- 37) ANY MATERIALS OF A NON-POLLUTING NATURE (STEEL, ROCK, BRICK, LUMBER, ETC.) SHALL BE INSPECTED FOR ANY RESIDUE COMING OFF THE MATERIAL DURING ROUTINE INSPECTION AND WILL GENERALLY BE LOCATED WHERE PRACTICAL AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM DRAINAGE WAYS.
- 38) ANY HIGH ENVIRONMENTAL IMPACT POLLUTANT MATERIALS THAT HAVE A HIGH LIKELIHOOD TO RESULT IN DISCHARGE WHEN IN CONTACT WITH STORMWATER (LUBRICANTS, FUELS, PAINTS, SOLVENTS, DETERGENTS, FERTILIZERS, CHEMICAL SPRAYS, BAGS OF CEMENT MIX, ETC.) SHOULD NOT BE KEPT ON SITE WHERE PRACTICAL. WHEN NOT PRACTICAL, THEY SHOULD BE STORED INSIDE (VEHICLE, TRAILER, CONNEX, BUILDING, ETC.) AND OUT OF CONTACT WITH STORMWATER OR STORMWATER RUNOFF. WHERE NOT AVAILABLE, THEY SHALL BE STORED OUTSIDE IN A RAISED (HIGH SPOTS OR ON PALLETS), COVERED (PLASTIC OR TARPED), AND SEALED (LEAK PROOF CONTAINER) IN SECONDARY CONTAINMENT LOCATION. THE SECONDARY CONTAINMENT OR OTHER CONTROL MEASURE SHALL BE ADEQUATELY SIZED, LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS.

# VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING

39) PARKING, REFUELING, AND MAINTENANCE OF VEHICLES AND EQUIPMENT SHOULD BE LIMITED IN ONE AREA OF THE SITE TO MINIMIZE POSSIBLE SPILLS AND FUEL STORAGE AREAS. THIS AREA SHALL BE LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS. ALL AREAS SHALL KEEP SPILL KITS AND

# SIGNIFICANT DUST OR PARTICULATE GENERATING PROCESS

40) THE PROPERTY MUST BE ACTIVELY PREVENTING THE EMISSION OF FUGITIVE DUST AT ALL TIMES DURING CONSTRUCTION AND VEGETATION ACTIVITIES. ALL LAND DISTURBING ACTIVITIES THAT RESULT IN FUGITIVE DUST SHALL BE IN ACCORDANCE WITH MUNICIPAL CODE §12-150 TO REDUCE THE IMPACTS TO ADJACENT PROPERTIES AND COMMUNITY HEALTH. ALL REQUIRED PRACTICES SHALL BE IMPLEMENTED AND ADDITIONAL ONES SHALL BE FOLLOWED. THESE PRACTICES INCLUDE WATERING THE SITES AND DISCONTINUING CONSTRUCTION ACTIVITIES UNTIL THE WIND SUBSIDES AS DETERMINED BY ANY CITY INSPECTORS.

# CONCRETE TRUCK / EQUIPMENT WASHING, INCLUDING THE CONCRETE TRUCK CHUTE AND ASSOCIATED FIXTURES AND

- 41) ALL CONCRETE AND EQUIPMENT WASHING SHALL USE STRUCTURAL CONTROL MEASURES APPROPRIATE TO THE VOLUME OF WASH AND FREQUENCY OF USE. THESE CONTROL MEASURES SHALL BE LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS. THESE AREAS SHALL BE CLEARLY IDENTIFIED AND PROTECTED FROM ANY WASH FROM LEAVING THE CONTROL MEASURE. IF FREQUENT ACCESS FROM HARDSCAPE TO THE CONTROL MEASURE IS TO OCCUR, A STRUCTURAL TRACKING CONTROL MEASURE SHALL BE IMPLEMENTED. THESE CONTROL MEASURES SHALL BE FREQUENTLY CLEANED OUT.
- 42) THE DEVELOPER IS RESPONSIBLE FOR ENSURING WASHING ACTIVITY IS TAKING PLACE AT THE APPROPRIATE CONTROL MEASURE AND SITE WORKERS ARE NOT WASHING OR DUMPING WASH WATER ON TO THE DIRT OR OTHER UNCONTROLLED LOCATIONS.

# DEDICATED ASPHALT AND CONCRETE BATCH PLANTS

43) DEDICATED ASPHALT AND CONCRETE BATCH PLANTS ARE NOT ACCEPTABLE ON CONSTRUCTION SITES WITHIN THE CITY OF FORT COLLINS WITHOUT AN EXPRESSED WRITTEN REQUEST AND PLAN TO REDUCE POLLUTANTS ASSOCIATED WITH THAT TYPE OF ACTIVITY AND APPROVAL BY THE CITY OF FORT COLLINS SPECIFICALLY THE EROSION CONTROL INSPECTOR. THE DEVELOPER SHALL INFORM THE EROSION CONTROL INSPECTION STAFF OF ANY DEDICATED ASPHALT, OR CONCRETE BATCH PLANTS THAT IS TO BE USED ON SITE.

# CONCRETE SAW CUTTING MATERIALS

44) SAW CUTTING MATERIAL SHALL BE IN ACCORDANCE WITH MUNICIPAL CODE §12-150 FOR AIR EMISSIONS AND ALL WATER APPLICATIONS TO THE SAW CUTTING SHALL PREVENT MATERIAL FROM LEAVING THE IMMEDIATE SITE AND COLLECTED. THESE CUTTING LOCATIONS, ONCE DRIED, SHALL BE SWEPT AND SCRAPED OF ALL MATERIAL AND SHALL HAVE PROPER AND LEGAL DISPOSAL.

#### WASTE MATERIALS STORAGE AND SANITARY FACILITIES

- 45) TRASH, DEBRIS, MATERIAL SALVAGE, AND/OR RECYCLING AREAS SHALL BE, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS. THESE FACILITIES SHOULD BE LOCATED OUT OF THE WIND AND COVERED AS ABLE. WHERE NOT ABLE TO COVER, LOCATING SAID AREAS ON THE SIDE OF OTHER STRUCTURES TO REDUCE EXPOSURE TO WINDS, AND FOLLOW MAXIMUM LOADING GUIDELINES AS MARKED ON THE CONTAINER. THE DEVELOPER IS REQUIRED TO PRACTICE GOOD HOUSEKEEPING TO KEEP THE CONSTRUCTION SITE FREE OF LITTER, CONSTRUCTION DEBRIS, AND LEAKING CONTAINERS.
- 46) SANITARY FACILITIES SHALL BE PREVENTED FROM TIPPING THROUGH THE USE OF ANCHORING TO THE GROUND OR LASHING TO A STABILIZED STRUCTURE. THESE FACILITIES SHALL ALSO BE LOCATED AS FAR AS PRACTICAL FROM AN INLET, CURB CUT, DRAINAGE SWALE OR OTHER DRAINAGE CONVEYANCES TO PREVENT MATERIAL TRANSPORT FROM LEAVING THE LOCAL AREA. THIS CONSISTS OF THE FACILITY BEING LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM DRAINAGE WAYS.

## OTHER SITE OPERATIONS AND POTENTIAL SPILL AREAS

- 47) SPILLS: FOR THOSE MINOR SPILLS THAT; ARE LESS THAN THE STATE'S REPORTABLE QUANTITY FOR SPILLS, STAY WITHIN THE PERMITTED AREA, AND IN NO WAY THREATEN ANY STORMWATER CONVEYANCE, NOTIFY THE CITY OF FORT COLLINS UTILITIES BY EMAIL AT <a href="mailto:erosion@fcgov.com">erosion@fcgov.com</a> OR PHONE (970) 817-4770. FOR ANY SIGNIFICANT, MAJOR, OR HAZARDOUS SPILLS, NOTIFY THE CITY OF FORT COLLINS UTILITIES BY PHONE ONLY AFTER EMERGENCY RESPONSE (911) HAS BEEN NOTIFIED AND IS ON ROUTE, COUNTY HEALTH DEPARTMENT (LCDHE) HAS BEEN NOTIFIED THROUGH LARIMER COUNTY SHERIFF DISPATCH (970) 416-1985, AND THE STATE SPILL HOTLINE INCIDENT REPORTING HAVE BEEN CONTACTED 1-877-518-5608. WRITTEN DOCUMENTATION SHALL BE PROVIDED TO THE CITY WITHIN 5 DAYS OF THE EVENT. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY.
- 48) SELECTION OF "PLASTIC WELDED" EROSION CONTROL BLANKETS SHALL NOT BE USED IN AREAS THAT WILDLIFE, SUCH AS SNAKES, ARE LIKELY TO BE LOCATED AS THESE HAVE PROVEN TO CAUSE ENTRAPMENT ISSUES.

#### FINAL STABILIZATION AND PROJECT COMPLETION

- 49) ANY STORMWATER FACILITIES USED AS A TEMPORARY CONTROL MEASURE WILL BE RESTORED AND STORM SEWER LINES WILL BE CLEANED UPON COMPLETION OF THE PROJECT AND BEFORE TURNING THE MAINTENANCE OVER TO THE OWNER, HOMEOWNERS ASSOCIATION (HOA), OR OTHER PARTY RESPONSIBLE FOR LONG TERM MAINTENANCE OF THOSE FACILITY.
- 50) ALL FINAL STABILIZATION SPECIFICATIONS SHALL BE DONE IN ACCORDANCE WITH THE MANUAL, CHAPTER 4: CONSTRUCTION CONTROL MEASURES.
- 51) ALL DISTURBED AREAS DESIGNED TO BE VEGETATED SHALL BE AMENDED, SEEDED & MULCHED, OR LANDSCAPED AS SPECIFIED IN THE LANDSCAPE PLANS WITHIN 14 WORKING DAYS OF FINAL GRADING.
- 52) SOIL IN ALL VEGETATED (LANDSCAPED OR SEEDED) AREAS, INCLUDING PARKWAYS AND MEDIANS SHALL COMPLY WITH ALL REQUIREMENTS SET FORTH IN SECTIONS 12-130 THROUGH 12-132 OF THE CITY MUNICIPAL CODE, AS WELL AS SECTION 3.8.21 FOR THE CITY LAND USE CODE.
- 53) ALL SEEDING SHALL REFER TO LANDSCAPING PLANS FOR SPECIES MIXTURE AND APPLICATION RATES AND DEPTHS REQUIREMENTS.
- 54) ALL SEED SHALL BE DRILLED WHERE PRACTICAL TO A DEPTH BASED UPON THE SEED TYPE. BROADCAST SEEDING SHALL BE APPLIED AT DOUBLE THE RATE AS PRESCRIBED FOR DRILL SEEDING AND SHALL BE LIGHTLY HAND RAKED AFTER APPLICATION. HYDROSEEDING MAY BE SUBSTITUTED FOR DRILL SEEDING ON SLOPES STEEPER THAN 3(H):1(V) OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED AND CRIMP AND MULCH. ALL HYDROSEEDING MUST BE CONDUCTED AS TWO SEPARATE PROCESSES OF SEEDING AND TACKIFICATION.
- 55) ALL SEEDED AREAS MUST BE MULCHED WITHIN TWENTY-FOUR (24) AFTER PLANTING. ALL MULCH SHALL BE MECHANICALLY CRIMPED AND OR ADEQUATELY APPLIED TACKIFIER. THE USE OF CRIMPED MULCH OR TACKIFIER MAY REQUIRE MULTIPLE RE-APPLICATIONS IF NOT PROPERLY INSTALLED OR HAVE WEATHERED OR DEGRADED BEFORE VEGETATION HAS BEEN ESTABLISHED. AREAS OF EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 3H:1V SHALL BE STABILIZED WITH AN EROSION MAT OR APPROVED EQUAL TO ENSURE SEED WILL BE ABLE TO GERMINATE ON THE STEEP SLOPES. DURING A SEASON WHEN SEEDING DOES NOT PRODUCE VEGETATIVE COVER, ANOTHER TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED ALONG WITH, OR UNTIL, TEMPORARY SEEDING OR PERMANENT EROSION CONTROL CAN BE PERFORMED.
- 56) THE DEVELOPER SHALL WARRANTY AND MAINTAIN ALL VEGETATIVE MEASURES FOR TWO GROWING SEASONS AFTER INSTALLATION OR UNTIL SEVENTY PERCENT (70%) VEGETATIVE COVER HAS BEEN ESTABLISHED, WHICHEVER IS LONGER AND MEETS ALL THE CRITERIA OUTLINED IN THE FORT COLLINS STORMWATER CRITERIA MANUAL CHAPTER 4: CONSTRUCTION CONTROL MEASURES.
- 57) THE DEVELOPER SHALL MAINTAIN, MONITOR, REPAIR, AND REPLACE ANY AND ALL APPLICABLE CONTROL MEASURES UNTIL FINAL STABILIZATION HAS BEEN OBTAINED. ALL CONTROL MEASURES MUST REMAIN UNTIL SUCH TIME AS ALL UPSTREAM CONTRIBUTING POLLUTANT SOURCES HAVE BEEN VEGETATED OR REMOVED FROM THE SITE. WHEN ANY CONTROL MEASURE IS REMOVED, THE DEVELOPER SHALL BE RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ALL SEDIMENT AND DEBRIS FROM THAT CONTROL MEASURE. AT THE POINT AT WHICH THE SITE HAS BEEN DEEMED STABILIZED AND VERIFIED BY CITY EROSION CONTROL INSPECTOR, ALL TEMPORARY CONTROL MEASURES CAN THEN BE FULLY REMOVED. ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION IS
- 58) THE RESPONSIBLE PARTY SHALL MAINTAIN AND KEEP CURRENT ALL PAYMENTS OR RELATED FORMS OF SECURITY FOR THE EROSION CONTROL ESCROW UNTIL 1) STABILIZATION HAS BEEN REACHED AND 2) ALL CONTROL MEASURES AND/OR BMPS HAVE SEDIMENT MATERIALS COLLECTED AND THE CONTROL MEASURE REMOVED FROM THE SITE. AT THAT TIME THE SITE WILL BE CONSIDERED COMPLETED AND ANY REMAINING EROSION CONTROL ESCROW SHALL BE RETURNED TO THE APPROPRIATE PARTIES.







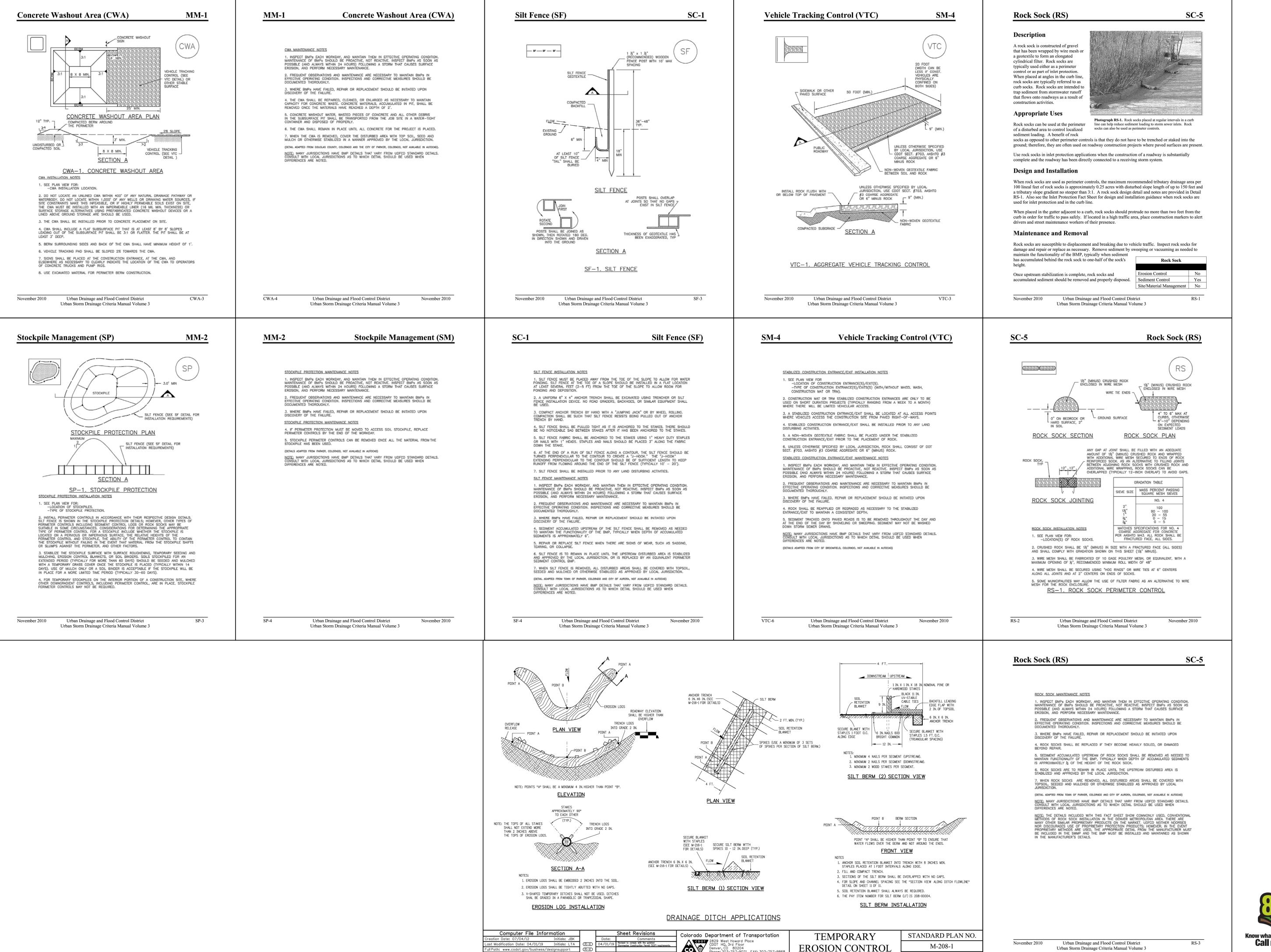
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# Erosion Control Report Stormwater Management Plan for Hill Single-Family FDP210005

June 2, 2021





Keefe Civil, Inc. 3125 Crockett Street Fort Collins, Colorado 80526

Prepared for:

Chris Hill 4112 Lakefront Drive Loveland, Colorado 80537

# **Table of Contents**

1	Intro	ductionduction	1
	1.1	Site Description	1
	1.2	Nature of Proposed Construction Activity	3
	1.3	Proposed Sequence of Major Activities	. 4
	1.4	Location of Potential Pollutant Sources	. 5
2	ВМР	s for Stormwater Pollution Prevention	6
	2.1	Erosion and Sediment Controls	6
	2.2	Materials Handling and Spill Prevention	8
3	Stor	mwater Management Controls	11
		SWMP Administrator	
	3.2	Identification of Potential Pollution Sources	.11
4	Fina	Stabilization and Long-Term Stormwater Management	15
		City of Fort Collins Native Seed Mix Notes	
	4.2	Final Stabilization	.16
5	Insp	ection and Maintenance	18
	-	City of Fort Collins Standard Erosion and Sediment Control Notes	
		City of Fort Collins Erosion Control Security Calculations	
6	SWN	IP Implementation	28
		·	
F	igures		
•	iguics		
Fi	igure 1: \	/icinity map	2
		Jpland seed mix	
A	ppend	lices	
	Α	Flood Insurance Rate Map	
	В	NRCS Soil Survey of Larimer County	
	С	Lot 2, Blehm Subdivision 2 <sup>nd</sup> Filing, Being a Replat of Lot 5, Blehm Subdivision Utility Plans	
	D	Best Management Practices Detail Sheets	
	E	Lot 2, Blehm Subdivision 2 <sup>nd</sup> Filing, Being a Replat of Lot 5, Blehm Subdivision Final Development Plan	
	F	City of Fort Collins Erosion Control Security Calculations	
		- ·	

#### 1 Introduction

The primary purpose of preparing and maintaining a stormwater management plan is to improve the health and quality of the State's urban waterways. The preparation of and adherence to this plan will aid in achieving this objective by establishing a program of actions to be used during construction activities and describing stormwater management controls and various Best Management Practices (BMPs) necessary to reduce erosion, sediment, and pollutants in stormwater discharge.

The project will disturb more than one acre (~2.59 acres), which will require a Stormwater Management Plan (SWMP) permit. Information concerning the State of Colorado General SWMP permit are not included in the appendices of this report, but this document may be used by the project's contractor as a part of the required documentation for final permit.

#### 1.1 Site Description

The 4.011-acre project site is located 0.3 mile east of the South Timberline Road and Kechter Road intersection and approximately 450 ft north of Kechter Road right-of-way (Figure 1). The Hill Single-Family project is lot 2 of Blehm Subdivision 2<sup>nd</sup> Filing, being a replat of Lot 5, Blehm Subdivision in Fort Collins, Colorado. The lot was recently assigned an address of 2336 Kechter Road but has not received a parcel number to date. The GPS coordinates for the proposed home site are 40°30'44.59"N, 105° 1'59.16"W. The lot is bound by a Stetson Creek PUD Second Filing concrete drainage channel and single-family residential lots to the north, and urban estate residential properties to the south, west, and east. No existing structures are located on site.

The site is located within the McClellands drainage basin. Historically, site stormwater has drained with gentle slopes (1-2%) from the southwest to northeast into offsite flood irrigation channels on the upstream edge of Blehm Subdivision Lot 6 to the east and conveyed north to the Stetson Creek PUD Second Filing concrete drainage channel, which discharges into McClellands drainageway ~350 ft to the east. Once within the McClellands channel, it flows southeast ~1.5 miles to a water quality pond adjacent to South County Road 7. This pond

releases into Fossil Creek Reservoir inlet channel and travels south  $\sim 1/3$  mile to Fossil Creek Reservoir.

Per the flood insurance rate map (Appendix A), the lot is located within Zone X. Zone X is defined as an area of minimal flood hazard and does not have a base flood elevation associated with it.



Figure 1: Vicinity map

The lot is undeveloped pastureland (0% imperviousness) with moderate vegetative ground cover (~80% vegetation). One existing tree is located at the northeast corner of the property and will not be disturbed during construction activities. Possible environmental impacts to the site include disturbance of existing vegetation; however, the site will have permanent vegetation replaced in all disturbed areas after construction activities have been completed at project site.

Per the NRCS Soil Survey of Larimer County (Appendix B), the site consists of ~57% Fort Collins loam and ~43% Nunn clay loam, which has a hydrologic soil group C classification.

These soils are anticipated to have a slow infiltration rate when thoroughly wet and a slow rate of water transmission. Additional soil characteristics are as follows.

Soil Type	Percent of Site	Hydrologic Soil Group	K Factor	Wind Group
Fort Collins loam, 0 to 3 percent slopes	26.0%	С	0.43	5
Fort Collins loam, 3 to 5 percent slopes	31.0%	С	0.43	5
Nunn clay loam, wet, 1 to 3 percent slopes	43.0%	С	0.24	6

The site's erosion factor K ranges between 0.24 and 0.43. The higher the K factor, the more susceptible the soil is to sheet and rill erosion by water. Based on the NRCS map, the northern portion of the site (the low spot) is less likely to experience water erosion than the southern portion.

This project site is in the 5 and 6 wind groups. Wind erodibility groups range from 1 to 8. The higher the group number, the least susceptible the soils are to experience wind erosion.

According to soils report by others (EEC 2021), approximate high groundwater levels appear to be ~6 ft below present site grades.

Since the irrigation water rights associated with the property were previously sold, there are no non-stormwater discharges associated with the site.

No known riparian or sensitive areas are located on-site or close to project. Closest riparian and wetland area identified by the Colorado Natural Heritage Program is Fossil Creek Reservoir.

No known ground contamination on-site.

#### 1.2 Nature of Proposed Construction Activity

Since the total disturbed area is ~2.61 acres, the property owner's contractor must obtain a Colorado Discharge Permit System (CDPS) Stormwater Discharge Associated with Construction Activities General Permit. Construction activity will be typical of small residential developments, as discussed below.

Proposed site improvements include a two-story house with basement, attached garage, a gravel driveway with access off Kechter Road, and a detached barn. There will be minimal concrete surrounding the house and barn. The homeowner intends to revegetate with native plant material and turf. The gravel driveway and turnaround shall be made of compacted road base material meeting Poudre Fire Authority standards.

#### 1.3 Proposed Sequence of Major Activities

The project will be constructed in two phases with the following sequence of construction activity related to the proposed erosion control plan (Appendix C).

- 1. Install and implement construction boundary erosion fence (silt fence) and vehicle tracking control at the proposed driveway entrance off Kechter Road.
- 2. Clear, grub, and stockpile topsoil along proposed driveway limits. Implement soil storage area sediment controls adjacent to proposed barn location.
- 3. Utility service line installation (water, gas, and electric).
- 4. Stormwater culvert installation (four total).
- 5. Install and implement erosion log inlet and outlet protection for stormwater culverts (three total).
- 6. Grade and construct Kechter Road entrance and access road.
- 7. Install rock socks along access road drainage swale and Kechter Road drainage swales.
- 8. Complete final site stabilization of all disturbed areas along access road from Kechter Road to proposed house.
- 9. Install concrete washout adjacent to proposed barn location.
- 10. Barn construction.
- 11. Complete final grading, landscaping, and site stabilization around barn.
- 12. Remove stockpile storage area sediment controls and concrete washout adjacent to barn.
- 13. Install stockpile storage area sediment controls and concrete washout adjacent to proposed house location.
- 14. House construction.

- 15. Complete final grading, landscaping, and site stabilization adjacent to house.
- 16. Final stabilization of vegetation.
- 17. Remove all BMPs and complete final site cleanup.

#### 1.4 Location of Potential Pollutant Sources

The property owner's future contractor shall identify potential pollution sources and implement BMPs to minimize the risk of pollution outside the construction area. Potential pollution sources will generally be restricted to on-site locations and are discussed in detail within Section 3.2.

#### 2 BMPs for Stormwater Pollution Prevention

#### 2.1 Erosion and Sediment Controls

Structural Practices

Structural practices for the site will consist mainly of a concrete washout area, vehicle tracking pad, rock socks along the flowline of the drainage swales, and silt fence, which are described in detail within the following paragraphs. Detail drawings of these BMPs are included in Appendix D. BMPs are expected to change as construction progresses and it is the responsibility of the contractor to ensure appropriate BMPs are in place and/or removed at the appropriate time in the construction sequence (Section 1.3). All temporary and permanent erosion and sediment control practices must be maintained and repaired as needed to assure continued performance of their intended function. All BMPs shall be inspected and repaired or replaced as indicated in Section 5 and as required to satisfy the conditions of the SWMP permit.

The concrete washout area is intended to contain washout liquids and solids resulting from the cleaning of concrete trucks and pumps. Washouts should be placed near the area where concrete is being poured for either the house or barn.

A vehicle tracking pad is intended to trap mud and sediment within coarse grain material and provide clean access to public roadways. Wherever construction vehicle access routes intersect paved public roads (Kechter Road), a vehicle tracking control pad shall be installed to minimize the transport of sediment (mud) by runoff or vehicles tracking onto the paved surface. Pads shall be maintained and refurbished when necessary, to obtain their intended result.

Rock socks are intended to be installed along the flowline of site drainage swales. The rock socks will control localized sediment loading during construction activities.

Silt fence will aid in the prevention of sediment leaving the site during a stormwater runoff or wind event by collecting silt deposits along the fence line while still allowing storm water to seep through. Silt fence shall be placed along the western access road boundary closest to Kechter Road (Blehm Subdivision 2<sup>nd</sup> Filing, Lot 1) and at the northeast corner of the project

site to prevent sediment transport. Silt fence shall be inspected and maintained regularly; generally, every 2 weeks and after every rainfall event that produces runoff. Sediment must be removed, and rocks replaced. Silt fence shall be installed prior to any work commencing on-site.

#### Non-Structural Practices

If there are any low sloped areas exposed during land disturbing activity (stripping, grading, utility installations, stockpiling, filling, etc.) they shall be kept in a roughened condition by ripping or disking along land contours until mulch, vegetation or other permanent erosion control is installed by contractor.

If there are any exposed steep sloped areas created during land disturbing activity (stripping, grading, utility installations, stockpiling, filling, etc.) they shall have slope protection. The contractor shall use a tracked vehicle to run perpendicular to the slope to inhibit rill/gully erosion. The contractor may use other windrow-type methods, as necessary.

No soil shall remain exposed by land disturbing activity for >30 days. After 30 days, temporary or permanent erosion control seed/mulch or landscaping is required to be installed by contractor.

Additional Non-Structural Practices are strongly encouraged, such as minimizing soil and vegetation disturbance, providing educational materials on disposal/recycling, spill prevention / clean up, identification and elimination of illicit discharges, promotion of street sweeping and the development of public education programs.

THE CONTRACTOR SHALL ADD ANY AND ALL BMP'S AND DETAILS NEEDED FOR SEDIMENT/EROSION CONTROL.

#### 2.2 Materials Handling and Spill Prevention

Potential impacts from significant materials and their handling are included below.

Chemicals, cleaning substances, and petroleum products related to construction shall be stored within the construction trailer during barn construction or inside the future barn during the house construction phase. These areas will protect the chemicals from encountering precipitation. No storage of these materials will be allowed outside.

Maintenance of equipment and refueling shall not take place on-site until the barn is constructed. Once the barn is constructed, equipment maintenance and fueling may be accomplished either in the barn or off- site. Absorbent (e.g., kitty litter) shall be stored in the construction trailer or barn and immediately applied to any spill with the dry material being disposed of properly and legally.

All construction waste shall be disposed of in available on-site dumpsters throughout the workday. Liquid wastes will be hauled off-site and disposed of properly and legally.

Any cleaning or maintenance of small equipment will be required to be done within a containment device (e.g., horse trough) and the liquid disposed of properly and legally.

In the event of any spill, the SWMP administrator shall be notified immediately.

Spills shall be broken into three categories. Their definitions and the procedures required to address the spills are indicated below.

Minor Spill

A spill generally <5 gallons which is unlikely to reach adjacent waters (e.g., equipment leak).

#### Procedure:

- 1. Stop the source of spill.
- 2. Contain spillage.
- 3. Contact SWMP administrator.
- 4. Clean up spill with on-site absorbent material (e.g., kitty litter).

- 5. Dispose of dry material properly and legally.
- 6. Document spill and response in the SWMP. Include dates and times. Verify the pollutants are completely cleaned up.
- 7. Include incident in the following site safety meeting.
- 8. Provide spill information to City of Fort Collins representative at next regular inspection.

#### Significant Spill

A spill of pollutants or oils of any size that has or will likely reach adjacent waters, may endanger health or the environment, or which may exceed a water quality standard.

#### Procedure:

- 1. Stop source of spill.
- 2. Contain spillage.
- 3. Contact SWMP administrator.
- 4. Clean up spill with on-site absorbent material (e.g., kitty litter).
- 5. Dispose of dry material properly and legally.
- 6. Document spill and response in the SWMP. Include dates and times. Verify the pollutants are completely cleaned up.
- 7. Notify City of Fort Collins at (970) 221-6700 and Colorado Department of Public Health and Environment spill reporting line at (877) 518-5608 and report the spill.
- 8. Notify the same two entities above with a written submission (outlined in permit) within five calendar days.
- 9. Include incident in the following site safety meeting.

#### Hazardous Spill

A spill of a dangerous substance requiring expert cleanup.

#### Procedure:

1. Secure spill area – do not approach spill area.

- 2. Offer first aid to any injured parties.
- 3. Call 911 and describe nature of the spill and any injuries.
- 4. If possible, isolate downstream areas from the spill (e.g., cover a downstream storm drain inlet, a safe distance from the spill, with plastic and soil).
- 5. Contact SWMP administrator.
- 6. Document spill and response in SWMP.
- 7. Notify City of Fort Collins at (970) 221-6700 and Colorado Department of Public Health and Environment spill reporting line at (877) 518-5608 and report the spill.
- 8. Notify the same two entities above with a written submission (outlined in permit) within five calendar days.
- 9. Include incident in the following training meeting.

## 3 Stormwater Management Controls

#### 3.1 SWMP Administrator

The local contact / SWMP administrator (Administrator) has yet to be determined for project.

Administrator will be responsible for developing, implementing, maintaining, and revising the SWMP. Administrator will also be responsible for required inspections and coordinating and documenting changes or repairs resulting from inspections. Administrator will be responsible for SWMP training and enforcement aspects and will be the first point of contact for any stormwater issues.

#### 3.2 Identification of Potential Pollution Sources

The permit identifies the following potential project pollution sources that must be evaluated for their potential contribution to stormwater discharge.

#### Disturbed and stored soil

Construction will require areas to be disturbed, exposing soil, during utility installation, access road grading, and foundation construction as shown on approved project utility plans. BMPs shall include rock socks along access road swale, inlet protection on proposed storm drain flared end sections, minimizing disturbance of existing vegetation and hard surfaces, and slope roughening and tracking of slopes after disturbance and prior to landscaping, paving, or building by contractor.

#### Vehicle tracking of sediment

Construction will require the contractor and all subs to drive their vehicles on unpaved surfaces to the proposed buildings and utility improvement locations. BMPs will include a policy that vehicles must be clean prior to entering the site and, if they become muddy during construction or earthwork activities, mud is to be removed from the vehicle by hand in an area near the vehicle tracking pad prior to departing project site. Any soil tracked from the project site is to be disposed of by sweeping or scraping the material off Kechter Road. Any muddy vehicle will use the vehicle tracking pad prior to leaving the site.

#### Management of contaminated soil

Soil borings completed by others do not indicate existing soil contamination on-site. If contaminated soil is encountered, dispose of material properly and legally.

#### Loading and unloading operations

Contractor shall limit the number of large vehicle traffic onto and off of project site during the process of unloading and loading operations of construction vehicles and project materials.

#### Outdoor storage activities

Inert materials, such as wood and stone, are not pollutant sources and may be stored outside. These materials will likely be covered with tarps or plastic, but they are not covered by the permit.

Chemicals and petroleum products will be stored within either the construction trailer or future barn. Cement and mortar bags (if stored outside) will be completely covered with plastic to avoid contact with precipitation.

#### Vehicle and equipment maintenance and fueling

Vehicle maintenance and fueling are a necessary part of the construction process. No fuel will be stored on-site unless it is located inside the future barn. If vehicle maintenance is required, it will either take place off-site or inside the future barn.

#### Significant dust or particulate generating processes

To control dust or particulate generating processes, a water truck or similar watering device will be always available on-site. Contractor shall adhere to City of Fort Collins Ordinance No. 044 and must follow controls outline in the current City of Fort Collins Dust Prevention and Control Manual.

Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.

Fertilizers and pesticides will not be used during construction activities. Any cleaning or maintenance of small equipment will be required to be done within a containment device (e.g., horse trough) and the liquid will be disposed of properly and legally.

#### On-site waste management

Site construction will result in standard construction waste. A dumpster for trash and a dumpster for bulk recycling will be made available on-site by the contractor. Waste will be hauled to the dumpsters by hand or in loaders. Dumpsters will be hauled off as needed. No construction waste will be left outside overnight without being in a dumpster. No construction debris (including broken concrete) may be buried on-site.

#### Concrete truck/equipment washing

One mobile concrete washout will be provided on-site during each phase of construction (two phases total). This will be used for trucks and for any masonry/concrete tools.

#### Dedicated asphalt and concrete batch plants

No dedicated asphalt or concrete batch plant is proposed on-site with this project.

#### Non-industrial waste sources

Potential non-industrial waste sources include worker trash and portable toilets. Contractor will provide all necessary on-site waste management items to control non-industrial waste sources associated with construction activities.

#### Saw cutting and grinding

One utility service connection is proposed within Kechter Road asphalt paving area. Contractor shall perform asphalt saw cut and pavement repairs per current Larimer Urban Area Street Standards. Approximate saw cut area is ~50 sf asphalt. No construction waste from saw cutting activities shall be left outside overnight without being in a dumpster. No construction debris (including broken asphalt and concrete) may be buried on-site.

Non-structural waste sources, such as worker trash and portable toilets

A trash dumpster will be available for construction trash and will be located near the construction trailer and emptied weekly. Portable toilets will be staked on site near the construction trailer.

Other non-stormwater discharges

No other non-stormwater discharges not covered under the construction dewatering discharges general permit known to be associated with proposed construction activities.

Other areas or operations where spills can occur

Potential areas where spills can occur include adjacent to concrete washout area. Contractor will ensure concrete washout area is properly maintained during construction activities.

CONTRACTOR TO UPDATE THE ABOVE INFORMATION WITH EXACT LOCATIONS OF CONCRETE WASHOUT, DUMPSTERS, AND PORTABLE TOILETS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND UPDATED AS NECESSARY THROUGHOUT THE CONSTRUCTION SEQUENCE.

# 4 Final Stabilization and Long-Term Stormwater Management

Long-term erosion control for this site will be include established native vegetative cover, landscaping, and xeriscaping around the completed site improvements (access road and buildings).

All disturbed areas outside of proposed structures will either be paved with compacted road base, seeded with upland mix, sodded, or mulched. See Appendix E for site and landscape plan for reference.

#### 4.1 City of Fort Collins Native Seed Mix Notes

- 1. Prepare soil as necessary and appropriate for native seed mix species through aeration and addition of amendments, then seed in two directions to distribute seed evenly over entire area. Drill seed all indicated areas as soon as possible after completion of grading operations.
- 2. If changes are to be made to seed mix based on site conditions, then approval must be provided by City environmental planner.
- 3. Appropriate native seeding equipment will be used (standard turf seeding equipment or agriculture equipment shall not be used).
- 4. Drill seed application recommended per specified application rate to no more than ½ inch depth (or appropriate depth for selected species). For broadcast seeding instead of drill seeding method, double specified application rate. Refer to native seed mix table for species, percentages, and application rates.
- 5. Prepare a weed management plan to ensure that weeds are properly managed before, during, and after seeding activities.
- 6. After seeding, the area shall be covered with crimped straw, jute mesh, or other appropriate methods.
- 7. Where needed, temporary irrigation should be provided until see is established. If irrigation is used, the irrigation system for seeded areas shall be fully operational at the time of seeding and shall ensure 100% head-to-head coverage over all seeded areas. All methods and requirements in the approved irrigation plan shall be followed.
- 8. Contractor shall monitor seeded area for proper irrigation, erosion control, germination, and reseeding, as needed, to establish cover.

- 9. The approved seed mix area is intended to be maintained in a natural like landscape aesthetic. If and when mowing occurs in native grass seed mix areas, do not mow lower than 6 to 8 inches in heigh to avoid inhibiting native plant growth.
- 10. Native seed area will be considered established with seventy percent vegetative cover is reached with no larger than one-foot square bare spots and/or until deemed established by City planning services and erosion control.
- 11. The developer and/or landscape contractor is responsible for adequate seedling coverage and growth at the time of final stabilization, as defined by state and local agencies. If stabilization is not achieved to the satisfaction of the agency, the developer and/or landscape contractor shall be responsible for additional corrective measures to satisfy final vegetative requirements for closeout.

#### 4.2 Final Stabilization

Exposed dirt areas containing hardscapes, and buildings will prevent future erosion to those areas and will be considered stabilized following final construction. All areas identified as requiring permanent seeding in the landscape plan (Appendix E) will have the area amended in accordance with City Municipal Code §12-132 and be seeded with upland mix (Figure 2) based on the specifications listed in the landscape plan.

All seeded areas will be crimped and mulched within 24 hours after planting, in accordance with project temporary and permanent seeding details and City of Fort Collins Erosion Control Criteria. All mulch shall be mechanically crimped and/or have an adequate amount of tackifier applied to the soil and mulch to provide quick and effective erosion control. The use of crimped mulch or tackifier may require multiple re-applications if not professionally installed or have weathered or degraded before vegetation has been established. Areas of embankments having slopes greater than or equal to 3H:1V will be stabilized with an erosion mat or approved equal to ensure seed will germinate on steep slopes.

No temporary irrigation system is proposed with project. Once planting is complete in permanent seeding areas, all seeding will be monitored until site has reached a vegetative cover (density) of at least 70%. Colorado Discharge Permit System (CDPS) general permit for stormwater discharges associated with construction activities defines final stabilization as follows (CDPS 2021).

Final Stabilization is the condition reached when construction activities at the site have been completed, permanent stabilization methods are complete, and temporary control measures are removed. Ares being stabilized with a vegetative cover must have evenly distributed perennial vegetation. The vegetation coverage must be, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.

The site is anticipated to be seeded in the spring of 2022 and will be fully established in the fall of 2023. Once vegetation has reached 70% density, and confirmed by City of Fort Collins staff, the erosion control warranty period will begin. At this time, all stormwater infrastructure will be cleaned of sediment deposits and remaining temporary erosion control measures will be removed from project site.

	UPLAND MIX				
	Common Name	Scientific Name	lbs/PLS/Acre		
Wildflowers	Plains coreopsis	Coreopsis tinctoria	0.17		
	Purple Prairie Clover	Dalea purpurea	0.81		
	Indian blanketflowe	Gaillardia aristata	1.85		
/ild	Rocky. Mtn. penstemon	Penstemon strictus	0.35		
>	Mexican hat	Ratibida columnifera	0.2		
	Indian ricegrass	Achnatherum hymenoides	1.13		
	Sideoats grama	Bouteloua curtipendula	1.15		
	Buffalograss	Bouteloua dactyloides	3.27		
	Blue grama	Bouteloua gracilis	0.25		
Grasses	Bottlebrush squirreltail	Elymus elymoides	0.95		
jras	Prairie Junegrass	Koeleria macrantha	0.08		
	Green needlegrass	Nassella viridula	1.01		
	Switchgrass	Panicum virgatum	0.71		
	Western Wheat	Pascopyrum smithii	1.61		
	Sand dropseed	Sporobolus cryptandrus	0.04		
		Total for Upland Mix	13.58 lbs/PLS/Acre		
	ACCEPTABLE SUBSTITUTES FOR WILDFLOWERS				
	Fringed sage (Artemisia frigida) 0.03 lbs/PLS/Acre				
səi	Blue flax (Linum lewisii) 0.41 lbs/PLS/Acre				
Ē	Prairie aster (Machaeranthera tanacetifolia ) 0.25 lbs/PLS/Acre				
Substitutes	ACCEPTABLE SUBSTITUTES FOR GRASSES				
S	Canada wildrye (Elymus canadensis) 1.59 lbs/PLS/Acre				
	Inland saltgrass (Distichlis stricta) 0.35 lbs/PLS/Acre				
	Mountain muhly (Muhlenbergia montana) 0.11 lbs/PLS/Acre				
Requirements	*Contractor is responsible for locating and purchasing all species listed in mix. If a species can't be located, contractor must replace each missing species with the acceptable substitutions (listed above). Contractor is responsible for providing seed tags to appropriate City staff. This mix is based on 70 seeds/ square foot and is only calculated for one acre. This mix is based on the contractor using a drill seed application. Mix should be doubled if hand broadcasted. Contractor is responsible for calculating the appropriate seed amounts to purchase. Please note that the pounds per acre are in PLS (Pure Live Seed) and must be ordered that way. All materials furnished shall be free of Colorado State noxious weeds as defined in Article III, Section 21-40 of the Code of the City of Fort Collins.				

Figure 2: Upland seed mix

## 5 Inspection and Maintenance

Site inspections will be performed to effectively address maintenance, repair, and adequacy of BMPs. The site inspections will be performed by the SWMP administrator or her designee a minimum of once every 14 calendar days on active construction sites and within 24 hours after a significant storm event (resulting in soil or wind erosion). As part of site inspections, the inspector will keep documentation of all inspections and BMP maintenance, including updated site maps indicating new BMPs or the removal of BMPs since the previous inspection. Blank site maps will be utilized and will be redlined by SWMP administrator throughout construction to note all BMPs, pollutant sources, storage locations, etc.

Any maintenance, repair, or necessary installation of BMPs not noted during the inspection must begin immediately. The modifications shall be noted in the SWMP and action taken because of the inspection shall be noted and certified on or attached to the original inspection report. The date and time of repair or change (start and finish) will be required in report.

#### 5.1 City of Fort Collins Standard Erosion and Sediment Control Notes

General Erosion Control Requirements

These notes are a summary for the legal requirements, that are set forth in the Fort Collins Stormwater Criteria Manual (FCSCM), and that any conflict is resolved by the more stringent requirement controlling.

- 1. The Property Owner, Owner's Representative, Developer, Design Engineer, General Contractor, Sub-contractors, or similar title for the developing entity (here after referred to as the Developer) has provided these Erosion Control Materials in accordance with Erosion Control Criteria set forth in the Manual as an attempt to identify erosion, sediment, and other potential pollutant sources associated with these Construction Activities and preventing those pollutants from leaving the project site as an illicit discharge. Full City requirements and are outlined and clarified in the Manual under Chapter 4: Construction Control Measures and should be used to identify and define what is needed on a project.
- 2. The Developer shall make themselves thoroughly familiar with the provisions and the content of the specifications laid out in the Manual, the Development Agreement, the Erosion Control Materials compiled for this project, and the following notes as all these materials are applicable to this project.

- 3. The Developer shall implement and maintain Control Measures for all potential pollutants from the start of land disturbing activities until final stabilization of the construction site.
- 4. The City Erosion Control Inspector shall be notified at least twenty-four (24) hours prior to the desired start of any construction activities on this site to allow adequate time for on-site confirmation (initial inspection which can take up to two business days after receiving the request) that the site is in fact protected from sediment and pollutants discharges off site. Please contact erosion@fcgov.com early to schedule those Initial Erosion Control Inspections well in advance so that demolition, clearing, grubbing, tree removal, and scraping may begin without delay. Failure to receive an on-site confirmation before construction activities commence is an automatic "Notice of Violation" and can result in further enforcement actions.
- 5. The Developer shall proactively provide all appropriate Control Measures to prevent damage to adjacent downstream and leeward properties. This includes but is not limited to: trees, shrubs, lawns, walks, pavements, roadways, structures, creeks, wetlands, streams, rivers, and utilities that are not designed for removal, relocation, or replacement in the course of construction.
- 6. At all times the Developer shall be responsible to ensure adequate Control Measures are designed, selected, installed, maintain, repaired, replaced, and ultimately removed in order to prevent and control erosion suspension, sediment transportation, and pollutant discharge as a result of construction activities associated with this project.
- 7. All applicable Control Measures based upon the sequencing and/or phasing of the project shall be installed prior to those construction activities commencing.
- 8. As dynamic conditions (due to the nature, timing, sequence, and phasing of construction) in the field may warrant Control Measures in addition, or different, to what is shown on these plans, the Developer shall at all times be responsible to implement the Control Measures that are most effective with the current state and progress of construction. The Developer shall implement whatever measures are determined necessary, and/or as directed by the City Erosion Control Inspector. The Developer shall insure that all Erosion Control Plans (Maps) or SWMP documents are updated to reflect the current site conditions, with updates being initialed and dated. These site inspections and site condition updates shall be made available upon request by the City.
- 9. All listings, provisions, materials, procedures, activities, site work and the like articulated in this or other written site-specific documents (Including but not limited to the erosion control reports, development agreements, landscape, and drainage materials) shall meet or exceed the most restrictive language for City, County, State, and Federal regulations with regards to erosion, sediment, pollutant, and other pollution source Control Measures. The Developer shall be responsible to comply with all of these aforementioned laws and regulations.

- 10. The Developer shall ensure that all appropriate permits (CDPS General Permit Stormwater Discharges Associated with Construction Activity, Dewatering, Clean Water Act, Army Corps of Engineers' 404 Wetlands Mitigation Permit, etc.) have been attained prior to the relevant activity has begun. These permits or copies shall be made available upon request by the City.
- 11. The Developer shall furnish all conveniences and assistances to aid the Erosion Control Inspectors of materials, workmanship, records, and self-inspections, etc. of the Control Measures involved in the construction activities.
- 12. The Developer shall request clarification of all apparent site construction issues that may arise due to inconsistencies in construction plans for the site or site conditions around the selected Control Measures by contacting the Erosion Control Inspector. The Erosion Control Inspector will not be responsible for any explanations, interpretations, or supplementary data provided by others.
- 13. All Control Measures shall be installed in accordance with the Manual.
- 14. The City reserves the right to require additional Control Measures as site conditions warrant, to the extent authorized by relevant legal authority.
- 15. As with any construction standards, occasions may arise where the minimum erosion control standards are either inappropriate or cannot be justified. In these cases, a variance to these standards may be applied for pursuant to the terms, conditions, and procedures of the Manual.
- 16. Inspection. The contractor shall inspect site pollutant sources and implement Control Measures at a minimum of once every two weeks during construction and within 24 hours following a precipitation event. Documentation of each inspection shall be recorded and retained by the contractor.
- 17. All temporary Control Measures shall be cleaned, repaired, or reconstructed as necessary in order to assure continual performance of their intended function. All retained sediments, particularly those on paved roadway surfaces, shall be removed and disposed of in a manner and location so as not to cause their release into any drainage way.
- 18. Any Control Measure may be substituted for another standard Control Measure so long as that Control Measure is equal to, or of greater protection than the original Control Measure that was to be used in that location. (ex. silt fence, for wattles, or for compact berms) Wattle alone on commercial construction sites have shown to be an ineffective substitute for silt fence or compact berms unless it is accompanied by a construction fence to prevent vehicle traffic.
- 19. Any implementation or replacement of existing Control Measures for a non-standard control, or alternative Control Measure, shall require the review and acceptance by the City erosion control staff before the measure will be allowed to be used on this project. These Control Measures' details shall be submitted, reviewed and accepted to

be in accordance with the Erosion Control Criteria based upon the functionality and effectiveness in accordance with sound engineering and hydrological practices

Land disturbance, Stockpiles, and Storage of Soils

- 20. There shall be no earth-disturbing activity outside the limits designated on the accepted plans. Off road staging areas or stockpiles must be preapproved by the City. Disturbances beyond these limits will be restored to original condition.
- 21. Pre-disturbance vegetation shall be identified, protected, and retained wherever possible. Removal or disturbance of existing vegetation shall be limited to the area required for immediate construction operations, and for the shortest practical period of time. This should include sequencing and phasing construction activities in a way so that the soil is not exposed for long periods of time by schedule or limit grading to small areas. This should also include when practical advancing the schedule on stabilization activities such that landscaping takes place shortly if not immediately after grading has occurred. Vegetation efforts shall start as soon as possible to return the site to a stabilized condition. Sensitive areas should avoid clearing and grading activities as much possible.
- 22. All exposed soils or disturbed areas are considered a potential pollutant and shall have Control Measures implemented on the site to prevent materials from leaving the site.
- 23. All soils exposed during land disturbing activity (stripping, grading, utility installations, stockpiling, filling, etc.) shall be kept in a roughened condition at all times by equipment tracking, scarifying or disking the surface on a contour with a 2 to 4 inch minimum variation in soil surface until mulch, vegetation, and/or other permanent erosion control is installed.
- 24. No soil stockpile shall exceed ten (10) feet in height. All soil stockpiles shall be protected from sediment transport through the use of surface roughening, watering, and down gradient perimeter controls. All soil stockpiles shall be protected from sediment transport by wind in accordance with Municipal Code §12-150. All stockpiles shall be flattened to meet grade or removed from site as soon as practical, and no later than the completion of construction activities or abandonment of the project. All off-site stockpile storage locations in City limits shall have a stockpile permit from the City Engineering Department prior to using the area to store material. If frequent access from hardscape to the stockpile is needed a structural tracking Control Measure shall be implemented.
- 25. All required Control Measures shall be installed prior to any land disturbing activity (stockpiling, stripping, grading, etc.). All of the required erosion Control Measures must be installed at the appropriate time in the construction sequence as indicated in the approved project schedule, construction plans, and erosion control report.
- 26. All inlets, curb-cuts, culverts, and other storm sewer infrastructure which could be potentially impacted by construction activities shall be protected with Control

- Measures. Material accumulated from this Control Measure shall be promptly removed and in cases where the protection has failed, the pipes shall be thoroughly cleaned out.
- 27. All streams, stream corridors, buffers, woodlands, wetlands, or other sensitive areas shall be protected from impact by any construction activity through the use of Control Measures.
- 28. All exposed dirt shall have perimeter control. Any perimeter controls that drain off or has the ability to be tracked onto the nearby hardscape shall have some form of effective sediment control as the, or as part of the, perimeter control.
- 29. All exposed slopes should be protected. All exposed steep slopes (Steeper than 3:1 H:V) shall be protected from erosion and sediment transport through use of Control Measures.
- 30. No soils shall remain exposed by land disturbing activity for more than thirty (30) days after activity has ceased before required temporary seeding or permanent erosion control (e.g. seed/mulch, landscaping, etc.) is installed. This is not just limited to projects that are abandoned; this includes any project that is temporarily halted and no immediate activity is to resume within the next thirty (30) days, unless otherwise approved by the City Erosion Control Inspector. During a season when seeding does not produce vegetative cover, another temporary erosion control shall be implemented with or until temporary seeding or permanent erosion control can be performed.
- 31. All individual lots shall have effective sediment controls located on the street side and any down gradient side. Typically, most lots drain to the front yet on those cases where houses are along a pond or drainage swale have the lot drain in a different direction than the street, those individual lots will need protection on that down gradient side to prevent sediment from leaving the lot. See the Individual Lot Details for further clarification.

#### Vehicle Tracking

- 32. At all points where vehicles exit or leave the exposed dirt area on to a hardscape or semi hardscape (concrete, asphalt, road base, etc.) shall have installed at least one structural tracking Control Measure to prevent vehicle tracking. All areas not protected by an adequate perimeter control shall be considered a point where vehicles exit the site. Access points should be limited to as few entrances as possible (All perimeter areas shall be protected from tracking activities).
- 33. In all areas that the structural tracking Control Measures fail to prevent vehicle tracking, collection and proper disposal of that material is required. All inlets located near access points and affected by tracking activities shall be prevented from the introduction of sediment into the drainage system.

- 34. City Municipal Code §20-62, among other things, prohibits the tracking, dropping, or depositing of soils or any other material onto city streets by or from any source. City Municipal Code, §26-498, among other things, prohibits the discharge of pollutants on public or private property if there is a significant potential for migration of such pollutant. Therefore, all tracked or deposited materials (intentional or inadvertent) are not permitted to remain on the street or gutter and shall be removed and legally disposed of by the Developer in a timely and immediate manner. Dirt ramps installed in the curb-lines are not exempt to these sections of code and shall not be permitted in the street right of way (public or private).
- 35. If repeated deposit of material occurs on a site, additional structural tracking controls may be required of the Developer by the City Erosion Control Inspector.

#### Loading and Unloading Operations

36. The Developer shall apply Control Measure to limit traffic (site worker or public) impacts and proactively locate material delivered to the site in close proximity to the work area or immediately incorporated in the construction to limit operational impacts to disturbed areas, vehicle tracking, and sediment deposition that could impact water quality.

Outdoor Storage or Construction Site Materials, Building Materials, Fertilizers, and Chemicals

- 37. Any materials of a non-polluting nature (steel, rock, brick, lumber, etc.) shall be inspected for any residue coming off the material during routine inspection and will generally be located where practical at least fifty (50) feet from any permanent or interim drainage ways.
- 38. Any high environmental impact pollutant materials that have a high likelihood to result in discharge when in contact with stormwater (lubricants, fuels, paints, solvents, detergents, fertilizers, chemical sprays, bags of cement mix, etc.) should not be kept on site where practical. When not practical, they should be stored inside (vehicle, trailer, connex, building, etc.) and out of contact with stormwater or stormwater runoff. Where not available, they shall be stored outside in a raised (high spots or on pallets), covered (plastic or tarped), and sealed (leak proof container) in secondary containment location. The secondary containment or other Control Measure shall be adequately sized, located, where practical, at least fifty (50) feet from any permanent or interim stormwater structures or drainage ways and shall be monitored as part of the routine inspections.

#### Vehicle and equipment maintenance and fueling

39. Parking, refueling, and maintenance of vehicles and equipment should be limited in one area of the site to minimize possible spills and fuel storage areas. This area shall be located, where practical, at least fifty (50) feet from any permanent or interim

stormwater structures or drainage ways and shall be monitored as part of the routine inspections. All areas shall keep spill kits and supplies close.

#### Significant Dust or Particulate generating Process

40. The property must be actively preventing the emission of fugitive dust at all times during construction and vegetation activities. All land disturbing activities that result in fugitive dust shall be in accordance with Municipal Code §12-150 to reduce the impacts to adjacent properties and community health. All required practices shall be implemented and additional ones shall be followed. These practices include watering the sites and discontinuing construction activities until the wind subsides as determined by any City Inspectors.

Concrete truck / equipment washing, including the concrete truck chute and associated fixtures and equipment

- 41. All concrete and equipment washing shall use structural Control Measures appropriate to the volume of wash and frequency of use. These Control Measures shall be located, where practical, at least fifty (50) feet from any permanent or interim stormwater structures or drainage ways and shall be monitored as part of the routine inspections. These areas shall be clearly identified and protected from any wash from leaving the Control Measure. If frequent access from hardscape to the Control Measure is to occur, a structural tracking Control Measure shall be implemented. These Control Measures shall be frequently cleaned out.
- 42. The Developer is responsible for ensuring washing activity is taking place at the appropriate Control Measure and site workers are not washing or dumping wash water on to the dirt or other uncontrolled locations.

#### Dedicated Asphalt and concrete batch plants

43. Dedicated asphalt and concrete batch plants are not acceptable on construction sites within the City of Fort Collins without an expressed written request and plan to reduce pollutants associated with that type of activity and approval by the City of Fort Collins specifically the Erosion Control Inspector. The Developer shall inform the erosion control inspection staff of any dedicated asphalt, or concrete batch plants that is to be used on site.

#### Concrete Saw Cutting Materials

44. Saw cutting material shall be in accordance with Municipal Code §12-150 for air emissions and all water applications to the saw cutting shall prevent material from leaving the immediate site and collected. These cutting locations, once dried, shall be swept and scraped of all material and shall have proper and legal disposal.

#### Waste Materials Storage and Sanitary Facilities

- 45. Trash, debris, material salvage, and/or recycling areas shall be, where practical, at least fifty (50) feet from any permanent or interim stormwater structures or drainage ways and shall be monitored as part of the routine inspections. These facilities should be located out of the wind and covered as able. Where not able to cover, locating said areas on the side of other structures to reduce exposure to winds, and follow maximum loading guidelines as marked on the container. The Developer is required to practice good housekeeping to keep the construction site free of litter, construction debris, and leaking containers.
- 46. Sanitary facilities shall be prevented from tipping through the use of anchoring to the ground or lashing to a stabilized structure. These facilities shall also be located as far as practical from an inlet, curb cut, drainage swale or other drainage conveyances to prevent material transport from leaving the local area. This consists of the facility being located, where practical, at least fifty (50) feet from any permanent or interim drainage ways.

#### Other Site Operations and Potential Spill Areas

- 47. Spills: For those minor spills that; are less than the State's reportable quantity for spills, stay within the permitted area, and in no way threaten any stormwater conveyance, notify the City of Fort Collins Utilities by email at erosion@fcgov.com or phone (970) 817-4770. For any significant, major, or hazardous spills, notify the City of Fort Collins Utilities by phone only after Emergency Response (911) has been notified and is on route, County Health Department (LCDHE) has been notified through Larimer County Sheriff Dispatch (970) 416-1985, and the State Spill Hotline Incident Reporting have been contacted 1-877-518-5608. Written documentation shall be provided to the City within 5 days of the event. All spills shall be cleaned up immediately.
- 48. Selection of "plastic welded" erosion control blankets shall not be used in areas that wildlife, such as snakes, are likely to be located as these have proven to cause entrapment issues.

#### Final stabilization and project completion

- 49. Any stormwater facilities used as a temporary Control Measure will be restored and storm sewer lines will be cleaned upon completion of the project and before turning the maintenance over to the Owner, Homeowners Association (HOA), or other party responsible for long term maintenance of those facility.
- 50. All final stabilization specifications shall be done in accordance with the Manual, Chapter 4: Construction Control Measures.

- 51. All disturbed areas designed to be vegetated shall be amended, seeded & mulched, or landscaped as specified in the landscape plans within 14 working days of final grading.
- 52. Soil in all vegetated (landscaped or seeded) areas, including parkways and medians shall comply with all requirements set forth in Sections 12-130 through 12-132 of the City Municipal Code, as well as Section 3.8.21 for the City Land Use Code.
- 53. All seeding shall refer to landscaping plans for species mixture and application rates and depths requirements.
- 54. All seed shall be drilled where practical to a depth based upon the seed type. Broadcast seeding shall be applied at double the rate as prescribed for drill seeding and shall be lightly hand raked after application. Hydroseeding may be substituted for drill seeding on slopes steeper than 3(H):1(V) or on other areas not practical to drill seed and crimp and mulch. All hydroseeding must be conducted as two separate processes of seeding and tackification.
- 55. All seeded areas must be mulched within twenty-four (24) hours after planting. All mulch shall be mechanically crimped and or adequately applied tackifier. The use of crimped mulch or tackifier may require multiple re-applications if not properly installed or have weathered or degraded before vegetation has been established. Areas of embankments having slopes greater than or equal to 3H:1V shall be stabilized with an erosion mat or approved equal to ensure seed will be able to germinate on the steep slopes. During a season when seeding does not produce vegetative cover, another temporary erosion control shall be implemented along with, or until, temporary seeding or permanent erosion control can be performed.
- 56. The Developer shall warranty and maintain all vegetative measures for two growing seasons after installation or until seventy percent (70%) vegetative cover has been established, whichever is longer and meets all the Criteria outlined in the Fort Collins Stormwater Criteria Manual Chapter 4: Construction Control Measures.
- 57. The Developer shall maintain, monitor, repair, and replace any and all applicable Control Measures until final stabilization has been obtained. All Control Measures must remain until such time as all upstream contributing pollutant sources have been vegetated or removed from the site. When any Control Measure is removed, the Developer shall be responsible for the cleanup and removal of all sediment and debris from that Control Measure. At the point at which the site has been deemed stabilized and verified by City Erosion Control Inspector, all temporary Control Measures can then be fully removed. All measures shall be removed within 30 days after final stabilization is achieved.
- 58. The responsible party shall maintain and keep current all payments or related forms of security for the Erosion Control Escrow until 1) stabilization has been reached and 2)

all Control Measures and/or BMPs have sediment materials collected and the Control Measure removed from the site. At that time, the site will be considered completed and any remaining Erosion Control Escrow shall be returned to the appropriate parties.

#### 5.2 City of Fort Collins Erosion Control Security Calculations

The cost of erosion control for the site was compared to the cost to reseed the entire site and the greater cost was used to establish the erosion control escrow amount. See Appendix F for a break-down of the costs associated with seeding and erosion control.

# 6 SWMP Implementation

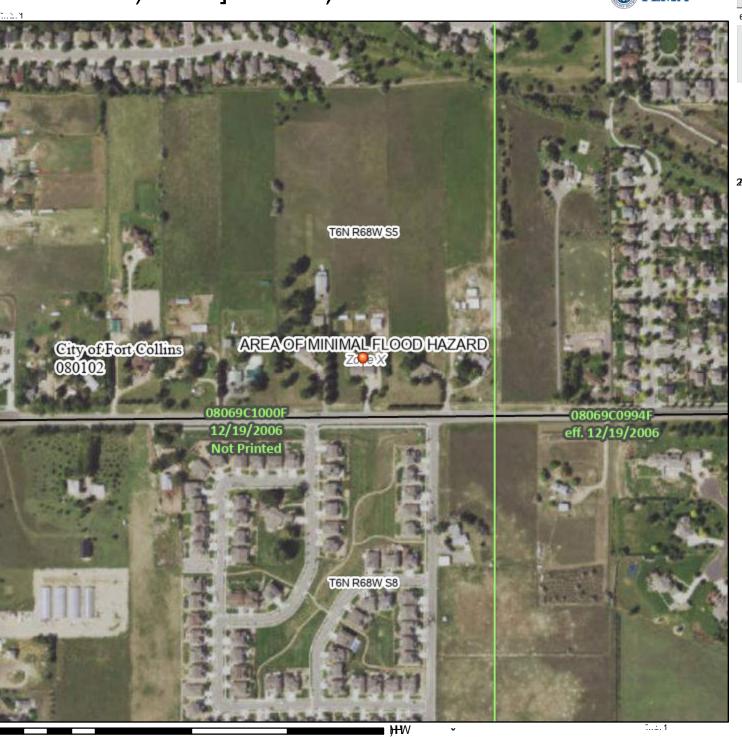
It is the responsibility of the project's contractor to operate and maintain all facilities and systems of treatment and control installed to achieve compliance with the conditions of the SWMP permit. This includes, but is not limited to, effective performance, adequate funding, plus adequate staffing and training.

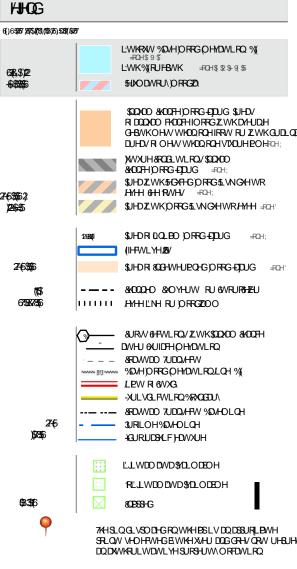
All personnel on the construction site who will be able to affect or be affected by the SWMP shall be trained prior to beginning work. These individuals will be given general orientation information regarding the project and SWMP, shown where the SWMP is physically located, the SWMP will be explained to them and available for their review, and the enforcement policy will be reviewed. After this training, a certification that the employee or subcontractor's employee is familiar with the document and its procedures will be signed. Throughout construction, as a part of a weekly safety meeting, the SWMP will be reviewed with all attendees and any incidents discussed. All attendees shall be logged.

# **APPENDIX A**

# IDWLRODO (DRRG-EDUGIDHU ) SIWWH





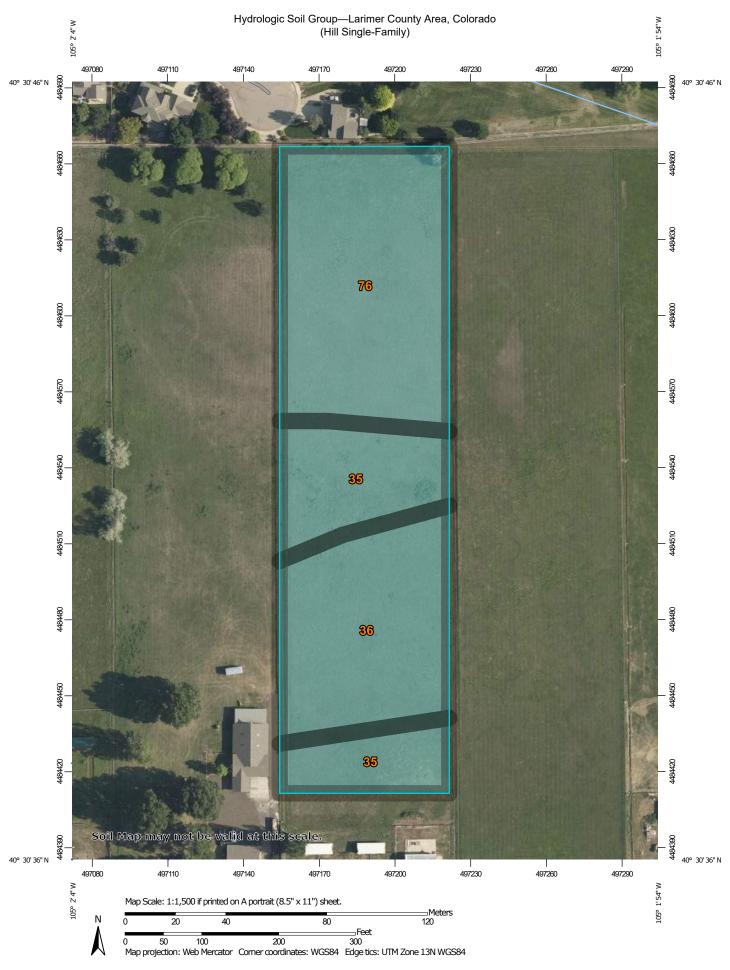


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74LV BSLBHLVYRLGLI WKHROHRU RUHRI WKHROORZOJBS HOHPOWV CROW DSSHUL EDHBLBHUN IORRGIFOHODHOV OHHOG VEDOHEDU BSRUIDWLROGDWH FRROLWLIGHOWLILHUV )\$500HO QHEU DOG)\$HIHFWLYHGDWH DSLBHVIRU XDBSHGDGXCROHOQ.HGDUHDV FDOORW BHXHGIRU UHXODWRUNSUSSHW

# APPENDIX B



#### MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) С 1:24.000. Area of Interest (AOI) C/D Soils Warning: Soil Map may not be valid at this scale. D Soil Rating Polygons Enlargement of maps beyond the scale of mapping can cause Not rated or not available Α misunderstanding of the detail of mapping and accuracy of soil **Water Features** line placement. The maps do not show the small areas of A/D Streams and Canals contrasting soils that could have been shown at a more detailed Transportation B/D Rails ---Please rely on the bar scale on each map sheet for map measurements. Interstate Highways C/D Source of Map: Natural Resources Conservation Service **US Routes** Web Soil Survey URL: D Major Roads Coordinate System: Web Mercator (EPSG:3857) Not rated or not available -Local Roads Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts Soil Rating Lines Background distance and area. A projection that preserves area, such as the Aerial Photography 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: Larimer County Area, Colorado Survey Area Data: Version 15, Jun 9, 2020 Soil map units are labeled (as space allows) for map scales 1:50.000 or larger. Not rated or not available Date(s) aerial images were photographed: Aug 11, 2018—Aug 12. 2018 **Soil Rating Points** The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background A/D imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. B/D

# **Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
35	Fort Collins loam, 0 to 3 percent slopes	С	1.1	26.0%
36	Fort Collins loam, 3 to 5 percent slopes	С	1.3	31.0%
76	Nunn clay loam, wet, 1 to 3 percent slopes	С	1.8	43.0%
Totals for Area of Interest			4.3	100.0%

# **Description**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

# **Rating Options**

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

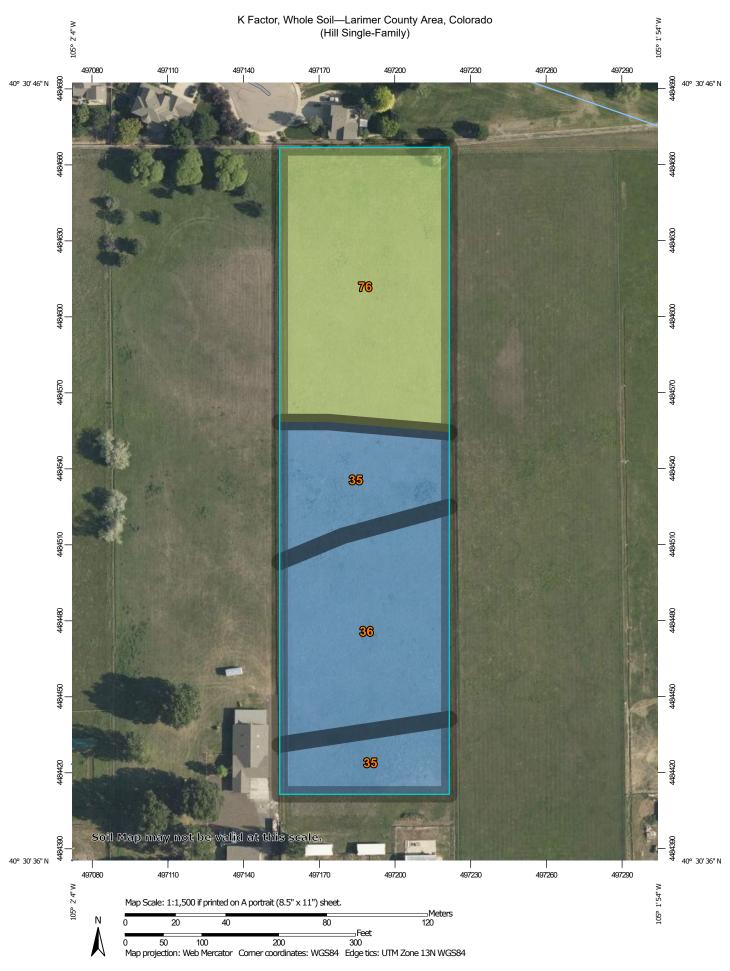
The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

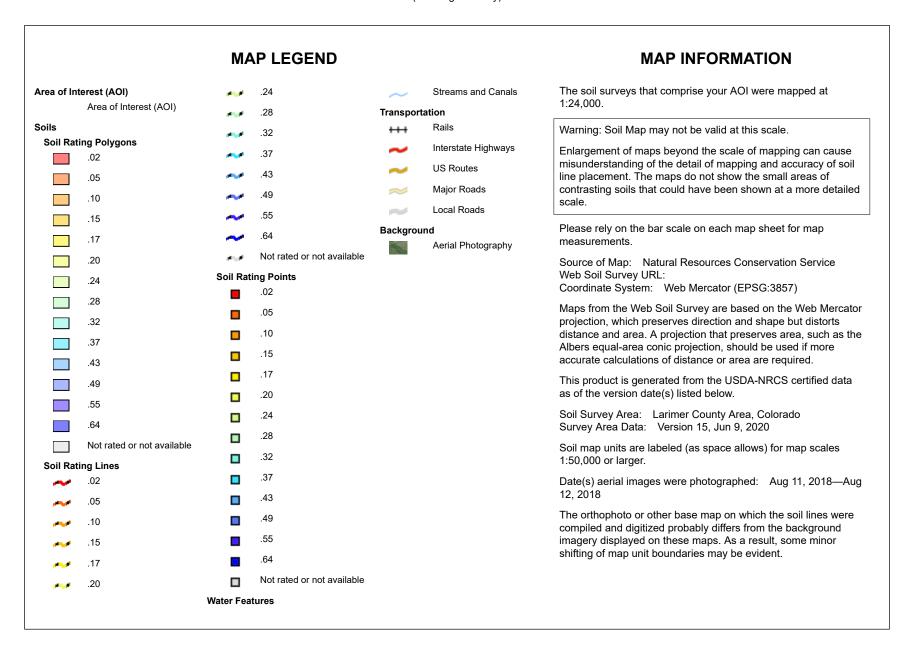
Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.





# K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
35	Fort Collins loam, 0 to 3 percent slopes	.43	1.1	26.0%
36	Fort Collins loam, 3 to 5 percent slopes	.43	1.3	31.0%
76	Nunn clay loam, wet, 1 to 3 percent slopes	.24	1.8	43.0%
Totals for Area of Interest			4.3	100.0%

## **Description**

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

# **Rating Options**

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

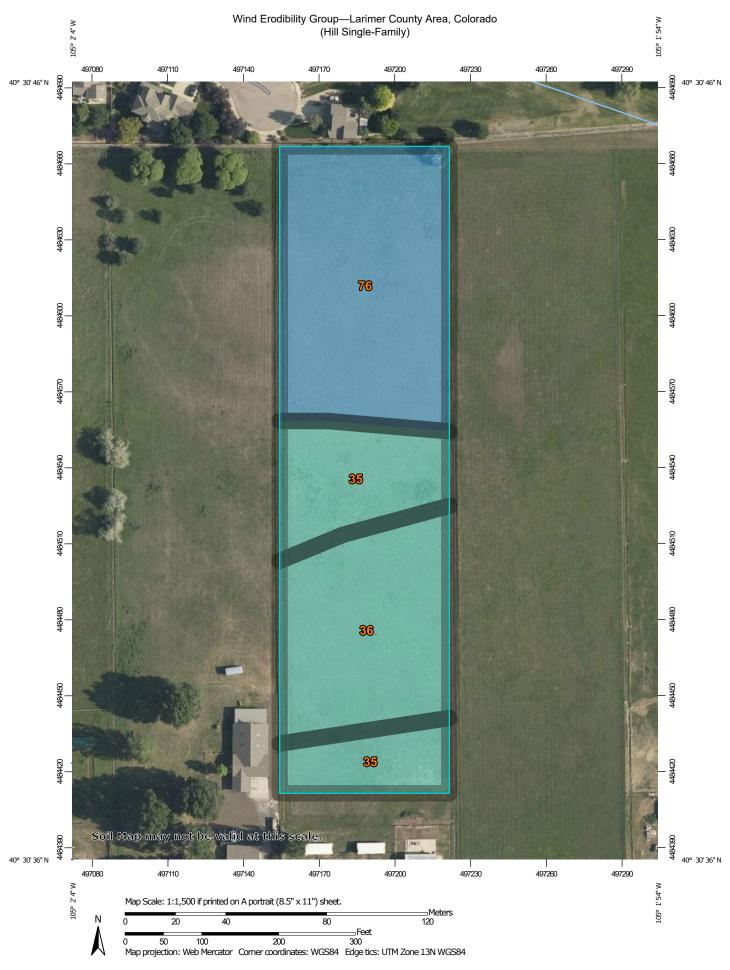
Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.



#### MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) 1:24.000. Area of Interest (AOI) Soils Warning: Soil Map may not be valid at this scale. Soil Rating Polygons Enlargement of maps beyond the scale of mapping can cause 1 misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of 2 contrasting soils that could have been shown at a more detailed Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Not rated or not available Coordinate System: Web Mercator (EPSG:3857) **Water Features** Maps from the Web Soil Survey are based on the Web Mercator Streams and Canals projection, which preserves direction and shape but distorts **Transportation** distance and area. A projection that preserves area, such as the Not rated or not available Albers equal-area conic projection, should be used if more Rails --accurate calculations of distance or area are required. Soil Rating Lines Interstate Highways This product is generated from the USDA-NRCS certified data as **US Routes** of the version date(s) listed below. Major Roads Soil Survey Area: Larimer County Area, Colorado Survey Area Data: Version 15, Jun 9, 2020 Local Roads Soil map units are labeled (as space allows) for map scales Background 1:50.000 or larger. Aerial Photography Date(s) aerial images were photographed: Aug 11, 2018—Aug 12. 2018 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. Not rated or not available Soil Rating Points

# **Wind Erodibility Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
35	Fort Collins loam, 0 to 3 percent slopes	5	1.1	26.0%
36	Fort Collins loam, 3 to 5 percent slopes	5	1.3	31.0%
76	Nunn clay loam, wet, 1 to 3 percent slopes	6	1.8	43.0%
Totals for Area of Interest			4.3	100.0%

# **Description**

A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

# **Rating Options**

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

#### Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

#### Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

# APPENDIX C

## **UTILITY PLANS**

## LOT 2, BLEHM SUBDIVISION 2ND FILING

### BEING A REPLAT OF LOT 5, BLEHM SUBDIVISION

Situate in the Southwest Quarter of Section 5, Township 6 North, Range 68 West of the 6th P.M. City of Fort Collins, County of Larimer, State of Colorado

**JUNE 2021** 

I HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS WERE PREPARED UNDER THEREBY AFFIRM THAT THESE FINAL CONSTRUCTION FURNS WERE PREFARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE CITY OF FORT COLLINS AND STATE OF COLORADO STANDARDS AND STATUTES, RESPECTIVELY; AND THAT I AM FULLY RESPONSIBLE FOR THE ACCURACY OF ALL DESIGN, REVISIONS, AND RECORD CONDITIONS THAT I HAVE NOTED ON THESE PLANS.



#### GENERAL INDEMNIFICATION STATEMENT:

THESE PLANS HAVE BEEN REVIEWED BY THE LOCAL ENTITY FOR CONCEPT ONLY. THE THESE PLANS HAVE BEEN REVIEWED BY THE LOCAL ENTITY FOR CONCEPT ONLY. THE REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE REVIEWING DEPARTMENT, THE LOCAL ENTITY ENGINEER, OR THE LOCAL ENTITY FOR ACCURACY AND CORRECTNESS OF THE CALCULATIONS. PURTHERMORE, THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED IN ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE LOCAL ENTITY FOR ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.

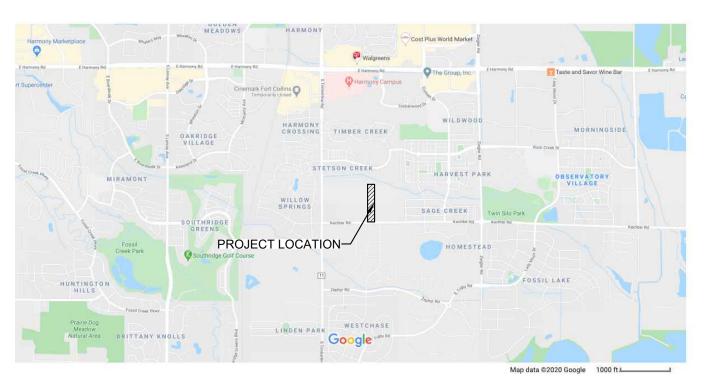
#### PROJECT BENCHMARK

PROJECT DATUM: NAVD88

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. FLEVATION: 4956.98 FFFT

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

IF NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) IS REQUIRED FOR ANY PURPOSE, THE FOLLOWING EQUATION SHOULD BE USED: NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) = NAVD88 - 3.19'.



Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL NOTES
3	UTILITY PLAN
4	GRADING & EROSION CONTROL PLAN
5	GRADING & EROSION CONTROL PLAN
6	CULVERT PLAN AND PROFILE
7	CULVERT PLAN AND PROFILE
8	DRAINAGE EXHIBIT
9	UTILITY DETAIL SHEET
10	EROSION CONTROL NOTES
11	EROSION CONTROL DETAILS

#### OWNER:

CHRIS HILL 4112 LAKEFRONT DRIVE LOVELAND, COLORADO 80537 (970) 227-3112 CHILL004@YAHOO.COM

#### CIVIL ENGINEER:

KEEFE CIVIL MEGAN KEEFE, P.E. 3125 CROCKETT STREET FORT COLLINS, COLORADO 80526 (970) 215-6808 MEG@KEEFECIVIL.COM

#### SURVEYOR:

MAJESTIC SURVEYING STEVEN PARKS, PLS (970) 443-0882 STEVENP@MAJESTICSURVEYING.COM

> FORT COLLINS - LOVELAND SOUTH FORT COLLINS

All changes, addendums, additions, deletions and modifications to these drawings must be approved, in writing, by the Fort Collins-Loveland Water District and the South Fort Collins Sanitation Dis

City of Fort Collins, Colorado UTILITY PLAN APPROVAL











UBDIVISION 2ND FILING, BEING A REPLAT BLEHM SUBDIVISION UTILITY PLANS

**COVER SHEET** BLEHM S LOT 5,

LOT SHEET

1 OF 11

#### **GENERAL NOTES**

ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF PUBLIC IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE LARIMER COUNTY URBAN AREA STREET STANDARDS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE MOST RESTRICTIVE STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY

- 2. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.
- THESE PUBLIC IMPROVEMENT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF THREE YEARS FROM THE DATE OF APPROVAL BY THE LOCAL ENTITY ENGINEER. USE OF THESE PLANS AFTER THE EXPIRATION DATE WILL REQUIRE A NEW REVIEW AND APPROVAL PROCESS BY THE LOCAL ENTITY PRIOR TO COMMENCEMENT OF ANY WORK SHOWN IN THESE PLANS.
- THE ENGINEER WHO HAS PREPARED THESE PLANS, BY EXECUTION AND/OR SEAL HEREOF, DOES HEREBY AFFIRM RESPONSIBILITY TO THE LOCAL ENTITY, AS BENEFICIARY OF SAID ENGINEER'S WORK, FOR ANY ERRORS AND OMISSIONS CONTAINED IN THESE PLANS, AND APPROVAL OF THESE PLANS BY THE LOCAL ENTITY ENGINEER SHALL NOT RELIEVE THE ENGINEER WHO HAS PREPARED THESE PLANS OF ALL SUCH RESPONSIBILITY. FURTHER, TO THE EXTENT PERMITTED BY LAW, THE ENGINEER HEREBY AGREES TO HOLD HARMLESS AND INDEMNIFY THE LOCAL ENTITY, AND ITS OFFICERS AND EMPLOYEES, FROM AND AGAINST ALL LIABILITIES, CLAIMS, AND DEMANDS WHICH MAY ARISE FROM ANY ERRORS AND OMISSIONS CONTAINED IN THESE PLANS.
- ALL SANITARY SEWER, STORM SEWER, AND WATER LINE CONSTRUCTION, AS WELL AS POWER AND OTHER "DRY" UTILITY INSTALLATIONS, SHALL CONFORM TO THE LOCAL ENTITY STANDARDS AND SPECIFICATIONS CURRENT AT THE DATE OF APPROVAL OF THE PLANS BY THE LOCAL ENTITY ENGINEER.
- THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR UNKNOWN UNDERGROUND UTILITIES.
- 7. THE ENGINEER SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING, TO HAVE ALL REGISTERED UTILITY LOCATIONS MARKED. OTHER UNREGISTERED UTILITY ENTITIES (I.E. DITCH / IRRIGATION COMPANY) ARE TO BE LOCATED BY CONTACTING THE RESPECTIVE REPRESENTATIVE. UTILITY SERVICE LATERALS ARE ALSO TO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN
- THE DEVELOPER SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES DURING CONSTRUCTION AND FOR COORDINATING WITH THE APPROPRIATE UTILITY COMPANY FOR ANY UTILITY CROSSINGS REQUIRED.
- IF A CONFLICT EXISTS BETWEEN EXISTING AND PROPOSED UTILITIES AND/OR A DESIGN MODIFICATION IS REQUIRED, THE DEVELOPER SHALL COORDINATE WITH THE ENGINEER TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVE D BY THE LOCAL ENTITY PRIOR TO BEGINNING CONSTRUCTION
- 10. THE DEVELOPER SHALL COORDINATE AND COOPERATE WITH THE LOCAL ENTITY, AND ALL UTILITY COMPANIES INVOLVED, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE DEVELOPER SHALL BE RESPONSIBLE FOR CONTACTING, IN ADVANCE, ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE AS WELL AS THE UTILITY COMPANIES.
- 11. NO WORK MAY COMMENCE WITHIN ANY PUBLIC STORM WATER, SANITARY SEWER OR POTABLE WATER SYSTEM UNTIL THE DEVELOPER NOTIFIES THE UTILITY PROVIDER. NOTIFICATION SHALL BE A MINIMUM OF 2 WORKING DAYS PRIOR TO COMMENCEMENT OF ANY WORK. AT THE DISCRETION OF THE WATER UTILITY PROVIDER, A PRE-CONSTRUCTION MEETING MAY BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORK
- 12. THE DEVELOPER SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF THE WATER LINES AND DRY UTILITIES.
- 13. THE MINIMUM COVER OVER WATER LINES IS 4.5 FEET AND THE MAXIMUM COVER IS 5.5 FEET UNLESS OTHERWISE NOTED IN THE PLAN S AND APPROVED BY THE
- 14. A STATE CONSTRUCTION DEWATERING WASTEWATER DISCHARGE PERMIT IS REQUIRED IF DEWATERING IS REQUIRED IN ORDER TO INSTALL UTILITIES OR WATER IS DISCHARGED INTO A STORM SEWER. CHANNEL, IRRIGATION DITCH OR ANY WATERS OF THE UNITED STATES.
- 15. THE DEVELOPER SHALL COMPLY WITH ALL TERMS AND CONDITIONS OF THE COLORADO PERMIT FOR STORM WATER DISCHARGE (CONTACT COLORADO DEPARTMENT OF HEALTH, WATER QUALITY CONTROL DIVISION, (303) 692-3590), THE STORM WATER MANAGEMENT PLAN, AND THE EROSION CONTROL PLAN.
- 16. THE LOCAL ENTITY SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF STORM DRAINAGE FACILITIES LOCATED ON PRIVATE PROPERTY. MAINTENANCE OF ONSITE DRAINAGE FACILITIES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER(S).
- 17. PRIOR TO FINAL INSPECTION AND ACCEPTANCE BY THE LOCAL ENTITY, CERTIFICATION OF THE DRAINAGE FACILITIES, BY A REGISTERED ENGINEER, MUST BE SUBMITTED TO AND APPROVED BY THE STORMWATER UTILITY DEPARTMENT. CERTIFICATION SHALL BE SUBMITTED TO THE STORMWATER UTILITY DEPARTMENT AT LEAST TWO WEEKS PRIOR TO THE RELEASE OF A CERTIFICATE OF OCCUPANCY FOR SINGLE FAMILY UNITS. FOR COMMERCIAL PROPERTIES. CERTIFICATION SHALL BE SUBMITTED TO THE STORMWATER UTILITY DEPARTMENT AT LEAST TWO WEEKS PRIOR TO THE RELEASE OF ANY BUILDING PERMITS IN EXCESS OF THOSE ALLOWED PRIOR TO CERTIFICATION PER THE DEVELOPMENT AGREEMENT
- 18. THE LOCAL ENTITY SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES OR INJURIES SUSTAINED IN THIS DEVELOPMENT AS A RESULT OF GROUNDWATER SEEPAGE, WHETHER RESULTING FROM GROUNDWATER FLOODING, STRUCTURAL DAMAGE OR OTHER DAMAGE UNLESS SUCH DAMAGE OR INJURIES ARE SUSTAINED AS A RESULT OF THE LOCAL ENTITY FAILURE TO PROPERLY MAINTAIN ITS WATER, WASTEWATER, AND/OR STORM DRAINAGE FACILITIES IN THE DEVELOPMENT.
- 19. ALL RECOMMENDATIONS OF THE FINAL DRAINAGE MEMO DATED JUNE 2, 2021 BY KEEFE CIVIL SHALL BE FOLLOWED AND IMPLEMENTED
- 20. TEMPORARY EROSION CONTROL DURING CONSTRUCTION SHALL BE PROVIDED AS SHOWN ON THE EROSION CONTROL PLAN. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE DEVELOPER, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS IS STABILIZED WITH HARD SURFACE OR THE DEVELOPER SHALL BE RESPONSIBLE FOR INSURING THAT NO MUD OR DEBRIS SHALL BE TRACKED ONTO THE EXISTING PUBLIC STREET SYSTEM. MUD AND
- DEBRIS MUST BE REMOVED WITHIN 24 HOURS BY AN APPROPRIATE MECHANICAL METHOD (I.E. MACHINE BROOM SWEEP, LIGHT DUTY FRONT-END LOADER, ETC.) OR AS APPROVED BY THE LOCAL ENTITY STREET INSPECTOR.
- 22. NO WORK MAY COMMENCE WITHIN ANY IMPROVED OR UNIMPROVED PUBLIC RIGHT-OF-WAY UNTIL A RIGHT-OF-WAY PERMIT OR DEVELOPMENT CONSTRUCTION
- 23. THE DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ALL APPLICABLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE DEVELOPER SHALL NOTIFY THE LOCAL ENTITY ENGINEERING INSPECTOR (FORT COLLINS - 221-6605) AND THE LOCAL ENTITY EROSION CONTROL INSPECTOR (FORT COLLINS - 221-6700) AT LEAST 2 WORKING DAYS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY, OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS. IF THE LOCAL ENTITY ENGINEER IS NOT AVAILABLE AFTER PROPER NOTICE OF CONSTRUCTION ACTIVITY HAS BEEN PROVIDED, THE DEVELOPER MAY COMMENCE WORK IN THE ENGINEER ABSENCE. HOWEVER, THE LOCAL ENTITY RESERVES THE RIGHT NOT TO ACCEPT THE IMPROVEMENT IF SUBSEQUENT TESTING REVEALS AN IMPROPER INSTALLATION.
- 24. THE DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING SOILS TESTS WITHIN THE PUBLIC RIGHT-OF-WAY AFTER RIGHT-OF-WAY GRADING AND ALL UTILITY TRENCH WORK IS COMPLETE AND PRIOR TO THE PLACEMENT OF CURB, GUTTER, SIDEWALK AND PAVEMENT. IF THE FINAL SOILS/PAVEMENT DESIGN REPORT DOES NOT CORRESPOND WITH THE RESULTS OF THE ORIGINAL GEOTECHNICAL REPORT, THE DEVELOPER SHALL BE RESPONSIBLE FOR A RE-DESIGN OF THE SUBJECT PAVEMENT SECTION OR, THE DEVELOPER MAY USE THE LOCAL ENTITY'S DEFAULT PAVEMENT THICKNESS SECTION(S). REGARDLESS OF THE OPTION USED, ALL FINAL SOILS/PAVEMENT DESIGN REPORTS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER. THE FINAL REPORT SHALL BE SUBMITTED TO THE INSPECTOR A MINIMUM OF 10 WORKING DAYS PRIOR TO PLACEMENT OF BASE AND ASPHALT. PLACEMENT OF CURB, GUTTER, SIDEWALK, BASE AND ASPHALT SHALL NOT OCCUR UNTIL THE LOCAL ENTITY ENGINEER APPROVES THE FINAL REPORT.
- THE CONTRACTOR SHALL HIRE A LICENSED ENGINEER OR LAND SURVEYOR TO SURVEY THE CONSTRUCTED ELEVATIONS OF THE STREET SUBGRADE AND THE GUTTER FLOWLINE AT ALL INTERSECTIONS, INLETS, AND OTHER LOCATIONS REQUESTED BY THE LOCAL ENTITY INSPECTOR. THE ENGINEER OR SURVEYOR MUST CERTIFY IN A LETTER TO THE LOCAL ENTITY THAT THESE ELEVATIONS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS. ANY DEVIATIONS SHALL BE NOTED IN THE LETTER AND THEN RESOLVED WITH THE LOCAL ENTITY BEFORE INSTALLATION OF BASE COURSE OR ASPHALT WILL BE ALLOWED ON THE STREETS.
- 26. ALL UTILITY INSTALLATIONS WITHIN OR ACROSS THE ROADBED OF NEW RESIDENTIAL ROADS MUST BE COMPLETED PRIOR TO THE FINAL STAGES OF ROAD CONSTRUCTION. FOR THE PURPOSES OF THESE STANDARDS, ANY WORK EXCEPT C/G ABOVE THE SUBGRADE IS CONSIDERED FINAL STAGE WORK. ALL SERVICE LINES MUST BE STUBBED TO THE PROPERTY LINES AND MARKED SO AS TO REDUCE THE EXCAVATION NECESSARY FOR BUILDING CONNECTIONS.
- 27. PORTIONS OF LARIMER COUNTY ARE WITHIN OVERLAY DISTRICTS. THE LARIMER COUNTY FLOODPLAIN RESOLUTION SHOULD BE REFERRED TO FOR ADDITIONAL CRITERIA FOR ROADS WITHIN THESE DISTRICTS.
- 28. ALL ROAD CONSTRUCTION IN AREAS DESIGNATED AS WILD FIRE HAZARD AREAS SHALL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION CRITERIA AS ESTABLISHED IN THE WILD FIRE HAZARD AREA MITIGATION REGULATIONS IN FORCE AT THE TIME OF FINAL PLAT APPROVAL.
- 29. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LOCAL ENTITY FORESTER TO SCHEDULE A SITE INSPECTION
- 30. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY, REFER TO OSHA PUBLICATION 2226, EXCAVATING AND TRENCHING
- 31. THE DEVELOPER SHALL SUBMIT A CONSTRUCTION TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH MUTCD, TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY.

(LOCAL ENTITY, COUNTY OR STATE), FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.

- 32. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION THAT WILL AFFECT TRAFFIC SIGNS OF ANY TYPE, THE CONTRACTOR SHALL CONTACT LOCAL ENTITY TRAFFIC OPERATIONS DEPARTMENT, WHO WILL TEMPORARILY REMOVE OR RELOCATE THE SIGN AT NO COST TO THE CONTRACTOR; HOWEVER, IF THE CONTRACTOR MOVES THE TRAFFIC SIGN THEN THE CONTRACTOR WILL BE CHARGED FOR THE LABOR, MATERIALS AND EQUIPMENT TO REINSTALL THE SIGN AS NEEDED.
- 33. THE DEVELOPER IS RESPONSIBLE FOR ALL COSTS FOR THE INITIAL INSTALLATION OF TRAFFIC SIGNING AND STRIPING FOR THE DEVELOPMENT RELATED TO THE DEVELOPMENT'S LOCAL STREET OPERATIONS. IN ADDITION, THE DEVELOPER IS RESPONSIBLE FOR ALL COSTS FOR TRAFFIC SIGNING AND STRIPING RELATED TO DIRECTING TRAFFIC ACCESS TO AND FROM THE DEVELOPMENT
- 34. THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS, UNLESS SPECIFICALLY APPROVED BY THE LOCAL ENTITY ENGINEER, AND NO SITE CONSTRUCTION ACTIVITIES ON SUNDAYS OR HOLIDAYS. UNLESS THERE IS PRIOR WRITTEN APPROVAL BY THE LOCAL ENTITY
- 35. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS, SHOWN ON THESE DRAWINGS, OR DESIGNATED TO BE PROVIDED, INSTALLED, OR CONSTRUCTED, UNLESS SPECIFICALLY NOTED OTHERWISE
- 36. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE DESIGNER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.
- 37. THE DEVELOPER SHALL HAVE, ONSITE AT ALL TIMES, 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.
- 38. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE DEVELOPER SHALL CONTACT THE DESIGNER AND THE LOCAL ENTITY ENGINEER IMMEDIATELY.
- 39. THE DEVELOPER SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE LOCAL ENTITY'S INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR(S) SHALL SUBMIT RECORD DRAWINGS TO THE LOCAL ENTITY ENGINEER.
- 40. THE DESIGNER SHALL PROVIDE, IN THIS LOCATION ON THE PLAN, THE LOCATION AND DESCRIPTION OF THE NEAREST SURVEY BENCHMARKS (2) FOR THE PROJECT AS WELL AS THE BASIS OF BEARINGS. THE INFORMATION SHALL BE AS FOLLOWS:

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET.

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

IF NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) IS REQUIRED FOR ANY PURPOSE, THE FOLLOWING EQUATION SHOULD BE USED: NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) = NAVD88 - 3.19'.

- 41. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.
- 42. DAMAGED CURB, GUTTER AND SIDEWALK EXISTING PRIOR TO CONSTRUCTION, AS WELL AS EXISTING FENCES, TREES, STREETS, SIDEWALKS, CURBS AND GUTTERS, LANDSCAPING, STRUCTURES, AND IMPROVEMENTS DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED OR RESTORED IN LIKE KIND AT THE DEVELOPER'S EXPENSE, UNLESS OTHERWISE INDICATED ON THESE PLANS, PRIOR TO THE ACCEPTANCE OF COMPLETED IMPROVEMENTS AND/OR PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY.
- 43. WHEN AN EXISTING ASPHALT STREET MUST BE CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BY THE LOCAL ENTITY CONSTRUCTION INSPECTOR BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ENTITY STREET REPAIR STANDARDS. THE FINISHED PATCH SHALL BLEND IN SMOOTHLY INTO THE EXISTING SURFACE, ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE. IN STREETS WHERE MORE THAN ONE CUT IS MADE, AN OVERLAY OF THE ENTIRE STREET WIDTH, INCLUDING THE PATCHED AREA, MAY BE REQUIRED. THE DETERMINATION OF NEED FOR A COMPLETE OVERLAY SHALL BE MADE BY THE LOCAL ENTITY ENGINEER AND/OR THE LOCAL ENTITY INSPECTOR AT THE TIME THE CUTS ARE MADE.
- 44. UPON COMPLETION OF CONSTRUCTION, THE SITE SHALL BE CLEANED AND RESTORED TO A CONDITION EQUAL TO, OR BETTER THAN, THAT WHICH EXISTED BEFORE CONSTRUCTION, OR TO THE GRADES AND CONDITION AS REQUIRED BY THESE PLANS
- 45. STANDARD HANDICAP RAMPS ARE TO BE CONSTRUCTED AT ALL CURB RETURNS AND AT ALL "T" INTERSECTIONS
- 46. AFTER ACCEPTANCE BY THE LOCAL ENTITY, PUBLIC IMPROVEMENTS DEPICTED IN THESE PLANS SHALL BE GUARANTEED TO BE FREE FROM MATERIAL AND WORKMANSHIP DEFECTS FOR A MINIMUM PERIOD OF TWO YEARS FROM THE DATE OF ACCEPTANCE.
- 47. THE LOCAL ENTITY SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF ROADWAY AND APPURTENANT IMPROVEMENTS, INCLUDING STORM DRAINAGE STRUCTURES AND PIPES. FOR THE FOLLOWING PRIVATE STREETS: NOT APPLICABLE.
- 48. APPROVED VARIANCES ARE LISTED AS FOLLOWS: NOT APPLICABLE

#### FORT COLLINS - LOVELAND WATER DISTRICT AND SOUTH FORT COLLINS SANITATION DISTRICT NOTES:

- 49. ALL WATER AND SANITARY SEWER CONSTRUCTION SHALL BE PERFORMED ACCORDING TO THE FORT COLLINS-LOVELAND WATER DISTRICT AND THE SOUTH FORT COLLINS SANITATION DISTRICT STANDARDS AND SPECIFICATIONS.
- 50. CONSTRUCTION OF WATER AND SEWER FACILITIES REQUIRE A PRECON MEETING WITH DISTRICT OPERATIONS STAFF PRIOR TO CONSTRUCTION.
- 51. CONTRACTOR SHALL NOTIFY DISTRICT INSPECTORS PRIOR TO STARTING WORK
- 52. CONTRACTOR SHALL CONTACT THE SANITATION DISTRICT FOR SEWER INSPECTION 48 HOURS PRIOR TO CONNECTING TO EXISTING SEWER STUBS
- IF GROUNDWATER IS ENCOUNTERED WITHIN DEPTH OF SEWER CONSTRUCTION, MANHOLES MUST BE WATER-PROOFED
- CONTRACTOR SHALL CONTACT THE WATER DISTRICT FOR WATER INSPECTION 48 HOURS PRIOR TO CONNECTING TO EXISTING INFRASTRUCTURE
- 55. ALL COMMERCIAL DOMESTIC SERVICES REQUIRE A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE
- ALL WATER LINES SHALL BE A MINIMUM OF (5) FIVE FEET AND A MAXIMUM OF (6) SIX FEET BELOW FINAL GRADE
- 57. ALL DISTRICT VALVES SHALL ONLY BE OPERATED BY DISTRICT OPERATIONS STAFF
- 58. PIPE PRESSURE AND VACUUM TESTING SHALL BE WITNESSED BY DISTRICT INSPECTORS. WATERLINE BACTERIA TESTS SHALL ALSO BE TAKEN BY DISTRICT
- 59. ONCE THE SYSTEM IS OPERATIONAL AND ALL TESTS HAVE PASSED, CONTRACTOR SHALL REQUEST SUBSTANTIAL COMPLETION WITH A LETTER TO THE DISTRICT THAT INCLUDES THE DOLLAR VALUE OF THE WATER AND SEWER IMPROVEMENTS LISTED SEPARATELY.
- 60. AS-BUILTS SHALL BE SUBMITTED IN PDF AND DWG TO THE DISTRICT FOR FINAL APPROVAL









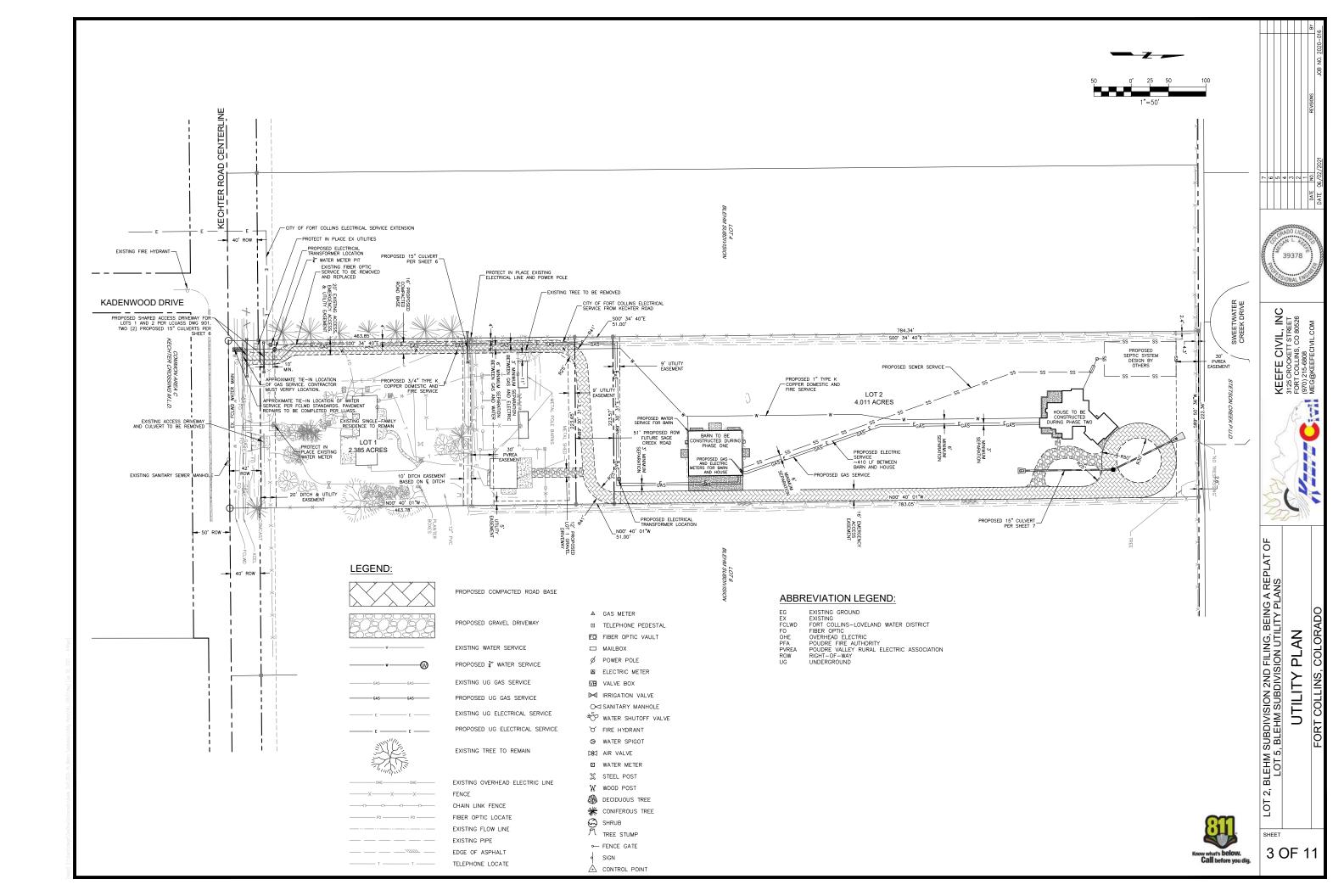
SUBDIVISION 2ND FILING, BEING A REPLAT BLEHM SUBDIVISION UTILITY PLANS GENERAL NOTES

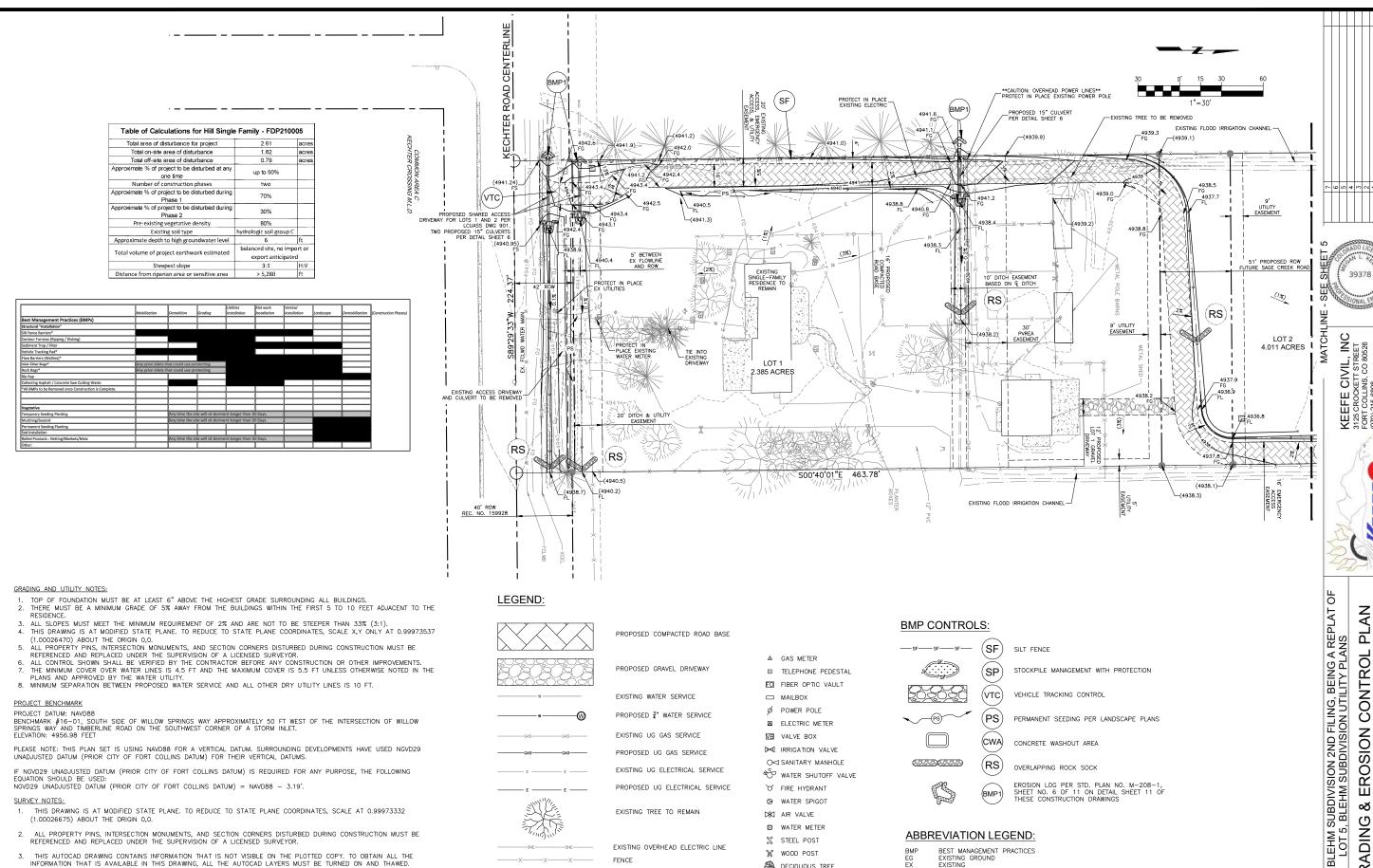
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- REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.

  ALL CONTROL SHOWN SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION OR OTHER IMPROVEMENTS.

  THE MINIMUM COVER OVER WATER LINES IS 4.5 FT AND THE MAXIMUM COVER IS 5.5 FT UNLESS OTHERWISE NOTED IN THE

  PLANS AND APPROVED BY THE WATER UTILITY.
- 8. MINIMUM SEPARATION BETWEEN PROPOSED WATER SERVICE AND ALL OTHER DRY UTILITY LINES IS 10 FT.

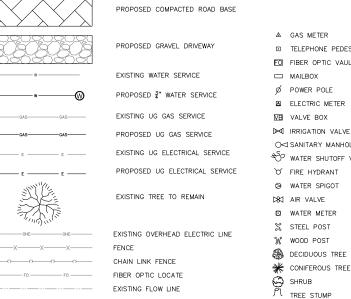
#### PROJECT BENCHMARK

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. ELEVATION: 4956.98 FEET

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

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- ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED DURING CONSTRUCTION MUST BE REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.
- THIS AUTOCAD DRAWING CONTAINS INFORMATION THAT IS NOT VISIBLE ON THE PLOTTED COPY. TO OBTAIN ALL THE INFORMATION THAT IS AVAILABLE IN THIS DRAWING, ALL THE AUTOCAD LAYERS MUST BE TURNED ON AND THAWED.
- THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWNGS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
- 5. ALL PROJECT CONTROL LISTED HEREON IS PROVIDED AS A COURTESY. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THE ACCURACY OF THE COORDINATES AND ELEVATIONS SHOWN PRIOR TO USING THEM FOR ANY PURPOSES.
- 6. ANY LOT LINES, RIGHTS OF WAY OR EASEMENTS SHOWN ARE APPROXIMATE AND ARE NOT TO BE RELIED UPON FOR FUTURE IMPROVEMENTS.



△ GAS METER TELEPHONE PEDESTAL FOI FIBER OPTIC VAULT

Ø POWER POLE

WATER METER

→ FENCE GATE

SIGN

■ ELECTRIC METER **VB** VALVE BOX

▶ IRRIGATION VALVE O⊲ SANITARY MANHOLE

water shutoff valve Y FIRE HYDRANT

D&J AIR VALVE

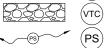
STEEL POST

EXISTING FLOW LINE EXISTING PIPE FDGE OF ASPHALT TELEPHONE LOCATE (SF) (SP (vtc)

SILT FENCE



STOCKPILE MANAGEMENT WITH PROTECTION



PERMANENT SEEDING PER LANDSCAPE PLANS



CONCRETE WASHOUT AREA

VEHICLE TRACKING CONTROL



(RS)OVERLAPPING ROCK SOCK



EROSION LOG PER STD. PLAN NO. M-208-1, SHEET NO. 6 OF 11 ON DETAIL SHEET 11 OF THESE CONSTRUCTION DRAWINGS

#### ABBREVIATION LEGEND:

BEST MANAGEMENT PRACTICES EXISTING GROUND EXISTING FORT COLLINS-LOVELAND WATER DISTRICT

FCLWD FINISHED GRADE FLOWLINE

FLOWLINE
FIBER OPTIC
FINISHED SURFACE (CONCRETE)
GRADE BREAK
HIGH POINT

INV OHE PFA INVERT

OVERHEAD ELECTRIC
POUDRE FIRE AUTHORITY
POUDRE VALLEY RURAL ELECTRIC ASSOCIATION **PVRFA** UNDERGROUND

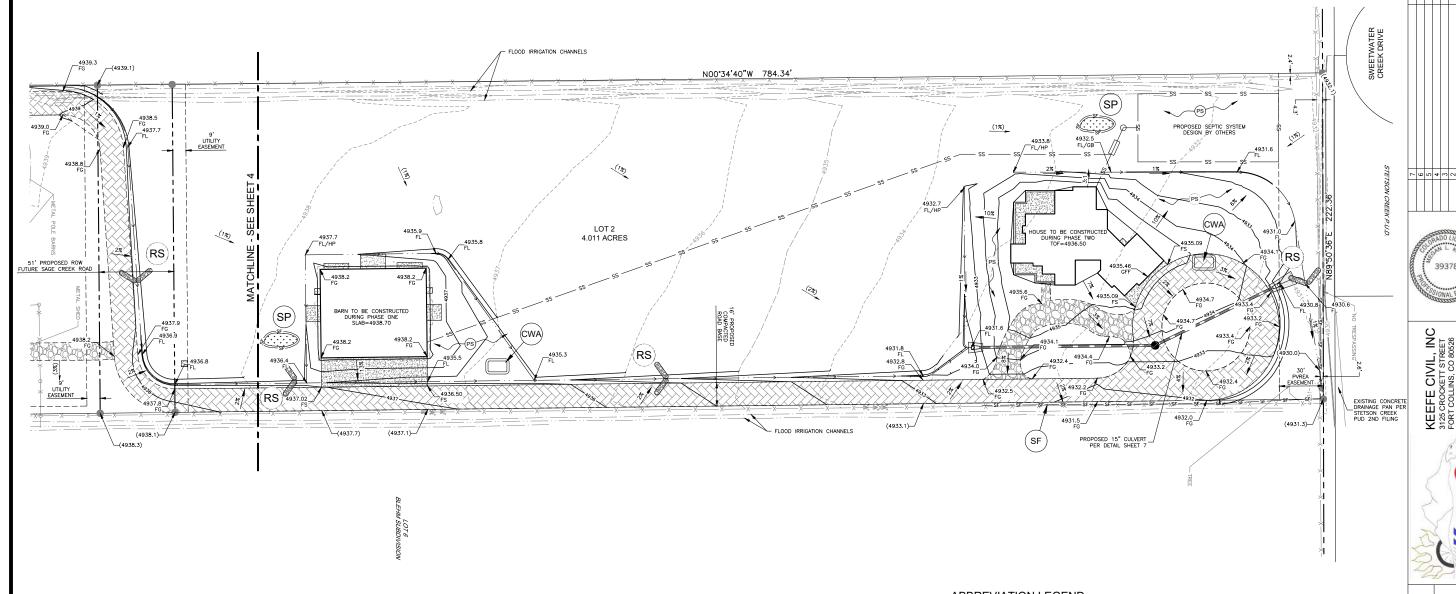


LOT 2, SHEET 4 OF 11

**EROSION** 

∞

GRADING



#### GRADING AND UTILITY NOTES:

- 1. TOP OF FOUNDATION MUST BE AT LEAST 6" ABOVE THE HIGHEST GRADE SURROUNDING ALL BUILDINGS.
- THERE MUST BE A MINIMUM GRADE OF 5% AWAY FROM THE BUILDINGS WITHIN THE FIRST 5 TO 10 FEET ADJACENT TO THE RESIDENCE.
- 3. ALL SLOPES MUST MEET THE MINIMUM REQUIREMENT OF 2% AND ARE NOT TO BE STEEPER THAN 33% (3:1).
  4. THIS DRAWING IS AT MODIFIED STATE PLANE. TO REDUCE TO STATE PLANE COORDINATES, SCALE X,Y ONLY AT 0.99973537 (1.00026470) ABOUT THE ORIGIN 0,0.
- (1.00020470) ABOUT THE UNIGN O,U.

  ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED DURING CONSTRUCTION MUST BE REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.

  ALL CONTROL SHOWN SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION OR OTHER IMPROVEMENTS.

  THE MINIMUM COVER OVER WATER LINES IS 4.5 FT AND THE MAXIMUM COVER IS 5.5 FT UNLESS OTHERWISE NOTED IN THE

- PLANS AND APPROVED BY THE WATER UTILITY.
- 8. MINIMUM SEPARATION BETWEEN PROPOSED WATER SERVICE AND ALL OTHER DRY UTILITY LINES IS 10 FT.

#### PROJECT BENCHMARK

#### PROJECT DATUM: NAVD88

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. ELEVATION: 4955.98 FEET

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#### SURVEY NOTES:

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- 6. ANY LOT LINES, RIGHTS OF WAY OR EASEMENTS SHOWN ARE APPROXIMATE AND ARE NOT TO BE RELIED UPON FOR FUTURE

#### LEGEND:

PROPOSED COMPACTED ROAD BASE

PROPOSED GRAVEL DRIVEWAY

EXISTING WATER SERVICE PROPOSED 3" WATER SERVICE

EXISTING UG GAS SERVICE PROPOSED UG GAS SERVICE EXISTING UG ELECTRICAL SERVICE

EXISTING OVERHEAD ELECTRIC LINE

EXISTING TREE TO REMAIN

PROPOSED UG ELECTRICAL SERVICE

CHAIN LINK FENCE FIBER OPTIC LOCATE EXISTING FLOW LINE EXISTING PIPE EDGE OF ASPHALT TELEPHONE LOCATE

△ GAS METER

■ TELEPHONE PEDESTAL FO FIBER OPTIC VAULT □ MAILBOX

> Ø POWER POLE ■ ELECTRIC METER **VB** VALVE BOX

▶ IRRIGATION VALVE O⊲ SANITARY MANHOLE ₩ WATER SHUTOFF VALVE

Y FIRE HYDRANT DS AIR VALVE

■ WATER METER

℃ STEEL POST  ${\it W}$  WOOD POST B DECIDUOUS TREE **\*** CONIFEROUS TREE

> SHRUB 剤 TREE STUMP ── FENCE GATE SIGN

△ CONTROL POINT

#### ABBREVIATION LEGEND:

EG EX FCLWD EXISTING GROUND
EXISTING
FORT COLLINS—LOVELAND WATER DISTRICT
FINISHED GRADE FLOWLINE FIBER OPTIC

FIBER OPTIC
FINISHED SURFACE (CONCRETE)
GRADE BREAK
HIGH POINT
INVERT
OVERHEAD ELECTRIC
POUDRE FIRE AUTHORITY
POUDRE VALLEY RURAL ELECTRIC ASSOCIATION
RIGHT-OF-WAY
INDERGEOILIND UNDERGROUND

(SF)

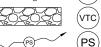
#### BMP CONTROLS:



SILT FENCE



STOCKPILE MANAGEMENT WITH PROTECTION



(vtc) VEHICLE TRACKING CONTROL



PERMANENT SEEDING PER LANDSCAPE PLANS CONCRETE WASHOUT AREA





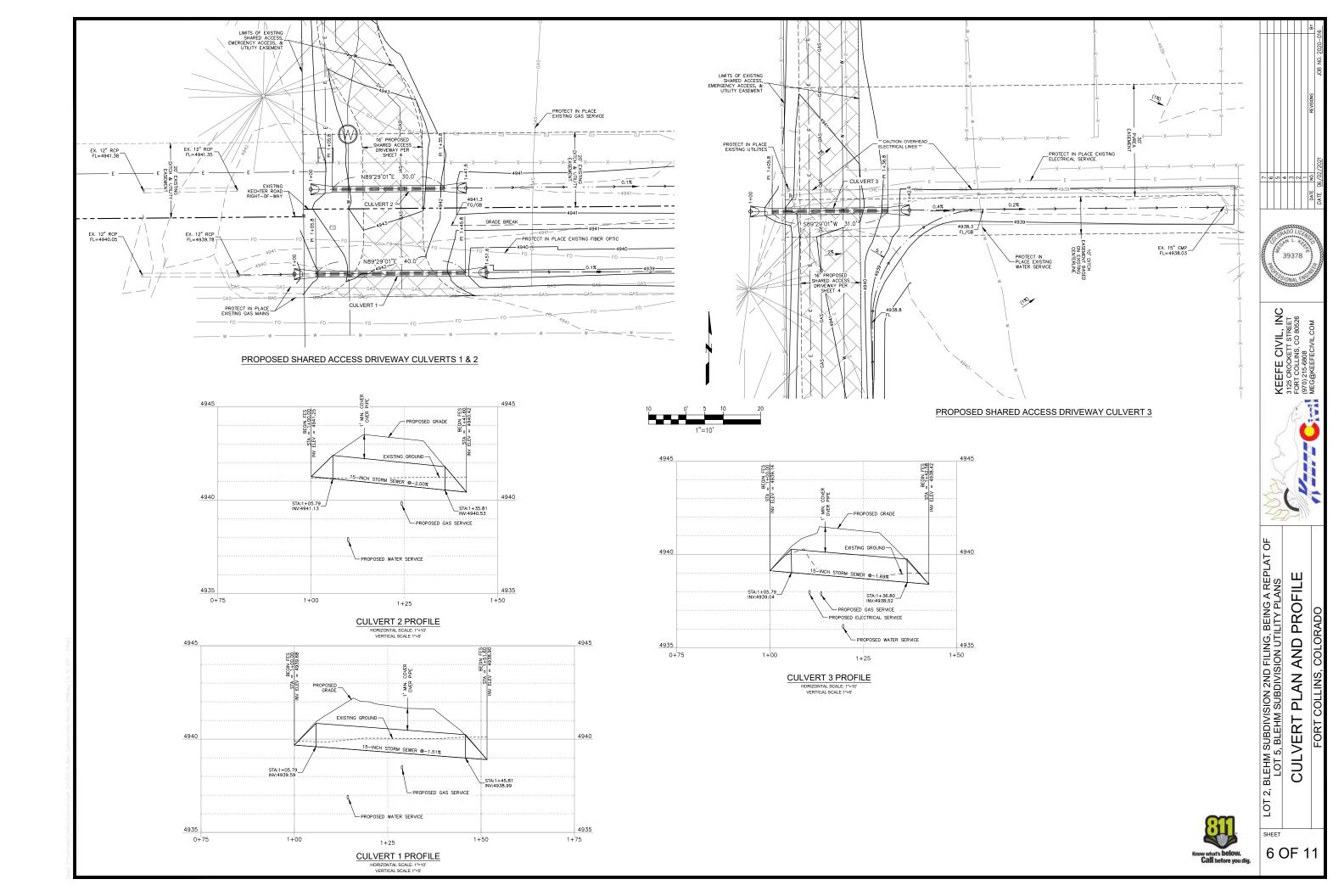
(CWA)

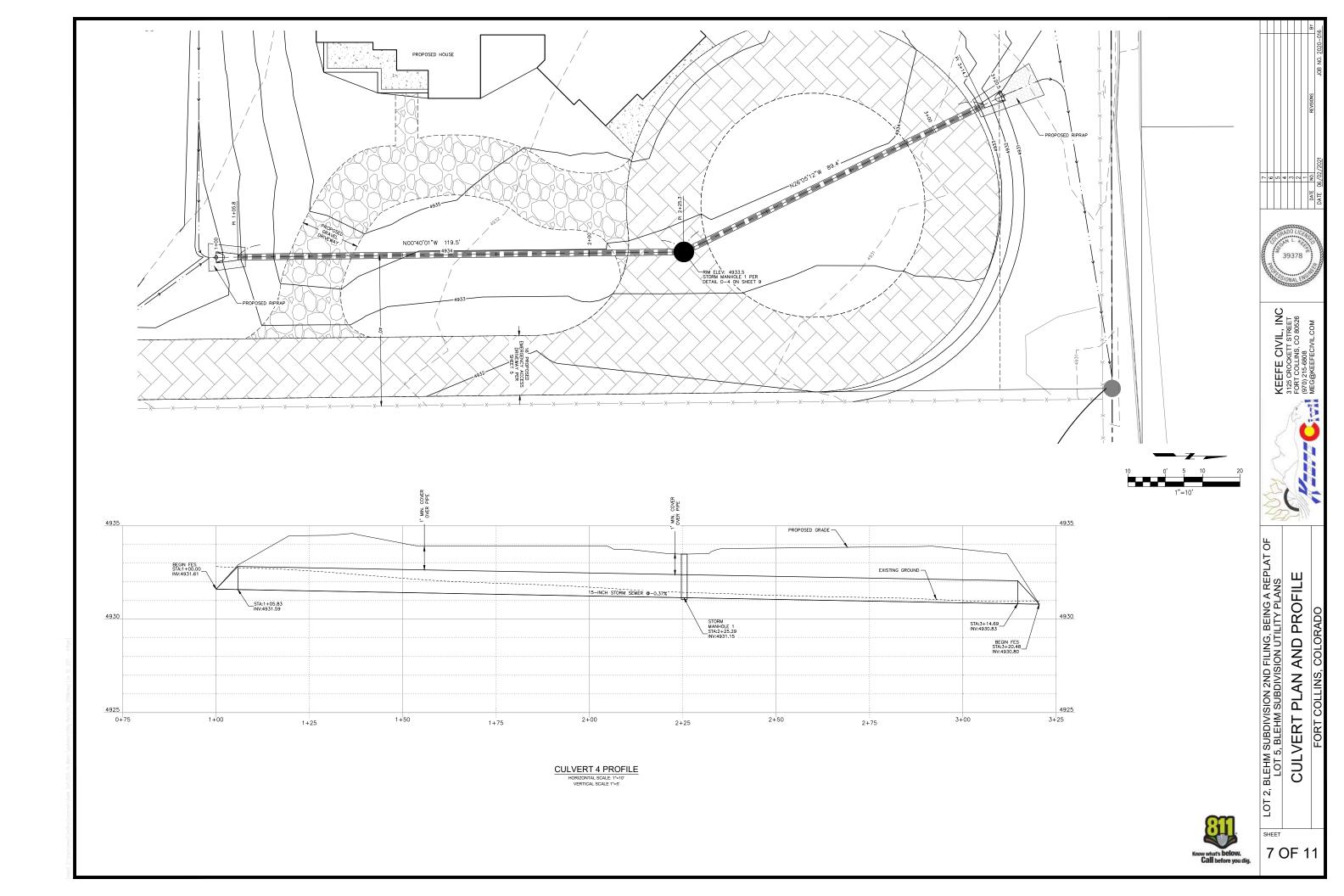
OVERLAPPING ROCK SOCK

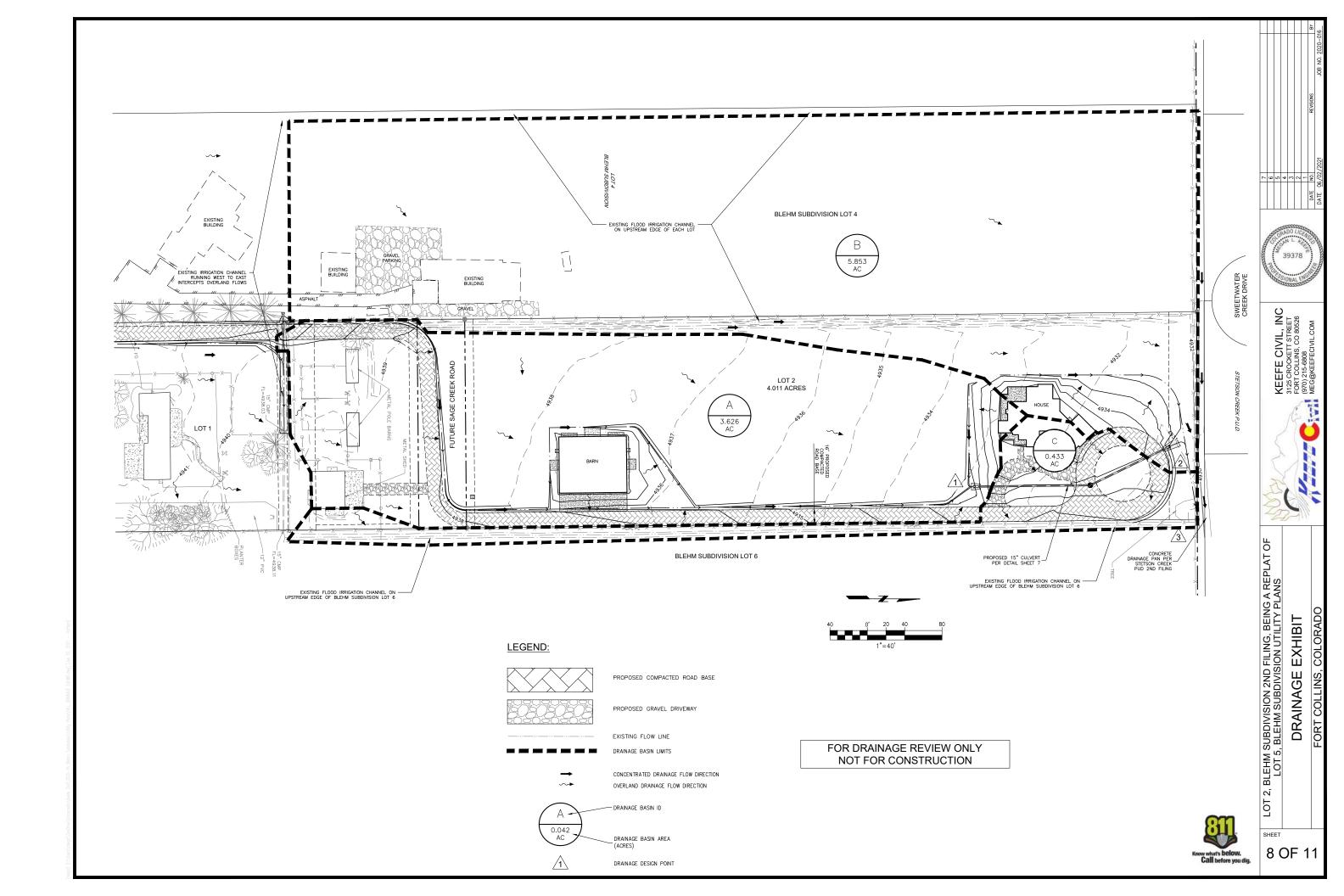


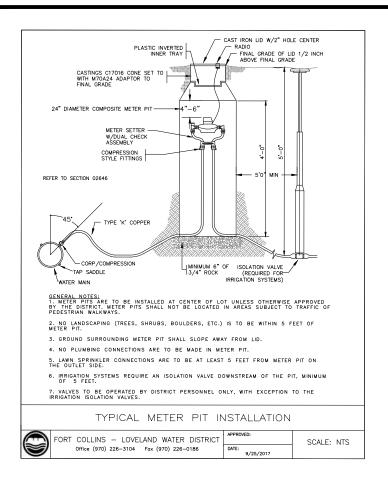
**CONTROL PLAN** BLEHM SUBDIVISION 2ND FILING, BEING A REPLAT LOT 5, BLEHM SUBDIVISION UTILITY PLANS **EROSION** જ GRADING LOT 2,

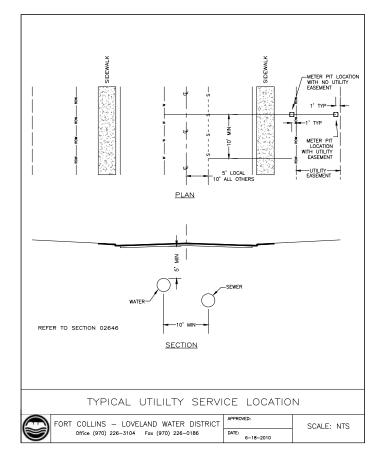
SHEET 5 OF 11

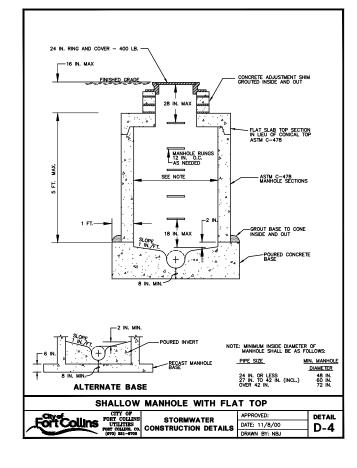


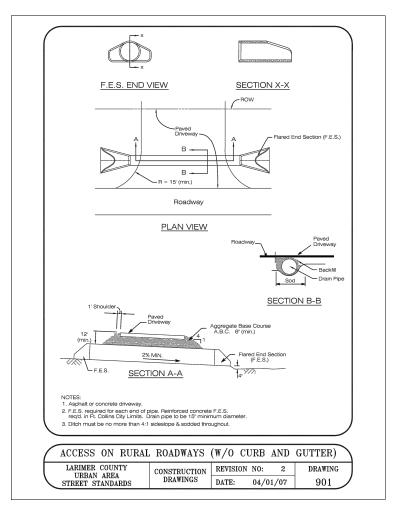






















LOT 2, BLEHM SUBDIVISION 2ND FILING, BEING A REPLAT OF LOT 5, BLEHM SUBDIVISION UTILITY PLANS UTILITY DETAIL SHEET

SHEET

9 OF 11

#### GENERAL EROSION CONTROL NOTES:

- 1) THE PROPERTY OWNER, OWNER'S REPRESENTATIVE, DEVELOPER, DESIGN ENGINEER, GENERAL CONTRACTOR SUB-CONTRACTORS OR SIMILAR TITLE FOR THE DEVELOPING ENTITY (HERE AFTER REFERRED TO AS THE DEVELOPER) HAS PROVIDED THESE EROSION CONTROL MATERIALS IN ACCORDANCE WITH EROSION CONTROL CRITERIA SET FORTH IN THE MANUAL AS AN ATTEMPT TO IDENTIFY EROSION, SEDIMENT, AND OTHER POTENTIAL POLITIANT SOURCES ASSOCIATED WITH THESE CONSTRUCTION ACTIVITIES AND PREVENTING THOSE POLITIANTS ROM LEAVING THE PROJECT SITE AS AN ILLICIT DISCHARGE. FULL CITY REQUIREMENTS AND ARE OUTLINED AND CLARIFIED IN THE MANUAL UNDER CHAPTER 4: CONSTRUCTION CONTROL MEASURES AND SHOULD BE USED TO IDENTIFY AND DEFINE WHAT IS NEEDED ON A PROJECT.
- THE DEVELOPER SHALL MAKE THEMSELVES THOROUGHLY FAMILIAR WITH THE PROVISIONS AND THE CONTENT OF THE SPECIFICATIONS LAID OUT IN THE MANUAL. THE DEVELOPMENT AGREEMENT. THE EROSION CONTROL MATERIALS COMPILED FOR THIS PROJECT, AND THE FOLLOWING NOTES AS ALL THESE MATERIALS ARE APPLICABLE TO THIS PROJECT.
- THE DEVELOPER SHALL IMPLEMENT AND MAINTAIN CONTROL MEASURES FOR ALL POTENTIAL POLLUTANTS FROM THE START OF LAND DISTURBING ACTIVITIES UNTIL FINAL STABILIZATION OF THE CONSTRUCTION SITE.
- THE CITY EROSION CONTROL INSPECTOR SHALL BE <u>NOTIFIED</u> AT <u>LEAST TWENTY-FOUR (24) HOURS PRIOR</u> TO THE DESIRED START OF ANY CONSTRUCTION ACTIVITIES ON THIS SITE TO ALLOW ADEQUATE TIME FOR ON-SITE CONFIRMATION (INITIAL INSPECTION WHICH CAN TAKE UP TO TWO BUSINESS DAYS AFTER RECEIVING THE REQUEST) THAT THE SITE IS IN FACT PROTECTED FROM SEDIMENT AND POLITIANTS DISCHARGES OF SITE PLEASE CONTACT EROSION@FCGOV.COM EARLY TO SCHEDULE THOSE INITIAL EROSION CONTROL INSPECT WELL IN ADVANCE SO THAT DEMOLITION, CLEARING, GRUBBING, TREE REMOVAL, AND SCRAPING MAY BEGIN WITHOUT DELAY, FAILURE TO RECEIVE AN ON-SITE CONFIRMATION BEFORE CONSTRUCTION ACTIVITIES COMMENCE S AN AUTOMATIC "NOTICE OF VIOLATION" AND CAN RESULT IN FURTHER ENFORCEMENT ACTIONS
- THE DEVELOPER SHALL PROACTIVELY PROVIDE ALL APPROPRIATE CONTROL MEASURES TO PREVENT DAMAGE TO ADJACENT DOWNSTREAM AND LEEWARD PROPERTIES. THIS INCLUDES BUT IS NOT LIMITED TO: TREES, SHRUBS LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES, CREEKS, WETLANDS, STREAMS, RIVERS, AND UTILITIES THAT ARE NOT DESIGNED FOR REMOVAL, RELOCATION, OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.
- 6) AT ALL TIMES THE DEVELOPER SHALL BE RESPONSIBLE TO ENSURE ADEQUATE CONTROL MEASURES ARE DESIGNED, SELECTED, INSTALLED, MAINTAIN, REPAIRED, REPLACED, AND LILTIMATELY REMOVED IN ORDER
- TO PREVENT AND CONTROL EROSION SUSPENSION, SEDIMENT TRANSPORTATION, AND POLLUTANT DISCHARGE AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.
- ALL APPLICABLE CONTROL MEASURES BASED UPON THE SEQUENCING AND/OR PHASING OF THE PROJECT SHALL BE INSTALLED PRIOR TO THOSE CONSTRUCTION ACTIVITIES COMMENCING.
- 8) AS DYNAMIC CONDITIONS (DUE TO THE NATURE, TIMING, SEQUENCE, AND PHASING OF CONSTRUCTION) IN THE FIELD MAY WARRANT CONTROL MEASURES IN ADDITION OR DIFFERENT TO WHAT IS SHOWN ON THESE PLANS. THE DEVELOPER SHALL AT ALL TIMES BE RESPONSIBLE TO IMPLEMENT THE CONTROL MEASURES THAT ARE MOST EFFECTIVE WITH THE CURRENT STATE AND PROGRESS OF CONSTRUCTION. THE DEVELOPER SHALL IMPLEMENT WHATEVER MEASURES ARE DETERMINED NECESSARY, AND/OR AS DIRECTED BY THE CITY EROSION CONTROL INSPECTOR, THE DEVELOPER SHALL INSURE THAT ALL EROSION CONTROL PLANS (MAPS) OR SWMP DOCUMENTS ARE UPDATED TO REFLECT THE CURRENT SITE CONDITIONS, WITH UPDATES BEING INITIALED AND DATED. THESE SITE INSPECTIONS AND SITE CONDITION UPDATES SHALL BE MADE AVAILABLE UPON REQUEST BY THE CITY.
- ALL LISTINGS, PROVISIONS, MATERIALS, PROCEDURES, ACTIVITIES, SITE WORK AND THE LIKE ARTICULATED IN THIS OR OTHER WRITTEN SITE-SPECIFIC DOCUMENTS (INCLUDING BUT NOT LIMITED TO THE EROSION CONTROL REPORTS DEVELOPMENT AGREEMENTS LANDSCAPE AND DRAINAGE MATERIALS) SHALL MEET OR EXCEED THE MOST RESTRICTIVE LANGUAGE FOR CITY, COUNTY, STATE, AND FEDERAL REGULATIONS WITH REGARDS EROSION, SEDIMENT, POLLUTANT, AND OTHER POLLUTION SOURCE CONTROL MEASURES. THE DEVELOPER SHALL BE RESPONSIBLE TO COMPLY WITH ALL OF THESE AFOREMENTIONED LAWS AND REGULATIONS.

  10) THE DEVELOPER SHALL ENSURE THAT ALL APPROPRIATE PERMITS (CDPS GENERAL PERMIT STORMWATER
- DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY DEWATERING CLEAN WATER ACT, ARMY CORPS OF BOSINGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, DEVALUATING, SEEAN WATER ACT, NAME CORPS OF REGISTERS' 404 WETLANDS MITIGATION PERMIT, ETC.) HAVE BEEN ATTAINED PRIOR TO THE RELEVANT ACTIVITY HAS BEGUN. THESE PERMITS OR COPIES SHALL BE MADE AVAILABLE UPON REQUEST BY THE CITY.
- 11) THE DEVELOPER SHALL FURNISH ALL CONVENIENCES AND ASSISTANCE TO AID THE EROSION CONTROL INSPECTIONS OF MATERIALS, WORKMANSHIP, RECORDS, AND SELF-INSPECTIONS, ETC. OF THE CONTROL MEASURES INVOLVED IN THE CONSTRUCTION ACTIVITIES.
- 12) THE DEVELOPER SHALL REQUEST CLARIFICATION OF ALL APPARENT SITE CONSTRUCTION ISSUES THAT MAY ARISE DUE TO INCONSISTENCIES IN CONSTRUCTION PLANS FOR THE SITE OR SITE CONDITIONS AROUND THE SELECTED CONTROL MEASURES BY CONTACTING THE EROSION CONTROL INSPECTOR. THE EROSION CONTROL INSPECTOR WILL NOT BE RESPONSIBLE FOR ANY EXPLANATIONS, INTERPRETATIONS, OR SUPPLEMENTARY DATA PROVIDED BY OTHERS
- 13) ALL CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL
- 14) THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL CONTROL MEASURES AS SITE CONDITIONS WARRANT, TO THE EXTENT AUTHORIZED BY RELEVANT LEGAL AUTHORITY.
- 15) AS WITH ANY CONSTRUCTION STANDARDS OCCASIONS MAY ARISE WHERE THE MINIMUM EROSION CONTROL STANDARDS ARE EITHER INAPPROPRIATE OR CANNOT BE JUSTIFIED. IN THESE CASES, A VARIANCE TO THESE STANDARDS MAY BE APPLIED FOR PURSUANT TO THE TERMS, CONDITIONS, AND PROCEDURES OF THE MANUAL.
- 16) INSPECTION. THE CONTRACTOR SHALL INSPECT SITE POLLUTANT SOURCES AND IMPLEMENT CONTROL MEASURES AT A MINIMUM OF ONCE EVERY TWO WEEKS DURING CONSTRUCTION AND WITHIN 24 HOURS FOLLOWING A PRECIPITATION EVENT, DOCUMENTATION OF EACH INSPECTION SHALL BE RECORDED AND RETAINED BY THE
- 17) ALL TEMPORARY CONTROL MEASURES SHALL BE CLEANED. REPAIRED, OR RECONSTRUCTED AS NECESSARY IN ORDER TO ASSURE CONTINUAL PERFORMANCE OF THEIR INTENDED FUNCTION. ALL RETAINED SEDIMENTS, PARTICULARLY THOSE ON PAVED ROADWAY SURFACES, SHALL BE REMOVED AND DISPOSED OF IN A MANNER AND LOCATION SO AS NOT TO CAUSE THEIR RELEASE INTO ANY DRAINAGE WAY.
- 18) ANY CONTROL MEASURE MAY BE SUBSTITUTED FOR ANOTHER STANDARD CONTROL MEASURE SO LONG AS THAT CONTROL MEASURE IS FOUND TO, OR OF GREATER PROTECTION THAN THE ORIGINAL CONTROL MEASURE THAT WAS TO BE USED IN THAT LOCATION. (EX. SILT FENCE, FOR WATTLES, OR FOR COMPACT BERMS) WATTLE ALONE ON COMMERCIAL CONSTRUCTION SITES HAVE SHOWN TO BE AN INEFFECTIVE SUBSTITUTE FOR SILT FENCE OR COMPACT BERMS UNLESS IT IS ACCOMPANIED BY A CONSTRUCTION FENCE TO PREVENT VEHICLE TRAFFIC.
- 19) ANY IMPLEMENTATION OR REPLACEMENT OF EXISTING CONTROL MEASURES FOR A NON-STANDARD CONTROL, OR ALTERNATIVE CONTROL MEASURE, SHALL REQUIRE THE REVIEW AND ACCEPTANCE BY THE CITY EROSION CONTROL STAFF BEFORE THE MEASURE WILL BE ALLOWED TO BE USED ON THIS PROJECT. THESE CONTROL MEASURES DETAILS SHALL BE SUBMITTED, REVIEWED AND ACCEPTED TO BE IN ACCORDANCE WITH THE EROSION CONTROL CRITERIA BASED UPON THE FUNCTIONALITY AND EFFECTIVENESS IN ACCORDANCE WITH SOUND ENGINEERING AND HYDROLOGICAL PRACTICES

#### LAND DISTURBANCE, STOCKPILES, AND STORAGE OF SOILS

- 20) THERE SHALL BE NO EARTH-DISTURBING ACTIVITY OUTSIDE THE LIMITS DESIGNATED ON THE ACCEPTED PLANS. OF ROAD STAGING AREAS OR STOCKPILES MUST BE PREAPPROVED BY THE CITY. DISTURBANCES BEYOND THESE LIMITS WILL BE RESTORED TO ORIGINAL CONDITION.
- PRE-DISTURBANCE VEGETATION SHALL BE IDENTIFIED, PROTECTED, AND RETAINED WHEREVER POSSIBLE. REMOVAL OR DISTURBANCE OF EXISTING VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS, AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME. THIS SHOULD INCLUDE SEQUENCING AND PHASING CONSTRUCTION ACTIVITIES IN A WAY SO THAT THE SOIL IS NOT EXPOSED FOR LONG PERIODS OF TIME BY SCHEDULE OR LIMIT GRADING TO SMALL AREAS. THIS SHOULD ALSO INCLUDE WHEN PRACTICAL ADVANCING THE SCHEDULE ON STABILIZATION ACTIVITIES SUCH THAT LANDSCAPING TAKES PLACE SHORTLY IF NOT IMMEDIATELY AFTER GRADING HAS OCCURRED. VEGETATION EFFORTS SHALL START AS SOON AS POSSIBLE TO RETURN THE SITE TO A STABILIZED CONDITION. SENSITIVE AREAS SHOULD AVOID CLEARING AND GRADING ACTIVITIES AS MUCH POSSIBLE.
- 22) ALL EXPOSED SOILS OR DISTURBED AREAS ARE CONSIDERED A POTENTIAL POLLUTANT AND SHALL HAVE CONTROL MEASURES IMPLEMENTED ON THE SITE TO PREVENT MATERIALS FROM LEAVING THE SITE.
- 23) ALL SOILS EXPOSED DURING LAND DISTURBING ACTIVITY (STRIPPING, GRADING, UTILITY INSTALLATIONS, STOCKPILING, FILLING, ETC.) SHALL BE KEPT IN A ROUGHENED CONDITION AT ALL TIMES BY EQUIPMENT TRACKING, SCARIEVING OR DISKING THE SURFACE ON A CONTOUR WITH A 2 TO 4 INCH MINIMUM VARIATION IN SOIL SURFACE UNTIL MULCH, VEGETATION, AND/OR OTHER PERMANENT EROSION CONTROL IS INSTALLED.
- 24) NO SOIL STOCKPILE SHALL EXCEED TEN (10) FEET IN HEIGHT. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT THROUGH THE USE OF SURFACE ROUGHENING, WATERING, AND DOWN GRADIENT PERIMETER CONTROLS. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT BY WIND IN ACCORDANCE WITH MUNICIPAL CODE §12-150. ALL STOCKPILES SHALL BE FLATTENED TO MEET GRADE OR REMOVED FROM SITE AS SOON AS PRACTICAL, AND NO LATER THAN THE COMPLETION OF CONSTRUCTION ACTIVITIES OR ABANDONMENT OF THE PROJECT. ALL OFF-SITE STOCKPILE STORAGE LOCATIONS IN CITY LIMITS SHALL HAVE A STOCKPILE PERMIT FROM THE CITY ENGINEERING DEPARTMENT PRIOR TO USING THE AREA TO STORE MATERIAL. IF FREQUENT ACCESS FROM HARDSCAPE TO THE STOCKPILE IS NEEDED A STRUCTURAL TRACKING CONTROL MEASURE SHALL BE IMPLEMENTED.
- 25) ALL REQUIRED CONTROL MEASURES SHALL BE INSTALLED <u>PRIOR</u> TO ANY LAND DISTURBING ACTIVITY (STOCKPILING STRIPPING, GRADING, ETC.). ALL OF THE REQUIRED EROSION CONTROL MEASURES MUST BE INSTALLED AT THE

- APPROPRIATE TIME IN THE CONSTRUCTION SEQUENCE AS INDICATED IN THE APPROVED PROJECT SCHEDULE, CONSTRUCTION PLANS, AND EROSION CONTROL REPORT.
- 26) ALL INLETS, CURB-CUTS, CULVERTS, AND OTHER STORM SEWER INFRASTRUCTURE WHICH COULD BE POTENTIALLY IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE PROTECTED WITH CONTROL MEASURES. MATERIAL ACCUMULATED FROM THIS CONTROL MEASURE SHALL BE PROMPTLY REMOVED AND IN CASES WHERE THE PROTECTION HAS FAILED, THE PIPES SHALL BE THOROUGHLY CLEANED OUT.
- 27) ALL STREAMS, STREAM CORRIDORS, BUFFERS, WOODLANDS, WETLANDS, OR OTHER SENSITIVE AREAS SHALL BE PROTECTED FROM IMPACT BY ANY CONSTRUCTION ACTIVITY THROUGH THE USE OF CONTROL MEASURES.
- 28) ALL EXPOSED DIRT SHALL HAVE PERIMETER CONTROL ANY PERIMETER CONTROLS THAT DRAIN OFF OR HAS THE TO BE TRACKED ONTO THE NEARBY HARDSCAPE SHALL HAVE SOME FORM OF EFFECTIVE SEDIMEN CONTROL AS THE, OR AS PART OF THE, PERIMETER CONTROL.
- 29) ALL EXPOSED SLOPES SHOULD BE PROTECTED. ALL EXPOSED STEEP SLOPES (STEEPER THAN 3:1 H:V) SHALL BE PROTECTED FROM EROSION AND SEDIMENT TRANSPORT THROUGH USE OF CONTROL MEASURES.
- 30) NO SOILS SHALL REMAIN EXPOSED BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS AFTER ACTIVITY HAS CEASED BEFORE REQUIRED TEMPORARY SEEDING OR PERMANENT EROSION CONTROL (E.G. SEED/MULICH LANDSCAPING ETC.) IS INSTALLED THIS IS NOT JUST LIMITED TO PROJECTS THAT ARE ARANDONED THIS INCLUDES ANY PROJECT THAT IS TEMPORARILY HALTED AND NO IMMEDIATE ACTIVITY IS TO RESUME WITHIN THE NEXT THIRTY (30) DAYS, UNLESS OTHERWISE APPROVED BY THE CITY EROSION CONTROL INSPECTOR. DURING A SEASON WHEN SEEDING DOES NOT PRODUCE VEGETATIVE COVER. ANOTHER TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED WITH OR UNTIL TEMPORARY SEEDING OR PERMANENT EROSION CONTROL CAN BE
- 31) ALL INDIVIDUAL LOTS SHALL HAVE EFFECTIVE SEDIMENT CONTROLS LOCATED ON THE STREET SIDE AND ANY DOWN GRADIENT SIDE. TYPICALLY MOST LOTS DRAIN TO THE FRONT YET ON THOSE CASES WHERE HOUSES ARE ALONG A POND OR DRAINAGE SWALE HAVE THE LOT DRAIN IN A DIFFERENT DIRECTION THAN THE STREET, THOSE INDIVIDUAL LOTS WILL NEED PROTECTION ON THAT DOWN GRADIENT SIDE TO PREVENT SEDIMENT FROM LEAVING THE LOT. SEE THE INDIVIDUAL LOT DETAILS FOR FURTHER CLARIFICATION.

- 32) AT ALL POINTS WHERE VEHICLES EXIT OR LEAVE THE EXPOSED DIRT AREA ON TO A HARDSCAPE OR SEMI HARDSCAPE (CONCRETE, ASPHALT, ROAD BASE, ETC.) SHALL HAVE INSTALLED AT LEAST ONE STRUCTURAL TRACKING CONTROL MEASURE TO PREVENT VEHICLE TRACKING, ALL AREAS NOT PROTECTED BY AN ADEQUATE PERIMETER CONTROL SHALL BE CONSIDERED A POINT WHERE VEHICLES EXIT THE SITE. ACCESS POINTS SHOULD BE LIMITED TO AS FEW ENTRANCES AS POSSIBLE (ALL PERIMETER AREAS SHALL BE PROTECTED FROM TRACKING ACTIVITIES).
- 33) IN ALL AREAS THAT THE STRUCTURAL TRACKING CONTROL MEASURES FAIL TO PREVENT VEHICLE TRACKING COLLECTION AND PROPER DISPOSAL OF THAT MATERIAL IS REQUIRED. ALL INLETS LOCATED NEAR ACCESS POINTS AND AFFECTED BY TRACKING ACTIVITIES SHALL BE PREVENTED FROM THE INTRODUCTION OF SEDIMENT INTO THE DRAINAGE SYSTEM
- 34) CITY MUNICIPAL CODE \$20-62 AMONG OTHER THINGS PROHIBITS THE TRACKING DROPPING OR DEPOSITING OF SOILS OR ANY OTHER MATERIAL ONTO CITY STREETS BY OR FROM ANY SOURCE. CITY MUNICIPAL CODE, §26-498, AMONG OTHER THINGS, PROHIBITS THE DISCHARGE OF POLLUTANTS ON PUBLIC OR PRIVATE PROPERTY IF THERE IS A SIGNIFICANT POTENTIAL FOR MIGRATION OF SUCH POLLUTANT. THEREFORE, ALL TRACKED OR DEPOSITED MATERIALS (INTENTIONAL OR INADVERTENT) ARE NOT PERMITTED TO REMAIN ON THE STREET OR GUTTER AND SHALL BE REMOVED AND LEGALLY DISPOSED OF BY THE DEVELOPER IN A TIMELY AND IMMEDIATE MANNER. DIRT RAMPS INSTALLED IN THE CURB-LINES ARE NOT EXEMPT TO THESE SECTIONS OF CODE AND SHALL NOT BE PERMITTED IN THE STREET RIGHT OF WAY (PUBLIC OR PRIVATE).
- 35) IF REPEATED DEPOSIT OF MATERIAL OCCURS ON A SITE, ADDITIONAL STRUCTURAL TRACKING CONTROLS MAY BE REQUIRED OF THE DEVELOPER BY THE CITY EROSION CONTROL INSPECTOR.

#### LOADING AND UNLOADING OPERATIONS

36) THE DEVELOPER SHALL APPLY CONTROL MEASURE TO LIMIT TRAFFIC (SITE WORKER OR PUBLIC) IMPACTS AND PROACTIVELY LOCATE MATERIAL DELIVERED TO THE SITE IN CLOSE PROXIMITY TO THE WORK AREA OR IMMEDIATELY INCORPORATED IN THE CONSTRUCTION TO LIMIT OPERATIONAL IMPACTS TO DISTURBED AREAS VEHICLE TRACKING, AND SEDIMENT DEPOSITION THAT COULD IMPACT WATER QUALITY.

#### OUTDOOR STORAGE OR CONSTRUCTION SITE MATERIALS, BUILDING MATERIALS, FERTILIZERS, AND CHEMICALS

- 37) ANY MATERIALS OF A NON-POLLUTING NATURE (STEEL ROCK, BRICK LUMBER, ETC.) SHALL BE INSPECTED FOR ANY RESIDUE COMING OFF THE MATERIAL DURING ROUTINE INSPECTION AND WILL GENERALLY BE LOCATED WHERE PRACTICAL AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM DRAINAGE WAYS.
- 38) ANY HIGH ENVIRONMENTAL IMPACT POLLUTANT MATERIALS THAT HAVE A HIGH LIKELIHOOD TO RESULT IN DISCHARGE WHEN IN CONTACT WITH STORMWATER (LUBRICANTS, FUELS, PAINTS, SOLVENTS, DETERGENTS FERTILIZERS, CHEMICAL SPRAYS, BAGS OF CEMENT MIX, ETC.) SHOULD NOT BE KEPT ON SITE WHERE PRACTICAL WHEN NOT PRACTICAL, THEY SHOULD BE STORED INSIDE (VEHICLE, TRAILER, CONNEX, BUILDING, ETC.) AND OUT OF CONTACT WITH STORMWATER OR STORMWATER RUNOFF. WHERE NOT AVAILABLE, THEY SHALL BE STORED OUTSIDE IN A RAISED (HIGH SPOTS OR ON PALLETS), COVERED (PLASTIC OR TARPED), AND SEALED (LEAK PROOF CONTAINER) IN SECONDARY CONTAINMENT LOCATION. THE SECONDARY CONTAINMENT OR OTHER CONTROL MEASURE SHALL BE ADEQUATELY SIZED, LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF

#### VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING

39) PARKING, REFUELING, AND MAINTENANCE OF VEHICLES AND FOUIPMENT SHOULD BE LIMITED IN ONE AREA OF THE SITE TO MINIMIZE POSSIBLE SPILLS AND FUEL STORAGE AREAS. THIS AREA SHALL BE LOCATED, WHERE PRACTICA AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS. ALL AREAS SHALL KEEP SPILL KITS AND

#### SIGNIFICANT DUST OR PARTICULATE GENERATING PROCESS

40) THE PROPERTY MUST BE ACTIVELY PREVENTING THE EMISSION OF FUGITIVE DUST AT ALL TIMES DURING CONSTRUCTION AND VEGETATION ACTIVITIES. ALL LAND DISTURBING ACTIVITIES THAT RESULT IN FUGITIVE DUST SHALL BE IN ACCORDANCE WITH MUNICIPAL CODE \$12-150 TO REDUCE THE IMPACTS TO ADJACENT PROPERTIES AND COMMUNITY HEALTH. ALL REQUIRED PRACTICES SHALL BE IMPLEMENTED AND ADDITIONAL ONES SHALL BE FOLLOWED. THESE PRACTICES INCLUDE WATERING THE SITES AND DISCONTINUING CONSTRUCTION ACTIVITIES UNTIL THE WIND SUBSIDES AS DETERMINED BY ANY CITY INSPECTORS

#### CONCRETE TRUCK / FOUIPMENT WASHING, INCLUDING THE CONCRETE TRUCK CHUTE AND ASSOCIATED FIXTURES AND

- 41) ALL CONCRETE AND EQUIPMENT WASHING SHALL USE STRUCTURAL CONTROL MEASURES APPROPRIATE TO THE VOLUME OF WASH AND FREQUENCY OF USE. THESE CONTROL MEASURES SHALL BE LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS. THESE AREAS SHALL BE CLEARLY IDENTIFIED AND PROTECTED FROM ANY WASH FROM LEAVING THE CONTROL MEASURE. IF FREQUENT ACCESS FROM HARDSCAPE TO THE CONTROL MEASURE IS TO OCCUR. A STRUCTURAL TRACKING CONTROL MEASURE SHALL BE IMPLEMENTED. THESE CONTROL MEASURES SHALL BE FREQUENTLY CLEANED OUT.

  42) THE DEVELOPER IS RESPONSIBLE FOR ENSURING WASHING ACTIVITY IS TAKING PLACE AT THE APPROPRIATE
- CONTROL MEASURE AND SITE WORKERS ARE NOT WASHING OR DUMPING WASH WATER ON TO THE DIRT OR OTHER

#### DEDICATED ASPHALT AND CONCRETE BATCH PLANTS

43) DEDICATED ASPHALT AND CONCRETE BATCH PLANTS ARE NOT ACCEPTABLE ON CONSTRUCTION SITES WITHIN THE CITY OF FORT COLLINS WITHOUT AN EXPRESSED WRITTEN REQUEST AND PLAN TO REDUCE POLLUTANTS ASSOCIATED WITH THAT TYPE OF ACTIVITY AND APPROVAL BY THE CITY OF FORT COLLINS SPECIFICALLY THE EROSION CONTROL INSPECTOR. THE DEVELOPER SHALL INFORM THE EROSION CONTROL INSPECTION STAFF OF ANY DEDICATED ASPHALT, OR CONCRETE BATCH PLANTS THAT IS TO BE USED ON SITE.

#### CONCRETE SAW CUTTING MATERIALS

44) SAW CUTTING MATERIAL SHALL BE IN ACCORDANCE WITH MUNICIPAL CODE §12-150 FOR AIR EMISSIONS AND ALL WATER APPLICATIONS TO THE SAW CUTTING SHALL PREVENT MATERIAL FROM LEAVING THE IMMEDIATE SITE AND COLLECTED. THESE CUTTING LOCATIONS, ONCE DRIED, SHALL BE SWEPT AND SCRAPED OF ALL MATERIAL AND SHALL HAVE PROPER AND LEGAL DISPOSAL

#### WASTE MATERIALS STORAGE AND SANITARY FACILITIES

- 45) TRASH, DEBRIS, MATERIAL SALVAGE, AND/OR RECYCLING AREAS SHALL BE, WHERE PRACTICAL, AT LEAST FIFTY (50) FEET FROM ANY PERMANENT OR INTERIM STORMWATER STRUCTURES OR DRAINAGE WAYS AND SHALL BE MONITORED AS PART OF THE ROUTINE INSPECTIONS. THESE FACILITIES SHOULD BE LOCATED OUT OF THE WIND AND COVERED AS ABLE. WHERE NOT ABLE TO COVER, LOCATING SAID AREAS ON THE SIDE OF OTHER STRUCTURES TO REDUCE EXPOSURE TO WINDS, AND FOLLOW MAXIMUM LOADING GUIDELINES AS MARKED ON THE CONTAINER THE DEVELOPER IS REQUIRED TO PRACTICE GOOD HOUSEKEEPING TO KEEP THE CONSTRUCTION SITE FREE OF LITTER, CONSTRUCTION DEBRIS, AND LEAKING CONTAINERS.
- 46) SANITARY FACILITIES SHALL BE PREVENTED FROM TIPPING THROUGH THE USE OF ANCHORING TO THE GROUND OR LASHING TO A STABILIZED STRUCTURE. THESE FACILITIES SHALL ALSO BE LOCATED AS FAR AS PRACTICAL FROM AN INLET, CURB CUT, DRAINAGE SWALE OR OTHER DRAINAGE CONVEYANCES TO PREVENT MATERIAL TRANSPORT FROM LEAVING THE LOCAL AREA. THIS CONSISTS OF THE FACILITY BEING LOCATED, WHERE PRACTICAL, AT LEAST FIFTY (50) FFET FROM ANY PERMANENT OR INTERIM DRAINAGE WAYS.

#### OTHER SITE OPERATIONS AND POTENTIAL SPILL AREAS

- 47) SPILLS: FOR THOSE MINOR SPILLS THAT; ARE LESS THAN THE STATE'S REPORTABLE QUANTITY FOR SPILLS, STAY WITHIN THE PERMITTED AREA, AND IN NO WAY THREATEN ANY STORMWATER CONVEYANCE, NOTIFY THE CITY OF FORT COLLINS UTILITIES BY EMAIL AT <u>EROSION@FCGOV.COM</u> OR PHONE (970) 817-4770. FOR ANY SIGNIFICANT, MAJOR, OR HAZARDOUS SPILLS, NOTIFY THE CITY OF FORT COLLINS UTILITIES BY PHONE ONLY AFTER EMERGENCY RESPONSE (911) HAS BEEN NOTIFIED AND IS ON ROUTE, COUNTY HEALTH DEPARTMENT (LCDHE) HAS BEEN NOTIFIED THROUGH LARIMER COUNTY SHERIEF DISPATCH (970) 416-1985, AND THE STATE SPILL HOTLINE INCIDENT REPORTING HAVE BEEN CONTACTED 1-877-518-5608. WRITTEN DOCUMENTATION SHALL BE PROVIDED TO THE CITY WITHIN 5 DAYS OF THE EVENT. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY.
- 48) SELECTION OF "PLASTIC WELDED" EROSION CONTROL BLANKETS SHALL NOT BE USED IN AREAS THAT WILDLIFE, SUCH AS SNAKES, ARE LIKELY TO BE LOCATED AS THESE HAVE PROVEN TO CAUSE ENTRAPMENT ISSUES.

#### FINAL STABILIZATION AND PROJECT COMPLETION

- 49) ANY STORMWATER FACILITIES USED AS A TEMPORARY CONTROL MEASURE WILL BE RESTORED AND STORM SEWER LINES WILL BE CLEANED UPON COMPLETION OF THE PROJECT AND BEFORE TURNING THE MAINTENANCE OVER TO THE OWNER, HOMEOWNERS ASSOCIATION (HOA), OR OTHER PARTY RESPONSIBLE FOR LONG TERM MAINTENANCE
- 50) ALL FINAL STABILIZATION SPECIFICATIONS SHALL BE DONE IN ACCORDANCE WITH THE MANUAL, CHAPTER 4: CONSTRUCTION CONTROL MEASURES.
- 51) ALL DISTURBED AREAS DESIGNED TO BE VEGETATED SHALL BE AMENDED, SEEDED & MULCHED, OR LANDSCAPED
- AS SPECIFIED IN THE LANDSCAPE PLANS WITHIN 14 WORKING DAYS OF FINAL GRADING.

  52) SOIL IN ALL VEGETATED (LANDSCAPED OR SEEDED) AREAS, INCLUDING PARKWAYS AND MEDIANS SHALL COMPLY WITH ALL REQUIREMENTS SET FORTH IN SECTIONS 12-130 THROUGH 12-132 OF THE CITY MUNICIPAL CODE, AS WELL AS SECTION 3.8.21 FOR THE CITY LAND USE CODE
- 53) ALL SEEDING SHALL REFER TO LANDSCAPING PLANS FOR SPECIES MIXTURE AND APPLICATION RATES AND DEPTHS
- 54) ALL SEED SHALL BE DRILLED WHERE PRACTICAL TO A DEPTH BASED UPON THE SEED TYPE BROADCAST SEEDING SHALL BE APPLIED AT DOUBLE THE RATE AS PRESCRIBED FOR DRILL SEEDING AND SHALL BE LIGHTLY HAND RAKED AFTER APPLICATION. HYDROSEEDING MAY BE SUBSTITUTED FOR DRILL SEEDING ON SLOPES STEEPER THAN 3(H):1(V) OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED AND CRIMP AND MULCH, ALL HYDROSEEDING MUST E CONDUCTED AS TWO SEPARATE PROCESSES OF SEEDING AND TACKIFICATION.
- 55) ALL SEEDED AREAS MUST BE MULCHED WITHIN TWENTY-FOUR (24) AFTER PLANTING. ALL MULCH SHALL BE MECHANICALLY CRIMPED AND OR ADEQUATELY APPLIED TACKIFIER. THE USE OF CRIMPED MULCH OR TACKIFIER MAY REQUIRE MULTIPLE RE-APPLICATIONS IF NOT PROPERLY INSTALLED OR HAVE WEATHERED OR DEGRADED BEFORE VEGETATION HAS BEEN ESTABLISHED. AREAS OF EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 3H:1V SHALL BE STABILIZED WITH AN EROSION MAT OR APPROVED EQUAL TO ENSURE SEED WILL BE ABLE TO GERMINATE ON THE STEEP SLOPES. DURING A SEASON WHEN SEEDING DOES NOT PRODUCE VEGETATIVE COVER, ANOTHER TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED ALONG WITH, OR UNTIL, TEMPORARY SEEDING OR PERMANENT EROSION CONTROL CAN BE PERFORMED.
  56) THE DEVELOPER SHALL WARRANTY AND MAINTAIN ALL VEGETATIVE MEASURES FOR TWO GROWING SEASONS
- AFTER INSTALLATION OR UNTIL SEVENTY PERCENT (70%) VEGETATIVE COVER HAS BEEN ESTABLISHED, WHICHEVER IS LONGER AND MEETS ALL THE CRITERIA OUTLINED IN THE FORT COLLINS STORMWATER CRITERIA MANUAL CHAPTER 4: CONSTRUCTION CONTROL MEASURES.
- 57) THE DEVELOPER SHALL MAINTAIN, MONITOR, REPAIR, AND REPLACE ANY AND ALL APPLICABLE CONTROL MEASURES UNTIL FINAL STABILIZATION HAS BEEN OBTAINED. ALL CONTROL MEASURES MUST REMAIN UNTIL SUCH TIME AS ALL UPSTREAM CONTRIBUTING POLLUTANT SOURCES HAVE BEEN VEGETATED OR REMOVED FROM THE SITE, WHEN ANY CONTROL MEASURE IS REMOVED, THE DEVELOPER SHALL BE RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ALL SEDIMENT AND DEBRIS FROM THAT CONTROL MEASURE. AT THE POINT AT WHICH THE SITE HAS BEEN DEEMED STABILIZED AND VERIFIED BY CITY FROSION CONTROL INSPECTOR ALL TEMPORARY CONTROL MEASURES CAN THEN BE FULLY REMOVED. ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION IS
- 58) THE RESPONSIBLE PARTY SHALL MAINTAIN AND KEEP CURRENT ALL PAYMENTS OR RELATED FORMS OF SECURITY FOR THE EROSION CONTROL ESCROW UNTIL 1) STABILIZATION HAS BEEN REACHED AND 2) ALL CONTROL MEASURES AND/OR BMPS HAVE SEDIMENT MATERIALS COLLECTED AND THE CONTROL MEASURE REMOVED FROM THE SITE. AT THAT TIME THE SITE WILL BE CONSIDERED COMPLETED AND ANY REMAINING EROSION CONTROL ESCROW SHALL BE RETURNED TO THE APPROPRIATE PARTIES.







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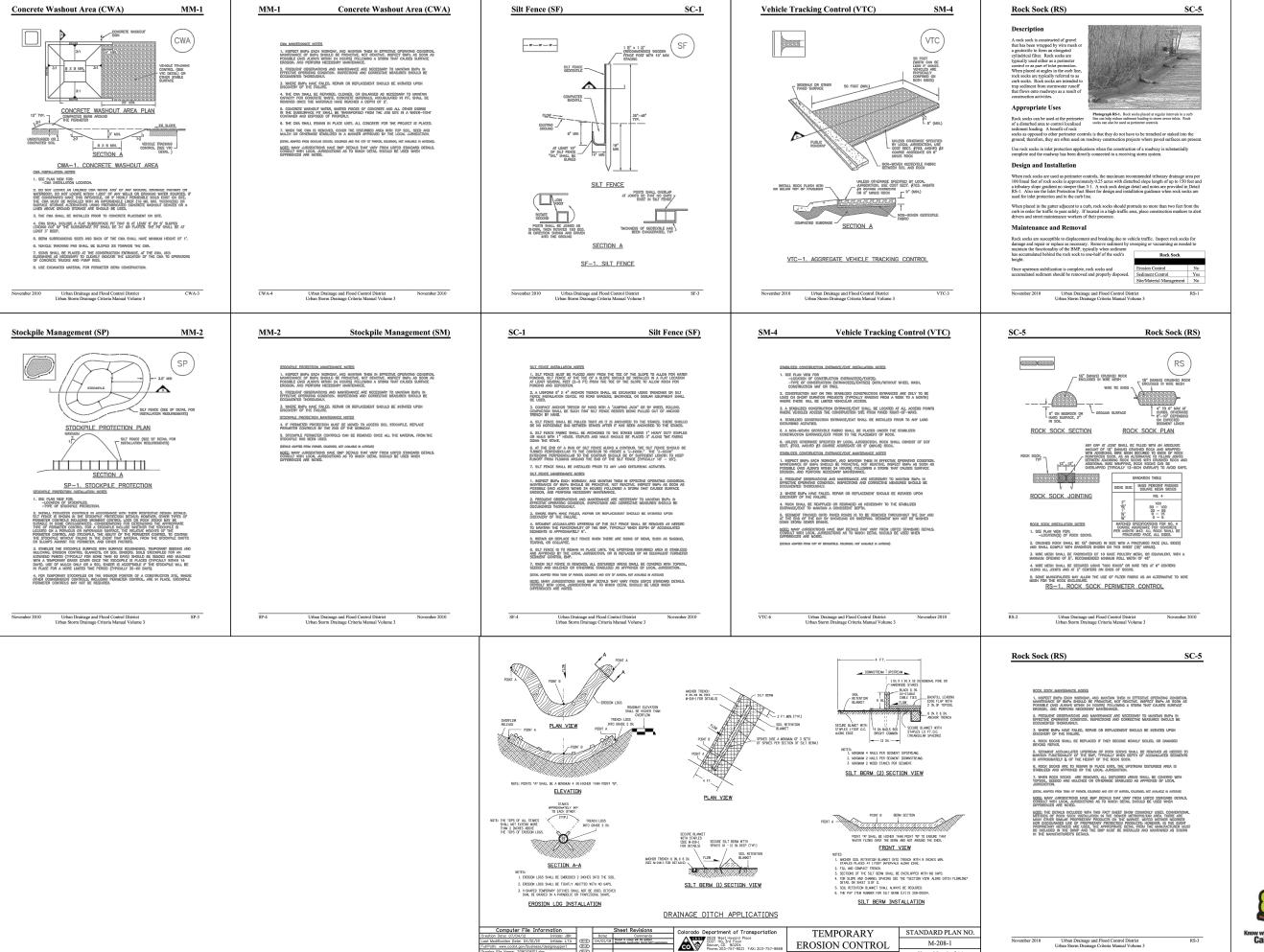
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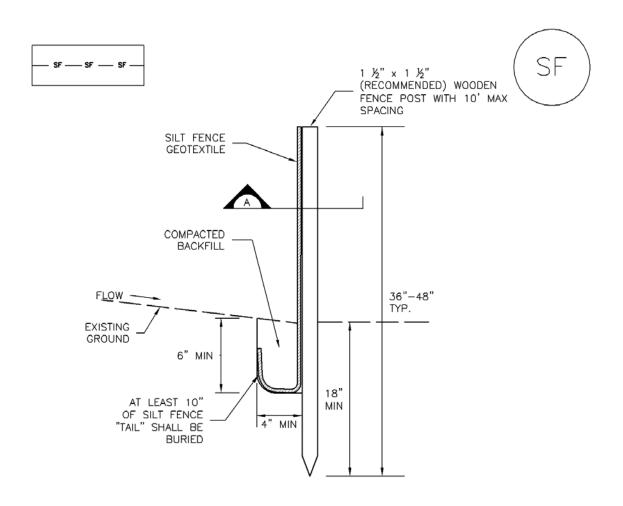
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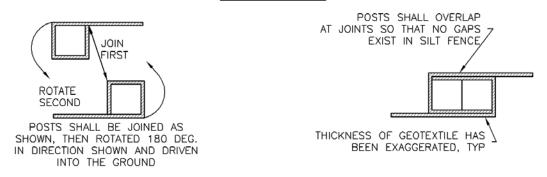
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SHEET 11 OF 11

# APPENDIX D



#### SILT FENCE



SECTION A

#### SF-1. SILT FENCE

#### 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.

### **Description**

A rock sock is constructed of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter. Rock socks are typically used either as a perimeter control or as part of inlet protection. When placed at angles in the curb line, rock socks are typically referred to as curb socks. Rock socks are intended to trap sediment from stormwater runoff that flows onto roadways as a result of construction activities.

### **Appropriate Uses**

Rock socks can be used at the perimeter of a disturbed area to control localized sediment loading. A benefit of rock



**Photograph RS-1.** Rock socks placed at regular intervals in a curb line can help reduce sediment loading to storm sewer inlets. Rock socks can also be used as perimeter controls.

socks as opposed to other perimeter controls is that they do not have to be trenched or staked into the ground; therefore, they are often used on roadway construction projects where paved surfaces are present.

Use rock socks in inlet protection applications when the construction of a roadway is substantially complete and the roadway has been directly connected to a receiving storm system.

### **Design and Installation**

When rock socks are used as perimeter controls, the maximum recommended tributary drainage area per 100 lineal feet of rock socks is approximately 0.25 acres with disturbed slope length of up to 150 feet and a tributary slope gradient no steeper than 3:1. A rock sock design detail and notes are provided in Detail RS-1. Also see the Inlet Protection Fact Sheet for design and installation guidance when rock socks are used for inlet protection and in the curb line.

When placed in the gutter adjacent to a curb, rock socks should protrude no more than two feet from the curb in order for traffic to pass safely. If located in a high traffic area, place construction markers to alert drivers and street maintenance workers of their presence.

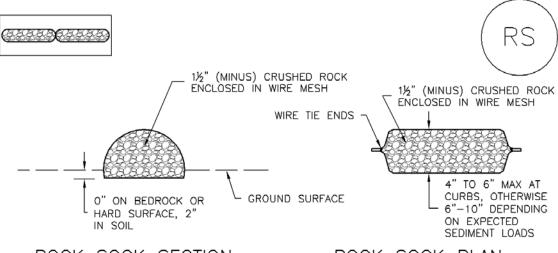
#### Maintenance and Removal

Rock socks are susceptible to displacement and breaking due to vehicle traffic. Inspect rock socks for damage and repair or replace as necessary. Remove sediment by sweeping or vacuuming as needed to

maintain the functionality of the BMP, typically when sediment has accumulated behind the rock sock to one-half of the sock's height.

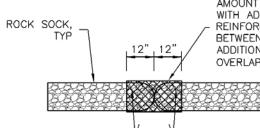
Once upstream stabilization is complete, rock socks and accumulated sediment should be removed and properly disposed.

Rock Sock				
Functions				
Erosion Control	No			
Sediment Control	Yes			
Site/Material Management	No			



ROCK SOCK SECTION

ROCK SOCK PLAN



AMOUNT OF 1½" (MINUS) CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED SOCK. AS AN ALTERNATIVE TO FILLING JOINTS BETWEEN ADJOINING ROCK SOCKS WITH CRUSHED ROCK AND ADDITIONAL WIRE WRAPPING, ROCK SOCKS CAN BE OVERLAPPED (TYPICALLY 12-INCH OVERLAP) TO AVOID GAPS.

ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE

### ROCK SOCK JOINTING

GRADATION TABLE				
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES			
	NO. 4			
2" 1½" 1" ¾" ¾"	100 90 - 100 20 - 55 0 - 15 0 - 5			
MATCHES SPECIFICATIONS FOR NO 4				

MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.

#### ROCK SOCK INSTALLATION NOTES

- 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  $\frac{1}{2}$ ", 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

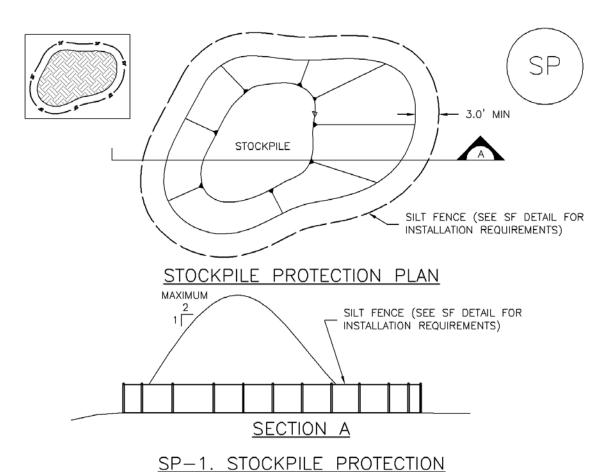
#### ROCK SOCK MAINTENANCE NOTES

- 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.



#### STOCKPILE PROTECTION INSTALLATION NOTES

- 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.

#### STOCKPILE PROTECTION MAINTENANCE NOTES

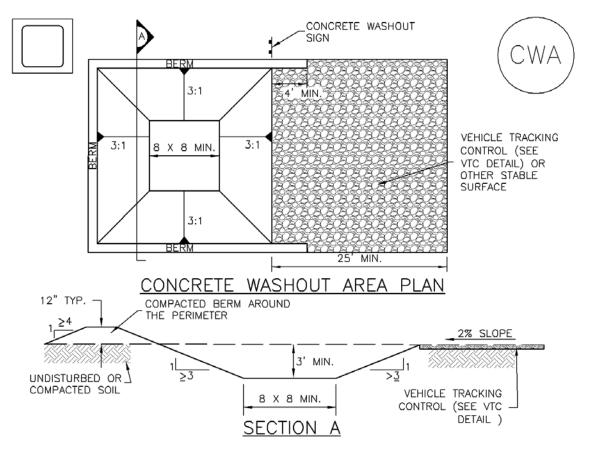
- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- 2. FREQUENT OBSERVATIONS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

#### STOCKPILE PROTECTION MAINTENANCE NOTES

- 4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
- 5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

(DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN 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.



#### CWA-1. CONCRETE WASHOUT AREA

#### CWA INSTALLATION NOTES

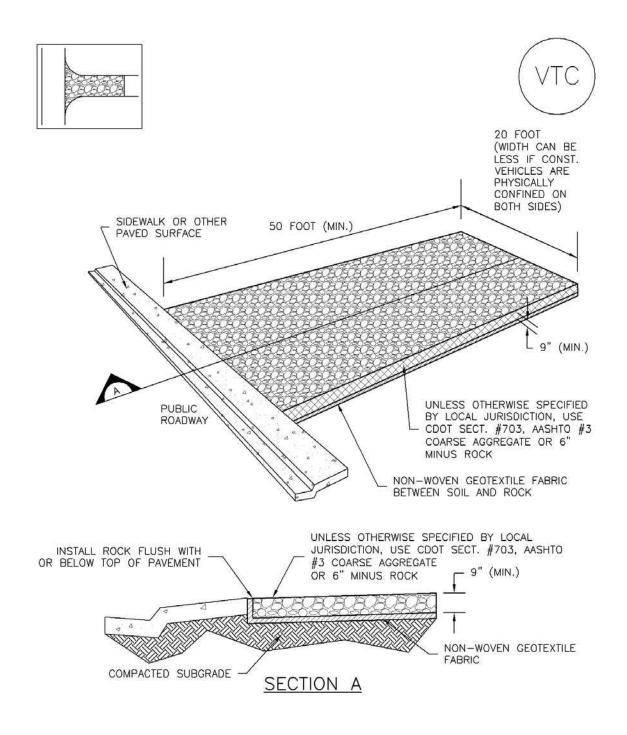
- 1. SEE PLAN VIEW FOR:
  -CWA INSTALLATION LOCATION.
- 2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
- 3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- 4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- 5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- 6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- 7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- 8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

#### CWA MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- 4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- 5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- 6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- 7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

#### 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.

#### 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)



### Why Use Native Plants?

Native plants are sustainable, low maintenance, and create a beautiful habitat for insects and pollinators.

Grasses such as smooth brome, crested wheatgrass, and intermediate wheat are exotic plants. They are aggressive, form monocultures, and don't provide good habitat to native pollinators and other wildlife.

The City of Fort Collins Natural Areas Department has 15 years of experience developing and testing a variety of native seed mixes. Many of these species have been used in successful large-scale restoration projects. These mixes are carefully planned to provide landscapers, contractors, and private citizens grasses and wildflowers that thrive in our climate. The mixes are custom blended for the Fort Collins Growth Management Area at elevations of 4,800—5,660 feet.

### What to Expect

These native prairie plants are adapted to conditions in this area:

- The seeds will germinate and establish in 1–3 growing seasons. If they do not, reseed the area. Get a head start on establishing your native seed. If there are areas that won't be re-disturbed during construction, go ahead and seed it.
- Expect some bare soil between plants.
- Expect plants to go dormant in hot, dry conditions—they will turn brown but are still alive.
- Expect diversity in your plantings. The different native plants will grow commingled, instead of in isolated pockets of the same species grouped together.
- Excessive grazing or continual disturbance will not allow plants to establish.

### **Top Tips for Success**

- ✓ Plant during recommended dates.
- ✓ Do not use fertilizer.
- ✓ Plant at proper depth.
- ✓ Do not irrigate.
- ✓ Carefully monitor use of herbicides.
- ✓ Do not mow during hot, dry conditions.

#### **CUSTOM NATIVE SEED MIXES**

Native wildflowers and grasses provide larval food, nesting sites, pollen, and nectar for our native pollinators. Many of our native bee populations are declining. Each of these seed mixes was created with native pollinators in mind.

#### **UPLAND MIX**

- All soil types
- Area is dry majority of growing season

\$154-\$204/ac.

#### **MESIC MIX**

- All soil types
- Area is periodically moist during growing season \$220-\$360/ac.

#### **WETLAND MIX**

- All soil types
- Area is saturated to 6 inches of standing water for the majority of the growing season \$345-\$685/ac.

#### **ALKALINE MIX**

- Soils with a presence of white mineral deposits on surface or in proximity
- Area dry to saturated for the majority of the growing season \$200-\$270/ac.

#### **DETENTION BASIN MIX**

- All soil types (blend of Upland and Mesic)
- Low height requires less mowing \$145-\$225/ac.

Prices may vary due to availability.



## How to Establish Native Seeds

Choose a pre-formulated native seed mix (see previous page) based on your site conditions.

Measure the square footage and calculate how much seed you need to purchase. Select a native seed company and let them know which of these native seed mixes you require. They may be able to assist with calculating how much seed you need.

It's important for seeds to have good contact with the soil. Eliminate weeds or other vegetation that might impede soil contact. The soil should be firm. Compacted soil doesn't allow the seed to be placed into the soil; fluffy soil may allow the seed to be planted too deep. There is no need to fertilize. Native plants have evolved with our

low-nutrient soils. Fertilizer will benefit non-native weeds more than native plants.

4 SEEDING

Plant seed on dry, bare ground from late October through early May. Seeds may be planted using a rangeland seed drill or by hand-broadcasting. If using a seed drill, it is best to plant perpendicular on slopes. This will aid in erosion control. Make sure the top inch of soil is not frozen. Plant seed between ½ - ½ inch deep. Native plants need sunlight to germinate, so planting deeper may inhibit growth. If using the broadcast method, lightly rake the area, evenly spread the seed, and lightly rake the seed in. You want to ensure good seed-to-soil contact, so be careful not to bury the seed or cluster it into uneven patterns.

5 IVIAIN I ENANCE

Depending on your site requirements, you may need mulch, hydromulch, or an erosion control mat. Most sites will benefit when protected by placement of one of these.

There is no need to irrigate. Native plants have evolved with our precipitation events. Irrigation will benefit non-native weeds more than native plants and will set back the establishment period of native seeds.

Weed control, especially noxious weeds, is important during establishment. Hand pull or spot spray weeds with an herbicide. This helps to limit the amount of herbicide put into the environment and allows the native wildflowers to establish.

Mowing can be beneficial to the establishment of your native seed. Make sure not to mow when conditions are dry and hot. Try not to mow more than once or twice a growing season; any more may stress plants that are trying to establish. It will benefit your project if you allow the plants to flower and seed prior to mowing.

#### **Seed Companies**

Arkansas Valley (Denver) www.avseeds.com/
1-877-907-3337

Granite Seed (Denver) www.graniteseed.com/ 1-888-577-5650

Pawnee Buttes Seed (Greeley) www.pawneebuttesseed.com/ 1-800-782-5947

Western Native Seed (Salida) www.westernnativeseed.com/ (719) 942-3935

Sharp Bros. Seed (Greeley) www.sharpseed.com/(970) 356-4710

#### **Seed Installation**

Custom Services of Colorado markbuckley5619@gmail.com (303) 775-0505

Native Seeders
kate@nativeseederscomp

kate@nativeseederscompany.com (970) 686-5121, c (970)217-9390

Habitat Management Inc. habitatmanagementinc.com/ (303) 770-9788

Larimer County Contractor list larimer.org/weeds/commapplicators.htm

For more information:

Native Plant Revegetation Guide for Colorado:

https://cpw.state.co.us/Documents/CNAP/RevegetationGuide.pdf



# **Native Seed Mixes**

	UPLAND MIX					
	Common Name	Scientific Name	lbs/PLS/Acre			
	Plains coreopsis	Coreopsis tinctoria	0.17			
Wil	Purple prairie clover	Dalea purpurea	0.81			
dflo	Indian blanketflower	Gaillardia aristata	1.85			
Wildflowers	Rocky. Mtn. penstemon	Penstemon strictus	0.35			
3	Mexican hat	Ratibida columnifera	0.2			
	Indian ricegrass	Achnatherum hymenoides	1.13			
	Sideoats grama	Bouteloua curtipendula	1.15			
	Buffalograss	Bouteloua dactyloides	3.27			
	Blue grama	Bouteloua gracilis	0.25			
Grasses	Bottlebrush squirreltail	Elymus elymoides	0.95			
sses	Prairie Junegrass	Koeleria macrantha	0.08			
	Green needlegrass	Nassella viridula	1.01			
	Switchgrass	Panicum virgatum	0.71			
	Western wheat	Pascopyrum smithii	1.61			
	Sand dropseed	Sporobolus cryptandrus	0.04			
		13.58 lbs/PLS/Acre				
	ACCEPTABLE SUBSTITUTES FOR WILDFLOWERS					
	Fringed sage (Artemisia frigida) 0.03 lbs/PLS/Acre					
Sı	Blue flax ( <i>Linum lewisii</i> ) 0.41 lbs/P.	LS/Acre				
ubst	Prairie aster (Machaeranthera tana	cetifolia) 0.25 lbs/PLS/Acre				
Substitutes	ACCEPTABLE SUBSTITUTES FOR GRASSES					
es	Canada wildrye (Elymus canadensis) 1.59 lbs/PLS/Acre					
	Inland saltgrass (Distichlis stricta) 0.35 lbs/PLS/Acre					
	Mountain muhly (Muhlenbergia montana) 0.11 lbs/PLS/Acre					
Requirements	*Contractor is responsible for locating and purchasing all species listed in mix. If a species can't be located, contractor must replace each missing species with the acceptable substitutions (listed above). Contractor is responsible for providing seed tags to appropriate City staff, if required for project. This mix is based on 70 seeds/ square foot and is only calculated for one acre. This mix is based on the contractor using a drill seed application. Mix should be doubled if hand broadcasted. Contractor is responsible for calculating the appropriate seed amounts to purchase. Please note that the pounds per acre are in PLS (Pure Live Seed) and must be ordered that way. All materials furnished shall be free of Colorado State noxious weeds as defined in Article III, Section 21-40 of the Code of the City of Fort Collins.					

Cu

# **APPENDIX E**

## FINAL DEVELOPMENT PLAN Lot 2, Blehm Subdivision 2nd Filing

Being a Replat of Lot 5, Blehm Subdivision

Situate in the Southwest Quarter of Section 5, Township 6 North, Range 68 West of the 6th P.M.

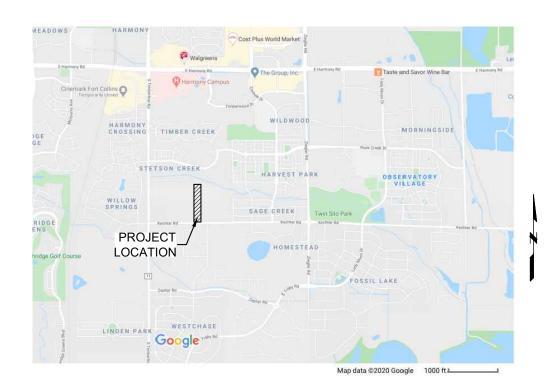
City of Fort Collins, County of Larimer, State of Colorado

**JUNE 2021** 

- 1. REFER TO FINAL UTILITY PLANS FOR EXACT LOCATIONS AND CONSTRUCTION INFORMATION FOR STORM DRAINAGE STRUCTURES, UTILITY MAINS AND SERVICES, PROPOSED TOPOGRAPHY, STREET IMPROVEMENTS
- 2. REFER TO THE SUBDIVISION PLAT AND UTILITY PLANS FOR EXACT LOCATIONS. AREAS AND DIMENSIONS OF ALL EASEMENTS, LOTS, TRACTS, STREETS, WALKS AND OTHER SURVEY INFORMATION.
- THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FINAL PLANS, AMENDMENTS TO THE PLANS MUST BE REVIEWED AND APPROVED BY THE CITY PRIOR TO THE IMPLEMENTATION OF ANY CHANGES TO THE
- 4. ALL ROOFTOP AND GROUND MOUNTED MECHANICAL EQUIPMENT MUST BE SCREENED FROM VIEW FROM ADJACENT PROPERTY AND PUBLIC STREETS. IN CASES WHERE BUILDING PARAPETS DO NOT ACCOMPLISH SUFFICIENT SCREENING, THEN EREE-STANDING SCREEN WALLS MATCHING THE PREDOMINANT COLOR OF THE BUILDING SHALL BE CONSTRUCTED. OTHER MINOR EQUIPMENT SUCH AS CONDUIT, METERS AND PLUMBING VENTS SHALL BE SCREENED OR PAINTED TO MATCH SURROUNDING BUILDING SURFACES.
- 5. ALL CONSTRUCTION WITH THIS DEVELOPMENT PLAN MUST BE COMPLETED IN ONE PHASE UNLESS A PHASING
- 6. ALL SINGLE FAMILY DETACHED HOMES SHALL MEET OR EXCEED THE GARAGE DOOR STANDARDS AS OUTLINED
- 7. ALL EXTERIOR LIGHTING PROVIDED SHALL COMPLY WITH THE FOOT-CANDLE REQUIREMENTS IN SECTION 3.2.4 OF THE LAND USE CODE AND SHALL USE A CONCEALED, FULLY SHIELDED LIGHT SOURCE WITH SHARP CUT-OFF CAPABILITY SO AS TO MINIMIZE UP-LIGHT, SPILL LIGHT, GLARE AND UNNECESSARY DIFFUSION.
- SEPARATE CITY PERMIT PRIOR TO CONSTRUCTION. SIGNS MUST COMPLY WITH CITY SIGN CODE UNLESS A SPECIFIC VARIANCE IS GRANTED BY THE CITY.
- 9. FIRE HYDRANTS MUST MEET OR EXCEED POUDRE FIRE AUTHORITY STANDARDS. ALL BUILDINGS MUST PROVIDE
- 10.DESIGN AND INSTALLATION OF ALL PARKWAY/TREE LAWN AND MEDIAN AREAS IN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH CITY STANDARDS. UNLESS OTHERWISE ACREED TO BY THE CITY WITH THE FINAL PLANS, ALL ONGOING MAINTENANCE OF SUCH AREAS IS THE RESPONSIBILITY OF THE
- 11 ALL SIDEWALKS AND RAMPS MUST CONFORM TO CITY STANDARDS. ACCESSIBLE RAMPS MUST BE I JALE 3 IDEMVALES AND FAMILY STREET AND DRIVE INTERSECTIONS AND AT ALL DESIGNATED ACCESSIBLE PARKING SPACES.

  ACCESSIBLE PARKING SPACES MUST SLOPE NO MORE THAN 1:48 IN ANY DIRECTION. ALL ACCESSIBLE ROUTES

  MUST SLOPE NO MORE THAN 1:20 IN DIRECTION OF TRAVEL AND WITH NO MORE THAN 1:48 CROSS SLOPE.
- 12.COMMON OPEN SPACE AREAS AND LANDSCAPING WITHIN RIGHT OF WAYS, STREET MEDIANS, AND TRAFFIC CIRCLES ADJACENT TO COMMON OPEN SPACE AREAS ARE REQUIRED TO BE MAINTAINED BY THE PROPERTY OWNER OF THE COMMON AREA. THE PROPERTY OWNER IS RESPONSIBLE FOR SNOW REMOVAL ON ALL ADJACENT STREET SIDEWALKS AND SIDEWALKS IN COMMON OPEN SPACE AREAS
- 13.DESIGN AND INSTALLATION OF ALL PARKWAY/TREE LAWN AND MEDIAN AREAS IN THE RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH CITY STANDARDS. UNLESS OTHERWISE AGREED TO BY THE CITY WITH THE FINAL PLANS, ALL ONGOING MAINTENANCE OF SUCH AREAS IS THE RESPONSIBILITY OF THE
- 14.THE PROPERTY OWNER FOR EACH RESIDENTIAL LOT IS RESPONSIBLE FOR SNOW REMOVAL ON ALL
- 15.PRIVATE CONDITIONS, COVENANTS, AND RESTRICTIONS (CC&R'S), OR ANY OTHER PRIVATE RESTRICTIVE COVENANT IMPOSED ON LANDOWNERS WITHIN THE DEVELOPMENT, MAY NOT BE CREATED OR ENFORCED HAVING THE EFFECT OF PROHIBITING OR LIMITING THE INSTALLATION OF XERISCAPE LANDSCAPING, SOLAR/PHOTO-VOLTAIC COLLECTORS (IF MOUNTED FLUSH UPON ANY ESTABLISHED ROOF LINE), CLOTHES LINES (IF LOCATED IN BACK YARDS), ODOR-CONTROLLED COMPOST BINS, OR WHICH HAVE THE EFFECT OF REQUIRING THAT A PORTION OF ANY INDIVIDUAL LOT BE PLANTED IN TURF GRASS.
- 16 ANY DAMAGED CURB, GUTTER AND SIDEWALK EXISTING PRIOR TO CONSTRUCTION, AS WELL AS STREETS, SIDEWALKS, CURBS AND GUTTERS, DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED OR RESTORED TO CITY OF FORT COLLINS STANDARDS AT THE DEVELOPER'S EXPENSE PRIOR TO THE ACCEPTANCE OF COMPLETED IMPROVEMENTS AND/OR PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY
- 17 FIRE LANE MARKING: A FIRE LANE MARKING PLAN MUST BE REVIEWED AND APPROVED BY THE FIRE OFFICIAL PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. WHERE REQUIRED BY THE FIRE CODE OFFICIAL, APPROVED SIGNS OR OTHER APPROVED NOTICES THAT INCLUDE THE WORDS NO PARKING FIRE LANE SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF, THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AD BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.



#### OWNER:

CHRIS HILL 4112 LAKEFRONT DRIVE LOVELAND, COLORADO 80537 (970) 227-3112 CHILL004@YAHOO.COM

#### CIVIL ENGINEER:

KEEFE CIVIL, INC. MEGAN KEEFE, P.E. 3125 CROCKETT STREET FORT COLLINS, COLORADO 80526 MEG@KEEFECIVIL.COM

MAJESTIC SURVEYING STEVEN PARKS, PLS 1111 DIAMOND VALLEY DRIVE #104 WINDSOR, CO 80550 (970) 443-0882 STEVENP@MAJESTICSURVEYING.COM

#### GEOTECHNICAL ENGINEER EARTH ENGINEERING COMPANY, INC.

MICHAEL J. COLEY, P.E. FORT COLLINS, COLORADO 80527 MIKEC@EARTHENGINEERINGCOMPANY.COM

#### ARCHITECT:

KENNEY LEE ARCHITECTURE GROUP 209 EAST 4TH STREET LOVELAND, COLORADO 80537 KML@KENNEYLEEARCH.COM

PROPOSED LAND USES		
SINGLE-FAMILY DETACHED DWELLINGS	1 TOTAL	
ACCESSORY BUILDINGS	1 TOTAL	
FARM ANIMALS		
URBAN AGRICULTURE		

Sheet Title	Sheet Number
COVER SHEET	1
SITE AND LANDSCAPE PLAN	2
GENERAL NOTES	3

#### LAND USE TABLE

ZONE DISTRICT: URBAN ESTATE (U-E) EXISTING SINGLE-FAMILY RESIDENCE STORIES: 0 NEW SINGLE-FAMILY RESIDENCE STORIES: 2 ALLOWABLE DENSITY: 2 UNITS / GROSS ACRE PROPOSED DENSITY: 0.25 UNITS / GROSS ACRE

#### GROSS LOT SIZE: 4 011 ACRES

NEW RESIDENTIAL BUILDING FOOTPRINT TO BE ADDED: 0.954 ACRES NEW STORAGE AND ACCESSORY BUILDING(S) TO BE ADDED: 0.100 ACRES
NET BUILDING COVERAGE: 1.054 ACRES

FIRE LANE AREAS: 0.435 ACRES LANDSCAPING AND OPEN AREAS: 2.423 ACRES
TOTAL: 4.011 ACRES

#### PARKING SUMMARY

REQUIRED: 1 / SINGLE-FAMILY DETACHED DWELLING PROVIDED: 3

APPROVED BY TH					
NEIGHBORHOOD	SERVICES OF	- THE CITY OF	FORT COLLINS	COLORADO	
ON THIS	DAY OF	, 20 .			
irector Signature					

#### **OWNER'S CERTIFICATE**

THE UNDERSIGNED DOES/I/O HEREBY CERTIFY THAT I/WE ARE THE LAW! PROPERTY DESCRIBED ON THIS SITE PLAN AND DO HEREBY CERTIFY THAT CONDITIONS AND RESTRICTIONS SET FORTH ON SAID SITE PLAN.	
OWNER (SIGNED)	Date
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME	
THIS DAY OF A.D., 20 BY	
(PRINT NAME)	
AS	
MY COMMISSION EXPIRES:	
WITNESS MY HAND AND OFFICIAL SEAL.	
NOTARY PUBLIC ADDRESS	

S N E CIVIL, INCOCKETT STREET STLINS, CO 80526 5-6808 KEEFE

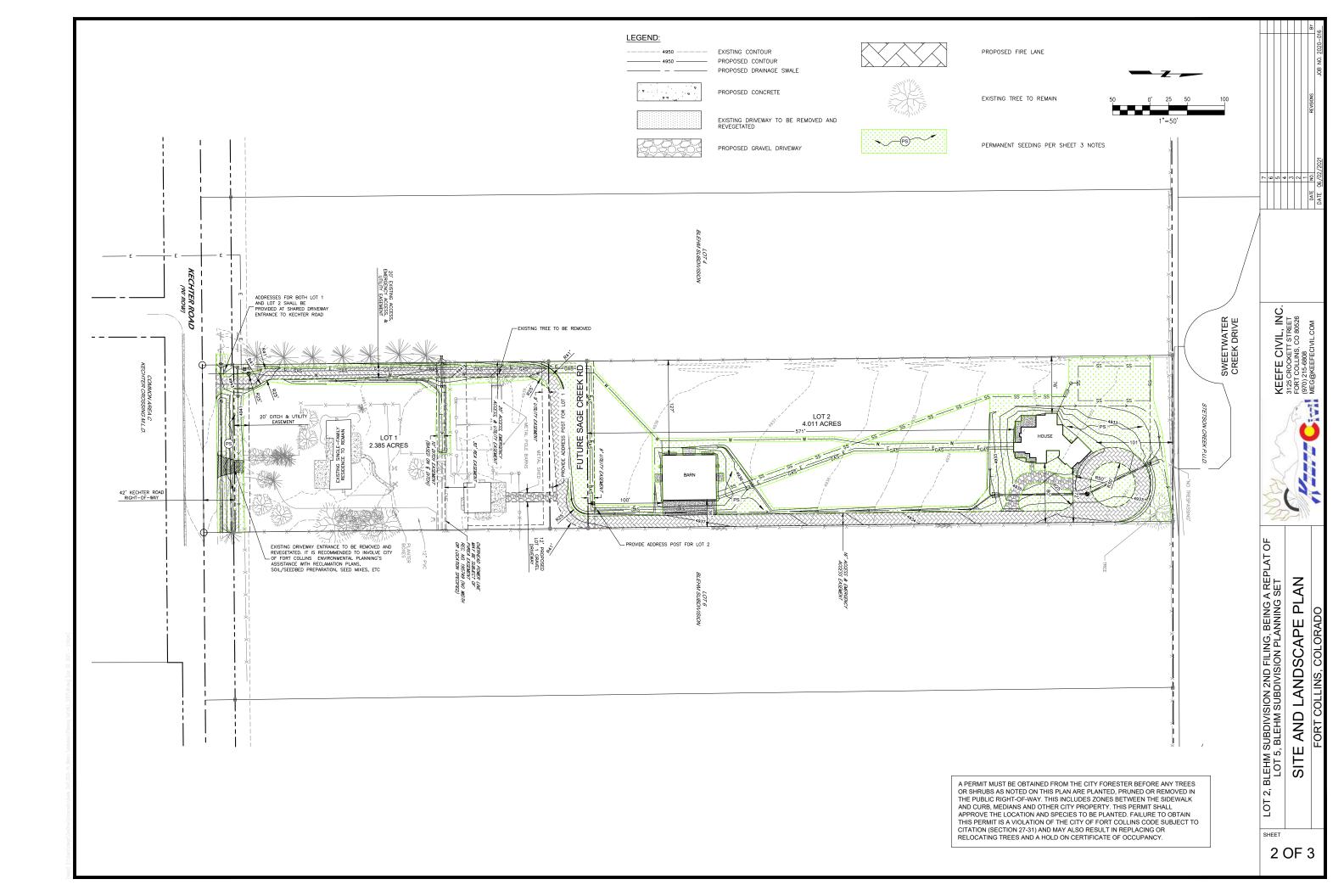
SUBDIVISION 2ND FILING, BEING A REPLAT , BLEHM SUBDIVISION PLANNING SET

SHEET COVER

BLEHM S LOT 5,

ď, LOT

1 OF 3



Tree Inventory and Mitigation Lot - 2400 Kechter Rd							
ı	Species	DBH	Condition	Mitigation Value	Status	Notes	Reason for Removal
i	Honeylocust	10"	Fair	2			
	Honeylocust	11"	Fair	2			
	Crabapple	25"	Fair	2.5			
	Cherry	10*	Dead	0			
	Crabapple	11"	Fair	1.5			
	Cherry	12"	Fair	1.5			
	Crabapple	6"	Fair	1			
	Cherry	10"	Fair	1.5			
	Redbud	14"	Fair	2			
0	Cherry	8"	Fair	1.5			
ı	Redbud	18"	Fair plus	2.5			
2	Ash	13"	Fair plus	2		6	
3	Bur oak	17"	Fair plus	2.5			
	Spruce	13"	Fair plus	2			
5	White poplar	58"	Fair minus	3			
5	Juniper	12"	Fair	2			
7	Honeylocust	18"	Fair minus	1.5			
8	Honeylocust	18"	Fair minus	1.5			
,	Mugo pine		Fair plus	3		~30 stems	
,	Plum	10"	Fair minus	1.5			
1	Plum	11"	Fair	2			
2	Plum	9"	Fair minus	1.5		measured below 4.5'	
3	Mugo pine		Fair	2		6 stems	

#### NATIVE SEED MIX NOTES

- 1. NATIVE SEED MIX PER UPLAND MIX SHOWN HEREII
- 2. PREPARE SOIL AS NECESSARY AND APPROPRIATE FOR NATIVE SEED MIX SPECIES THROUGH AERATION AND ADDITION OF AMENDMENTS, THEN SEED IN TWO DIRECTIONS TO DISTRIBUTE SEED EVENLY OVER ENTIRE AREA. DRILL SEED ALL INDICATED AREAS AS SOON AS POSSIBLE AFTER COMPLETION OF GRADING
- 3. IF CHANGES ARE TO BE MADE TO SEED MIX BASED ON SITE CONDITIONS THEN APPROVAL MUST BE PROVIDED BY CITY ENVIRONMENTAL PLANNER.
- 4. APPROPRIATE NATIVE SEEDING EQUIPMENT WILL BE USED (STANDARD TURF SEEDING EQUIPMENT OR AGRICULTURE EQUIPMENT SHALL NOT BE USED).
- DRILL SEED APPLICATION RECOMMENDED PER SPECIFIED APPLICATION RATE TO NO MORE THAN 5/ INCH DEPTH (OR APPROPRIATE DEPTH FOR SELECTED SPECIES). FOR BROADCAST SEEDING INSTEAD OF DRILL SEEDING METHOD DOUBLE SPECIFIED APPLICATION RATE. REFER TO NATIVE SEED MIX TABLE FOR SPECIES, PERCENTAGES AND APPLICATION RATES.
- 6. PREPARE A WEED MANAGEMENT PLAN TO ENSURE THAT WEEDS ARE PROPERLY MANAGED BEFORE, DURING AND AFTER SEEDING ACTIVITIES.
- 7. AFTER SEEDING THE AREA SHALL BE COVERED WITH CRIMPED STRAW, JUTE MESH, OR OTHER APPROPRIATE METHODS.
- 8. WHERE NEEDED, TEMPORARY IRRIGATION SHOULD BE PROVIDED UNTIL SEED IS ESTABLISHED. IF IRRIGATION IS USED. THE IRRIGATION SYSTEM FOR SEEDED ESTABLISHED. IF INFIGATION IS USED, THE INTROATION BY SEMPTOR SEEDED
  AREAS SHALL BE FULLY OPERATIONAL AT THE TIME OF SEEDING AND SHALL
  ENSURE 100% HEAD-TO-HEAD COVERAGE OVER ALL SEEDED AREAS, ALL METHODS
  AND REQUIREMENTS IN THE APPROVED IRRIGATION PLAN SHALL BE FOLLOWED.
- CONTRACTOR SHALL MONITOR SEEDED AREA FOR PROPER IRRIGATION, EROSION CONTROL, GERMINATION AND RESEEDING AS NEEDED TO ESTABLISH COVER.
- 10.THE APPROVED SEED MIX AREA IS INTENDED TO BE MAINTAINED IN A NATURAL LIKE LANDSCAPE AESTHETIC. IF AND WHEN MOWING OCCURS IN NATIVE GRASS SEED MIX AREAS DO NOT MOW LOWER THAN 6 TO 8 INCHES IN HEIGHT TO AVOID INHIBITING NATIVE PLANT GROWTH.
- 11.NATIVE SEED AREA WILL BE CONSIDERED ESTABLISHED WHEN SEVENTY PERCENT VEGETATIVE COVER IS REACHED WITH NO LARGER THAN ONE FOOT SQUARE BARE SPOTS AND/OR UNTIL DEEMED ESTABLISHED BY CITY PLANNING SERVICES AND EROSION CONTROL.
- 12.THE DEVELOPER AND/OR LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ADEQUATE SEEDLING COVERAGE AND GROWTH AT THE TIME OF FINAL STABILIZATION, AS DEFINED BY STATE AND LOCAL AGENCIES. IF FINAL STABILIZATION IS NOT ACHIEVED TO THE SATISFACTION OF THE AGENCY, THE DEVELOPER AND/OR LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL CORRECTIVE MEASURES TO SATISFY FINAL VEGETATIVE REQUIREMENTS FOR CLOSEOUT.

		UPLAND MIX				
	Common Name	Scientific Name	lbs/PLS/Acre			
Wildflowers	Plains coreopsis	Coreopsis tinctoria	0.17			
	Purple prairie clover	Dalea purpurea	0.81			
Hov	Indian blanketflower	Gaillardia aristata	1.85			
vers	Rocky. Mtn. penstemon	Penstemon strictus	0.35			
	Mexican hat	Ratibida columnifera	0.2			
	Indian ricegrass	Achnatherum hymenoides	1.13			
	Sideoats grama	Bouteloua curtipendula	1.15			
	Buffalograss	Bouteloua dactyloides	3.27			
	Blue grama	Bouteloua gracilis	0.25			
Grasses	Bottlebrush squirreltail	Elymus elymoides	0.95			
SSes	Prairie Junegrass	Koeleria macrantha	0.08			
	Green needlegrass	Nassella viridula	1.01			
	Switchgrass	Panicum virgatum	0.71			
	Western wheat	Poscopyrum smithii	1.61			
	Sand dropseed	Sporobolus cryptandrus	0.04			
		Total for Upland Mix	13.58 lbs/PLS/Acr			
	ACCEPTABLE SUBSTITUTES FOR WILDFLOWERS					
	Fringed sage (Artemisio frigida) 0.03	lbs/PLS/Acre				
50	Blue flax (Linnut lewisii) 0.41 lbs/PLS/Acre					
Substitutes	Prairie aster (Machaeranthera tanace	etifolia) 0.25 lbs/PLS/Acre				
itti	ACCEPTABLE SUBSTITUTES FOR GRASSES					
20	Canada wildrye (Elymus canadensis) 1.59 lbs/PLS/Acre					
	Inland saltgrass (Distichlis stricta) 0.35 lbs/PLS/Acre					
	Mountain muhly (Muhlenbergia montana) 0.11 lbs/PLS/Acre					
Requirements	*Contractor is responsible for locating and purchasing all species listed in mix. If a species can't be located, contractor must replace each missing species with the acceptable substitutions (listed above). Contractor is responsible for providing seed tags to appropriate City staff. If required for project. This mix is based on 10 seeds/square foot and is only calculated for one acre. This mix is based on the contractor using a drill seed application. Mix should be doubled if hand broadcasted. Contractor is responsible for calculating the appropriate seed amounts to purchase. Please note that the pounds per acre are in PLS (Pure Live Seed) and must be ordered that way. All materials furnished shall be free of Colorado Sate noxious weeds as defined in Article III. Section 21-40 of the Code of the City of Fort Colletion.					

#### STREET TREE NOTES:

- 1. A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-31) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE
- 2. CONTACT THE CITY FORESTER TO INSPECT ALL STREET TREE PLANTINGS AT THE COMPLETION OF EACH PHASE OF THE DEVELOPMENT. ALL MUST BE INSTALLED AS SHOWN ON THE LANDSCAPE PLAN. APPROVAL OF STREET TREE PLANTING IS REQUIRED BEFORE FINAL APPROVAL OF EACH PHASE.
- 3. STREET LANDSCAPING, INCLUDING STREET TREES, SHALL BE SELECTED IN ACCORDANCE WITH ALL CITY CODES AND POLICIES. ALL TREE PRUNING AND REMOVAL WORKS SHALL BE PERFORMED BY A CITY OF FORT COLLINS LICENSED ARBORS WHERE REQUIRED BY CODE.STREET TREES SHALL BE SUPPLIED AND PLANTED BY THE DEVELOPER USING A QUALIFIED LANDSCAPE CONTRACTOR.
- 4. THE DEVELOPER SHALL REPLACE DEAD OR DYING STREET TREES AFTER PLANTING UNTIL FINAL MAINTENANCE INSPECTION AND ACCEPTANCE BY THE CITY OF FORT COLLINS FORESTRY DIVISION. ALL STREET TREES IN THE PROJECT MUST BE ESTABLISHED. WITH AN APPROVED SPECIES AND OF ACCEPTABLE CONDITION PRIOR TO ACCEPTANCE.
- 5 SUBJECT TO APPROVAL BY THE CITY FORESTER -- STREET TREE LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE DRIVEWAY LOCATIONS LITHLITY SEPARATIONS BETWEEN TREES STREET SIGNS AND STREET LIGHTS, STREET TREES TO BE CENTERED IN THE MIDDLE OF THE LOT TO THE EXTENT FEASIBLE. QUANTITIES SHOWN ON PLAN MUST BE INSTALLED UNLESS A REDUCTION IS APPROVED BY THE CITY TO MEET SEPARATION STANDARDS.

#### TREE PROTECTION NOTES:

- 1. ALL EXISTING TREES WITHIN THE LIMITS OF THE DEVELOPMENT AND WITHIN ANY NATURAL AREA BUFFER ZONES SHALL REMAIN AND BE PROTECTED UNLESS NOTED ON THESE PLANS FOR
- 2. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER A FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND
- 3. ALL PROTECTED EXISTING TREES SHALL BE PRUNED TO THE CITY OF FORT COLLINS FORESTRY STANDARDS. TREE PRUNING AND REMOVAL SHALL BE PERFORMED BY A BUSINESS THAT HOLDS A CURRENT CITY OF FORT COLLINS ARBORIST LICENSE WHERE REQUIRED BY CODE.
- 4. PRIOR TO AND DURING CONSTRUCTION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED EXISTING TREES WITH SUCH BARRIERS TO BE OF ORANGE FENCING A MINIMUM OF FOUR (4) FEET IN HEIGHT, SECURED WITH METAL T- POSTS, NO CLOSER THAN SIX (6) FEET FROM THE TRUNK OR ONE-HALF (½) OF THE DRIP LINE, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE.
- 5. DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE APPLICANT SHALL PREVENT THE CLEANING OF EQUIPMENT OR MATERIAL OR THE STORAGE AND DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OILS, SOLVENTS, ASPHALT, CONCRETE, MOTOR OIL OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY PROTECTED TREE OR GROUP OF TREES.
- AGING ATTACHMENT, WIRES, SIGNS OR PERMITS MAY BE FASTENED TO ANY PROTECTED TREE
- 7. LARGE PROPERTY AREAS CONTAINING PROTECTED TREES AND SEPARATED FROM CONSTRUCTION OR LAND CLEARING AREAS, ROAD RIGHTS-OF-WAY AND UTILITY EASEMENTS MAY BE "RIBBONED OFF," RATHER THAN ERECTING PROTECTIVE FENCING AROUND EACH TREE AS REQUIRED IN SUBSECTION (G)(3) ABOVE. THIS MAY BE ACCOMPLISHED BY PLACING METAL T-POST STAKES A MAXIMUM OF FIFTY (50) FEET APART AND TYING RIBBON OR ROPE FROM STAKE- TO-STAKE ALONG THE OUTSIDE PERIMETERS OF SUCH AREAS BEING CLEARED.
- 8. THE INSTALLATION OF UTILITIES, IRRIGATION LINES OR ANY UNDERGROUND FIXTURE REQUIRING EXCAVATION DEEPER THAN SIX (6) INCHES SHALL BE ACCOMPLISHED BY BORING UNDER THE ROOT SYSTEM OF PROTECTED EXISTING TREES AT A MINIMUM DEPTH OF TWENTY-FOUR (24) INCHES. THE AUGER DISTANCE IS ESTABLISHED FROM THE FACE OF THE TREE (OUTER BARK) AND IS SCALED FROM TREE DIAMETER AT BREAST HEIGHT AS DESCRIBED IN THE CHART BELOW:

Tree Diameter at Breast Height (inches)#	Auger-Distance-From-Face of Tree-(feet)o
0-2=	10
3.4u	211
5-9n	50
10-14=	10a
15-19¤	120
Over-19s	15u

9. ALL TREE REMOVAL SHOWN SHALL BE COMPLETED OUTSIDE OF THE SONGBIRD NESTING SEASON (FEB 1 - JULY 31) OR CONDUCT A SURVEY OF TREES ENSURING NO ACTIVE NESTS IN THE AREA.

#### GENERAL LANDSCAPE NOTES

- 1. PLANT QUALITY: ALL PLANT MATERIAL SHALL BE A-GRADE OR NO. 1 GRADE FREE OF ANY DEFECTS, OF NORMAL HEALTH, HEIGHT, LEAF DENSITY AND SPREAD APPROPRIATE TO THE SPECIES AS DEFINED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. ALL TREES SHALL BE BALL AND BURLAP OR EQUIVALENT.
- 2. IRRIGATION: ALL LANDSCAPE AREAS WITHIN THE SITE INCLUDING TURF, SHRUB BEDS AND TREE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM. THE IRRIGATION PLAN MUST BE REVIEWED AND APPROVED BY THE CITY OF FORT COLLINS WATER UTILITIES DEPARTMENT PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. ALL TURF AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC POP-UP IRRIGATION SYSTEM. ALL SHRUB BEDS AND TREES, INCLUDING IN NATIVE SEED AREAS, SHALL BE IRRIGATED WITH AN AUTOMATIC DRIP (TRICKLE) IRRIGATION SYSTEM, OR WITH AN ACCEPTABLE ALTERNATIVE APPROVED BY THE CITY WITH THE IRRIGATION PLANS. THE IRRIGATION SYSTEM SHALL BE ADJUSTED TO MEET THE WATER REQUIREMENTS OF THE INDIVIDUAL PLANT MATERIAL, IRRIGATION SYSTEMS TO BE TURNED OVER TO THE CITY PARKS DEPARTMENT FOR MAINTENANCE MUST BE APPROVED BY THE PARKS MANAGER AND MEET PARKS IRRIGATION STANDARDS. DESIGN REVIEW SHALL OCCUR DURING UTILITIES DEPARTMENT IRRIGATION REVIEW PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND CONSTRUCTION OBSERVATION AND INSPECTION BY PARKS SHALL BE INCORPORATED INTO THE CONSTRUCTION PROCESS.
- 3. TOPSOIL: TO THE MAXIMUM EXTENT FEASIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE CONSERVED FOR LATER USE ON AREAS REQUIRING REVEGETATION AND
- 4. SOIL AMENDMENTS: SOIL AMENDMENTS SHALL BE PROVIDED AND DOCUMENTED IN ACCORDANCE WITH CITY CODE SECTION 12-132. THE SOIL IN ALL LANDSCAPE AREAS, INCLUDING PARKWAYS AND MEDIANS, SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF NOT LESS THAN EIGHT(8) INCHES SO AND SOIL AMENDMENT SHALL BE THOROUGHLY INCORPORATED INTO THE SOIL OF ALL LANDSCAPE AREAS TO A DEPTH OF AT LEAST SIX(6) INCHES BY TILLING, DISCING OR OTHER SUITABLE METHOD, AT A RATE OF AT LEAST THREE (3) CUBIC YARDS OF SOIL AMENDMENT PER ONE THOUSAND (1,000) SQUARE FEET OF LANDSCAPE AREA. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, A WRITTEN CERTIFICATION MUST BE SUBMITTED TO THE CITY THAT ALL PLANTED AREAS, OR AREAS TO BE PLANTED, HAVE BEEN THOROUGHLY LOOSENED AND THE SOIL AMENDED, CONSISTENT WITH THE REQUIREMENTS SET FORTH IN SECTION 12-132.
- 5. INSTALLATION AND GUARANTEE: ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND HORTICULTURAL PRACTICES IN A MANNER DESIGNED TO ENCOURAGE QUICK ESTABLISHMENT AND HEALTHY GROWTH. ALL LANDSCAPING FOR EACH PHASE MUST BE EITHER INSTALLED OR THE INSTALLED OR THE INSTALLATION MUST BE SECURED WITH AN IRREVOCABLE LETTER OF CREDIT, PERFORMANCE BOND, OR ESCROW ACCOUNT FOR 125% OF THE VALUATION OF THE MATERIALS AND LABOR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING IN SUCH PHASE.
- 6. MAINTENANCE: TREES AND VEGETATION, IRRIGATION SYSTEMS, FENCES, WALLS AND OTHER LANDSCAPE ELEMENTS WITH THESE FINAL PLANS SHALL BE CONSIDERED AS ELEMENTS OF THE PROJECT IN THE SAME MANNER AS PARKING, BUILDING MATERIALS AND OTHER SITE DETAILS. THE APPLICANT, LANDOWNER OR SUCCESSORS IN INTEREST SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE REGULAR MAINTENANCE OF ALL LANDSCAPING ELEMENTS IN GOOD CONDITION. ALL LANDSCAPING SHALL BE MAINTAINED FREE FROM DISEASE, PESTS, WEEDS AND LITTER, AND ALL LANDSCAPE STRUCTURES SUCH AS FENCES AND WALLS SHALL BE REPAIRED AND REPLACED PERIODICALLY TO MAINTAIN A STRUCTURALLY SOUND CONDITION.
- 7. REPLACEMENT: ANY LANDSCAPE ELEMENT THAT DIES, OR IS OTHERWISE REMOVED, SHALL BE PROMPTLY REPLACED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS
- 8. THE FOLLOWING SEPARATIONS SHALL BE PROVIDED BETWEEN TREES/SHRUBS AND UTILITIES

40 FEET BETWEEN CANOPY TREES AND STREET LIGHTS

15 FEET BETWEEN ORNAMENTAL TREES AND STREETLIGHTS

10 FEET BETWEEN TREES AND PUBLIC WATER, SANITARY AND STORM SEWER MAIN LINES 6 FEET BETWEEN TREES AND PUBLIC WATER, SANITARY AND STORM SEWER SERVICE LINES

4 FEET BETWEEN SHRUBS AND PUBLIC WATER AND SANITARY AND STORM SEWER LINES

4 FEET BETWEEN TREES AND GAS LINES

- 9. ALL STREET TREES SHALL BE PLACED A MINIMUM EIGHT (8) FEET AWAY FROM THE EDGES OF DRIVEWAYS AND ALLEYS PER LUC 3.2.1(D)(2)(A
- 10.PLACEMENT OF ALL LANDSCAPING SHALL BE IN ACCORDANCE WITH THE SIGHT DISTANCE CRITERIA AS SPECIFIED BY THE CITY OF FORT COLLINS. NO STRUCTURES OR LANDSCAPE ELEMENTS GREATER THAN 24" SHALL BE ALLOWED WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENTS WITH THE EXCEPTION OF DECIDUOUS TREES PROVIDED THAT THE LOWEST BRANCH IS AT LEAST 6' FROM GRADE. ANY FENCES WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENT MUST BE NOT MORE THAN 42" IN HEIGHT AND OF AN OPEN DESIGN
- 11.THE FINAL LANDSCAPE PLAN SHALL BE COORDINATED WITH ALL OTHER FINAL PLAN ELEMENTS SO THAT THE PROPOSED GRADING, STORM DRAINAGE, AND OTHER DEVELOPMENT IMPROVEMENTS DO NOT CONFLICT WITH NOR PRECLUDE INSTALLATION AND MAINTENANCE OF LANDSCAPE ELEMENTS ON THIS PLAN.
- 12 MINOR CHANGES IN SPECIES AND PLANT LOCATIONS MAY BE MADE DURING CONSTRUCTION -- AS REQUIRED BY SITE CONDITIONS OR PLANT AVAILABILITY, OVERALL QUANTITY, QUALITY, AND DESIGN CONCEPT MUST BE CONSISTENT WITH THE APPROVED PLANS. IN THE EVENT OF CONFLICT WITH THE QUANTITIES INCLUDED IN THE PLANT LIST, SPECIES AND QUANTITIES ILLUSTRATED SHALL BE PROVIDED. ALL CHANGES OF PLANT SPECIES AND LOCATION MUST HAVE WRITTEN APPROVAL BY THE CITY PRIOR TO INSTALLATION.
- 13.ALL PLANTING BEDS SHALL BE MULCHED TO A MINIMUM DEPTH OF THREE INCHES



EFE CIVIL, INC. CROCKETT STREET T COLLINS, CO 80526 215-8808 EEFE



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# **APPENDIX F**

## Erosion and Sediment Control Escrow/Security Calculation for The City of Fort Collins

Project: Hill Single Family - FDP210005 Disturbed Acres: 2.61

BMP Amount								
EDOCION CONTROL DMDs	Estimated	l luita	Unit Price	Total Price				
EROSION CONTROL BMPs	Quantity	Units						
Silt Fence (SF)	575	LF	\$2.00	\$1,150.00				
Concrete Washout Area (CWA)	1	EA	\$500.00	\$500.00				
Vehicle Tracking Control (VTC)	1	EA	\$500.00	\$500.00				
Rock Socks (RS)	7	LF	\$150.00	\$1,050.00				
Erosion Log Inlet & Outlet Protection (BMP1)	3	EA	\$75.00	\$225.00				
,	-		Sub-Total:	\$3,425.00				
			1.5 x Sub-Total:	\$5,137.50				
		Δr	nount of security:	\$5,137.50				
		7.1	nount of occurry.	ψ0,101.00				
Reseeding Amount								
	Total Acres x Price/acre:			\$1,879.20				
Unit Price of Seeding per acre:	\$720.00		Sub-Total:	\$1,879.20				
5 m	*		1.5 x Sub-Total:	\$2,818.80				
		Δn	nount to Re-seed:	\$2,818.80				
		All	nount to NC-3cca.	Ψ2,010.00				
Miniumum Escrow Amount								
		Minimun	n escrow amount:	\$1,500.00				
Final Escrow Amount								
		Erosio	n Control Escrow:	\$5,137.50				

<sup>&</sup>quot;The amount of the security must be based on one and one-half times the estimate of the cost to install the approved measures, or one and one-half times the cost to re-vegetate the disturbed land to dry land grasses based upon unit cost determined by the City's Annual Revegetation and Stabilization Bid, whichever is greater. In no instance, will the amount of security be less than one thousand five hundred dollars (\$1,500) for residential development or three thousand dollars (\$3,000) for commercial development"



KEEFE CIVIL, INC 3125 Crockett Street Fort Collins, Colorado 80526 (970) 215-6808 meg@keefecivil.com

June 2, 2021 Keefe Civil Project Number: 2020-016

Water Utilities Engineering City of Fort Collins 700 Wood Street Fort Collins, Colorado 80522

**RE:** Hill Single-Family Drainage Memo

FDP210005

#### To Whom it May Concern:

The purpose of this letter is to describe the proposed improvements and potential drainage impacts associated with the Hill Single-Family FDP210005 project (Appendix A). The 4.011-acre project site is located 0.3 mile east of South Timberline Road, on the north side of Kechter road. The lot is undeveloped pastureland and is bound by a Stetson Creek PUD Second Filing concrete drainage channel and single-family residential lots to the north, and urban estate residential properties to the south, west, and east.

The site is located within the McClellands drainage basin. The McClellands Basin Master Drainage Plan assumed 35% imperviousness.

Per the NRCS Soil Survey of Larimer County (Appendix B), the site consists of ~57% Fort Collins loam and ~43% Nunn clay loam, which has a hydrologic soil group C classification. These soils are anticipated to have a slow infiltration rate when thoroughly wet and a slow rate of water transmission.

Per the flood insurance rate map, the lot is located within Zone X. Zone X is defined as an area of minimal flood hazard and does not have a base flood elevation associated with it. Also, the site is outside of all City of Fort Collins mapped floodplains. (Appendix C)

Historically, site stormwater (historic basin A) has drained with gentle slopes from the southwest to northeast into offsite flood irrigation channels on the upstream edge of Blehm Subdivision Lot 6 to the east and conveyed north to the Stetson Creek PUD Second Filing concrete drainage channel, which discharges into McClellands drainageway. Historic and developed drainage basins are shown in Appendix D. An excerpt from the Stetson Creek PUD Second Filing Drainage Report (Northern Engineering 1996) is included in Appendix E.

The proposed site improvements include a two-story house with a basement, attached garage, a gravel driveway with access off Kechter Road, and a detached barn. There will be minimal concrete surrounding the house and barn. The homeowner intends to revegetate with native plant material and turf. The gravel driveway and turnaround shall be made of compacted road base material meeting Poudre Fire Authority standards.

The lot's total adjusted impervious area will increase by 15,152 square feet (sf), as indicated in calculations shown below. The total proposed impervious area is 11% for this project.

Hardscape or Hard Surface	Historic Site Area (sf)	Adjusted Historic Area (sf)	Developed Site Area (sf)	Adjusted Developed Area (sf)
Concrete	845	845	2,090	2,090
Rooftop (90%)	2,380	2,142	10,210	9,189
Gravel Driveway (40%)	0	0	17,150	6,860
Total Impervious Area	3,225	3,225	29,450	18,139
Adjusted Site Imperviousness	15,152			

Keefe Civil Project No.: 2020-016

June 2, 2021

The composite runoff coefficient and drainage basin runoff calculations for the historic and developed site are included in the enclosed tables (Appendix F). Using the Fort Collins Stormwater Criteria Manual (2018), the proposed stormwater runoff will increase slightly towards McClellands drainageway, but the site improvements will remain below the 35% imperviousness used in the McClellands Basin Master Drainage Plan.

	2-year	10-year	100-year
Basin A Historic Runoff	1.77 cfs	3.02 cfs	7.95 cfs
Basin B Historic Runoff	1.75 cfs	2.97 cfs	5.08 cfs
Basin A Developed Runoff	1.59 cfs	2.71 cfs	7.20 cfs
Basin B Developed Runoff	1.33 cfs	2.27 cfs	7.73 cfs
Basin C Developed Runoff	0.37 cfs	0.63 cfs	1.68 cfs

In my professional opinion, the additional runoff generated by this development will not cause adverse impacts to downstream private properties. Therefore, Keefe Civil respectfully requests no detention and water quality requirements be imposed on this development.

Based on the enclosed design, it is my professional opinion the additional runoff generated by these site improvements will not cause adverse impacts to downstream private properties. I hereby attest that this letter for the final drainage design for the Hill Single-Family FDP210005 project was prepared by me or under my direct supervision, in accordance with the provisions of the Fort Collins Stormwater Criteria Manual. I understand that the City of Fort Collins does not and will not assume liability for drainage facilities designed by others.

Thank you for the opportunity to submit this drainage memo. Please do not hesitate to reach out to me if you have any questions or comments regarding the above items.

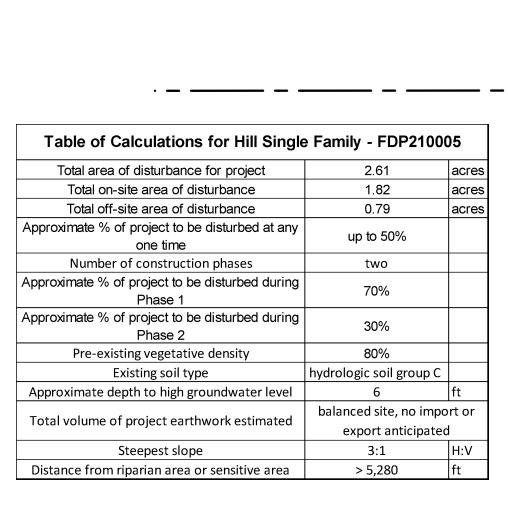
Best regards,

Megan L. Keefe, PE / Manager Keefe Civil, Inc.

Enclosures

Cc: Chris Hill, Property Owner

# **APPENDIX A**



				Utilities	Flat work	Vertical			
	Mobilization	Demolition	Grading	Installation	Installation	Installation	Landscape	Demobilization	(Construction Phase
Best Management Practices (BMPs)									
Structural "Installation"									]
Silt Fence Barriers*									]
Contour Furrows (Ripping / Disking)									]
Sediment Trap / Filter									]
Vehicle Tracking Pad*									]
Flow Barriers (Wattles)*									]
Inlet Filter Bags*	Any prior inlets	that could use p	rotecting						]
Rock Bags*	Any prior inlets	that could use p	rotecting						]
Rip Rap									
Collecting Asphalt / Concrete Saw Cutting Waste									]
*All BMPs to be Removed once Construction is Complete.									]
									1
Vegetative									
Temporary Seeding Planting		Any time the	site will sit dorm	nent longer than	30 Days.				
Mulching/Sealant		Any time the	site will sit dorm	nent longer than	30 Days.				
Permanent Seeding Planting									
Sod Installation									
Rolled Products : Netting/Blankets/Mats		Any time the	site will sit dorm	nent longer than	30 Days.				
Other:									1

# PROTECT IN PLACE RESIDENCE TO BASED ON & DITCH EX UTILITIES REMAIN 9' UTILITY EASEMENT LOT 2 EASEMENT 4.011 ACRES -PLACE EXISTING LOT 1 2.385 ACRES EXISTING ACCESS DRIVEWAY AND CULVERT TO BE REMOVED 20' DITCH & UTILITY EASEMENT (4938.1)— EXISTING FLOOD IRRIGATION CHANNEL REC. NO. 159928

PROTECT IN PLACE EXISTING ELECTRIC

## **GRADING AND UTILITY NOTES:**

- 1. TOP OF FOUNDATION MUST BE AT LEAST 6" ABOVE THE HIGHEST GRADE SURROUNDING ALL BUILDINGS.
- 2. THERE MUST BE A MINIMUM GRADE OF 5% AWAY FROM THE BUILDINGS WITHIN THE FIRST 5 TO 10 FEET ADJACENT TO THE RESIDENCE.
- 3. ALL SLOPES MUST MEET THE MINIMUM REQUIREMENT OF 2% AND ARE NOT TO BE STEEPER THAN 33% (3:1). 4. THIS DRAWING IS AT MODIFIED STATE PLANE. TO REDUCE TO STATE PLANE COORDINATES, SCALE X,Y ONLY AT 0.99973537
- (1.00026470) ABOUT THE ORIGIN 0,0.
- 5. ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED DURING CONSTRUCTION MUST BE REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.
- 6. ALL CONTROL SHOWN SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION OR OTHER IMPROVEMENTS. 7. THE MINIMUM COVER OVER WATER LINES IS 4.5 FT AND THE MAXIMUM COVER IS 5.5 FT UNLESS OTHERWISE NOTED IN THE
- PLANS AND APPROVED BY THE WATER UTILITY.
- 8. MINIMUM SEPARATION BETWEEN PROPOSED WATER SERVICE AND ALL OTHER DRY UTILITY LINES IS 10 FT.

## PROJECT BENCHMARK

PROJECT DATUM: NAVD88

BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. ELEVATION: 4956.98 FEET

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

IF NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) IS REQUIRED FOR ANY PURPOSE, THE FOLLOWING EQUATION SHOULD BE USED: NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) = NAVD88 - 3.19'.

- 1. THIS DRAWING IS AT MODIFIED STATE PLANE. TO REDUCE TO STATE PLANE COORDINATES, SCALE AT 0.99973332 (1.00026675) ABOUT THE ORIGIN 0,0.
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- 6. ANY LOT LINES, RIGHTS OF WAY OR EASEMENTS SHOWN ARE APPROXIMATE AND ARE NOT TO BE RELIED UPON FOR FUTURE IMPROVEMENTS.

## LEGEND:

PROPOSED SHARED ACCESS

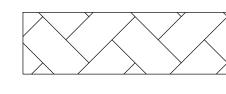
LCUASS DWG 901.

PER DETAIL SHEET 6

(4940.95)

DRIVEWAY FOR LOTS 1 AND 2 PER

TWO PROPOSED 15" CULVERTS



PROPOSED COMPACTED ROAD BASE

4940.5

**(**4941.3)

(2%)

**EXISTING** 

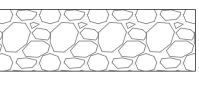
SINGLE-FAMIL

EX FLOWLINE

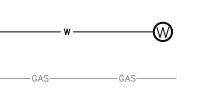
AND ROW



PROPOSED GRAVEL DRIVEWAY



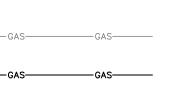
EXISTING WATER SERVICE



PROPOSED 3" WATER SERVICE

PROPOSED UG ELECTRICAL SERVICE

EXISTING UG GAS SERVICE



PROPOSED UG GAS SERVICE EXISTING UG ELECTRICAL SERVICE



EXISTING TREE TO REMAIN



EXISTING OVERHEAD ELECTRIC LINE

CHAIN LINK FENCE FIBER OPTIC LOCATE EXISTING FLOW LINE EXISTING PIPE EDGE OF ASPHALT

TELEPHONE LOCATE

# △ GAS METER

▼ TELEPHONE PEDESTAL

FO FIBER OPTIC VAULT ☐ MAILBOX

Ø POWER POLE 

VB VALVE BOX IRRIGATION VALVE

○ SANITARY MANHOLE WATER SHUTOFF VALVE

∀ FIRE HYDRANT 

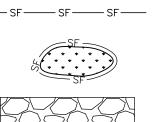
D AIR VALVE WATER METER S STEEL POST

₩ WOOD POST DECIDUOUS TREE

CONIFEROUS TREE SHRUB TREE STUMP

 → FENCE GATE SIGN CONTROL POINT

# **BMP CONTROLS:**



SILT FENCE STOCKPILE MANAGEMENT WITH PROTECTION

\*\*CAUTION: OVERHEAD POWER LINES\*\* PROTECT IN PLACE EXISTING POWER POLE

(4939.2)

EXISTING TREE TO BE REMOVED

EXISTING FLOOD IRRIGATION CHANNEL —

UTILITY

EASEMENT

51' PROPOSED ROW

FUTURE SAGE CREEK ROA

4937.7

1/012/4/2/1-13

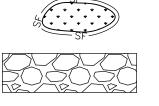
PROPOSED 15" CULVERT

PER DETAIL SHEET 6

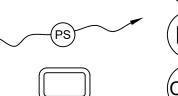
<del>---(</del>4939.9)

4938.4 X X

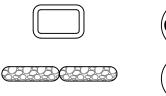
10' DITCH EASEMENT



VEHICLE TRACKING CONTROL



PERMANENT SEEDING PER LANDSCAPE PLANS



CONCRETE WASHOUT AREA

OVERLAPPING ROCK SOCK



EROSION LOG PER STD. PLAN NO. M-208-1, SHEET NO. 6 OF 11 ON DETAIL SHEET 11 OF THESE CONSTRUCTION DRAWINGS

## **ABBREVIATION LEGEND:**

BEST MANAGEMENT PRACTICES EG EXISTING GROUND **EXISTING** 

FORT COLLINS-LOVELAND WATER DISTRICT FINISHED GRADE FLOWLINE FIBER OPTIC

FINISHED SURFACE (CONCRETE) GRADE BREAK HIGH POINT INV

OHE OVERHEAD ELECTRIC PFA POUDRE FIRE AUTHORITY **PVREA** POUDRE VALLEY RURAL ELECTRIC ASSOCIATION

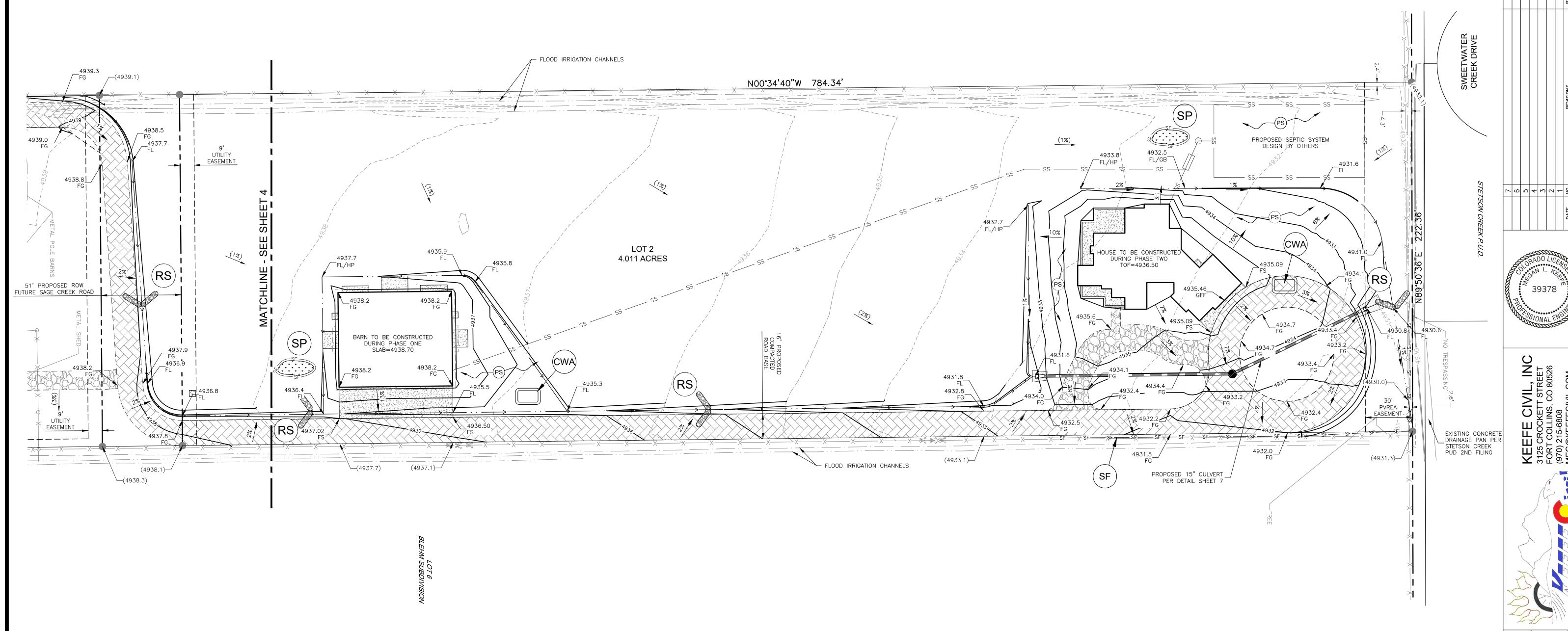
ROW RIGHT-OF-WAY UNDERGROUND



0

0

RADIN



## GRADING AND UTILITY NOTES:

- 1. TOP OF FOUNDATION MUST BE AT LEAST 6" ABOVE THE HIGHEST GRADE SURROUNDING ALL BUILDINGS.
- 2. THERE MUST BE A MINIMUM GRADE OF 5% AWAY FROM THE BUILDINGS WITHIN THE FIRST 5 TO 10 FEET ADJACENT TO THE
- 3. ALL SLOPES MUST MEET THE MINIMUM REQUIREMENT OF 2% AND ARE NOT TO BE STEEPER THAN 33% (3:1). 4. THIS DRAWING IS AT MODIFIED STATE PLANE. TO REDUCE TO STATE PLANE COORDINATES, SCALE X,Y ONLY AT 0.99973537
- (1.00026470) ABOUT THE ORIGIN 0,0. 5. ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED DURING CONSTRUCTION MUST BE
- REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.
- 6. ALL CONTROL SHOWN SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ANY CONSTRUCTION OR OTHER IMPROVEMENTS. 7. THE MINIMUM COVER OVER WATER LINES IS 4.5 FT AND THE MAXIMUM COVER IS 5.5 FT UNLESS OTHERWISE NOTED IN THE
- PLANS AND APPROVED BY THE WATER UTILITY. 8. MINIMUM SEPARATION BETWEEN PROPOSED WATER SERVICE AND ALL OTHER DRY UTILITY LINES IS 10 FT.

## PROJECT BENCHMARK

## PROJECT DATUM: NAVD88

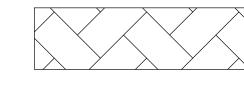
BENCHMARK #16-01, SOUTH SIDE OF WILLOW SPRINGS WAY APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF WILLOW SPRINGS WAY AND TIMBERLINE ROAD ON THE SOUTHWEST CORNER OF A STORM INLET. ELEVATION: 4956.98 FEET

PLEASE NOTE: THIS PLAN SET IS USING NAVD88 FOR A VERTICAL DATUM. SURROUNDING DEVELOPMENTS HAVE USED NGVD29 UNADJUSTED DATUM (PRIOR CITY OF FORT COLLINS DATUM) FOR THEIR VERTICAL DATUMS.

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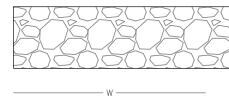
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## LEGEND:

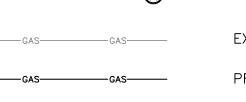


PROPOSED COMPACTED ROAD BASE

PROPOSED GRAVEL DRIVEWAY



EXISTING WATER SERVICE



EXISTING UG GAS SERVICE PROPOSED UG GAS SERVICE EXISTING UG ELECTRICAL SERVICE

PROPOSED UG ELECTRICAL SERVICE



CHAIN LINK FENCE EXISTING FLOW LINE EXISTING PIPE EDGE OF ASPHALT

☐ MAILBOX Ø POWER POLE PROPOSED 3" WATER SERVICE

■ ELECTRIC METER

EXISTING TREE TO REMAIN

EXISTING OVERHEAD ELECTRIC LINE FIBER OPTIC LOCATE

TELEPHONE LOCATE

△ GAS METER

▼ TELEPHONE PEDESTAL

FO FIBER OPTIC VAULT

VB VALVE BOX № IRRIGATION VALVE

SANITARY MANHOLE

WATER SHUTOFF VALVE TIRE HYDRANT

D AIR VALVE S STEEL POST

> DECIDUOUS TREE CONIFEROUS TREE SHRUB TREE STUMP

₩ WOOD POST

SIGN 

→ FENCE GATE

# **ABBREVIATION LEGEND:**

EXISTING GROUND EXISTING FORT COLLINS-LOVELAND WATER DISTRICT FINISHED GRADE

FLOWLINE FIBER OPTIC

RIGHT-OF-WAY

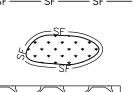
UNDERGROUND

FINISHED SURFACE (CONCRETE) GRADE BREAK HIGH POINT

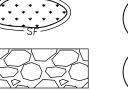
INVERT INV OHE OVERHEAD ELECTRIC POUDRE FIRE AUTHORITY POUDRE VALLEY RURAL ELECTRIC ASSOCIATION PVREA

# **BMP CONTROLS:**

ROW

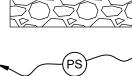


SILT FENCE



STOCKPILE MANAGEMENT WITH PROTECTION

PERMANENT SEEDING PER LANDSCAPE PLANS



VEHICLE TRACKING CONTROL



CONCRETE WASHOUT AREA



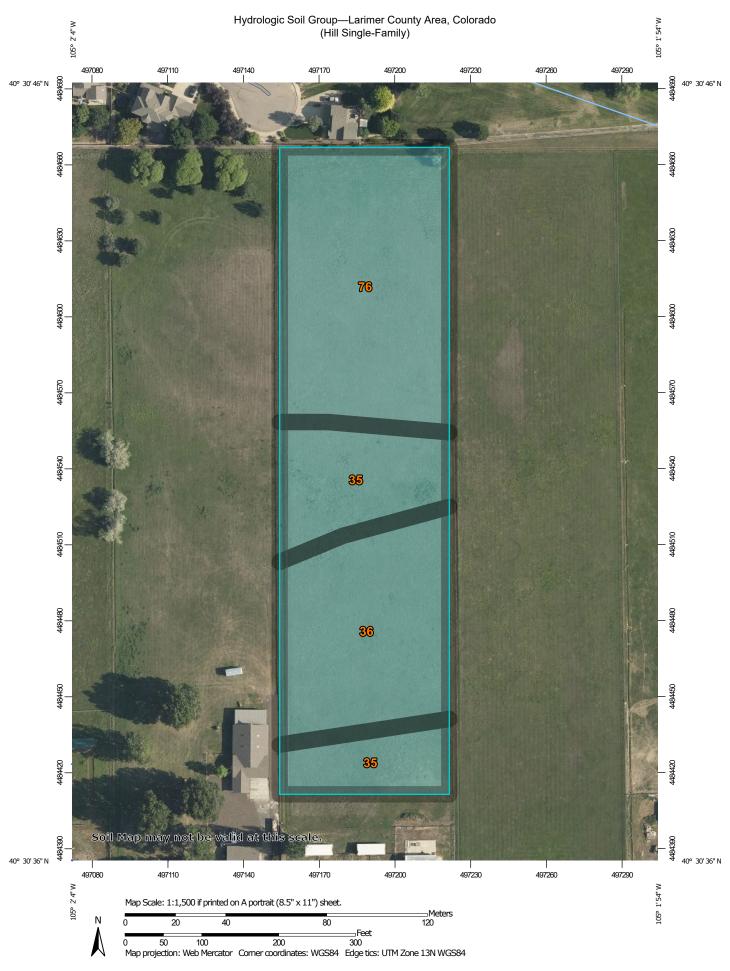
OVERLAPPING ROCK SOCK



0 0 RADIN

4

# **APPENDIX B**



#### MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) С 1:24.000. Area of Interest (AOI) C/D Soils Warning: Soil Map may not be valid at this scale. D Soil Rating Polygons Enlargement of maps beyond the scale of mapping can cause Not rated or not available Α misunderstanding of the detail of mapping and accuracy of soil **Water Features** line placement. The maps do not show the small areas of A/D Streams and Canals contrasting soils that could have been shown at a more detailed Transportation B/D Rails ---Please rely on the bar scale on each map sheet for map measurements. Interstate Highways C/D Source of Map: Natural Resources Conservation Service **US Routes** Web Soil Survey URL: D Major Roads Coordinate System: Web Mercator (EPSG:3857) Not rated or not available -Local Roads Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts Soil Rating Lines Background distance and area. A projection that preserves area, such as the Aerial Photography 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: Larimer County Area, Colorado Survey Area Data: Version 15, Jun 9, 2020 Soil map units are labeled (as space allows) for map scales 1:50.000 or larger. Not rated or not available Date(s) aerial images were photographed: Aug 11, 2018—Aug 12. 2018 **Soil Rating Points** The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background A/D imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. B/D

#### **Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
35	Fort Collins loam, 0 to 3 percent slopes	С	1.1	26.0%
36	Fort Collins loam, 3 to 5 percent slopes	С	1.3	31.0%
76	Nunn clay loam, wet, 1 to 3 percent slopes	С	1.8	43.0%
Totals for Area of Intere	est	4.3	100.0%	

#### **Description**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

#### **Rating Options**

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

# APPENDIX C

# National Flood Hazard Layer FIRMette



1:6,000 Feet TEN R68W S5 TEN R68W

# Legend

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

Regulatory Floodway

With BFE or Depth Zone AE, AO, AH, VE, AR Without Base Flood Elevation (BFE)

SPECIAL FLOOD HAZARD AREAS

0.2% Annual Chance Flood Hazard, Areas depth less than one foot or with drainage areas of less than one square mile zone x of 1% annual chance flood with average

OTHER AREAS OF FLOOD HAZARD

Area with Flood Risk due to Levee Zone D Area with Reduced Flood Risk due to Chance Flood Hazard Zone X Levee. See Notes. Zone X

Future Conditions 1% Annual

NO SCREEN Area of Minimal Flood Hazard Zone X **Effective LOMRs** 

Area of Undetermined Flood Hazard Zone D

OTHER AREAS

Channel, Culvert, or Storm Sewer

STRUCTURES 1111111 Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation (B) 20.2

Base Flood Elevation Line (BFE) Coastal Transect Limit of Study mm 513 mm

**Jurisdiction Boundary** 

Coastal Transect Baseline

Hydrographic Feature

OTHER FEATURES

No Digital Data Available Digital Data Available

Unmapped

MAP PANELS

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

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

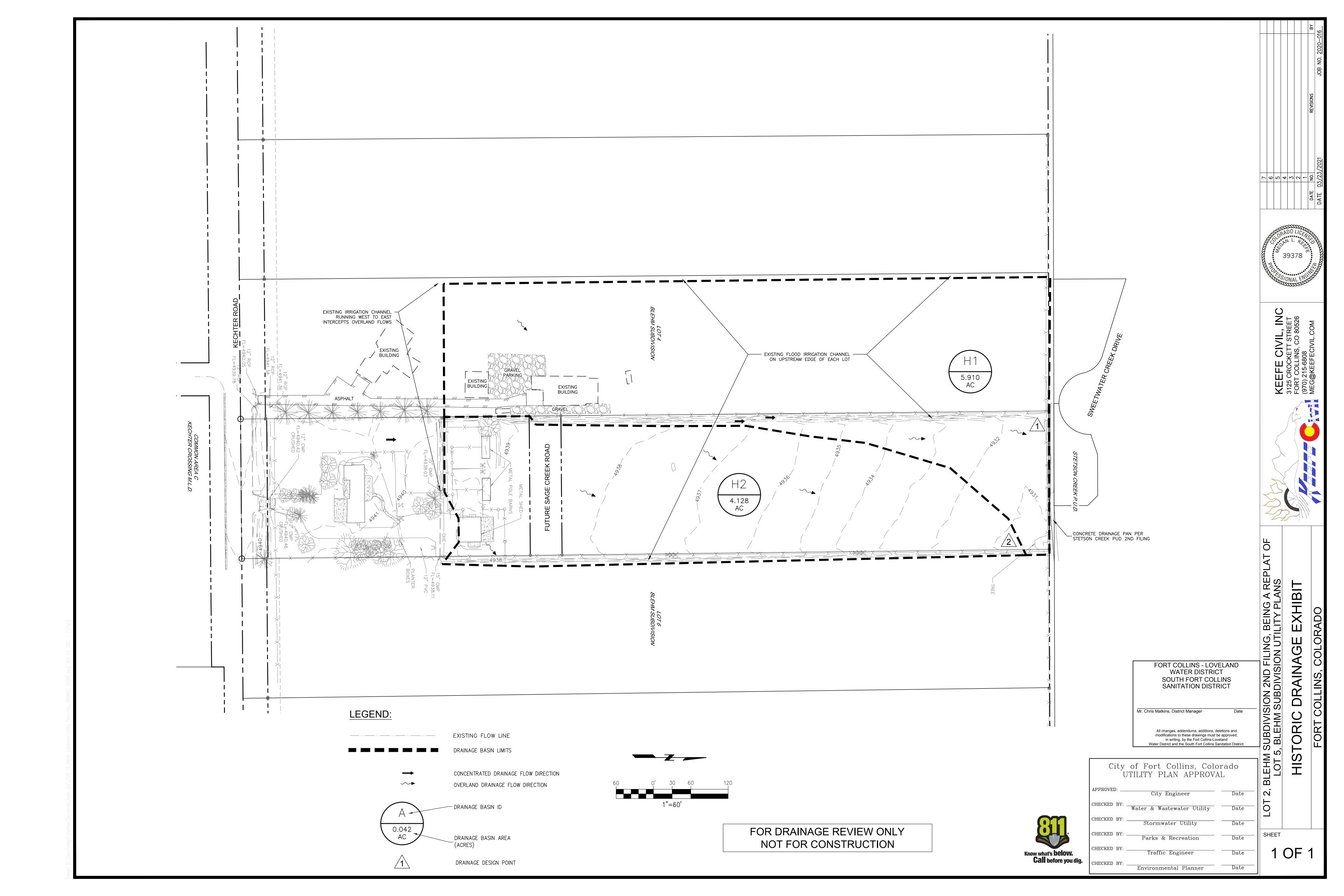
authoritative NFHL web services provided by FEMA. This map reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or The flood hazard information is derived directly from the was exported on 3/22/2021 at 4:11 PM and does not become superseded by new data over time. This map image is void if the one or more of the following map 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. elements do not appear: basemap imagery, flood zone labels,

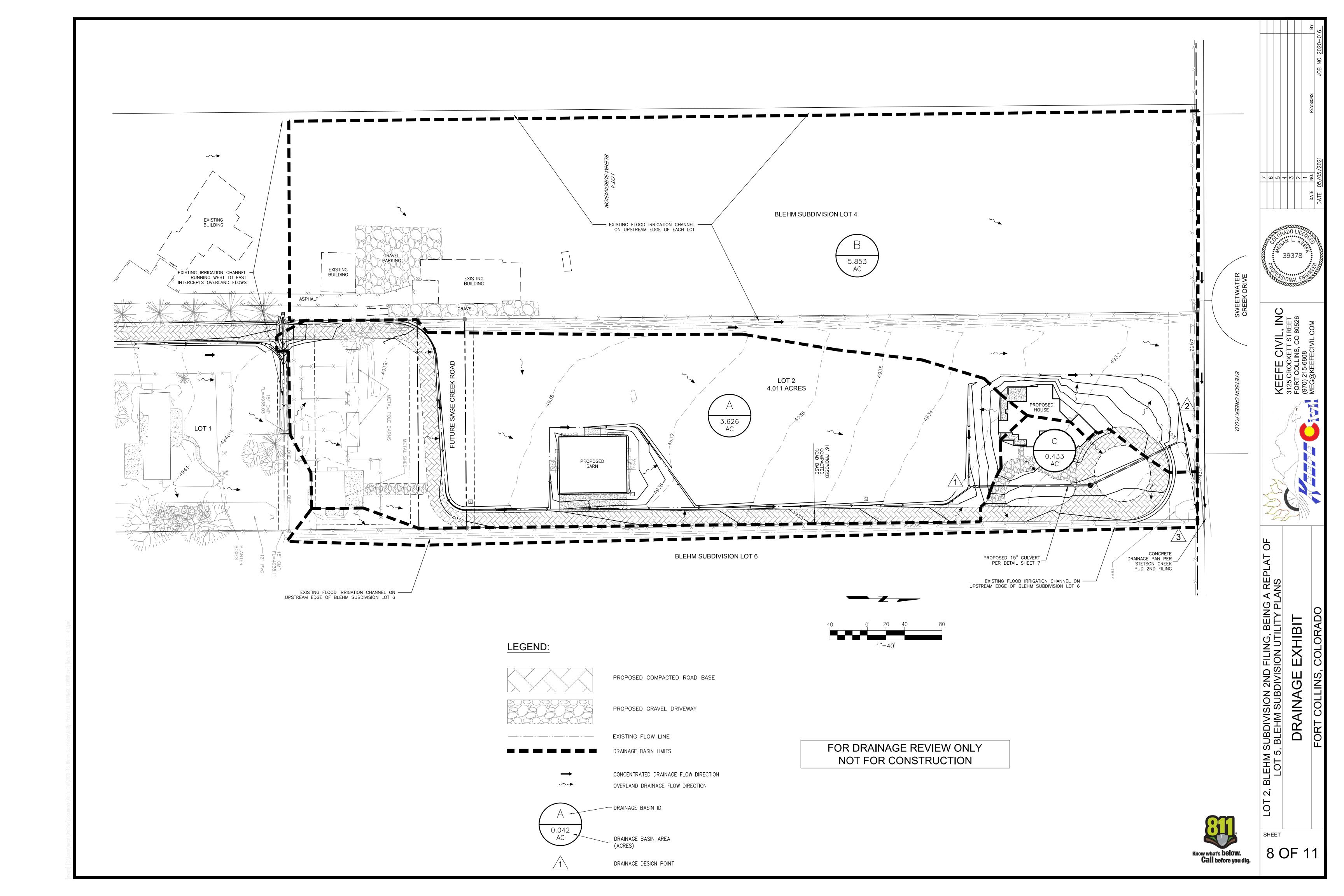
> 2,000 Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020 1,500 1,000

500

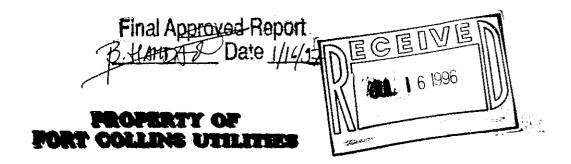
250

# APPENDIX D





# **APPENDIX E**



#### Final Drainage Report

for Stetson Creek P.U.D. Second Filing Fort Collins, Colorado

July 9, 1996





July 9, 1996

City of Fort Collins Stormwater Utility 235 Mathews Fort Collins, Colorado 80522

RE: Stetson Creek P.U.D. Second Filing

Fort Collins, Colorado Project Number: 9517.00

Dear Staff:

Northern Engineering is pleased to re-submit this Final Drainage Report for the Stetson Creek P.U.D. Second Filing for your review. We have addressed the comments contained on the Project Comment Sheet dated June 5, 1996.

This report was prepared in compliance with technical criteria set forth in the, City of Fort Collins, Storm Drainage Design Criteria and Construction Standards manual.

If you should have any questions or comments as you review this report, please feel free to contact me at your convenience.

Sincerely,

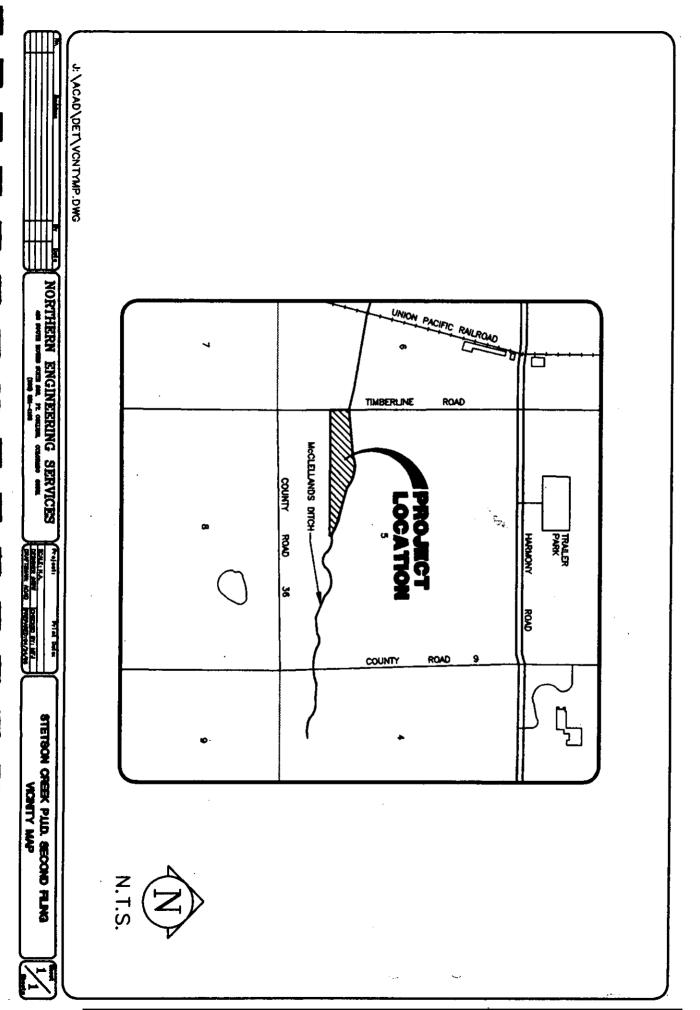
NORTHERN ENGINEERING SERVICES, INC.

Mary B. Wohnrad



# PROJECT COMMENT SHEET

COMMENT SHEET  City of Fort Collins
Current Planning
DATE: 6-5-96 DEPT: Stormwater
PROJECT: STETSON CREEK 2ND FILING
PLANNER: Ted Shepard All comments must be received by:  No Problems
Problems or Concerns (see below or attached)
A written response for each of the following comments must be submitted, with the redlined plans and report, at time of project resubmittal. The responses must note any revisions or clarifications completed in result of these comments. If responses are not submitted with the resubmittal, the project will be returned to the applicant without further review. This procedure will help the review process become more efficient and effective. Thank you.
1. There is roughly 3 acres of the proposed development that is draining undetained into the McClellands channel. The McClellands master plan requires that all new developments detain at .5 cfs/acre. Developed areas can release undetained, if the net release from the entire development is shown to be no greater than .5 cfs/acre for the 100-year event. Please show that the net release from the site will not exceed .5 cfs/acre.  MET MET MOTOR OF THE STATE OF
Date: 6-6-96  CHECK IF YOU WISH TO RECEIVE  COPIES OF REVISIONS  DIANDSCAPE  LANDSCAPE  Ceneva Corporation  Common



Final Drainage Report for Stetson Creek P.U.D. Second Filing

#### I. GENERAL LOCATION SITE DESCRIPTION

#### General Location

This report summarizes the results of a storm drainage investigation for the proposed Stetson Creek P.U.D. Second Filing site. The project is located in the SW Quarter of Section 5, Township 6 North, Range 68 West of the 6th Principal Meridian in Fort Collins, Colorado. The project is adjacent to Timberline Road on the west, and is located approximately 0.70 miles south of Harmony Road. (See Vicinity Map).

#### Site Description

The 10.64 acre site which was once agricultural is currently overlot graded and vegetated with temporary cover crops. The surrounding land use patterns are residential (Stetson Creek P.U.D. First and Third Filings and Willow Springs P.U.D.) to the north and west respectively, residential to the south and undeveloped to the east. The site is bounded on the north and east by the McClellands Basin Drainageway which has been recently improved as part of Stetson Creek P.U.D First Filing. An irrigation return ditch currently runs west to east along the south propertyline conveying runoff from flood irrigation on properties south of Stetson Creek P.U.D. Second Filing. At the time of this report, construction was complete on Stetson Creek P.U.D. First Filing and Timber Creek P.U.D and, improvements to Timberline Road had been completed.

#### II. HISTORIC DRAINAGE

#### Major Basin Description

The project is located in the McClellands/Mail Creek Drainage Basin. The SWMM modeling for this basin was most recently revised by RBD, Inc.. The RBD model has been revised, as part of this stormwater investigation, to reflect changes proposed as part of the Stetson Creek Second Filing development.

#### **Historic Drainage Patterns**

The historic drainage pattern of the site is generally overland from west to east at slopes ranging from approximately 0.4% to 0.8%. The only off-site runoff is from residential properties to the south which enters Stetson Creek P.U.D. Second Filing along the south propertyline. Runoff from Stetson Creek P.U.D. First Filing to the north, will be intercepted by the McClellands Basin Drainageway. Runoff from Timberline Road will be conveyed in curb and gutter to existing curb inlets in the east flowline of Timberline and then to the McClellands Drainageway.

There is an existing irrigation (tailwater) ditch that runs from west to east, along the south propertyline of the project, to the McClellands Drainageway. This ditch is used to convey runoff from flood irrigation on properties south of the site. The ditch companies have estimated the runoff from flood irrigation to be a total of approximately 3.0 cfs from all property tributary to the ditch. This tailwater ditch will be improved as part of the Second Filing and will be maintained by the future Stetson Creek Second Filing Homeowners Association. Water conveyed in this ditch will be routed undetained to the McClellands Drainageway.

#### III. DEVELOPED DRAINAGE

#### **Developed Conditions**

The proposed development of the site includes 43 single family lots with local streets, utilities and on-site detention.

#### **Design Criteria and References**

Drainage criteria outlined in both the <u>City of Fort Collins Storm Drainage Design Criteria Manual (SDDCM)</u> and <u>Storm Drainage Criteria Manual</u> by the Urban Drainage and Flood Control District have been used for this Final Drainage Study. The "Overall/Preliminary Drainage and Erosion Control Study for Stetson Creek P.U.D." by RBD, Inc, has also been referenced.

#### Hydrologic Criteria

The Rational Method was used to estimate peak stormwater runoff from the proposed site. An initial 2-year design storm and major 100-year design storm was used to evaluate the proposed drainage system. Rainfall intensity data for the Rational Method was taken from Figure 3-1 of SDDCM. SWMM modeling has also been performed to reflect proposed conditions.

**Hydraulic Criteria** 

The City of Fort Collins Storm Drainage Design Criteria has been used in most hydraulic analyses. In addition, the computer models' HEC-2 and Flowmaster were utilized to analyze open channel flow in McClellands Drainageway and proposed concrete pans.

General Drainage Concept

The majority of the on-site developed stormwater runoff (Basins' 1,2 & 6) will be conveyed through the Stetson Creek P.U.D. Second Filing site by overland flow, drive-over curb and gutter and open grass-lined swale to the proposed Detention Pond 372 located in the southeast corner of the site. Pond 372 will release stormwater to the McClellands Drainageway through an orifice controlled fifteen(15) inch ADS N-12 polyethylene pipe. Basins' 3, 4, 5, 7 & 8 will drain to McClellands Draingeway undetained to due topography and previous detention considerations. Off-site runoff, from residential properties south of the site, will be conveyed along the south propertyline in a proposed rectangular concrete pan and will be routed undetained to McClellands Drainageway.

It was not feasible to meet the criteria set forth in the McClellands Basin Master Drainage Plan, for the 10 and 100-year maximum allowable release rates of 0.20 and 0.50 cfs/acre respectively. However, SWMM modeling has been performed to reflect proposed changes in subcatchment parameters (305 & 306) and to confirm there is no increase in flows downstream of the Stetson Creek Second Filing site.

**Specific Details** 

Detention Pond 372 will detain developed stormwater runoff from Basins' 1, 2 and 6 (6.358 acres) and release the 100-year event at a rate of 0.20 cfs/acre (1.3 cfs/6.358acres) and the 10-year event at a rate of 0.15 cfs/acre (1.0cfs/6.358 acres). Basins' 3 and 8 will drain directly into the McClellands Drainageway due to the final topography of the site.

Basins' 4, 5 and 7 have been included in detention calculations for Pond 373 by RBD, Inc. as part of Timber Creek P.U.D. (See pages D-1 thru D-5). Pond 373 will overdetain for these basins.

Pond 372 has sufficient capacity to store the 100-year developed runoff with approximately one (1) foot of freeboard provided from elevation 4929.09 to 4930.0. The detention facility has been designed to detain runoff from the 10-year storm with a maximum release rate of 1.00 cfs and a water surface elevation of 4927.55. The computer software program "Watershed Modeling" by Eagle Point has been used to

route the 10-year storm through Pond 372.

Both SWMM and "Watershed Modeling" have been used to route the 100-year storm through the pond with very consistent results (See page C-19). The maximum 100-year release rate is 1.3 cfs with a water surface elevation of 4929.09. Both storms will be controlled by a five (5) inch diameter orifice. A trapezoidal weir is provided to serve as an emergency overflow for the pond with a notch elevation set at the maximum 100-year water surface elevation of 4929.10. Lots' 21 and 22 which are adjacent to the pond will have a minimum finished grade of one (1) foot above the maximum 100-year water surface elevation or, 4930.00.

Since detention for Basins' 4, 5 and 7 have been accounted for in previous calculations, the total area of the site remaining is 8.936 acres. According to the Master Drainageway Plan the maximum 100-year allowable release rate is 8.936 x 0.50 cfs/acre = 4.47 cfs, and 10-year allowable rate is 8.936 x 0.20 cfs/acre = 1.78 cfs. As stated previously however, this rate can not be achieved.

Recently revised SWMM modeling of fully developed conditions in the McClellands Basin was provided to Northern Engineering by RBD, Inc.. This model has been revised to reflect proposed conditions at Stetson Creek Second Filing which is identified in the model as Basin 306. SWMM File Number OAK-100.DAT by RBD, Inc., has been modified and renamed SCT-SWMM.DAT. Based on proposed conditions, the SWMM model specifies a maximum 100-year release rate of 1.3 cfs at conveyance element 372 which is proposed Detention Pond 372 in the Second Filing. Conditions downstream of the pond have also been slightly improved from the RBD model. Input and output files have been included in the appendix to this report (See pages C1 thru C-19).

Off-site storm and irrigation water will be intercepted along the south propertyline and conveyed to McClellands Drainageway via a 2.5 and 7.0-foot I.D. rectangular concrete pan. The criteria used in determining the size of the pan was, not to exceed the historic 100-year flow spread on off-site properties. Existing Sections' A-A and B-B, as shown on the Off-site Basins exhibit, reflect these historic conditions. Section D-D represents proposed conditions at the identical location as Section B-B. A total of 49.39 acres drains to the proposed pan in addition to the 3.0 cfs of irrigation flow therefore, the majority of the runoff conveyed in the pan is from off-site. Using the same 100-year flow rate the spread on offsite property was reduced from 68' to none at all.

Stormwater from Timberline Road (Basin 7, 0.340 acres) will be conveyed in the east flowline to existing curb inlets located in the existing box culvert directly over McClellands Drainageway. As can be seen from the grading of Timberline Road and

the Second Filing site, it is not feasible to direct runoff from this basin to Pond 372 for detention.

Construction of Stetson Creek P.U.D. First Filing, located to the north, is nearly complete. As part of the First Filing project, the McClellands Basin Drainageway has been improved from Timberline Road, east, for a total length of approximately 2,700 l.f.. The only access to Stetson Creek Second Filing will be via the proposed Dry Creek Lane which crosses over McClellands Drainageway from Stetson Creek P.U.D. First Filing. The crossing will require construction of (4) fourty-eight (48) inch reinforced concrete pipes with flared ends. The original HEC-2 modeling for McClellands Drainageway was completed by RBD, Inc. as part of Stetson Creek First Filing (Output from this model is contained in the Appendix to this report). This model has been modified by Northern Engineering to reflect the proposed fourty-eight (48) inch pipes rather than a concrete box culvert. The modified model also includes 25% debris blockage where the RBD model does not. This is not required according to the City of Fort Collins Standard Specifications but is, in our opinion, a realistic scenario.

#### IV. EROSION CONTROL

Temporary sediment control will be provided in the form of gravel inlet filters, silt fence and straw bale dikes.

Permanent vegetative erosion control will be used in conjunction with landscaping in areas surrounding future homes. The proposed grassed detention facility and open grass-lined swale shall be covered with topsoil and revegetated with dryland pasture mix as specified on the Grading Plan.

Permanent buried Type L riprap will be provided at the end of the proposed 7.0' I.D. concrete pan, at the end of the pond outlet pipe, at the outlet of the ten (10) foot sidewalk culvert and at the downstream end of the proposed fourty-eight (48) inch RCP's.

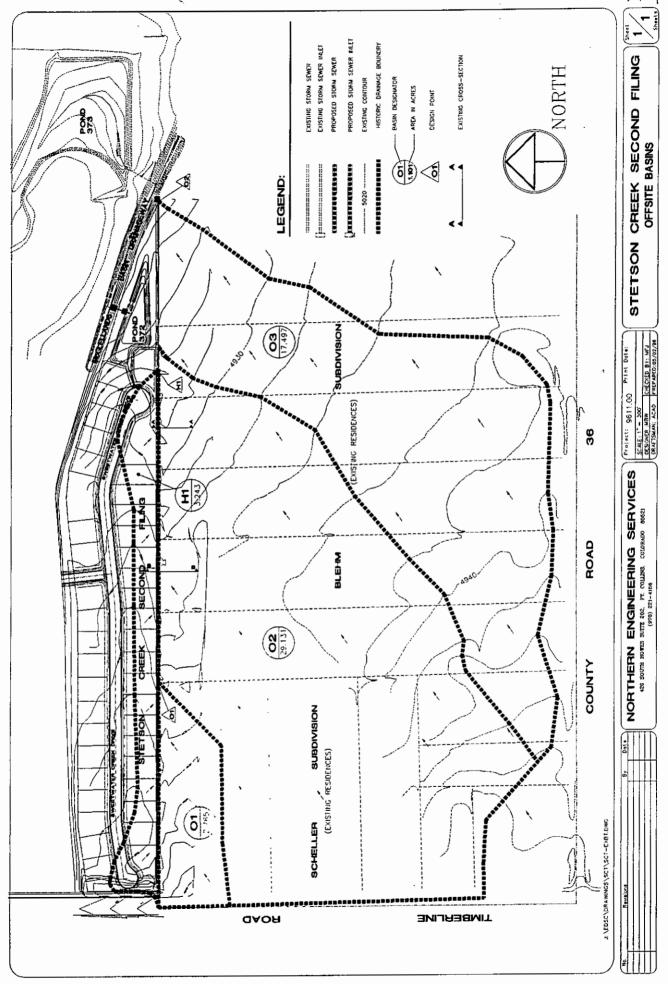
#### V. CONCLUSIONS

#### Compliance with Standards

All drainage analyses have been performed according to the City of Fort Collins Storm Drainage Design Criteria Manual (SDDCM) and the Urban Drainage and Flood Control District's Drainage Criteria Manual. No variances are requested for this project.

#### **Summary of Drainage Concept**

Measures have been taken to ensure adequate drainage facilities have been provided with attention given to water quality and, public health and safety. The hydraulic and hydrologic analyses conducted for this study have been performed in a manner consistent with standard practice and principles of civil engineering. All known available information has been referenced where applicable to this study.



# **APPENDIX F**

# Composite Runoff Coefficient Calculations 2400 Kechter Road, Fort Collins, CO

$$C = \frac{\sum_{i=1}^{n} (C_i x A_i)}{A_t}$$

Equation 5-2

Where: C = Composite Runoff Coefficient

C<sub>i</sub> = Runoff Coefficient for Specific Area (A<sub>i</sub>), dimensionless

A<sub>i</sub> = Area of Surface with Runoff Coefficient of C<sub>i</sub>, acres or square feet

n = Number of different surfaces to be considered

At = Total Area over which C is applicable, acres or square feet

		Historic Drainage Basin H1			Historic Drainage Basin H2 Developed Drainage Basin A				ge Basin A	Dev	eloped Drainag	ge Basin B	Developed Drainage Basin C			
			Minor (2- and			Minor (2- and			Minor (2- and		Minor (2- and			Minor (2- and		
	Runoff		10-yr)	Major (100-yr)		10-yr)	Major (100-yr)		10-yr)	Major (100-yr)		10-yr)	Major (100-yr)		10-yr)	Major (100-yr)
Surface Type	Coefficients <sup>1</sup>	Area (sf)	Composite C <sup>2</sup>	Composite C <sup>3</sup>	Area (sf)	Composite C <sup>2</sup>	Composite C <sup>3</sup>	Area (sf)	Composite C <sup>2</sup>	Composite C <sup>3</sup>	Area (sf)	Composite C <sup>2</sup>	Composite C <sup>3</sup>	Area (sf)	Composite C <sup>2</sup>	Composite C <sup>3</sup>
Hardscape or Hard Surface			•	•			•									
Concrete	0.95	675			845			2,825			0			110		
Rooftop	0.95	6,310			2,380			8,169			8,545			2,185		
Gravel Driveway	0.50	7,700			0			15,430			1,150			8,270		
Total Impervious Area		14,685			3,225			26,424			9,695			10,565		
Landscape or Pervious Surface		-	•	•			•									
Lawns, Clayey Soil, Average Slope 2-7%	0.15	0			0			0			3,400			4,875		
Undeveloped																
Greenbelts, Agriculture	0.20	242,770			176,600			131,511			241,880			24,910		
Total		257,455	0.23	0.29	179,825	0.21	0.27	157,935	0.28	0.35	254,975	0.23	0.28	40,350	0.30	0.37

#### Notes:

- 1. Runoff coefficients per Fort Collins Stormwater Criteria Manual Table 3.2-2.
- 2. Composite runoff coefficient per Fort Collins Stormwater Criteria Manual Equation 5-1.
- 3. Frequency adjustment factor per Fort Collins Stormwater Criteria Manual Table 3.2-3.

Table 3.2-3. Frequency Adjustment Factors

Storm Return Period (years)	Frequency Adjustment Factor (C <sub>f</sub> )
2, 5, 10	1.00
25	1.10
50	1.20
100	1.25

Table 3.2-2. Surface Type - Runoff Coefficients

Surface Type	Runoff Coefficients
Hardscape or Hard Surface	
Asphalt, Concrete	0.95
Rooftop	0.95
Recycled Asphalt	0.80
Gravel	0.50
Pavers	0.50
Landscape or Pervious Surface	
Lawns, Sandy Soil, Flat Slope < 2%	0.10
Lawns, Sandy Soil, Avg Slope 2-7%	0.15
Lawns, Sandy Soil, Steep Slope >7%	0.20
Lawns, Clayey Soil, Flat Slope < 2%	0.20
Lawns, Clayey Soil, Avg Slope 2-7%	0.25
Lawns, Clayey Soil, Steep Slope >7%	0.35

#### Drainage Basin Runoff Calculations 2400 Kechter, Fort Collins, CO

Design	Dosign		Minor	Major		Initial/O	verland Tim	ie <sup>1</sup>		Т	ravel Time	2		Final T <sub>c</sub> <sup>3</sup>		Intensity (in/hr) <sup>4</sup>			Basin Flow (cfs) <sup>5</sup>		
Design Point	Basin	Area (acres)		Major Composite C	Length	Slope	Minor t <sub>o</sub>	Major t <sub>o</sub>	Length	Slope	Channel	Velocity	t <sub>t</sub>	Minor Tc	Major Tc	2-yr	10-yr	100-vr	2-vr	10-vr	100-yr
Tomic	(acres)   Composite C   Comp	composite c	(ft)	(%)	(min)	(min)	(ft)	(%)	Type	(fps)	(min)	(min)	(min)	Z-y:	10-yi	100-yi	Z-y1	±0°yi	100-yı		
	Historic																				
1	H1	5.910	0.23	0.29	240	1	25.2	23.6	400	1%	swale	1.5	4.4	29.7	28.0	1.31	2.23	4.69	1.77	3.02	7.95
2	H2	4.128	0.21	0.27	230	1	25.1	23.6	475	1%	swale	1.5	5.3	30.4	28.9	1.29	2.19	4.61	1.75	2.97	5.08
										Develope	d										
1	Α	3.626	0.28	0.35	120	1	16.8	15.3	400	1%	swale	1.5	4.4	21.2	19.8	1.55	2.66	5.65	1.59	2.71	7.20
2	В	5.853	0.23	0.28	240	1	25.3	23.7	400	1%	swale	1.5	4.4	29.8	28.1	1.31	2.22	4.68	1.33	2.27	7.73
3	С	0.926	0.30	0.37	230	1	22.7	20.6	475	1%	swale	1.5	5.3	28.0	25.9	1.34	2.29	4.88	0.37	0.63	1.68

#### Notes: Notes:

1. Per Fort Collins Stormwater Criteria Manual Section 3.3.2.

$$T_i = \frac{1.87(1.1 - CxC_f)\sqrt{L}}{\sqrt[3]{\overline{S}}}$$

Where: C = Runoff Coefficient, dimensionless

C<sub>f</sub> = Frequency Adjustment Factor, dimensionless

L = Length of Overland Flow, feet

S = Slope, percent

2. Per Fort Collins Stormwater Criteria Manual Section 3.3.3.

$$V = \frac{1.49}{n} \ R^{2/3} S^{1/2}$$

Where: V = Velocity, feet/second

n = Roughness Coefficient, dimensionless

R = Hydraulic Radius, feet (Hydraulic Radius = area / wetted perimeter, feet)

S = Longitudinal Slope, feet/feet

And:

$$T_{t} = \frac{L}{Vx60}$$

3. Per Fort Collins Stormwater Criteria Manual Section 3.3.4. A minimum  $T_c$  of 5 minutes is required.

$$T_c = \frac{L}{180} + 10$$

4. Per IDF Table for Rational Method, Table 3.4-1 Fort Collins Stormwater Criteria Manual.

5. Per Fort Collins Stormwater Criteria Manual Equation 5-1.

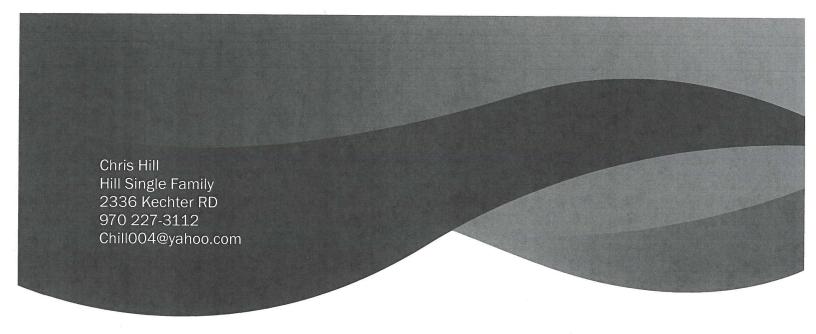
$$Q = CIA$$

Where: Q = Peak Rate of Runoff, cfs

C = Runoff Coefficient, dimensionless ess

I = Rainfall Intensity, in/hr

A = Area of the Basin or Sub-basin, acres, acres



#### **City of Fort Collins**

Dear Recipient,

I am requesting a modification to Land Use Code section 3.2.2(J) which stipulates that there must be a setback from a lot line of five feet for a vehicular use above 1,800 square feet. I am proposing a setback of 4 feet along the driveway on Lot 1 and no setback along the driveway on Lot 2. This is similar to other driveways within the area. Therefore, the modification would be equal to or better than the setback requirement in 3.2.2(J). My neighbors to the east and west acknowledge that there may be minimal impact to their properties during the construction of the driveway. Placing the drive in the current location allows the utilities on Lot 2 to be placed next to the road. Letters of support from these adjoining neighbors are attached.

Warm regards,

Chris Hill Owner To Whom it May Concern,

I understand the property north of 2400 Kechter Road will be constructing an access road along our shared property line. I understand there may be slight soil disturbance on my side of the fence during construction; however, the owner, Chris Hill, has assured me the road surface and the associated stormwater drainage will tilt away from my property and any potential fence damage during construction will be fixed at his expense.

As the property owner of 2424 Kechter Road, I do not object to the access road construction.

To Whom it May Concern,

I understand the property north of 2400 Kechter Road will be constructing an access road and utility services along our shared property line. I understand there may be slight soil disturbance on my side of the fence during construction.

As the property owner of 2324 Kechter Road, I do not object to the access road and utility construction.