BOARD OF TRUSTEES

REGULAR MEETING AGENDA

March 22, 2023
6:30 PM
9900 Park Avenue
Firestone, CO 80504

PRE-MEETING WORK SESSION 6:00 PM IN THE TRAINING ROOM

AGENDA FOR THE WORK SESSION IS A DISCUSSION OF THE REGULAR MEETING AGENDA BELOW

REGULAR MEETING 6:30 PM IN THE BOARD ROOM

1. **Call to Order & Roll Call**

2. **Pledge of Allegiance**

3. **Approval of Agenda**

4. **Public Comment** *(maximum time permitted for all Public Comment is 30 minutes)

5. **Consent Agenda**

   a. Approval of March 8, 2023 BOT Regular Meeting Minutes

6. **Presentation**

7. **Land Development**

   a. **PUBLIC HEARING: Ordinance 1024**: AN ORDINANCE OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO APPROVING AN APPLICATION TO AMEND THE COTTONWOOD HOLLOW OUTLINE DEVELOPMENT PLAN

   b. **PUBLIC HEARING: Resolution 23-31**: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A FINAL SUBDIVISION PLAT AND ACCEPTING THE PROPERTY INTERESTS DEDICATED BY THE FINAL PLAT FOR COTTONWOOD HOLLOW FILING NO. 4A; AUTHORIZING A SUBDIVISION AGREEMENT PERTAINING TO THE COTTONWOOD HOLLOW FILING NO. 4A SUBDIVISION

8. **Discussion/Action**

   a. **Resolution 23-35:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSTRUCTION

* Individuals that desire to address the Board of Trustees are requested to sign up at the table at the entrance to the meeting room. Individuals are allotted 3 minutes of Public Comment during the entirety of the meeting. Maximum time permitted for all Public Comment during a meeting is 30 minutes.

If you need special assistance in order to participate in a Board of Trustees meeting, please contact the Town Clerk's Office at 303-531-6264 in advance of the meeting to make arrangements. A forty-eight-hour notice is requested.

CONTRACT BETWEEN THE TOWN OF FIRESTONE AND ASPHALT SPECIALTIES COMPANY INC FOR THE MILL AND OVERLAY PAVING PROJECT FOR PORTIONS OF ROADWAYS IN ST VRAIN RANCH, RIDGE CREST AND SAGEBRUSH SUBDIVISIONS AND FOR REMOVAL AND REPLACEMENT PROJECT FOR ROSEWOOD AVENUE AND A PORTION OF BIRCH STREET AND CRACK REPAIR PROJECT FOR STONE RIDGE SUBDIVISION

b. **Resolution 23-34:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND A-ONE CHIPSEAL COMPANY FOR CHIPSEAL SERVICES IN THE ST VRAIN RANCH, RIDGE CREST, SAGEBRUSH, OWL LAKE ESTATES, SADDLEBACK HEIGHTS AND SADDLEBACK/FALCON POINT SUBDIVISIONS

c. **Resolution 23-32:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND BOHANNAN HUSTON FOR ENGINEERING DESIGN SERVICES PERTAINING TO THE WELD COUNTY ROAD 20 AND COAL RIDGE DITCH BRIDGE REPLACEMENT PROJECT

d. **Resolution 23-36:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND BOHANNAN HUSTON FOR TRAFFIC ENGINEERING SERVICES PERTAINING TO THE NEIGHBORS POINT TRAFFIC CALMING AND SCHOOL ZONE ASSESSMENT PROJECT

e. Broadband Discussion

9. Public Comment *(maximum time permitted for all Public Comment is 30 minutes)

10. Reports

a. Staff

10.a.i. Community Grant Update

10.a.ii. Dog Park Update

10.a.iii. Monthly Financial Report

* Individuals that desire to address the Board of Trustees are requested to sign up at the table at the entrance to the meeting room. Individuals are allotted 3 minutes of Public Comment during the entirety of the meeting. Maximum time permitted for all Public Comment during a meeting is 30 minutes.

If you need special assistance in order to participate in a Board of Trustees meeting, please contact the Town Clerk's Office at 303-531-6264 in advance of the meeting to make arrangements. A forty-eight-hour notice is requested.

b. Mayor

c. Trustees

11. Adjournment

* Individuals that desire to address the Board of Trustees are requested to sign up at the table at the entrance to the meeting room. Individuals are allotted 3 minutes of Public Comment during the entirety of the meeting. Maximum time permitted for all Public Comment during a meeting is 30 minutes.

If you need special assistance in order to participate in a Board of Trustees meeting, please contact the Town Clerk's Office at 303-531-6264 in advance of the meeting to make arrangements. A forty-eight-hour notice is requested.

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 5.a **Consent Agenda** **Meeting Date:** March 22, 2023 **Initiated By:** **Dept:** Town Clerk

AGENDA TITLE
Approval of March 8, 2023 BOT Regular Meeting Minutes

RECOMMENDATION
Approval of March 8, 2023 BOT Regular Meeting Minutes

SUMMARY

FINANCIAL CONSIDERATIONS

HISTORY AND PREVIOUS BOARD ACTION

ATTACHMENTS
1. 03-08-2023 Board of Trustees Meeting Minutes

TOWN OF FIRESTONE, COLORADO
Board of Trustees Regular Meeting
MINUTES
March 8, 2023

1. Call to Order & Roll Call

The Town of Firestone met for a Regular Meeting on March 8, 2023, at the Police Department & Municipal Court building, 9900 Park Avenue, Firestone, Colorado. Mayor Peterson called the meeting to order at 6:00 PM.

The following were present upon the call of the roll:

Mayor: Drew Peterson
Mayor Pro-tem: Frank A. Jimenez
Trustees: Don Conyac
David Whelan
Matt Holcomb
Sean Doherty
Doug Sharp

Staff: **Present:** Jan Sloat, Director of Human Resources; Matt Wiederspahn, Town Engineer; Rebecca Wertz, Stormwater Coordinator; Paula Mehle, Director of FURA & Economic Development; Raelynn Ferrera, Assistant to the Town Manager; Katie Hansen, Director of Marketing & Communications; Jessica Clanton, Director of Finance; Julie Pasillas, Director of Public Works; Todd Bjerkaas, Director of Planning & Development; David Angelo, Chief of Police; Miriam Luna Gonzalez, Deputy Town Clerk; AJ Krieger, Town Manager; & Keith Martin, Town Attorney.

2. Pledge of Allegiance

Mayor Peterson led the pledge of allegiance.

3. Approval of Agenda

Motion by Trustee Whelan, **second** by Trustee Conyac, to Amend the Agenda to move item C and F to item 8, Discussion/Action.
Roll Call Vote:
Yes: Trustee Conyac, Trustee Whelan, Trustee Jimenez, Trustee Doherty, Trustee Sharp, Trustee Holcomb
No: None
Abstain: None
Motion carried.

Motion by Trustee Whelan, **second** by Trustee Conyac, to Approve the Amended Agenda
Roll Call Vote:
Yes: Trustee Conyac, Trustee Whelan, Trustee Jimenez, Trustee Doherty, Trustee Sharp, Trustee Holcomb
No: None

DRAFT

Abstain: None
Motion carried.

4. Public Comment *(maximum time permitted for all Public Comment is 30 minutes)

Ashley Flory, a Frederick resident, gave public comment in regard to the dog park closure.

Ashley Gronlie, a Firestone resident, gave public comment in regard to the board's representation of the Firestone residents.

David Cumley, a Firestone resident, gave public comment in regard to the dog closure and provided concerns regarding the proposed central park development.

Caryl Zulcauskas, a Firestone resident, gave public comment regarding the town's developments and growth.

Brenna Summer, a Frederick resident, gave public comment in regard to the dog park closure.

Judi Boshihsui, a Firestone resident, gave public comment regarding concerns about the dog park closure.

Margaret Volz, a Firestone resident, gave public comment regarding concerns about the dog park closure.

Diana Mckenny gave public comment regarding concerns about the dog park closure.

Steve Flowers, a Firestone resident, gave public comment regarding the dog park closure.

Marg Bell, a Firestone resident, gave public comment regarding the dog park closure.

5. Consent Agenda

Motion by Trustee Whelan, **second** by Trustee Jimenez, to Approve the Consent Agenda, All in Favor, **Motion carried**.

a. Approval of February 8, 2023 BOT Regular Meeting Minutes

b. **Resolution 23-27:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND VECTOR DISEASE CONTROL INTERNATIONAL LLC FOR INTEGRATED MOSQUITO MANAGEMENT SERVICES

c. **Resolution 23-28:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE COLORADO APPROVING CHANGE ORDER NO. 1 TO THE CONTRACT BETWEEN THE TOWN OF FIRESTONE AND SUN VALLEY ELECTRIC INC FOR CONSTRUCTION OF THE FIRESTONE ALLUVIAL SUPPLY TREATMENT HORIZONTAL WELL PUMP STATION

DRAFT

d. **Resolution 23-29:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, RATIFYING THE APPOINTMENT OF TIMOTHY SPIEGELBERG AND JACI DAGGETT AS REGULAR MEMBERS TO THE TOWN OF FIRESTONE PLANNING AND ZONING COMMISSION

6. Presentation

a. Police Department Awards

7. Land Development

a. **PUBLIC HEARING: Resolution 23-26**: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSOLIDATED SERVICE PLAN FOR THE DENMORE METROPOLITAN DISTRICT NOS. 1-5

Mayor Peterson opened the public hearing for Resolution 23-26 at 7:18 PM.

Todd Bjerkaas, Director of Planning & Development, presented to the Board of Trustees.

Blair Dickhoner from White Bear Ankele Tanaka & Waldron, and Mathew Napier from Tri Point Homes, the applicant, presented to the Board of Trustees.

Claudia Astrom, a Firestone resident, gave public comment in regard to the number of people that this development will draw and provided concerns regarding schools.

Veronica Polies, a Firestone resident, gave public comment regarding high schools, middle schools, and parks being provided.

AJ Krieger, Town Manager, Todd Bjerkaas, Director of Planning & Development, Blair Dickhoner from White Bear Ankele Tanaka & Waldron, and Mathew Napier from Tri Point Homes, the applicant, responded to the board's questions regarding the proposed resolution.

Motion by Trustee Conyac, **second** by Trustee Whelan, to Approve **PUBLIC HEARING: Resolution 23-26**: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSOLIDATED SERVICE PLAN FOR THE DENMORE METROPOLITAN DISTRICT NOS. 1-5
Roll Call Vote:
Yes: Trustee Conyac, Trustee Whelan, Trustee Jimenez, Trustee Doherty, Trustee Sharp, Trustee Holcomb
No: None
Abstain: None
Motion carried.

8. Discussion/Action

DRAFT

a. Dog Park Closure Discussion

b. Central Park Discussion

c. Frederick-Firestone Protection District Discussion

d. **Ordinance 1023:** AN ORDINANCE OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, REPEALING AND REENACTING IN ITS ENTIRETY CHAPTER 2.50 OF THE FIRESTONE MUNICIPAL CODE REGARDING UNCLAIMED PROPERTY

Motion by Trustee Conyac, **second** by Trustee Whelan, to Approve **Ordinance 1023:** AN ORDINANCE OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, REPEALING AND REENACTING IN ITS ENTIRETY CHAPTER 2.50 OF THE FIRESTONE MUNICIPAL CODE REGARDING UNCLAIMED PROPERTY

Roll Call Vote:
Yes: Trustee Conyac, Trustee Whelan, Trustee Jimenez, Trustee Doherty, Trustee Sharp
No: Trustee Holcomb
Abstain: None
Motion carried.

e. **Resolution 23-30:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, RATIFYING THE APPOINTMENT OF PATRICK HANAFIN AS A REGULAR MEMBER TO THE TOWN OF FIRESTONE PLANNING AND ZONING COMMISSION

Motion by Trustee Doherty, **second** by Trustee Whelan, to Approve **Resolution 23-30:** A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, RATIFYING THE APPOINTMENT OF PATRICK HANAFIN AS A REGULAR MEMBER TO THE TOWN OF FIRESTONE PLANNING AND ZONING COMMISSION
Roll Call Vote:
Yes: Trustee Conyac, Trustee Whelan, Trustee Jimenez, Trustee Doherty, Trustee Sharp, Trustee Holcomb
No: None
Abstain: None
Motion carried.

9. Public Comment *(maximum time permitted for all Public Comment is 30 minutes)

Becky Duckworth, a Firestone resident, gave public comment regarding the dog park fencing.

Pat Young, a Firestone resident, gave thanks to trustee Whelan's engagement. He also gave public comment regarding the Fire department and Town's Relationship.

10. Reports

DRAFT

a. Mayor

b. Trustees

c. Staff

10.c.i. Pavement Management Update

10.c.ii. Neighbors Point Traffic Study Update

11. Executive Session

a. An Executive Session regarding the Town of Firestone's Water Service Agreement with Central Weld County Water District for the purposes, pursuant to C.R.S. 24-6-402(4)(e)(I) for determining positions relative to matters that may be subject to negotiations, developing strategy for negotiations and instructing negotiators and pursuant to C.R.S. 24-6-402(4)(b) for conferences with legal counsel for the Town for the purpose of receiving legal advice on specific legal questions.

Motion by Trustee Conyac, **second** by Trustee Doherty, to go into an Executive Session regarding the Town of Firestone's Water Service Agreement with Central Weld County Water District for the purposes, pursuant to C.R.S. 24-6-402(4)(e)(I) for determining positions relative to matters that may be subject to negotiations, developing strategy for negotiations and instructing negotiators and pursuant to C.R.S. 24-6-402(4)(b) for conferences with legal counsel for the Town for the purpose of receiving legal advice on specific legal questions.
Roll Call Vote:
Yes: Don Conyac, Trustee Whelan, Trustee Jimenez, Trustee Doherty, Trustee Sharp
No: Trustee Holcomb
Abstain: None
Motion carried.

12. Adjournment

Motion to Adjourn, All in Favor, **Motion carried**.

Introduced and Approved on the 15 of March, 2023.

TOWN OF FIRESTONE, COLORADO

ATTEST

Drew A. Peterson, Mayor

Miriam Luna Gonzalez, Deputy Town Clerk

DRAFT

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 7.a **Land Development** **Meeting Date:** March 22, 2023 **Initiated By:** Matt Thompson **Dept:** Planning & Development

AGENDA TITLE

PUBLIC HEARING: Ordinance 1024: AN ORDINANCE OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO APPROVING AN APPLICATION TO AMEND THE COTTONWOOD HOLLOW OUTLINE DEVELOPMENT PLAN

RECOMMENDATION

Town staff recommends the Board of Trustees approve draft Ordinance 1024, an ordinance approving the Fourth Amendment to the Cottonwood Hollow ODP with the following condition:

1. All remaining technical corrections to the Cottonwood Hollow Outline Development Plan Amendment No. 4 requested by Town staff shall be made to the Town staff's satisfaction.

SUMMARY

The applicant is proposing the 4th Amendment to the Cottonwood Hollow Outline Development Plan (ODP) for the Cottonwood Hollow development. This amendment brings the ODP into conformance with the current Firestone Development Code and only applies to Block 2 (Filing No. 4), which covers a total of 64.04 acres.

FINANCIAL CONSIDERATIONS

n/a

HISTORY AND PREVIOUS BOARD ACTION

The Cottonwood Hollow ODP was initially called Del Camino East ODP, which was approved in 1999. The name of the ODP was changed to Cottonwood Hollow with the 1st amendment to the ODP which was approved in 2002. The 2nd Amendment to the ODP was approved in 2008, and the 3rd Amendment to the ODP was approved in 2019.

After conducting a Public Hearing on the proposed Outline Development Plan on March 16, 2023, the Planning and Zoning Commission rendered a decision recommending approval of the ODP as more fully set forth in Resolution PC-23-03.

ATTACHMENTS

1. Ordinance 1024
2. Cottonwood Hollow ODP BOT Staff Report
3. Cottonwood Hollow ODP-4th Amendment
4. PC 23-03 Amend. Cottonwood Hollow Outline Dev. Parcel Size Adj. & Density Adj. 03-16-2023

ORDINANCE NO. 1024

AN ORDINANCE OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO APPROVING AN APPLICATION TO AMEND THE COTTONWOOD HOLLOW OUTLINE DEVELOPMENT PLAN

WHEREAS, Cottonwood Colorado Residential, LLC and Cottonwood Residential V, LLC, ("Applicants"), as owners of certain real property located within the Town of Firestone, Colorado (the "Property"), have submitted an application to amend the existing Cottonwood Hollow Subdivision Outline Development Plan, to be known as the Cottonwood Hollow Outline Development Plan Amendment No. 4 (the "ODP Amendment"), to accommodate adjustments to parcel size and allowable density adjustments to block 2 of the Cottonwood Hollow Filing No. 4 subdivision (the "Application"); and

WHEREAS, the Firestone Planning and Zoning Commission, after conducting a public hearing on the proposed Application on March 16, 2023, rendered a decision recommending approval of the Application with one (1) condition as more fully set forth in PC-23-03, dated March 16, 2023; and

WHEREAS, on March 22, 2023, the Board of Trustees conducted a public hearing on the Application; and

WHEREAS, after reviewing the decision of the Planning and Zoning Commission, and after considering the testimony, evidence and argument presented at the Board of Trustees public hearing, the Board of Trustees finds and determines that the proposed Application is in substantial conformance with the technical requirements of the Firestone Development Code, and that the proposed development plan meets the applicable requirements and standards set forth in the Firestone Municipal Code and Firestone Development Code.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO:

Section 1. The Board of Trustees acknowledges the Planning and Zoning Commission's findings of fact in this case, as detailed in Resolution PC-23-03.

Section 2. The above Recitals and Findings of the Board of Trustees are hereby incorporated into this ordinance.

Section 3. The Board of Trustees hereby approves the Cottonwood Hollow Outline Development Plan Amendment No. 4, attached hereto as **Exhibit A** and incorporated herein by this reference, which is subject to:

1. All remaining technical corrections to the Cottonwood Hollow Amended Outline Development Plan requested by Town staff shall be made to the Town staff's satisfaction.

Section 4. The Board of Trustees directs that a certified copy of this Ordinance be filed with the Town Clerk and further, that the Town Clerk index, file and make the Ordinance available to the public.

Section 5. If any article, section, paragraph, sentence, clause or phrase of this ordinance is held to be unconstitutional or invalid for any reason, such decision will not affect the validity or

constitutionality of the remaining portions of this ordinance. The Board of Trustees hereby declares that it would have passed this ordinance and each part or parts hereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

Section 6. All other ordinances or portions thereof inconsistent or conflicting with this ordinance or any portion hereof are hereby repealed to the extent of such inconsistency or conflict.

INTRODUCED, READ, ADOPTED, APPROVED, AND ORDERED PUBLISHED BY TITLE this __ day of _____, 2023.

TOWN OF FIRESTONE, COLORADO

_____
Drew Alan Peterson, Mayor

ATTEST:

_____
Kristi K. Bashor, CMC Town Clerk

APPROVED AS TO FORM:

_____
William P. Hayashi, Town Attorney

EXHIBIT A
COTTONWOOD HOLLOW OUTLINE DEVELOPMENT PLAN AMENDMENT NO. 4

Staff Report

4th Amendment to Cottonwood Hollow Outline Development Plan

Prepared by the Town of Firestone for the Board of Trustees

March 22, 2023

GENERAL INFORMATION

Purpose: The applicant is proposing the 4th Amendment to the Cottonwood Hollow Outline Development Plan (ODP) for the Cottonwood Hollow development. This amendment only applies to Block 2 (Filing No. 4), which covers a total of 64.04 acres.

Applicant: Don Provost, Cottonwood Colorado Residential, LLC
5750 DTC Parkway #210
Greenwood Village, CO 80111

Location: The site is located south of Sable Avenue, ½ mile west of Birch Street, and ½ east of the east I-25 frontage road.

Existing Conditions:

Existing Zoning:	PUD R – B (medium-density residential)
Existing Use:	Vacant land, agriculture, oil and gas, and Godding ditch

Adjacent Land Use/Zoning:

	ZONING	LAND USE
NORTH	R-C (Firestone)	High-Density Residential
SOUTH	R-E (Frederick)	Estate District and oil and gas facility
EAST	AG (Weld County)	Agriculture with single-family homes
WEST	R-B (Firestone) R-C (Firestone)	Vacant land, future filing of Cottonwood Hollow residential

Proposed ODP Amendment
The 4th Amendment to the Cottonwood Hollow ODP proposes the following modifications for Block 2 :

1) The maximum density requirement is proposed to change from 3.5 DU/AC to 10 DU/AC to match the R-B maximum density requirement as outlined in Table 4-1 of the FDC.
2) The minimum lot area is proposed to change from 5,000 SF to 4,500 SF to match the minimum R-B lot size as outlined in Table 4-1 of the FDC.
3) The minimum front yard setback for the house is proposed to change from 20-feet to 14-feet, however, the garage setback will remain at 20-feet. This change will match the minimum setbacks as outlined in Table 4-1 of the FDC.
4) Footnote No. 8 is now proposed to remove minimum lot width and lot depth requirements. Note however, the minimum lot width requirement of 45-feet from the FDC is being complied with.

Staff has reviewed the proposal and supports the modifications to the ODP, which brings it into closer conformance with the current FDC.

Approval Criteria and Staff Analysis

Rezoning Approval Criteria and Staff Analysis:
The ODP Amendment No. 4 application for Cottonwood Hollow was reviewed for compliance with the Approval Criteria from Section 16.7.4.E of the FDC. Staff makes the following findings:

A. The proposed zoning promotes the health, safety or welfare of the inhabitants of the Town and the purposes of this FDC; and

Staff: *The modifications proposed promotes the health, safety, and welfare of the inhabitants of the Town and the purpose of the FDC.*

B. The proposed zoning is generally consistent with the Town's Comprehensive Master Plan, or the proposed zoning is necessary to provide land for a community need that was not anticipated at the time of the adoption of the Town's plan.

Staff: *The proposed modifications are generally consistent with the Town's Master Plan. The Master Plan shows this property as medium-density residential.*

C. Adequate facilities and services (including street and transportation, water, gas, electric, police and fire protection, and sewage and waste disposal, as applicable) will be available to serve the subject property while maintaining adequate levels of service to existing development;

Staff: *Adequate facilities and services will be provided to serve the subject property and maintain adequate levels of service to existing development.*

D. The proposed zoning is not likely to result in significant adverse impacts upon the natural environment, including air, water, noise, storm water management, wildlife, and vegetation, or such impacts will be substantially mitigated;

Staff: *The proposed modifications are not likely to result in significant adverse impacts on the natural environment.*

E. The proposed zoning is not likely to result in significant adverse impacts upon other property in the vicinity of the subject property;

Staff: *The proposed modifications are not likely to result in significant adverse impacts upon the property in the vicinity of this property.*

F. Future uses on the subject property will be compatible in scale with uses on other properties in the vicinity of the subject property; and

Staff: *The proposed uses on the Cottonwood Hollow property have not been modified.*

G. The proposed zoning is generally consistent with the Towns' economic development goals and objectives in bringing positive growth and sustainable revenues to the Town.

Staff: *The proposed modifications are generally consistent with the Town's economic development goals and objectives in bringing positive growth via residential lots to the Town.*

Outline Development Plan Amendment No. 4 Approval Criteria and Staff Analysis:
The ODP Amendment No. 4 application for Cottonwood Hollow was reviewed for compliance with the Approval Criteria from Section 16.7.5.B of the FDC. Staff makes the following findings:

A. The PUD district zoning is generally consistent with the purpose of the PUD zone district as set forth in FDC Subsection 2.4.E.;

Staff: *The ODP amendment is generally consistent with the purpose of the PUD zone district as outlined in FDC subsection 2.4.E.*

B. The PUD district and the PUD district plan comply with all applicable standards and criteria stated in Section 7.5.;

Staff: *The ODP amendment complies with all applicable standards and criteria from Section 7.5.*

C. The development proposed on the subject property is not feasible under any other zone districts, and would require an unreasonable number of variances or waivers and conditions;

Staff: *The changes outlined in the ODP are bringing it into closer conformance with the current FDC.*

D. The PUD district and the PUD district plan establish permitted uses that are compatible with existing land uses adjacent to the subject property;

Staff: *The proposed uses on the Cottonwood Hollow property have not been modified.*

E. The PUD district and the PUD district plan establish permitted building forms that are compatible with adjacent existing building forms, or which are made compatible through appropriate transitions at the boundaries of the PUD district plan (e.g., through decreases in building height, through significant distance or separation by rights-of-way, landscaping or similar features; or through innovative building design).

Staff: *No modifications are proposed to the design standards outlined in the FDC. In addition, an adequate buffer is proposed for the County properties to the east.*

PUBLIC NOTICE

Notice of the Public Hearings has been provided as follows:

Published in the Longmont Times Call:	March 1, 2023
Property Posted:	February 28, 2023
Letters to Adjacent Property Owners:	February 22, 2023

RECOMMENDATION

Staff:
Town staff recommends the Board of Trustees approve draft Ordinance 1024, a resolution approving of the application with the following condition:

1. All remaining technical corrections to the Cottonwood Hollow Outline Development Plan Amendment No. 4 requested by Town staff shall be made to the Town staff's satisfaction.

Planning and Zoning Commission:
After conducting a Public Hearing on the proposed Outline Development Plan on March 16, 2023, the Planning and Zoning Commission rendered a decision recommending approval of the ODP as more fully set forth in Resolution PC-23-03.

FOURTH AMENDMENT TO OUTLINE DEVELOPMENT PLAN FOR

COTTONWOOD HOLLOW

(FORMERLY KNOWN AS DEL CAMINO EAST ODP)

TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO

SHEET 1 OF 3

ODPA-22-020

LEGAL DESCRIPTION

PARCEL A:

A TRACT OF LAND LOCATED IN THE NORTH ONE-HALF OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 68 WEST, 6TH PRINCIPAL MERIDIAN, TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT THE NORTH ONE-QUARTER CORNER OF SAID SECTION 14; THENCE S00°07'17"E A DISTANCE OF 30.00 FEET ALONG THE WEST LINE OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 14 TO A POINT ON THE SOUTH RIGHT-OF-WAY OF WELD COUNTY ROAD NO. 22 (60 FEET IN WIDTH) SAID POINT BEING THE POINT OF BEGINNING; THENCE ALONG SAID SOUTH RIGHT-OF-WAY S89°55'22"E, A DISTANCE OF 1309.10 FEET TO A POINT ON THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 14; THENCE ALONG SAID EAST LINE S00°18'14"E A DISTANCE OF 2624.04 FEET TO THE SOUTHEAST CORNER OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 14; THENCE ALONG THE SOUTH LINE OF SAID NORTHEAST QUARTER S89°55'12"W, A DISTANCE OF 1317.46 FEET TO THE CENTER QUARTER CORNER OF SAID SECTION 14; THENCE ALONG THE SOUTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 14 S89°56'54"W, A DISTANCE OF 69.31 FEET; THENCE LEAVING SAID SOUTH LINE N29°04'16"W, A DISTANCE OF 156.64 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A CENTRAL ANGLE OF 17°12'19", A RADIUS OF 1025.00 FEET, AND AN ARC LENGTH OF 307.80 FEET; THENCE N46°16'35"W, A DISTANCE OF 271.54 FEET TO A POINT OF CURVE; THENCE ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 29°41'44", A RADIUS OF 1125.00 FEET, AND AN ARC LENGTH OF 583.07 FEET, THE CHORD OF WHICH BEARS N31°25'43"W, A DISTANCE OF 576.57 FEET; THENCE S89°56'37"W, A DISTANCE OF 83.72 FEET; THENCE S63°18'00"W, A DISTANCE OF 58.00 FEET; THENCE S76°20'46"W, A DISTANCE OF 60.00 FEET; THENCE N82°58'39"W, A DISTANCE OF 58.79 FEET; THENCE N63°36'35"W, A DISTANCE OF 73.80 FEET; THENCE S89°56'37"W, A DISTANCE OF 160.77 FEET; TO A POINT ON THE WEST LINE OF THE EAST HALF OF THE NORTHWEST QUARTER OF SAID SECTION 14; THENCE ALONG SAID WEST LINE N00°15'46"W, A DISTANCE OF 1047.84 FEET; THENCE LEAVING SAID WEST LINE N81°08'34"E, A DISTANCE OF 63.99 FEET; THENCE N64°18'44"E, A DISTANCE OF 492.53 FEET; THENCE N89°44'57"E, A DISTANCE OF 10.00 FEET; THENCE N00°15'47"W, A DISTANCE OF 297.66 FEET TO A POINT ON SAID SOUTH RIGHT-OF-WAY OF WELD COUNTY ROAD NO. 22; THENCE ALONG SAID SOUTH RIGHT-OF-WAY N90°00'00"E, A DISTANCE OF 792.29 FEET TO THE POINT OF BEGINNING; CONTAINING 132.916 ACRES MORE OR LESS.

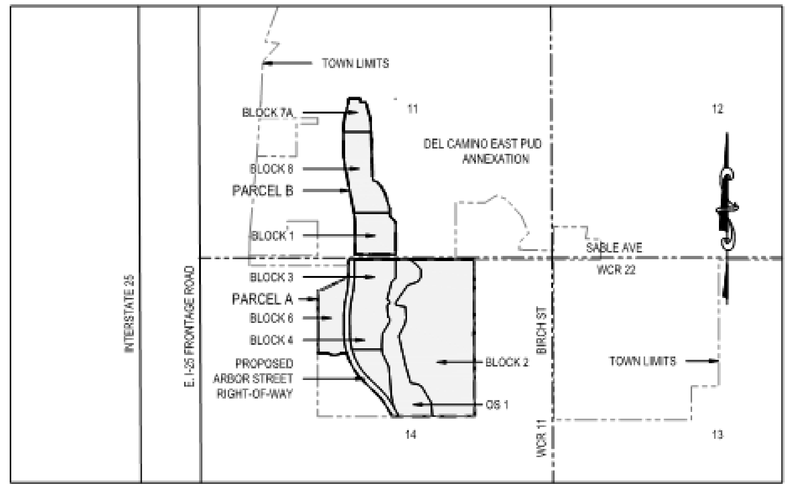
BASIS OF BEARING: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 2 NORTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, WHICH BEARS S90°00'00"W.

TOGETHER WITH;

PARCEL B:

ALL OF TRACT B, COTTONWOOD HOLLOW, FILING 2 AS RECORDED ON 01/31/2008, UNDER RECEPTION NUMBER 3532463, ALL IN THE CLERK AND RECORDER'S OFFICE OF WELD COUNTY, COLORADO, LOCATED IN THE SOUTHWEST ONE-QUARTER OF SECTION 11, T2N., R68W., 6TH P.M., TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO, CONTAINING 31.393 ACRES, MORE OR LESS.

TOTAL AREA CONTAINS 164.309 ACRES, MORE OR LESS



VICINITY MAP

1"=1200'

SHEET INDEX

COVER SHEET	SHEET 1
GENERAL NOTES	SHEET 2
SITE PLAN	SHEET 3

SURVEYOR:

RED ROCK LAND SURVEYS, INC.
7865 W. ONTARIO PLACE
LITTLETON, CO 80128
PHONE: 303.994.6300
CONTACT: JOHN E. KRATZ
EMAIL: JKRATZ@REDROCKLANDSURVEYS.COM

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.

Board of Trustees Approval

APPROVED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO

THIS_____DAY OF_____, 20__, BY ORDINANCE NO._____

_____ _____

MAYOR ATTEST: TOWN CLERK

AMENDMENT NOTE:
REVISIONS INCLUDE PARCEL SIZE ADJUSTMENTS AND ALLOWABLE DENSITIES ADJUSTMENTS TO BLOCK 2, FILING 4.

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
801 E. Florida Ave., Suite 425,
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

OUTLINE DEVELOPMENT PLAN
COTTONWOOD HOLLOW
FIRESTONE, COLORADO 80504
COVER SHEET

PROJECT NO:	04.5031.01
DESIGNED BY:	GBR
DRAWN BY:	RAK
DATE:	2/14/2023

1

SHEET 1 OF 3

FOURTH AMENDMENT TO OUTLINE DEVELOPMENT PLAN FOR

COTTONWOOD HOLLOW

(FORMERLY KNOWN AS DEL CAMINO EAST ODP)

TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO

SHEET 2 OF 3

ODPA-22-020

TABLE A
LAND USE AND ZONING TABLE
THE ZONING FOR THE PROPERTY IS PUD. THE TABLE BELOW SPECIFIES THE LAND USES CATEGORIES, RESIDENTIAL DENSITIES AND THE NUMBER OF DWELLING UNITS, AND BUILDING HEIGHTS:

Planning Area 2B8:Q35B25B8:N33B8:P35B8B	Block 1		Block 2[8] (Filing 4)	Block 3		Block 4		Block 6	Block 7A[9]	Block 8		OS-1	ROW
Land Use	PUD EC / PUD R-C		PUD R-B	PUD EC / PUD R-C		PUD R-B		PUD EC	PUD NC	PUD EC / PUD R-C		PUD OS	PUD R-C
Maximum Gross Density in DU/Ac	17.0		10	17.0		8.0		-	-	14.0		-	-
Maximum FAR	-		-	-		-		0.50	0.50	-			
Anticipated Dwelling Units[2]	140		195	340		45		-	-	160			
Min. Lot Area													
Single Family Detached (front & side loaded)	4,500 sf							-	-	5000 sf		-	-
Single Family Detached (alley loaded)	3,500 sf									3600 sf			
Single Family Attached (alley, side or front loaded)	SF attached alley loaded 1,500 sf, front loaded 2,000 sf									front and side 1850 sf / alley 1400 sf			
Multi Family	-									-			
Maximum Building Height													
Residentail (Principal)	45'		35'	45'		35'		-		45'		-	-
Residentail (Accessory)	20'		20'	20'		20'				20'			
Commercial	45'		-	45'		45'		45'		45'			
Setback from Streets													
Principal Building Setback from Arterial ROW	30'											0'	0'
Accessory Building Setback from Arterial ROW	Maximum of 60% Frontage 15', Remainder at 30'												
Surface Parking Setback from Arterial ROW	20'												
Building Setbacks													
	SFD / SFA	MF / C[6]		SFD / SFA	MF / C[6]	SFD / SFA	MF / C[6]			SFD / SFA	MF / C[6]		
Minimum Front Yard Setback[3,7] (Principal Uses)	20' Front Load 15' Side Load 10' Alley Load	20'	14' Front (House), 20' to Garage	20' Front Load 15' Side Load 10' Alley Load	20'	20' Front Load 15' Side Load 10' Alley Load	20'	20'		20' Front Load 15' Side Load 10' Alley Load	20'	0'	-
Minimum Side Yard Setback[1,3,7] (Principal Uses)	5' 10' Corner Lots 0' Internal Lot Line	10'	5' 10' Corner Lots	5' 10' Corner Lots 0' Internal Lot Line	10'	5' 10' Corner Lot Line 0' Internal Lot Line	10'	15'		5' 10' Corner Lot Line 0' Internal Lot Line	10'		
Minimum Side Yard Setback[1,3,7] (Accessory Uses)	5' 10' Corner	10'	5' 10' Corner Lots	5' 10' Corner	10'	5' 10' Corner	10'	5'		5' 10' Corner	10'		
Minimum Rear Yard Setback[3,4,7] (Principal Uses)	20' Front Load 20' Side Load 5' Alley Load	20'	20'	20' Front Load 20' Side Load 5' Alley Load	20'	20' Front Load 20' Side Load 5' Alley Load	20'	20'		20' Front Load 20' Side Load 5' Alley Load	20'		
Minimum Rear Yard Setback[3,4,7] (Accessory Uses)	5'	10'	5'	5'	10'	5'	10'	10'		5'	10'		

Off Street Parking Spaces	9'x20'											-
Parking Requirement[5,7]	2 / DU	1.75 : 1 Bed 2.25: 2 & 3 Bed	2 / DU	2 / DU	1.75 : 1 Bed 2.25: 2 & 3 Bed	2 / DU	1.75 : 1 Bed 2.25: 2 & 3 Bed	Town Standards (Based from use)	2 / DU	1.75 : 1 Bed 2.25: 2 & 3 Bed	-	

[1] IF FEE SIMPLE LOTS ARE CREATED WITHIN BUILDINGS OR SHARED BY A COMMON PARTY WALL, THERE IS NO SETBACK REQUIREMENT BETWEEN INTERNAL UNITS.

[2] DWELLING UNITS ARE TRANSFERABLE BETWEEN RESIDENTIAL PLANNING AREAS SO LONG AS THEY DO NOT EXCEED THE MAXIMUM DENSITY FOR EACH LAND USE DISTRICT AND THE TOTAL MAXIMUM NUMBER OF UNITS ALLOWED IN COTTONWOOD HOLLOW, AND SHALL BE TRACKED AT THE RECORDING OF EACH FINAL PLAT.

[3] AWNINGS, BLADE SIGNS, WINDOW WELLS, INCIDENTAL ARCHITECTURAL FEATURES SUCH AS CORNICES, EAVES, CANOPIES, CHIMNEYS, BAY WINDOWS, ORNAMENTAL FEATURES AND OTHER SIMILAR ARCHITECTURAL FEATURES MAY PROJECT NOT MORE THAN TWO (2) FEET INTO ANY REQUIRED SETBACK.

[4] UNCOVERED DECKS WITH A SURFACE 30" OR LESS IN HEIGHT MAY ENCROACH 10' INTO ANY REAR SETBACK.

[5] ALL PARKING REQUIREMENTS INCLUDE GUEST PARKING.

[6] THE SETBACK FOR ALL PRINCIPAL OR ACCESSORY STRUCTURES FOR MULTI-FAMILY AND COMMERCIAL ADJACENT TO OPEN SPACE IS 5' PROVIDED ALL STRUCTURES SHALL BE LOCATED A MINIMUM OF 30' AWAY FROM ADJACENT PEDESTRIAN TRAILS.

[7] THE SETBACK FOR ALL SURFACE PARKING ADJACENT TO OPEN SPACE IS 5'; PROVIDED ALL STRUCTURES SHALL BE LOCATED A MINIMUM OF 30' AWAY FROM ADJACENT PEDESTRIAN TRAILS.

[8] A 30 FOOT LANDSCAPE, DRAINAGE AND ACCESS SETBACK WILL BE PROVIDED ALONG THE ENTIRE EASTERN BOUNDARY OF BLOCK 2. (Filing 4)

[9] SKILLED NURSING, ASSISTED LIVING AND MEMORY CARE, AND OTHER ASSOCIATED USES DO NOT COUNT TOWARDS THE MAXIMUM PERMITTED UNITS FOR THE PROPERTY.

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
WHITE BEARD AND ELLIOTT ENERGY SOLUTIONS, INC.
801 E. Florida Ave., Suite 425,
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE
COLORADO

OUTLINE DEVELOPMENT PLAN
COTTONWOOD HOLLOW
FIRESTONE, COLORADO 80504

Land Use and Zoning

PROJECT NO: 0L5081.01
DESIGNED BY: GSR
DRAWN BY: RAW
DATE: 2/14/2023

2
SHEET 2 OF 3

FOURTH AMENDMENT TO OUTLINE DEVELOPMENT PLAN FOR

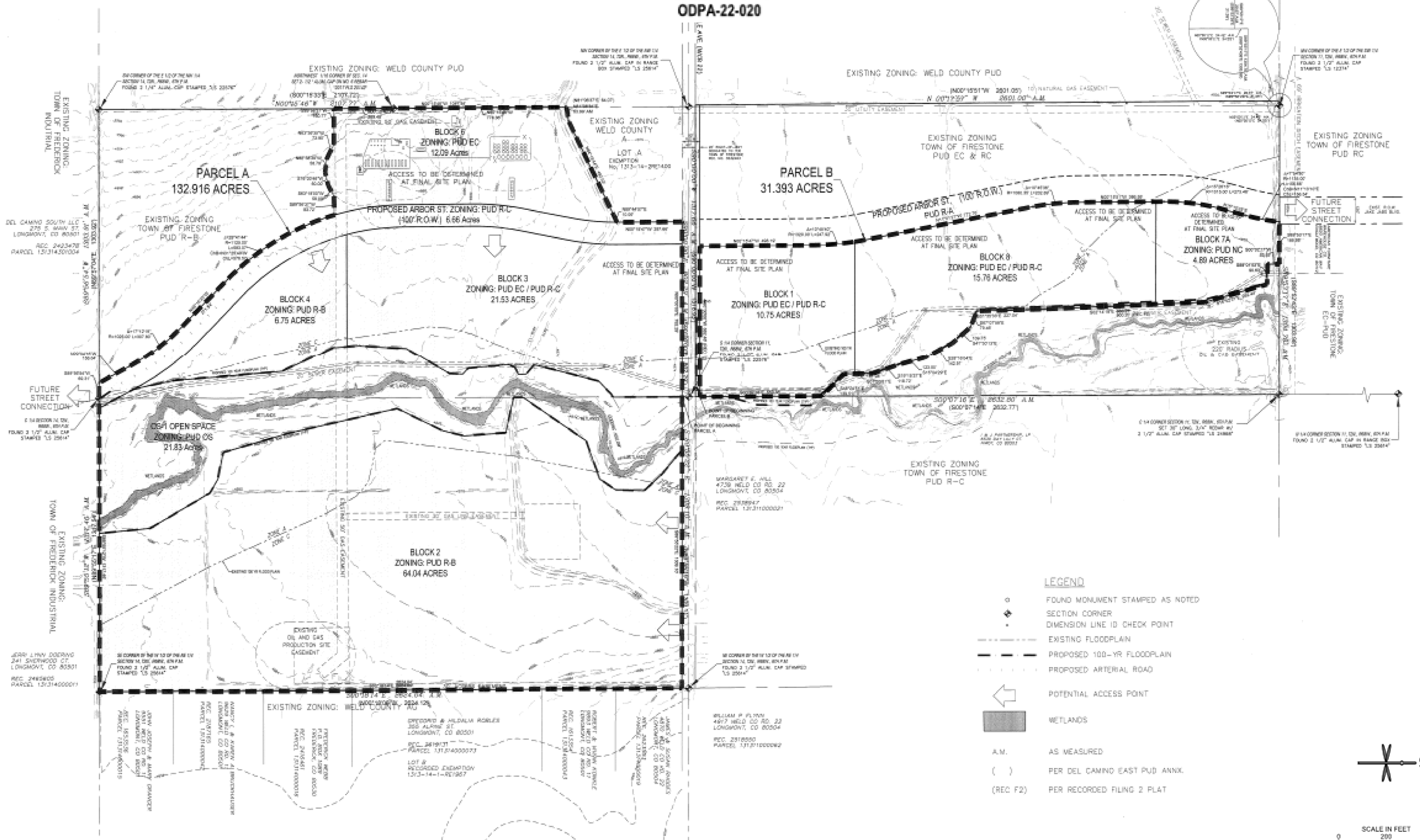
COTTONWOOD HOLLOW

(FORMERLY KNOWN AS DEL CAMINO EAST ODP)

TOWN OF FIRESTONE. COUNTY OF WELD. STATE OF COLORADO

SHEET 3 OF 3

ODPA-22-020



LEGEND

- FOUND MONUMENT STAMPED AS NOTED
- SECTION CORNER
- DIMENSION LINE ID CHECK POINT
- EXISTING FLOODPLAIN
- PROPOSED 100-YR FLOODPLAIN
- PROPOSED ARTERIAL ROAD
- POTENTIAL ACCESS POINT
- WETLANDS
- A.M. — AS MEASURED
- ( ) — PER DEL CAMINO EAST PUD ANNX.
- (REC F2) — PER RECORDED FILING 2 PLAT

N

SCALE IN FEET
0 200 400

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES
ENVIRONMENT AND ENGINEERING SOLUTIONS, INC.
801 E. Florida Ave., Suite 425,
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

OUTLINE DEVELOPMENT PLAN
COTTONWOOD HOLLOW
FIRESTONE, COLORADO 80504
SITE PLAN

PROJECT NO:	OL5081.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	2/14/2023

3
SHEET 3 OF 3

FIRESTONE PLANNING AND ZONING COMMISSION

RESOLUTION NO. PC-23-03

A RESOLUTION OF THE PLANNING AND ZONING COMMISSION OF THE TOWN OF FIRESTONE, COLORADO, RECOMMENDING APPROVAL OF AN APPLICATION TO AMEND THE COTTONWOOD HOLLOW OUTLINE DEVELOPMENT PLAN TO ALLOW FOR PARCEL SIZE ADJUSTMENTS AND DENSITY ADJUSTMENTS TO BLOCK 2 OF THE COTTONWOOD HOLLOW FILING 4 SUBDIVISION

WHEREAS, Cottonwood Colorado Residential, LLC and Cottonwood Residential V, LLC, ("Applicants"), as owners of certain real property located within the Town of Firestone, Colorado (the "Property"), have submitted an application to amend the existing Cottonwood Hollow Outline Development Plan (the "ODP Amendment"), to accommodate adjustments to parcel size and allowable density adjustments to block 2 of the Cottonwood Hollow Filing No. 4 subdivision (the "Application"); and

WHEREAS, after a duly-noticed public hearing, at which evidence and testimony were entered into the record, the Planning and Zoning Commission finds and determines that the Application is complete, and that the Applicants have met the applicable requirements and standards set forth in the Firestone Municipal Code and Firestone Development Code; and

WHEREAS, the Planning and Zoning Commission wishes to make a recommendation to the Board of Trustees regarding the Application.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING AND ZONING COMMISSION OF THE TOWN OF FIRESTONE, COLORADO:

Section 1. The Planning and Zoning Commission hereby recommends approval of the proposed Cottonwood Hollow Outline Development Plan Amendment No. 4, attached hereto as **Exhibit A** and incorporated herein by this reference, subject to and contingent upon compliance with the following conditions:

1. All remaining technical corrections to the Cottonwood Hollow Outline Development Plan Amendment No. 4 requested by Town staff shall be made to the Town staff's satisfaction.

PASSED AND ADOPTED this 16 day of March, 2023.

FIRESTONE PLANNING AND ZONING COMMISSION TOWN SEAL

Vice-Chairperson

ATTEST:

Secretary

EXHIBIT A
COTTONWOOD HOLLOW OUTLINE DEVELOPMENT PLAN AMENDMENT NO. 4

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 7.b **Land Development** **Meeting Date:** March 22, 2023 **Initiated By:** Matt Thompson **Dept:** Planning & Development

AGENDA TITLE

PUBLIC HEARING: Resolution 23-31: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A FINAL SUBDIVISION PLAT AND ACCEPTING THE PROPERTY INTERESTS DEDICATED BY THE FINAL PLAT FOR COTTONWOOD HOLLOW FILING NO. 4A; AUTHORIZING A SUBDIVISION AGREEMENT PERTAINING TO THE COTTONWOOD HOLLOW FILING NO. 4A SUBDIVISION

RECOMMENDATION

Town staff recommends the Board of Trustees approve draft Resolution 23-31, a resolution approving the Cottonwood Hollow Filing No. 4A final plat with the following conditions:

1. All remaining technical corrections to the Cottonwood Hollow Filing No. 4A final plat and construction drawings requested by Town staff shall be made to the Town staff's satisfaction.
2. Prior to commencement of construction, Final Construction Plans shall be approved by the Town.
3. Prior to recordation of the final plat, a Phase III Drainage Report shall be approved by the Town.
4. Prior to recordation of the final plat, the Sable Avenue Construction Plans shall be approved by the Town.
5. Prior to recordation of the final plat, all agreements and easements with the Godding Ditch Company shall be fully executed.
6. Prior to recordation of the final plat, the Town and the Applicant shall execute a subdivision agreement, in a form to be approved by the Town Attorney.
7. Prior to recordation of the final plat, a Traffic Report shall be approved by the Town.

SUMMARY

Cottonwood Hollow Filing 4A proposes 129 single-family residential lots, and 22 tracts for open space, landscaping, drainage and future development on approximately 64.04 acres.

FINANCIAL CONSIDERATIONS

n/a

HISTORY AND PREVIOUS BOARD ACTION

The Cottonwood Hollow Filing No. 4 Preliminary Plat was approved by the Town on June 18, 2020.

After conducting a Public Hearing on the proposed Final Plat on March 16, 2023, the Planning and Zoning Commission rendered a decision recommending approval of the Final Plat as more fully set forth in Resolution PC-23-04.

ATTACHMENTS

1. Resolution 23-31
2. Cottonwood Hollow Filing 4A Staff Report
3. Cottonwood Hollow Filing 4A Final Plat
4. Cottonwood Hollow Filing 4A Improvement Plans
5. Cottonwood Hollow Filing 4A Subdivision Agreement
6. Public Comment

7. PC-04 Final Plat Cottonwood Hollow F. No. 4 03-16-2023

RESOLUTION NO. 23-31

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A FINAL SUBDIVISION PLAT AND ACCEPTING THE PROPERTY INTERESTS DEDICATED BY THE FINAL PLAT FOR COTTONWOOD HOLLOW FILING NO. 4A; AUTHORIZING A SUBDIVISION AGREEMENT PERTAINING TO THE COTTONWOOD HOLLOW FILING NO. 4A SUBDIVISION

WHEREAS, Cottonwood Colorado Residential, LLC and Cottonwood Residential V, LLC, ("Applicants"), as owners of certain real property located within the Town of Firestone, Colorado (the "Property"), have submitted a proposed final plat for the Property, entitled "Cottonwood Hollow Filing No. 4A" (the "Final Plat"), attached hereto as **Exhibit A**, and a proposed Subdivision Agreement for the Property, attached hereto as **Exhibit B**; and

WHEREAS, the Firestone Planning and Zoning Commission, after conducting a public hearing on the Final Plat on March 16, 2023, rendered a decision recommending approval of the Final Plat with seven (7) conditions as more fully set forth in PC-23-04, dated March 16, 2023; and

WHEREAS, after reviewing the decision of the Planning and Zoning Commission, and after considering the testimony, evidence and argument presented at the Board of Trustees public hearing, the Board of Trustees finds the proposed Final Plat to be in substantial compliance with the technical requirements of the Town of Firestone Development Code.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO:

Section 1. The Board of Trustees acknowledges the Planning and Zoning Commission's findings of fact in this case, as detailed in Resolution PC-23-04.

Section 2. The above Recitals and Findings of the Board of Trustees are hereby incorporated into this resolution.

Section 3. The Board of Trustees hereby approves the final plat for Cottonwood Hollow Filing No. 4A, attached hereto as **Exhibit A** and incorporated herein by this reference, subject to and contingent upon compliance with the following conditions:

(a) All remaining technical corrections to the Cottonwood Hollow Filing No. 4A final plat and construction drawings requested by Town staff shall be made to the Town staff's satisfaction.

(b) Prior to commencement of construction, Final Construction Plans shall be approved by the Town.

(c) Prior to recordation of the final plat, a Phase III Drainage Report shall be approved by the Town.

(d) Prior to recordation of the final plat, the Sable Avenue Construction Plans shall be approved by the Town.

(e) Prior to recordation of the final plat, all agreements and easements with the Godding Ditch Company shall be fully executed.

(f) The Town and the Applicant shall execute a subdivision agreement, in a form to be approved by the Town Attorney.

(g) Prior to recordation of the final plat, a Traffic Report shall be approved by the Town.

Section 4. The dedication of all easements and all other places designated for public use as shown upon the plat Cottonwood Hollow Filing No. 4A is hereby accepted by the Town of Firestone, subject however, to the following conditions:

(a) that acceptance in no way obligates the Town of Firestone for the financing, construction, or maintenance of public improvements within such easements or other places designated for public use; and

(b) that the Town shall not undertake maintenance of any easement or other place designated for public use until after construction of all necessary public improvements has been satisfactorily completed by the land owner and accepted in writing by the Town of Firestone.

Section 5. The Mayor and Town Clerk are hereby authorized and directed to certify upon the final subdivision plat the Town's approval and acceptance thereof. The Town Clerk is hereby authorized and directed to file the subdivision plat with Weld County Clerk and Recorder's office upon fulfillment of all conditions as indicated herein.

Section 6. The Subdivision Agreement between the Town of Firestone and Applicant is hereby approved in the form substantially similar to the form attached hereto as **Exhibit B**. The Mayor is authorized to execute the Subdivision Agreement on behalf of the Town.

Section 7. Unless otherwise extended by resolution of the Board of Trustees, the approval of the Cottonwood Hollow Filing No. 4A final plat shall be null and void if the conditions set forth in Section 3 are not complied with within one hundred and eighty (180) days of the date of this Resolution.

PASSED AND ADOPTED this ____ day of _____, 2023.

_____
Drew Peterson, Mayor

ATTEST:

_____
Kristi Bashor, Town Clerk

APPROVED AS TO FORM:

_____
William P. Hayashi, Town Attorney

EXHIBIT A
Cottonwood Hollow Filing No. 4A
Final Plat

EXHIBIT B
Cottonwood Hollow Filing No. 4A – Subdivision Agreement

Staff Report

Cottonwood Hollow, Filing 4A, Final Plat

Prepared by the
Town of Firestone for the
Board of Trustees

March 22, 2023

GENERAL INFORMATION

Purpose: This staff report is for Cottonwood Hollow Filing 4A proposes 129 single-family residential lots, and 22 tracts on approximately 64.04 acres.

Applicant: Don Provost, Cottonwood Colorado Residential, LLC
5750 DTC Parkway #210
Greenwood Village, CO 80111

Location: The site is located south of Sable Avenue, ½ mile west of Birch Street, and ½ east of the east I-25 frontage road.

Existing Conditions:

Existing Zoning:	PUD R – B (medium-density residential)
Existing Use:	Vacant land, agriculture, oil and gas, and Godding ditch

Adjacent Land Use/Zoning:

	ZONING	LAND USE
NORTH	R-C (Firestone)	High-Density Residential
SOUTH	R-E (Frederick)	Estate District and oil and gas facility
EAST	AG (Weld County)	Agriculture with single-family homes
WEST	R-B (Firestone) R-C (Firestone)	Vacant land, future filing of Cottonwood Hollow residential

Cottonwood Hollow Filing No. 4A Final Plat - Plan Analysis
Cottonwood Hollow Filing 4A proposes 129 single-family residential lots, and 22 tracts for open space, landscaping, drainage and future development on approximately 64.04 acres. The subject property is located south of Sable Avenue, ½ mile west of Birch Street, and ½ mile east of the east I-25 frontage road.

The gross density of the proposed Filing 4A subdivision is 2.01 dwelling units/acre in accordance with Cottonwood Hollow ODP Amendment No. 4 and the FDC. Lot sizes are a minimum of 4,500 square feet and are 45 to 50-foot in width with a minimum lot depth of 100 feet. Note that Tracts G, J, Q, U and V are for future development purposes. These tracts will be replatted in the future for additional single-family lots.

The proposed density will be compatible with adjacent developments by having open space and a 75-foot buffer to the larger county lots to the east of the subdivision.

The primary vehicular access points into the site will be from Sable Avenue. There will be two access points will be Ashwood Street and Audrey Street. Pedestrian access is provided via attached sidewalks along interior residential streets and will connect to the detached sidewalk along Sable Avenue.

Public infrastructure and utilities are generally available or will be extended to the property by the developer at the time of the development.

APPROVAL CRITERIA AND STAFF ANALYSIS

Final Plat Approval Criteria and Staff Analysis:
The Final Plat application for Cottonwood Hollow Filing No. 4A was reviewed for compliance with the Approval Criteria from Section 16.7.6.D of the FDC. Staff makes the following findings:

A. The Final Plat is found to be in substantial compliance with all respects of the approved Preliminary Plat and incorporates all recommended changes, modifications, and conditions attached to the approval of the Preliminary Plat;

Staff: *The proposed final plat is generally consistent with the approved Preliminary Plat and incorporates all recommended changes, modifications, and conditions attached to the approval of the Preliminary Plat.*

B. Plans and specifications for improvements connected with development of the subdivision comply with the subdivision development and design standards set forth in Chapter 6 of this FDC, and any other relevant Town, County, State, or Federal regulations, except to the extent modifications, variances, or exceptions have been expressly permitted by the terms of the Preliminary Plat approval. All construction plans for improvements shall be approved by the Town Engineer prior to the Board of Trustees action on the Final Plat;

Staff: *The plans and specifications for improvements connected with the development of the subdivision comply with the subdivision and design standards set forth in Chapter 6 of the FDC, and any other relevant Town, County, State, or Federal regulations.*

C. The applicant has either installed all required improvements or has executed a Subdivision Agreement pursuant to Section 7.16;

Staff: *The applicant will execute a Subdivision Agreement pursuant to Section 7.16 of the FDC.*

D. The applicant has paid or satisfied all applicable fees and charges.

Staff: *The applicant has paid or satisfied all applicable fees and charges.*

PUBLIC NOTICE

Notice of the Public Hearings has been provided as follows:

Published in the Longmont Times Call:	March 1, 2023
Property Posted:	February 28, 2023
Letters to Adjacent Property Owners:	February 22, 2023

RECOMMENDATION

Staff:
Town staff recommends the Board of Trustees approve draft of Resolution 23-31, with the following conditions:

1. All remaining technical corrections to the Cottonwood Hollow Filing No. 4A final plat and construction drawings requested by Town staff shall be made to the Town staff's satisfaction.
2. Prior to commencement of construction, Final Construction Plans shall be approved by the Town.
3. Prior to recordation of the final plat, a Phase III Drainage Report shall be approved by the Town.
4. Prior to recordation of the final plat, the Sable Avenue Construction Plans shall be approved by the Town.
5. Prior to recordation of the final plat, all agreements and easements with the Godding Ditch Company shall be fully executed.
6. Prior to recordation of the final plat, the Town and the Applicant shall execute a subdivision agreement, in a form to be approved by the Town Attorney.

7. Prior to recordation of the final plat, a Traffic Study shall be approved by the Town.

Planning and Zoning Commission:
After conducting a Public Hearing on the proposed Final Plat on March 16, 2023, the Planning and Zoning Commission rendered a decision recommending approval of the Final Plat as more fully set forth in Resolution PC-23-04.

COTTONWOOD HOLLOW FILING 4A

A PORTION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 68 WEST, OF THE 6TH PRINCIPAL MERIDIAN
TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO
64.036 ACRES - 129 LOTS - 22 TRACTS
FP-22-021

OWNERSHIP AND DEDICATION

KNOW ALL PEOPLE BY THESE PRESENTS, THAT THE UNDERSIGNED, COTTONWOOD COLORADO RESIDENTIAL, LLC, A COLORADO LIMITED LIABILITY COMPANY AND COTTONWOOD COLORADO RESIDENTIAL V, LLC, A COLORADO LIMITED LIABILITY COMPANY, BEING THE OWNERS OF THE LAND SHOWN IN THIS FINAL PLAT AND DESCRIBED AS FOLLOWS:

LEGAL DESCRIPTION

A parcel of land situated in the West half of the northeast quarter of Section 14, Township 2 North, Range 68 West of the Sixth Principal Meridian, Town of Firestone, County of Weld, State of Colorado, and being more particularly described as follows:

Commence at the northeast corner of the West half of the northeast quarter of said Section 14; thence along the East line of the West half of said northeast quarter of Section 14, South 00° 19' 08" East for 30.00 feet to a point on the South right of way line of Sable Avenue, as described within Book 86, Page 273 of the public records of Weld County, Colorado and the POINT OF BEGINNING; thence continue along said East line, South 00° 19' 08" East for 2624.04 feet to the southeast corner of said West half of the northeast quarter of Section 14; thence leaving said East line, run along the South line of said West half of the northeast quarter of Section 14, South 89° 54' 18" West for 708.83 feet to the southeast corner of COTTONWOOD HOLLOW, FILING 1, as recorded by reception number 4485833, of the public records of Weld County, Colorado; thence leaving said South line, run along the easterly subdivision line of said COTTONWOOD HOLLOW, FILING 1 the following seventeen courses, North 05° 54' 58" West for 231.64 feet; thence, North 30° 43' 19" West for 310.05 feet; thence, North 59° 39' 30" West for 73.63 feet; thence, North 78° 48' 55" West for 123.20 feet; thence, North 16° 19' 24" West for 305.08 feet; thence, North 12° 49' 06" West for 504.03 feet; thence, North 26° 10' 16" East for 228.92 feet; thence, North 13° 29' 06" East for 100.66 feet; thence, North 04° 10' 02" West for 187.09 feet; thence, North 77° 58' 15" West for 163.26 feet; thence, North 00° 08' 11" West for 42.50 feet; thence, North 34° 25' 45" East for 345.89 feet; thence, North 70° 26' 45" East for 183.51 feet; thence, North 34° 11' 41" East for 86.45 feet; thence, North 01° 44' 38" East for 127.93 feet; thence, North 42° 35' 14" West for 107.53 feet; thence, North 50° 35' 47" West for 113.92 feet to the southeast corner of TRACT L, of said COTTONWOOD HOLLOW, FILING 1; thence along the East line of said TRACT L, North 00° 03' 42" East for 20.00 feet to the aforementioned South right of way line of Sable Avenue; thence leaving said East line, run along said South right of way line, South 89° 56' 16" East for 1047.20 feet to the POINT OF BEGINNING.

Said parcel of land contains 2,789,410 Square Feet, which equates to 64.036 Acres, more or less.

HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LAND AS PER DRAWN HEREON CONTAINED UNDER THE NAME AND STYLE OF COTTONWOOD HOLLOW, FILING 4A, A SUBDIVISION OF A PART OF THE TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO, AND BY THESE PRESENTS DO HEREBY DEDICATE TO THE TOWN OF FIRESTONE THE STREETS, AVENUES AND LANES AS SHOWN ON THE ACCOMPANYING PLAT FOR THE PUBLIC USE THEREOF FOREVER AND DOES FURTHER DEDICATE TO THE USE OF THE TOWN OF FIRESTONE AND ALL SERVING PUBLIC UTILITIES THOSE PORTIONS OF SAID REAL PROPERTY WHICH ARE SO DESIGNATED AS EASEMENTS AS SHOWN.

IT IS EXPRESSLY UNDERSTOOD AND AGREED BY THE UNDERSIGNED THAT ALL EXPENSES AND COSTS INVOLVED IN CONSTRUCTING AND INSTALLING SANITARY SEWER SYSTEM WORKS AND LINES, WATER SYSTEM WORKS AND LINES, GAS SERVICE LINES, ELECTRICAL SERVICE WORKS AND LINES, LANDSCAPING, CURBS, GUTTERS, STREET PAVEMENT, SIDEWALKS, AND OTHER SUCH UTILITIES AND SERVICES SHALL BE GUARANTEES AND PAID FOR BY THE SUBDIVIDER OR ARRANGEMENTS MADE BY THE SUBDIVIDER THEREOF WHICH ARE APPROVED BY THE TOWN OF FIRESTONE, COLORADO, AND SUCH SUMS SHALL NOT BE PAID BY THE TOWN OF FIRESTONE, AND THAT ANY ITEM SO CONSTRUCTED OR INSTALLED WHEN ACCEPTED BY THE TOWN OF FIRESTONE SHALL BECOME THE SOLE PROPERTY OF SAID TOWN OF FIRESTONE, COLORADO. EXCEPT PRIVATE ROADWAY CURBS, GUTTER AND PAVEMENT AND ITEMS OWNED BY MUNICIPALITY FRANCHISED UTILITIES, OTHER SERVING PUBLIC ENTITIES AND/OR CENTURY LINK AND SHALL NOT BECOME THE PROPERTY OF THE TOWN OF FIRESTONE, COLORADO.

OWNER:

COTTONWOOD COLORADO RESIDENTIAL, LLC
A COLORADO LIMITED LIABILITY COMPANY

BY: _____

TITLE: _____

NOTARY CERTIFICATE:

STATE OF COLORADO)
) SS
COUNTY OF ARAPAHOE)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED
BEFORE ME THIS _____ DAY OF _____, 2023, BY

_____.

WITNESS MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

MY COMMISSION EXPIRES

OWNER:

COTTONWOOD COLORADO RESIDENTIAL V, LLC
A COLORADO LIMITED LIABILITY COMPANY

BY: _____

TITLE: _____

NOTARY CERTIFICATE:

STATE OF COLORADO)
) SS
COUNTY OF ARAPAHOE)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED
BEFORE ME THIS _____ DAY OF _____, 2023, BY

_____.

WITNESS MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

MY COMMISSION EXPIRES

LIEN HOLDER

THE UNDERSIGNED AS MORTGAGE HOLDER ON PART OF ALL OF THE HEREON SHOWN REAL PROPERTY, DO HEREBY AGREE AND CONSENT TO THE PLATTING OF SAID PROPERTY AS SHOWN HEREON.

CENTENNIAL DEVELOPMENT PARTNERS, LLC

BY: _____ TITLE: _____

NOTARY CERTIFICATE:

STATE OF COLORADO)
) SS
COUNTY OF ARAPAHOE)

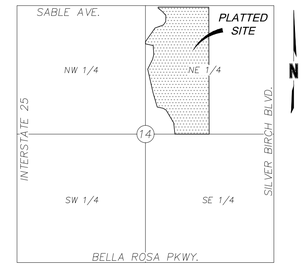
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS

_____ DAY OF _____, 2023, BY _____.

WITNESS MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

MY COMMISSION EXPIRES



SECTION MAP
SECTION 14-T2N-R68W of the Sixth Principal Meridian
-Not To Scale-

SHEET INDEX

COVER SHEET..... SHEET 1
OVERALL BOUNDARY..... SHEET 2
FINAL PLAT DETAILS..... SHEET 3-8
CURVE TABLES..... SHEET 9
EASEMENT DETAIL..... SHEET 10

OPEN SPACE		
PUBLIC LAND TYPE	REQUIRED	PROVIDED
POCKET PARK	0.20 AC	1.28 AC
NEIGHBORHOOD PARK	1.20 AC	CASH IN LIEU
COMMUNITY PARK	1.99 AC	CASH IN LIEU
PARK TOTALS	3.39 AC	1.28 AC

LAND SUMMARY CHART		
TYPE	AREA	% OF TOTAL AREA
RESIDENTIAL LOTS	16.678	26.04%
TRACTS	38.011	59.36%
VARIES	36.733	57.36%
PARKS	1.278	2.00%
PUBLIC ROW	9.347	14.59%
TOTAL	64.036	100.00%

SUBDIVISION DATA TABLE	
	TOTALS
GROSS AREA	64.036 ACRES
GROSS DENSITY (RESIENTIAL LOTS PER ACRE)	7.73 LOTS / ACRE
NUMBER OF SINGLE FAMILY DETACHED RESIDENTIAL LOTS	129
NUMBER OF TRACTS	22
AREA OF TRACTS	38.011 ACRES
AREA OF SINGLE FAMILY DETACHED RESIDENTIAL LOTS	16.678 ACRES
DENSITY (SINGLE FAMILY DETACHED RESIDENTIAL LOTS PER ACRE)	7.73 LOTS / ACRE
MINUMUM SINGLE FAMILY DETACHED RESIDENTIAL LOT AREA	4,500 SQUARE FEET
MAXIMUM SINGLE FAMILY DETACHED RESIDENTIAL LOT AREA	14,111 SQUARE FEET
AVERAGE SINGEL FAMILY DETACHED RESIDENETIAL LOT AREA	5,630 SQUARE FEET

TRACT SUMMARY CHART				
TRACTS	AREA	USE	OWNERSHIP	MAINTENANCE
TRACT A	0.701	DRAINAGE, OIL/GAS PIPELINE, UTILITIES, GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT B	2.557	DRAINAGE, OIL/GAS PIPELINE, OIL/GAS FACILITIES, ACCESS, UTILITIES, GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT C	0.877	DRAINAGE TRACT	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT D	1.880	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT E	1.278	COMMUNITY CENTER	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT F	0.859	DRAINAGE, OIL/GAS PIPELINE, UTILITIES, GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT G	0.220	FUTURE DEVELOPMENT	COTTONWOOD COLORADO RESIDENTIAL LLC	HOME OWNERS ASSOC.
TRACT H	0.333	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT I	0.133	OIL/GAS PIPELINE AND GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT J	0.804	FUTURE DEVELOPMENT	COTTONWOOD COLORADO RESIDENTIAL LLC	HOME OWNERS ASSOC.
TRACT K	1.281	DRAINAGE TRACT	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT L	0.068	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT M	0.116	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT N	0.093	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT O	5.457	DRAINAGE, OIL/GAS PIPELINE, OIL/GAS FACILITIES, ACCESS, UTILITIES, GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT P	0.575	OIL/GAS PIPELINE AND GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT Q	11.440	FUTURE DEVELOPMENT	COTTONWOOD COLORADO RESIDENTIAL LLC	HOME OWNERS ASSOC.
TRACT R	6.945	OIL/GAS FACILITIES	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT S	0.131	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT T	0.154	GREEN SPACE	HOME OWNERS ASSOC.	HOME OWNERS ASSOC.
TRACT U	1.435	FUTURE DEVELOPMENT	COTTONWOOD COLORADO RESIDENTIAL LLC	HOME OWNERS ASSOC.
TRACT V	0.674	FUTURE DEVELOPMENT	COTTONWOOD COLORADO RESIDENTIAL LLC	HOME OWNERS ASSOC.

OWNER / DEVELOPER

COTTONWOOD COLORADO
RESIDENTIAL, LLC
5750 DTC PARKWAY #210
GREENWOOD VILLAGE, CO 80111
CONTACT: DON PROVOST
EMAIL: DGP@ALBDEV.COM

SURVEYOR

OLSSON, INC
1525 RALEIGH ST, SUITE 400
DENVER, CO 80204
PHONE: 303.237.2072
CONTACT: ELI J. DONALDSON
EMAIL:
EDONALDSON@OLSSON.COM

NOTES

1. THE PURPOSE OF THIS PLAT IS TO SUBDIVIDE THE OVERALL TRACT TO DEVELOP RESIDENTIAL LOTS.
2. THE SUBJECT PROPERTY LIES WITHIN A DESIGNATED ZONE "A" FLOODPLAIN PER FEMA FIRM MAP NUMBER 08123C1890E, EFFECTIVE DATE JANUARY 20, 2016.
3. THE BASIS OF BEARING ARE GRID AND BASED WITHIN THE COLORADO COORDINATE SYSTEM OF 1983, NORTH ZONE. THE BEARING OF THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 14, BEING MONUMENTED AT THE WEST END BY A NUMBER 6 REBAR AND 2.5" ALUMINUM DISC WITHIN A RANGE BOX, STAMPED "PERTOLEUM FIELD SURVEYING 2014 PLS 38304" AND MONUMENTED AT THE EAST END BY A NUMBER 6 REBAR AND 3.25" ALUMINUM DISC WITHIN A RANGE BOX, STAMPED "KING SURVEORS INC PEPEK 2006" IS, SOUTH 89° 56' 16" EAST FOR 2618.05 FEET.
4. UTILITY EASEMENTS ARE FOR THE USE OF ELECTRIC, TELEPHONE, GAS AND CABLE TELEVISION. THESE EASEMENTS ARE LOCATED ON PRIVATE PROPERTY IMMEDIATELY ADJACENT TO BOTH SIDES OF PLATTED ROADWAYS AND LOTS. OTHER UTILITIES SHALL HAVE THE RIGHT TO CROSS AT SUBSTANTIALLY RIGHT ANGLES, THESE EASEMENTS, UNLESS OTHERWISE SPECIFIED, SHALL BE LOCATED AS FOLLOWS:
   FRONT: TEN FEET WIDE, BEING COINCIDENT WITH AND ADJACENT TO THE STREET RIGHTS-OF-WAY.
   REAR: EIGHT FEET WIDE, ALONG ALL PERIMETER LOTS.
   TRACTS: TEN FEET WIDE, ON EACH SIDE.
5. THE CURRENT FLOOD PLAIN AREA IS BEING REVISED THROUGH A LETTER OF MAP REVISION PROCESS. THE PROPOSED FLOOD PLAIN WILL BECOME THE WESTERLY BOUNDARY OF THIS PLAT. THE FLOOD PLAIN LINES CURRENTLY SHOWN ARE BASED ON THE FEMA, FIRM MAP 08123C1890E, DATED 01/20/2016.

SURVEYOR'S CERTIFICATE

I, ELI J. DONALDSON, A REGISTERED LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY OF COTTONWOOD HOLLOW, FILING 4A, WAS MADE BY ME OR UNDER MY SUPERVISION ON OR ABOUT ,06/01/2021, AND THAT THE ACCOMPANYING PLAT ACCURATELY AND PROPERLY SHOWS SAID SUBDIVISION AND THE SURVEY THEREOF.

ON BEHALF OF OLSSON,

ELI J. DONALDSON
PROFESSIONAL LAND SURVEYOR
COLORADO REGISTRATION NUMBER: 38755

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.

TOWN OF FIRESTONE APPROVAL

THIS IS TO CERTIFY THAT THIS FINAL PLAT FOR COTTONWOOD HOLLOW FILING 4A WAS APPROVED ON THE _____ DAY OF _____ , 2023, BY RESOLUTION NO._____ , PASSED AND ADOPTED AT THE REGULAR MEETING OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, HELD ON THIS _____ DAY OF _____, 2023, AND MAY BE FILED WITH THE CLERK AND RECORDER OF WELD COUNTY. ALL PUBLIC DEDICATIONS SHOWN THEREON ARE ACCEPTED BY THE TOWN, SUBJECT TO THE PROVISION THAT NEITHER APPROVAL NOR ACCEPTANCE OBLIGATES THE TOWN OF FIRESTONE FOR THE FINANCING OR CONSTRUCTION OF IMPROVEMENTS ON LAND OR EASEMENTS DEDICATED TO THE TOWN EXCEPT AS SPECIFICALLY AGREED TO BY THE BOARD OF TRUSTEES.

MAYOR _____ ATTEST: TOWN CLERK _____

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

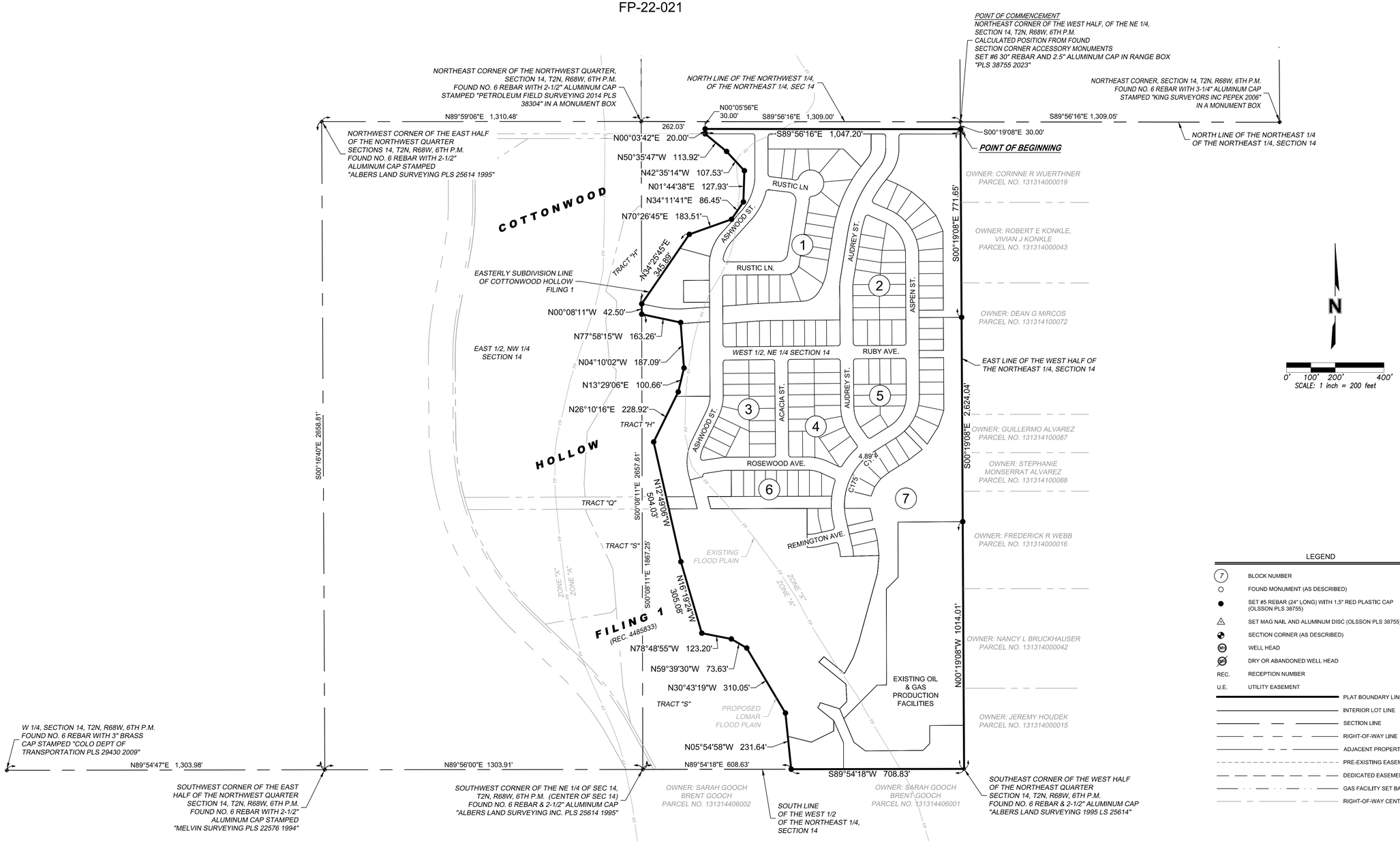
olsson
1525 Raleigh Street
Suite 400
Denver, CO 80204
TEL 303.237.2072 www.olsson.com

SUBDIVISION OF LAND, TOWN OF FIRESTONE

APPROVED BY: EJD
PROJECT #: 021-02728
DATE: 02.20.2023

COTTONWOOD HOLLOW FILING 4A

A PORTION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 68 WEST, OF THE 6TH PRINCIPAL MERIDIAN
TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO
64.036 ACRES - 129 LOTS - 22 TRACTS
FP-22-021



LEGEND

7	BLOCK NUMBER
○	FOUND MONUMENT (AS DESCRIBED)
●	SET #5 REBAR (24" LONG) WITH 1.5" RED PLASTIC CAP (OLSSON PLS 38755)
△	SET MAG NAIL AND ALUMINUM DISC (OLSSON PLS 38755)
	SECTION CORNER (AS DESCRIBED)
WH	WELL HEAD
DWH	DRY OR ABANDONED WELL HEAD
REC.	RECEPTION NUMBER
U.E.	UTILITY EASEMENT
	PLAT BOUNDARY LINE
	INTERIOR LOT LINE
	SECTION LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	PRE-EXISTING EASEMENT LINE
	DEDICATED EASEMENT LINE
	GAS FACILITY SET BACK LINE
	RIGHT-OF-WAY CENTERLINE

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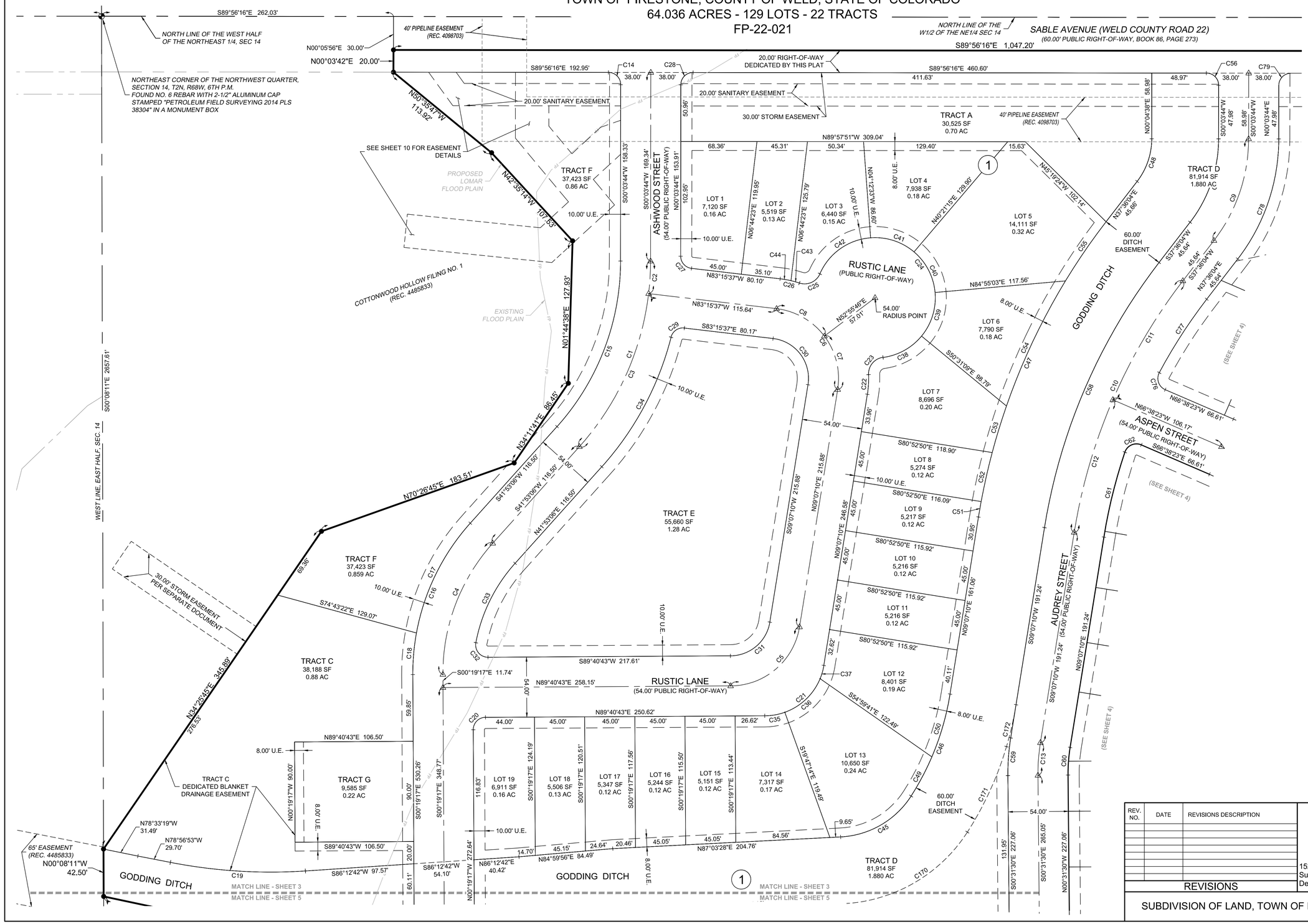
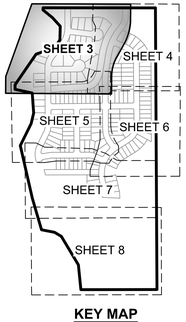


SEE SHEET 9 FOR CURVE TABLES



KEY MAP
(NOT TO SCALE)

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SHEET 3 OF 10

COTTONWOOD HOLLOW FILING 4A

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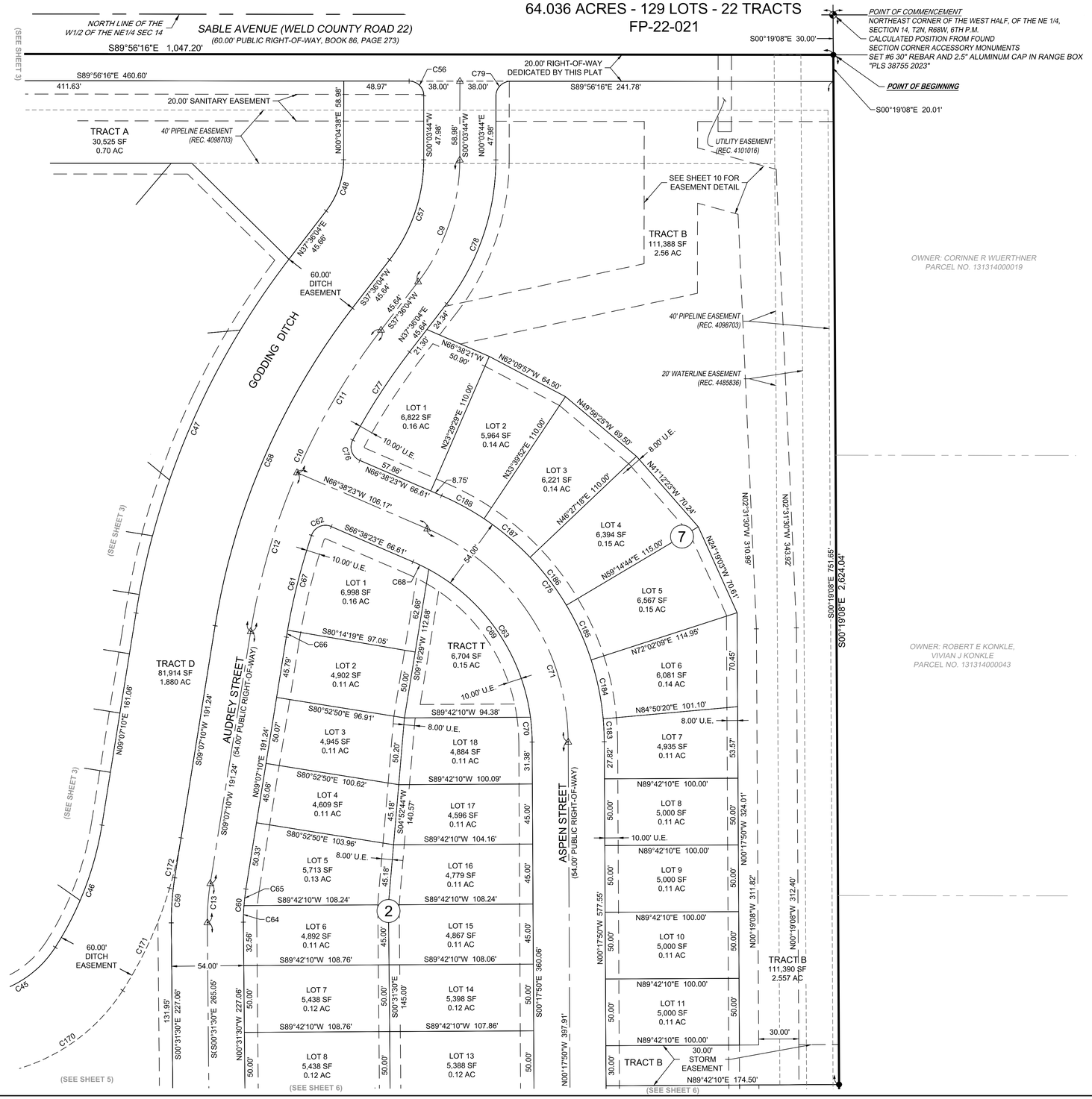

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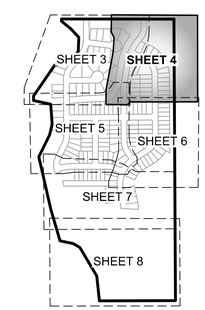

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COTTONWOOD HOLLOW FILING 4A

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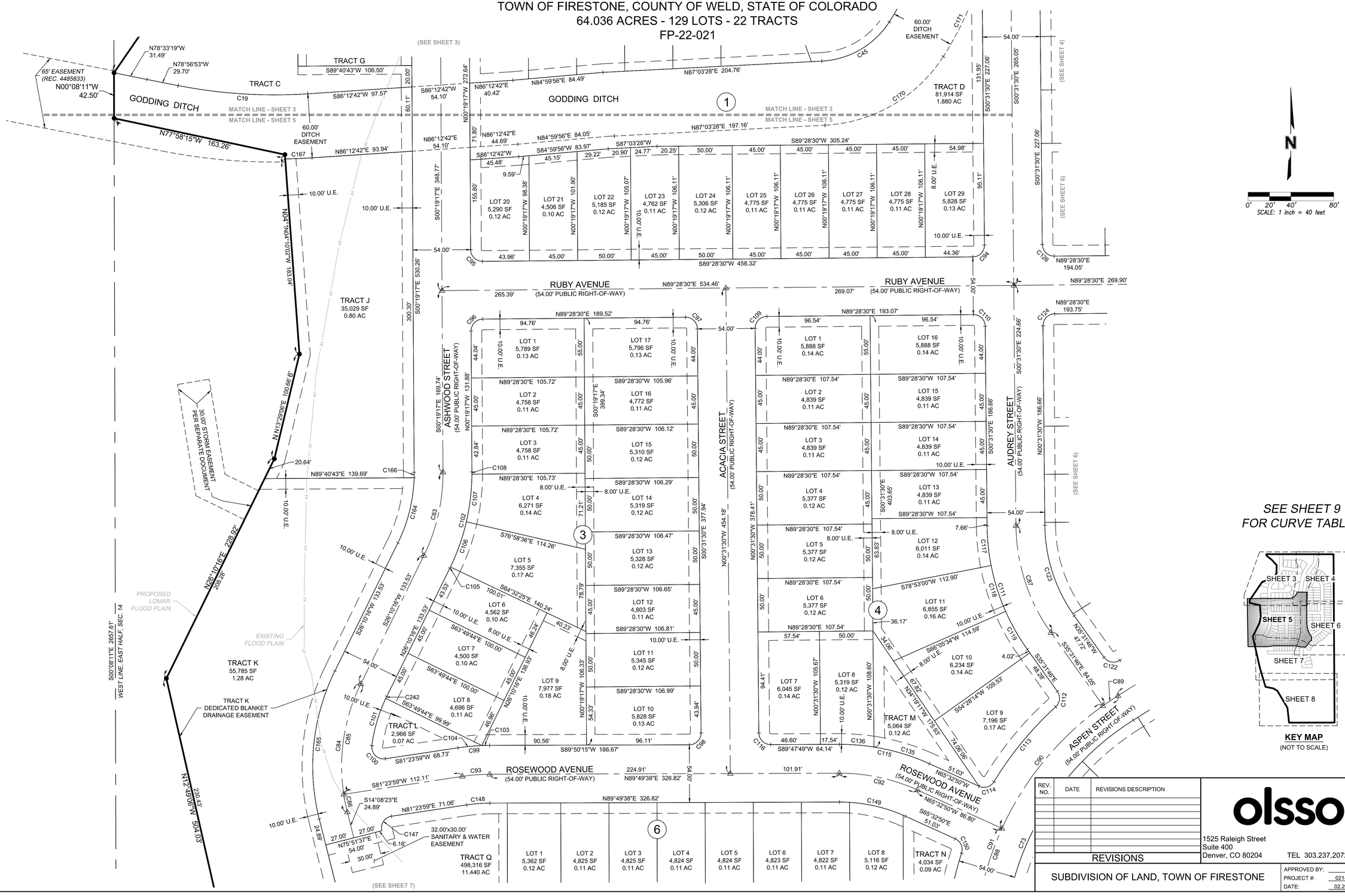

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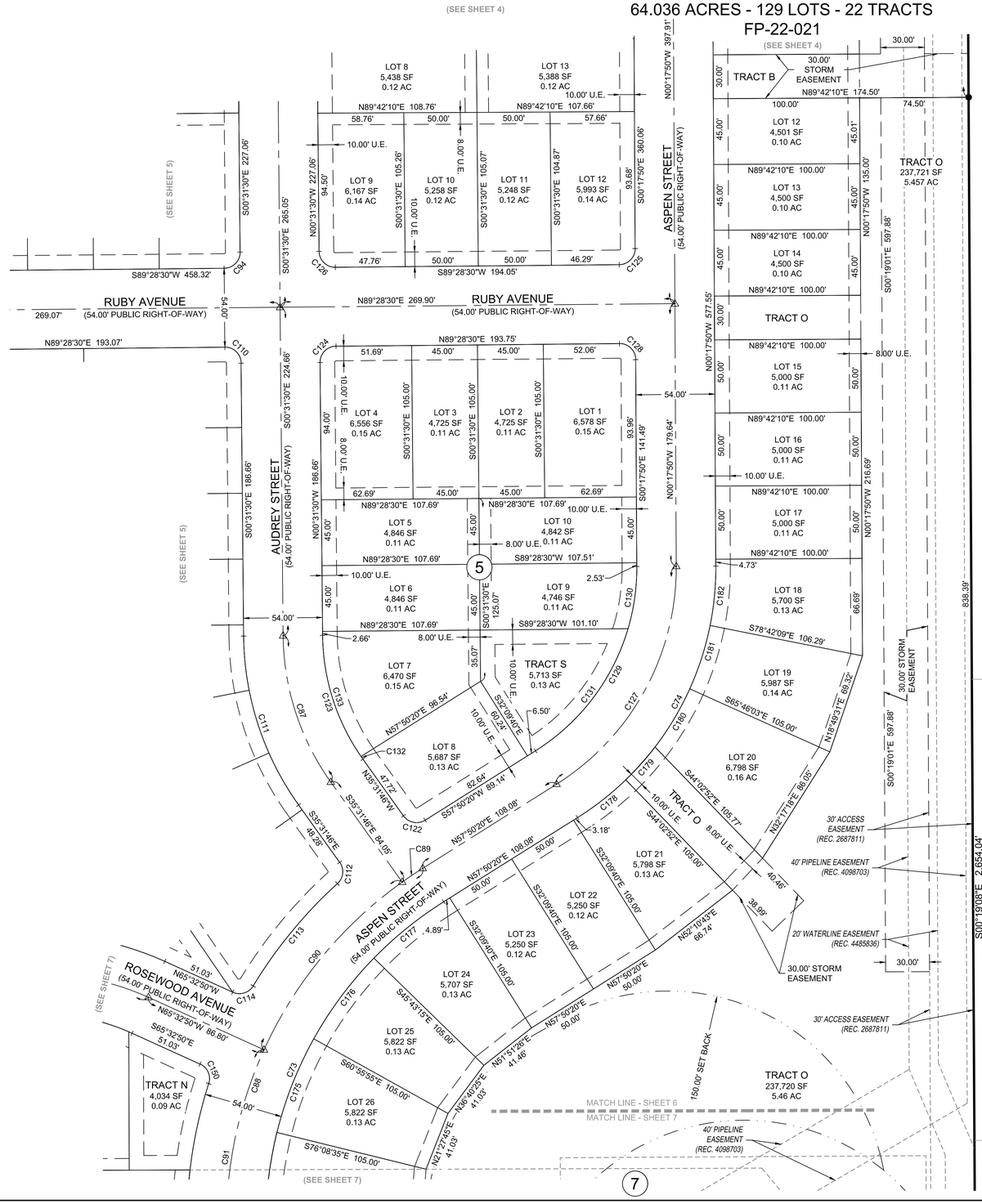

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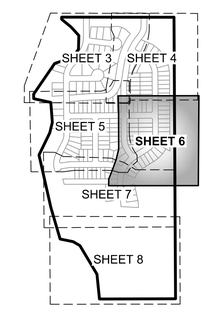

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SHEET 6 OF 10

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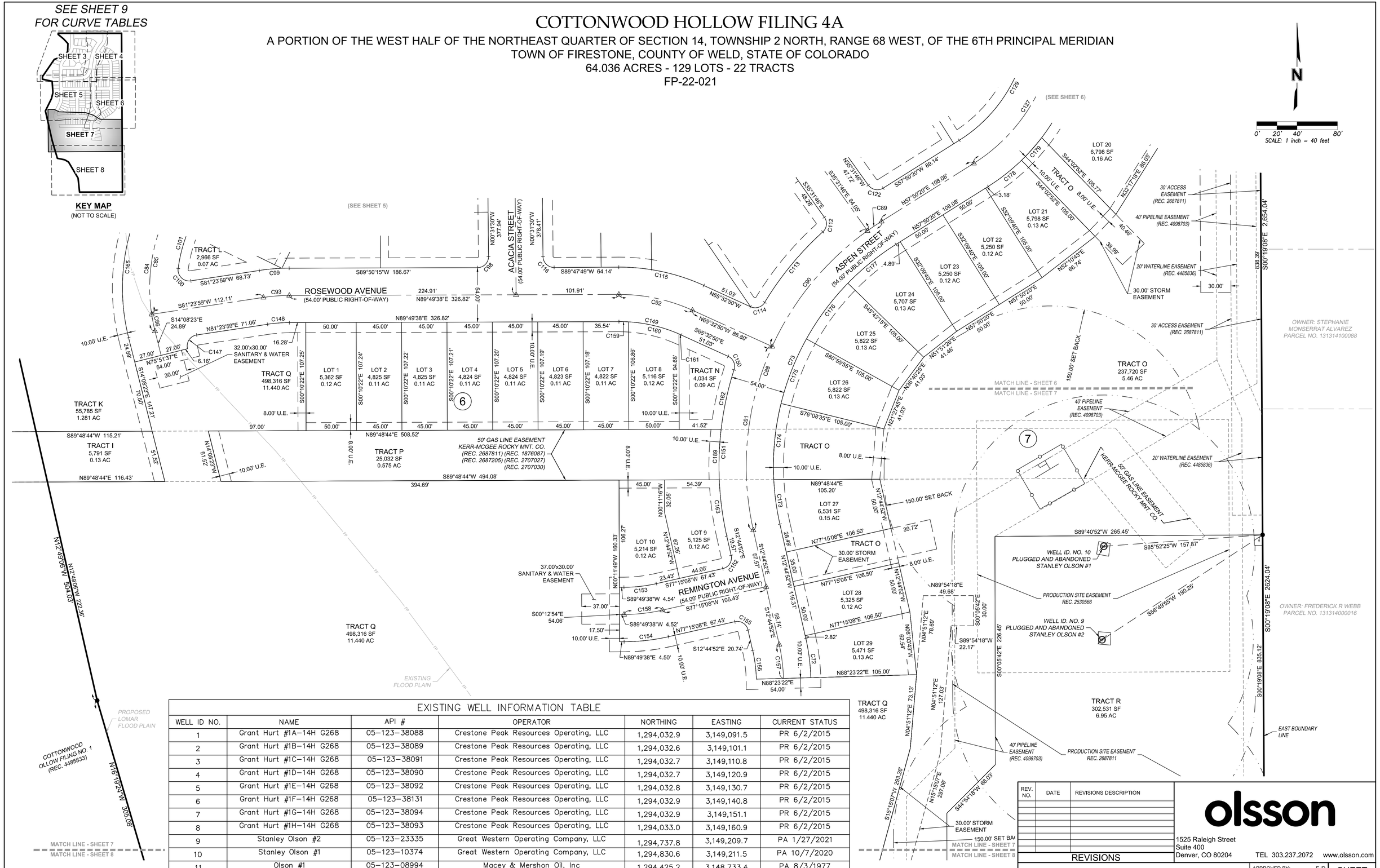

EXISTING WELL INFORMATION TABLE

WELL ID NO.	NAME	API #	OPERATOR	NORTHING	EASTING	CURRENT STATUS
1	Grant Hurt #1A–14H G268	05–123–38088	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,091.5	PR 6/2/2015
2	Grant Hurt #1B–14H G268	05–123–38089	Crestone Peak Resources Operating, LLC	1,294,032.6	3,149,101.1	PR 6/2/2015
3	Grant Hurt #1C–14H G268	05–123–38091	Crestone Peak Resources Operating, LLC	1,294,032.7	3,149,110.8	PR 6/2/2015
4	Grant Hurt #1D–14H G268	05–123–38090	Crestone Peak Resources Operating, LLC	1,294,032.7	3,149,120.9	PR 6/2/2015
5	Grant Hurt #1E–14H G268	05–123–38092	Crestone Peak Resources Operating, LLC	1,294,032.8	3,149,130.7	PR 6/2/2015
6	Grant Hurt #1F–14H G268	05–123–38131	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,140.8	PR 6/2/2015
7	Grant Hurt #1G–14H G268	05–123–38094	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,151.1	PR 6/2/2015
8	Grant Hurt #1H–14H G268	05–123–38093	Crestone Peak Resources Operating, LLC	1,294,033.0	3,149,160.9	PR 6/2/2015
9	Stanley Olson #2	05–123–23335	Great Western Operating Company, LLC	1,294,737.8	3,149,209.7	PA 1/27/2021
10	Stanley Olson #1	05–123–10374	Great Western Operating Company, LLC	1,294,830.6	3,149,211.5	PA 10/7/2020
11	Olson #1	05–123–08994	Macey & Mershon Oil, Inc	1,294,425.2	3,148,733.4	PA 8/3/1977

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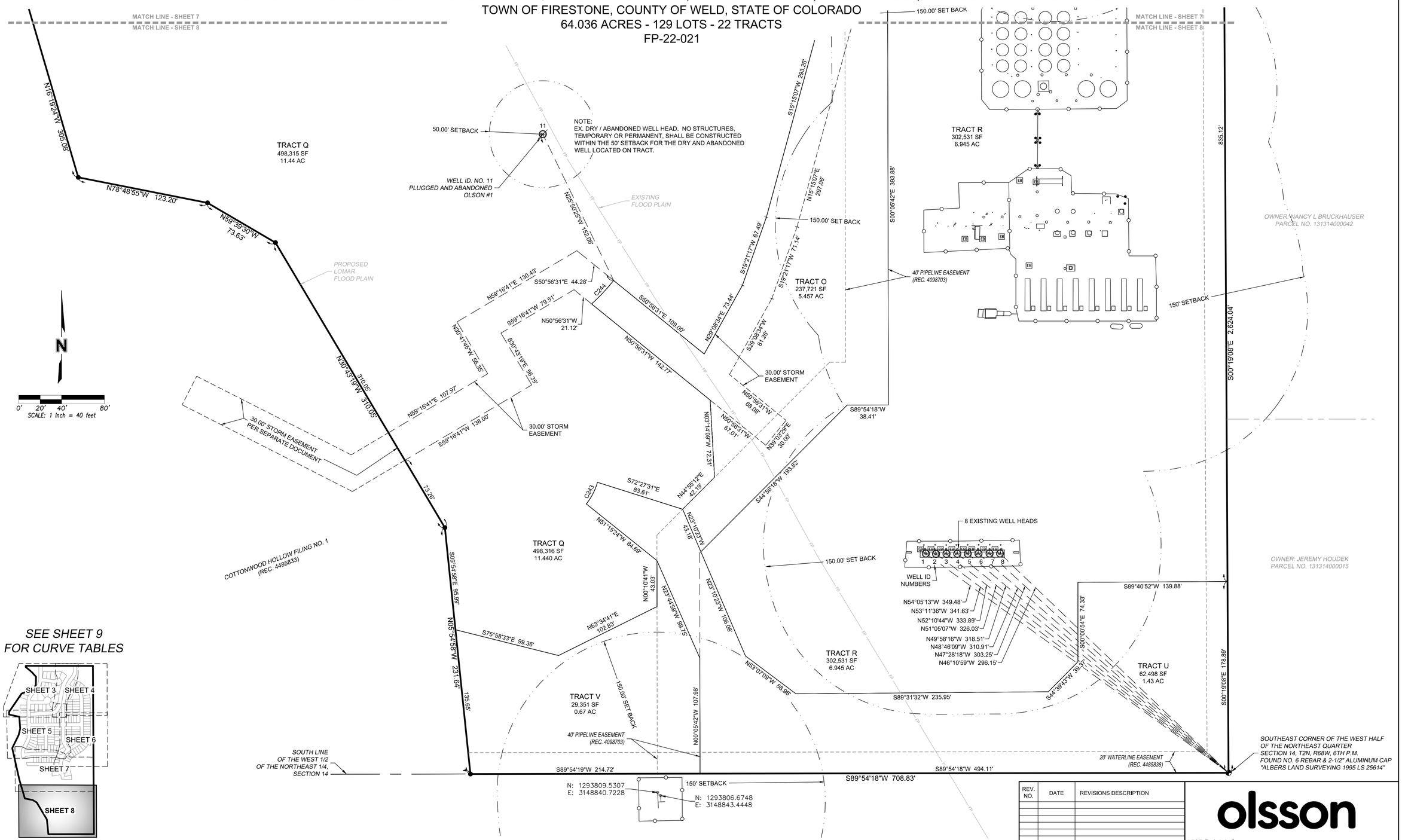
64.036 ACRES - 129 LOTS - 22 TRACTS
FP-22-021



SEE SHEET 9
FOR CURVE TABLES

KEY MAP
(NOT TO SCALE)

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

olsson
1525 Raleigh Street
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TEL 303.237.2072 www.olsson.com

SUBDIVISION OF LAND, TOWN OF FIRESTONE

APPROVED BY: EJD
PROJECT #: 021-02728
DATE: 02.20.2023

COTTONWOOD HOLLOW FILING 4A

A PORTION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 68 WEST, OF THE 6TH PRINCIPAL MERIDIAN
TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO
64.036 ACRES - 129 LOTS - 22 TRACTS
FP-22-021

CURVE TABLES

CURVE DATA					
#	Radius	Delta	Chord Bearing	Chord Length	Length
C1	250.00'	041°49'22"	S20°58'25"W	178.46'	182.49'
C2	250.00'	006°42'23"	S03°24'56"W	29.25'	29.26'
C3	250.00'	035°06'59"	S24°19'37"W	150.84'	153.22'
C4	175.00'	042°12'24"	S20°46'54"W	126.02'	128.91'
C5	63.00'	080°33'33"	N49°23'56"E	81.46'	88.58'
C6	63.00'	092°22'47"	N37°04'14"W	90.93'	101.58'
C7	63.00'	046°11'24"	N13°58'32"W	49.42'	50.79'
C8	63.00'	046°11'24"	N60°09'56"W	49.42'	50.79'
C9	150.00'	037°32'19"	S18°49'54"W	96.53'	98.28'
C10	500.00'	028°28'54"	S23°21'37"W	246.00'	248.55'
C11	500.00'	014°14'27"	S30°28'50"W	123.95'	124.27'
C12	500.00'	014°14'27"	S16°14'23"W	123.95'	124.27'
C13	175.00'	009°38'40"	S04°17'50"W	29.42'	29.46'
C14	11.00'	090°00'00"	S44°56'16"E	15.56'	17.28'
C15	223.00'	041°49'22"	S20°58'25"W	159.19'	162.78'
C16	202.00'	042°12'24"	S20°46'54"W	145.46'	148.80'
C17	202.00'	031°32'09"	S26°07'02"W	109.78'	111.18'
C18	202.00'	010°40'15"	S05°00'50"W	37.57'	37.62'
C19	470.00'	014°50'25"	N86°22'06"W	121.40'	121.74'
C20	11.00'	090°00'00"	N44°40'43"E	15.56'	17.28'
C21	54.00'	080°23'33"	N49°30'55"E	69.70'	75.77'
C22	90.00'	011°16'36"	N03°28'52"E	17.68'	17.71'
C23	15.00'	084°31'04"	N40°06'06"E	20.17'	22.13'
C24	54.00'	238°51'44"	N37°04'14"W	94.06'	225.12'
C25	15.00'	084°31'04"	S65°45'26"W	20.17'	22.13'
C26	90.00'	011°16'36"	N77°37'20"W	17.68'	17.71'
C27	11.00'	083°19'22"	N41°35'56"W	14.62'	16.00'
C28	11.00'	090°00'00"	N45°03'44"E	15.56'	17.28'
C29	11.00'	082°23'33"	N55°32'36"E	14.49'	15.82'
C30	36.00'	092°22'47"	S37°04'14"E	51.96'	58.04'
C31	36.00'	080°33'33"	S49°23'56"W	46.55'	50.62'
C32	11.00'	101°02'57"	N39°47'49"W	16.98'	19.40'
C33	148.00'	031°09'27"	N26°18'23"E	79.49'	80.48'
C34	277.00'	027°32'17"	N28°06'58"E	131.86'	133.13'
C35	54.00'	019°29'54"	N79°57'45"E	18.29'	18.38'
C36	54.00'	047°45'14"	N46°20'11"E	43.72'	45.01'
C37	54.00'	013°08'25"	N15°53'21"E	12.36'	12.38'
C38	54.00'	042°52'47"	N60°55'15"E	39.48'	40.41'
C39	54.00'	044°33'48"	N17°11'57"E	40.95'	42.00'
C40	54.00'	044°33'48"	N27°21'51"W	40.95'	42.00'
C41	54.00'	044°33'48"	N71°55'39"W	40.95'	42.00'
C42	54.00'	062°17'33"	S54°38'40"W	55.86'	58.71'
C43	90.00'	004°57'48"	N74°27'56"W	7.79'	7.80'
C44	90.00'	006°18'48"	N80°06'13"W	9.91'	9.92'
C45	80.00'	054°22'52"	N59°52'02"E	73.11'	75.93'
C46	240.00'	023°33'26"	N20°53'53"E	97.98'	98.68'
C47	587.00'	028°28'54"	N23°21'37"E	288.80'	291.80'
C48	63.00'	037°31'25"	N18°50'21"E	40.53'	41.26'
C49	240.00'	009°30'33"	N27°55'19"E	39.79'	39.83'
C50	240.00'	014°02'53"	N16°08'37"E	58.70'	58.84'
C51	587.00'	001°22'17"	N09°48'18"E	14.05'	14.05'
C52	587.00'	004°24'07"	N12°41'30"E	45.09'	45.10'
C53	587.00'	004°16'17"	N17°01'42"E	43.75'	43.76'
C54	587.00'	012°08'45"	N25°14'13"E	124.20'	124.44'
C55	587.00'	006°17'28"	N34°27'20"E	64.42'	64.45'
C56	11.00'	090°00'00"	S44°56'16"E	15.56'	17.28'
C57	123.00'	037°32'19"	S18°49'54"W	79.15'	80.59'
C58	527.00'	028°28'54"	S23°21'37"W	259.28'	261.97'
C59	202.00'	009°38'40"	S04°17'50"W	33.96'	34.00'

CURVE DATA					
#	Radius	Delta	Chord Bearing	Chord Length	Length
C60	148.00'	009°38'40"	N04°17'50"E	24.88'	24.91'
C61	473.00'	009°31'22"	N13°52'51"E	78.52'	78.61'
C62	11.00'	094°43'05"	N66°00'04"E	16.18'	18.18'
C63	148.00'	066°20'34"	S33°28'06"E	161.95'	171.37'
C64	148.00'	004°49'20"	S01°53'10"W	12.45'	12.46'
C65	148.00'	004°49'20"	S06°42'30"W	12.45'	12.46'
C66	473.00'	000°38'31"	S09°26'25"W	5.30'	5.30'
C67	473.00'	008°52'51"	S14°12'06"W	73.24'	73.32'
C68	148.00'	005°07'05"	S64°04'51"E	13.22'	13.22'
C69	148.00'	053°59'44"	S34°31'27"E	134.37'	139.48'
C70	148.00'	007°13'45"	S03°54'42"E	18.66'	18.67'
C71	175.00'	066°20'34"	N33°28'06"W	191.50'	202.63'
C72	202.00'	011°08'15"	N07°10'45"W	39.20'	39.27'
C73	260.00'	070°35'12"	N22°32'44"E	300.44'	320.31'
C74	202.00'	058°08'09"	N28°46'15"E	196.28'	204.96'
C75	202.00'	066°20'34"	N33°28'06"W	221.05'	233.90'
C76	11.00'	094°43'05"	N19°16'48"W	16.18'	18.18'
C77	473.00'	009°31'22"	N32°50'22"E	78.52'	78.61'
C78	177.00'	037°32'19"	N18°49'54"E	113.90'	115.97'
C79	11.00'	090°00'00"	N45°03'44"E	15.56'	17.28'
C83	175.00'	026°29'33"	S12°55'29"W	80.20'	80.92'
C84	175.00'	040°18'39"	S06°00'56"W	120.60'	123.12'
C85	175.00'	034°46'17"	S08°47'08"W	104.56'	106.20'
C86	175.00'	005°32'23"	S11°22'12"E	16.91'	16.92'
C87	175.00'	035°00'16"	S18°01'38"E	105.26'	106.91'
C88	287.00'	070°35'12"	S22°32'44"W	331.64'	353.58'
C89	287.00'	003°22'05"	S56°09'17"W	16.87'	16.87'
C90	287.00'	030°01'04"	S39°27'42"W	148.65'	150.36'
C91	287.00'	037°12'02"	S05°51'09"W	183.09'	186.34'
C91	287.00'	037°12'02"	S05°51'09"W	183.09'	186.34'
C92	175.00'	024°37'32"	N77°51'36"W	74.64'	75.21'
C93	175.00'	008°25'39"	S85°36'49"W	25.72'	25.74'
C94	11.00'	090°00'00"	S44°28'30"W	15.56'	17.28'
C95	11.00'	090°12'13"	N45°25'24"W	15.58'	17.32'
C96	11.00'	089°47'47"	N44°34'36"E	15.53'	17.24'
C97	11.00'	090°00'00"	S45°31'30"E	15.56'	17.28'
C98	11.00'	090°21'45"	S44°39'23"W	15.61'	17.35'
C99	202.00'	008°25'39"	S85°36'49"W	29.68'	29.71'
C100	11.00'	106°06'12"	N45°32'54"W	17.58'	20.37'
C101	148.00'	018°40'04"	N16°50'14"E	48.01'	48.22'
C102	202.00'	026°29'33"	N12°55'29"E	92.57'	93.40'
C103	202.00'	002°04'36"	S88°47'20"W	7.32'	7.32'
C104	202.00'	006°21'02"	S84°34'31"W	22.38'	22.39'
C105	202.00'	000°25'00"	N25°57'46"E	1.47'	1.47'
C106	202.00'	012°43'52"	N19°23'20"E	44.79'	44.88'
C107	202.00'	012°43'53"	N06°39'28"E	44.79'	44.89'
C108	202.00'	000°36'49"	N00°00'53"W	2.16'	2.16'
C109	11.00'	090°00'00"	N44°28'30"E	15.56'	17.28'
C110	11.00'	090°00'00"	S45°31'30"E	15.56'	17.28'
C111	202.00'	035°00'16"	S18°01'38"E	121.50'	123.41'
C112	11.00'	083°17'09"	S06°06'48"W	14.62'	15.99'
C113	314.00'	016°35'19"	S39°27'42"W	90.59'	90.91'
C114	11.00'	083°17'08"	S72°48'36"W	14.62'	15.99'
C115	202.00'	024°37'32"	N77°51'36"W	86.15'	86.82'
C116	11.00'	089°40'41"	N45°21'50"W	15.51'	17.22'
C117	202.00'	010°35'30"	S05°49'15"E	37.29'	37.34'
C118	202.00'	012°47'26"	S17°30'43"E	45.00'	45.09'
C119	202.00'	011°37'20"	S29°43'06"E	40.90'	40.97'
C120	202.00'	015°22'28"	N73°14'04"W	54.04'	54.20'

CURVE DATA					
#	Radius	Delta	Chord Bearing	Chord Length	Length
C121	202.00'	009°15'04"	N85°32'50"W	32.58'	32.62'
C122	11.00'	086°37'55"	N78°50'42"W	15.09'	16.63'
C123	148.00'	035°00'16"	N18°01'38"W	89.02'	90.42'
C124	11.00'	090°00'00"	N44°28'30"E	15.56'	17.28'
C125	11.00'	089°46'20"	S44°35'20"W	15.53'	17.24'
C126	11.00'	090°00'00"	S45°31'30"E	15.56'	17.28'
C127	175.00'	058°08'09"	N28°46'15"E	170.05'	177.57'
C128	11.00'	090°13'40"	S45°24'40"E	15.59'	17.32'
C129	148.00'	058°08'09"	S28°46'15"W	143.81'	150.17'
C130	148.00'	016°41'06"	S08°02'43"W	42.95'	43.10'
C131	148.00'	041°27'04"	S37°06'48"W	104.75'	107.07'
C132	148.00'	000°52'10"	N35°05'41"W	2.25'	2.25'
C133	148.00'	034°08'05"	N17°35'33"W	86.88'	88.17'
C135	202.00'	015°22'28"	N73°14'04"W	54.04'	54.20'
C136	202.00'	009°15'04"	N85°32'50"W	32.58'	32.62'
C147	11.00'	095°32'23"	N33°37'48"E	16.29'	18.34'
C148	148.00'	008°25'39"	N85°36'49"E	21.75'	21.77'
C149	148.00'	024°37'32"	S77°51'36"E	63.12'	63.61'
C150	11.00'	083°17'08"	S23°54'16"E	14.62'	15.99'
C151	314.00'	030°29'10"	S02°29'43"W	165.11'	167.07'
C152	11.00'	090°00'00"	S32°15'08"W	15.56'	17.28'
C153	148.00'	012°34'30"	S83°32'23"W	32.42'	32.48'
C154	202.00'	012°34'30"	N83°32'23"E	44.25'	44.33'
C155	11.00'	090°00'00"	S57°44'52"E	15.56'	17.28'
C156	148.00'	011°08'15"	S07°10'45"E	28.72'	28.77'
C157	175.00'	011°08'15"	S07°10'45"E	33.96'	34.02'
C158	175.00'	012°34'30"	S83°32'23"W	38.33'	38.41'
C159	148.00'	003°39'50"	S88°20'27"E	9.46'	9.46'
C160	148.00'	020°01'23"	S76°29'51"E	51.46'	51.72'
C161	148.00'	000°56'19"	S66°00'59"E	2.42'	2.42'
C162	314.00'	011°02'45"	S12°12'55"W	60.44'	60.53'
C163	314.00'	010°17'59"	S07°35'53"E	56.37'	56.45'
C164	148.00'	024°29'49"	S13°55'21"W	62.80'	63.28'
C165	202.00'	040°18'39"	S06°00'56"W	139.21'	142.12'
C166	148.00'	001°59'44"	S00°40'35"W	5.15'	5.16'
C167	530.00'	002°42'42"	N87°34'03"E	25.08'	25.08'
C170	140.00'	054°22'52"	N59°52'02"E	127.95'	132.88'
C171	300.00'	016°10'24"	N24°35'24"E	84.40'	84.68'
C172	300.00'	007°23'02"	N12°48'41"E	38.64'	38.66'
C173	260.00'	009°49'48"	N07°49'59"W	44.55'	44.61'
C174	260.00'	016°46'30"	N05°28'10"E	75.85'	76.12'
C175	260.00'	015°12'40"	N21°27'45"E	68.82'	69.03'
C176	260.00'	015°12'40"	N36°40'25"E	68.82'	69.03'
C177	260.00'	013°33'34"	N51°03'33"E	61.39'	61.53'
C178	202.00'	011°53'12"	N51°53'44"E	41.83'	41.91'
C179	202.00'	008°32'27"	N41°40'54"E	30.08'	30.11'
C180	202.00'	013°10'43"	N30°49'19"E	46.36'	46.46'
C181	202.00'	012°56'06"	N17°45'54"E	45.51'	45.60'
C182	202.00'	011°35'41"	N05°30'01"E	40.81'	40.88'
C183	202.00'	004°52'35"	N02°44'07"W	17.19'	17.19'
C184	202.00'	012°47'26"	N11°34'08"W	45.00'	45.09'
C185	202.00'	012°47'26"	N24°21'33"W	45.00'	45.09'
C186	202.00'	012°47'26"	N37°08'59"W	45.00'	45.09'
C187	202.00'	012°47'26"	N49°56'25"W	45.00'	45.09'
C188	202.00'	010°18'16"	N61°29'15"W	36.28'	36.33'
C189	314.00'	009°08'26"	S02°07'20"W	50.04'	50.09'
C242	148.00'	000°45'39"	S25°47'27"W	1.96'	1.96'
C243	57.00'	022°57'58"	N27°15'37"E	22.69'	22.85'
C244	186.98'	009°13'42"	N43°19'43"E	30.08'	30.12'

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

olsson

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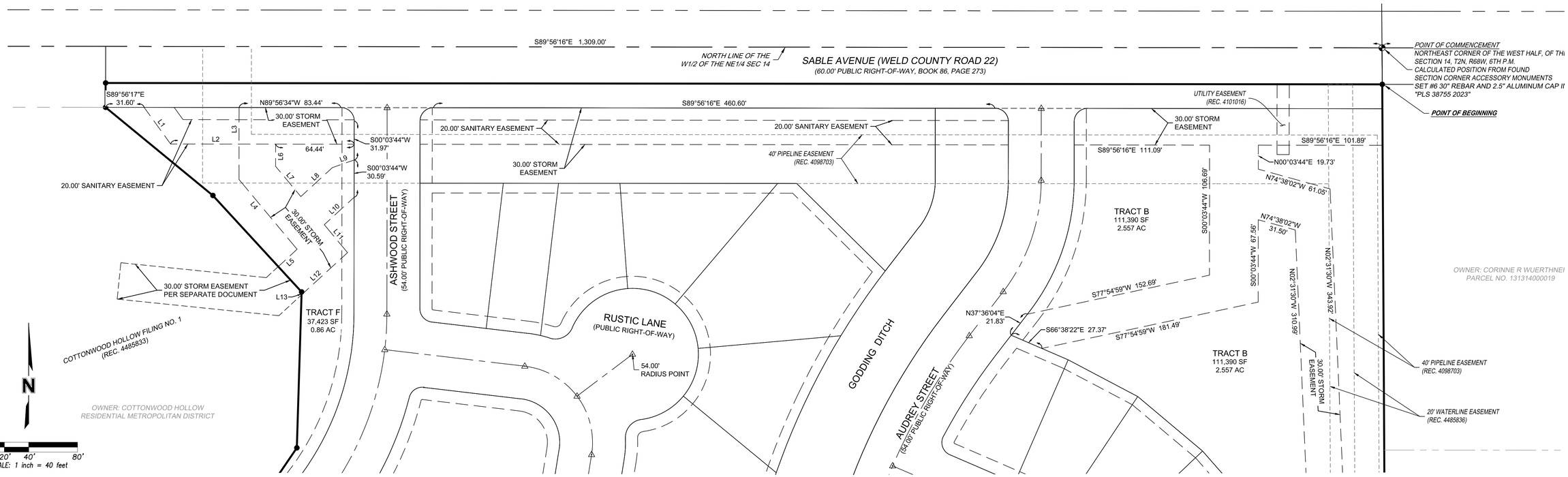
SUBDIVISION OF LAND, TOWN OF FIRESTONE

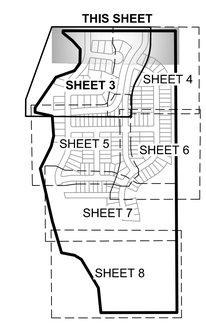
APPROVED BY: EJD
PROJECT #: 021-02728
DATE: 02.20.2023

COTTONWOOD HOLLOW FILING 4A

A PORTION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 68 WEST, OF THE 6TH PRINCIPAL MERIDIAN
TOWN OF FIRESTONE, COUNTY OF WELD, STATE OF COLORADO
64.036 ACRES - 129 LOTS - 22 TRACTS
FP-22-021



Line Table		
#	Bearing	Length
L1	S35°52'39"E	37.05'
L2	S89°56'16"E	150.60'
L3	S00°03'44"W	59.10'
L4	S39°47'58"E	74.45'
L5	S47°24'44"W	21.01'
L6	S00°03'44"W	18.22'
L7	S39°47'58"E	32.33'
L8	N47°24'44"E	35.13'
L9	N70°44'01"E	18.95'
L10	S47°24'44"W	33.27'
L11	S39°47'58"E	29.79'
L12	S47°24'44"W	51.23'
L13	N01°44'38"E	2.36'



KEY MAP
(NOT TO SCALE)

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

olsson

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SUBDIVISION OF LAND, TOWN OF FIRESTONE

APPROVED BY: EJD
PROJECT #: 021-02728
DATE: 02.20.2023

SHEET 10 OF 10

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COTTONWOOD HOLLOW, FILING 4A

CONSTRUCTION DOCUMENTS

LOCATED IN SECTIONS 11 AND 14 OF TOWNSHIP 2 NORTH, RANGE 68 WEST OF THE 6TH P.M.
TOWN OF FIRESTONE, WELD COUNTY, STATE OF COLORADO

TECHNICAL CONSULTANTS
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. FLORIDA AVENUE, SUITE 425
DENVER, COLORADO 80210
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CONTACT: AMANDA M. O'CONNOR
EMAIL: AMANDA.OCONNOR@EES.US.COM

LANDSCAPE ARCHITECT
PCS GROUP, INC.
200 KALAMATH STREET
DENVER, COLORADO 80223
PHONE: 303-531-4905
CONTACT: PAUL SHOUKAS
EMAIL: PAUL@PCSGROUPCO.COM

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OLSSON, INC.
1525 RALEIGH ST, SUITE 411
DENVER, CO 80204
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OWNER/ DEVELOPER
COTTONWOOD COLORADO RESIDENTIAL, LLC
5750 DTC PARKWAY, SUITE 210
GREENWOOD VILLAGE, COLORADO 80111
PHONE: 303-771-4004
CONTACT: DONALD G. PROVOST
EMAIL: DGP@ALBDEV.COM

OIL/GAS PRODUCTION
CRESTONE PEAK RESOURCES
CIVIRESOURCES
1801 CALIFORNIA STREET, SUITE 2500
DENVER, CO 80202
PHONE: 303-774-3982 | CELL: 720-369-0432
CONTACT: BOB BRESNAHAN, SENIOR SURFACE LANDMAN
EMAIL: BBRESNAHAN@CIVIRESOURCES.COM

SERVICE PROVIDERS / REQUIREMENTS

POLICE PROTECTION:	TOWN OF FIRESTONE
FIRE PROTECTION:	FREDERICK-FIRESTONE FIRE PROTECTION DISTRICT
STREET MAINTENANCE:	TOWN OF FIRESTONE
SCHOOLS:	ST. VRAIN SCHOOL DISTRICT
RECREATION:	CARBON VALLEY RECREATION DISTRICT

LIST OF AGENCIES

CITY
TOWN OF FIRESTONE
9950 PARK AVENUE
FIRESTONE, CO 80504

ELECTRIC
UNITED POWER
CONTACT: BILL MEIER
18551 E. 160TH AVE.,
P.O. BOX 929
BRIGHTON, CO 80601

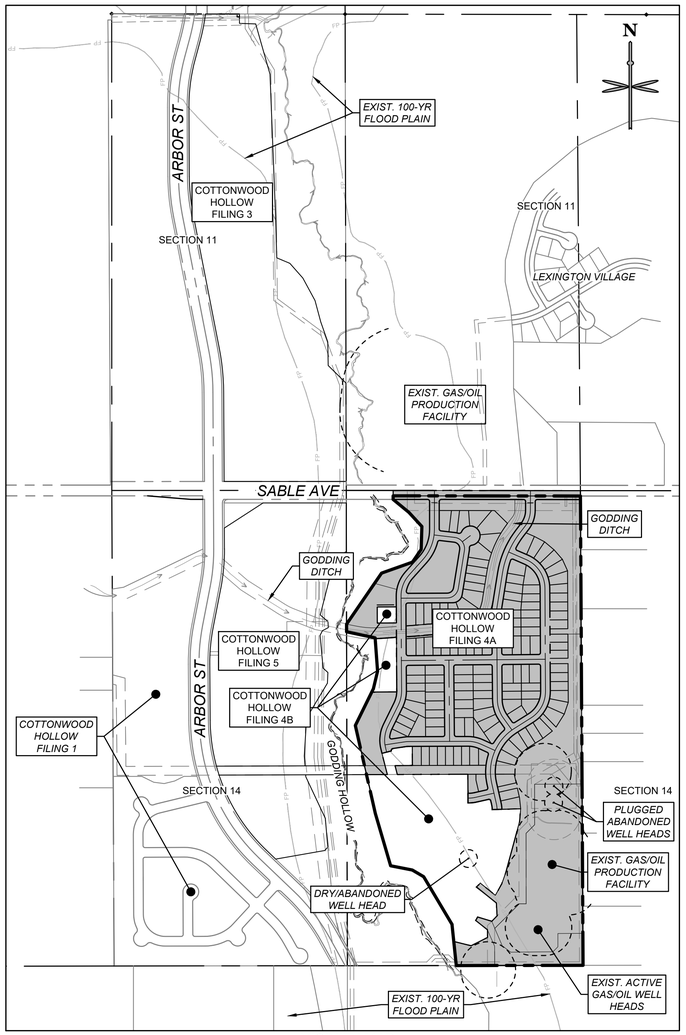
WATER
TOWN OF FIRESTONE
9950 PARK AVENUE
FIRESTONE, CO 80504

TELEPHONE
AT&T
CONTACT: ALBERT UCHAKER
PROM. I ROOM 2051
1200 PEACHTREE ST.
ATLANTA, GA 30309-3374
PHONE: 404-810-4602

GAS
BLACK HILLS ENERGY
P.O. BOX 437
FREDERICK, CO 80530

CABLE
CENTURY LINK
CONTACT: FIELD ENGINEER
12680 WELD COUNTY RD. 58
GREELEY, CO 80634

SANITARY SEWER
ST. VRAIN SANITATION DISTRICT
CONTACT: DAVID CROSS,
DISTRICT ENGINEER
11307 BUSINESS PARK CIRCLE
FIRESTONE, CO 80504
PHONE: 303-776-9570



VICINITY MAP
SCALE: 1" = 400'

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EXISTING UTILITIES DISCLAIMER:

EXISTING UTILITIES SHOWN ON THESE IMPROVEMENT PLANS ARE APPROXIMATE AND WERE LOCATED FROM FIELD SURVEYS AND UTILITY RECORDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL RESPECTIVE UTILITY COMPANIES TO HAVE ALL UTILITIES FIELD LOCATED AND VERIFIED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES ENCOUNTERED AND SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ANY UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SAID UTILITY WAS SHOWN ON THESE PLANS OR NOT. IF ANY UNKNOWN OR UNIDENTIFIED SUBSURFACE UTILITY STRUCTURE OR UTILITY LINE ARE ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CIVIL ENGINEER WHOSE NAME APPEARS ON THESE PLANS.

EXISTING GAS/OIL FACILITIES NOTE:

THIS PROJECT SITE CONTAINS EXISTING GAS/OIL PRODUCTION FACILITIES, EXISTING (ACTIVE AND ABANDONED) GAS WELL HEADS, EXISTING (ACTIVE AND ABANDONED) GAS/OIL FLOWLINES AND ASSOCIATED FACILITIES ABOVE GROUND AND BELOW GROUND. SAID FACILITIES MAY NOT BE VISIBLE FROM THE SURFACE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL ASSOCIATED GAS/OIL COMPANIES TO VERIFY THAT ALL FACILITIES HAVE BEEN LOCATED AND MARKED PRIOR TO CONSTRUCTION. CONTRACTOR IS REQUIRED TO FOLLOW ANY AN ALL COGCC (COLORADO OIL & GAS CONSERVATION COMMISSION) / TOWN OF FIRESTONE GUIDELINES FOR CONSTRUCTION NEAR EXISTING GAS/OIL PRODUCTION FACILITIES AND/OR OVER EXISTING GAS/OIL FLOWLINES AND WELL HEADS WHETHER ACTIVE OR ABANDONED.

VARIANCES REQUESTED:

THE APPLICANT IS REQUESTING A VARIANCE FROM THE TOWN OF FIRESTONE DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS FOR THE FOLLOWING:

NO.	STREET NAME	DESCRIPTION	STANDARD	REQUESTED
1.	AUDREY STREET:	HORIZONTAL CENTERLINE RADIUS	175.00'	150.00'
2.	AUDREY STREET:	TANGENT BETWEEN HORIZONTAL CURVES	100.00'	45.64'
3.	AUDREY STREET:	TANGENT AT INTERSECTION	100.00'	84.05'
4.	AUDREY STREET:	TANGENT BETWEEN VERTICAL CURVES	50.00'	45.11'
5.	ROSEWOOD AVE:	TANGENT AT INTERSECTION	100.00'	86.80'
6.	RUSTIC LANE:	FLOWLINE % GRADE LESS THAN STANDARD	0.80%	0.75%

ACCEPTED BY: _____ _____
TOWN ENGINEER DATE

ENGINEER'S STATEMENT

THESE CONSTRUCTION PLANS FOR COTTONWOOD HOLLOW FILING 4A WERE PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE *TOWN OF FIRESTONE ENGINEERING CONSTRUCTION STANDARDS AND SPECIFICATIONS AND TECHNICAL CRITERIA.*

AMANDA M. O'CONNOR
REGISTERED PROFESSIONAL
ENGINEER COLORADO NO. 36607

ACCEPTANCE OF CONSTRUCTION PLANS, SPECIFICATIONS, AND ASSOCIATED ENGINEERING REPORTS BY THE TOWN SHALL ONLY INDICATE THAT THE PLANS, SPECIFICATIONS, AND REPORTS ARE IN GENERAL CONFORMANCE WITH THE TOWN'S SUBMITTAL REQUIREMENTS, CURRENT DESIGN CRITERIA, STANDARD ENGINEERING PRINCIPLES AND PRACTICES, AND PREVIOUSLY APPROVED PLANS AND REPORTS. ACCEPTANCE SHALL NOT INDICATE THAT ALL ASSUMPTIONS, CALCULATIONS, AND CONCLUSIONS CONTAINED WITHIN THE DRAINAGE REPORTS AND/OR CONSTRUCTION PLANS HAVE BEEN THOROUGHLY VERIFIED BY TOWN STAFF. AT ALL TIMES, THE PROFESSIONAL ENGINEER SUBMITTING THE CONSTRUCTION PLANS, SPECIFICATIONS, AND DRAINAGE REPORTS SHALL BE SOLELY RESPONSIBLE FOR THEIR ACCURACY AND VALIDITY.

DRAWING ACCEPTANCE:

ALL WORK SHALL BE CONSTRUCTED TO *TOWN OF FIRESTONE DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS.* THIS DRAWING HAS BEEN REVIEWED AND FOUND TO BE IN GENERAL COMPLIANCE WITH THESE STANDARDS AND SPECIFICATIONS AND OTHER TOWN REQUIREMENTS. THE ENGINEERING DESIGN AND CONCEPT REMAINS THE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON.

ACCEPTED BY: _____ _____
TOWN ENGINEER DATE

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

ST. VRAIN SANITATION DISTRICT
SANITARY SEWER PLAN APPROVAL
APPROVED: _____ DATE: _____
ST. VRAIN SANITATION DISTRICT

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
811 Know what's below. Call before you dig.

COTTONWOOD HOLLOW FILING 4A	
COVER SHEET	
NAME OF APPLICATION:	COTTONWOOD HOLLOW
TYPE OF SUBMITTAL:	CONSTRUCTION PLANS
FILING NUMBER:	FILING 4A
PHASE NUMBER:	
PREPARATION DATE:	3/15/2022
REVISION DATE:	7/22/2022
REVISION DATE:	11/11/2022
REVISION DATE:	02/21/2023
REVISION DATE:	
REVISION DATE:	

SHEET 1 of 109

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
COVER SHEET

PROJECT NO:	OLS001.01
DESIGNED BY:	JMK
DRAWN BY:	RAK
DATE:	02/17/2023

C0.0
SHEET 1 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C0.0 COVER.DWG - 2/20/2023 1:09:09 PM - Luke Breedlove

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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C0.0 COVER.DWG - 2/20/2023 1:09:10 PM - Luke Breedlove

GENERAL NOTES:

1. ALL CONSTRUCTION WORK TO BE ACCEPTED BY THE TOWN SHALL CONFORM TO THE TOWN OF FIRESTONE CONSTRUCTION SPECIFICATIONS AND DESIGN STANDARDS.
2. ALL OVER LOT GRADING IN THE RIGHT-OF-WAY OR EASEMENT SHALL BE COMPLETED PRIOR TO INSTALLING POTABLE WATER, SANITARY SEWER, OR NON-POTABLE IRRIGATION LINES.
3. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. CALL UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987OR DIAL 811 FOR UTILITY LOCATES 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. UNLESS OTHERWISE NOTED IN THESE PLANS, MAINTAIN A MINIMUM OF TEN (10) FEET HORIZONTAL CLEAR DISTANCE SEPARATION BETWEEN POTABLE WATER MAINS/SERVICES AND SANITARY SEWER OR NON-POTABLE IRRIGATION MAINS/SERVICES. POTABLE WATER MAINS/SERVICES ARE TO BE LOCATED AT LEAST 18-INCHES MINIMUM ABOVE THE SANITARY SEWER OR NON-POTABLE IRRIGATION MAINS/SERVICES. IF FIELD CONDITIONS VARY FROM THOSE SHOWN ON THESE PLANS AND THE SANITARY SEWER OR NON-POTABLE MAINS/SERVICES CANNOT BE LOCATED BELOW THE WATER MAIN OR SERVICE, A CLEAR VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BELOW CANNOT BE MAINTAINED, OR A MINIMUM TEN (10) FOOT HORIZONTAL SEPARATION CANNOT BE ACHIEVED, THE TOWN SHALL BE CONTACTED IMMEDIATELY TO REVIEW THE SITUATION.
5. IN ALL INSTANCES WHERE A WATER LINE LOWERING, POTABLE OR NON-POTABLE, IS REQUIRED DUE TO UNFORESEEN FIELD CONDITIONS, A DETAILED DRAWING SHALL BE PROVIDED TO THE TOWN FOR ACCEPTANCE PRIOR TO CONSTRUCTION.
6. WHERE POTABLE WATER, SANITARY SEWER, AND NON-POTABLE IRRIGATION LINES ARE LOCATED IN COMMON UTILITY EASEMENT AREAS, THERE SHALL BE NO OTHER UTILITIES LOCATED HORIZONTALLY WITHIN TEN (10) FEET OF ANY LINE EXCEPT AT APPROVED CROSSINGS.
7. CONTRACTOR SHALL NOTIFY THE TOWN ONE (1) WEEK PRIOR TO COMMENCING WORK AFTER TOWN ACCEPTED CONSTRUCTION DRAWINGS HAVE BEEN DISTRIBUTED AND A PRE-CONSTRUCTION MEETING HAS BEEN HELD WITH THE TOWN.
8. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES TO BE CROSSED BY POTABLE WATER, SANITARY SEWER, OR NON-POTABLE IRRIGATION LINES AT LEAST 24 HOURS PRIOR TO CONSTRUCTION TO ENSURE REQUIRED CLEARANCE CLEARANCE FOR OPEN CUT CROSSINGS AND 36" MINIMUM CLEARANCE FOR BORED CROSSINGS. HORIZONTAL AND VERTICAL LOCATION OF CROSSED EXISTING UTILITIES SHALL BE RECORDED ON THE AS-CONSTRUCTED RECORD DRAWINGS.
9. SHOULD ANY VARIATIONS BEFORE OR DURING CONSTRUCTION TO THE POTABLE WATER DISTRIBUTION, SANITARY SEWER COLLECTION, OR NON-POTABLE IRRIGATION SYSTEM DESIGNS BE CONSIDERED, NOTICE MUST FIRST BE GIVEN TO THE TOWN TO DETERMINE IF IT NEEDS ACCEPTANCE BY THE TOWN. IF SO, A NEW PLAN SHALL BE DRAWN AND SUBMITTED TO THE TOWN FOR ACCEPTANCE BY THE DESIGN ENGINEER 72 HOURS PRIOR TO CONSTRUCTION.
10. FINAL CONSTRUCTION PLANS ARE VALID FOR CONSTRUCTION ONE (1) YEAR FROM THE DATE OF TOWN SIGNATURE ACCEPTANCE.
11. ALL POTABLE WATER MAINS, SERVICES, AND HYDRANT LINES SHALL HAVE A MINIMUM COVER OF FIVE (5) FEET AND A MAXIMUM COVER OF SIX (6) FEET UNLESS OTHERWISE INDICATED ON THE APPROVED CONSTRUCTION DRAWINGS.
12. ALL NON-POTABLE WATER MAINS AND SERVICES SHALL HAVE A MINIMUM COVER OF THREE AND A HALF (3.5) FEET AND A MAXIMUM COVER OF SIX (6) FEET UNLESS OTHERWISE INDICATED ON THE ACCEPTED CONSTRUCTION DRAWINGS.
13. ALL NEW WATER MAINS SHALL BE BULKHEADED AND TESTED AND APPROVED PRIOR TO CONNECTION TO THE EXISTING WATER SYSTEM. VALVES WHICH ARE PRESSURE TESTED BY THE CONTRACTOR IN THE PRESENCE OF THE TOWN INSPECTOR PRIOR TO CONSTRUCTION MAY BE USED AS A BULKHEAD.
14. VERIFICATION SURVEY - TOP OF PIPE ELEVATIONS AT ALL POTABLE AND NON-POTABLE WATER LINE VALVES, AND SANITARY SEWER MANHOLE INVERTS SHALL BE SURVEYED AND PROVIDED TO THE TOWN BY THE DESIGN ENGINEER FOR SUBMITTAL TO AND ACCEPTANCE BY THE TOWN PRIOR TO PAVING CONSTRUCTION. THE VERIFICATION SURVEY SHALL ALSO PROVIDE SEWER PIPE SLOPES AND LENGTH AND PROPOSED FINISHED GROUND ELEVATIONS AT ALL VALVE BOXES AND MANHOLE RIM ELEVATIONS.
15. ALL UTILITY CONDUIT CROSSINGS OF POTABLE WATER, SANITARY SEWER AND NON-POTABLE IRRIGATION LINES SHALL BE ENCASED IN HIGH DENSITY POLYETHYLENE (HDPE) PIPE, WITH A MINIMUM STANDARD DIMENSION RATIO (SDR) 11 ACROSS THE ENTIRE EASEMENT OR RIGHT-OF-WAY WIDTH. THE ENCASEMENT JOINT SHALL BE BUTT FUSED. FLEXIBLE JOINTS ARE NOT ALLOWED.
16. WET TAPS SHALL BE DRILLED BY THE TOWN FOR A FEE. CALL 970-350-9810 AT LEAST 48 HOURS IN ADVANCE TO PAY FEES AND SCHEDULE TAP.
17. THE CONTRACTOR SHALL RESTRICT WORKING HOURS TO BETWEEN 7:00 AM AND 6:00 PM ON NORMAL TOWN OF FIRESTONE BUSINESS DAYS UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE TOWN.
18. CONTRACTOR WILL BE REQUIRED TO SWEEP OR VACUUM ANY VISIBLE SEDIMENT THAT IS TRACKED ONTO TOWN STREETS.
19. ECO-PANS WILL BE REQUIRED TO BE USED FOR CONCRETE WASHOUTS DUE TO SITE CONSTRAINTS.

GENERAL NOTES - CONSTRUCTION

STANDARDS AND SPECIFICATIONS 2022 EDITION

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST "DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS FOR PUBLIC IMPROVEMENTS" BY THE TOWN OF FIRESTONE. COPIES OF THE STANDARDS AND SPECIFICATIONS MAY BE OBTAINED FROM THE TOWN WEB SITE. CONTRACTOR SHALL HAVE A SET ON SITE AT ALL TIMES.

2. THE OWNER SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE TOWN OF FIRESTONE ENGINEERING STAFF PRIOR TO THE START OF CONSTRUCTION. THOSE IN ATTENDANCE SHALL INCLUDE THE OWNER, HIS ENGINEER, THE TOWN ENGINEERING STAFF, REPRESENTATIVES OF THE CONTRACTORS AND OTHER AFFECTED AGENCIES. PLANS SIGNED AND ACCEPTED BY THE TOWN WILL BE DISTRIBUTED AT THE PRE-CONSTRUCTION MEETING. CONTRACTOR SHALL HAVE (1) COPY OF THE SIGNED PLANS ON SITE AT ALL TIMES.

3. THE TOWN OF FIRESTONE, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT. THE OWNER AND DESIGN ENGINEER UNDERSTAND THAT THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE ARE AFFIXED TO THIS DOCUMENT. REPORT ALL DISCREPANCIES TO THE DESIGN ENGINEER IMMEDIATELY.

4. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL OBTAIN ANY/ALL WRITTEN AGREEMENTS FOR INGRESS AND EGRESS TO THE WORK SITE FROM ADJACENT PRIVATE PROPERTY OWNERS. A COPY OF ALL AGREEMENTS SHALL BE PROVIDED TO THE TOWN. ACCESS TO ANY ADJACENT PRIVATE PROPERTY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

5. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE TOWN ENGINEERING STAFF. THE TOWN RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO TOWN STANDARDS AND SPECIFICATIONS. INSPECTIONS AND ONSITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY THE TOWN ENGINEERING STAFF OF THE CONTRACTORS'' CONTRACTUAL COMMITMENT. REQUESTS FOR INSPECTION BY THE TOWN SHALL BE MADE BY THE CONTRACTOR A MINIMUM OF TWENTY-FOUR (24) HOURS IN ADVANCE.

6. CONSTRUCTION WATER IS AVAILABLE TO THE CONTRACTOR AS ESTABLISHED IN THE TOWN STANDARDS AND SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE TOWN REGARDING CURRENT REGULATIONS, FEES AND REQUIRED AGREEMENTS RELATED TO THE PROVISION OF CONSTRUCTION WATER.

7. THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE AFFECTED UTILITY COMPANIES AND SHALL NOTIFY THE UTILITY NOTIFICATION CENTER, PHONE NUMBER 811, THREE (3) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION.

8. UTILITIES IN THE AREA OF CONSTRUCTION ARE APPROXIMATE ONLY. THEY HAVE BEEN LOCATED FROM FIELD INVESTIGATION AND THE BEST AVAILABLE UTILITY RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR OF ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL CONTACT ALL RESPECTIVE UTILITIES AND HAVE ALL UTILITIES FIELD-LOCATED PRIOR TO CONSTRUCTION. IF ANY UNKNOWN SUBSURFACE STRUCTURES ARE ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE TOWN ENGINEERING STAFF AND DESIGN ENGINEER PRIOR TO PROCEEDING.

9. THE CONTRACTOR SHALL NOTIFY TOWN ENGINEERING STAFF OF ANY PROBLEM IMPACTING WATER AND WASTE WATER FACILITIES THAT WOULD POTENTIALLY REQUIRE A VARIANCE FROM THE APPROVED PLANS AND SPECIFICATIONS. ANY VARIANCE FROM THE APPROVED DOCUMENTS SHALL BE AT THE SOLE DISCRETION OF THE TOWN ENGINEERING STAFF.

10. CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE SPECIFICATIONS AND PERMITS NECESSARY TO PERFORM THE PROPOSED WORK.

11. AS-BUILT DRAWINGS AS REQUIRED IN THE SPECIFICATIONS, ARE TO BE SUBMITTED BY THE OWNER/DEVELOPER PRIOR TO INITIAL ACCEPTANCE OF THE CONSTRUCTION.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY EXISTING SIGNS, STRUCTURES, FENCES, ETC., ENCOUNTERED ON THE JOB AND RESTORING THEM TO THEIR ORIGINAL CONDITION.

13. THE CONTRACTOR IS RESPONSIBLE FOR:

A. NOTIFYING THE TOWN UTILITY CUSTOMERS OF POTENTIAL SERVICE OUTAGES, AND COORDINATE WITH THE TOWN FOR DETERMINATION OF MINIMUM TIME REQUIREMENT.

B. NOTIFYING THE TOWN ENGINEERING STAFF IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START-UP. THE CONTRACTOR SHALL NOTIFY THE TOWN FORTY-EIGHT (48) HOURS PRIOR TO RESTART.

C. IN THE EVENT OF AN AFTER HOURS EMERGENCY, CALL 720-652-4222.

D. NOTIFYING THE FREDERICK FIRESTONE FIRE PROTECTION DISTRICT OF ALL STREET CLOSURES AND EXISTING FIRE HYDRANTS TAKEN OUT OF SERVICE A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.

14. PRIOR TO INSTALLATION OF UTILITY MAINS, ROAD CONSTRUCTION MUST HAVE COMPLETED THE OVER LOT GRADING STAGE.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. A CONSTRUCTION DEWATERING PERMIT MUST BE OBTAINED FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE). GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS OR EROSION OF ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. THE USE OF ANY SANITARY SEWER TO DISPOSE OF TRENCH WATER WILL NOT BE PERMITTED. NO CONCRETE SHALL BE PLACED WHERE GROUNDWATER IS VISIBLE OR UNTIL THE GROUNDWATER TABLE HAS BEEN LOWERED BELOW THE PROPOSED IMPROVEMENTS. ANY UNSTABLE AREAS, AS A RESULT OF GROUNDWATER, ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE STABILIZED AS AGREED UPON BY THE CONTRACTOR, THE TOWN, AND THE DESIGN ENGINEER AT THE TIME OF THE OCCURRENCE

16. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO RESOLVE CONSTRUCTION PROBLEMS WITH THE TOWN DUE TO CHANGED CONDITIONS ENCOUNTERED BY THE CONTRACTOR DURING THE PROGRESS OF ANY PORTION OF THE PROPOSED WORK. IF, IN THE OPINION OF THE TOWN, PROPOSED ALTERATIONS TO THE SIGNED CONSTRUCTION PLANS INVOLVES SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK, OR TO THE FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR SUBMITTING REVISED PLANS TO THE TOWN FOR REVIEW AND ACCEPTANCE, PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK.

17. DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS. THE TOWN OR THE DESIGN ENGINEER EXERCISE NO CONTROLS OVER THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS OR OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ANY AND ALL LIABILITY, REAL AND ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE DESIGN ENGINEER OR THE TOWN. THE TOWN ENGINEERING STAFF, OR ANY CONTRACTED ENGINEER, ARE NOT RESPONSIBLE FOR SAFETY IN, ON OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.

18. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE PROSECUTED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.

19. REGULAR WORK HOURS ARE SEVEN (7) A.M. UNTIL SEVEN (7) P.M. OR DUSK (WHICHEVER OCCURS FIRST) OF THE SAME DAY, MONDAY THROUGH

A.THE CONTRACTOR WILL NOT PERMIT OVERTIME WORK OUTSIDE OF REGULAR WORKING HOURS OR THE PERFORMANCE OF WORK ON SATURDAY, SUNDAY OR ANY LEGAL HOLIDAY WITHOUT RECEIVING WRITTEN CONSENT FROM THE TOWN ENGINEER. REQUESTS FOR WEEKEND WORK APPROVAL MUST BE SUBMITTED, IN WRITING TO THE TOWN NO LATER THAN WEDNESDAYS AT 3:30PM FOR SUBSEQUENT WEEKEND AND REQUESTS FOR HOLIDAY WORK APPROVAL MUST BE SUBMITTED, IN WRITING TO THE TOWN NO LATER THAN 7:00AM-2 BUSINESS DAYS PRIOR TO THE HOLIDAY. ALL EXPENSES INCURRED BY THE TOWN SHALL BE REIMBURSED AT A RATE TO BE DETERMINED BY DIRECTOR OF FINANCE.

20. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STORMWATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES FOR ANY PROJECT DISTURBING OVER ONE ACRE FROM BOTH THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND THE TOWN.

21. EACH TYPE OF CONSTRUCTION SHALL BE COMPLETED BY A CONTRACTOR THAT HAS DEMONSTRATED ACCEPTABLE QUALIFICATIONS TO THE TOWN AND IS A LICENSED CONTRACTOR IN THE TOWN.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL DURING CONSTRUCTION. ALL TRAFFIC CONTROLS SHALL CONFORM TO THE TOWN STANDARDS AND SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD) LATEST EDITIONS. A PLAN SHALL BE SUBMITTED TO THE TOWN FOR REVIEW AND ACCEPTANCE PRIOR TO CONSTRUCTION.

23. ALL BACKFILL SHALL CONFORM TO THE TRENCH DETAIL LOCATED IN THE TOWN STANDARDS & SPECIFICATIONS.

24. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ANY CONSTRUCTION DEBRIS OR MUD TRACKED ONTO EXISTING ROADWAYS.

25. THE CONTRACTOR SHALL REPAIR ANY EXCAVATION OR PAVEMENT FAILURES CAUSED BY HIS CONSTRUCTION.

26. THE CONTRACTOR SHALL RENEW OR REPLACE ANY EXISTING TRAFFIC STRIPING AND/OR PAVEMENT MARKINGS, WHICH HAVE BEEN EITHER REMOVED OR THE EFFECTIVENESS OF WHICH HAS BEEN REDUCED DURING HIS OPERATION. RENEWAL OF PAVEMENT STRIPING AND MARKING SHALL BE DONE IN CONFORMANCE WITH THE TOWN STANDARD SPECIFICATIONS.

27. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO TAKE EVERY MEASURE NECESSARY TO COMPLY WITH ANY STATE, COUNTY OR TOWN DUST CONTROL ORDINANCE.

28. CONSTRUCTION VEHICLES SHALL USE TRUCK ROUTES DESIGNATED BY THE TOWN. OVERSIZE AND/OR OVERWEIGHT VEHICLES REQUIRE AN OVERWEIGHT VEHICLE PERMIT FROM THE TOWN PRIOR TO TRAVELING ON TOWN STREETS.

29. THE OWNER/DEVELOPER WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF THE IMPROVEMENTS FOR A MINIMUM OF TWO (2) YEARS FROM THE DATE OF INITIAL ACCEPTANCE OF THE IMPROVEMENTS BY THE TOWN. ANY FAILURE DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE OWNER/CONTRACTOR TO THE SATISFACTION OF THE TOWN AT NO EXPENSE TO THE TOWN.

30. THE SOILS ENGINEER SHALL PERFORM SUFFICIENT INSPECTIONS DURING GRADING AND CONSTRUCTION SO THAT AN OPINION CAN BE RENDERED AND VERIFIED IN WRITING AS TO COMPLIANCE WITH THE PLANS AND CODES WITHIN THE SOILS ENGINEER'S PURVIEW.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

1-800-922-1987 or 811

CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

GENERAL NOTES - WATER:

1. AT ALL POINTS OF CONNECTION OF NEW WATER MAINS TO EXISTING MAINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATING AND VERIFYING LOCATION OF THE EXISTING LINES PRIOR TO ANY CONSTRUCTION.
2. EXCEPT IN CASE OF AN EMERGENCY, VALVES ON THE TOWN OF FIRESTONE WATER SYSTEM SHALL BE OPERATED BY OR UNDER THE DIRECTION OF THE APPROPRIATE TOWN PERSONNEL. THE CONTRACTOR SHALL GIVE THE TOWN ENGINEERING STAFF 48 HOURS NOTICE TO ARRANGE FOR OPERATING VALVES. BOTH THE CONTRACTOR AND THE APPROPRIATE TOWN PERSONNEL SHALL BE PRESENT WHEN THE VALVES ARE OPERATED.
3. WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS WATER LINES WITH LESS THAN ONE AND ONE-HALF (1½) FEET OF VERTICAL SEPARATION, SEWER LINE JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE WATER LINE IN BOTH DIRECTIONS.
4. ALL WATER LINES SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4½) FEET OF COVER AND BE LOCATED A MINIMUM OF TEN (10) FEET FROM THE SANITARY SEWER AND THREE (3) FEET FROM THE EDGE OF CONCRETE CURB AND GUTTER PAN.
5. CHANGES IN DIRECTION OF WATERLINE PIPE SHALL REQUIRE BENDS IN ALL INSTANCES. AXIAL DEFLECTION AT THE JOINTS SHALL NOT BE ALLOWED.
6. WHEN IT IS NECESSARY TO DEPRESS WATER LINES AT UTILITY CROSSINGS, A MINIMUM CLEARANCE OF ONE AND ONE-HALF (1-1/2) FEET SHALL BE MAINTAINED BETWEEN OUTSIDES OF PIPE.
7. DISTANCES FOR WATER LINES ARE THE HORIZONTAL DISTANCE BETWEEN THE CENTERS OF THE FITTINGS. THEREFORE, DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND FITTING DIMENSIONS.
8. ALL WATER LINE VALVES SHALL BE SET ADJACENT TO THE TEE, EXCEPT FOR POINTS THAT FALL IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN WHICH CASE, THE VALVE SHALL BE LOCATED SO THAT SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH TOWN PAVING REQUIREMENTS.
9. ALL WATER MAINS SHALL BE POLYVINYL CHLORIDE (PVC) PRESSURE PIPE UNLESS SPECIFIED OTHERWISE. NOMINAL PVC PIPE SIZES 8-INCH THROUGH 12-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-900, PRESSURE CLASS 150 (DR18). NOMINAL PVC PIPE SIZES 16-INCH THROUGH 24-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-905, PRESSURE CLASS 165 (DR25). ALL PVC PIPES SHALL HAVE OUTSIDE DIAMETERS EQUIVALENT TO CAST IRON PIPE.
10. FIRE HYDRANT ASSEMBLY INCLUDES THE FIRE HYDRANT, SIX (6) INCH VALVE, AND SIX (6) INCH PIPE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE TOWN STANDARDS AND SPECIFICATIONS.
11. ALL FITTINGS SHALL BE MADE FROM DUCTILE IRON, FURNISHED WITH MECHANICAL JOINT ENDS OR INTEGRAL RESTRAINED JOINTS, AND SHALL HAVE A PRESSURE RATING OF 350 PSI.
12. POLYETHYLENE WRAPPING SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPES, FITTINGS, VALVES, FIRE HYDRANT BARRELS AND ROD AND CLAMPS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS, IN ACCORDANCE WITH AWWA STANDARD C-105.
13. ALL WATER LINE PIPE SHALL BE PROVIDED WITH A MINIMUM GAGE SIZE OF 12 SINGLE STRAND INSULATED COPPER WIRE. SPLICES IN TRACER WIRE SHALL BE CAPPED IN WATER PROOF GEL CAP TYPE CONNECTORS SUITED FOR DIRECT BURY APPLICATION (3M TYPE DBY-6LOW VOLTAGE OR EQUAL). WIRE SHALL BE ATTACHED TO TOP OF WATER LINE WITH 2-INCH WIDE PVC TAPE @ 5-FT INTERVALS ALONG PIPE. TRACER WIRE SHALL EXTEND TO THE SURFACE AND BE COILED IN A LOCATE BOX AT THE BACKSIDE OF EITHER EACH FIRE HYDRANT OR VALVE. UNDER THE SUPERVISION OF TOWN ENGINEERING STAFF, TEST SHALL BE MADE BY THE CONTRACTOR @ THE COMPLETION OF CONSTRUCTION TO INSURE THAT THE TRACER WIRES CARRY A CONTINUOUS CURRENT BETWEEN ALL ACCESS POINTS.
14. WARNING TAPE SHALL BE INSTALLED 12" MINIMUM AND 18" MAXIMUM ABOVE WATER PIPE.
15. BEDDING MATERIAL SHALL CONFORM TO TOWN STANDARDS AND SPECIFICATIONS.
16. VALVES SHALL OPEN COUNTER CLOCKWISE. VALVES 12-INCH AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. LARGER VALVES SHALL BE BUTTERFLY VALVES.
17. VALVE BOXES SHALL BE RAISED TO ONE-FOURTH (1/4) INCH BELOW GRADE AFTER COMPLETION OF SURFACE PAVING OR FINAL GRADING. VALVE BOXES IN NON-PAVED AREAS SHALL HAVE A CONCRETE COLLAR AROUND THE VALVE LID IN ACCORDANCE WITH THE DETAIL.
18. ALL SERVICE LINE TAPS SHALL HAVE DOUBLE STRAP BRASS TAPPING SADDLES. (ROMAC 202B OR APPROVED EQUAL).
19. ALL RESIDENTIAL WATER TAPS SHALL BE FIVE-EIGHTS (5/8) INCH OR AS REQUIRED BY THE CURRENT BUILDING CODE.
20. ALL WATER SERVICE LATERALS SHALL EXTEND FIVE (5) FEET BEYOND RIGHT OF WAY OR UTILITY EASEMENTS, WHICHEVER IS GREATER. THE ENDS SHALL BE MARKED BY A BLUE PAINTED WOOD POST UNTIL CURB AND GUTTER IS IN PLACE. WHEN CURB AND GUTTER IS IN PLACE THE LATERALS SHALL BE MARKED ON THE CONCRETE CURB FACE WITH A "V" or "W".
21. CONCRETE THRUST BLOCKS AND/OR "MEGA-LUG" MECHANICAL RESTRAINTS ARE REQUIRED AT ALL MECHANICAL FITTINGS. THRUST BLOCKS MAY NOT BE REQUIRED IF PIPE RESTRAINT IS PROVIDED IN ACCORDANCE WITH RESTRAINED PIPE DETAIL.
22. NO WORK SHALL BE BACKFILLED (INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE) UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY TOWN ENGINEERING STAFF.
23. ONLY ONE CONNECTION TO THE EXISTING WATER DISTRIBUTION SYSTEM SHALL BE MADE UNTIL ALL HYDROSTATIC TESTING, CHLORINATION AND FLUSHING HAS BEEN COMPLETED.
24. DISINFECTION AND HYDROSTATIC TESTING SHALL BE DONE IN THE PRESENCE OF A TOWN ENGINEERING STAFF. CONTACT THE TOWN ENGINEERING DIVISION FORTY-EIGHT (48) HOURS PRIOR TO DISINFECTING AND/OR TESTING.
25. DISINFECTION AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE COLORADO DEPARTMENT OF HEALTH AND THE PROCEDURE SET FORTH IN AWWA C651, "STANDARD FOR DISINFECTING WATER MAINS". THE CHLORINATION OF THE WATER LINE SHALL BE PERFORMED PRIOR TO THE HYDROSTATIC TESTING. ALL VALVES, FIRE HYDRANTS AND OTHER APPURTENANCES SHALL BE OPERATED WHILE PIPELINE IS FILLED WITH THE CHLORINATING AGENT TO INSURE THAT HIGH CHLORINE CONTACT IS MADE WITH ALL INTERNAL SURFACES.
26. TWO TWENTY-FOUR (24) HOUR BACTERIOLOGICAL TESTS, FROM MULTIPLE POINTS TO BE DETERMINED BY THE TOWN ENGINEER, FOR TOTAL COLI-FORM BACTERIA SHALL BE PERFORMED BY THE TOWN A MINIMUM OF 24 HOURS APART. IF EITHER OF THESE TESTS FAIL, THE LINE SHALL BE RE-CHLORINATED, RE-FLUSHED AND THEN RETESTED. THE DEVELOPER AND/OR CONTRACTOR SHALL BE RESPONSIBLE FOR REIMBURSING THE TOWN FOR ALL COSTS ASSOCIATED WITH THE WATER QUALITY TESTING.
27. ALL WATER LINES SHALL BE HYDROSTATIC TESTED. PRESSURE AND LEAKAGE TESTS SHALL BE CONDUCTED ACCORDING TO THE APPLICABLE SECTIONS OF AWWA C600/605 TO A MINIMUM PRESSURE OF ONE HUNDRED AND FIFTY (150) POUNDS PER SQUARE (PSI) INCH AT THE LOW POINT OF THE SECTION BEING TESTED FOR THE DURATION OF TWO (2) HOURS. THE MAXIMUM LENGTH OF LINE TO BE TESTED SHALL BE ONE THOUSAND (1,000) FEET. ALL JOINTS IN CONNECTIONS ARE TO BE WATERTIGHT WITHIN TOLERANCES ALLOWED BY THE SPECIFICATIONS IN AWWA C600/605. ANY LEAKAGE THAT IS DISCOVERED BY OBSERVATION OR TESTS SHALL BE LOCATED AND MADE WATERTIGHT BY THE CONTRACTOR. PRESSURE AND LEAKAGE TESTS SHALL NOT BE CONDUCTED UNTIL THE LINE HAS PASSED ALL REQUIRED DISINFECTION TESTS.
28. INITIAL ACCEPTANCE OF THE NEW WATER LINES ARE CONTINGENT UPON RECEIVING COPIES OF:
    A. WATER TRENCH COMPACTION TEST RESULTS
    B. HYDRO STATIC TESTING OF 100% OF THE SYSTEM
    C. HEALTH DEPARTMENT TESTS. (CHLORINE AND/OR CLEAR WATER AS REQUIRED)
29. ALL METER PITS AND CURB STOPS SHALL BE PROTECTED AT THE TIME OF INSTALLATION WITH A MINIMUM OF THREE (3) T-POSTS AND ORANGE SAFETY FENCE. THE T-POST AND SAFETY FENCE SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL THE LANDSCAPING IS INSTALLED.
30. ALL WATER VAULTS SHALL BE WATER TIGHT. CONTRACTOR SHALL SEAL VAULTS TO ENSURE SURFACE WATER DOES NOT INFILTRATE INTO THE VAULTS. VAULT LIDS SHALL BE PLACED TO ENSURE THAT SURFACE WATER DOES NOT FLOW INTO THE VAULTS.

ST. VRAIN SANITATION DISTRICT GENERAL CONSTRUCTION NOTES

1. DISTRICT SHALL REFER TO THE ST. VRAIN SANITATION DISTRICT IN THESE NOTES.
2. DISTRICT'S ACCEPTANCE OF THESE PLANS IS VALID FOR ONE YEAR.
3. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE DISTRICT STANDARDS.
4. CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO COMMENCING ANY CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY THE DISTRICT A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING CONSTRUCTION OR PRIOR TO RESUMING CONSTRUCTION AFTER A BREAK.
6. SANITARY SEWER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE, ASTM D3034-SDR35 (OR AS INDICATED ON THE PLANS).
7. ALL CONCRETE SHALL BE MINIMUM 4000 PSI AT 28 DAY STRENGTH.
8. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL SEPARATION OUTSIDE DIAMETER TO OUTSIDE DIAMETER BETWEEN WATER LINES AND ALL SEWER LINES AND MANHOLES.
9. ALL SEWER MAINS CROSSING WATER MAINS WITH LESS THAN 18 INCHES OF SEPARATION SHALL BE ENCASED IN CONCRETE.
10. RIM ELEVATIONS SHOWN ARE APPROXIMATE AND SHOULD NOT BE TAKEN AS FINAL. ALL MANHOLES SHALL BE FINAL ADJUSTED AFTER PAVING SUCH THAT THE RIM IS ¼ TO ½ INCH BELOW FINISHED ASPHALT. MANHOLES IN UNPAVED AREAS SHALL BE SET SO THAT THE RIM IS 0.5' ABOVE FINISHED GRADE.
11. INVERT DATA SHALL BE COLLECTED BY A LICENSED SURVEYOR ON EACH PIPE INVERT IN A MANHOLE. CENTER OF MANHOLE SURVEYING IS NOT ACCEPTABLE FOR SLOPE CALCULATIONS. RECORD DRAWINGS (AS-BUILTS) MUST DEMONSTRATE CONFORMANCE TO DISTRICT STANDARDS.
12. THE CONTRACTOR SHALL HAVE A SET OF APPROVED PLANS ON SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING ACTUAL RECORD DRAWING DIMENSIONS AND DISTANCES AS WELL AS SERVICE LOCATIONS ON THESE PLANS AND SUBMITTING THEM TO THE ENGINEER FOR PREPARATION OF RECORD DRAWINGS. THESE DRAWINGS SHALL BE KEPT CURRENT AT ALL TIMES.
13. BEFORE ANY CONSTRUCTION COMMENCES, A PLUG SHALL BE INSTALLED TO PREVENT DRAINAGE THROUGH THE NEW SEWER LINE FROM ENTERING THE EXISTING SEWER LINE. THIS PLUG WILL BE INSTALLED IN THE MANHOLE, WHICH CONNECTS NEW WORK WITH THE EXISTING AND NOT BE REMOVED UNTIL INITIAL ACCEPTANCE.
14. UNDERDRAINS, IF INSTALLED, ARE THE RESPONSIBILITY OF THE DEVELOPER. DISTRICT ASSUMES NO LIABILITY FOR ANY PORTION OF OR ANY DAMAGE CAUSED BY UNDERDRAINS. ABSOLUTELY NO PART OF AN UNDERDRAIN SYSTEM, INCLUDING CLEAN OUTS, WILL BE ALLOWED INSIDE OF SANITARY SEWER MANHOLES. ALL UNDERDRAINS SHALL BE INSTALLED BELOW THE SANITARY SEWER AND OFFSET TO THE SIDE. PIPE MATERIAL SHALL BE DIFFERENT COLOR THAN SANITARY SEWER.
15. NO SERVICE LATERALS SMALLER THAN 8 INCH DIAMETER SHALL ENTER MANHOLES.
16. SERVICE CROSSINGS OF CURB SHALL BE MARKED WITH A CUT "S" IN CURB FACE. PAINT IS NOT ACCEPTABLE. SERVICE SHALL BE EXTENDED INTO THE LOT A MINIMUM OF 10 FEET.
17. CONTRACTOR SHALL MARK THE END OF ALL SEWER SERVICES WITH A 2" X 4" BOARD WITH MINIMUM OF FOUR (4) FEET ABOVE GRADE, PAINTED GREEN.
18. ALL PIPES SHALL HAVE SQUEEGEE (CDOT #8 BEDDING) UNLESS OTHERWISE SHOWN OR THE DISTRICT MAY APPROVE AN ALTERNATE BEDDING IN SPECIAL CASES.
19. CUT OFF WALLS WILL BE INSTALLED 10' DOWN STREAM OF EACH MANHOLE WHERE THE SUBDIVISION LINE CONNECTS TO THE EXISTING SANITARY SEWER MAIN LINE.
20. THE WARRANTY BOND SHALL BE IN THE AMOUNT OF $5,000.00 OR 15% OF THE TOTAL COST OF THE SEWER, WHICHEVER IS GREATER.
21. PRIOR TO APPROVAL, ALL SANITARY SEWER PIPES SHALL BE PRESSURE-TESTED PER ASTM C924. ALL MANHOLES SHALL BE VACUUM-TESTED PER UNI-B-98.
22. PRIOR TO REMOVAL OF PLUGS AT MANHOLES, PIPE SHALL BE JET-CLEANED AND VACUUMED TO REMOVE DEBRIS AND VIDEOED. NOTICE SHALL BE GIVEN TO THE DISTRICT INSPECTOR ONE (1) WEEK PRIOR TO CLEANING. INSPECTOR MUST BE PRESENT DURING THE OPERATION. ONCE APPROVAL HAS BEEN GIVEN BY INSPECTOR, PLUGS MAY BE ONLY BE REMOVED AFTER INITIAL ACCEPTANCE BY THE DISTRICT.
23. THE FINAL RECORDED PLAT AND RECORDED ADDRESS PLAT SHALL BE PROVIDED TO THE DISTRICT FOR INITIAL ACCEPTANCE.
24. TWENTY (20) MONTHS AFTER CONSTRUCTION AND PRIOR TO THE EXPIRATION OF WARRANTY, THE DEVELOPER SHALL CAMERA/VIDEO THE SANITARY SEWER LINES AND PROVIDE A DVD TO THE DISTRICT FOR REVIEW.

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
GENERAL NOTES

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/17/2023

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GENERAL NOTES - ROADWAY:

1. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL PREPARE THE SUBGRADE BY SCARIFYING THE UPPER ONE (1) FOOT OF THE SUBGRADE IN CUT AREAS OR AREAS WITH LITTLE OR NO FILL, UNLESS SPECIFIED IN THE SOILS REPORT. THE WORK SHALL CONFORM TO THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
3. PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL ALL UNDERGROUND UTILITIES HAVE BEEN INSTALLED, TESTED AND ACCEPTED BY THE TOWN OF FIRESTONE ENGINEERING STAFF.
4. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO SUPERVISE AND CERTIFY THAT PROPER COMPACTION HAS BEEN OBTAINED BY SUBCONTRACTORS AND AGENCIES CONCERNING UTILITY LINE BACKFILL INCLUDING, BUT NOT LIMITED TO, SEWER, WATER, ELECTRICAL, GAS AND LANDSCAPE IRRIGATION LINES AND ACCEPTED BY THE TOWN ENGINEERING STAFF AND THE SOILS ENGINEER.
5. STREET PAVING SHALL NOT START UNTIL:
   a. A SOILS REPORT AND PAVEMENT DESIGN IS ACCEPTED BY THE TOWN ENGINEERING STAFF.
   b. ALL STREETS ARE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND THE TOWN SPECIFICATIONS.
   c. ALL COMPACTION TEST REPORTS HAVE BEEN SUBMITTED TO THE TOWN ENGINEERING STAFF PRIOR TO PROOF ROLLS.
   d. PROOF ROLLS ARE PERFORMED USING A LOADED SINGLE AXLE 2000 GALLON WATER TRUCK AND MONITORED BY THE TOWN ENGINEERING STAFF.
6. THE OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL UTILITY MANHOLE COVERS AND ACCESS LIDS TO GRADE.
7. ALL CONCRETE SHALL BE A MINIMUM OF CLASS B, IN CONFORMANCE WITH CDOT STANDARDS.
8. ALL CONCRETE EDGES MUST BE ROUNDED TO A FOURTH (1/4) INCH RADIUS, EXCEPT WHERE SHOWN OTHERWISE ON DRAWINGS.
9. ONE HALF (1/2) INCH EXPANSION JOINTS SHALL BE INSTALLED AT ALL CURB RETURNS, CURB CUTS AND EXISTING STRUCTURES. CONTROL JOINTS SHALL BE INSTALLED PER THE TOWN STANDARDS AND SPECIFICATIONS.
10. BEFORE PLACING OF ASPHALT THE SUBGRADE SHALL RECEIVE A GROUND STERILANT APPLIED AT A RATE IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS.
11. THE GRADATION OF THE MINERAL AGGREGATE WILL BE GRADING SX (1/2" NOMINAL) FOR ALL TOP LIFTS AND OVERLAYS.
12. TACK COAT SHALL BE USED PRIOR TO OVERLAY, (CSS-1H), 50:50 DILUTION, 0.10 GAL/SY. ALL EDGES ABUTTING NEW PAVEMENT SHALL BE TACKED.
13. WHEN IT IS REQUIRED TO MATCH EXISTING PAVEMENT, EXISTING PAVEMENT SHALL BE SAW CUT IN A MANNER TO AFFECT A SMOOTH, VERTICAL STRAIGHT CUT EDGE. T PATCH MILLING MUST BE DONE PER STANDARD DETAILS.
14. ALL SAWCUT EDGES OF EXISTING PAVEMENT SHALL BE CLEAN AND COATED WITH TACK COAT PRIOR TO PLACING NEW PAVEMENT ADJACENT TO THE EXISTING PAVEMENT.
15. ALL ASPHALT SHALL BE ONE FOURTH (1/4) INCH ABOVE CONCRETE EDGES, MANHOLE COVERS AND ACCESS LIDS.
16. SIGNAGE AND STRIPING SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, THE COLORADO DEPARTMENT OF TRANSPORTATION M&S STANDARDS, AND THE TOWN STANDARDS.
17. THE PURCHASE AND INSTALLATION OF STREET NAME SIGNS SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR. THE OWNER/CONTRACTOR SHALL SECURE THE APPROVAL OF THE TOWN ENGINEERING STAFF FOR TYPE AND LOCATION OF THE STREET NAME SIGNS PRIOR TO INSTALLATION.
18. ALL NEW ROADWAY SECTIONS SHALL HAVE SUBGRADE PREPARATION AND INITIAL ASPHALT PAVEMENT PLACED WITH A 1% CROWN. FINAL OVERLAY IS TO BE PLACED WITH A 2% CROWN. SEE DETAIL ST7 IN THE "STANDARD DETAILS-STREET" FOR MORE INFORMATION.
19. DETERMINATION OF CROWN FOR CUL DE SAC PAVING SHALL BE EVALUATED ON A CASE BY CASE BASIS.

GENERAL NOTES - SANITARY SEWER:

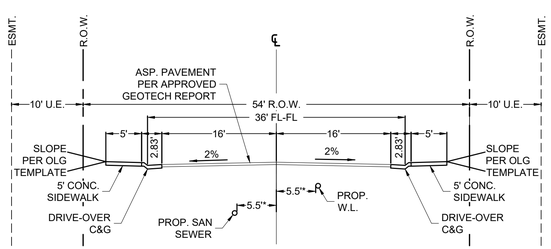
1. TOWN OF FIRESTONE SEWER SERVICE IS UNDER THE JURISDICTION OF THE ST. VRAIN SANITATION DISTRICT (SVSD). ALL SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SVSD STANDARDS AND CRITERIA IN ADDITION TO THE TOWN STANDARDS AND SPECIFICATIONS.
2. MINIMUM VERTICAL SEPARATIONS BETWEEN ALL UTILITY PIPES SHALL BE EIGHTEEN (18) INCHES. IF VERTICAL SEPARATIONS ARE LESS THAN EIGHTEEN (18) INCHES, THE UTILITY PIPES SHALL BE REINFORCED AND PROTECTED AS REQUIRED BY CURRENT TOWN STANDARD SPECIFICATIONS.
3. WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS WATER LINES WITH LESS THAN ONE AND ONE-HALF (1½) FEET OF VERTICAL SEPARATION, SEWER LINE JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE WATER LINE IN BOTH DIRECTIONS.
4. ALL SANITARY SEWER SERVICES AND WATER SERVICES ARE TO BE TEN (10) FEET APART.
5. SERVICE LATERALS SHALL EXTEND FIVE (5) FEET BEYOND RIGHTS OF WAY OR UTILITY EASEMENTS, WHICHEVER IS GREATER. THE ENDS SHALL BE MARKED BY A GREEN PAINTED WOOD POST UNTIL CURB AND GUTTER IS IN PLACE. WHEN CURB AND GUTTER IS IN PLACE THE LATERALS SHALL BE MARKED ON THE CONCRETE CURB FACE WITH AN "S" or "X".
6. BEDDING MATERIAL SHALL CONFORM TO SVSD AND TOWN STANDARDS AND SPECIFICATIONS.
7. WARNING TAPE SHALL BE INSTALLED 12" MINIMUM AND 18" MAXIMUM ABOVE SEWER PIPE.
8. PRECAST CONCRETE MANHOLE SECTIONS SHALL BE IN ACCORDANCE WITH ASTM C-478. CAST IRON RING AND COVER SHALL CONFORM TO ASTM A-48.
9. MANHOLES SHALL BE A MINIMUM FOUR (4) FOOT DIAMETER AND CONSTRUCTED PER THE STANDARDS AND SPECIFICATIONS.
10. MANHOLE RIMS SHALL BE SET AT AN ELEVATION RELATIVE TO THE PAVEMENT, IN ACCORDANCE WITH THE TOWN STANDARDS. WHETHER THE MANHOLE IS AT PAVED OR UNPAVED GRADE, A MINIMUM OF ONE (1) AND A MAXIMUM OF FOUR (4) CONCRETE RINGS SHALL BE USED TO ADJUST THE RIM ELEVATION TO FINAL GRADE. THE MAXIMUM ACCEPTABLE VERTICAL ADJUSTMENT UTILIZING CONCRETE RINGS IS EIGHTEEN (18) INCHES.

GENERAL NOTES - STORM SEWER:

1. EXCEPT WHERE NOTED, ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE, CLASS III AND SHALL CONFORM TO REQUIREMENTS OF ASTM C76. ALL RCP SHALL HAVE RUBBER GASKETED JOINTS AND SHALL CONFORM TO REQUIREMENTS OF ASTM C443, AND SHALL PROVIDE WATERTIGHT PERFORMANCE CHARACTERISTICS.
2. TONGUE AND GROOVE JOINTS SHALL NOT BE ALLOWED.
3. THE MINIMUM COVERAGE FOR ALL STORM DRAINAGE PIPES SHALL BE 1.5 FEET FOR CLASS III PIPE AND 1 FOOT FOR CLASS IV PIPE.
4. BEDDING MATERIAL SHALL CONFORM TO TOWN OF FIRESTONE STANDARDS AND SPECIFICATIONS.
5. ALL MANHOLES SHALL BE CONCRETE AND CONFORM TO CDOT STANDARD M-604-20.
6. THE MINIMUM MANHOLE DIAMETER SHALL BE AS SPECIFIED BELOW:

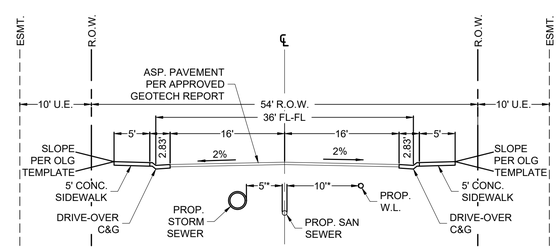
PIPE DIAMETER	MANHOLE SIZE
15" TO 18"	4' DIAMETER
21" TO 42"	5' DIAMETER
48" TO 54"	6' DIAMETER
60" AND LARGER	BOX BASE MANHOLE

7. ALL STREET INLETS SHALL BE CURB OPENING TYPE R CONFORMING TO CDOT STANDARD M-604-12, EXCEPT WHERE OTHERWISE NOTED.
8. ALL INLET ACCESS COVERS SHALL HAVE THE WORDS "NO DUMPING – DRAINS TO RIVERS" AND "STORM SEWER" CAST INTO THE COVER PER TOWN STANDARD DETAIL.
9. ALL END SECTIONS SHALL CONFORM TO CDOT STANDARD M-603-10.
10. WHERE RIPRAP OR GROUTED BOULDERS ARE CALLED FOR ON THE PLANS FOR EROSION CONTROL, IT SHALL CONFORM TO THE URBAN STORM DRAINAGE CRITERIA MANUAL SPECIFICATIONS (LATEST REVISION). .



54' R.O.W. ULTIMATE ROAD CROSS SECTION
(FILING 4 RESIDENTIAL STREETS)
NOT TO SCALE

* OUTSIDE TO OUTSIDE OF PIPE



54' R.O.W. ULTIMATE ROAD CROSS SECTION
(FILING 4 RESIDENTIAL STREETS W/ STORM)
NOT TO SCALE

* OUTSIDE TO OUTSIDE OF PIPE

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C0.0 COVER.DWG - 2/20/2023 1:09:11 PM - Luke Breedlove

811
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CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
GENERAL NOTES & ROADWAY SECTIONS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/17/2023

C0.2
SHEET 3 OF 109

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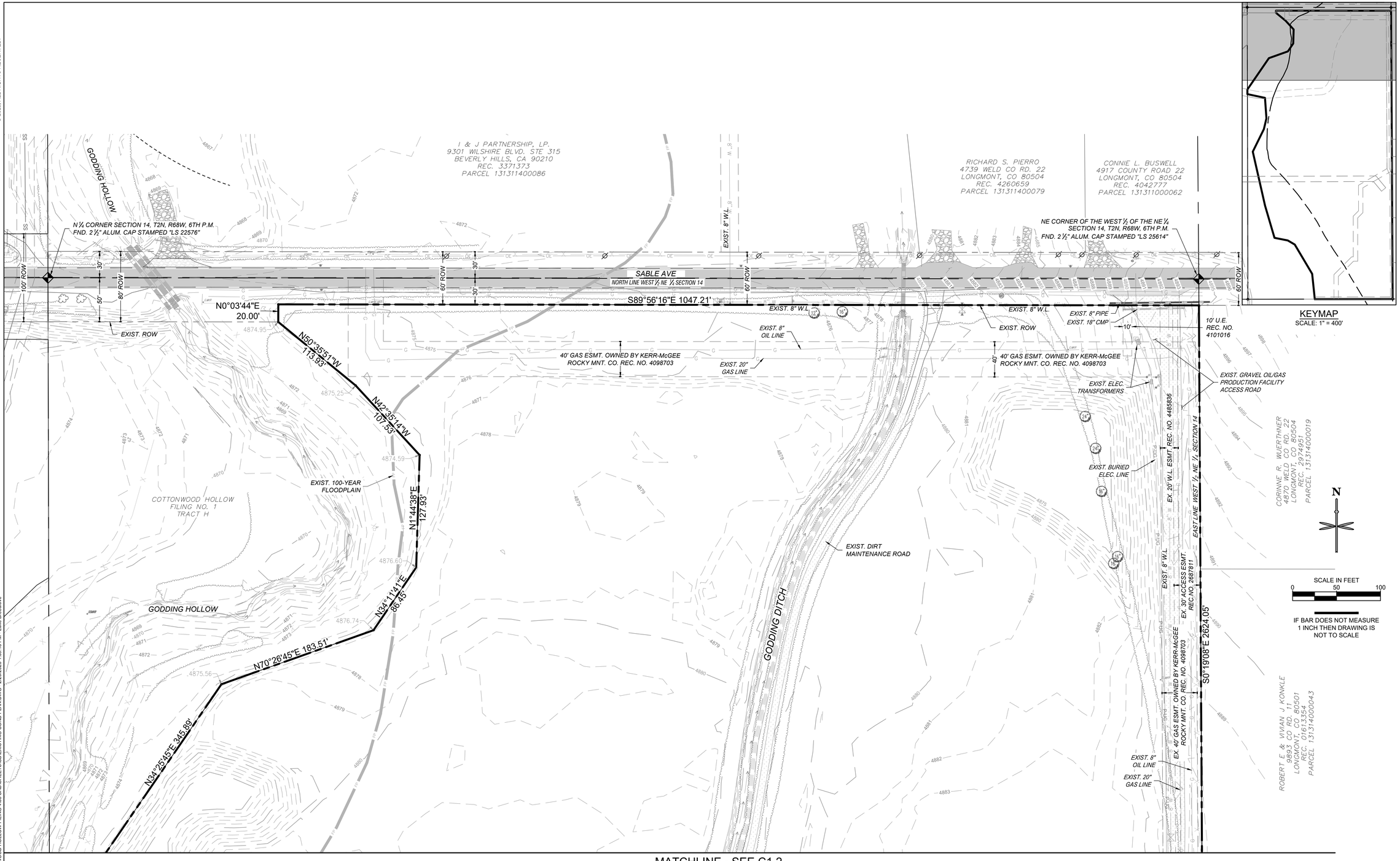

KEYMAP
SCALE: 1" = 400'

MATCHLINE - SEE C1.2

EXISTING CONDITIONS LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- EXIST. 100-YR FLOOD PLAIN
- 8" W / 12" WL — EXIST. WATER LINES
- SS — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- G — EXIST. OIL/GAS LINE
- FO — EXIST. FIBER OPTICS LINE
- UE — EXIST. BURIED ELEC. LINE
- OE — EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- EXIST. ASPHALT

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BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EXISTING CONDITIONS PLAN 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	11/21/2022

C1.1
SHEET 4 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\EXISTING COND PLAN.DWG - 2/20/2023 1:09:18 PM - Luke Breedlove

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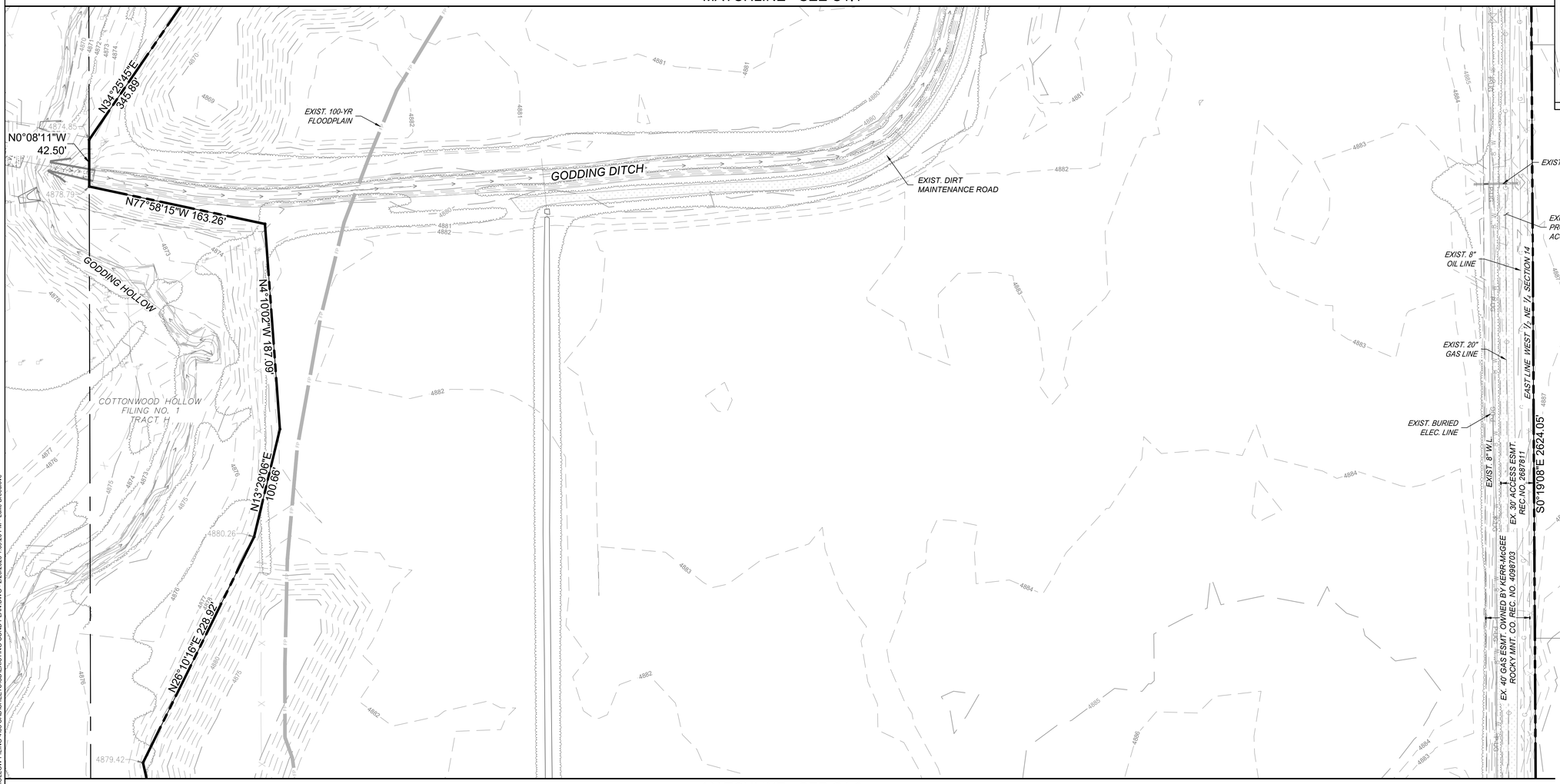
MATCHLINE - SEE C1.1



MATCHLINE - SEE C1.3

KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

EXISTING CONDITIONS LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- EXIST. 100-YR FLOOD PLAIN
- EXIST. WATER LINES (8" W / 12" WL)
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- EXIST. OIL/GAS LINE
- EXIST. FIBER OPTICS LINE
- EXIST. BURIED ELEC. LINE
- EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- EXIST. ASPHALT

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No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EXISTING CONDITIONS PLAN 2

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 11/21/2022

C1.2
SHEET 5 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\C2\EXISTING COND PLAN.DWG - 2/20/2023, 1:09:20 PM - Luke Breedlove

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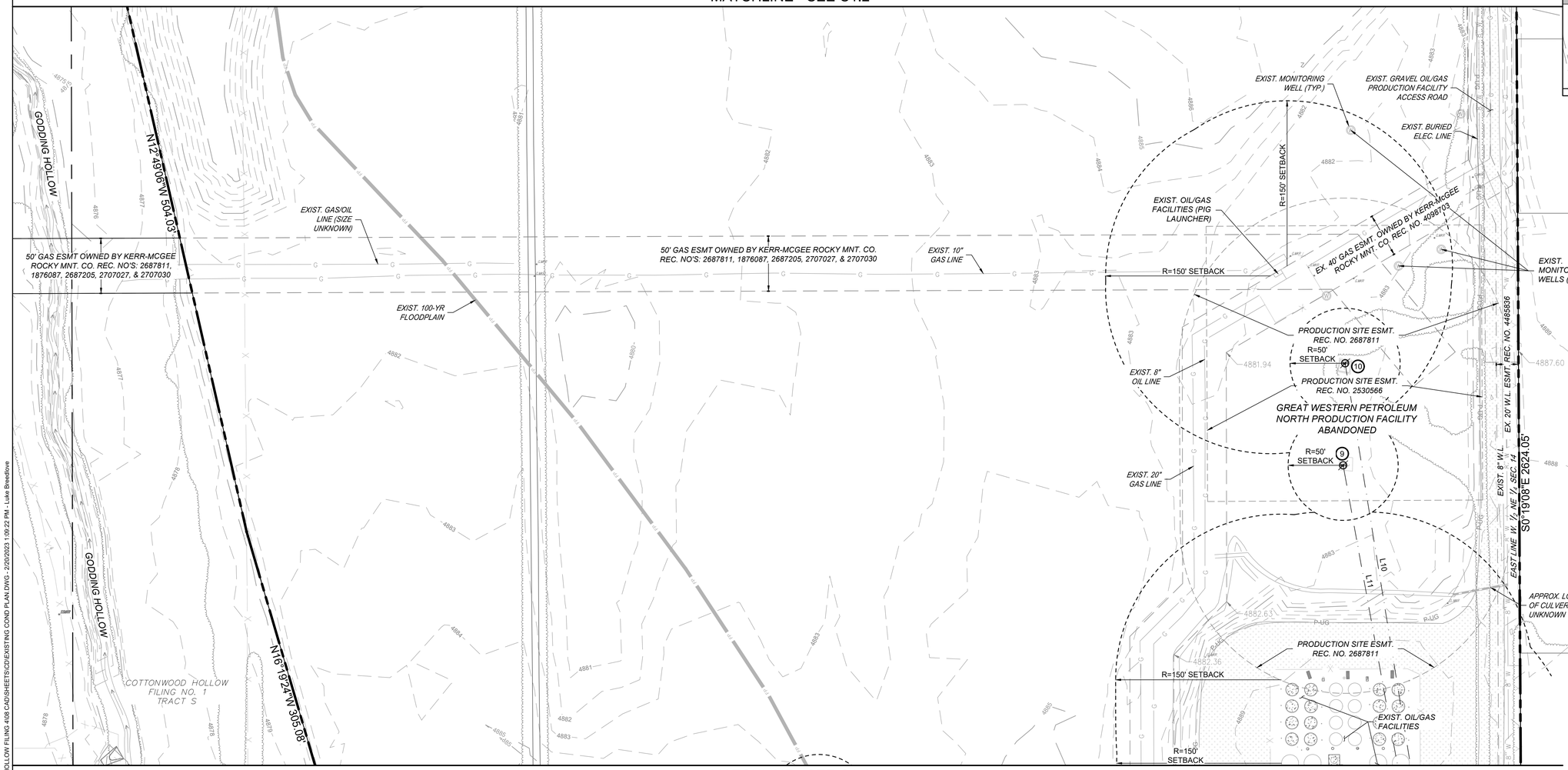
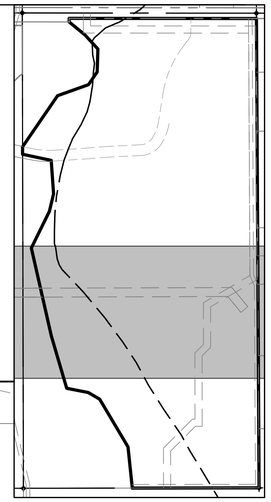
MATCHLINE - SEE C1.2



MATCHLINE - SEE C1.4



KEYMAP
SCALE: 1" = 400'

STEPHANIE MONSERRAT ALVEREZ
11466 DAISY CT
FIRESTONE, CO 80504
REC. 4386757
PARCEL 131314100088

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

FREDERICK R & GRETCHEN L. WEBB
9715 COUNTY ROAD 11
LONGMONT, CO 80501
REC. X0012923
PARCEL 131314000016

LINE TABLE		
LINE	LENGTH	BEARING
L10	1015.81	N9°14'24"W
L11	924.73	N10°16'19"W

NANCY L. BRUCKHAUSER
9629 COUNTY ROAD 11
LONGMONT, CO 80501
REC. 4344010
PARCEL 131314000042

EXISTING CONDITIONS LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- EXIST. 100-YR FLOOD PLAIN
- EXIST. WATER LINES (8" W, 12" WL)
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- EXIST. OIL/GAS LINE
- EXIST. FIBER OPTICS LINE
- EXIST. BURIED ELEC. LINE
- EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- EXIST. ASPHALT

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EXISTING CONDITIONS PLAN 3

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 11/21/2022

C1.3
SHEET 6 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\EXISTING COND PLAN.DWG - 2/28/2023 1:09:22 PM - Luke Breedlove

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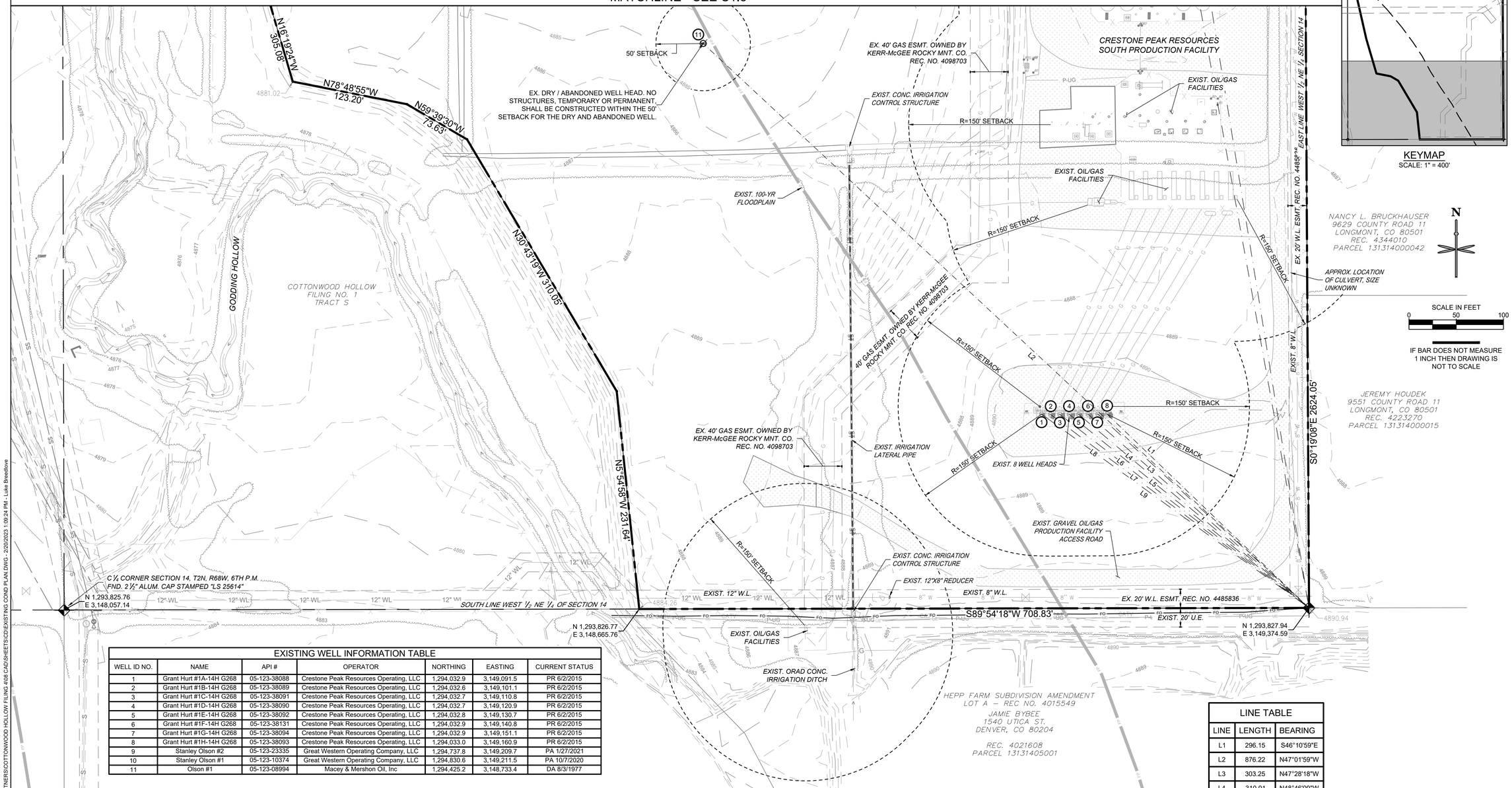
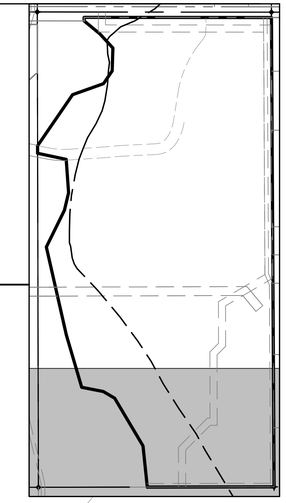
MATCHLINE - SEE C1.3





KEYMAP
SCALE: 1" = 400'

EXISTING WELL INFORMATION TABLE						
WELL ID NO.	NAME	API #	OPERATOR	NORTHING	EASTING	CURRENT STATUS
1	Grant Hurt #1A-14H G268	05-123-38088	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,091.5	PR 6/2/2015
2	Grant Hurt #1B-14H G268	05-123-38089	Crestone Peak Resources Operating, LLC	1,294,032.6	3,149,101.1	PR 6/2/2015
3	Grant Hurt #1C-14H G268	05-123-38091	Crestone Peak Resources Operating, LLC	1,294,032.7	3,149,110.8	PR 6/2/2015
4	Grant Hurt #1D-14H G268	05-123-38090	Crestone Peak Resources Operating, LLC	1,294,032.7	3,149,120.9	PR 6/2/2015
5	Grant Hurt #1E-14H G268	05-123-38092	Crestone Peak Resources Operating, LLC	1,294,032.8	3,149,130.7	PR 6/2/2015
6	Grant Hurt #1F-14H G268	05-123-38131	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,140.8	PR 6/2/2015
7	Grant Hurt #1G-14H G268	05-123-38094	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,151.1	PR 6/2/2015
8	Grant Hurt #1H-14H G268	05-123-38093	Crestone Peak Resources Operating, LLC	1,294,033.0	3,149,160.9	PR 6/2/2015
9	Stanley Olson #2	05-123-23335	Great Western Operating Company, LLC	1,294,737.8	3,149,209.7	PA 1/27/2021
10	Stanley Olson #1	05-123-10374	Great Western Operating Company, LLC	1,294,830.6	3,149,211.5	PA 10/7/2020
11	Olson #1	05-123-08994	Macey & Mershon Oil, Inc	1,294,425.2	3,148,733.4	DA 8/3/1977

LINE TABLE		
LINE	LENGTH	BEARING
L1	296.15	S46°10'59"E
L2	876.22	N47°01'59"W
L3	303.25	N47°28'18"W
L4	310.91	N48°46'09"W
L5	318.51	N49°58'16"W
L6	326.03	N51°05'07"W
L7	333.89	N52°10'44"W
L8	341.63	N53°11'36"W
L9	349.48	N54°05'13"W

EXISTING CONDITIONS LEGEND

ALIQUOT CORNER
ALIQUOT LINE
EXIST. R.O.W.
PROPERTY LINE
EXIST. PROPERTY LINE
EXIST. EASEMENT
EXIST. 100-YR FLOOD PLAIN
8" W EXIST. WATER LINES 12" WL
EXIST. SANITARY SEWER
EXIST. STORM SEWER
ABANDONED WELL HEAD
ACTIVE WELL HEAD
EXIST. OIL/GAS LINE
EXIST. FIBER OPTICS LINE
EXIST. BURIED ELEC. LINE
EXIST. OVERHEAD ELEC. LINE
EXIST. ELEC. TRANSFORMER
EXIST. CONTOURS
EXIST. ASPHALT

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BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EXISTING CONDITIONS PLAN 4

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 11/21/2022

C1.4
SHEET 7 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\EXISTING COND PLAN DWG - 2/20/2023 1:09:24 PM - Luke Breedlove

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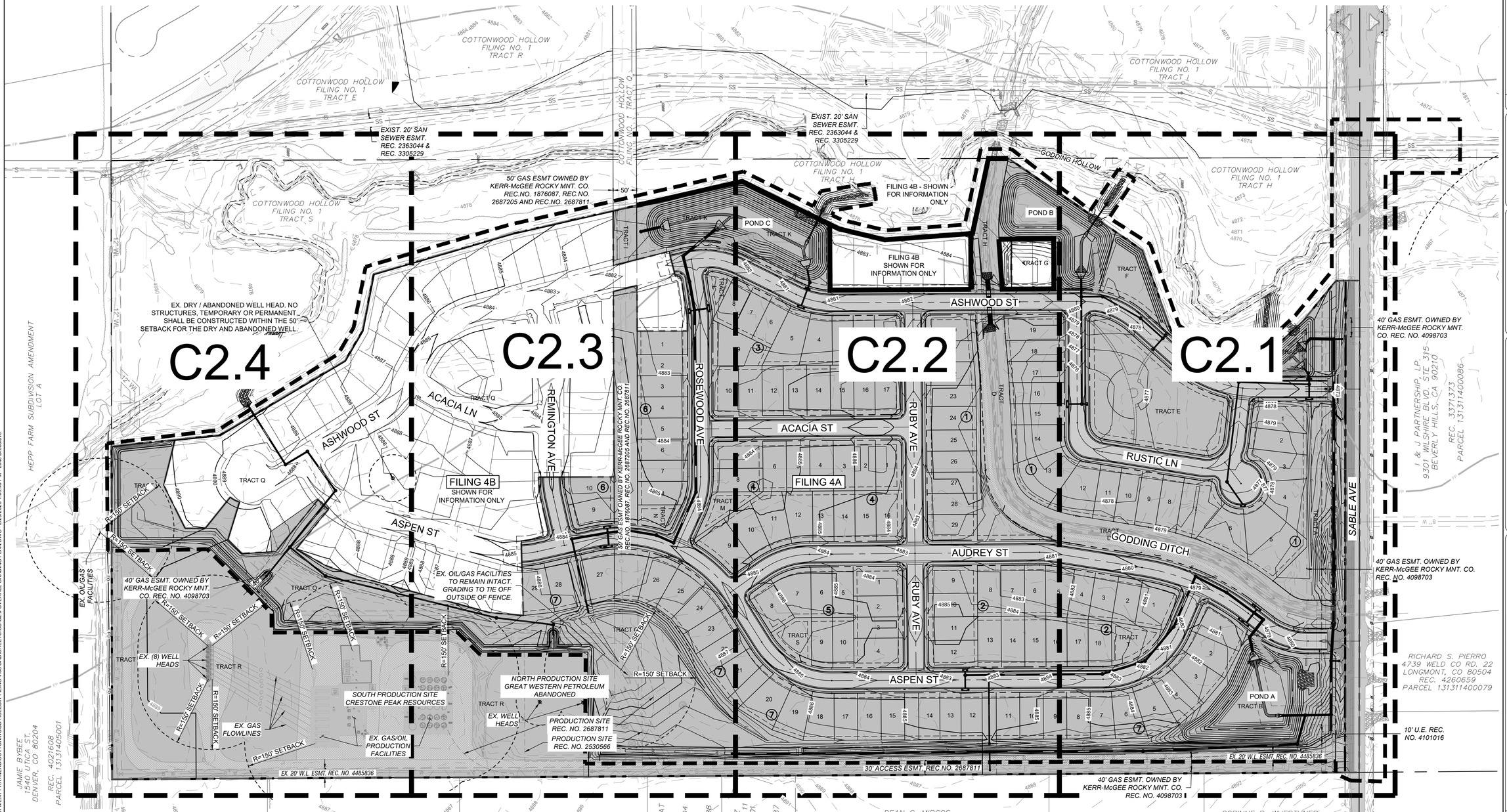
REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

N

SCALE IN FEET
0 100 200

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



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No.	REVISION	BY	DATE

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
OVERALL GRADING PLAN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/30/2023

C2.0
SHEET 8 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C2.0 OVERALL GRADING PLAN.DWG - 2/20/2023 1:09:43 PM - Luke Breedlove

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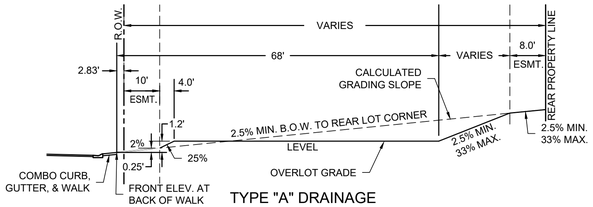
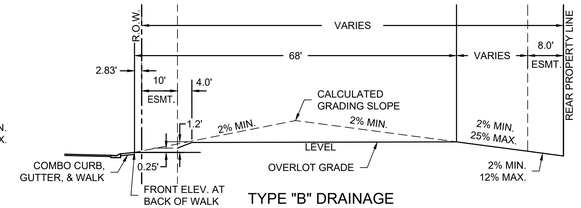


TYPE "A" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS

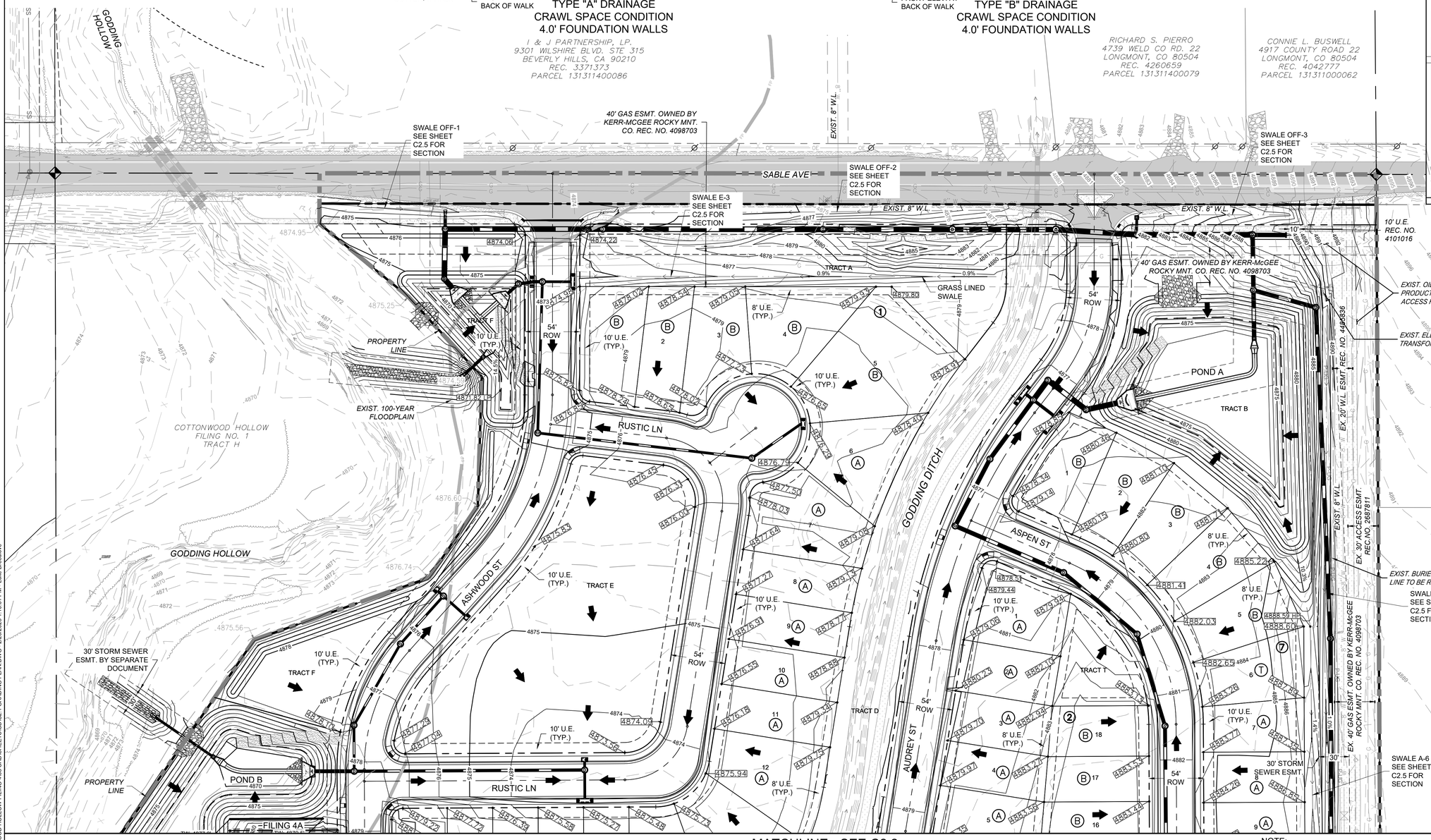


TYPE "B" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS

REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

KEYMAP
SCALE: 1" = 400'



MATCHLINE - SEE C2.2

NOTE:
RETAINING WALL ELEVATIONS ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR TO REFER TO RETAINING WALL PLANS UNDER SEPARATE COVER, BY OTHERS

OVERLOT GRADING LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- PROPOSED TRACT / LOT LINE
- PROPOSED EASEMENT
- PROPOSED CENTERLINE OF R.O.W.
- PC, PT, POINT OF INTERSECTION, ETC.
- EXIST. WATER LINES (8" W / 12" WL)
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- EXIST. OIL/GAS LINE
- EXIST. FIBER OPTICS LINE
- EXIST. BURIED ELEC. LINE
- EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- PROPOSED CONTOURS
- EXIST. 100-YR FLOOD PLAIN
- EXIST. ASPHALT
- (5) BLOCK NUMBER
- 28 LOT NUMBER
- D.E. DRAINAGE EASEMENT
- U.E. UTILITY EASEMENT
- L.P. LOW POINT
- H.P. HIGH POINT
- PROPOSED INLET
- SPOT ELEVATION
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- (A) OLG LOT TYPE (B)

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
OVERLOT GRADING PLAN 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C2.1
SHEET 9 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C2.1 GRADING PLAN.DWG - 2/20/2023 11:01 PM - Luke Breedlove

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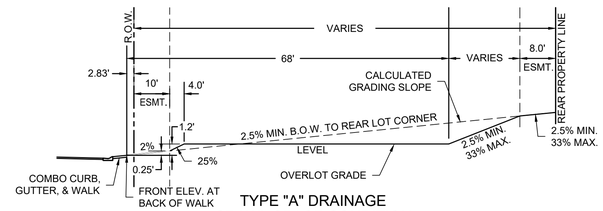
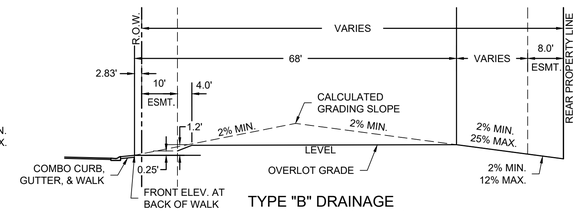
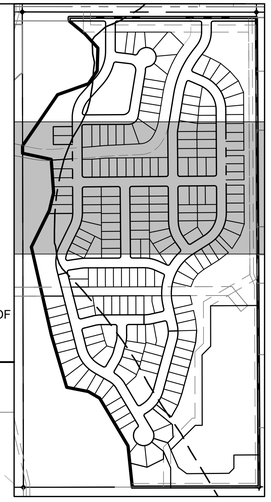


TYPE "A" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS



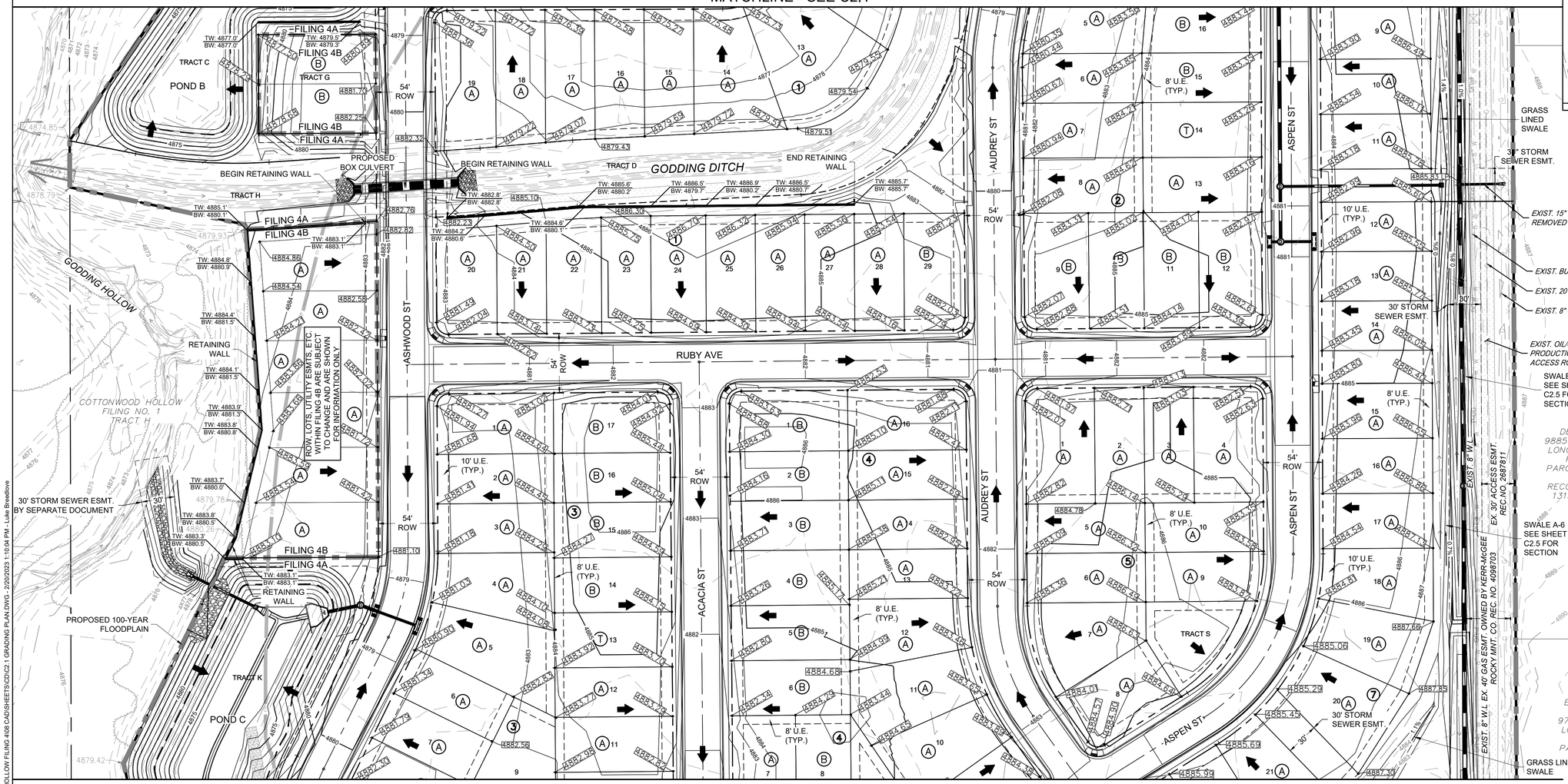
TYPE "B" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.



KEYMAP
SCALE: 1" = 400'

MATCHLINE - SEE C2.1



MATCHLINE - SEE C2.3

NOTE:
RETAINING WALL ELEVATIONS ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR TO REFER TO RETAINING WALL PLANS UNDER SEPARATE COVER, BY OTHERS

OVERLOT GRADING LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- PROPOSED TRACT / LOT LINE
- PROPOSED EASEMENT
- PROPOSED CENTERLINE OF R.O.W.
- PC, PT, POINT OF INTERSECTION, ETC.
- EXIST. WATER LINES (8" W, 12" WL)
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- EXIST. OIL/GAS LINE
- EXIST. FIBER OPTICS LINE
- EXIST. BURIED ELEC. LINE
- EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- PROPOSED CONTOURS
- EXIST. 100-YR FLOOD PLAIN
- EXIST. ASPHALT
- (5) BLOCK NUMBER
- 28 LOT NUMBER
- D.E. DRAINAGE EASEMENT
- U.E. UTILITY EASEMENT
- L.P. LOW POINT
- H.P. HIGH POINT
- PROPOSED INLET
- SPOT ELEVATION
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- (A) OLG LOT TYPE (B)

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
OVERLOT GRADING PLAN 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C2.2
SHEET 10 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C2.1 GRADING PLAN.DWG - 2/20/2023 1:10:04 PM - Luke Breedlove

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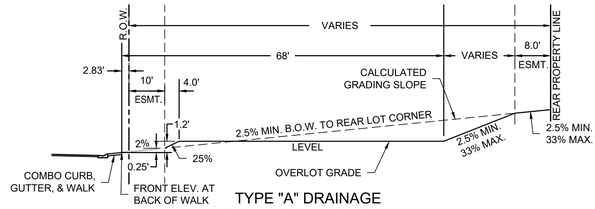
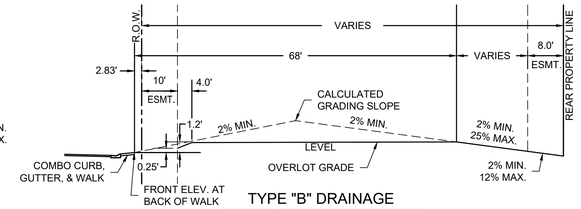
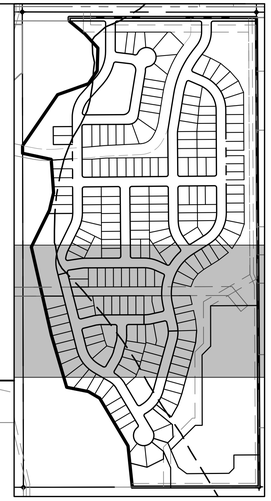


TYPE "A" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS



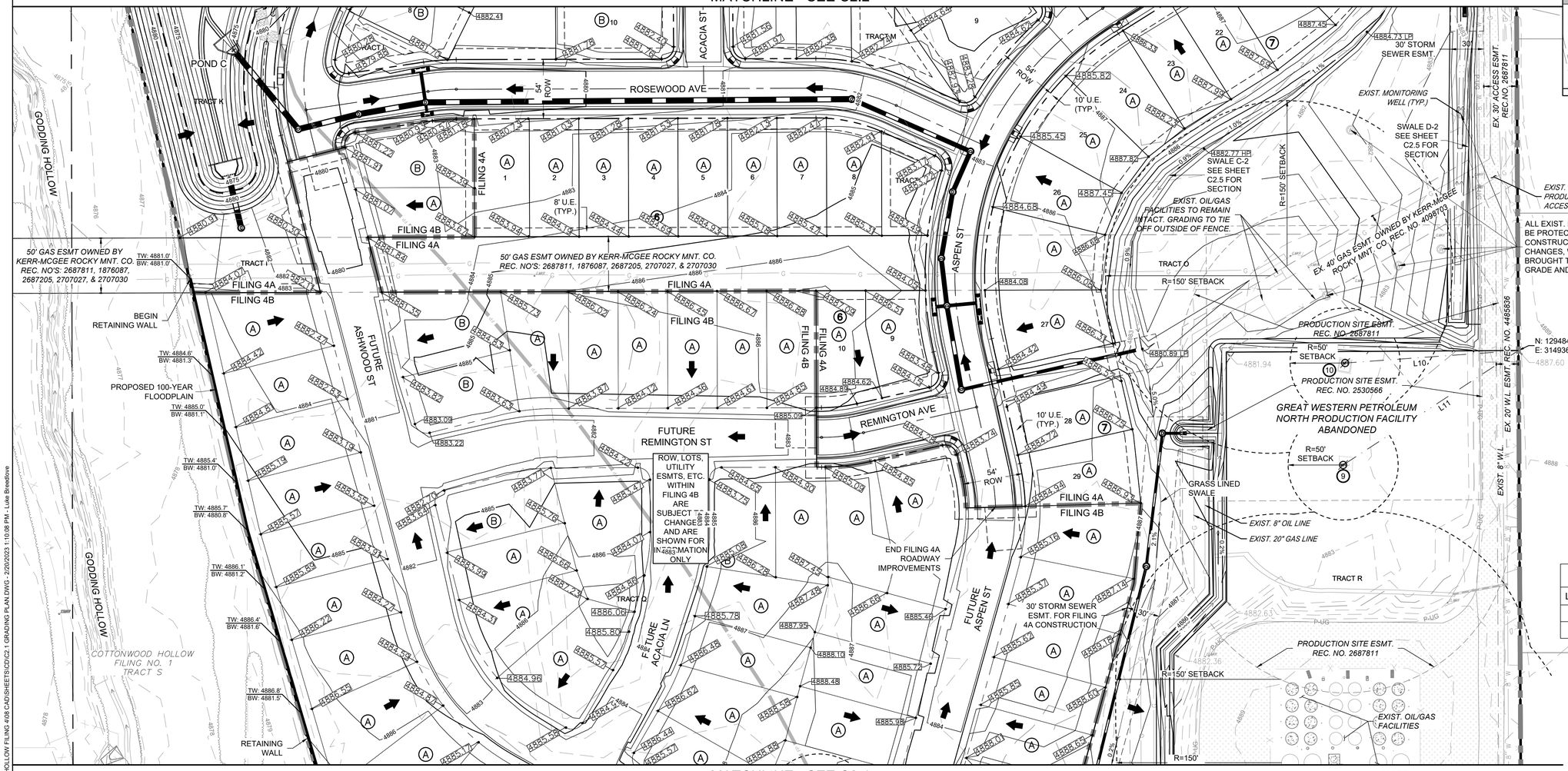
TYPE "B" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.



KEYMAP
SCALE: 1" = 400'

MATCHLINE - SEE C2.2



ALL EXIST. MONITORING WELLS TO BE PROTECTED DURING CONSTRUCTION. IF SURFACE ELEV CHANGES, WELLS WILL BE BROUGHT TO PROPOSED SURFACE GRADE AND CLEARLY MARKED.

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

LINE TABLE		
LINE	LENGTH	BEARING
L10	157.87'	S85°52'25"W
L11	190.25'	S56°49'55"W

MATCHLINE - SEE C2.4

NOTE:
RETAINING WALL ELEVATIONS ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR TO REFER TO RETAINING WALL PLANS UNDER SEPARATE COVER, BY OTHERS

OVERLOT GRADING LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- PROPOSED TRACT / LOT LINE
- PROPOSED EASEMENT
- PROPOSED CENTERLINE OF R.O.W.
- PC, PT, POINT OF INTERSECTION, ETC.
- 8" W / 12" WL — EXIST. WATER LINES
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- EXIST. OIL/GAS LINE
- EXIST. FIBER OPTICS LINE
- EXIST. BURIED ELEC. LINE
- EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- PROPOSED CONTOURS
- EXIST. 100-YR FLOOD PLAIN
- EXIST. ASPHALT
- 5 BLOCK NUMBER
- 28 LOT NUMBER
- D.E. DRAINAGE EASEMENT
- U.E. UTILITY EASEMENT
- L.P. LOW POINT
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- PROPOSED INLET
- SPOT ELEVATION
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- A OLG LOT TYPE B

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
OVERLOT GRADING PLAN 3

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C2.3
SHEET 11 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C2.1 GRADING PLAN.DWG - 2/20/2023 1:10:08 PM - Luke Bradshaw

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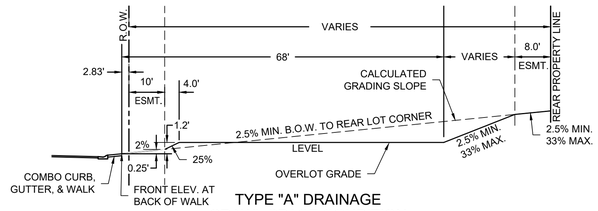
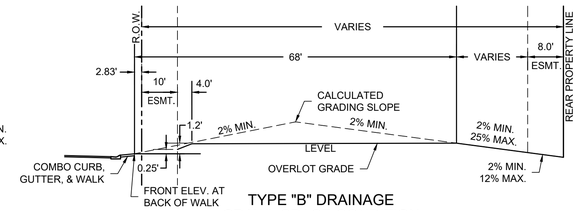


TYPE "A" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS

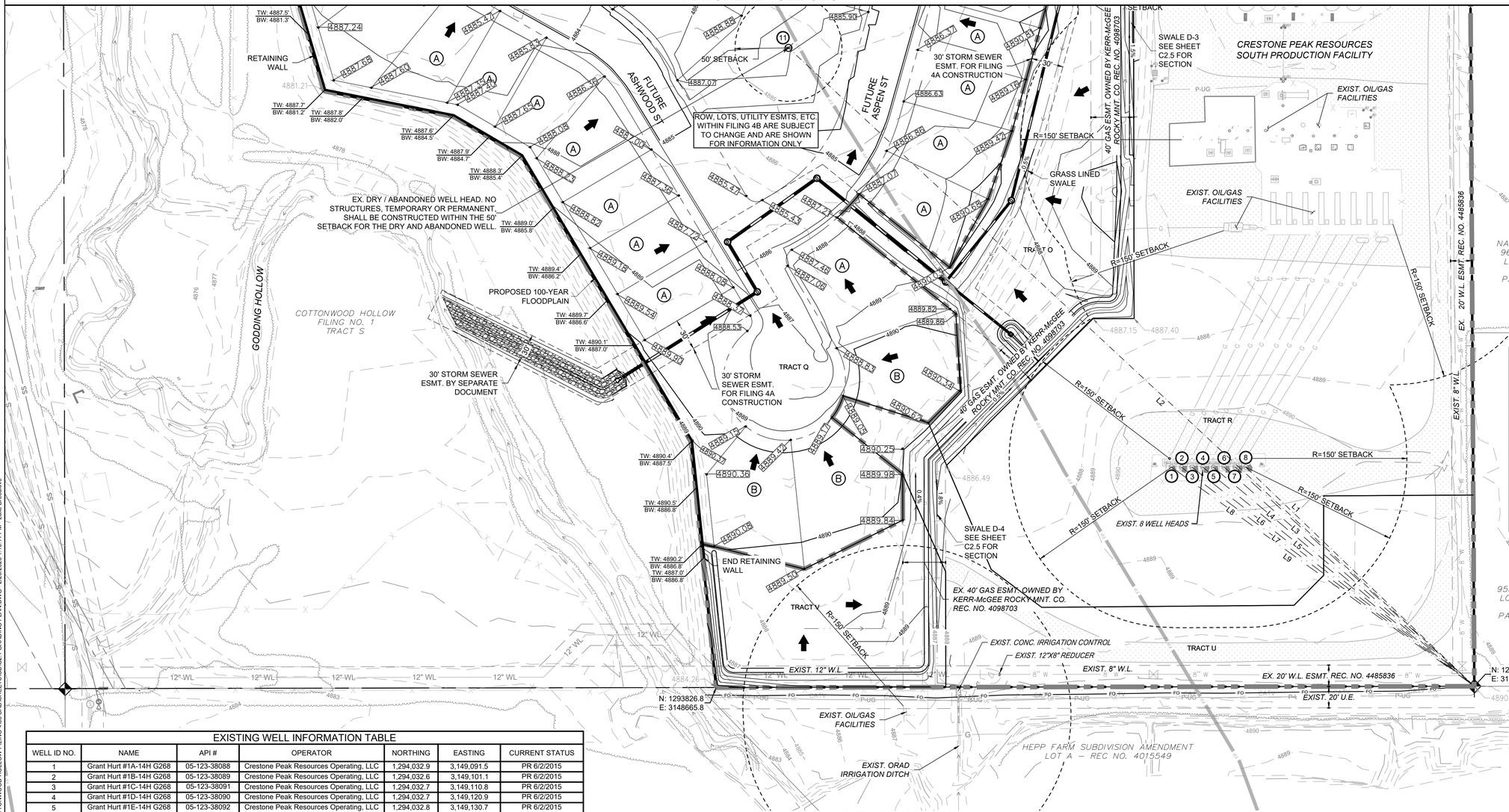


TYPE "B" DRAINAGE
CRAWL SPACE CONDITION
4.0' FOUNDATION WALLS

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

KEYMAP
SCALE: 1" = 400'

MATCHLINE - SEE C2.3



LINE TABLE		
LINE	LENGTH	BEARING
L1	296.15'	S46°10'59"E
L2	876.22'	N47°01'59"W
L3	303.25'	N47°28'18"W
L4	310.91'	N48°46'09"W
L5	318.51'	N49°58'16"W
L6	326.03'	N51°05'07"W
L7	333.89'	N52°10'44"W
L8	341.63'	N53°11'36"W
L9	349.48'	N54°05'13"W

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

EXISTING WELL INFORMATION TABLE						
WELL ID NO.	NAME	API #	OPERATOR	NORTHING	EASTING	CURRENT STATUS
1	Grant Hurt #1A-14H G268	05-123-38088	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,091.5	PR 6/2/2015
2	Grant Hurt #1B-14H G268	05-123-38089	Crestone Peak Resources Operating, LLC	1,294,032.6	3,149,101.1	PR 6/2/2015
3	Grant Hurt #1C-14H G268	05-123-38091	Crestone Peak Resources Operating, LLC	1,294,032.7	3,149,110.8	PR 6/2/2015
4	Grant Hurt #1D-14H G268	05-123-38090	Crestone Peak Resources Operating, LLC	1,294,032.7	3,149,120.9	PR 6/2/2015
5	Grant Hurt #1E-14H G268	05-123-38092	Crestone Peak Resources Operating, LLC	1,294,032.8	3,149,130.7	PR 6/2/2015
6	Grant Hurt #1F-14H G268	05-123-38131	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,140.8	PR 6/2/2015
7	Grant Hurt #1G-14H G268	05-123-38094	Crestone Peak Resources Operating, LLC	1,294,032.9	3,149,151.1	PR 6/2/2015
8	Grant Hurt #1H-14H G268	05-123-38093	Crestone Peak Resources Operating, LLC	1,294,033.0	3,149,160.9	PR 6/2/2015
9	Stanley Olson #2	05-123-23335	Great Western Operating Company, LLC	1,294,737.8	3,149,209.7	PA 1/27/2021
10	Stanley Olson #1	05-123-10374	Great Western Operating Company, LLC	1,294,830.6	3,149,211.5	PA 10/7/2020
11	Olson #1	05-123-08994	Macey & Mershon Oil, Inc	1,294,425.2	3,148,733.4	DA 8/3/1977

OVERLOT GRADING LEGEND

- ALIQUOT CORNER
- ALIQUOT LINE
- EXIST. R.O.W.
- PROPERTY LINE
- EXIST. PROPERTY LINE
- EXIST. EASEMENT
- PROPOSED TRACT / LOT LINE
- PROPOSED EASEMENT
- PROPOSED CENTERLINE OF R.O.W.
- PC, PT, POINT OF INTERSECTION, ETC.
- EXIST. WATER LINES (8" W, 12" WL)
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- ABANDONED WELL HEAD
- ACTIVE WELL HEAD
- EXIST. OIL/GAS LINE
- EXIST. FIBER OPTICS LINE
- EXIST. BURIED ELEC. LINE
- EXIST. OVERHEAD ELEC. LINE
- EXIST. ELEC. TRANSFORMER
- EXIST. CONTOURS
- PROPOSED CONTOURS
- EXIST. 100-YR FLOOD PLAIN
- EXIST. ASPHALT
- 5 BLOCK NUMBER
- 28 LOT NUMBER
- D.E. DRAINAGE EASEMENT
- U.E. UTILITY EASEMENT
- L.P. LOW POINT
- H.P. HIGH POINT
- PROPOSED INLET
- SPOT ELEVATION
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- A OLG LOT TYPE B

NOTE:
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
OVERLOT GRADING PLAN 4

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/15/2023

C2.4
SHEET 12 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C2\C2.1 GRADING PLAN.DWG - 2/20/2023 1:10:11 PM - Luke Breedlove

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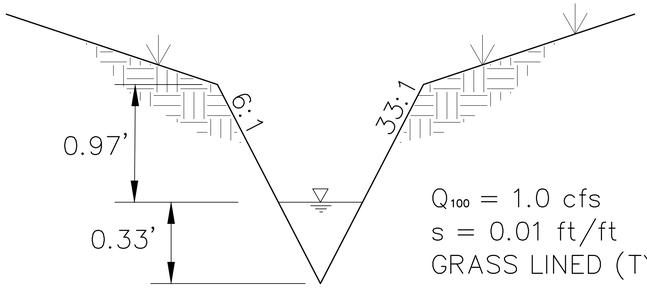
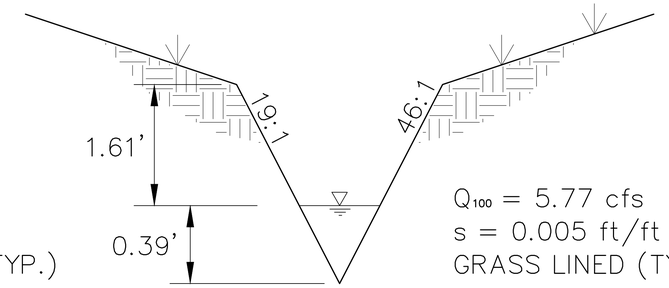


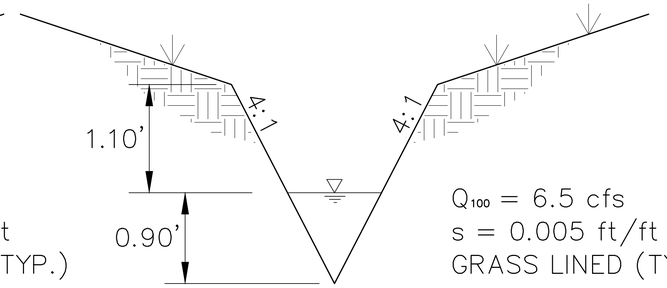
Q_{100} = 1.0 cfs
s = 0.01 ft/ft
GRASS LINED (TYP.)

SWALE A-6
NOT TO SCALE



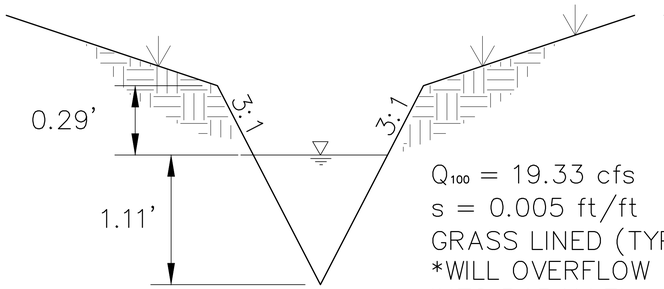
Q_{100} = 5.77 cfs
s = 0.005 ft/ft
GRASS LINED (TYP.)

SWALE C-1
NOT TO SCALE



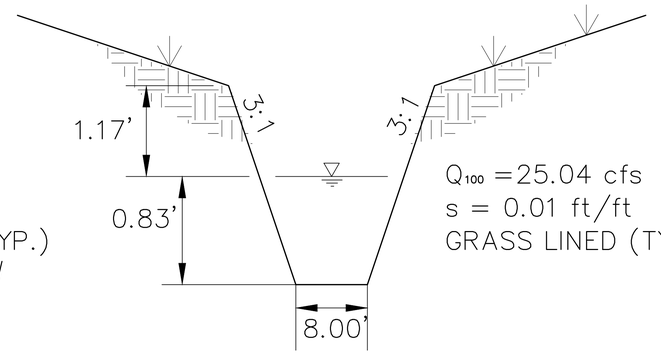
Q_{100} = 6.5 cfs
s = 0.005 ft/ft
GRASS LINED (TYP.)

SWALE C-2
NOT TO SCALE



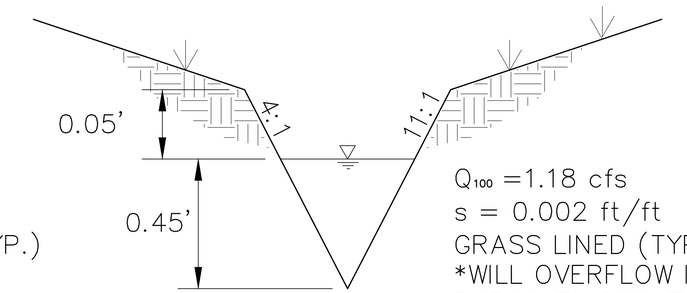
Q_{100} = 19.33 cfs
s = 0.005 ft/ft
GRASS LINED (TYP.)
*WILL OVERFLOW
INTO PARALLEL
SWALE A–6

SWALE D-1
NOT TO SCALE



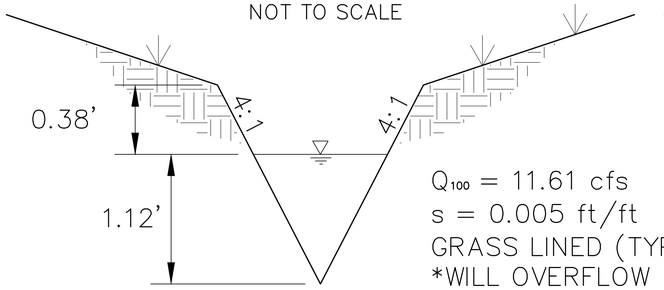
Q_{100} =25.04 cfs
s = 0.01 ft/ft
GRASS LINED (TYP.)

SWALE D-2
NOT TO SCALE



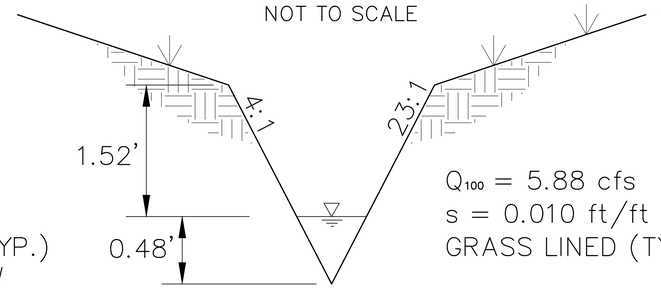
Q_{100} =1.18 cfs
s = 0.002 ft/ft
GRASS LINED (TYP.)
*WILL OVERFLOW INTO
PARALLEL SWALE
C–2 AND C–1

SWALE D-3
NOT TO SCALE



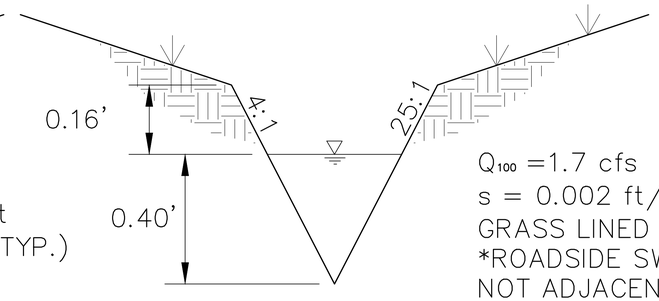
Q_{100} = 11.61 cfs
s = 0.005 ft/ft
GRASS LINED (TYP.)
*WILL OVERFLOW
INTO PARALLEL
SWALE C–1

SWALE D-4
NOT TO SCALE



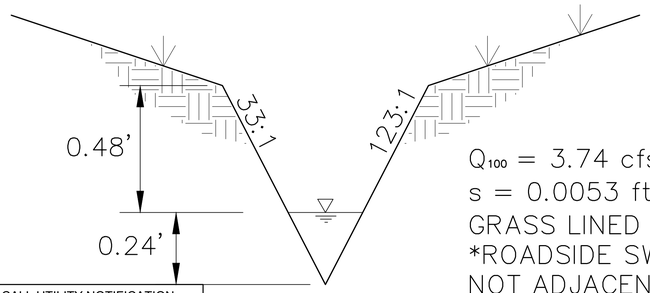
Q_{100} = 5.88 cfs
s = 0.010 ft/ft
GRASS LINED (TYP.)

SWALE E-3
NOT TO SCALE



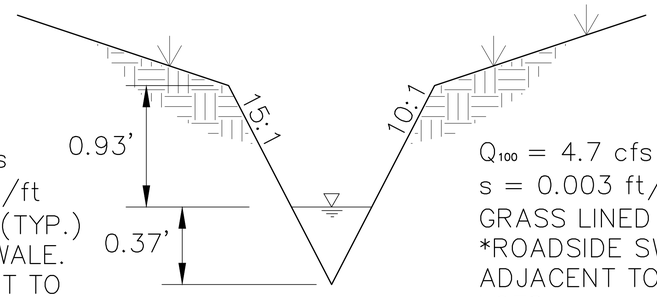
Q_{100} =1.7 cfs
s = 0.002 ft/ft
GRASS LINED (TYP.)
*ROADSIDE SWALE.
NOT ADJACENT TO
ANY LOTS

SWALE OFF-1
NOT TO SCALE



Q_{100} = 3.74 cfs
s = 0.0053 ft/ft
GRASS LINED (TYP.)
*ROADSIDE SWALE.
NOT ADJACENT TO
ANY LOTS

SWALE OFF-2
NOT TO SCALE



Q_{100} = 4.7 cfs
s = 0.003 ft/ft
GRASS LINED (TYP.)
*ROADSIDE SWALE. NOT
ADJACENT TO ANY
LOTS

SWALE OFF-3
NOT TO SCALE

Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SWALE SECTIONS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C2.5
SHEET 13 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C2.1 GRADING PLAN.DWG - 2/20/2023 1:10:13 PM - Luke Breedlove

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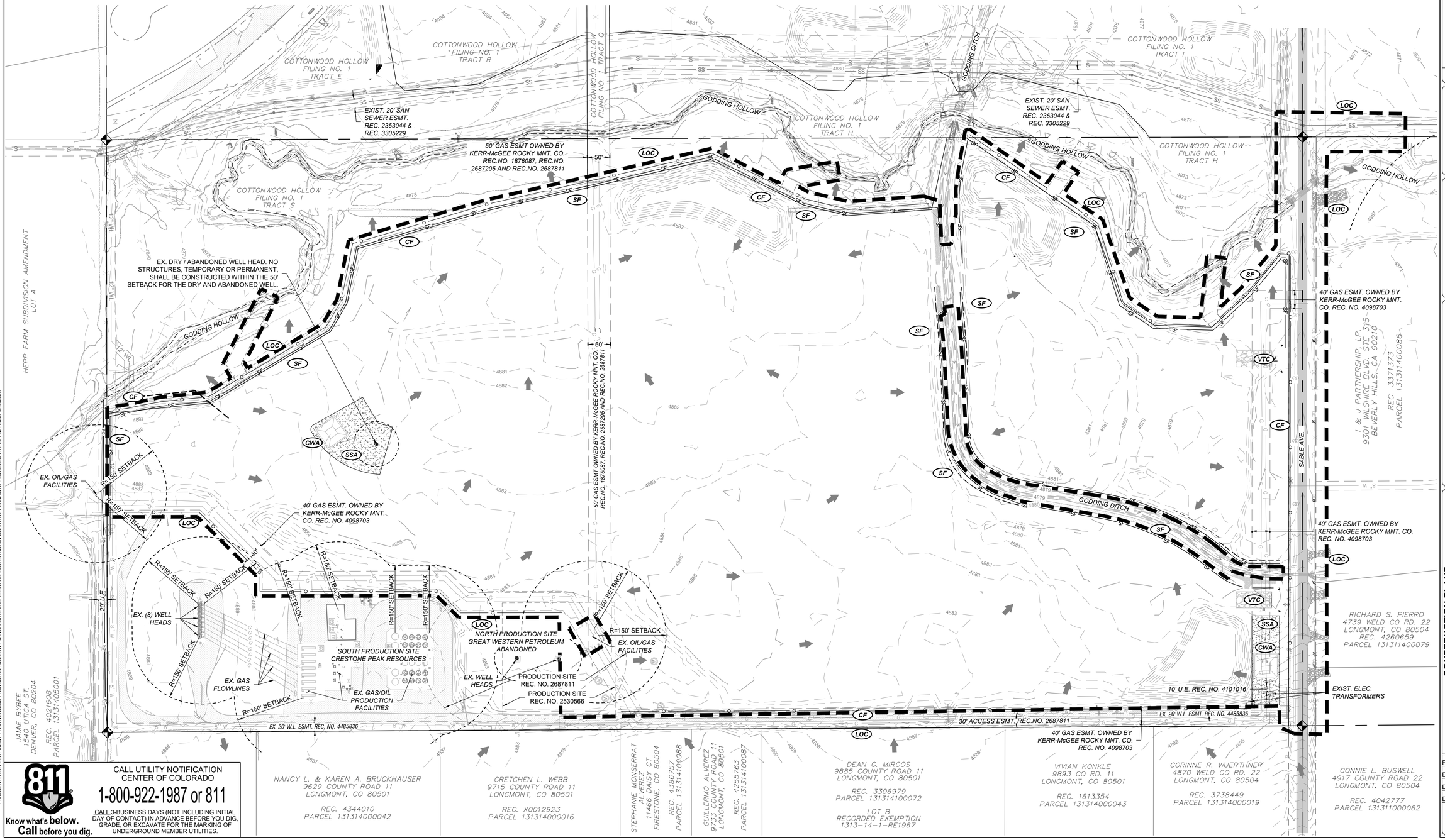
EROSION CONTROL LEGEND

- CF — CONSTRUCTION FENCE
- SF — SEDIMENT FENCE
- VTC — VEHICLE TRACKING CONTROL
- SM — SEEDING AND MULCHING (AT SLOPES LESS THAN 4:1)
- SSA — STABILIZED STAGING AREA
- LOC — LIMITS OF CONSTRUCTION
- CWA — CONCRETE WASHOUT AREA (TO BE LINED)
- FLOW ARROW
- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED EASEMENT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
- FLOW ARROW AND GRADE

N

SCALE IN FEET
0 100 200

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C3.0 EROSION CONTROL PLAN.DWG - 2/20/2023 1:10:27 PM - Luke Breidlove

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL PLAN - INITIAL

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/17/2023

C3.0
SHEET 14 OF 109

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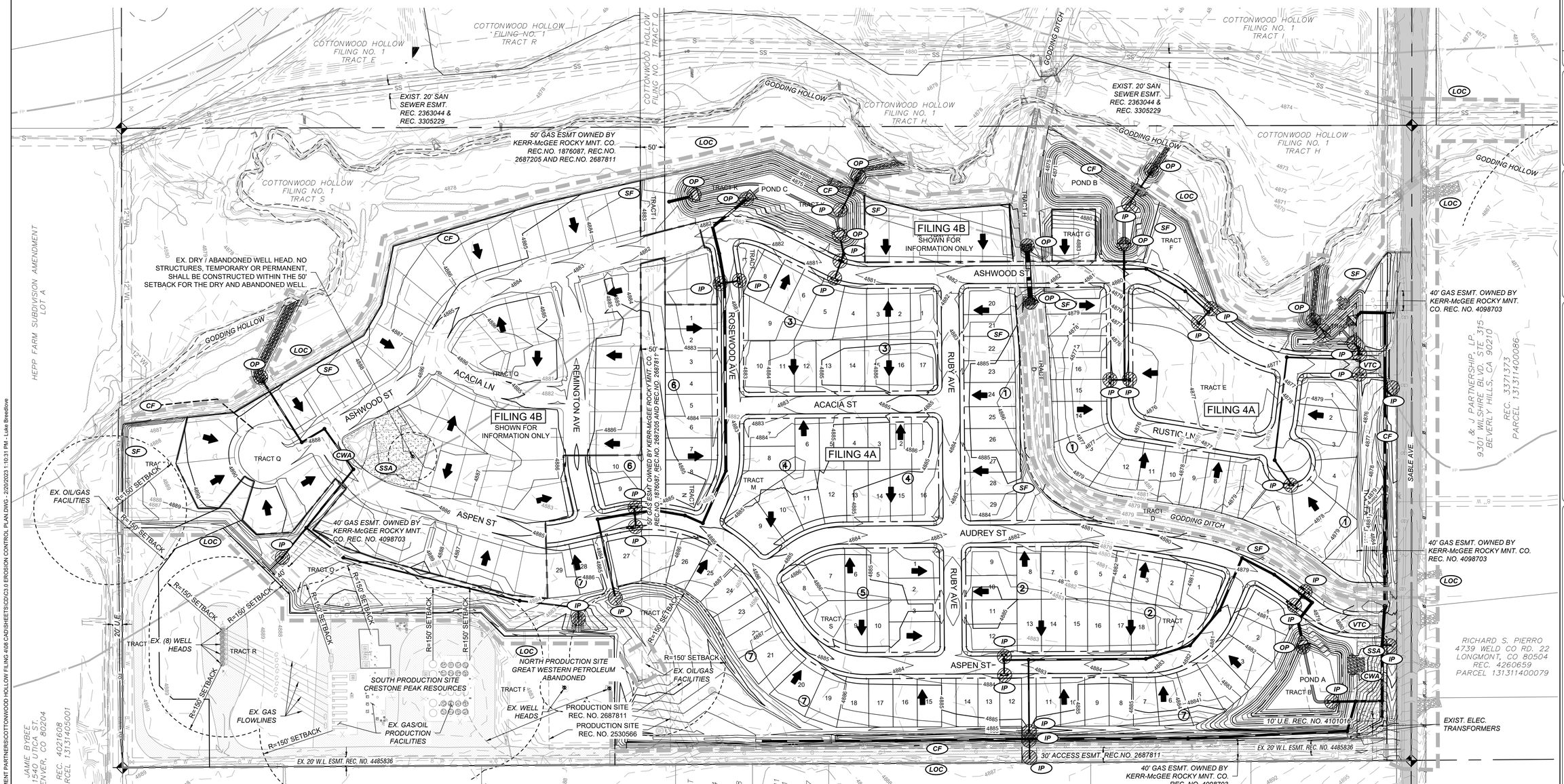
EROSION CONTROL LEGEND

CF	CONSTRUCTION FENCE
SF	SEDIMENT FENCE
VTC	VEHICLE TRACKING CONTROL
SM	SEEDING AND MULCHING (AT SLOPES LESS THAN 4:1)
SSA	STABILIZED STAGING AREA
LOC	LIMITS OF CONSTRUCTION
CWA	CONCRETE WASHOUT AREA (TO BE LINED)
	FLOW ARROW
IP	INLET PROTECTION
OP	OUTLET PROTECTION
	PROPERTY LINE
	PROPOSED PROPERTY BOUNDARY
	PROPOSED RIGHT-OF-WAY
	PROPOSED EASEMENT
	PROPOSED LOT LINE
	PROPOSED EASEMENT LINE
	PROPOSED CENTERLINE
	EXIST. 100-YEAR FLOODPLAIN
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED CURB & GUTTER
	PROPOSED STORM SEWER
	EXISTING STORM SEWER
	PROPOSED/EXIST. STORM MANHOLE
	PROPOSED/EXIST. STORM INLET
	FLOW ARROW AND GRADE

SCALE IN FEET
0 100 200

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\C2\C3.0 EROSION CONTROL PLAN.DWG - 2/20/2023 1:10:31 PM - Luke Brieskove

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL PLAN - INTERIM

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/17/2023

C3.1
SHEET 15 OF 109

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EROSION CONTROL LEGEND

- CF — CONSTRUCTION FENCE
- SF — SEDIMENT FENCE
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- SM — SEEDING AND MULCHING (AT SLOPES LESS THAN 4:1)
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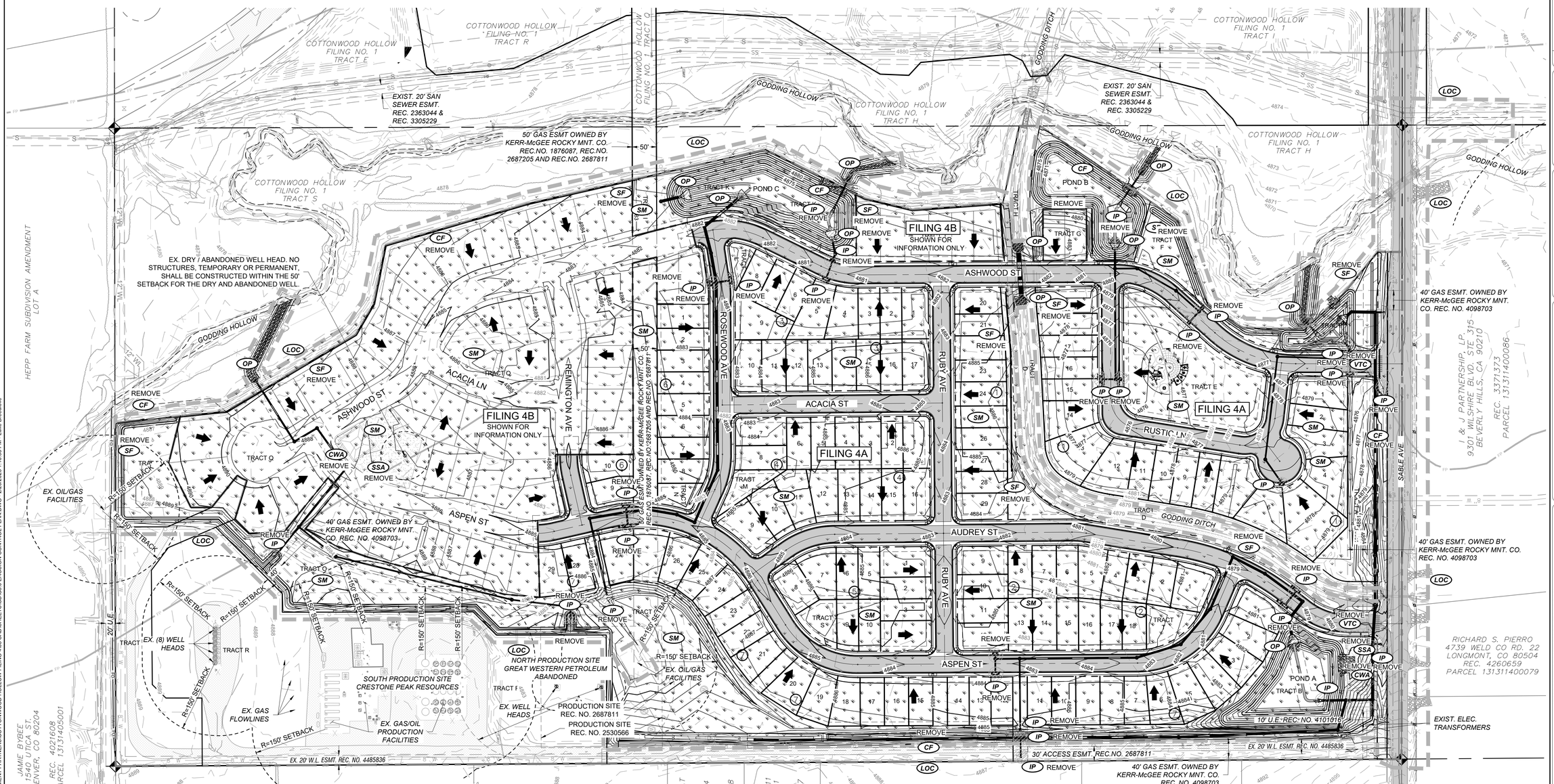
- LOC — LIMITS OF CONSTRUCTION
- CWA — CONCRETE WASHOUT AREA (TO BE LINED)
- FLOW ARROW
- IP — INLET PROTECTION
- OP — OUTLET PROTECTION
- PROPERTY LINE
- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED EASEMENT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- 5200 — EXISTING MAJOR CONTOUR
- 5200 — EXISTING MINOR CONTOUR
- 5200 — PROPOSED MAJOR CONTOUR
- 5200 — PROPOSED MINOR CONTOUR
- PROPOSED CURB & GUTTER
- ST — PROPOSED STORM SEWER
- ST — EXISTING STORM SEWER
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
- FLOW ARROW AND GRADE

N

SCALE IN FEET
0 100 200

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL PLAN - FINAL

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/17/2023

C3.2
SHEET 16 OF 109

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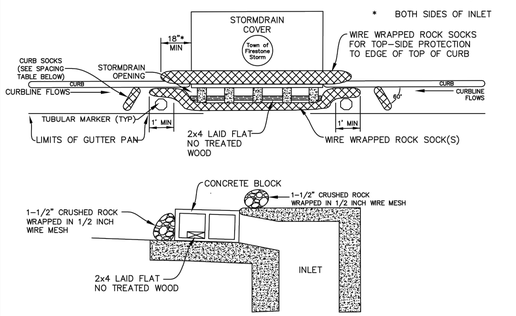
NOTES:
1. ROCK SOCK SHALL BE 1 1/2" CRUSHED ROCK FILL (RECYCLED CONCRETE NOT ACCEPTABLE)

* BOTH SIDES OF INLET

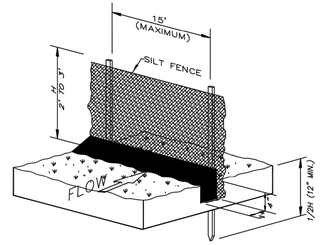


STREET SLOPE	CURB SOCK SPACING (ft)
0.5%	100
1.0%	100
2.0%	75
3.0%	50
4.0%	50
5.0%	50
6.0%	25
7.0%	25
8.0%	25

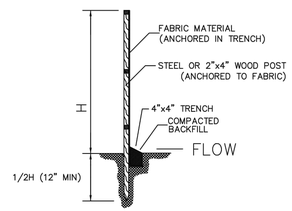
NOTES:
1. INTERIM CONFIGURATION OF INLET PROTECTION IN STREETS SHALL BE INSTALLED WITHIN 72-HOURS OF POURING INLET.
2. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL BE 1 1/2" CRUSHED ROCK.
3. WIRE MESH SHALL BE FABRICATED OF MINIMUM 16-20 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1/2 INCH. ROLL WIDTH SHALL BE 48". 16-20 GAUGE CHICKEN WIRE MAY BE USED IF DOUBLE WRAPPED WITH NO MORE THAN 1/2" OPENING.
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 ROCK SOCKS.
5. ROCK SOCK SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING ROCK SOCK JOINT DETAIL.
6. TUBULAR MARKERS SHALL MEET REQUIRMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED.
7. THE TOP OF THE REINFORCED ROCK SOCK SHALL BE 1/2" – 1" BELOW TOP OF CURB.
8. SEDIMENT ACCUMULATED UPSTREAM OF THE INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK SOCK IS WITHIN 5" OF THE CREST.
9. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED.
10. REFER TO (CS) AND (RS) DETAILS FOR MORE INFO.
11. SEE STM10 FOR INLET AND INLET COVER DETAIL.

INLET PROTECTION

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM3



SILT FENCE INSTALLATION
-NTS-



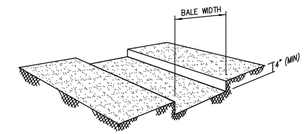
SECTION
-NTS-

FOR SINGLE LOT EROSION CONTROL SEE SHEET STM8

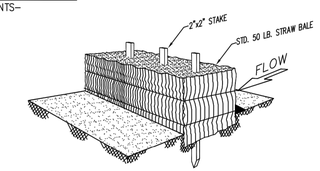
NOTES:
1. INSTALL SILT FENCE PARALLEL TO THE CONTOUR OF THE LAND.
2. EXTEND ENDS UPSLOPE TO ALLOW WATER TO POND BEHIND FENCE.
3. EXCAVATE A TRENCH 4 INCHES WIDE AND 4 INCHES DEEP.
4. INSTALL FENCE WITH POSTS ON THE DOWNSLOPE SIDE.
5. PLACE 8 INCHES OF FABRIC IN THE TRENCH, EXTENDING THE BOTTOM 4 INCHES TOWARD THE UPSLOPE SIDE.
6. JOIN SILT FENCE SECTIONS BY USING A WRAP JOINT.
7. BACKFILL TRENCH WITH SOIL MATERIALS AND COMPACT.
8. INSPECT AT LEAST WEEKLY AND AFTER EACH STORM EVENT, REPAIRING AS NEEDED AND REMOVING SEDIMENT DEPOSITS WHEN THEY REACH ONE-HALF THE FENCE HEIGHT.

SILT FENCE EROSION BARRIER

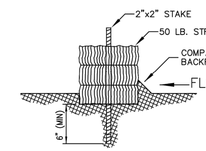
FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM4



TRENCH EXCAVATION
-NTS-



STRAW BALE INSTALLATION
-NTS-

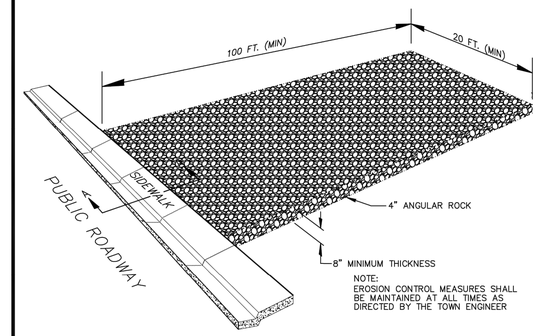


SECTION
-NTS-

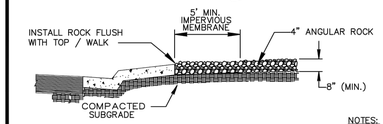
NOTE: EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL LANDSCAPING IS COMPLETED.

STRAW BALE EROSION BARRIER

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM5



NOTE:
EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AS DIRECTED BY THE TOWN ENGINEER



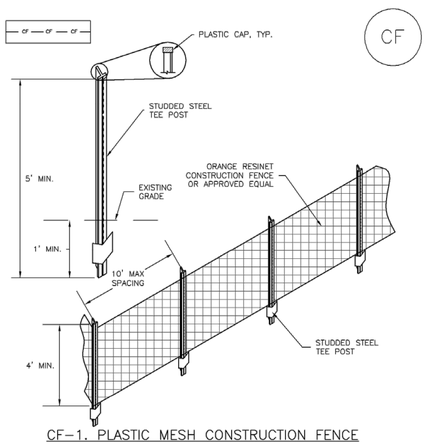
SECTION A–A
-NTS-

NOTES:
1. ALL ROCK TO BE REMOVED UPON COMPLETION OF CONSTRUCTION
2. PUBLIC ROADWAY TO BE KEPT CLEAN AND FREE OF MUD, DIRT AND DEBRIS AT ALL TIMES

TRACKING CONTROL PAD - CRUSHED ROCK

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM6A

SM-3 Construction Fence (CF)



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.

2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

Construction Fence (CF) SM-3

CONSTRUCTION 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.

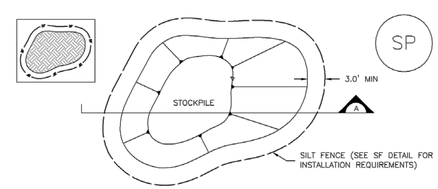
4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

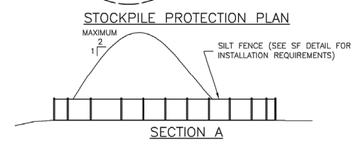
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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

Stockpile Management (SP) MM-2



STOCKPILE PROTECTION PLAN



SECTION A

SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF STOCKPILES.
   -TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).

4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

MM-2 Stockpile Management (SM)

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.

No.	REVISION	BY	DATE

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL NOTES & DETAILS 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/21/2022

C3.3
SHEET 17 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C3.3 EROSION CONTROL NOTES AND DETAILS.DWG - 2/20/2023 1:10:44 PM - Luke Breedlove

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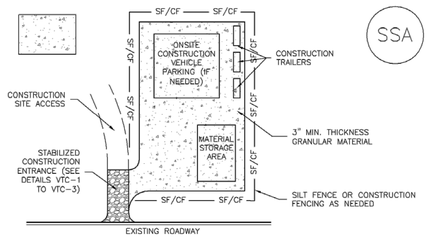
Stabilized Staging Area (SSA) SM-6



SSA–1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

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

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

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

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

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

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

STABILIZED STAGING AREA MAINTENANCE NOTES

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

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

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

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

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

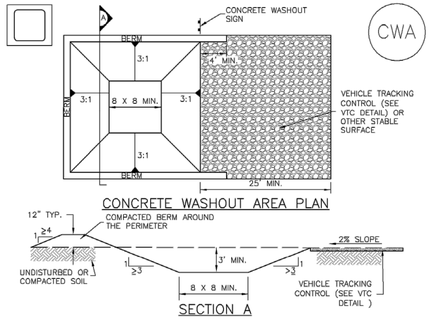
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

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

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

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

Concrete Washout Area (CWA) MM-1



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.

9. CWA MUST BE LINED DUE TO PROXIMITY TO GODDING HOLLOW.

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

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

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

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

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

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

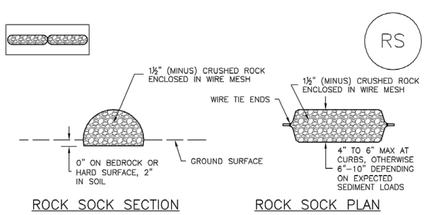
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

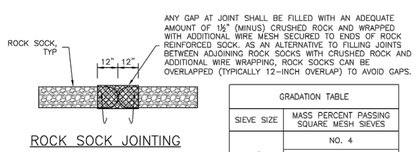
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(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.

SC-5 Rock Sock (RS)





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

ROCK SOCK INSTALLATION NOTES

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

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

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

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

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

RS–1. ROCK SOCK PERIMETER CONTROL

Rock Sock (RS) SC-5

ROCK SOCK MAINTENANCE NOTES

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

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

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

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

5. SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE ROCK SOCK.

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

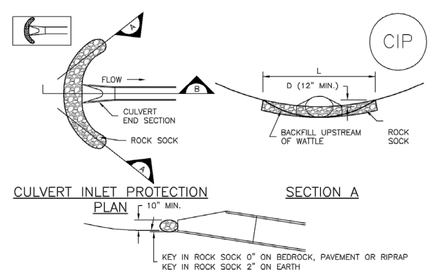
7. WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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

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

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER NDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

Inlet Protection (IP) SC-6



CIP–1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

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

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

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

4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM 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.

SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

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

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

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

INLET PROTECTION MAINTENANCE NOTES

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

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

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.

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

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

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

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

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

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

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL NOTES & DETAILS 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/21/2022

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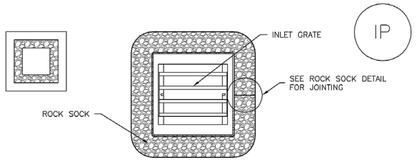
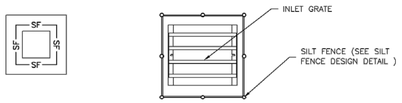


IP–3. ROCK SOCK SUMP/AREA INLET PROTECTION

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

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



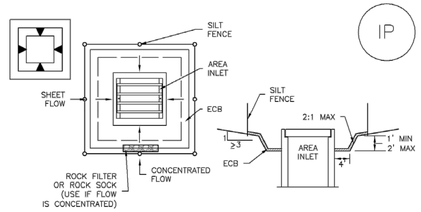
IP–4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

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

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



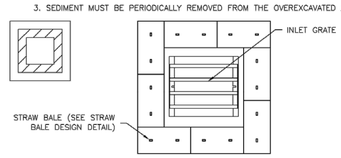
IP–5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

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

2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.

3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.

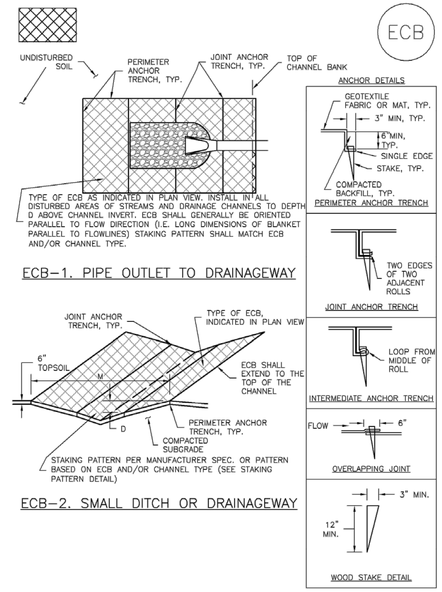


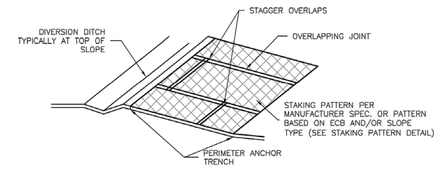
IP–6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

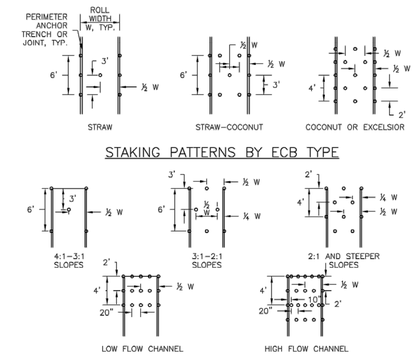
1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

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





ECB–3. OUTSIDE OF DRAINAGEWAY



STAKING PATTERNS BY ECB TYPE

STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF ECB.
   –TYPE OF ECB (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   –AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.

2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.

3. IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.

4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.

5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.

6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE–HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.

7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.

8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB–1.

9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.

10. DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB–1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	–	100%	–	DOUBLE/ NATURAL
STRAW–COCONUT	30% MIN	70% MAX	–	DOUBLE/ NATURAL
COCONUT	100%	–	–	DOUBLE/ NATURAL
EXCELSIOR	–	–	100%	DOUBLE/ NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNEL.
**ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS

EROSION CONTROL BLANKET 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.

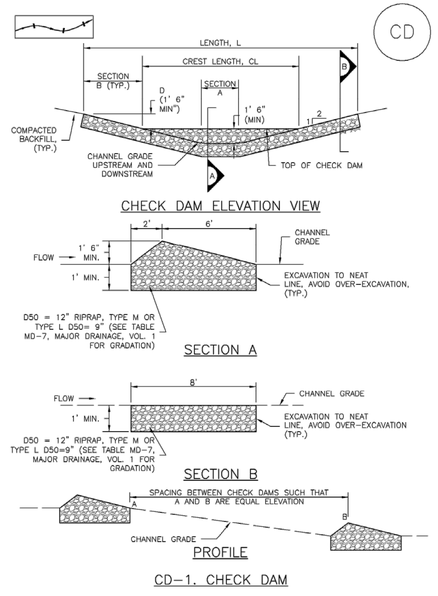
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.

5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

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

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



CD–1. CHECK DAM

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.

3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").

4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.

5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM 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 CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.

5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, 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.

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL NOTES & DETAILS 3

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/21/2022

C3.5
SHEET 19 OF 109

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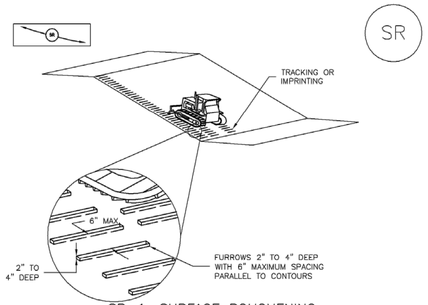
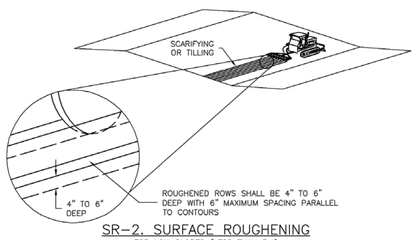


SR–1. SURFACE ROUGHENING
FOR STEEP SLOPES (3:1 OR STEEPER)



SR–2. SURFACE ROUGHENING
FOR LOW SLOPES (LESS THAN 3:1)

SURFACE ROUGHENING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION(S) OF SURFACE ROUGHENING.

2. SURFACE ROUGHENING SHALL BE PROVIDED PROMPTLY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY FORECASTED RAIN EVENT.

3. AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE, SURFACE ROUGHENING IS NOT REQUIRED.

4. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.

5. A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.

SURFACE ROUGHENING 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 REPLACE UPON DISCOVERY OF THE FAILURE.

4. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.

5. IN NON–TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.

6. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE–ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER RILL EROSION.

(DETAILS ADAPTED FROM TOWN 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.

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-3 for appropriate seeding dates.

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species[a] (Common name)	Growth Season[b]	Pounds of Pure Live Seed (PLS)/acre[c]	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5–10	½ - ¾
7. Sorghum	Warm	5–10	½ - ¾
8. Winter wheat	Cool	20–35	1 - 2
9. Winter barley	Cool	20–35	1 - 2
10. Winter rye	Cool	20–35	1 - 2
11. Triticale	Cool	25–40	1 - 2

[a] Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.

Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

[b] See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

[c] Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses

Common[a] Name	Botanical Name	Growth Season[b]	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Alakali Soil Seed Mix					
Alkali sacaton	*Sporobolus airoides*	Cool	Bunch	1,750,000	0.25
Basin wildrye	*Elymus cinereus*	Cool	Bunch	165,000	2.5
Sodar streambank wheatgrass	*Agropyron riparium 'Sodar'*	Cool	Sod	170,000	2.5
Jose tall wheatgrass	*Agropyron elongatum 'Jose'*	Cool	Bunch	79,000	7.0
Arriba western wheatgrass	*Agropyron smithii 'Arriba'*	Cool	Sod	110,000	5.5
Total					**17.75**
Fertile Loamy Soil Seed Mix					
Ephriam crested wheatgrass	*Agropyron cristatum 'Ephriam'*	Cool	Sod	175,000	2.0
Dural hard fescue	*Festuca ovina 'duriuscula'*	Cool	Bunch	565,000	1.0
Lincoln smooth brome	*Bromus inermis leyss 'Lincoln'*	Cool	Sod	130,000	3.0
Sodar streambank wheatgrass	*Agropyron riparium 'Sodar'*	Cool	Sod	170,000	2.5
Arriba western wheatgrass	*Agropyron smithii 'Arriba'*	Cool	Sod	110,000	7.0
Total					**15.5**
High Water Table Soil Seed Mix					
Meadow foxtail	*Alopecurus pratensis*	Cool	Sod	900,000	0.5
Redtop	*Agrostis alba*	Warm	Open sod	5,000,000	0.25
Reed canarygrass	*Phalaris arundinacea*	Cool	Sod	68,000	0.5
Lincoln smooth brome	*Bromus inermis leyss 'Lincoln'*	Cool	Sod	130,000	3.0
Pathfinder switchgrass	*Panicum virgatum 'Pathfinder'*	Warm	Sod	389,000	1.0
Alkar tall wheatgrass	*Agropyron elongatum 'Alkar'*	Cool	Bunch	79,000	5.5
Total					**10.75**
Transition Turf Seed Mix[c]					
Ruebens Canadian bluegrass	*Poa compressa 'Ruebens'*	Cool	Sod	2,500,000	0.5
Dural hard fescue	*Festuca ovina 'duriuscula'*	Cool	Bunch	565,000	1.0
Citation perennial ryegrass	*Lolium perenne 'Citation'*	Cool	Sod	247,000	3.0
Lincoln smooth brome	*Bromus inermis leyss 'Lincoln'*	Cool	Sod	130,000	3.0
Total					**7.5**

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses (cont.)

Common Name	Botanical Name	Growth Season[b]	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Sandy Soil Seed Mix					
Blue grama	*Bouteloua gracilis*	Warm	Sod-forming bunchgrass	825,000	0.5
Camper little bluestem	*Schizachyrium scoparium 'Camper'*	Warm	Bunch	240,000	1.0
Prairie sandreed	*Calamovilfa longifolia*	Warm	Open sod	274,000	1.0
Sand dropseed	*Sporobolus cryptandrus*	Cool	Bunch	5,298,000	0.25
Vaughn sideoats grama	*Bouteloua curtipendula 'Vaughn'*	Warm	Sod	191,000	2.0
Arriba western wheatgrass	*Agropyron smithii 'Arriba'*	Cool	Sod	110,000	5.5
Total					**10.25**
Heavy Clay, Rocky Foothill Seed Mix					
Ephriam crested wheatgrass[d]	*Agropyron cristatum 'Ephriam'*	Cool	Sod	175,000	1.5
Oahe Intermediate wheatgrass	*Agropyron intermedium 'Oahe'*	Cool	Sod	115,000	5.5
Vaughn sideoats grama[e]	*Bouteloua curtipendula 'Vaughn'*	Warm	Sod	191,000	2.0
Lincoln smooth brome	*Bromus inermis leyss 'Lincoln'*	Cool	Sod	130,000	3.0
Arriba western wheatgrass	*Agropyron smithii 'Arriba'*	Cool	Sod	110,000	5.5
Total					**17.5**

[a] All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If hydraulic seeding is used, hydraulic mulching should be done as a separate operation.

[b] See Table TS/PS-3 for seeding dates.

[c] If site is to be irrigated, the transition turf seed rates should be doubled.

[d] Crested wheatgrass should not be used on slopes steeper than 6H to 1V.

[e] Can substitute 0.5 lbs PLS of blue grama for the 2.0 lbs PLS of Vaughn sideoats grama.

Table TS/PS-3. Seeding Dates for Annual and Perennial Grasses

	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
Seeding Dates	**Warm**	**Cool**	**Warm**	**Cool**
January 1–March 15			✓	✓
March 16–April 30	4	1,2,3	✓	✓
May 1–May 15	4		✓	
May 16–June 30	4,5,6,7			
July 1–July 15	5,6,7			
July 16–August 31				
September 1–September 30		8,9,10,11		
October 1–December 31			✓	✓

Mulch

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the Mulching BMP Fact Sheet for additional guidance.

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.

Protect seeded areas from construction equipment and vehicle access.

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
EROSION CONTROL NOTES & DETAILS 4

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/21/2022

C3.6
SHEET 20 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C3.3 EROSION CONTROL NOTES AND DETAILS.DWG - 2/20/2023 1:10:51 PM - Luke Breedlove

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UTILITY PLAN LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED EASEMENT
- PROPOSED BUILDING SETBACK
- PROPOSED BUILDING OUTLINE
- PROPOSED BUILDING OVERHANG
- PROPOSED 6" STANDARD CURB
- PROPOSED WALL
- PROPOSED SIDEWALK
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED GAS LINE
- PROPOSED ELECTRIC SERVICE
- PROPOSED TELEPHONE
- PROPOSED FIBER OPTIC
- PROPOSED CATV
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING BURIED ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING CATV
- PROPOSED/EXISTING FIRE HYDRANT
- PROPOSED/EXISTING SANITARY MANHOLE
- PROPOSED/EXISTING CLEANOUT
- PROPOSED/EXISTING STORM MANHOLE
- PROPOSED/EXISTING STORM INLET
- EXIST. PROPERTY LINE
- PROPOSED/EXISTING UTILITY POLE
- PROPOSED/EXISTING LIGHT POLE
- PROPOSED/EXISTING SITE LIGHTING

REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

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SCALE IN FEET
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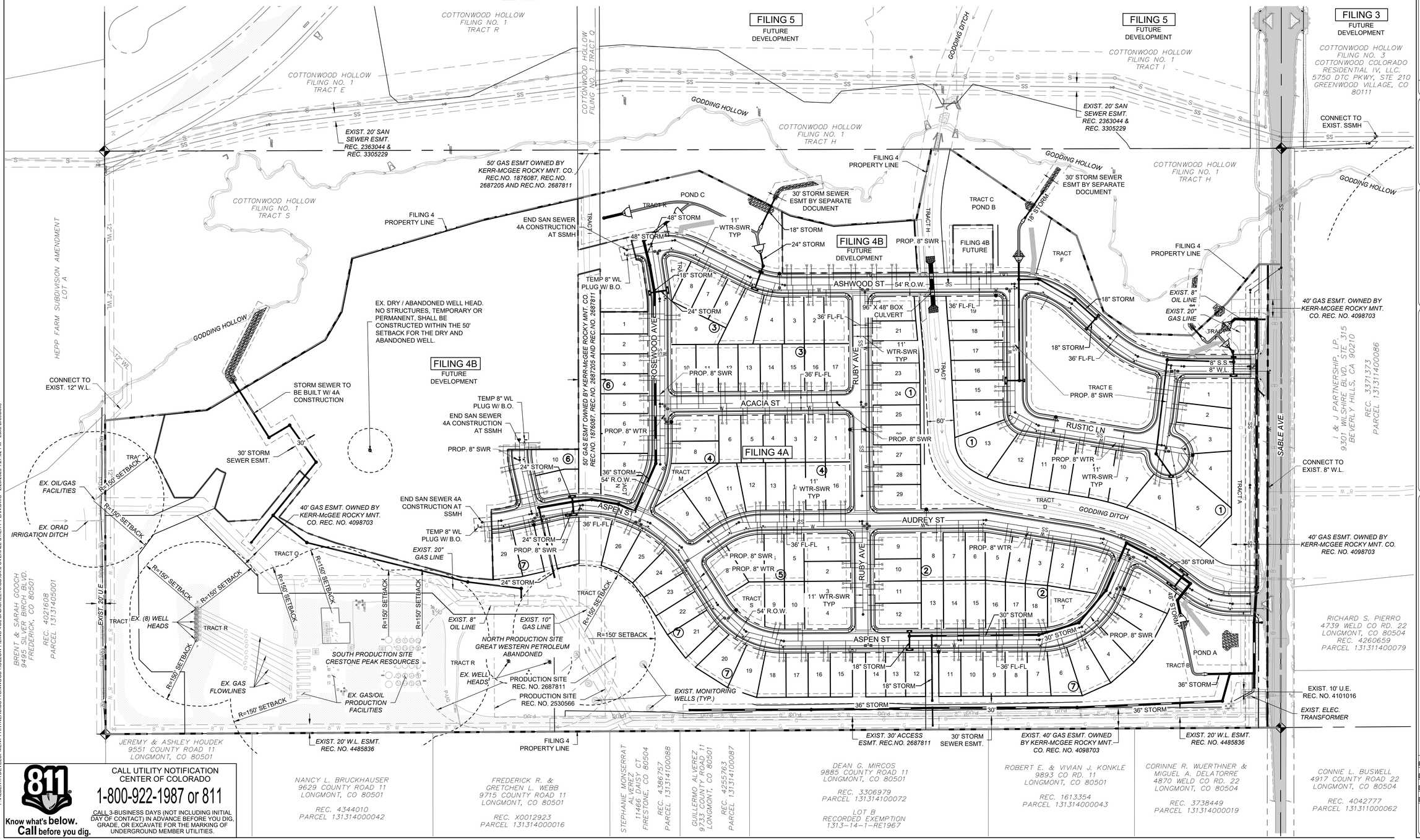
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
811 Know what's **below.** **Call** before you dig.

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\CA10 OVERALL UTILITY PLAN.DWG - 2/20/2023 1:27:52 PM - Luke Breedlove

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
OVERALL UTILITY PLAN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/16/2023

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SHEET 21 OF 109

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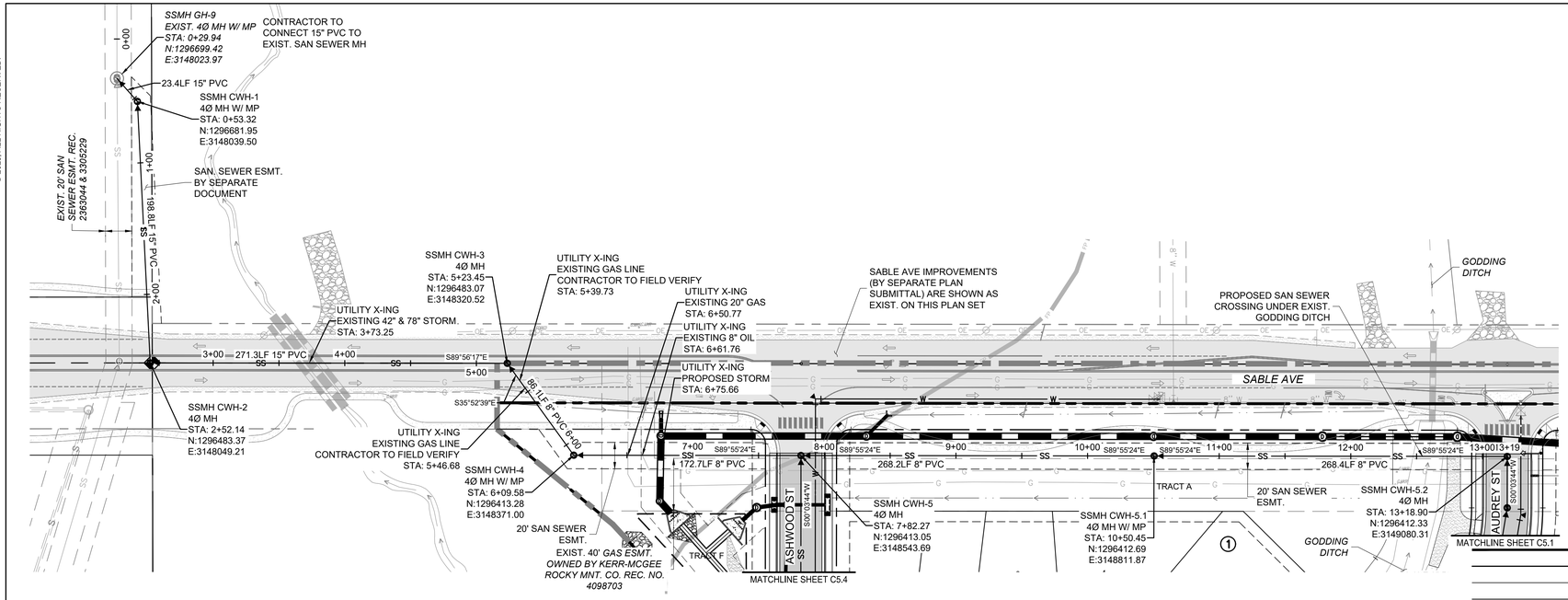

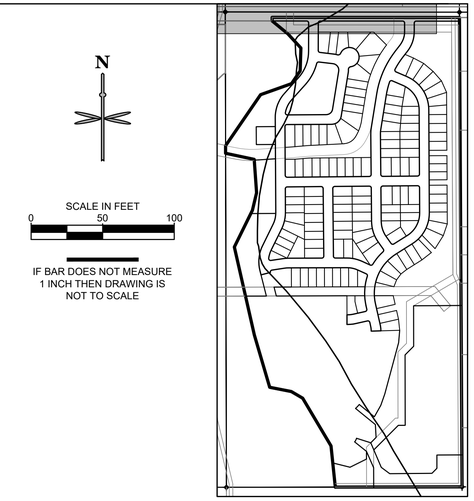

KEYMAP
SCALE: 1" = 400'

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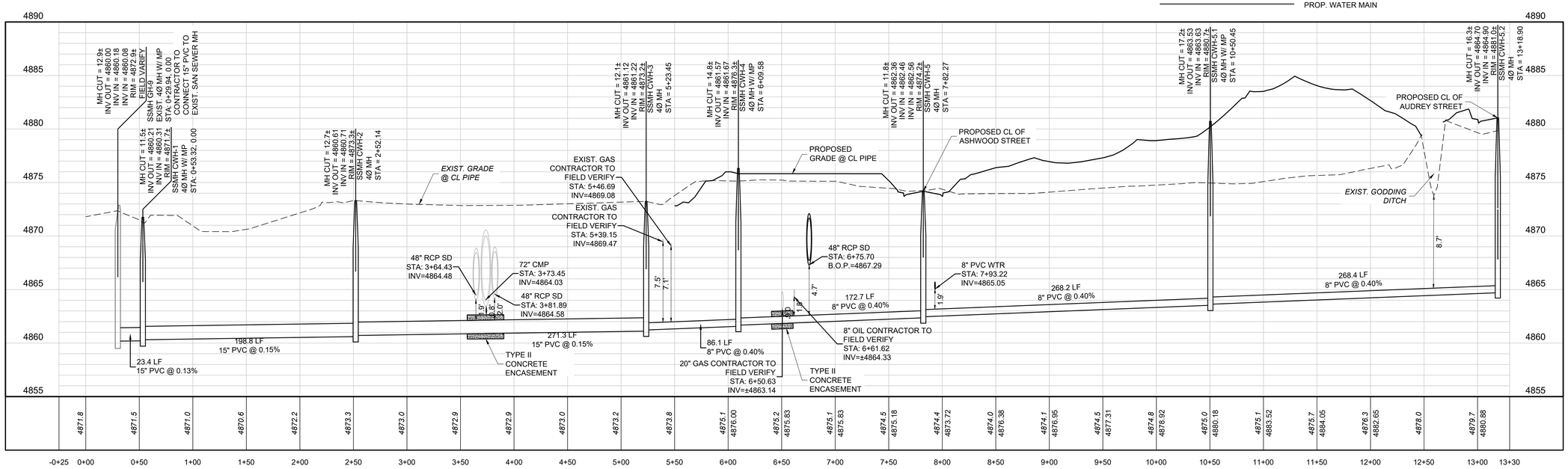
SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

UTILITY LEGEND

PROPOSED PROPERTY BOUNDARY	PROPOSED/EXIST. STORM MANHOLE
PROPOSED RIGHT-OF-WAY	PROPOSED/EXIST. STORM INLET
PROPOSED EASEMENT	PROP. AREA INLET
PROPOSED LOT LINE	PROP. TYPE 'R' INLET
PROPOSED CENTERLINE	PROP. STORM MANHOLE
EXIST. 100-YEAR FLOODPLAIN	PROP. FLARED END SECTION
EXIST. FENCE	PROP. FIRE HYDRANT
EXIST. ELECTRIC LINE	PROP. WATER VALVE
EXIST. GAS MAIN	PROP. WATER SERVICE LINE
EXIST. FIBER OPTICS	PROP. SAN SEWER SERVICE LINE
EXIST. SANITARY SEWER	PROP. SAN SEWER MANHOLE
EXIST. WATER MAIN	PROP. WATER FITTINGS
PROPOSED CURB & GUTTER	EXIST. SANITARY SEWER MH
PROPOSED STORM SEWER	EXIST. STORM MANHOLE
EXISTING STORM SEWER	EXIST. FIRE HYDRANT
IRR IRR PROP. IRRIGATION MAIN	EXIST. WATER VALVE
PROP. SANITARY SEWER	EXIST. UTILITY RISER
PROP. WATER MAIN	



PROFILE SABLE AVE (STA: -0+25 TO 13+30)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

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BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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FIRESTONE COLORADO

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COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - SABLE AVE.

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C5.0
SHEET 22 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C5.0 SANITARY PLAN AND PROFILE.DWG - 2/20/2023 1:28:23 PM - Luke Breedlove

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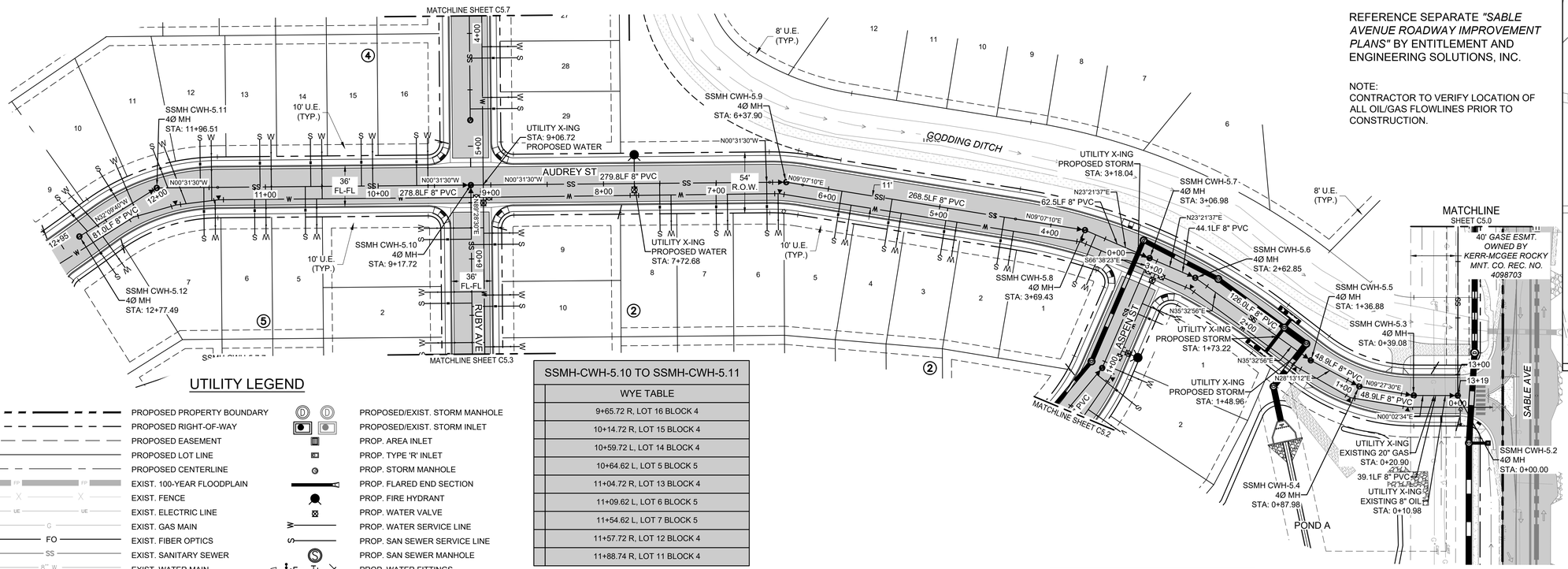
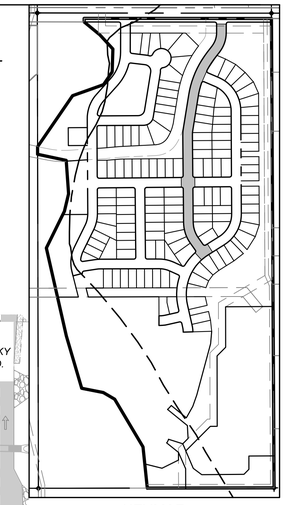


REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.



KEYMAP
SCALE: 1" = 400'

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

UTILITY LEGEND

PROPOSED PROPERTY BOUNDARY	PROPOSED/EXIST. STORM MANHOLE
PROPOSED RIGHT-OF-WAY	PROPOSED/EXIST. STORM INLET
PROPOSED EASEMENT	PROP. AREA INLET
PROPOSED LOT LINE	PROP. TYPE 'R' INLET
PROPOSED CENTERLINE	PROP. STORM MANHOLE
EXIST. 100-YEAR FLOODPLAIN	PROP. FLARED END SECTION
EXIST. FENCE	PROP. FIRE HYDRANT
EXIST. ELECTRIC LINE	PROP. WATER VALVE
EXIST. GAS MAIN	PROP. WATER SERVICE LINE
EXIST. FIBER OPTICS	PROP. SAN SEWER SERVICE LINE
EXIST. SANITARY SEWER	PROP. SAN SEWER MANHOLE
EXIST. WATER MAIN	PROP. WATER FITTINGS
PROPOSED CURB & GUTTER	EXIST. SANITARY SEWER MH
PROPOSED STORM SEWER	EXIST. STORM MANHOLE
EXISTING STORM SEWER	EXIST. FIRE HYDRANT
PROP. IRRIGATION MAIN	EXIST. WATER VALVE
PROP. SANITARY SEWER	EXIST. UTILITY RISER
PROP. WATER MAIN	

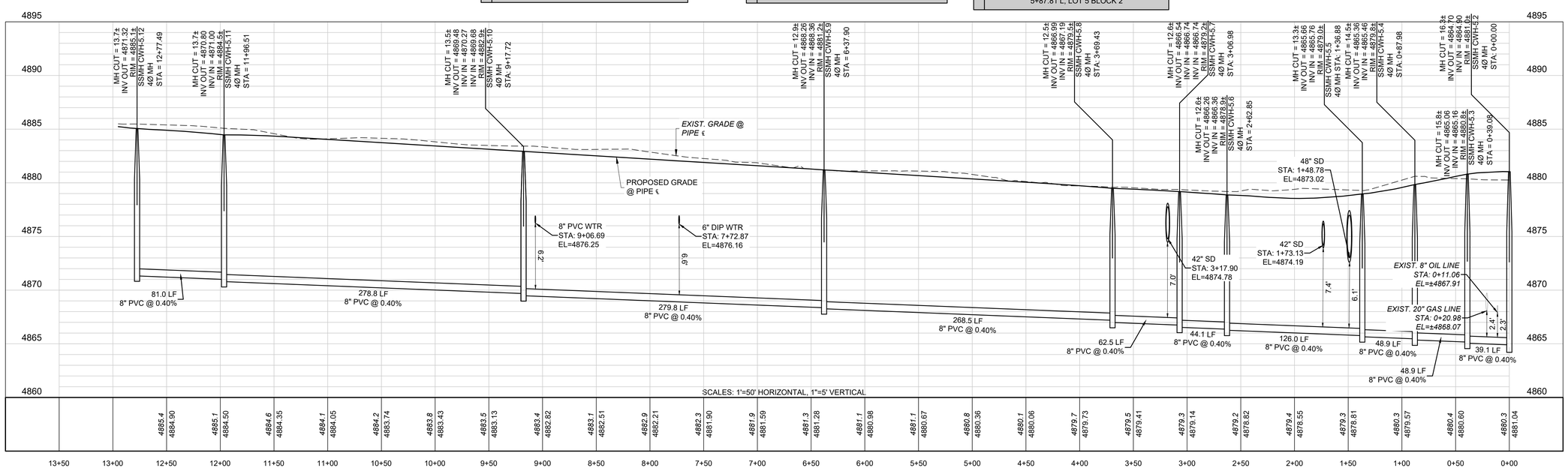
SSMH-CWH-5.10 TO SSMH-CWH-5.11
WYE TABLE
9+65.72 R, LOT 16 BLOCK 4
10+14.72 R, LOT 15 BLOCK 4
10+59.72 L, LOT 14 BLOCK 4
10+64.62 L, LOT 5 BLOCK 5
11+04.72 R, LOT 13 BLOCK 4
11+09.62 L, LOT 6 BLOCK 5
11+54.62 L, LOT 7 BLOCK 5
11+57.72 R, LOT 12 BLOCK 4
11+88.74 R, LOT 11 BLOCK 4

SSMH-CWH-5.11 TO SSMH-CWH-5.12
WYE TABLE
12+30.64 R, LOT 10 BLOCK 4
12+67.49 R, LOT 9 BLOCK 4
12+70.49 L, LOT 8 BLOCK 5

SSMH-CWH-5.9 TO SSMH-CWH-5.10
WYE TABLE
6+55.22 L, LOT 6 BLOCK 2
7+00.22 L, LOT 7 BLOCK 2
7+50.22 L, LOT 8 BLOCK 2

SSMH-CWH-5.8 TO SSMH-CWH-5.9
WYE TABLE
4+41.89 L, LOT 2 BLOCK 2
4+92.68 L, LOT 3 BLOCK 2
5+42.75 L, LOT 4 BLOCK 2
5+87.81 L, LOT 5 BLOCK 2

SSMH-CWH-5.7 TO SSMH-CWH-5.8
WYE TABLE
3+58.98 L, LOT 1 BLOCK 2



PROFILE AUDREY ST (STA: 0+00 TO 13+50)

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - AUDREY ST

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C5.1
SHEET 23 OF 109

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UTILITY LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. FIBER OPTICS
- EXIST. SANITARY SEWER
- EXIST. WATER MAIN
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROP. IRRIGATION MAIN
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. FIRE HYDRANT
- PROP. WATER VALVE
- PROP. WATER SERVICE LINE
- PROP. SAN SEWER SERVICE LINE
- PROP. SAN SEWER MANHOLE
- PROP. WATER FITTINGS
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER

SCALE IN FEET
0 50 100

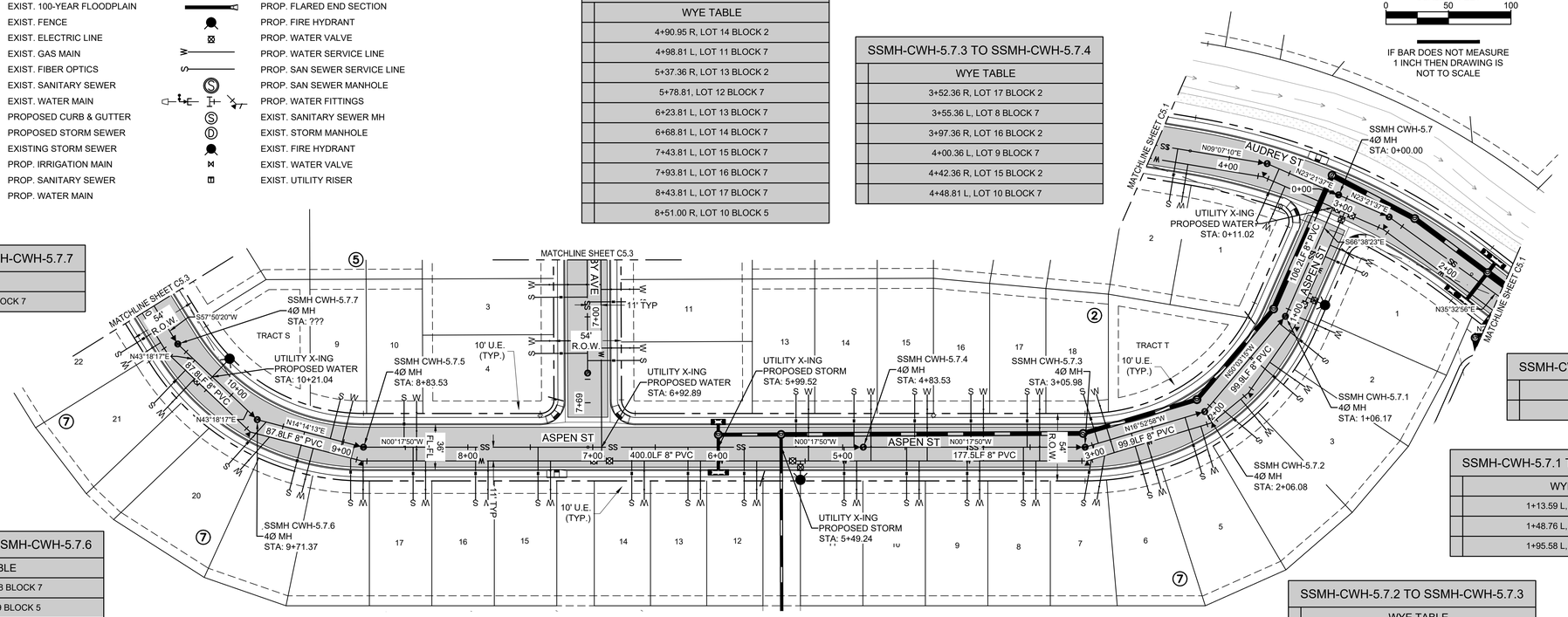
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

N

SSMH-CWH-5.7.4 TO SSMH-CWH-5.7.5
WYE TABLE
4+90.95 R, LOT 14 BLOCK 2
4+98.81 L, LOT 11 BLOCK 7
5+37.36 R, LOT 13 BLOCK 2
5+78.81, LOT 12 BLOCK 7
6+23.81 L, LOT 13 BLOCK 7
6+68.81 L, LOT 14 BLOCK 7
7+43.81 L, LOT 15 BLOCK 7
7+93.81 L, LOT 16 BLOCK 7
8+43.81 L, LOT 17 BLOCK 7
8+51.00 R, LOT 10 BLOCK 5

SSMH-CWH-5.7.3 TO SSMH-CWH-5.7.4
WYE TABLE
3+52.36 R, LOT 17 BLOCK 2
3+55.36 L, LOT 8 BLOCK 7
3+97.36 R, LOT 16 BLOCK 2
4+00.36 L, LOT 9 BLOCK 7
4+42.36 R, LOT 15 BLOCK 2
4+48.81 L, LOT 10 BLOCK 7

SSMH-CWH-5.7.6 TO SSMH-CWH-5.7.7
WYE TABLE
10+40.30 L, LOT 21 BLOCK 7

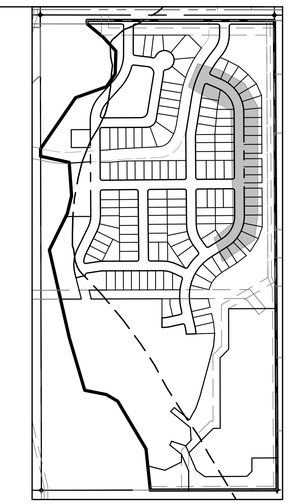


SSMH-CWH-5.7 TO SSMH-CWH-5.7.1
WYE TABLE
0+49.57 L, LOT 1 BLOCK 7

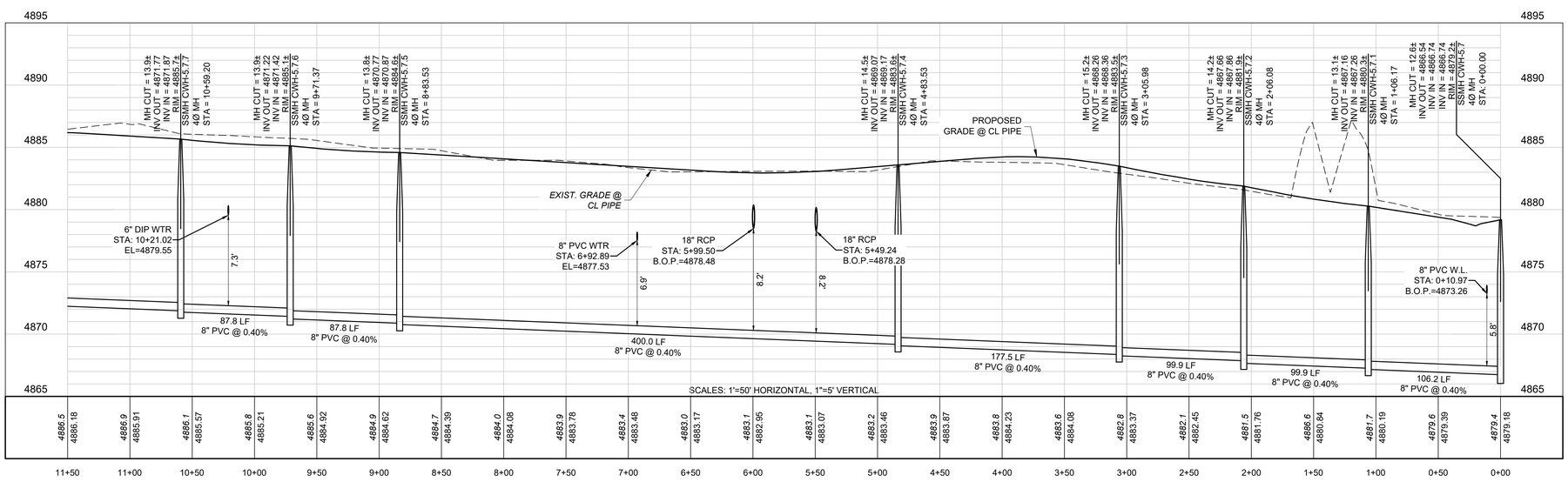
SSMH-CWH-5.7.1 TO SSMH-CWH-5.7.2
WYE TABLE
1+13.59 L, LOT 2 BLOCK 7
1+48.76 L, LOT 3 BLOCK 7
1+95.58 L, LOT 4 BLOCK 7

SSMH-CWH-5.7.5 TO SSMH-CWH-5.7.6
WYE TABLE
8+90.57 L, LOT 18 BLOCK 7
9+10.95 R, LOT 9 BLOCK 5
9+32.21 L, LOT 19 BLOCK 7
9+63.96 L, LOT 20 BLOCK 7

SSMH-CWH-5.7.2 TO SSMH-CWH-5.7.3
WYE TABLE
2+22.47 L, LOT 5 BLOCK 7
2+67.33 L, LOT 6 BLOCK 7
2+94.94 R, LOT 18 BLOCK 2
2+98.59 L, LOT 7 BLOCK 7



KEYMAP
SCALE: 1" = 400'



PROFILE ASPEN ST (STA: 0+00 TO 11+50)

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - ASPEN ST - 1

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/09/2023

C5.2
SHEET 24 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C5.1 SANITARY PLAN AND PROFILE.DWG - 2/20/2023 1:29:40 PM - Luke Breedlove

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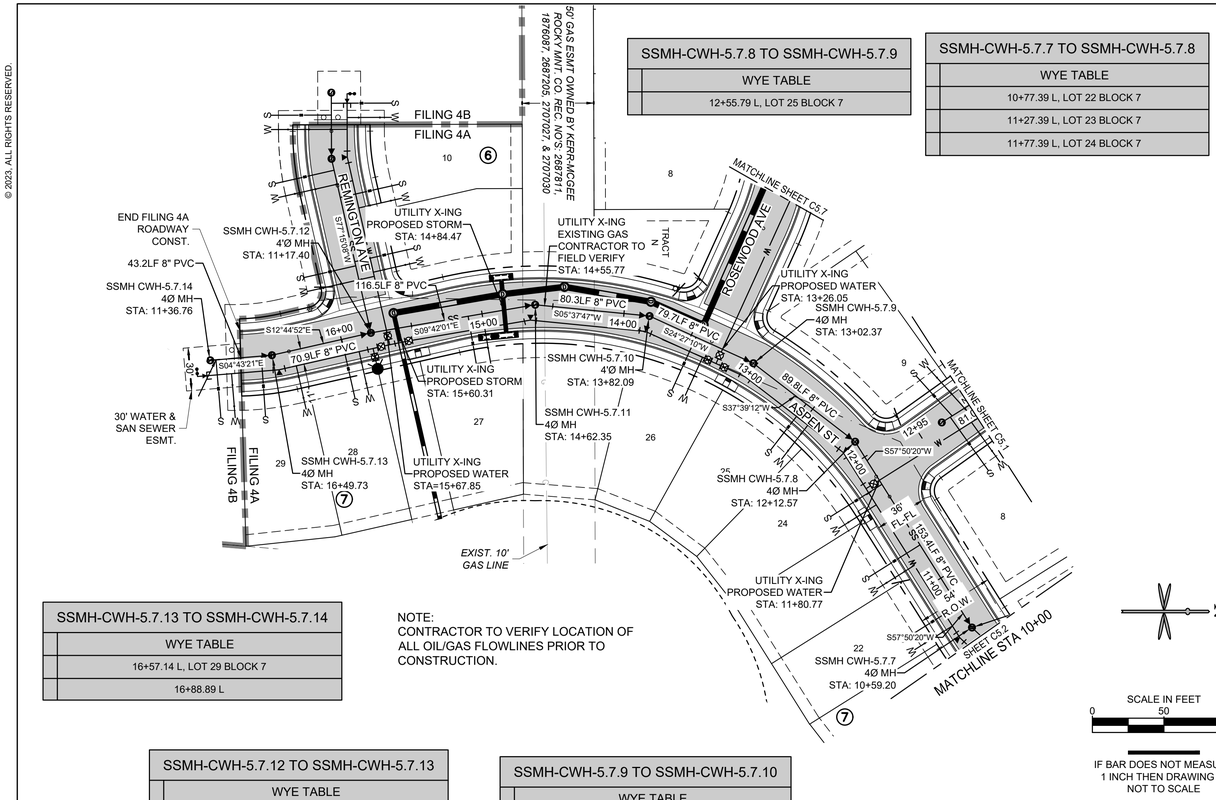


SSMH-CWH-5.7.8 TO SSMH-CWH-5.7.9
WYE TABLE
12+55.79 L, LOT 25 BLOCK 7

SSMH-CWH-5.7.7 TO SSMH-CWH-5.7.8
WYE TABLE
10+77.39 L, LOT 22 BLOCK 7
11+27.39 L, LOT 23 BLOCK 7
11+77.39 L, LOT 24 BLOCK 7

SSMH-CWH-5.7.13 TO SSMH-CWH-5.7.14
WYE TABLE
16+57.14 L, LOT 29 BLOCK 7
16+88.89 L

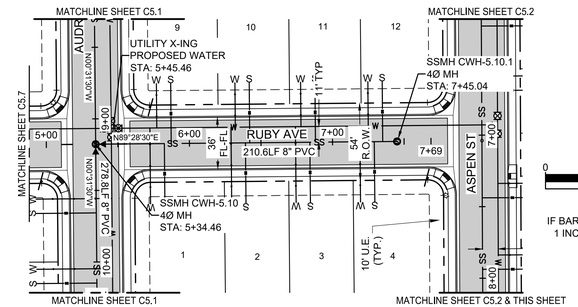
NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

SSMH-CWH-5.7.12 TO SSMH-CWH-5.7.13
WYE TABLE
15+09.88 L, LOT 27 BLOCK 7

SSMH-CWH-5.7.9 TO SSMH-CWH-5.7.10
WYE TABLE
13+46.39 L, LOT 26 BLOCK 7



SCALE IN FEET
0 50 100

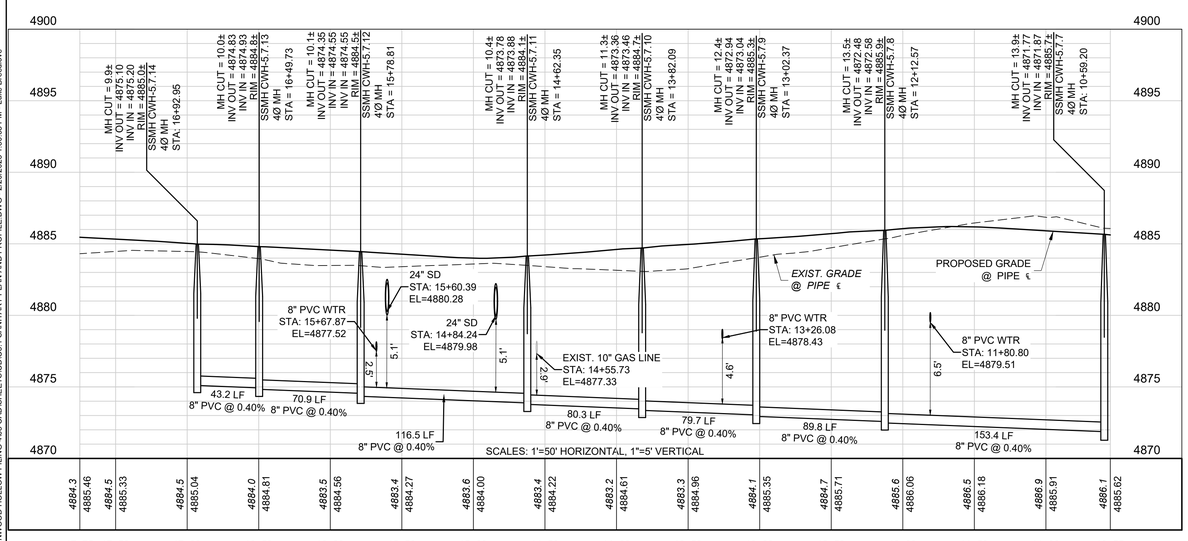
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

KEYMAP
SCALE: 1" = 400'

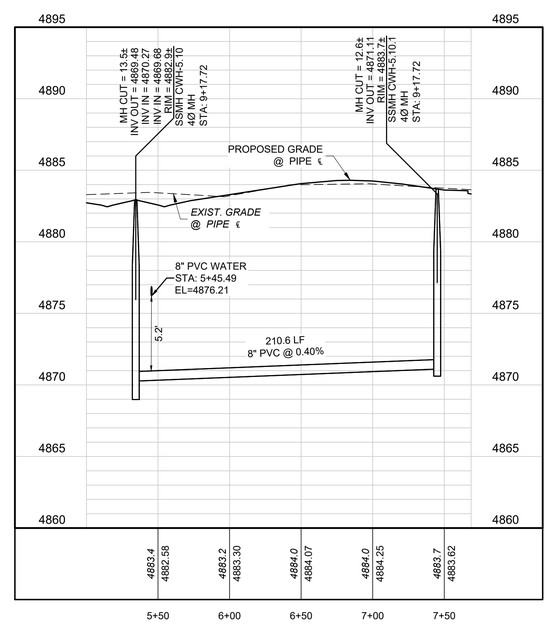
SSMH-CWH-5.10 TO SSMH-CWH-5.10.1
WYE TABLE
5+82.46 R, LOT 1 BLOCK 5
5+87.28 L, LOT 9 BLOCK 2
6+39.15 R, LOT 2 BLOCK 5
6+342.15 L, LOT 10 BLOCK 2
6+84.21 R, LOT 3 BLOCK 5
6+88.04 L, LOT 11 BLOCK 2
7+29.15 R, LOT 4 BLOCK 5
7+35.04 L, LOT 12 BLOCK 2

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- S — PROP. SANITARY SEWER
- W — PROP. WATER MAIN
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE R COMBINATION INLET
- PROP. STORM MANHOLE
- PROP. FIRE HYDRANT
- PROP. SIGN
- PROP. STREET LIGHT



PROFILE ASPEN ST (STA: 10+55 TO 17+75)



PROFILE RUBY AVE (STA: 5+00 TO 7+69)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - ASPEN ST - 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C5.3
SHEET 25 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\25.1 SANITARY PLAN AND PROFILE.DWG - 2/20/2023 1:30:06 PM - Luke Brestlove

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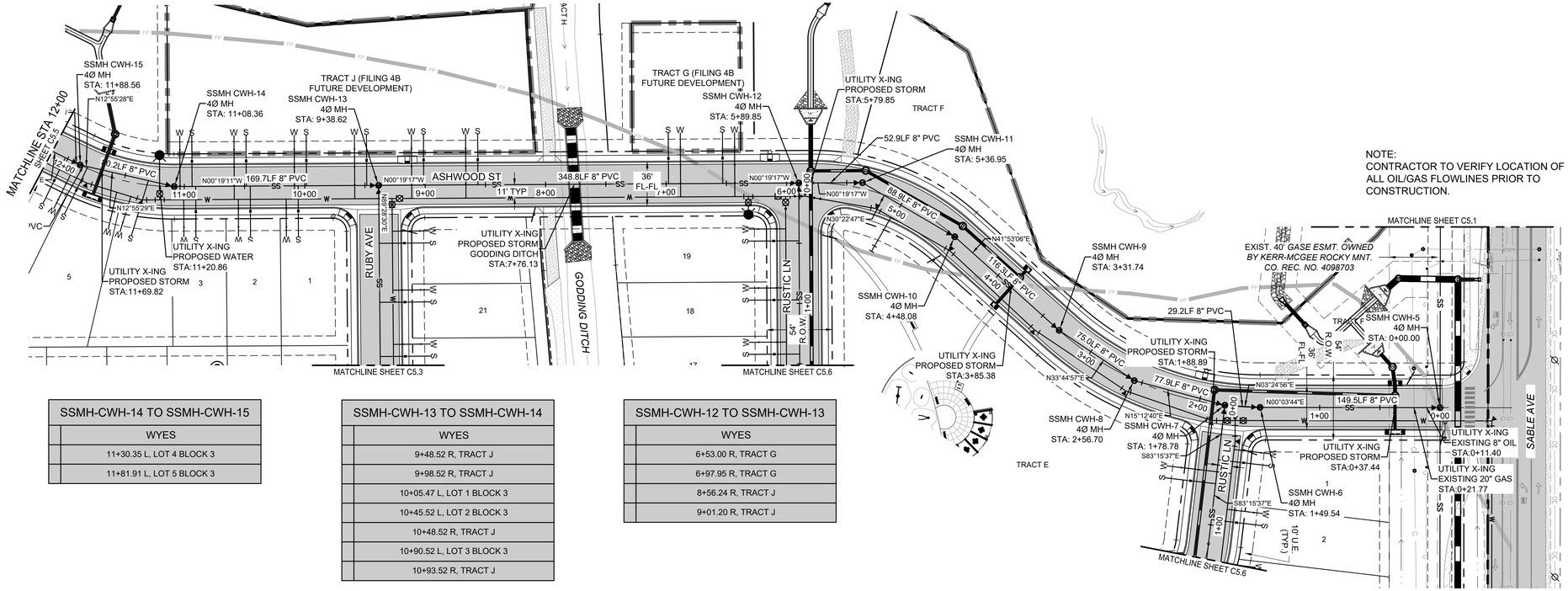
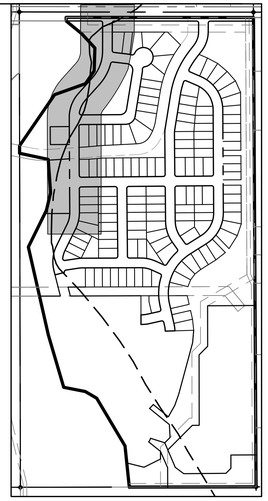


SSMH-CWH-14 TO SSMH-CWH-15
WYES
11+30.35 L, LOT 4 BLOCK 3
11+81.91 L, LOT 5 BLOCK 3

SSMH-CWH-13 TO SSMH-CWH-14
WYES
9+48.52 R, TRACT J
9+98.52 R, TRACT J
10+05.47 L, LOT 1 BLOCK 3
10+45.52 L, LOT 2 BLOCK 3
10+48.52 R, TRACT J
10+90.52 L, LOT 3 BLOCK 3
10+93.52 R, TRACT J

SSMH-CWH-12 TO SSMH-CWH-13
WYES
6+53.00 R, TRACT G
6+97.95 R, TRACT G
8+56.24 R, TRACT J
9+01.20 R, TRACT J



KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
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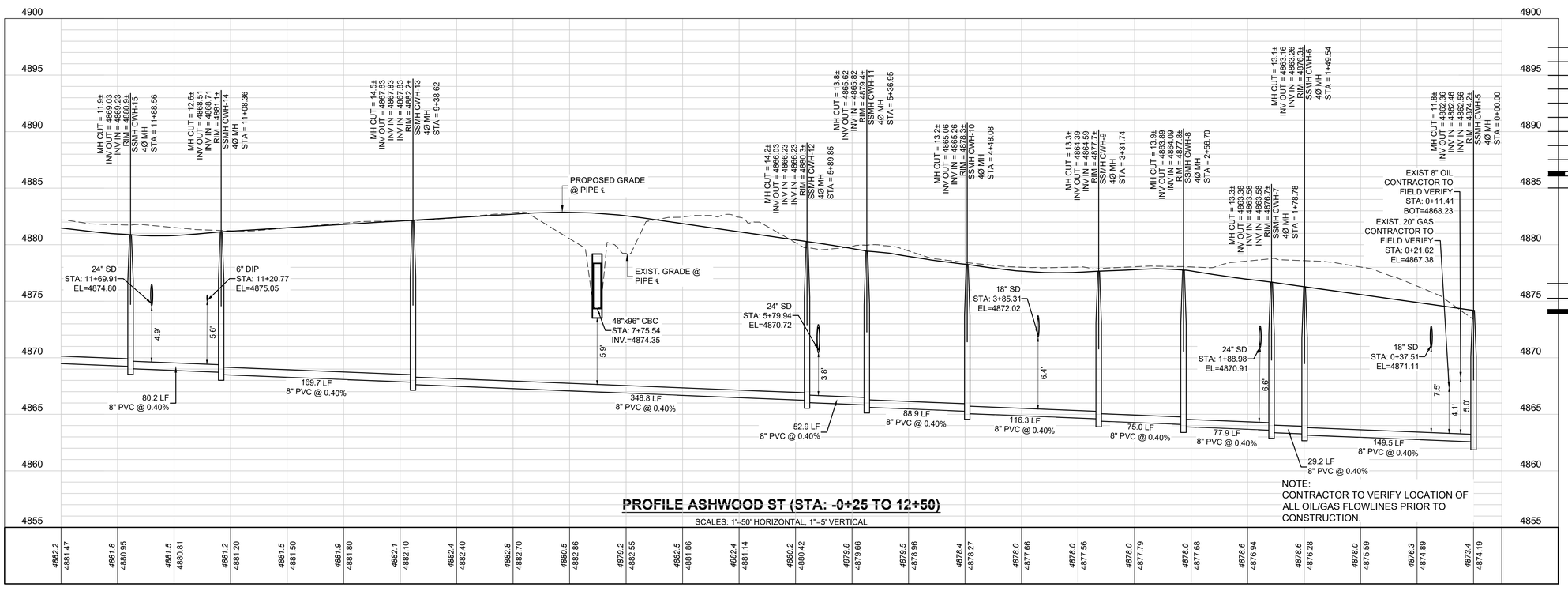

PROFILE ASHWOOD ST (STA: -0+25 TO 12+50)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

NOTE:
CONTRACTOR TO VERIFY LOCATION OF
ALL OIL/GAS FLOWLINES PRIOR TO
CONSTRUCTION.

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. CATV
- EXIST. COMMUNICATION
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- EXIST. WATER MAIN
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE R COMBINATION INLET
- PROP. STORM MANHOLE
- PROP. FIRE HYDRANT
- PROP. SIGN
- PROP. STREET LIGHT

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - ASHWOOD ST - 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C5.4
SHEET 26 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C5.8 SANITARY PLAN & PROFILE.DWG - 2/20/2023 1:30:40 PM - Luke Breedlove

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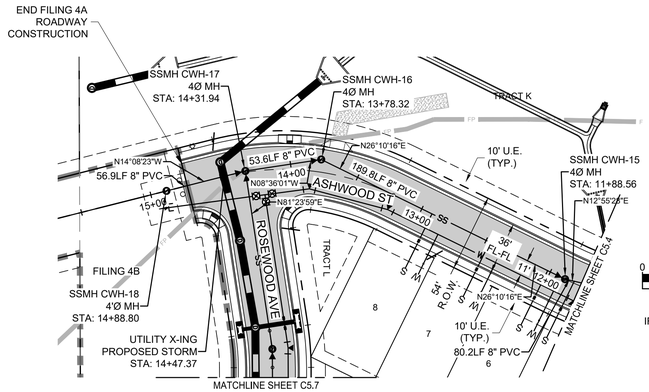
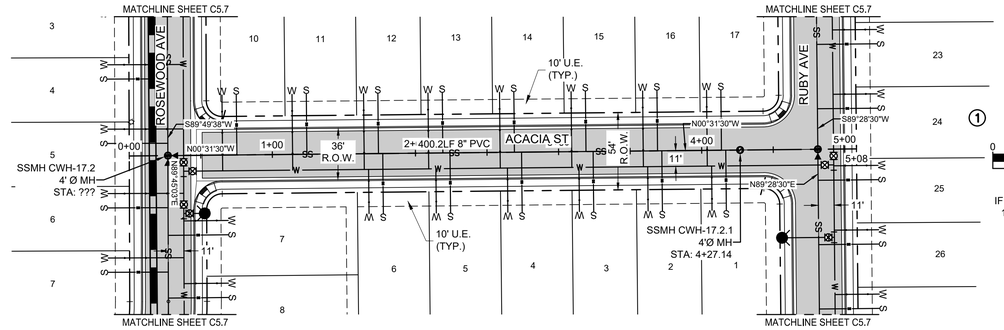
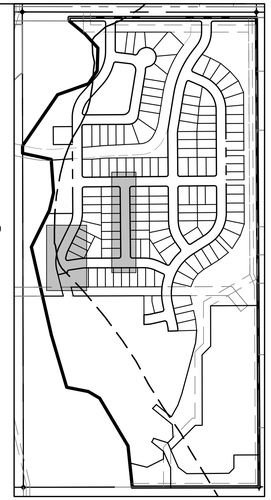




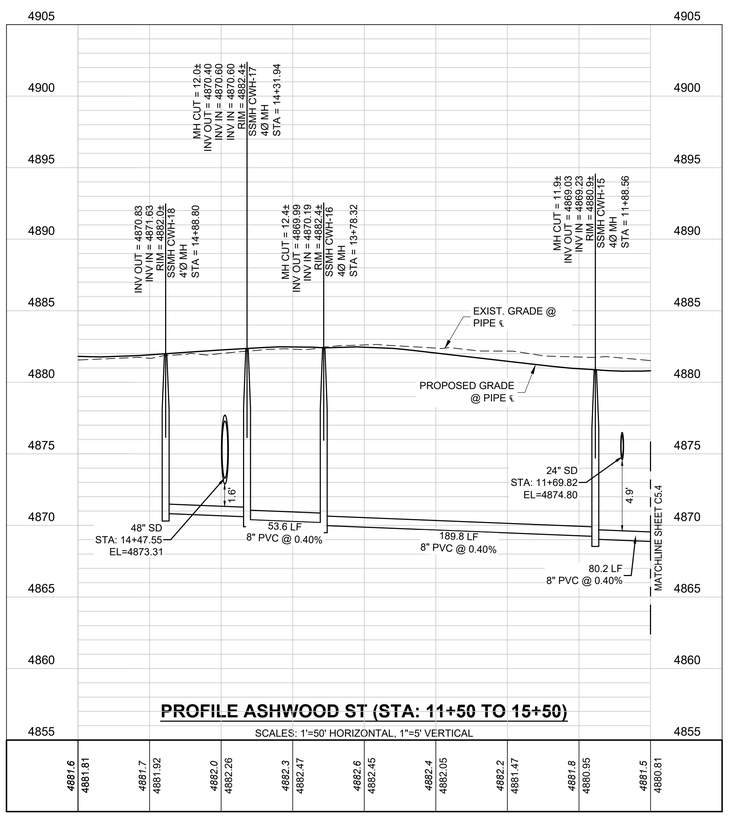


KEYMAP
SCALE: 1" = 400'

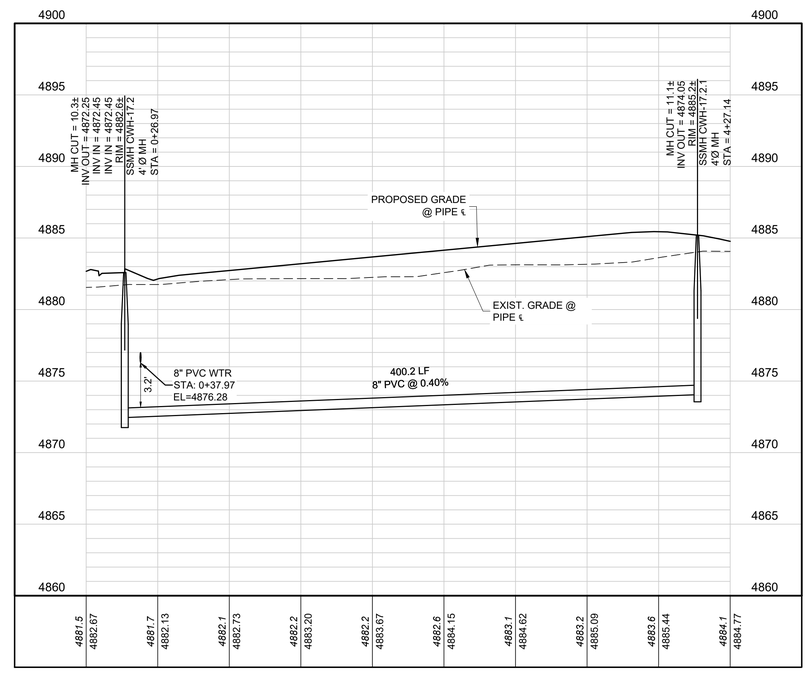
SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

SSMH-CWH-15 TO SSMH-CWH-16
WYES
12+02.09 L, LOT 6 BLOCK 3
12+47.59 L, LOT 7 BLOCK 3
12+92.09 L, LOT 8 BLOCK 3



PROFILE ASHWOOD ST (STA: 11+50 TO 15+50)
SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL



PROFILE ACACIA ST (STA: 0+00 TO 4+50)
SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- S — PROP. SANITARY SEWER
- W — PROP. WATER MAIN
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE R COMBINATION INLET
- PROP. STORM MANHOLE
- PROP. FIRE HYDRANT
- PROP. SIGN
- PROP. STREET LIGHT

SSMH-CWH-17 TO SSMH-CWH-17.2.1
WYES
0+75.20 L, LOT 10 BLOCK 3
1+24.14 L, LOT 11 BLOCK 3
1+74.14 L, LOT 12 BLOCK 3
1+77.14 R, LOT 6 BLOCK 4
2+19.14 L, LOT 13 BLOCK 3
2+24.14 R, LOT 5 BLOCK 4
2+69.14 L, LOT 14 BLOCK 3
2+74.14 R, LOT 4 BLOCK 4
3+19.14 L, LOT 15 BLOCK 3
3+24.14 R, LOT 3 BLOCK 4
3+69.14 L, LOT 16 BLOCK 3
3+72.14 R, LOT 2 BLOCK 4
4+13.82 L, LOT 17 BLOCK 3
4+16.82 R, LOT 1 BLOCK 4

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - ACACIA ST

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/14/2023

C5.5
SHEET 27 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\C2\C5.5 SANITARY PLAN & PROFILE.DWG - 2/20/2023 1:30:54 PM - Luke Breedlove

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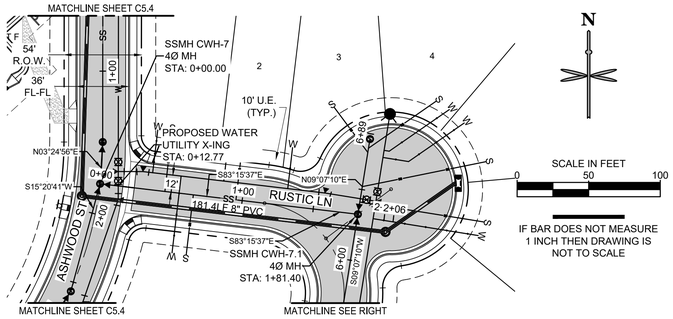
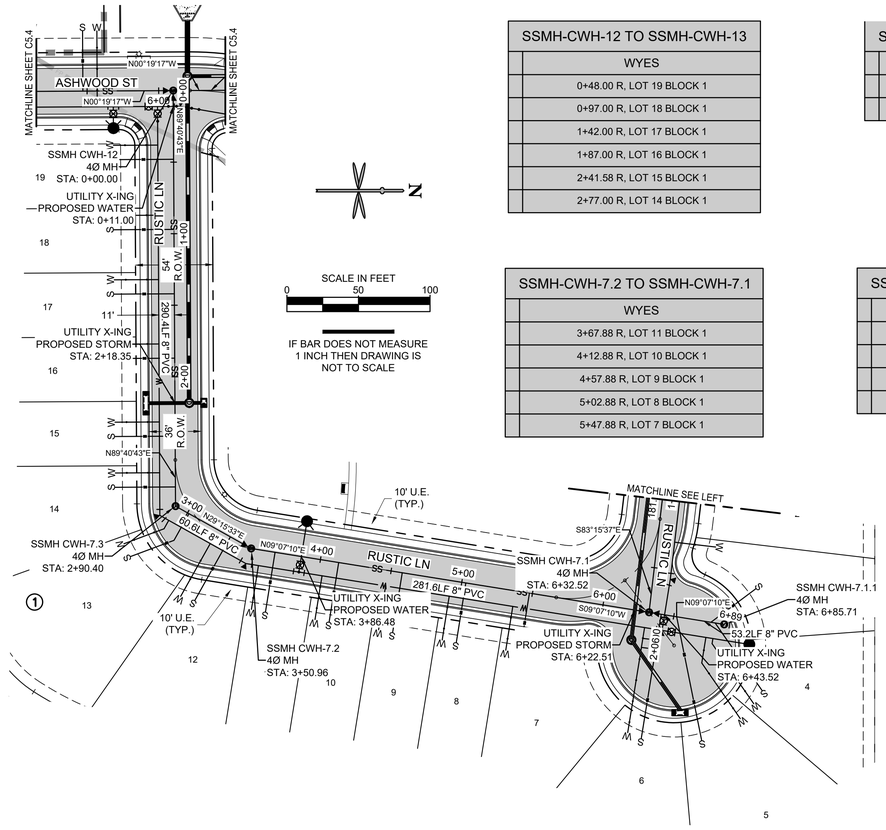


SSMH-CWH-7 TO SSMH-CWH-7.1
WYES
0+45.22 L, LOT 1 BLOCK 1
0+65.62 R, TRACT E
0+95.62 L, LOT 2 BLOCK 1

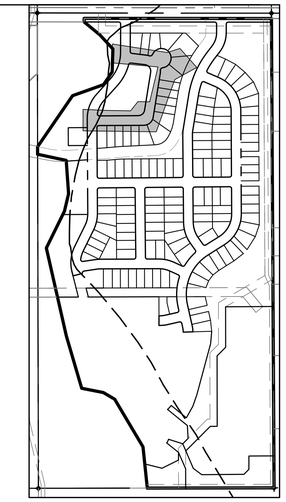


SSMH-CWH-12 TO SSMH-CWH-13
WYES
0+48.00 R, LOT 19 BLOCK 1
0+97.00 R, LOT 18 BLOCK 1
1+42.00 R, LOT 17 BLOCK 1
1+87.00 R, LOT 16 BLOCK 1
2+41.58 R, LOT 15 BLOCK 1
2+77.00 R, LOT 14 BLOCK 1

SSMH-CWH-7.3 TO SSMH-CWH-7.2
WYES
3+01.13 R, LOT 13 BLOCK 1
3+34.34 R, LOT 12 BLOCK 1

SSMH-CWH-7.2 TO SSMH-CWH-7.1
WYES
3+67.88 R, LOT 11 BLOCK 1
4+12.88 R, LOT 10 BLOCK 1
4+57.88 R, LOT 9 BLOCK 1
5+02.88 R, LOT 8 BLOCK 1
5+47.88 R, LOT 7 BLOCK 1

SSMH-CWH-7.1 TO SSMH-CWH-7.1.1
WYES
6+41.15 R, LOT 6 BLOCK 1
6+52.07 R, LOT 5 BLOCK 1
6+76.28 L, LOT 4 BLOCK 1
6+79.28 R, LOT 3 BLOCK 1



KEYMAP
SCALE: 1" = 400'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
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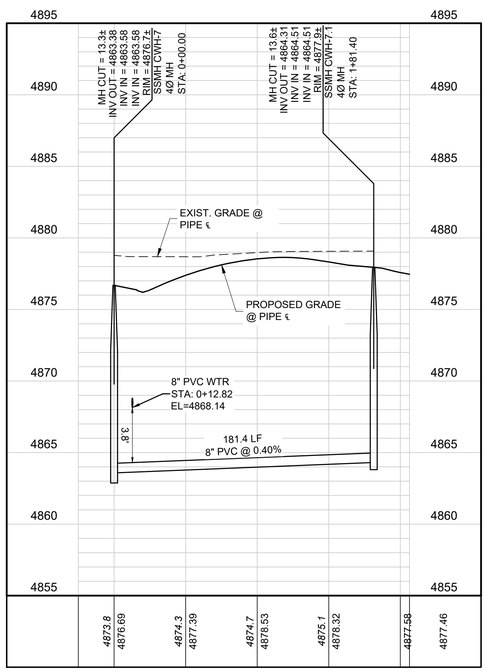
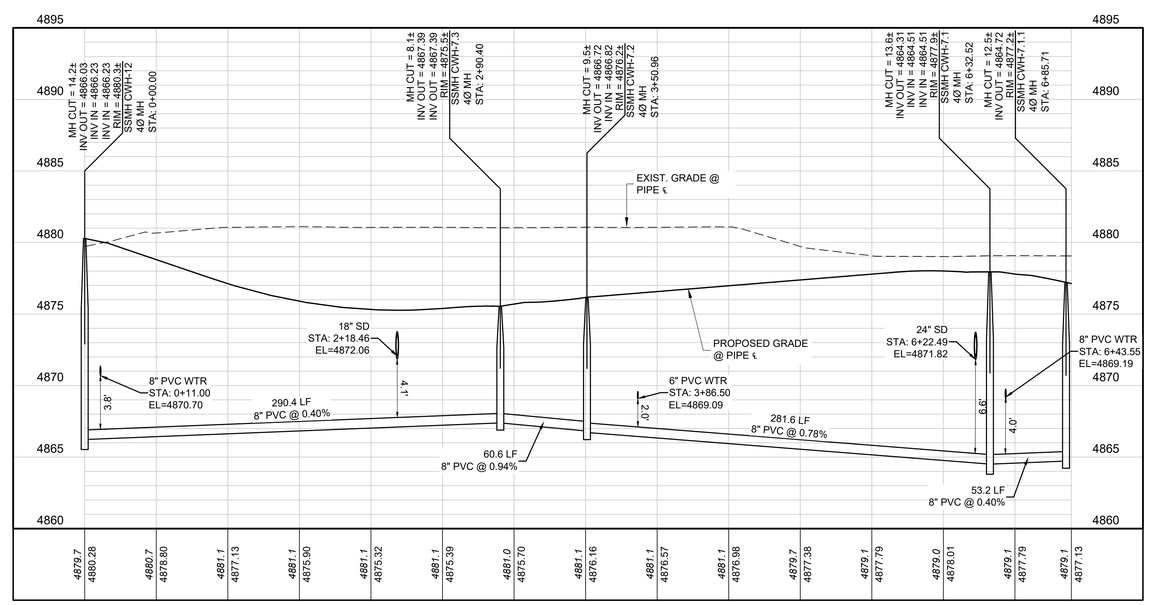
- PROP. SIGN
- PROP. STREET LIGHT



PROFILE RUSTIC LN -NORTH (STA: -0+25 TO 2+06)
SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL



PROFILE RUSTIC LN-SOUTH (STA: 0+00 TO 6+89)
SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
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811 Know what's below. Call before you dig.

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No.	REVISION	BY	DATE

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - RUSTIC LN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C5.6
SHEET 28 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C5.8 SANITARY PLAN & PROFILE.DWG - 2/20/2023 1:31:13 PM - Luke Breedlove

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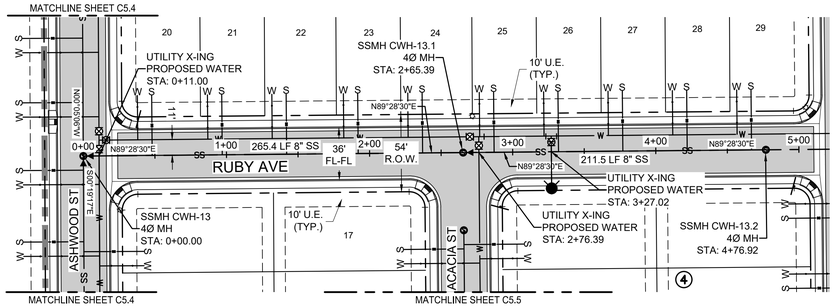
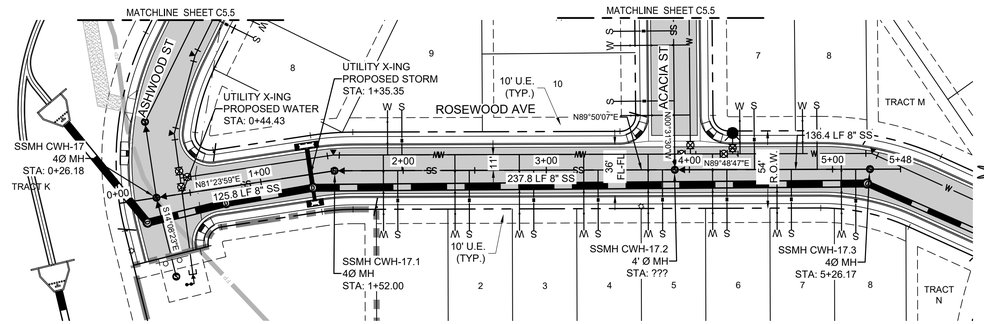
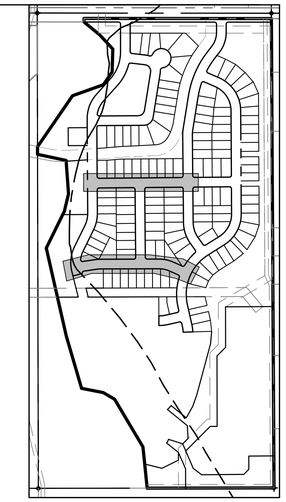






KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE

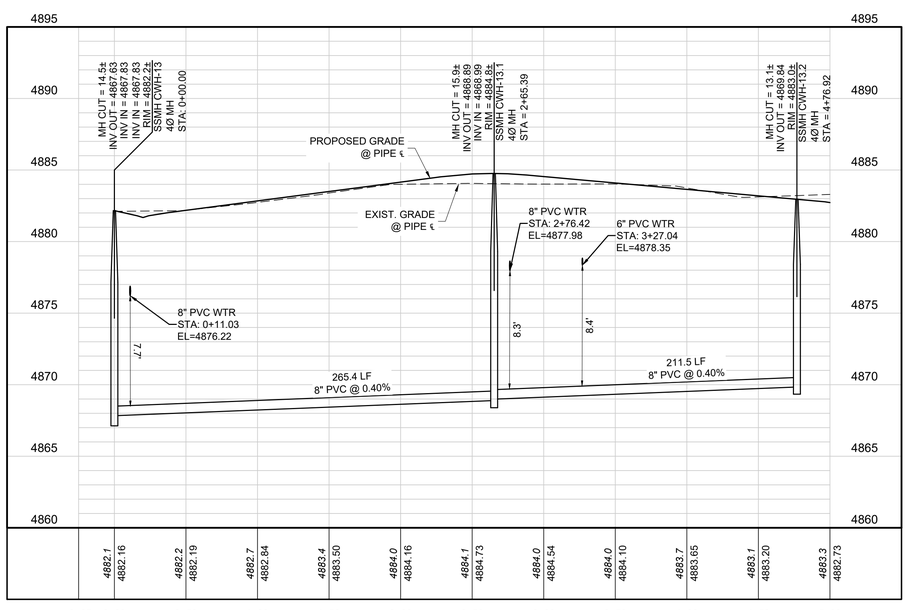
UTILITY LEGEND

PROPOSED PROPERTY BOUNDARY	PROPOSED/EXIST. STORM MANHOLE
PROPOSED RIGHT-OF-WAY	PROPOSED/EXIST. STORM INLET
PROPOSED EASEMENT	PROP. AREA INLET
PROPOSED LOT LINE	PROP. TYPE 'R' INLET
PROPOSED CENTERLINE	PROP. STORM MANHOLE
EXIST. 100-YEAR FLOODPLAIN	PROP. FLARED END SECTION
EXIST. FENCE	PROP. FIRE HYDRANT
EXIST. ELECTRIC LINE	PROP. WATER VALVE
EXIST. GAS MAIN	PROP. WATER SERVICE LINE
EXIST. FIBER OPTICS	PROP. SAN SEWER SERVICE LINE
EXIST. SANITARY SEWER	PROP. SAN SEWER MANHOLE
EXIST. WATER MAIN	PROP. WATER FITTINGS
PROPOSED CURB & GUTTER	EXIST. SANITARY SEWER MH
PROPOSED STORM SEWER	EXIST. STORM MANHOLE
EXISTING STORM SEWER	EXIST. FIRE HYDRANT
PROP. IRRIGATION MAIN	EXIST. WATER VALVE
PROP. SANITARY SEWER	EXIST. UTILITY RISER
PROP. WATER MAIN	

SSMH-CWH-13 TO SSMH-CWH-13.1
WYE TABLE
0+48.14 L, LOT 19 BLOCK 1
0+97.10 L, LOT 21 BLOCK 1
1+42.09 L, LOT 22 BLOCK 1
1+92.08 L, LOT 23 BLOCK 1
2+37.07 L, LOT 24 BLOCK 1

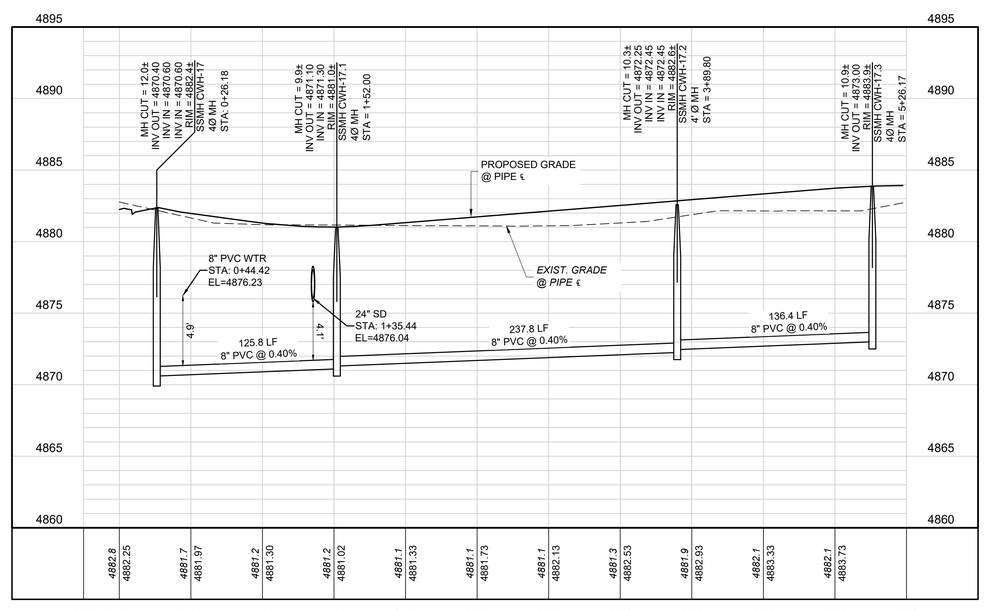
SSMH-CWH-17.1 TO SSMH-CWH-17.2
WYE TABLE
1+96.17 R, LOT 1 BLOCK 6
1+99.17 L, LOT 9 BLOCK 3
2+46.17 R, LOT 2 BLOCK 6
2+91.17 R, LOT 3 BLOCK 6
3+36.17 R, LOT 4 BLOCK 6
3+81.17 R, LOT 5 BLOCK 6

SSMH-CWH-17.2 TO SSMH-CWH-17.3
WYE TABLE
4+26.17 R, LOT 6 BLOCK 6
4+45.52 L, LOT 7 BLOCK 4
4+71.17 R, LOT 7 BLOCK 6
4+89.34 L, LOT 8 BLOCK 4
5+16.17 R, LOT 8 BLOCK 6



PROFILE RUBY AVE (STA: -0+25 TO 5+00)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL



PROFILE ROSEWOOD AVE (STA: -0+25 TO 5+50)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

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

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C5.7 SANITARY PLAN & PROFILE.DWG - 2/20/2023 1:31:51 PM - Luke Bredehoe

No.	REVISION	BY	DATE

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NOT FOR
CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SANITARY P&P - ROSEWOOD & RUBY AVE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C5.7
SHEET 29 OF 109

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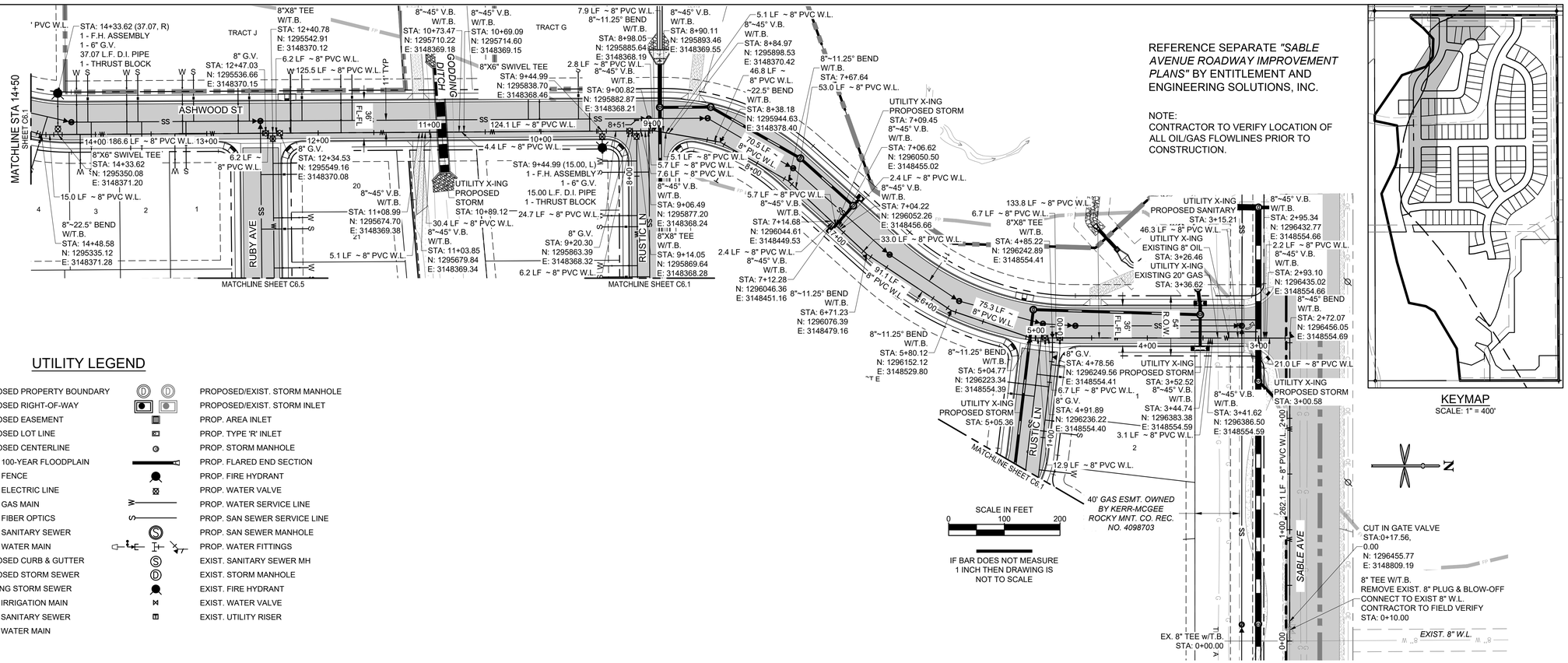
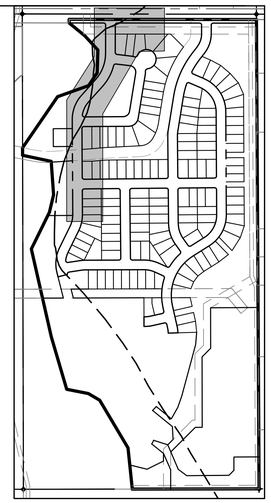


REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.



KEYMAP
SCALE: 1" = 400'

UTILITY LEGEND

PROPOSED PROPERTY BOUNDARY	PROPOSED/EXIST. STORM MANHOLE
PROPOSED RIGHT-OF-WAY	PROPOSED/EXIST. STORM INLET
PROPOSED EASEMENT	PROP. AREA INLET
PROPOSED LOT LINE	PROP. TYPE 'R' INLET
PROPOSED CENTERLINE	PROP. STORM MANHOLE
EXIST. 100-YEAR FLOODPLAIN	PROP. FLARED END SECTION
EXIST. FENCE	PROP. FIRE HYDRANT
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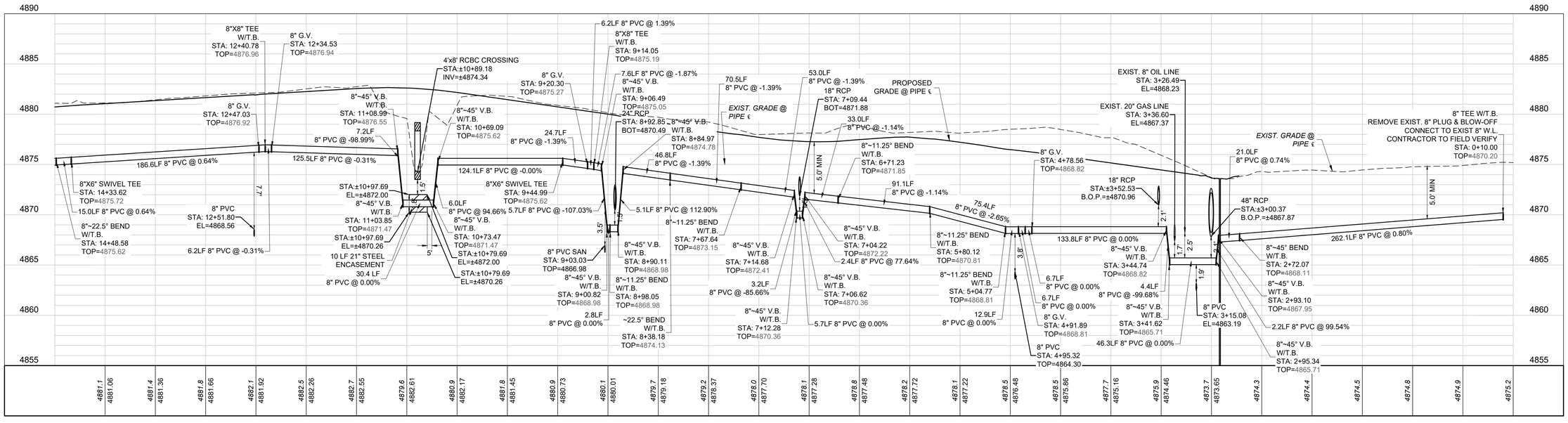
EXIST. GAS MAIN	PROP. WATER SERVICE LINE
EXIST. FIBER OPTICS	PROP. SAN SEWER SERVICE LINE
EXIST. SANITARY SEWER	PROP. SAN SEWER MANHOLE
EXIST. WATER MAIN	PROP. WATER FITTINGS
PROPOSED CURB & GUTTER	EXIST. SANITARY SEWER MH
PROPOSED STORM SEWER	EXIST. STORM MANHOLE
EXISTING STORM SEWER	EXIST. FIRE HYDRANT
PROP. IRRIGATION MAIN	EXIST. WATER VALVE
PROP. SANITARY SEWER	EXIST. UTILITY RISER
PROP. WATER MAIN	



PROFILE F4-WATER-ASHWOOD ST (STA: 0+00 TO 14+50)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - ASHWOOD ST

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/16/2023

C6.0
SHEET 30 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C6.0 WATER PLAN AND PROFILE - ASHWOOD ST.DWG - 2/20/2023 1:32:23 PM - Luke Breedlove

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UTILITY LEGEND

PROPOSED PROPERTY BOUNDARY	PROPOSED/EXIST. STORM MANHOLE
PROPOSED RIGHT-OF-WAY	PROPOSED/EXIST. STORM INLET
PROPOSED EASEMENT	PROP. AREA INLET
PROPOSED LOT LINE	PROP. TYPE 'R' INLET
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EXIST. 100-YEAR FLOODPLAIN	PROP. FLARED END SECTION
EXIST. FENCE	PROP. FIRE HYDRANT
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EXIST. SANITARY SEWER	PROP. SAN SEWER MANHOLE
EXIST. WATER MAIN	PROP. WATER FITTINGS
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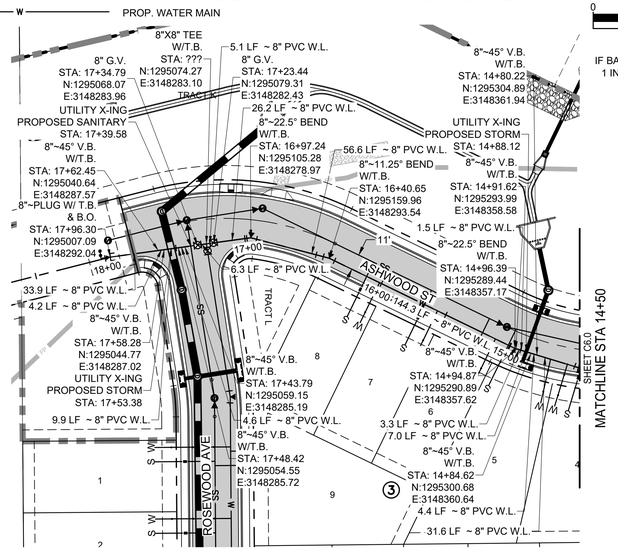
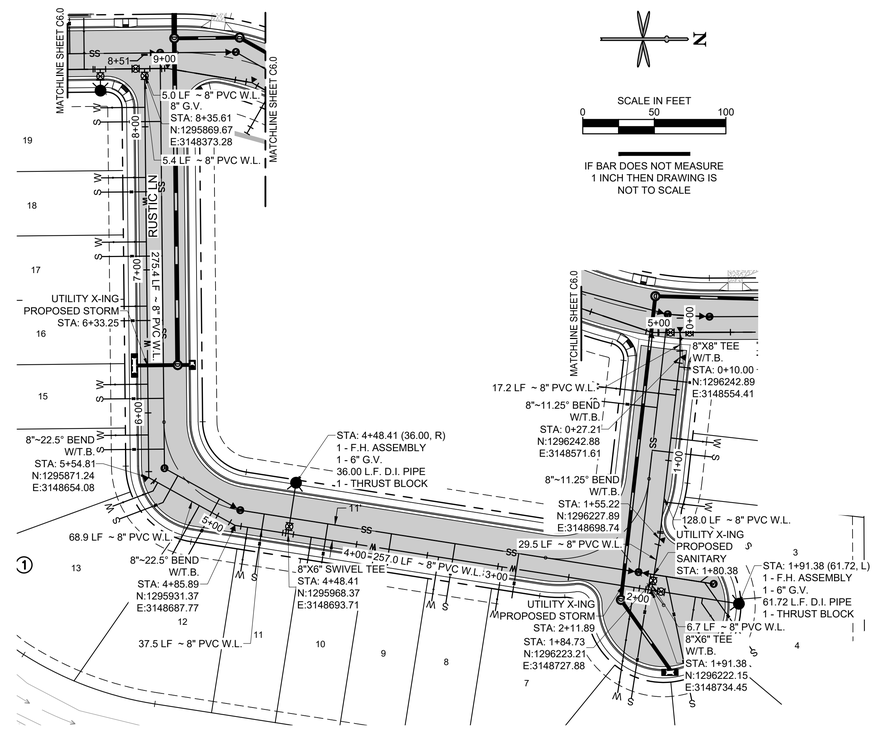
EXISTING STORM SEWER	EXIST. FIRE HYDRANT
PROP. IRRIGATION MAIN	EXIST. WATER VALVE
PROP. SANITARY SEWER	EXIST. UTILITY RISER
PROP. WATER MAIN	

SCALE IN FEET 0 50 100

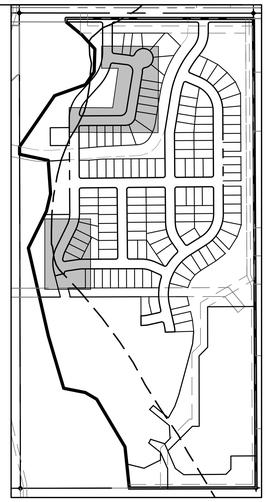
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



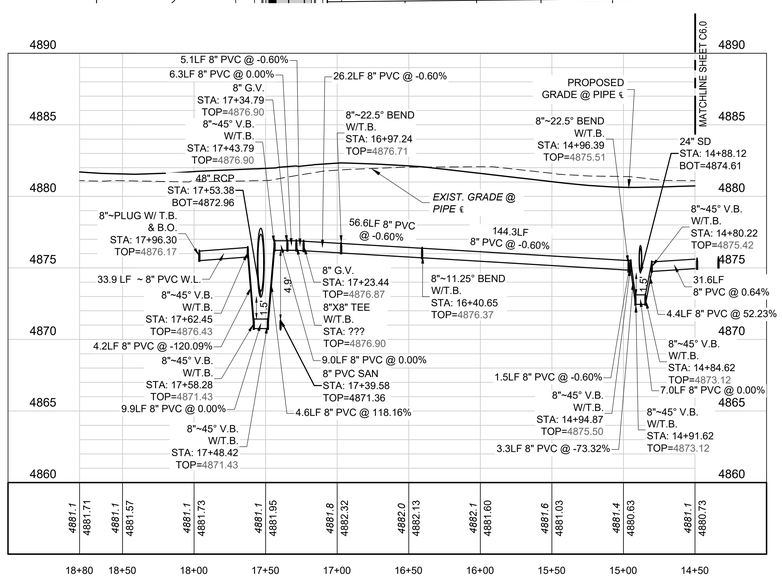


SCALE IN FEET 0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

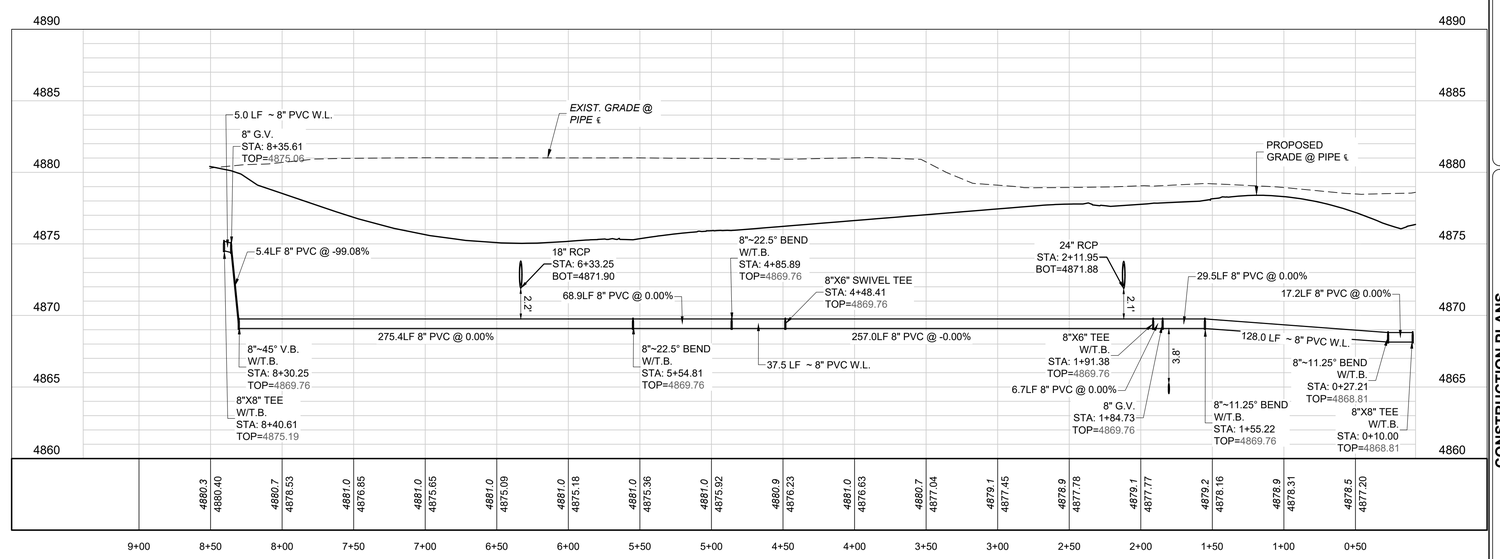


KEYMAP
SCALE: 1" = 400'



PROFILE F4-WATER-ASHWOOD ST (STA: 14+50 TO 18+80)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL



PROFILE F4-WATER-RUSTIC LN (STA: 0+08 TO 9+39)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ⅛ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - ASHWOOD ST & RUSTIC LN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/16/2023

C6.1
SHEET 31 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C6.0 WATER PLAN AND PROFILE - ASHWOOD ST.DWG - 2/20/2023 1:32:39 PM - Luke Breedlove

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UTILITY LEGEND

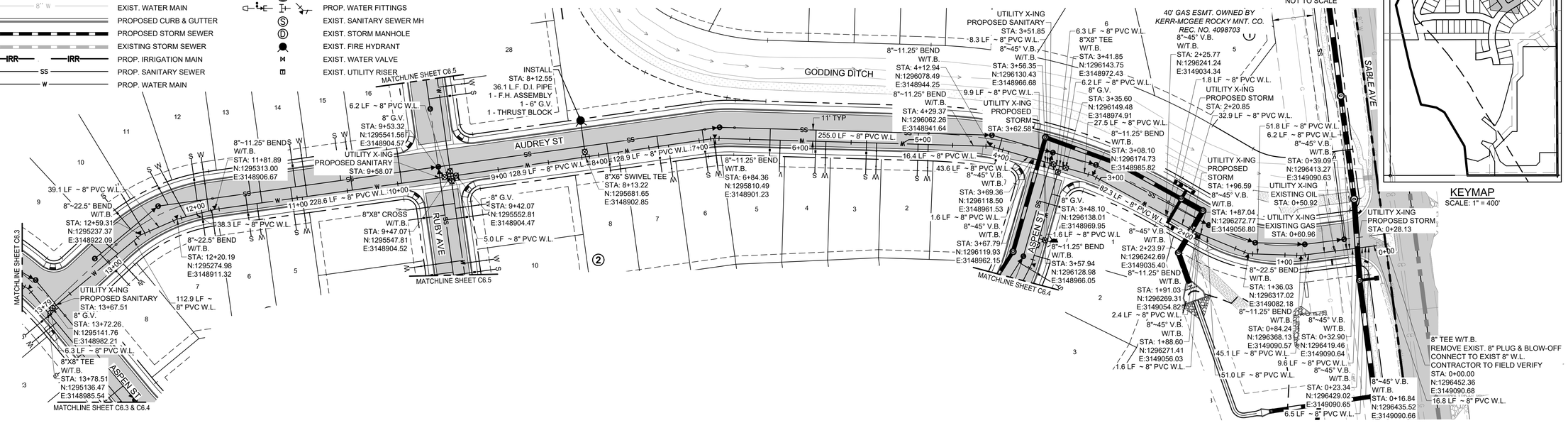
- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. FIBER OPTICS
- EXIST. SANITARY SEWER
- EXIST. WATER MAIN
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROP. IRRIGATION MAIN
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. FIRE HYDRANT
- PROP. WATER VALVE
- PROP. WATER SERVICE LINE
- PROP. SAN SEWER SERVICE LINE
- PROP. SAN SEWER MANHOLE
- PROP. WATER FITTINGS
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER

REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

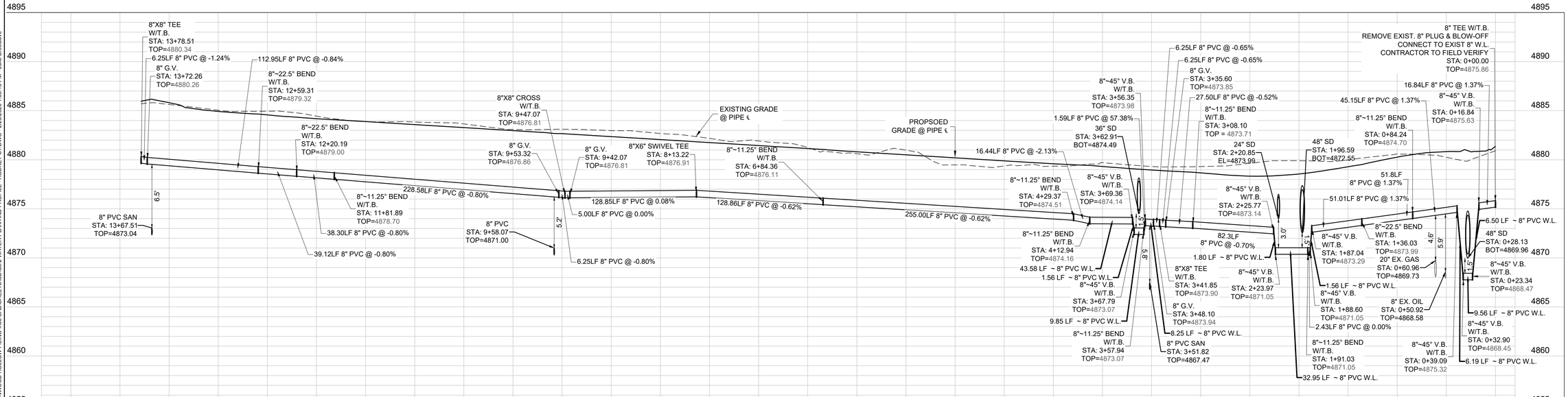
NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'



CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - AUDREY ST

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/17/2023

C6.2
SHEET 32 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\C\C6.2 WATER PLAN AND PROFILE - AUDREY ST.DWG - 2/20/2023 1:33:13 PM - Luke Breedlove

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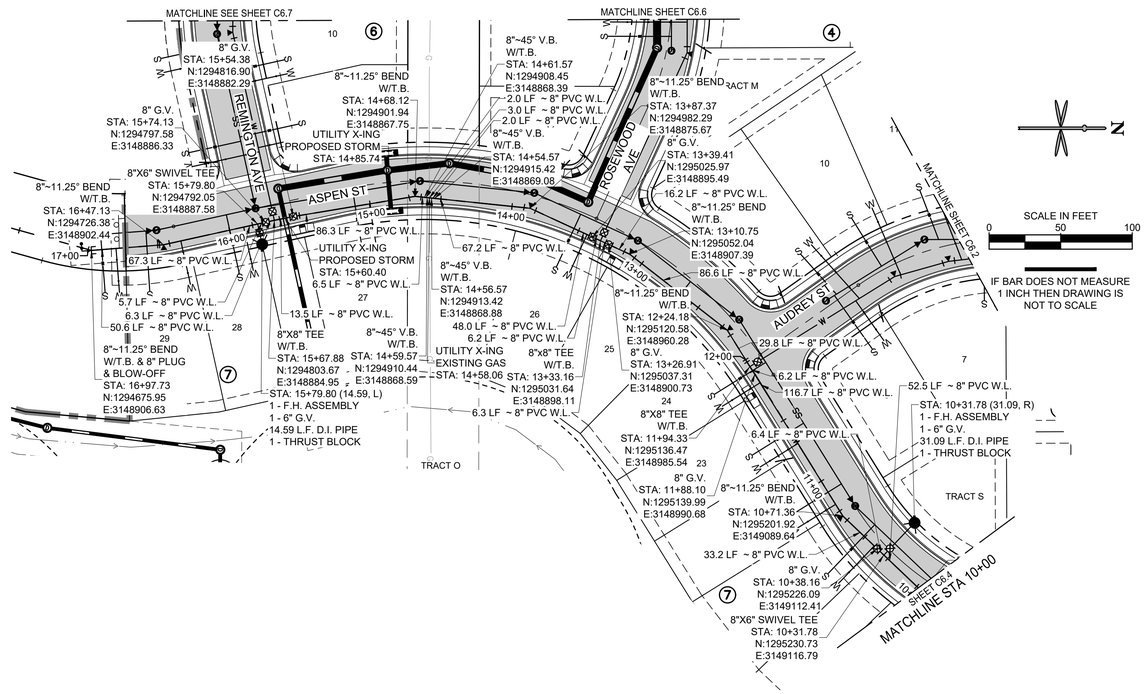
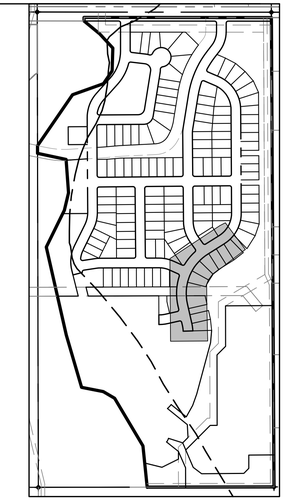
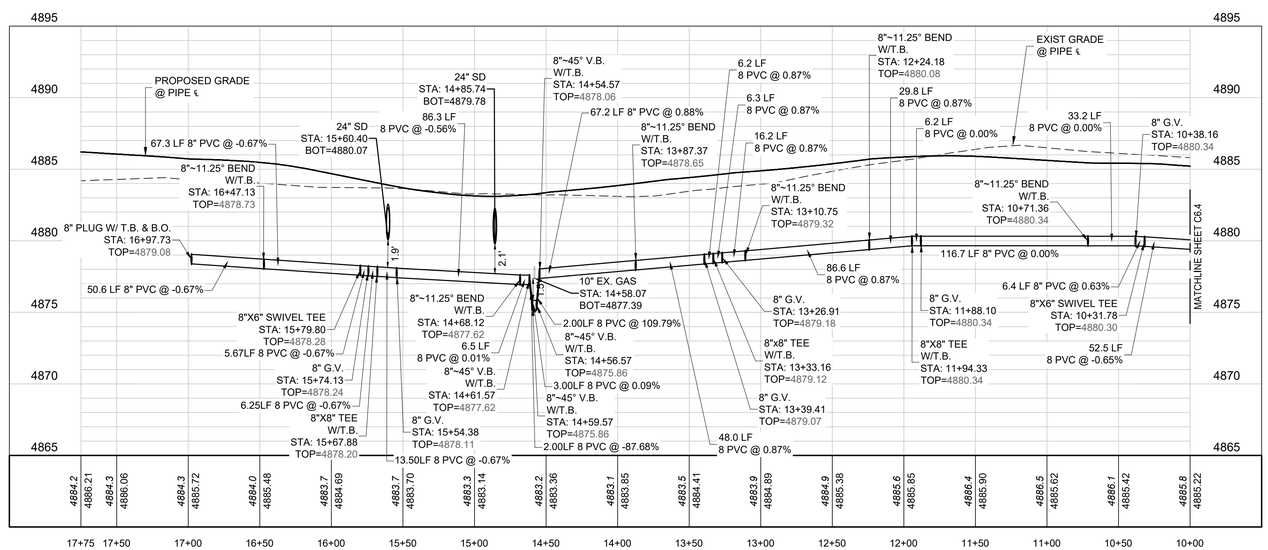
UTILITY LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. FIBER OPTICS
- EXIST. SANITARY SEWER
- EXIST. WATER MAIN
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROP. IRRIGATION MAIN
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. FIRE HYDRANT
- PROP. WATER VALVE
- PROP. WATER SERVICE LINE
- PROP. SAN SEWER SERVICE LINE
- PROP. SAN SEWER MANHOLE
- PROP. WATER FITTINGS
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER





KEYMAP
SCALE: 1" = 400'



PROFILE F4-WATER-ASPEN ST (STA: 10+00 TO 17+75)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - ASPEN ST - 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/13/2023

C6.3
SHEET 33 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C6.3 WATER PLAN AND PROFILE - ASPEN ST.DWG - 2/20/2023 1:34:02 PM - Luke Breedlove

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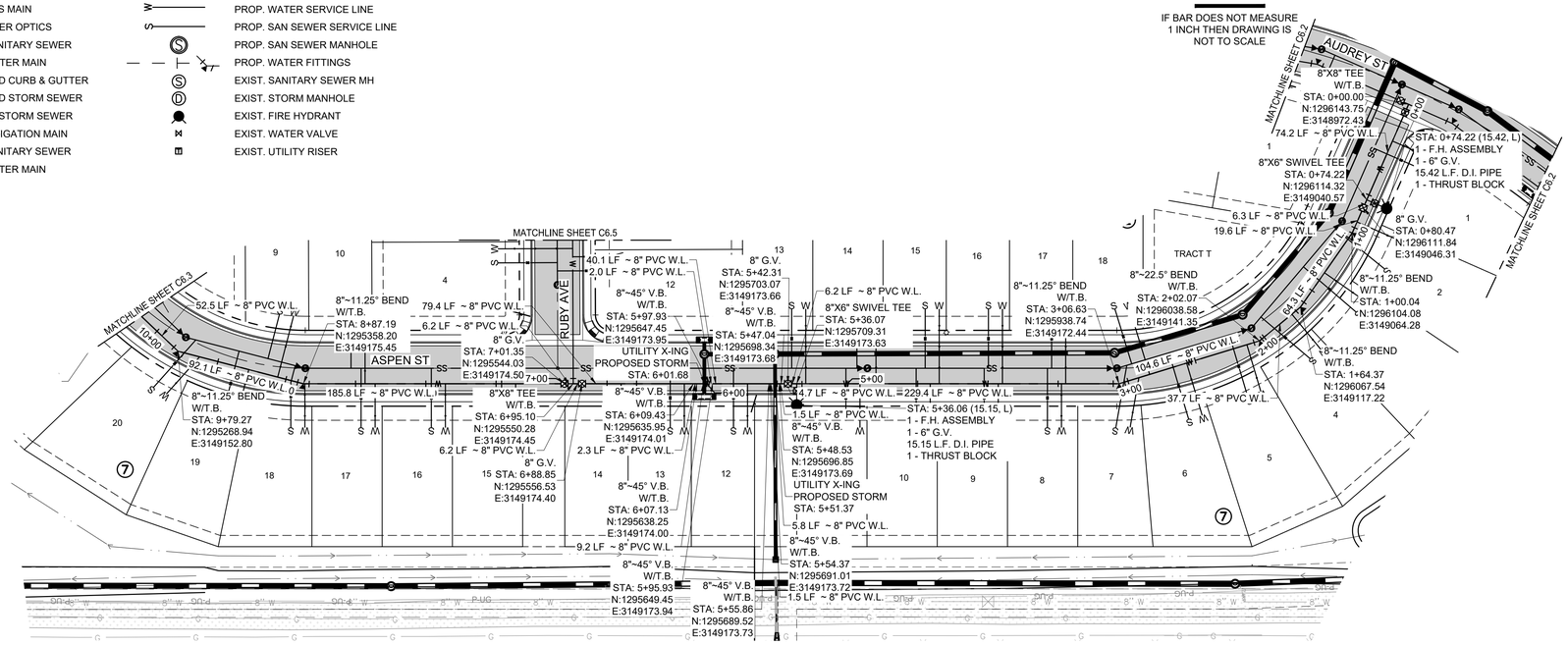
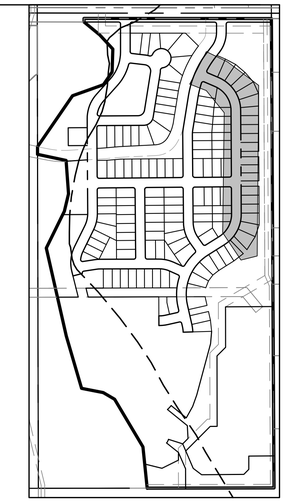
UTILITY LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. FIBER OPTICS
- EXIST. SANITARY SEWER
- EXIST. WATER MAIN
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROP. IRRIGATION MAIN
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. FIRE HYDRANT
- PROP. WATER VALVE
- PROP. WATER SERVICE LINE
- PROP. SAN SEWER SERVICE LINE
- PROP. SAN SEWER MANHOLE
- PROP. WATER FITTINGS
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER

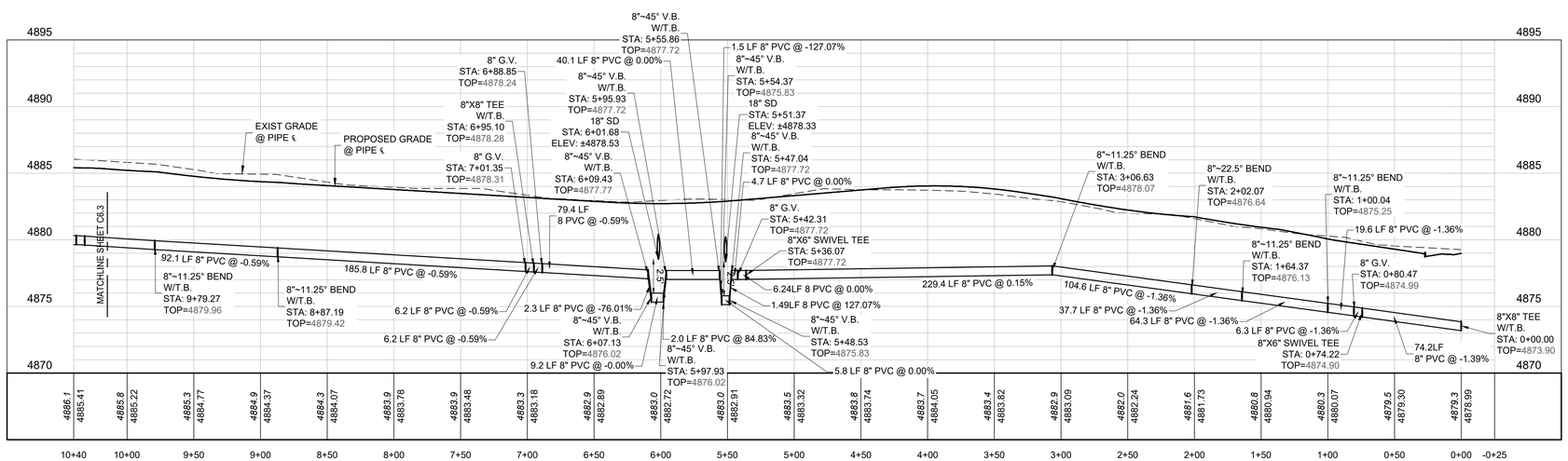
SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE





KEYMAP
SCALE: 1" = 400'



PROFILE F4-WATER-ASPEN ST (STA: -0+25 TO 10+40)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - ASPEN ST - 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/13/2023

C6.4
SHEET 34 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C\C6.3 WATER PLAN AND PROFILE - ASPEN ST.DWG - 2/28/2023 1:33:48 PM - Luke Breidlove

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UTILITY LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. FIBER OPTICS
- EXIST. SANITARY SEWER
- EXIST. WATER MAIN
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
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- PROP. IRRIGATION MAIN
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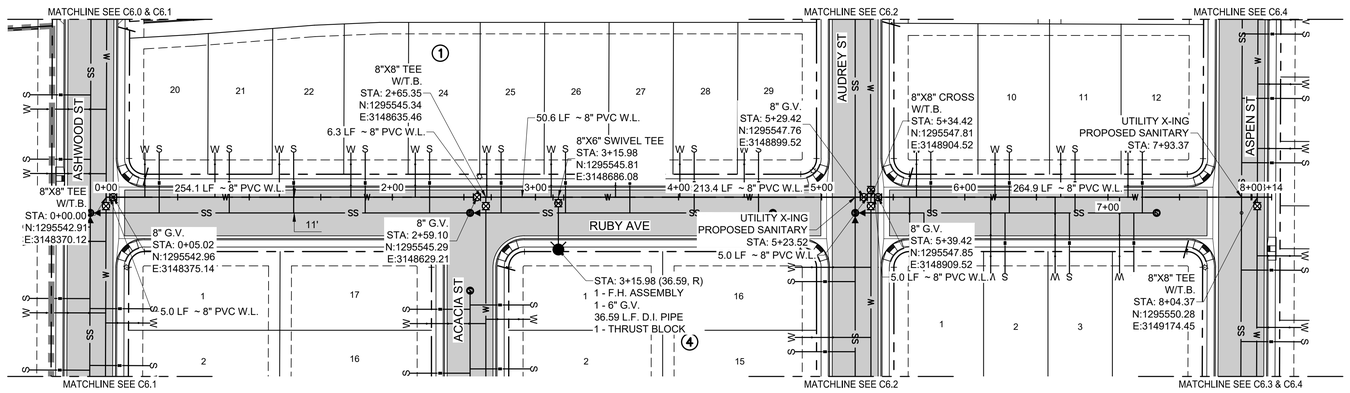
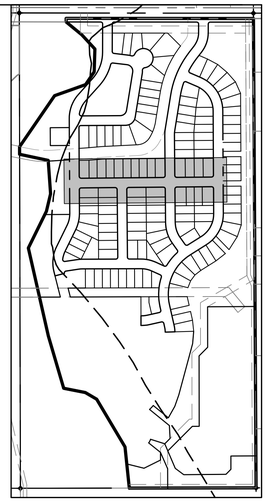
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER



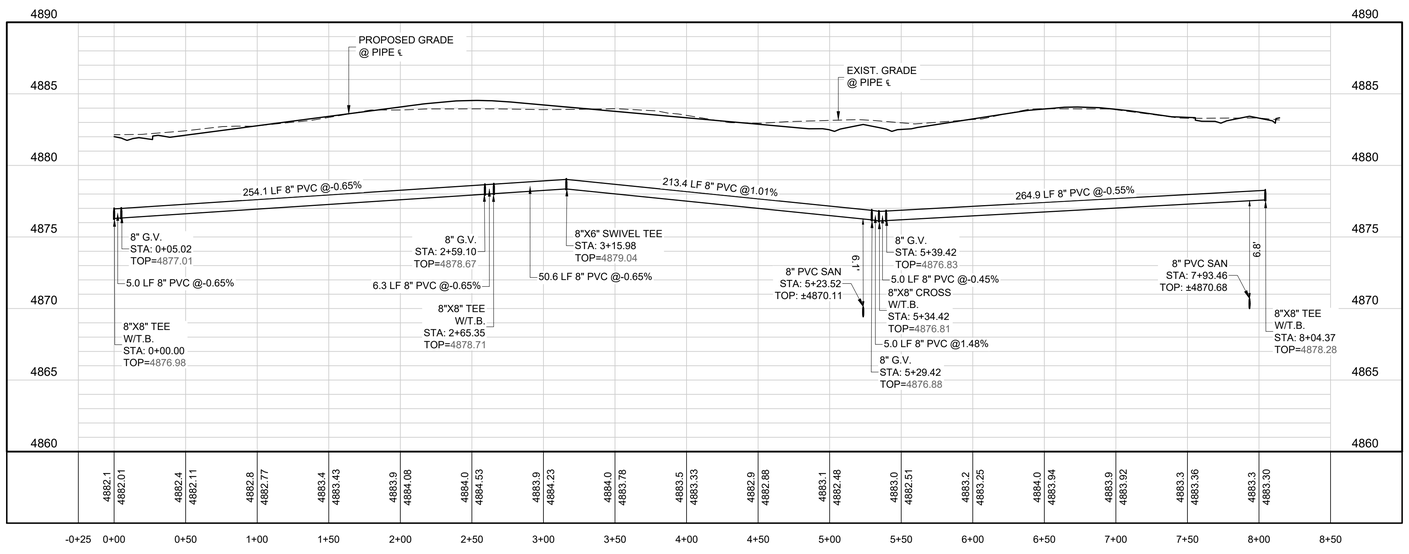


KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



PROFILE F4-WATER-RUBY AVE (STA: -0+25 TO 8+50)

SCALES: 1'=50' HORIZONTAL, 1'=5' VERTICAL

Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - RUBY AVE

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/13/2023

C6.5
SHEET 35 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C6.5 WATER PLAN AND PROFILE - RUBY AVE.DWG - 2/20/2023 1:34:39 PM - Luke Breedlove

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UTILITY LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
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- EXIST. WATER MAIN
- PROPOSED CURB & GUTTER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROP. IRRIGATION MAIN
- PROP. SANITARY SEWER
- PROP. WATER MAIN
- PROPOSED/EXIST. STORM MANHOLE
- PROPOSED/EXIST. STORM INLET
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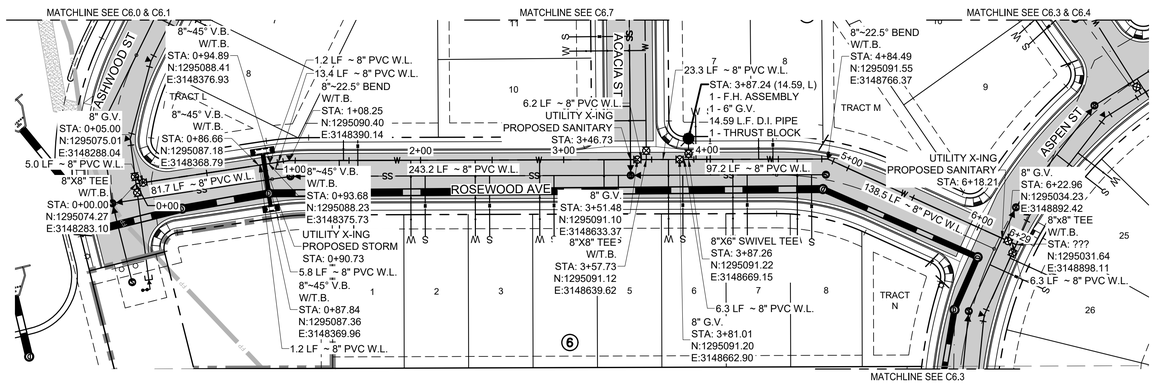
- PROP. SAN SEWER SERVICE LINE
- PROP. SAN SEWER MANHOLE
- PROP. WATER FITTINGS
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER

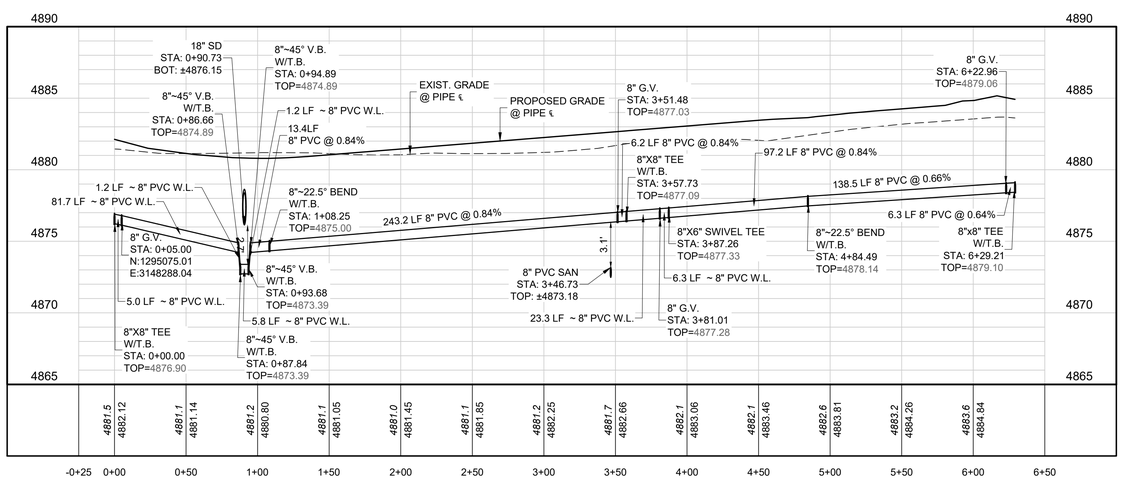


KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



PROFILE F4-WATER-ROSEWOOD AVE (STA: -0+25 TO 6+50)

SCALES: 1"=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - ROSEWOOD AVE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/13/2023

C6.6
SHEET 36 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C3\C6.6 WATER PLAN AND PROFILE - ROSEWOOD AVE.DWG - 2/20/2023 1:35:18 PM - Luke Breedlove

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UTILITY LEGEND

- PROPOSED PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- EXIST. 100-YEAR FLOODPLAIN
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
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- EXIST. SANITARY SEWER
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- PROP. IRRIGATION MAIN
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- PROPOSED/EXIST. STORM INLET
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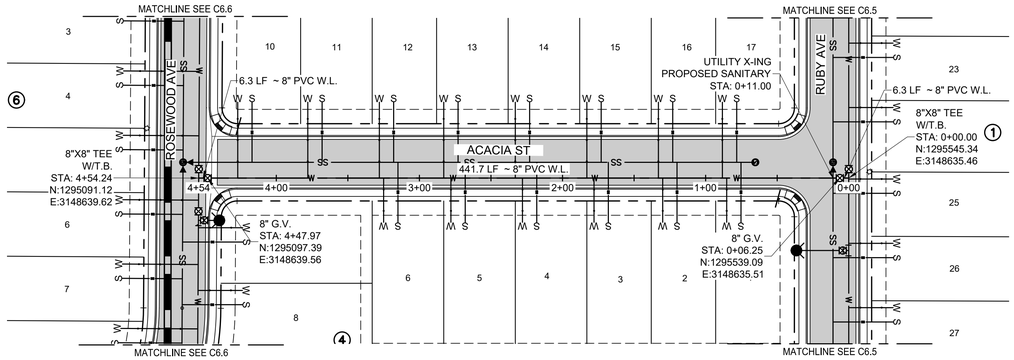
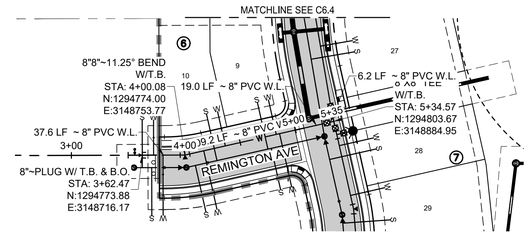
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. FIRE HYDRANT
- PROP. WATER VALVE
- PROP. WATER SERVICE LINE
- PROP. SAN SEWER SERVICE LINE
- PROP. SAN SEWER MANHOLE
- PROP. WATER FITTINGS
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER

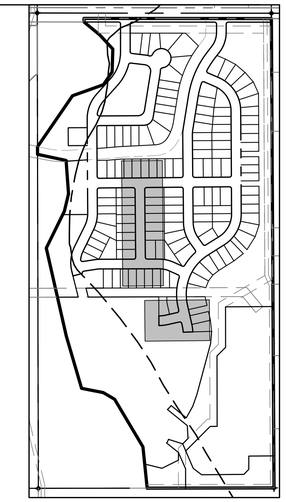
N

SCALE IN FEET
0 50 100

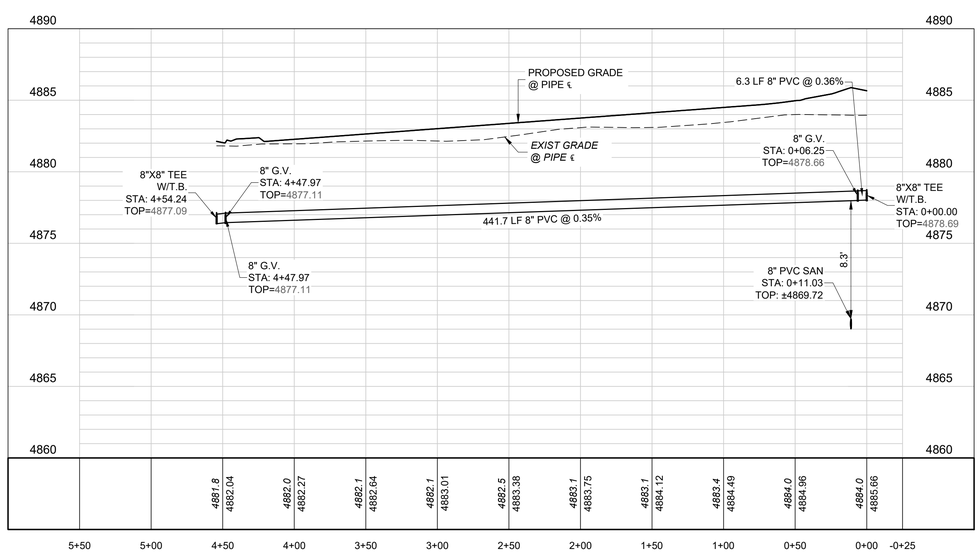
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE





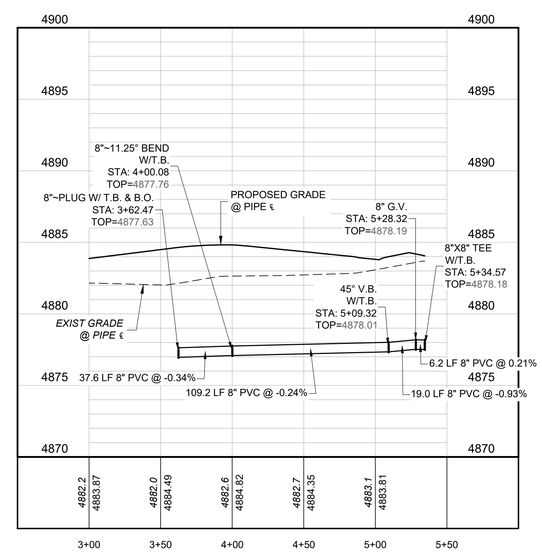


KEYMAP
SCALE: 1" = 400'



PROFILE F4-WATER-ACACIA ST (STA: -0+25 TO 5+50)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL



PROFILE F4-WATER-REMINGTON AVE (STA: 3+00 TO 5+50)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER P&P - ACACIA ST & REMINGTON AVE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/20/2023

C6.7
SHEET 37 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C6.8 WATER PLAN AND PROFILE - ACACIA ST.DWG - 2/20/2023 1:35:57 PM - Luke Breedlove

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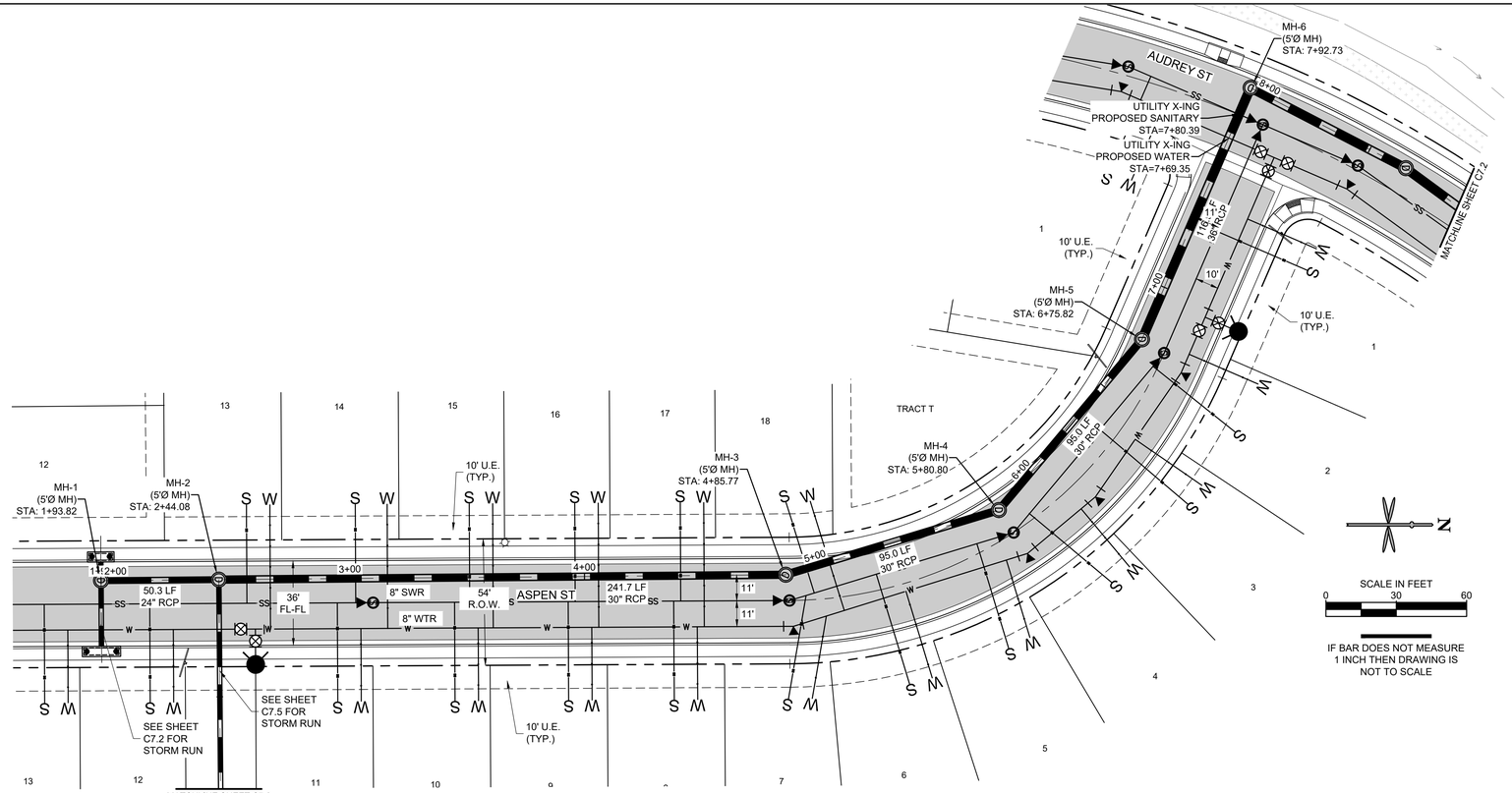
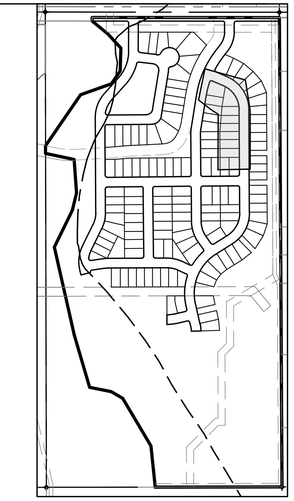




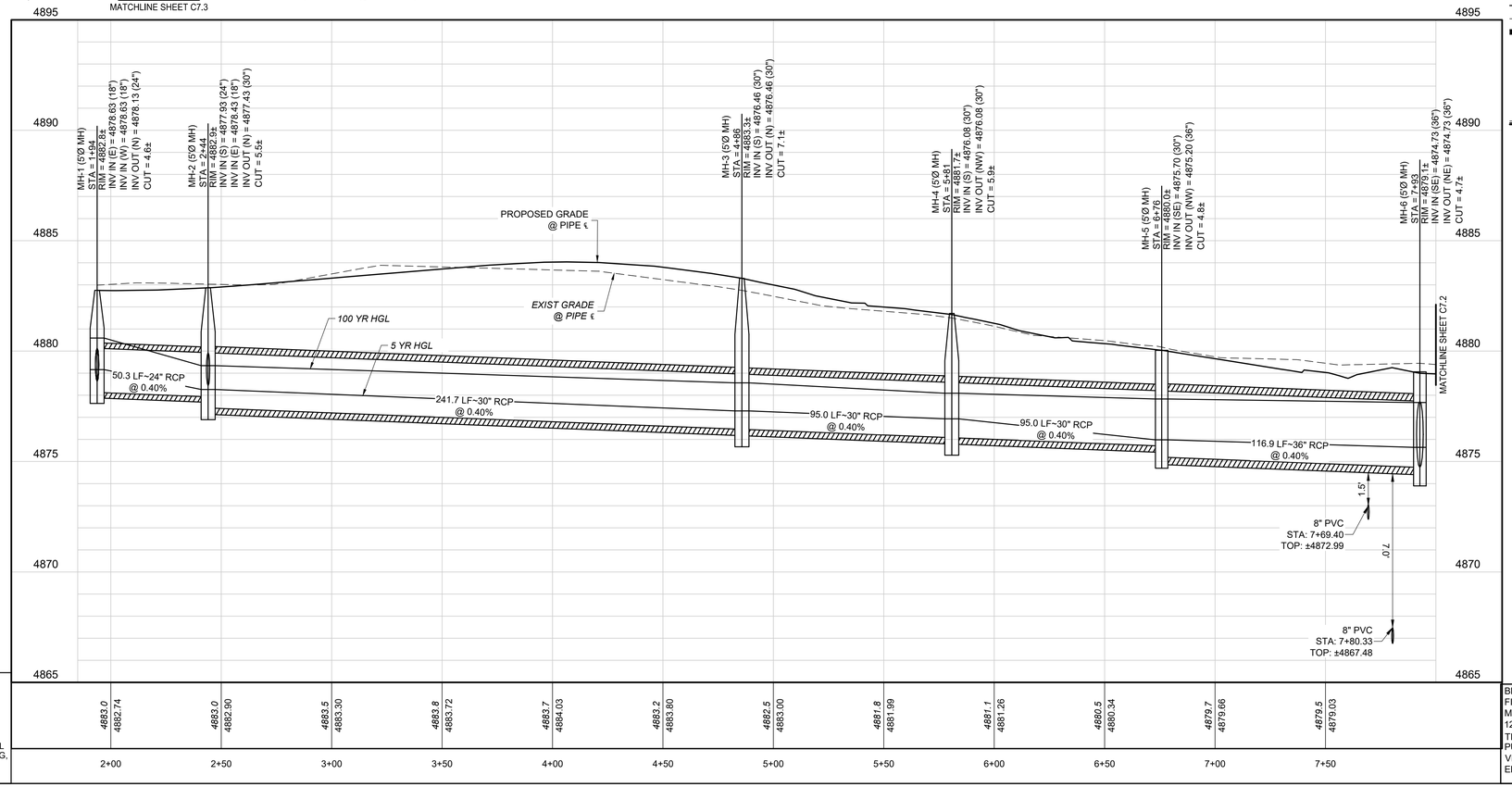
KEYMAP
SCALE: 1" = 400'

SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



STORM PROFILE NOTES:

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No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND A - ASPEN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.1
SHEET 38 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\98 CAD\SHEETS\CD\C7.1 STORM PLAN & PROFILE - POND A.DWG - 2/20/2023 10:49:19 AM - Gregory Rivera

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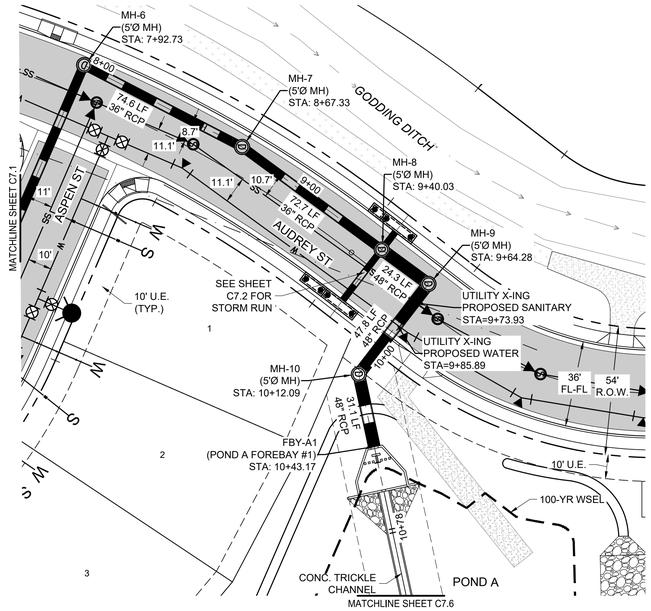
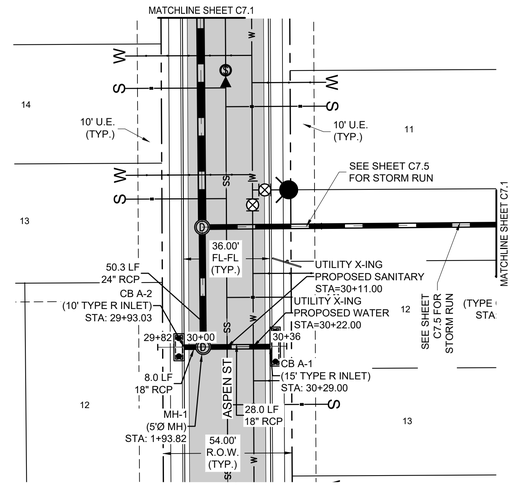


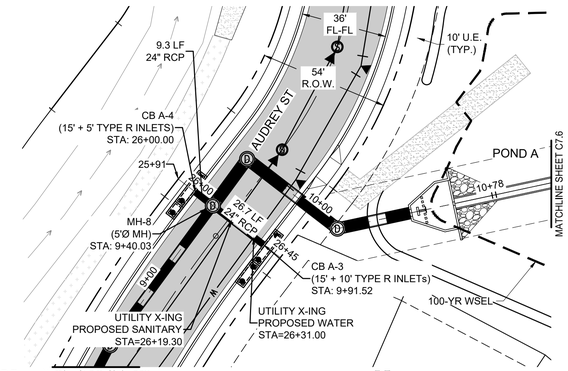
SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE



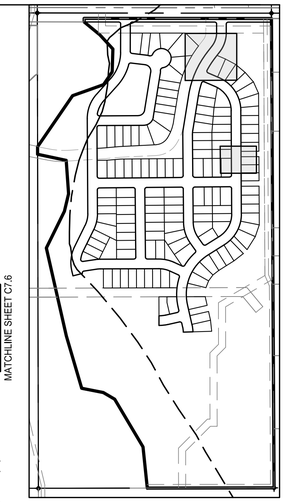
SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE



SCALE IN FEET
0 30 60

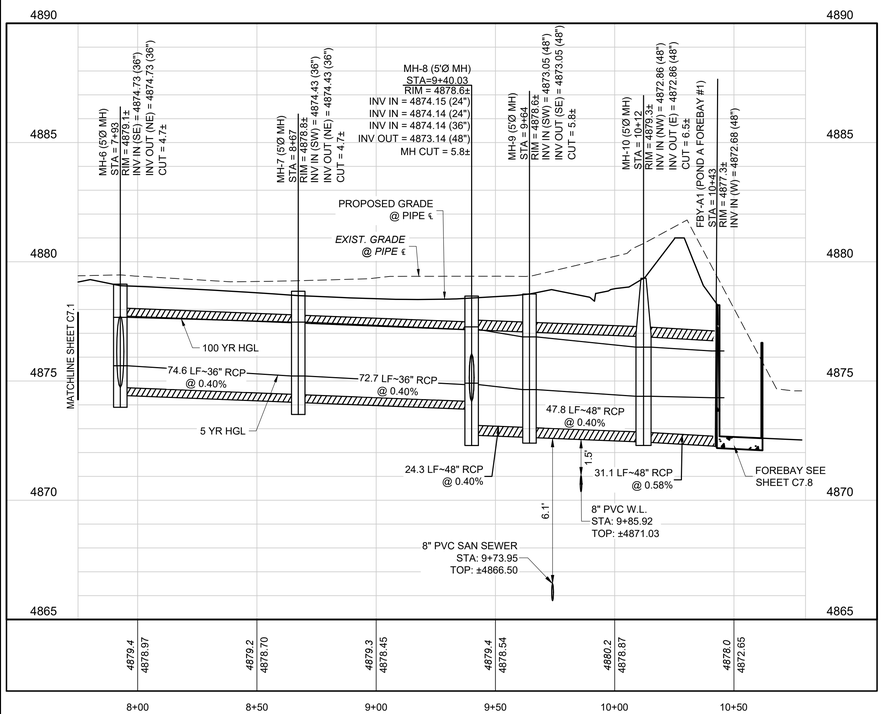
IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

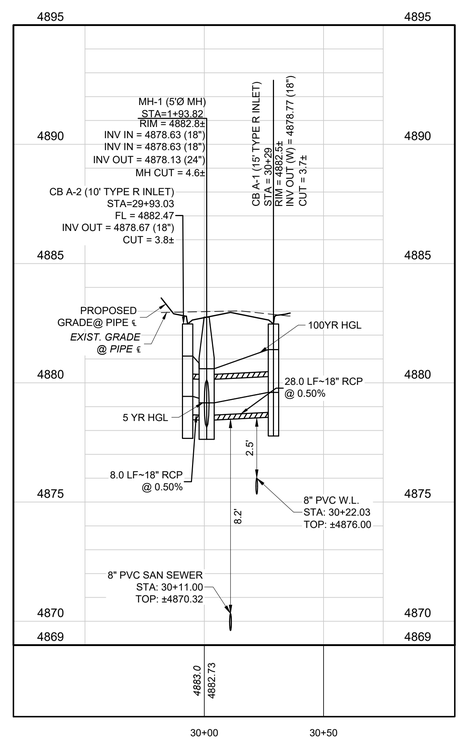
LEGEND

X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



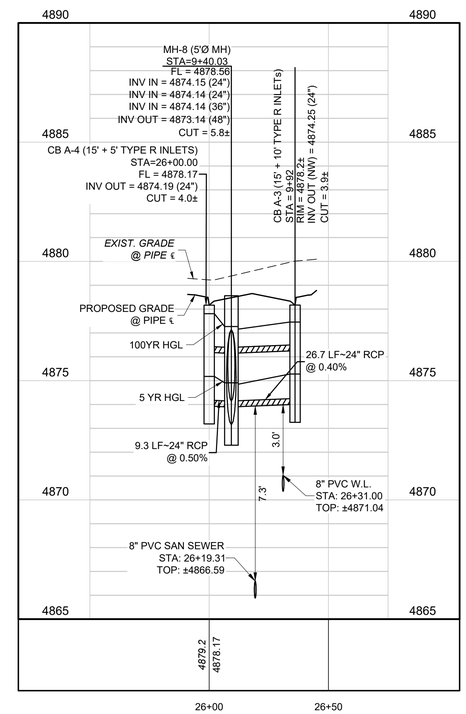
PROFILE STM-A1-ASPEN (STA: 7+75 TO 10+80)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-A4-ASPEN (STA: 29+50 TO 30+75)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-A2-ASPEN (STA: 25+50 TO 26+75)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

811
Know what's **below.**
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CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

STORM PROFILE NOTES:

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BENCHMARK:
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No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

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ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE
COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND A - ASPEN & AUDREY

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.2
SHEET 39 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.1 STORM PLAN & PROFILE - POND A.DWG - 2/20/2023 3:32:37 PM - Gregory Rivera

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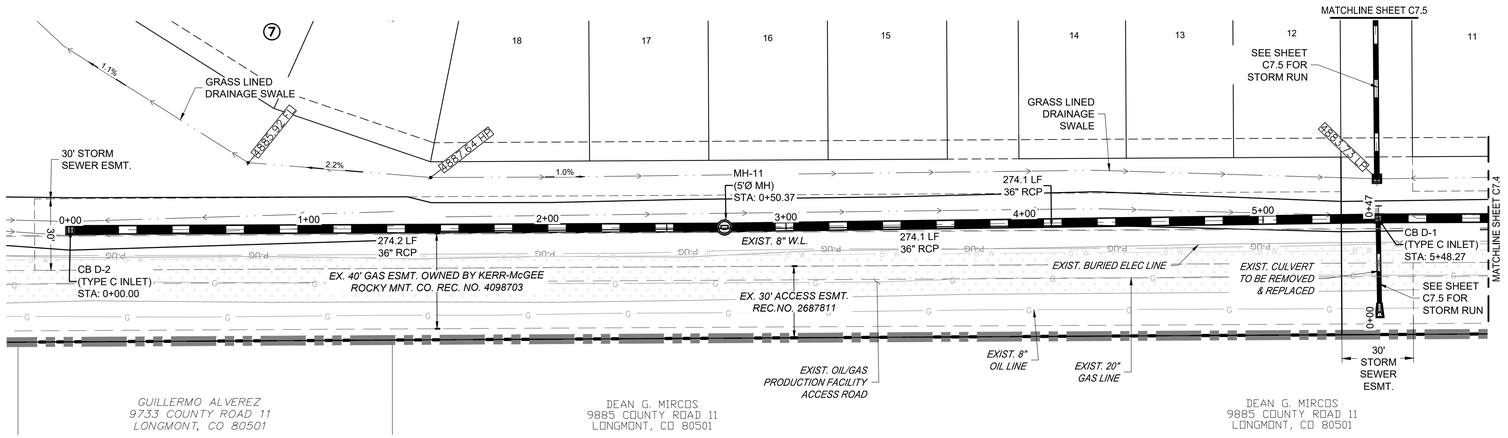
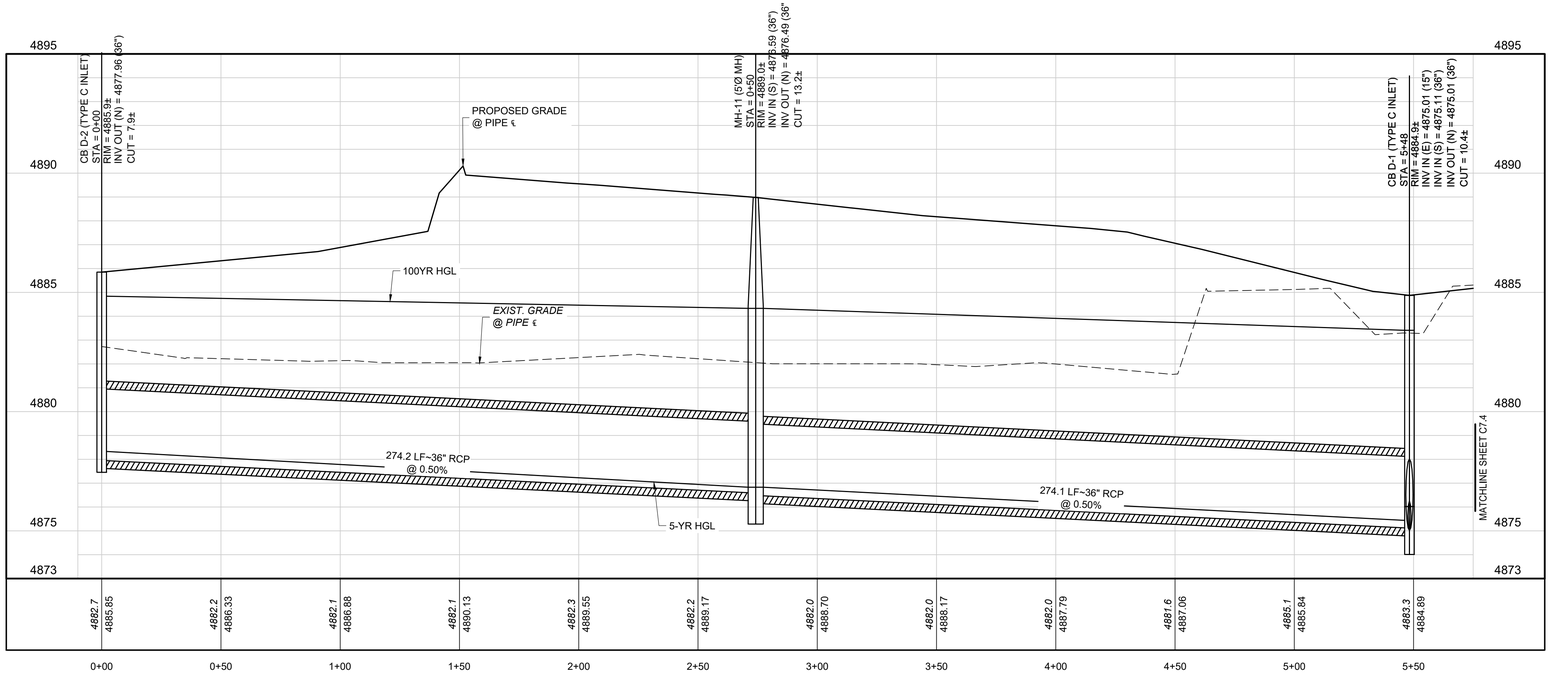
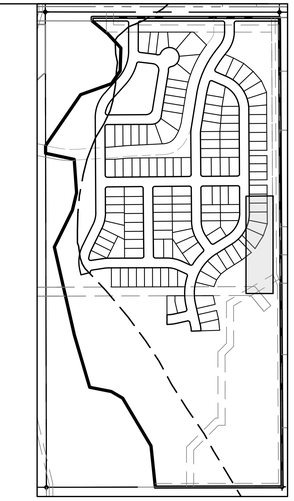


NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.



PROFILE STM-A4-EAST PROP (STA: -0+10 TO 5+75)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



KEYMAP
SCALE: 1" = 400'

SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- MP — PROP. MARKER POST

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND A - ASPEN & EAST PROP

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.3
SHEET 40 OF 109

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.1 STORM PLAN & PROFILE - POND A.DWG - 2/20/2023 10:15:35 AM - Gregory Rivera

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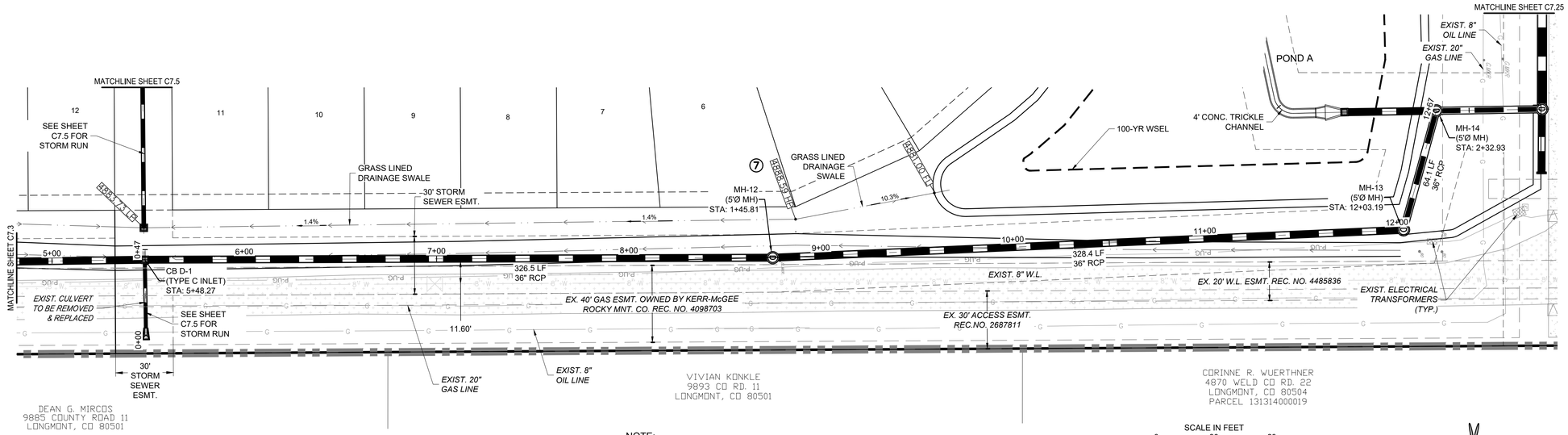
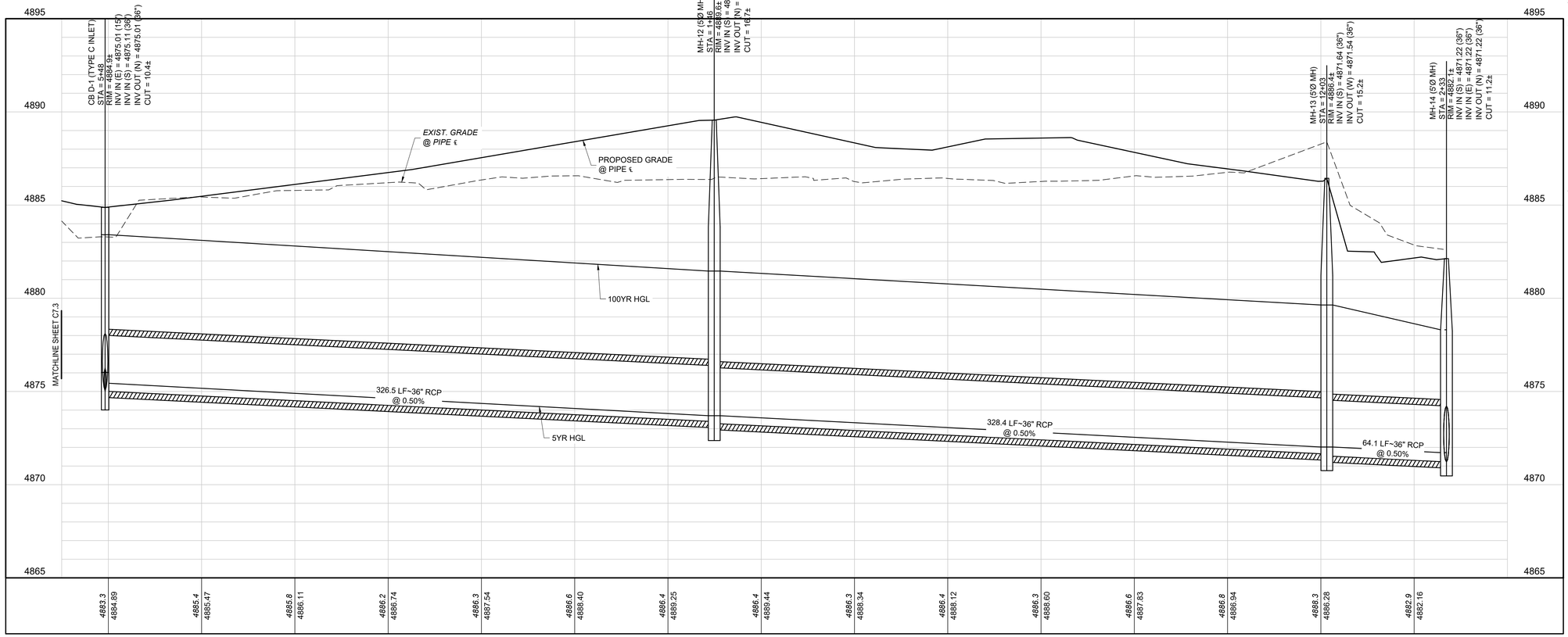


NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

SCALE IN FEET
0 30 60

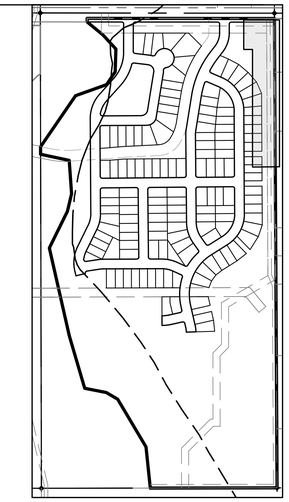
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

N



PROFILE STM-A4-EAST PROP (STA: 5+25 TO 13+00)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



KEYMAP
SCALE: 1" = 400'

LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE "R" INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- MP — PROP. MARKER POST

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND A - EAST PROP

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.4
SHEET 41 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.1 STORM PLAN & PROFILE - POND A.DWG - 2/20/2023 10:15:56 AM - Gregory Rivera

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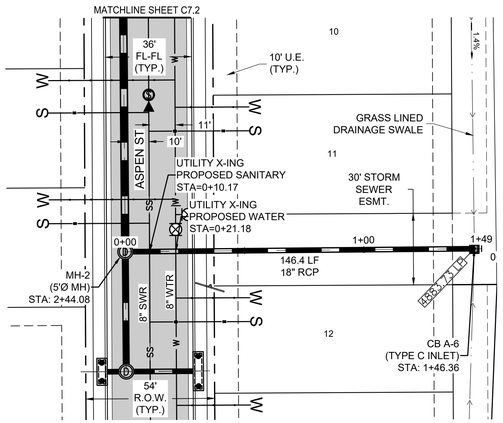
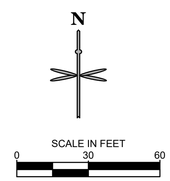
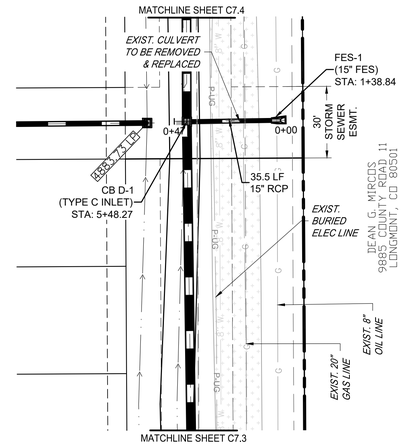
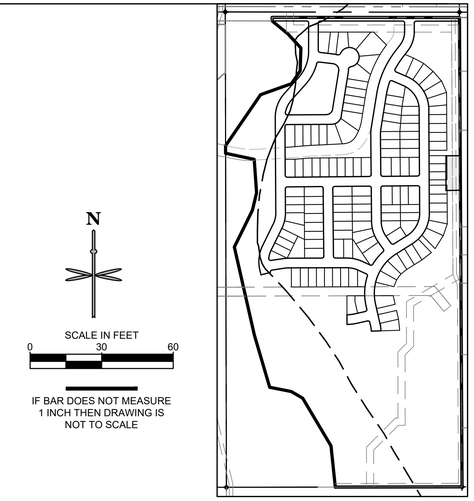




IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.



KEYMAP
SCALE: 1" = 400'

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
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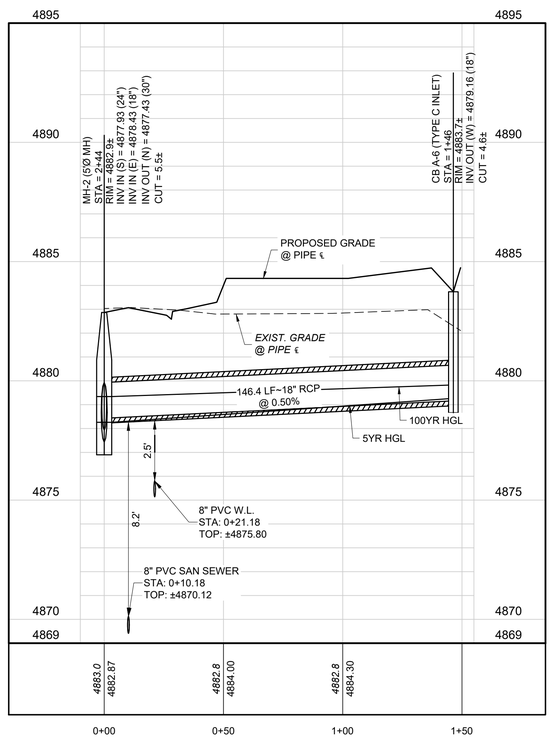
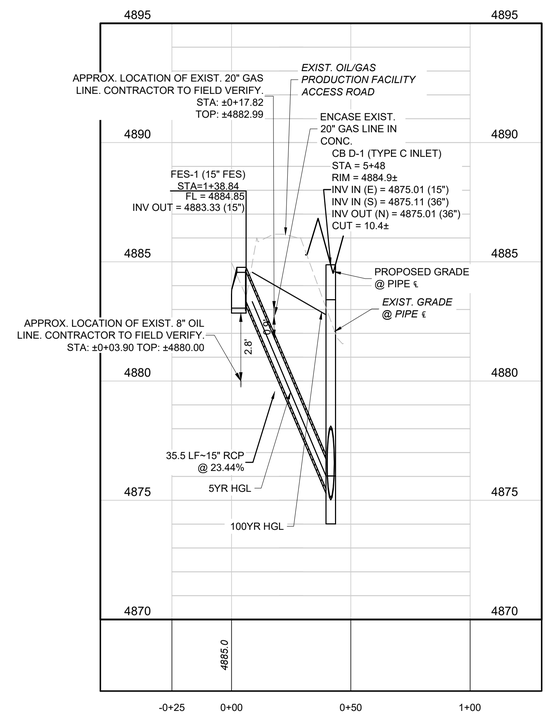
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



PROFILE STM-A5-ASPEN (STA: -0+10 TO 1+55)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-D3 (STA: -0+25 TO 1+00)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

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1-800-922-1987 or 811
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BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND A - OUTFALL

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.5
SHEET 42 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.1 STORM PLAN & PROFILE - POND A.DWG - 2/20/2023 10:16:30 AM - Gregory Rivera

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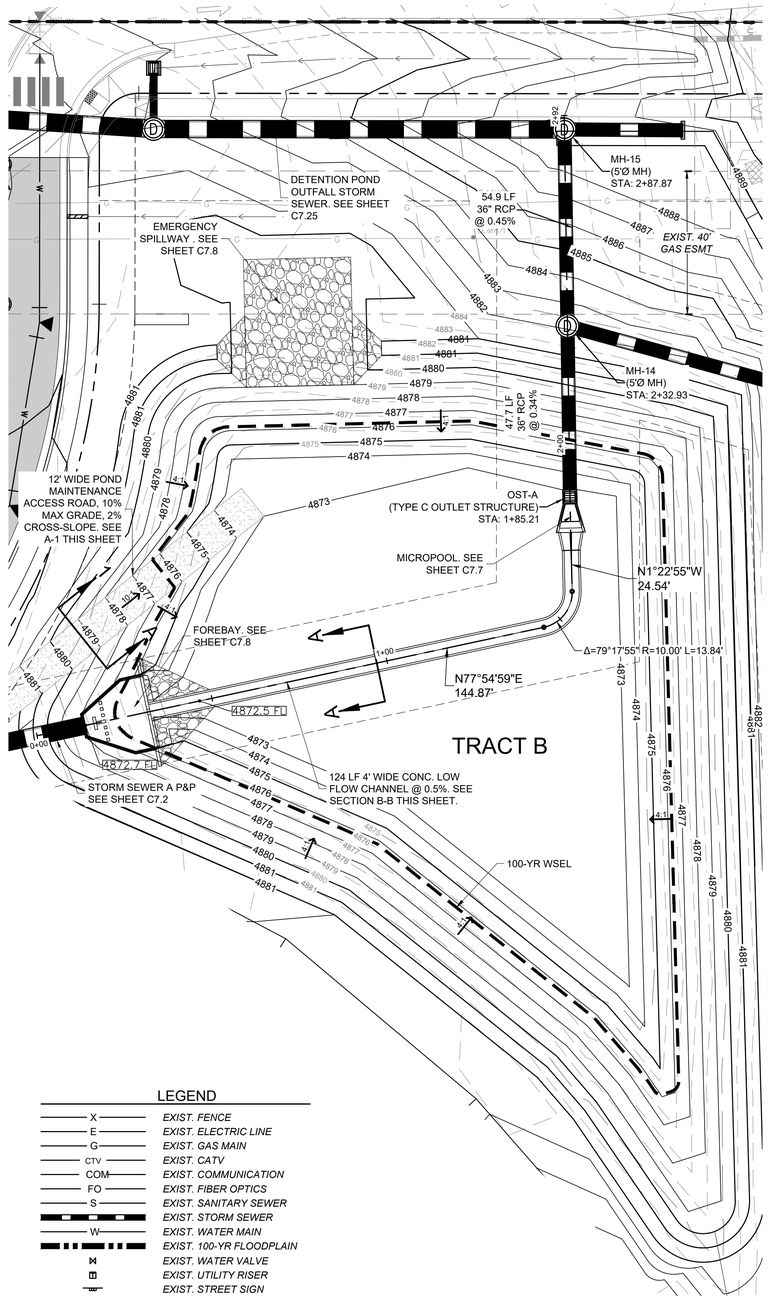
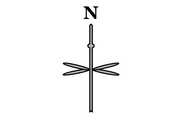
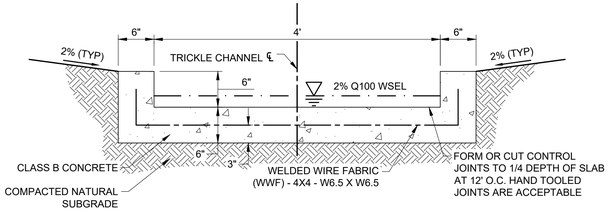


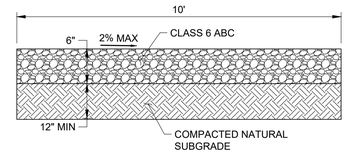


SCALE IN FEET
0 50 100

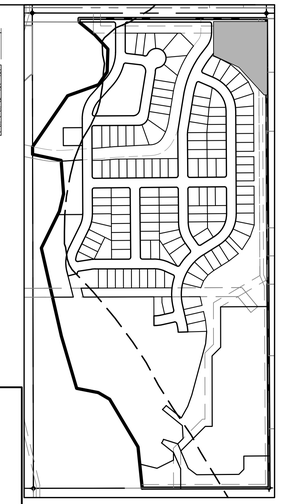
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



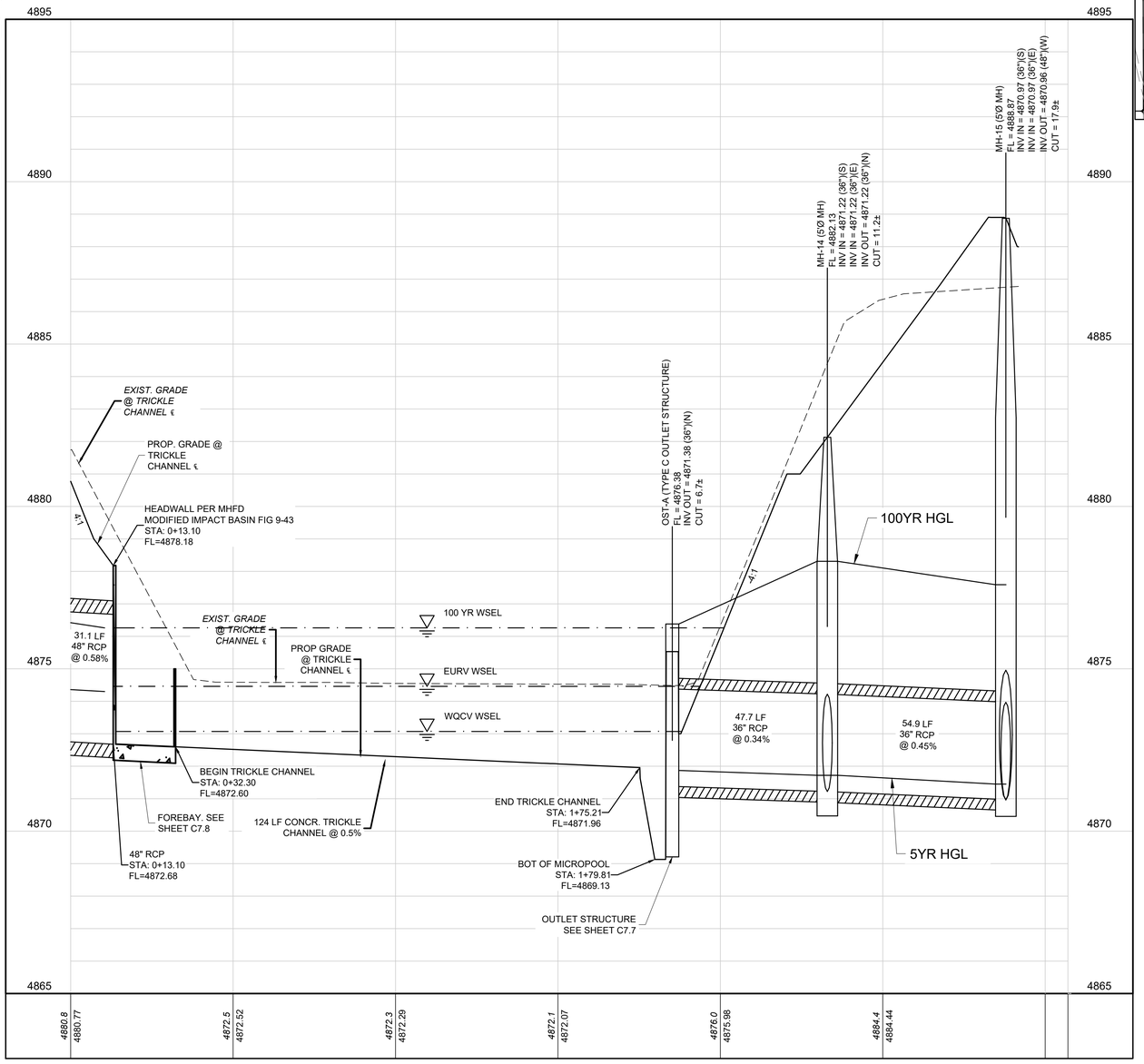
A-A CONCRETE LOW FLOW CHANNEL
SCALE: NTS



A-1 MAINTENANCE ACCESS ROAD
SCALE: 1"=5'



KEYMAP
SCALE: 1" = 400'



PROFILE STM-A6-OUTFALL (STA: 0+00 TO 3+07)
SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL

LEGEND

X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

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No.	REVISION	BY	DATE

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND A PLAN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.6
SHEET 43 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\C7\C7.7 POND A DETAILS.DWG - 2/20/2023 10:17:09 AM - Gregory Rivera

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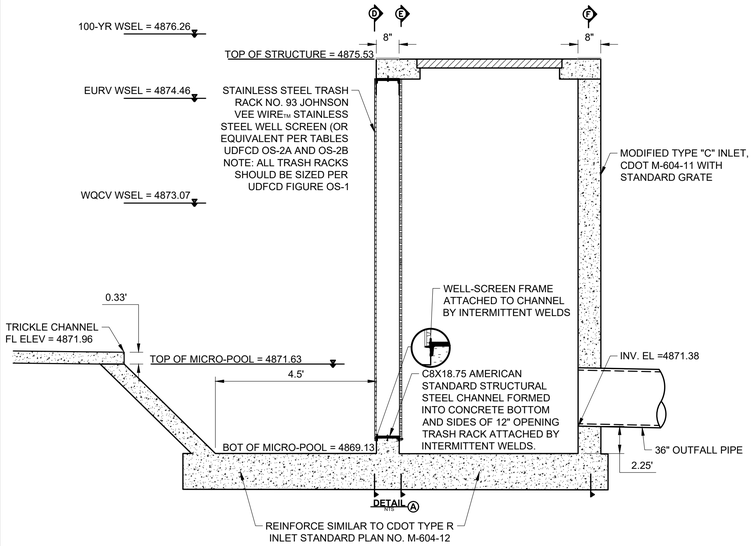
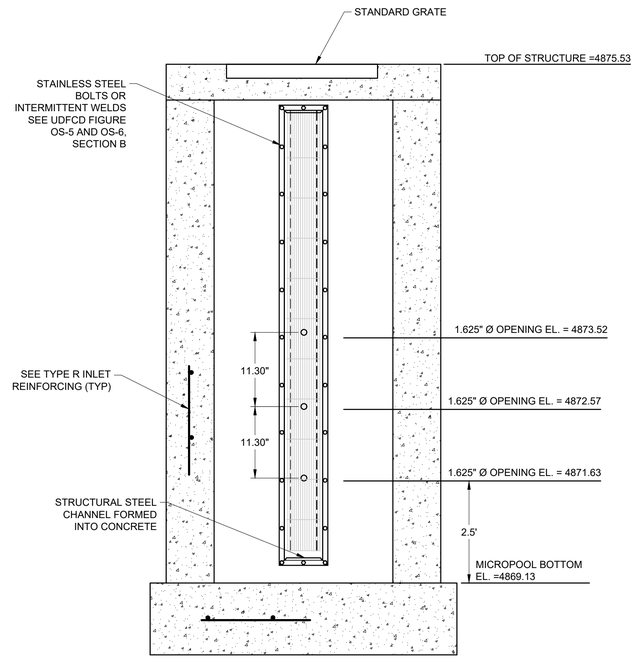
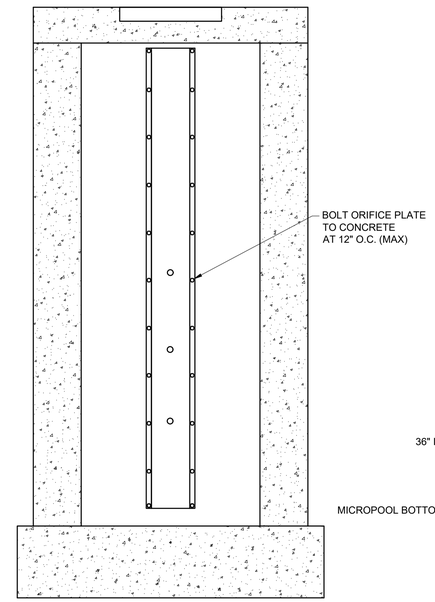
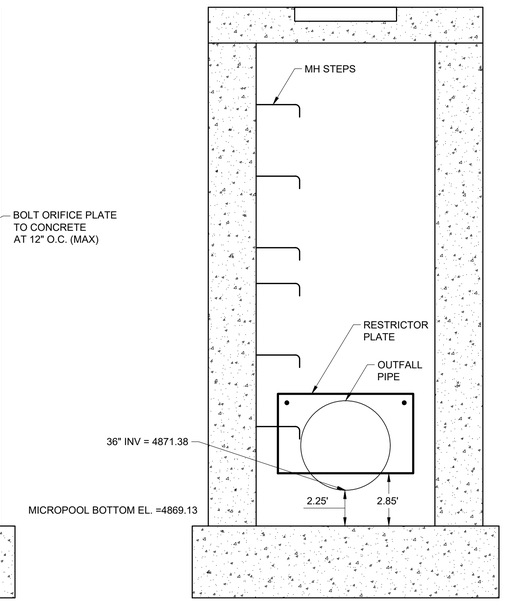




SECTION D
NTS



SECTION E
NTS



SECTION F
NTS

WARNING

KEEP SCREEN AND GRATE CLEAN. UNAUTHORIZED MODIFICATION OF THIS OUTLET IS A CODE VIOLATION

DETENTION WARNING 12" X 12"

POND SIGN
NTS

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1-800-922-1987 or 811
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Denver, CO 80210
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND A DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.7
SHEET 44 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CDVC7.7 POND A DETAILS.DWG - 2/20/2023 10:17:22 AM - Gregory Rivera

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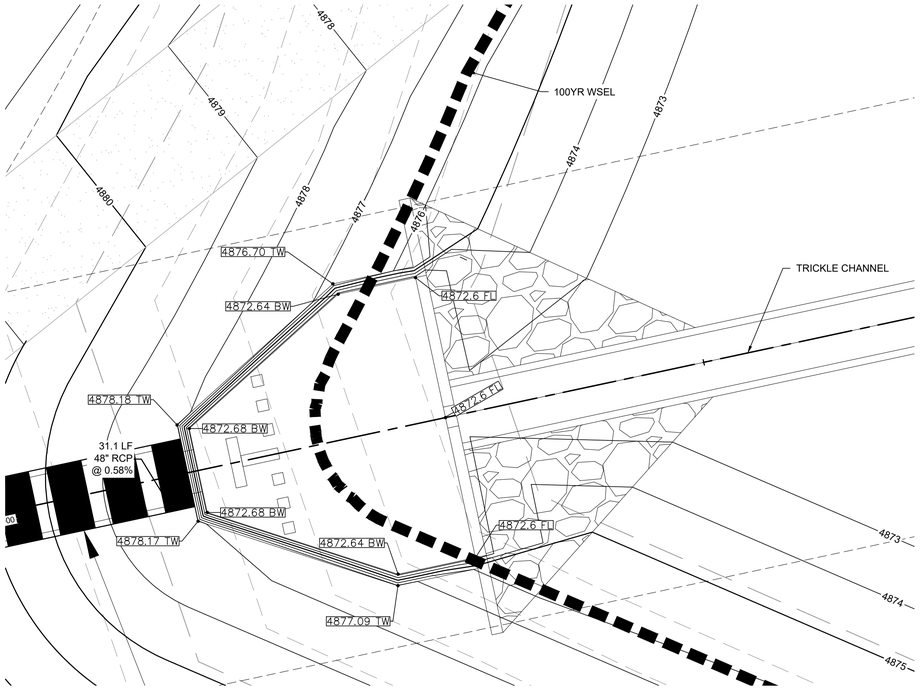
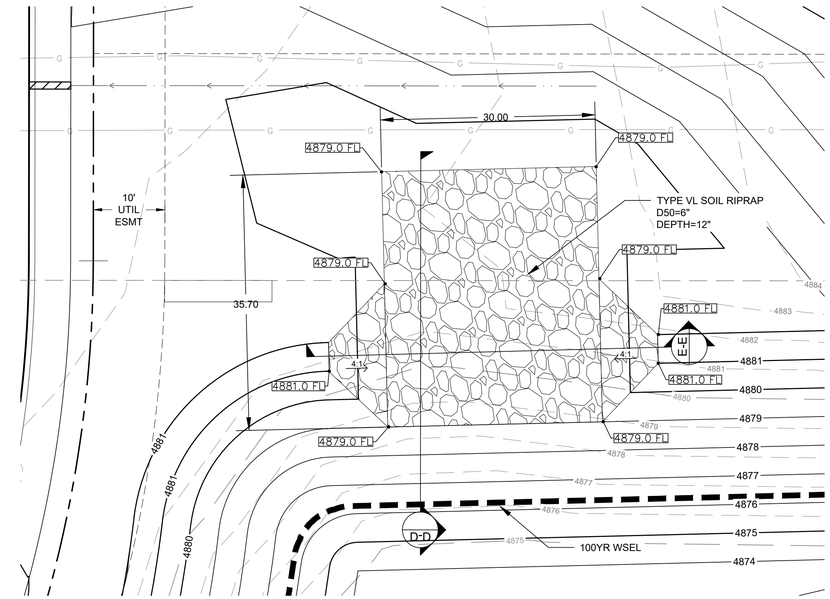


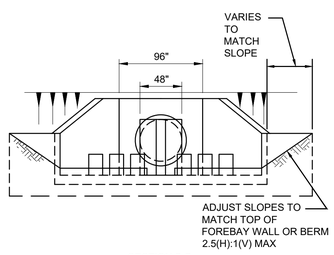
A POND A MODIFIED IMPACT STILLING BASIN PLAN VIEW

SCALE: 1" = 5'

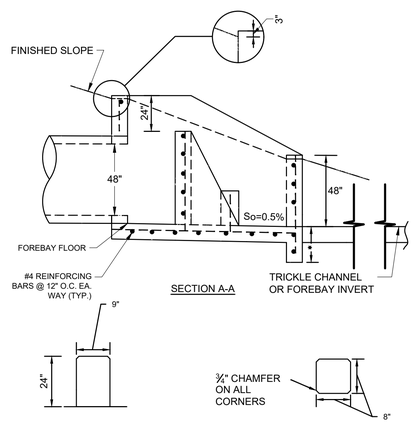


C POND A EMERGENCY OVERFLOW SPILLWAY

SCALE: 1" = 10'



SECTION B-B



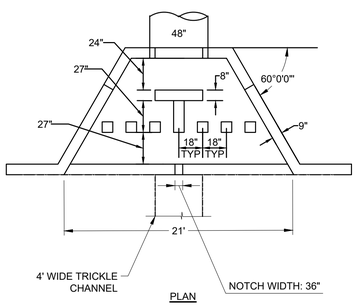
SECTION A-A

ELEVATION
(LOOKING UPSTREAM)

PLAN VIEW

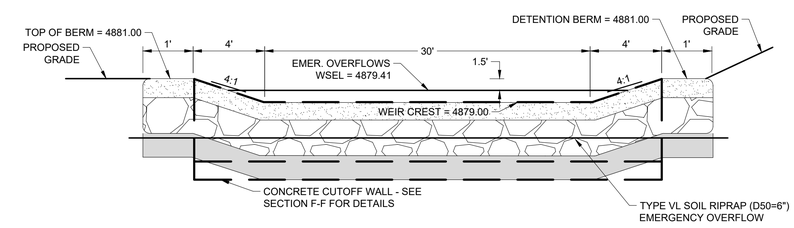
BAFFLE BLOCK GEOMETRY

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 2 OF 2)



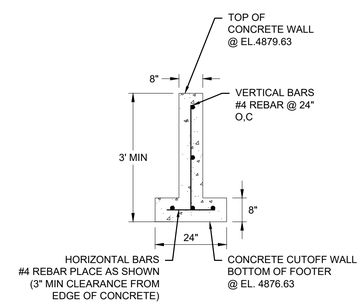
PLAN

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 1 OF 2)



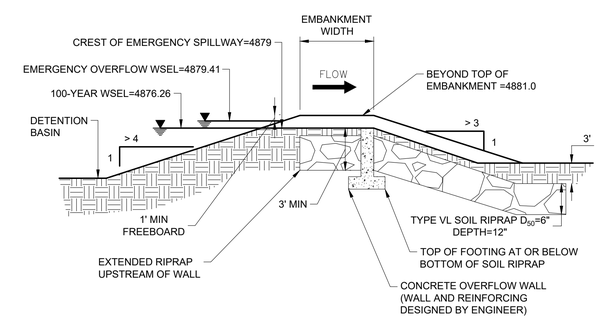
E-E EMERGENCY OVERFLOW SPILLWAY PROFILE

SCALE: NTS



F-F CUTOFF WALL CROSS SECTION

SCALE: NTS



D-D EMERGENCY OVERFLOW SPILLWAY SECTION

SCALE: NTS

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CENTER OF COLORADO
1-800-922-1987 or 811
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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND A FOREBAY DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.8

SHEET 45 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.7 POND A DETAILS.DWG - 2/20/2023 10:17:44 AM - Gregory Rivera

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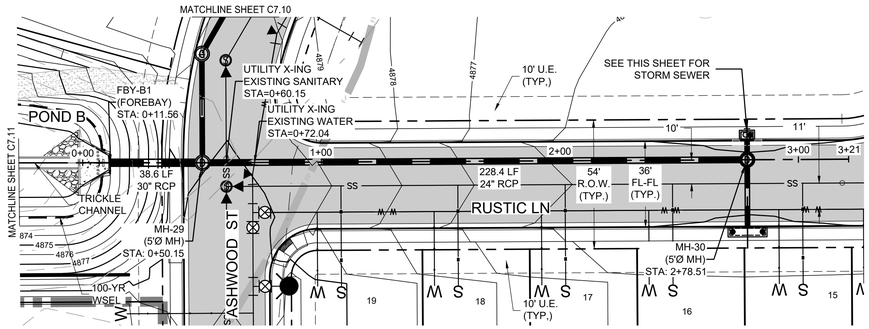
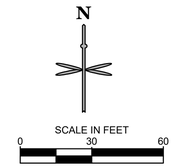
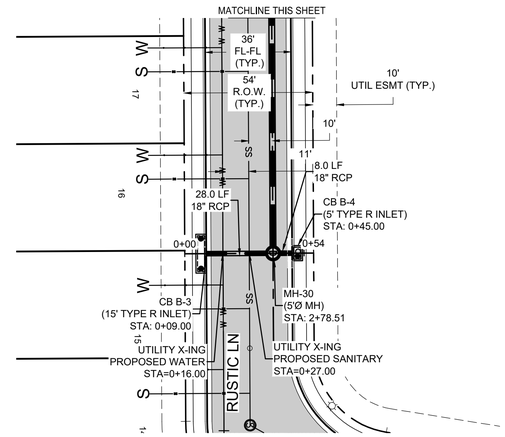
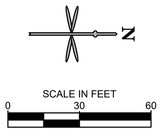
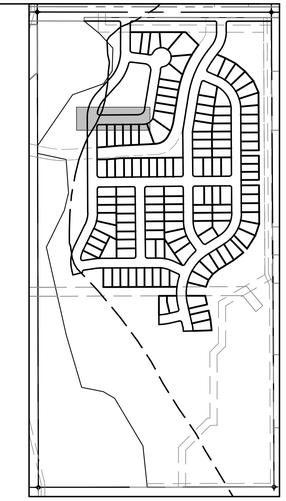






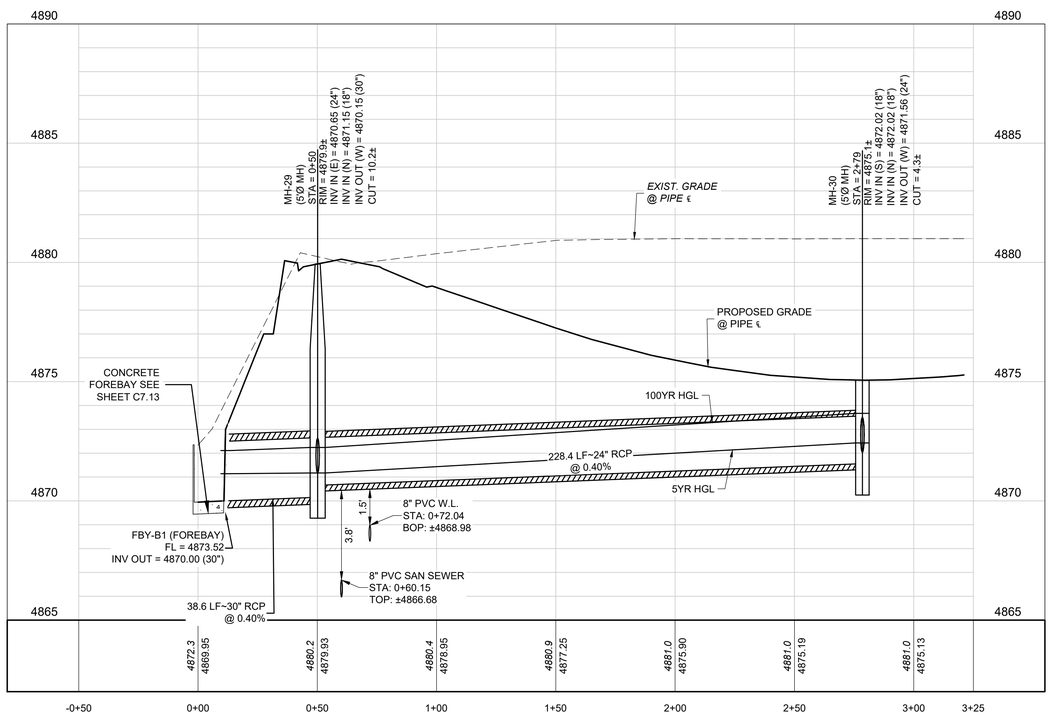




KEYMAP
SCALE: 1" = 400'

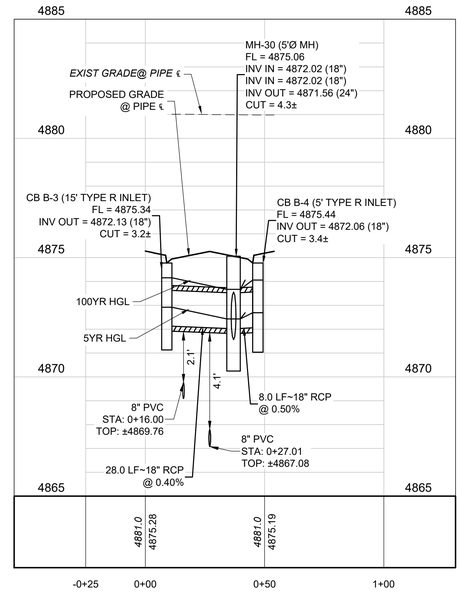
LEGEND

X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



PROFILE STM-B4-RUSTIC (STA: -0+50 TO 3+25)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-B5-RUSTIC (STA: -0+25 TO 1+00)

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CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND B - RUSTIC

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.9
SHEET 46 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C3\C7.10 STORM PLAN & PROFILE - POND B.DWG - 2/20/2023 3:42:25 PM - Gregory Rivera

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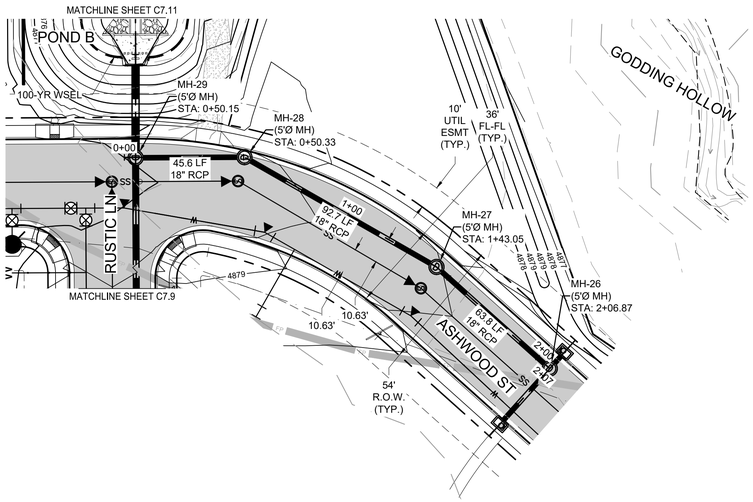
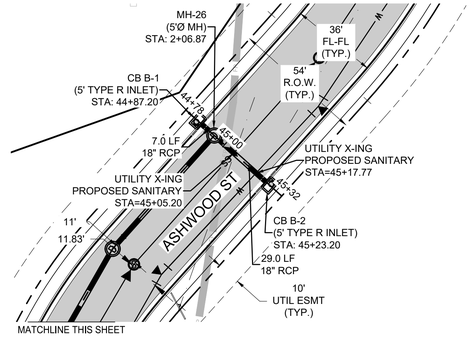
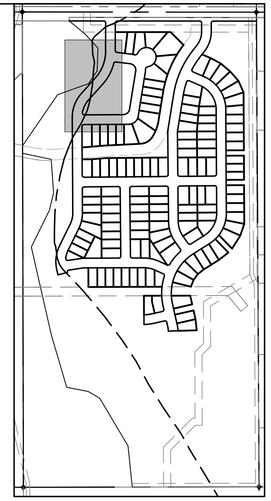
P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.10 STORM PLAN & PROFILE - POND B.DWG - 2/20/2023 3:34:36 PM - Gregory Rivera







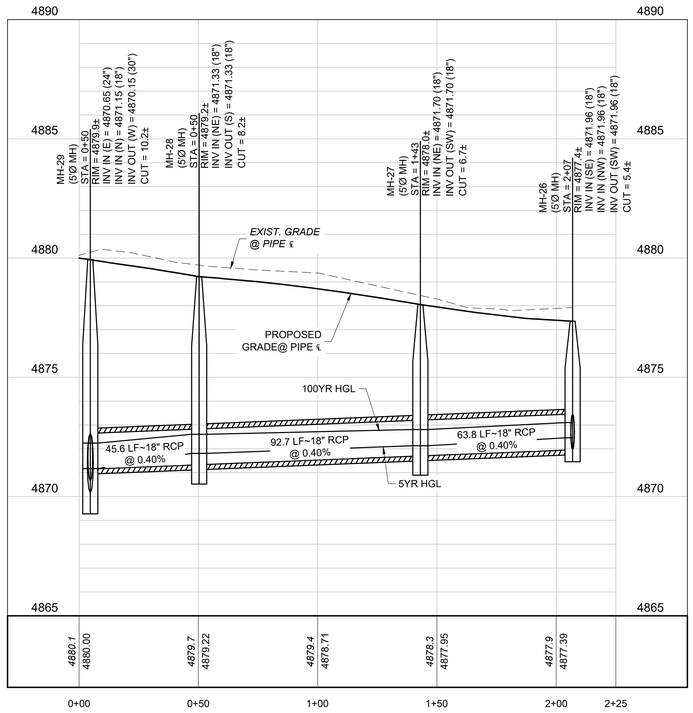
KEYMAP
SCALE: 1" = 400'

SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

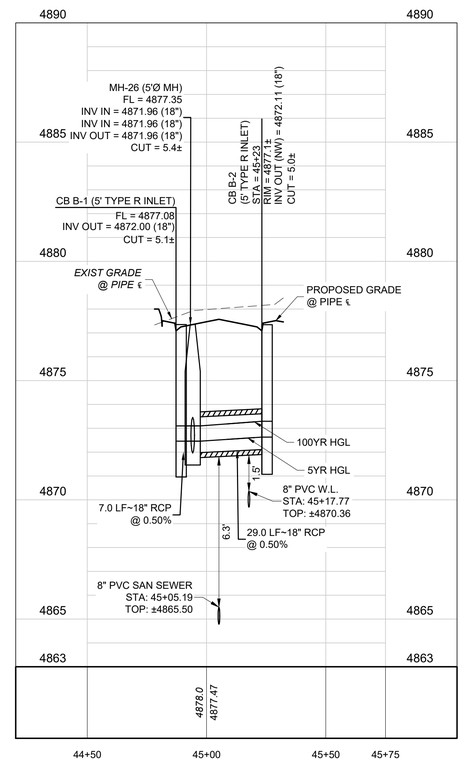
LEGEND

X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



PROFILE STM-B2-ASHWOOD (STA: 0+00 TO 2+25)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-B3-ASHWOOD (STA: 44+50 TO 45+75)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND B - ASHWOOD

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.10
SHEET 47 OF 109

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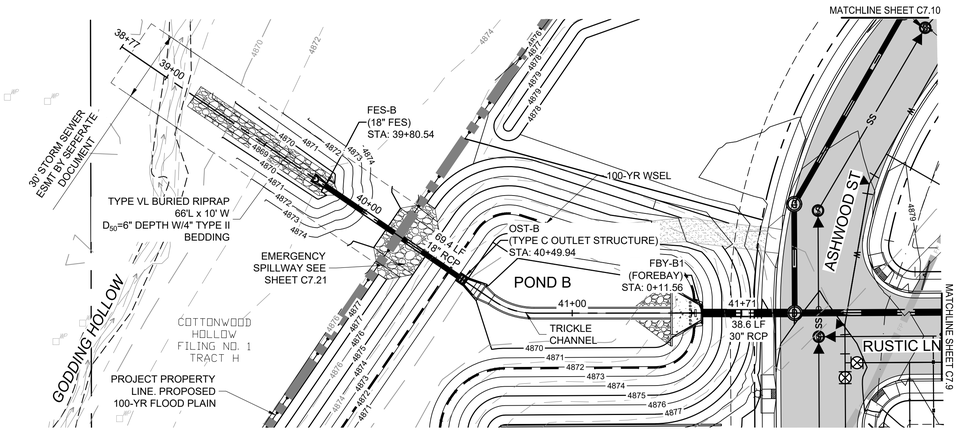
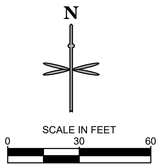
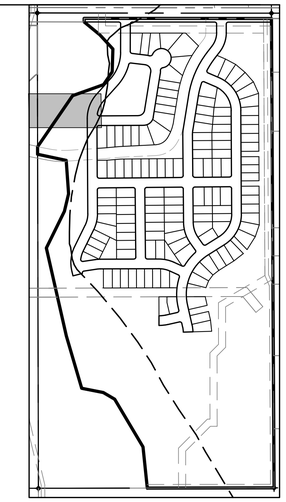


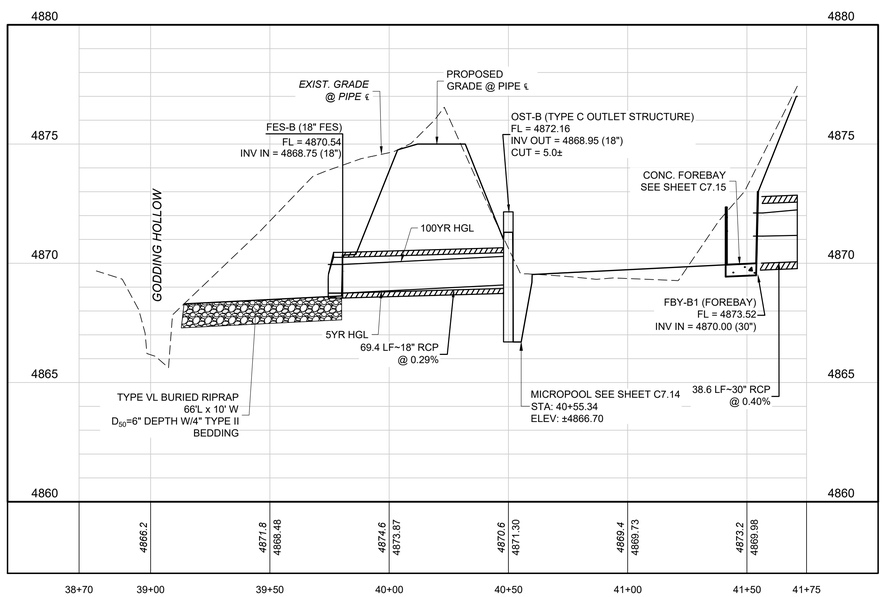




KEYMAP
SCALE: 1" = 400'

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



PROFILE STM-B6-OUTALL (STA: 38+70 TO 41+75)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

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1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
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No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND B - OUTFALL

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.11
SHEET 48 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\98 CAD\SHEETS\CD\C7.10 STORM PLAN & PROFILE - POND B.DWG - 2/20/2023 10:19:50 AM - Gregory Rivera

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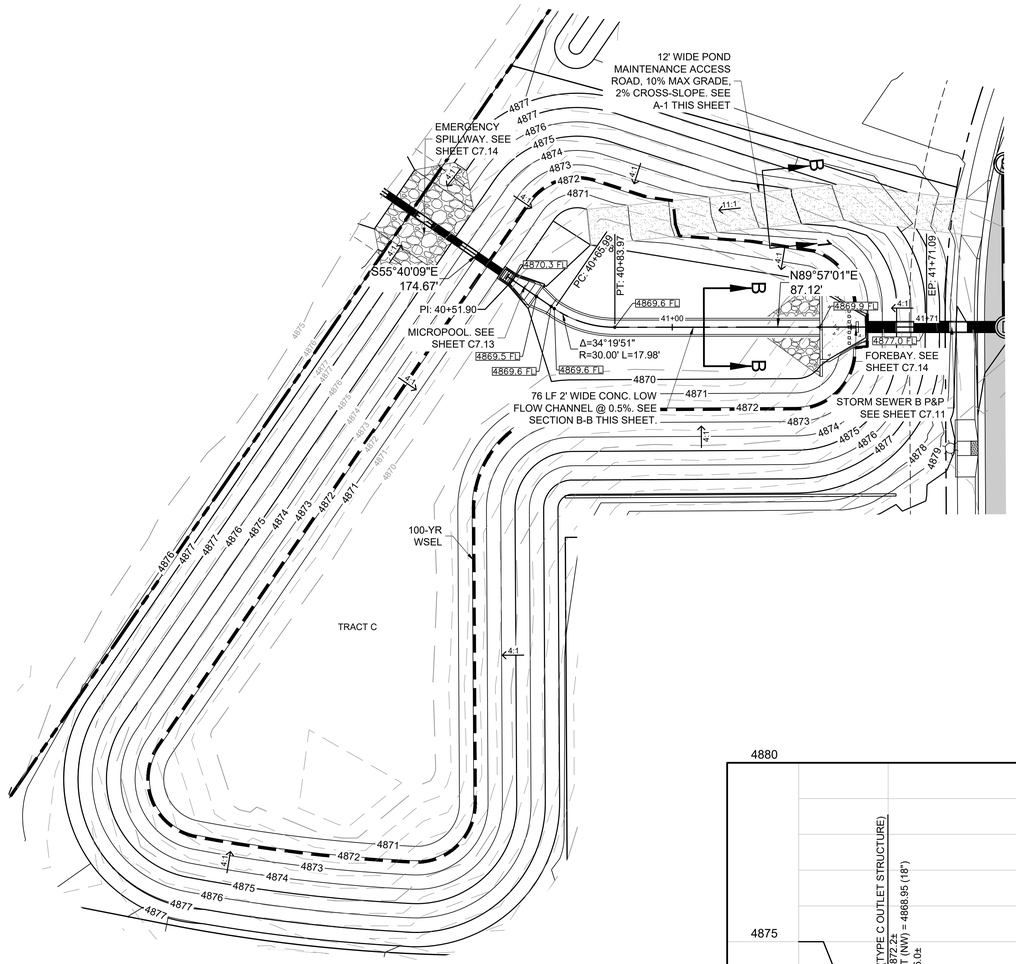
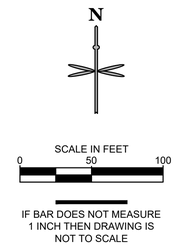
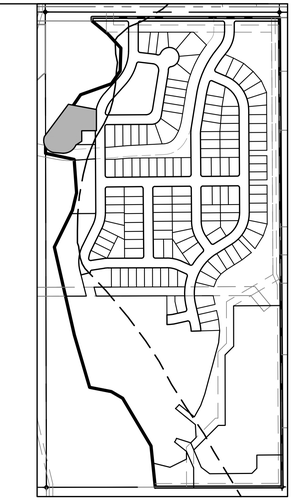


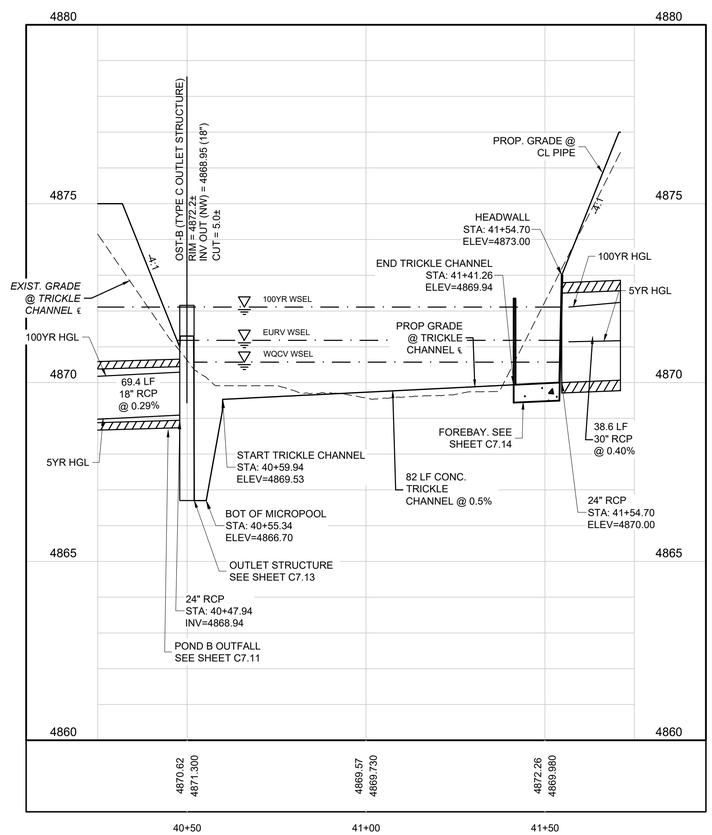




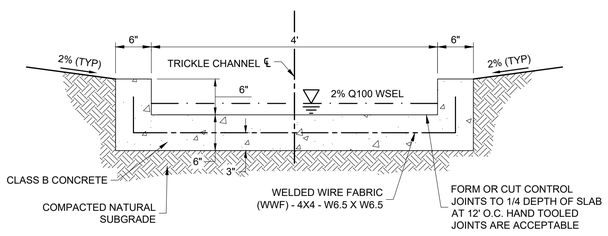
KEYMAP
SCALE: 1" = 400'

LEGEND

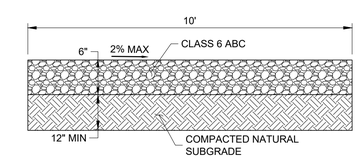
X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
•MP	PROP. MARKER POST



PROFILE STM-B6-OUTALL (STA: 40+25 TO 41+75)
SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL



B-B CONCRETE LOW FLOW CHANNEL
SCALE: NTS



B-1 MAINTENANCE ACCESS ROAD
SCALE: 1"=5'

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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

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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.13 POND B DETAILS.DWG - 2/20/2023 10:20:34 AM - Gregory Rivera

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND B PLAN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.12
SHEET 49 OF 109

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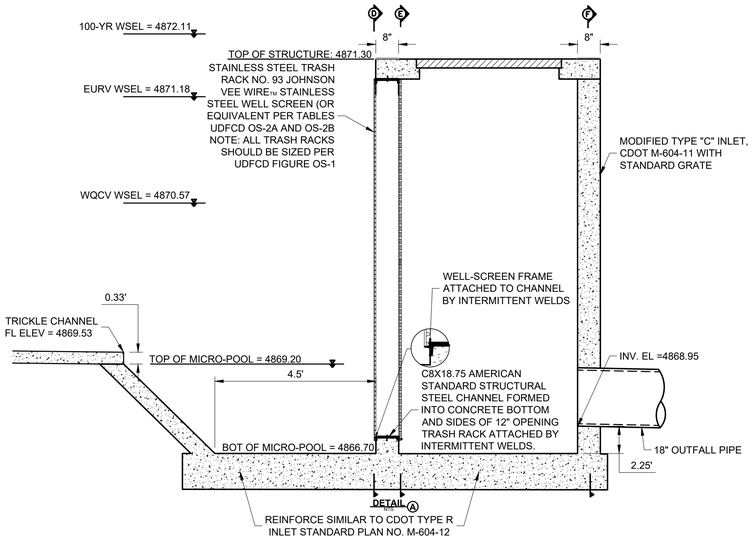
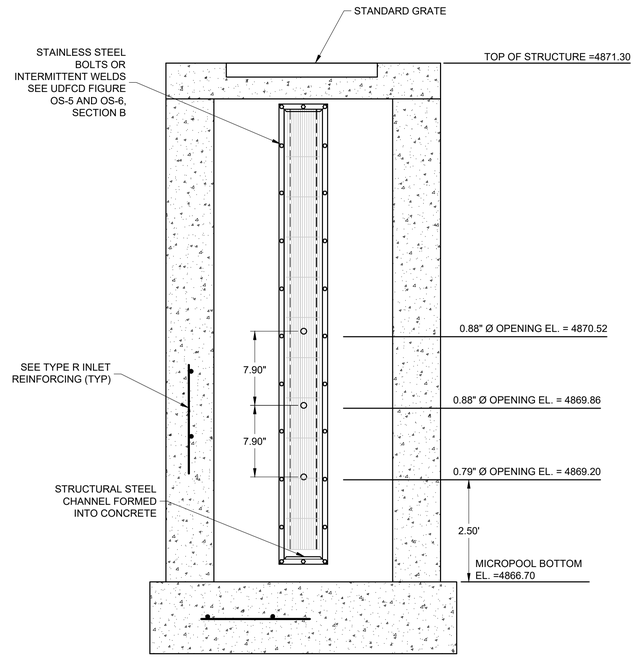
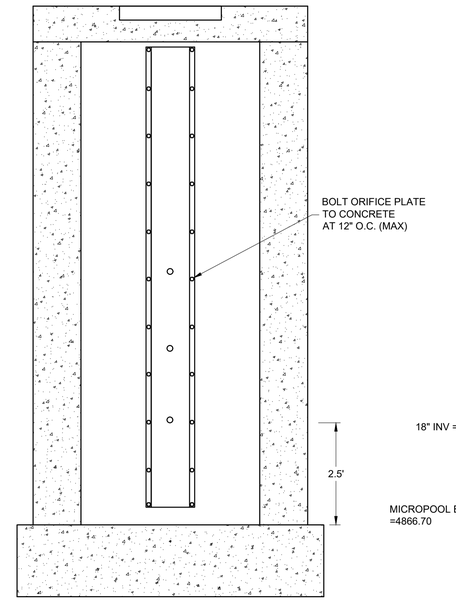
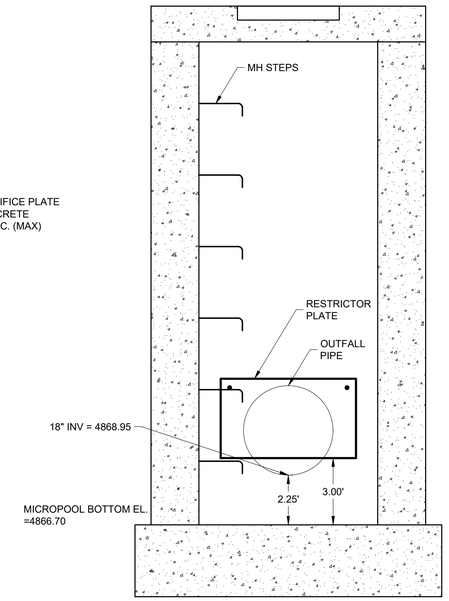




SECTION D
NTS



SECTION E
NTS



SECTION F
NTS

WARNING

KEEP SCREEN AND GRATE CLEAN. UNAUTHORIZED MODIFICATION OF THIS OUTLET IS A CODE VIOLATION

DETENTION WARNING 12" X 12"

POND SIGN
NTS

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.13 POND B DETAILS.DWG - 2/20/2023 10:20:43 AM - Gregory Rivera

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504

POND B DETAILS

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/14/2023

C7.13
SHEET 50 OF 109

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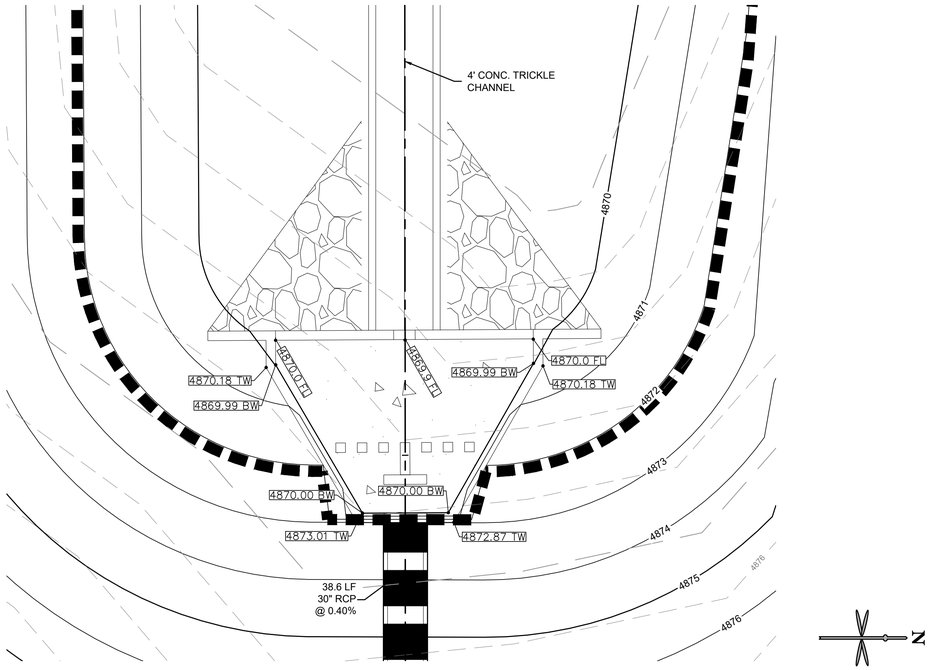
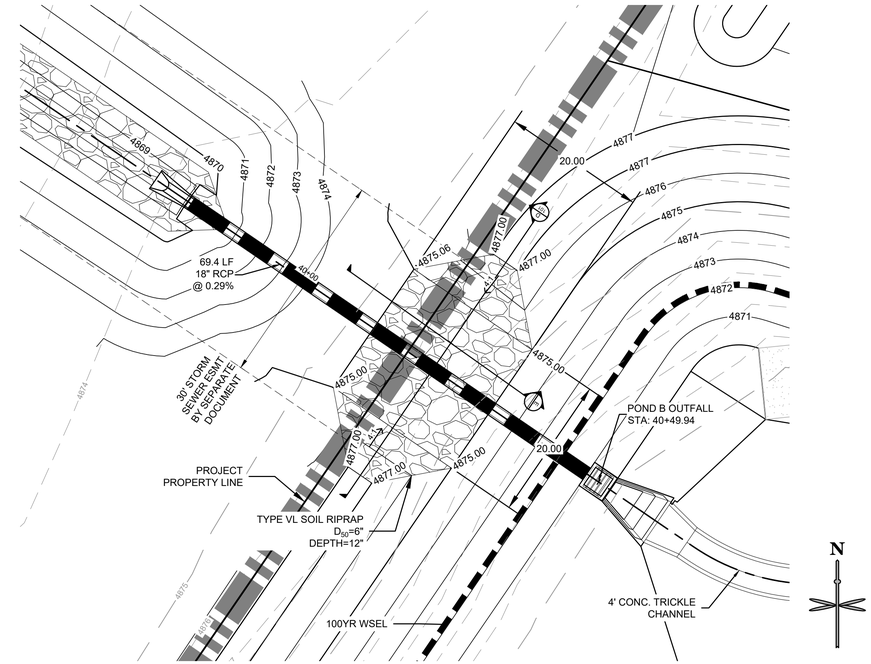


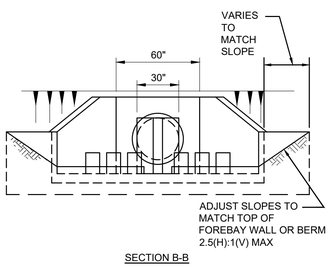
A POND B MODIFIED IMPACT STILLING BASIN PLAN VIEW

SCALE: 1" = 5'

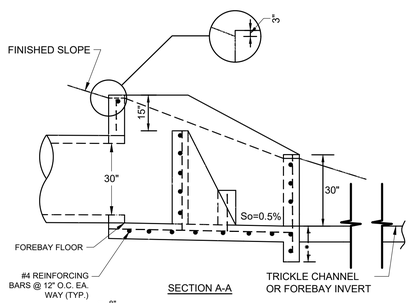


C POND B EMERGENCY OVERFLOW SPILLWAY

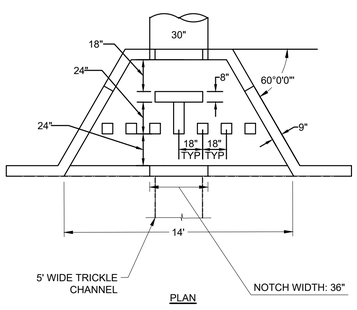
SCALE: 1" = 10'



SECTION B-B

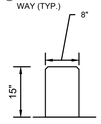


SECTION A-A

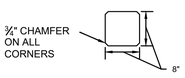


PLAN

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 1 OF 2)



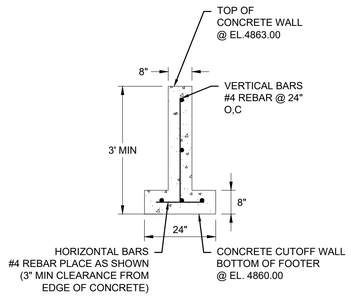
ELEVATION
(LOOKING UPSTREAM)



PLAN VIEW

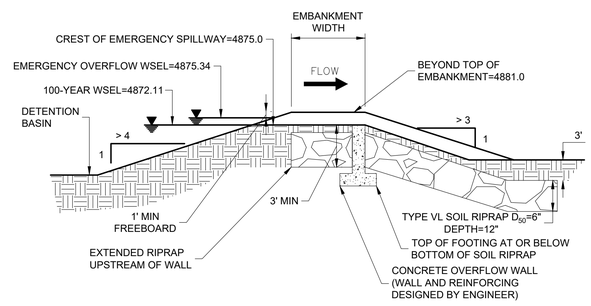
BAFFLE BLOCK GEOMETRY

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 2 OF 2)



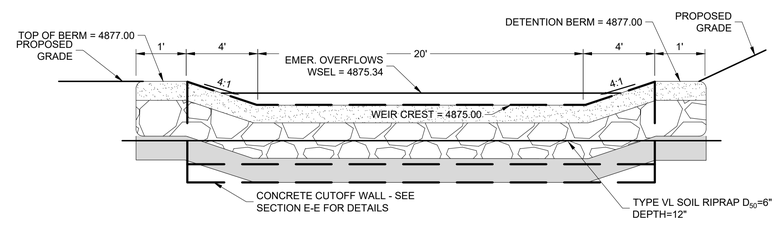
E-E CUTOFF WALL CROSS SECTION

SCALE: NTS



E-E EMERGENCY OVERFLOW SPILLWAY PROFILE

SCALE: NTS



D-D EMERGENCY OVERFLOW SPILLWAY SECTION

SCALE: NTS

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1-800-922-1987 or 811

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No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND B FOREBAY DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.14

SHEET 51 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.13 POND B DETAILS.DWG - 2/20/2023 10:21:05 AM - Gregory Rivera

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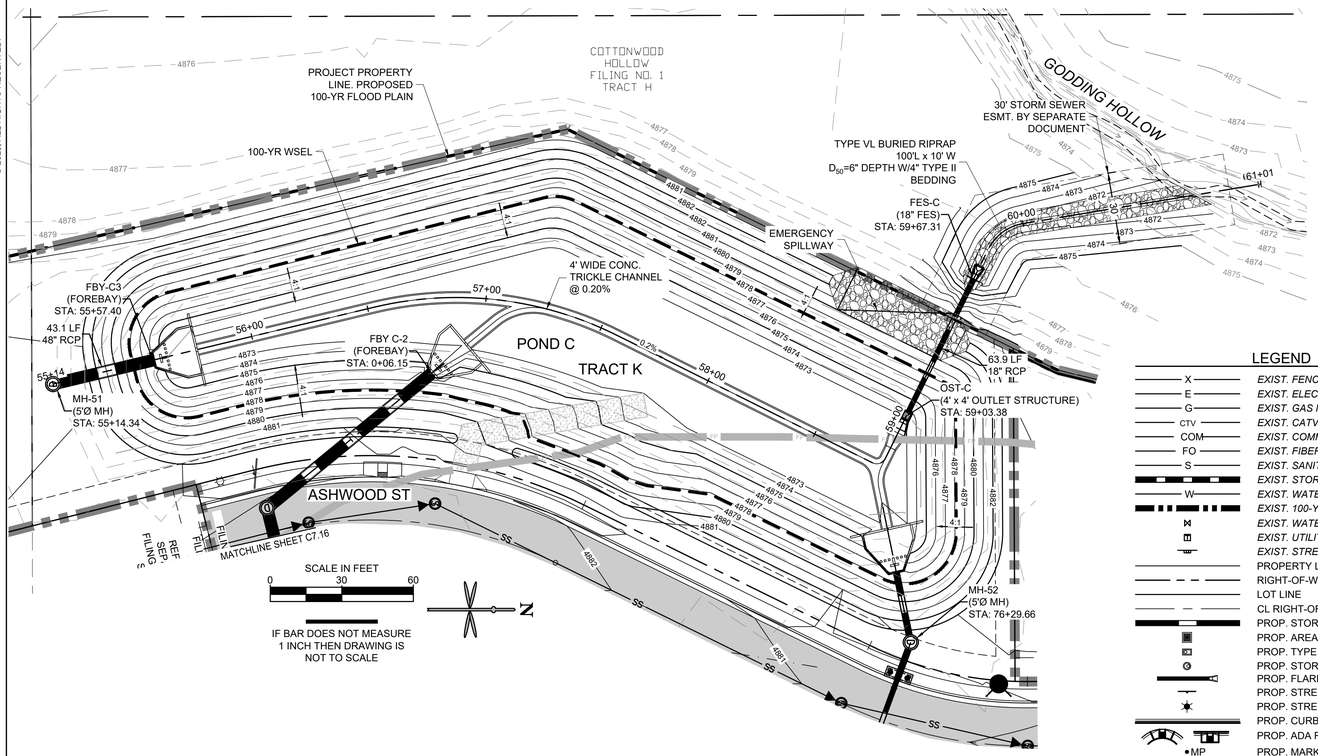
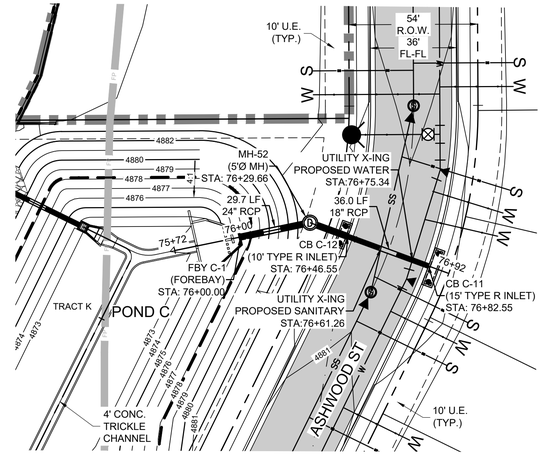
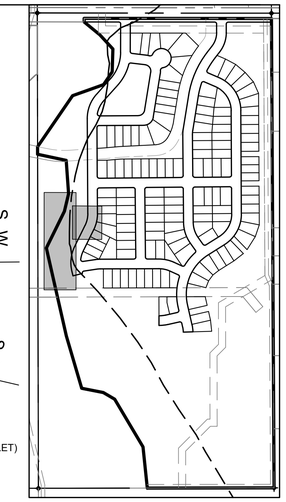


LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
•MP	PROP. MARKER POST



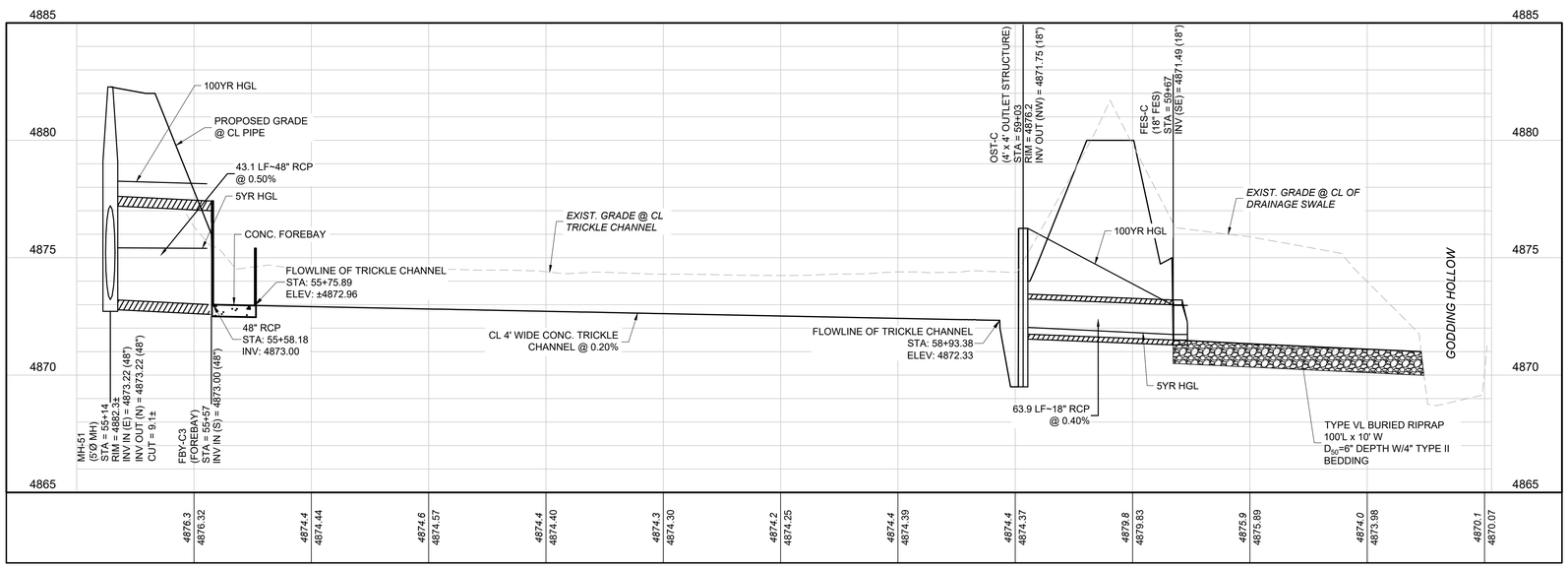


KEYMAP
SCALE: 1" = 400'

N

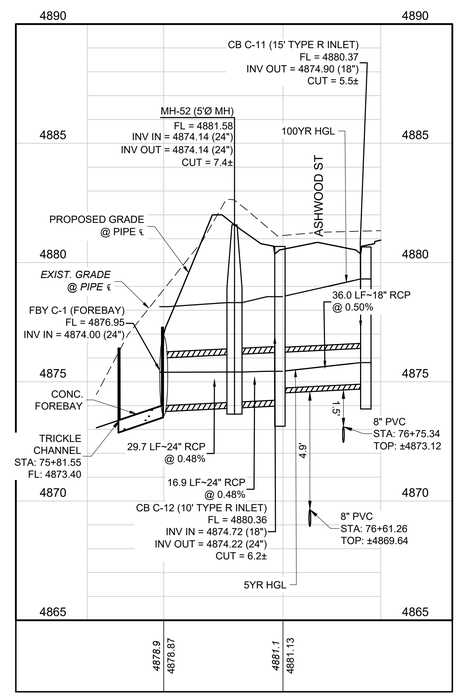
SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



PROFILE STM-C8-OUTFALL (STA: 55+00 TO 61+03)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-C1-ASHWWOD (STA: 75+68 TO 76+91)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

REFER TO SHEET C0.1 FOR PROJECT NOTES

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND C - ASHWOOD & OUTFALL

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C7.15
SHEET 52 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.16 STORM PLAN & PROFILE - POND C.DWG - 2/20/2023 3:35:45 PM - Gregory Rivera

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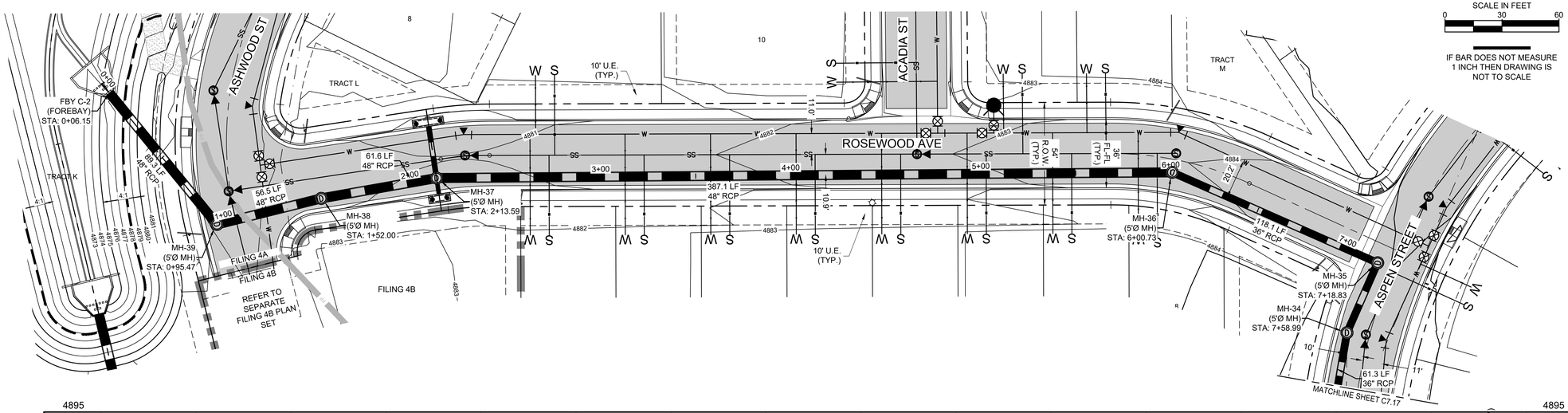
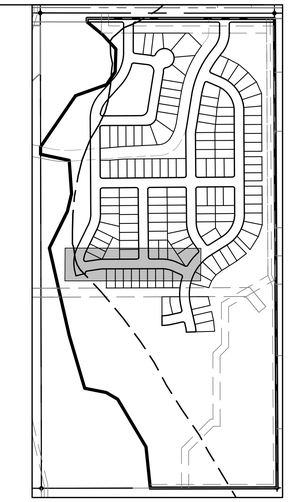


N

SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
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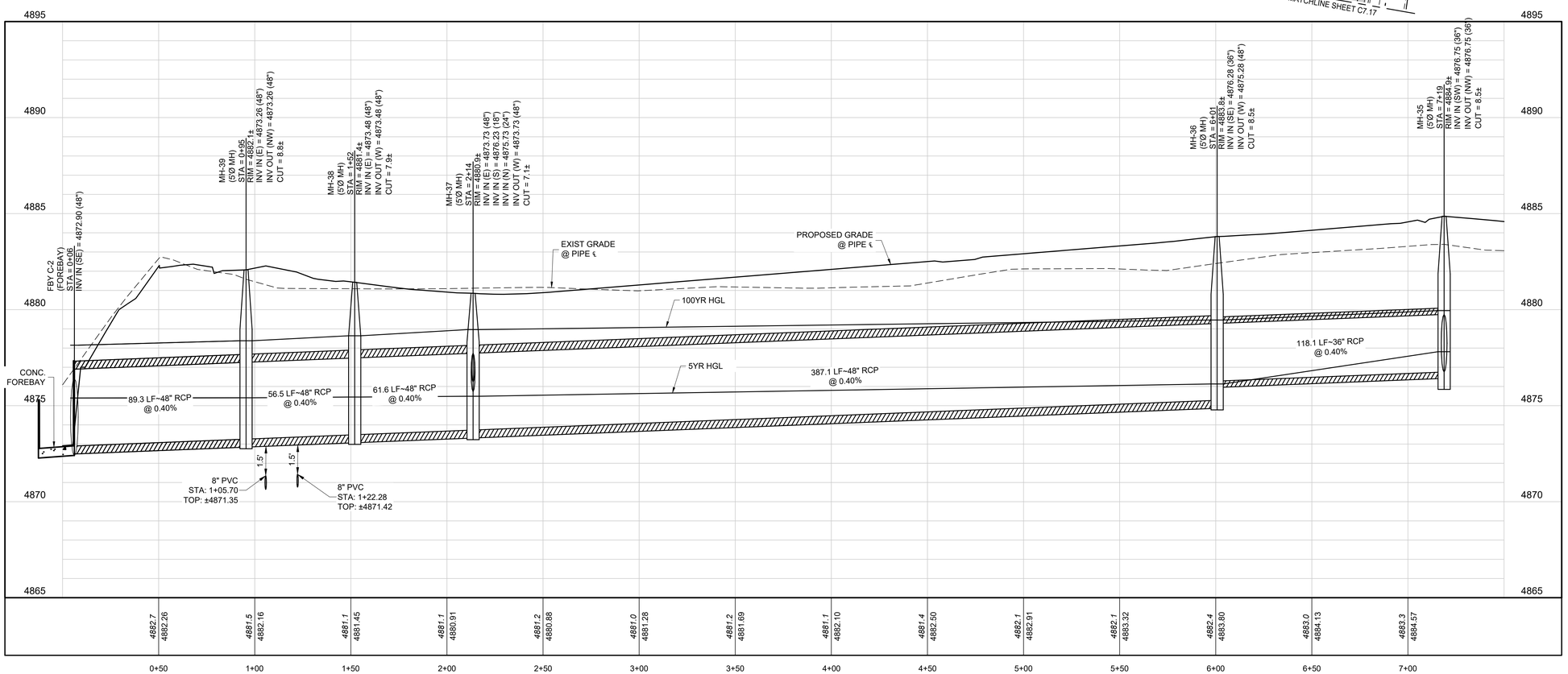
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- MP — PROP. MARKER POST



PROFILE STM-C3-ROSEWOOD (STA: 0+00 TO 7+50)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

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FOR PROJECT NOTES

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND C - ROSEWOOD

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C7.16
SHEET 53 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.16 STORM PLAN & PROFILE - POND C.DWG - 2/20/2023 10:22:26 AM - Gregory Rivera

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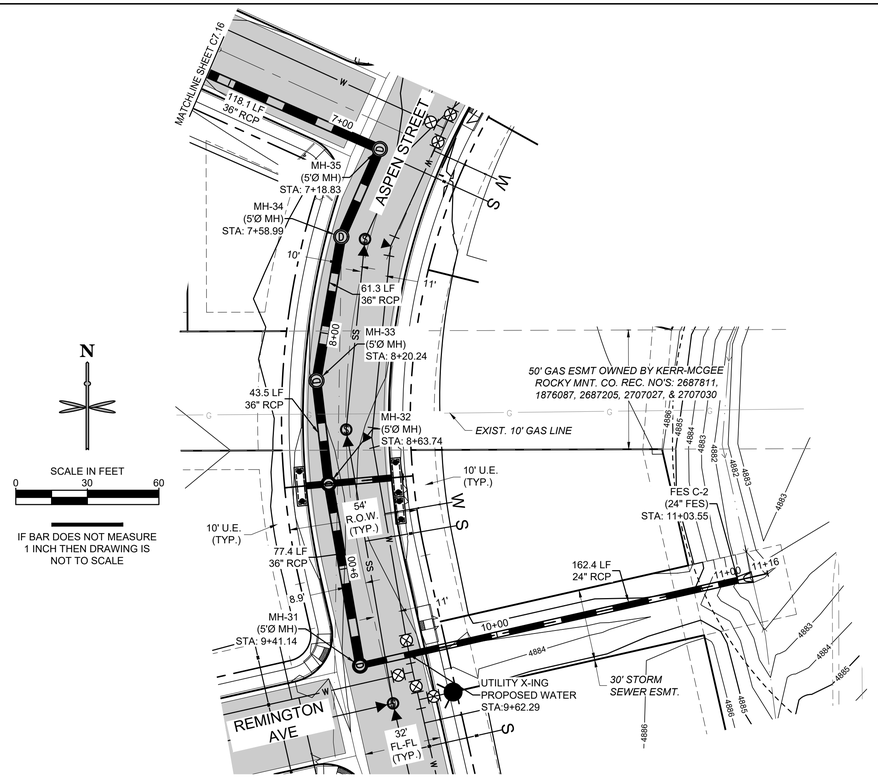

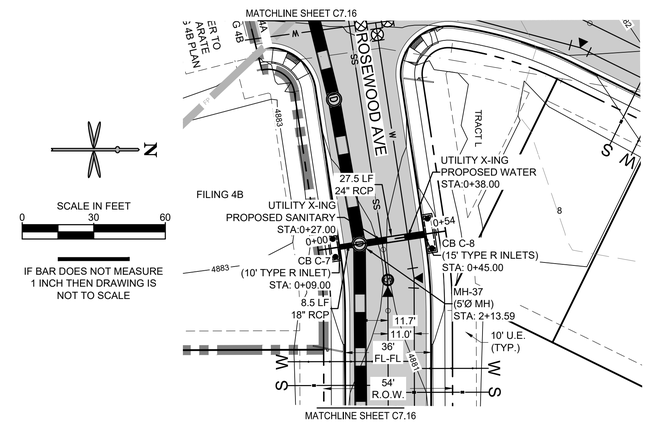

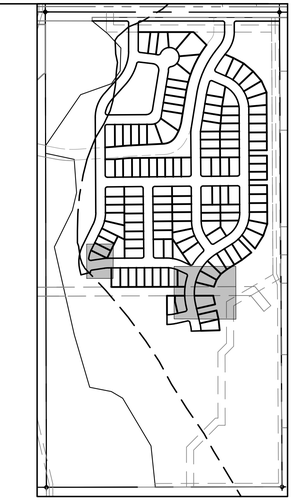

KEYMAP
SCALE: 1" = 400'

LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
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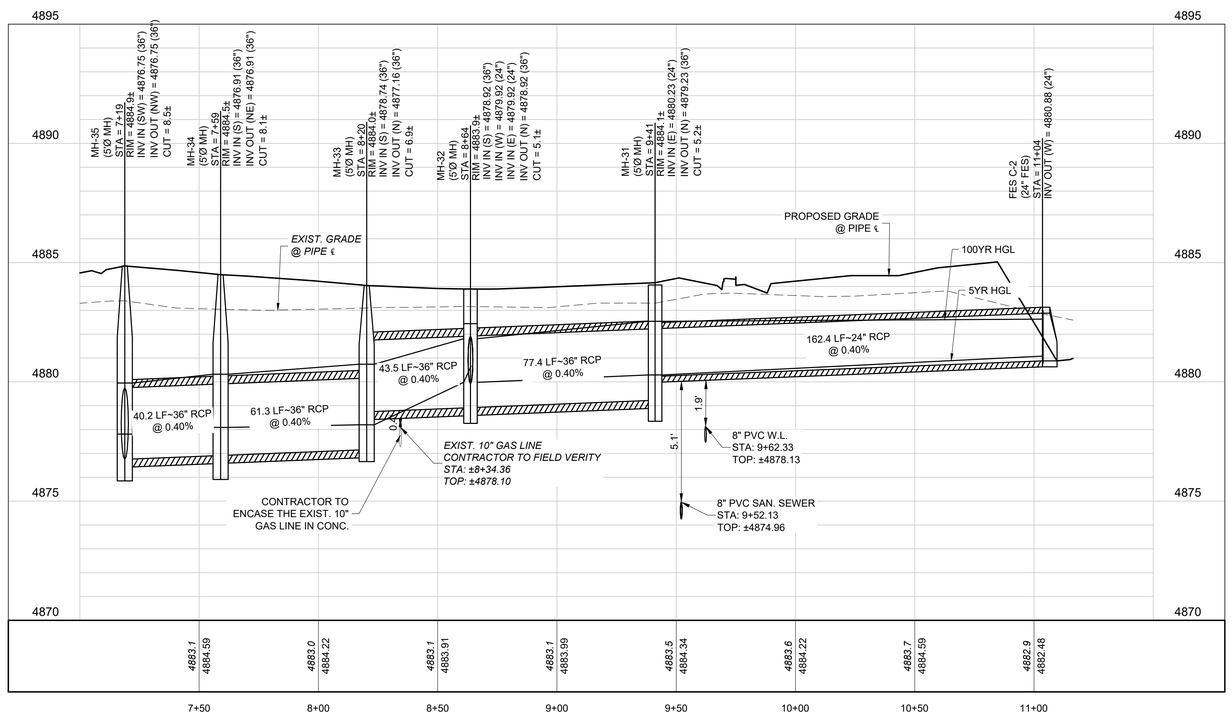
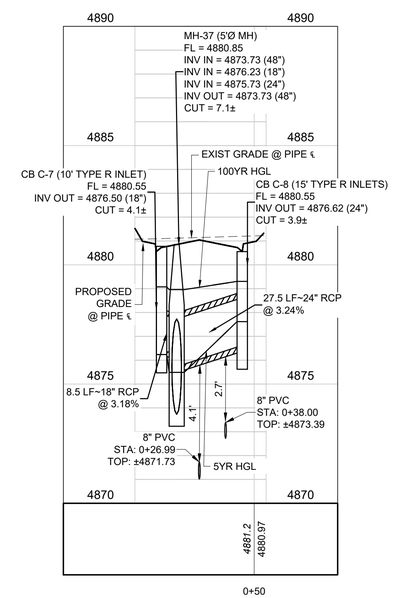
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- MP — PROP. MARKER POST



PROFILE STM-C3-ROSEWOOD (STA: 7+00 TO 11+50)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-C4-ROSEWOOD (STA: 0+00 TO 0+55)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

No.	REVISION	BY	DATE

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FIRESTONE
COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND C -
ROSEWOOD & REMINGTON

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C7.17
SHEET 54 OF 109

811
Know what's below.
Call before you dig.

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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FOR PROJECT NOTES

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ½ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.16 STORM PLAN & PROFILE - POND C.DWG - 2/20/2023 3:36:19 PM - Gregory Rosura

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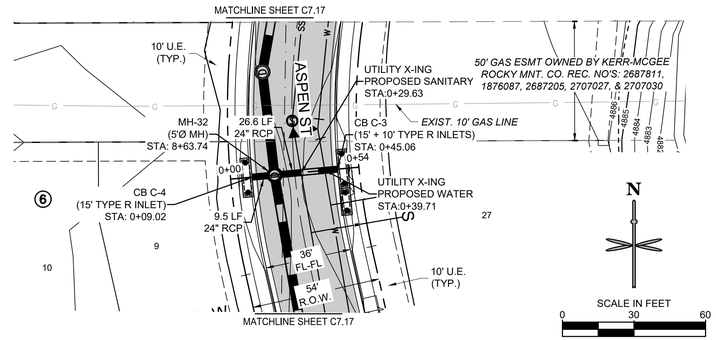
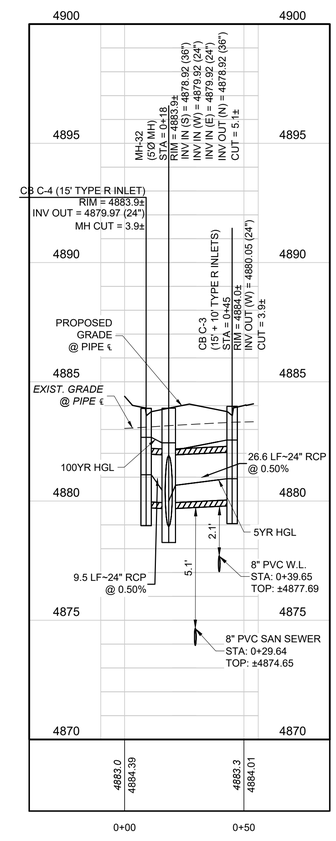
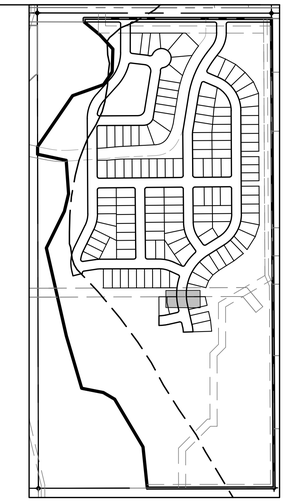




PROFILE STM-C7-ASPEN (STA: -0+10 TO 0+56)

SCALES: 1"=30' HORIZONTAL, 1"=3' VERTICAL



KEYMAP
SCALE: 1" = 400'

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
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	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - POND C - ROSEWOOD & ASPEN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/09/2023

C7.18
SHEET 55 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.18 STORM PLAN & PROFILE - POND C.DWG - 2/20/2023 3:36:39 PM - Gregory Rivera

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1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

STORM PROFILE NOTES:

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FOR PROJECT NOTES

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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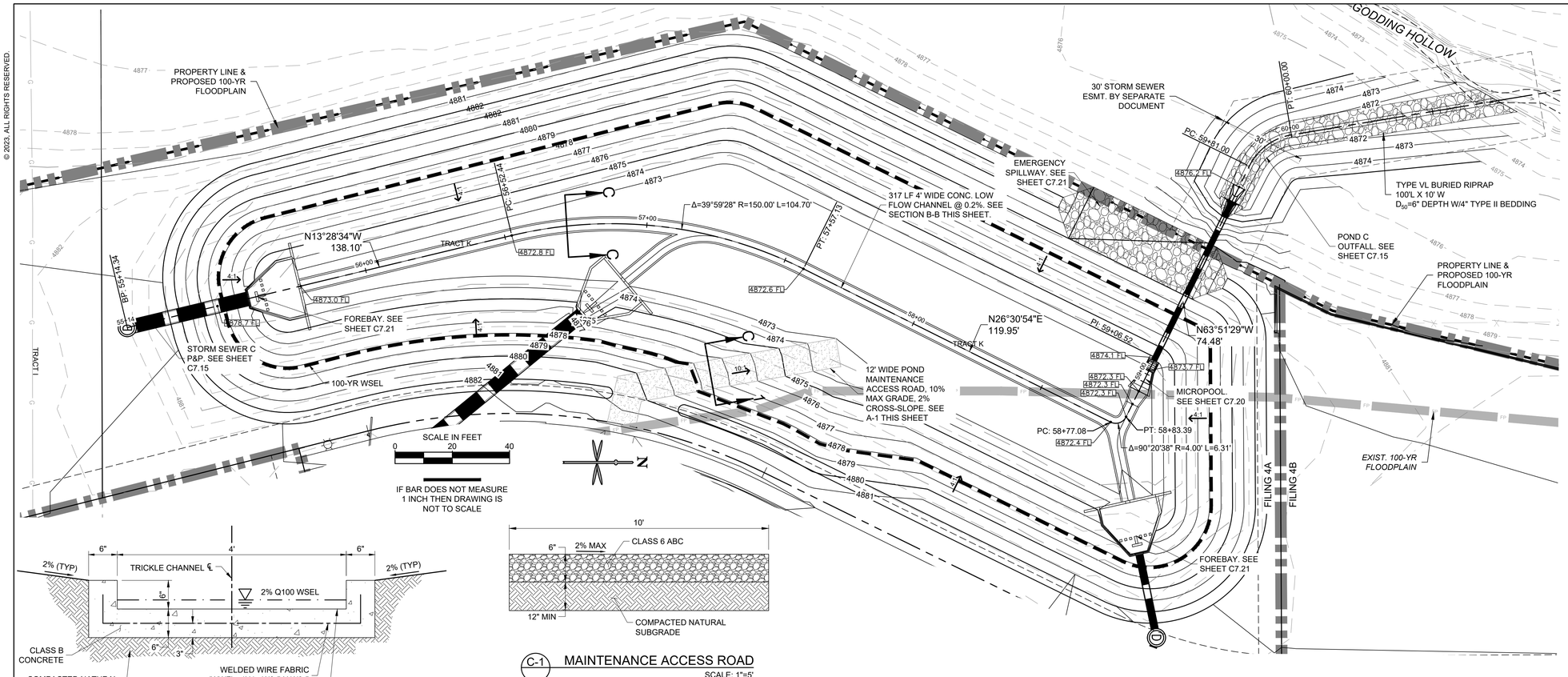
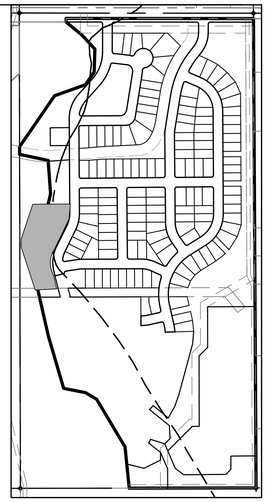
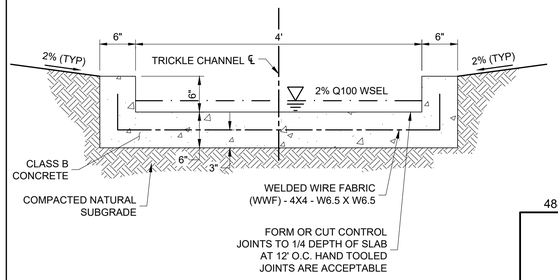


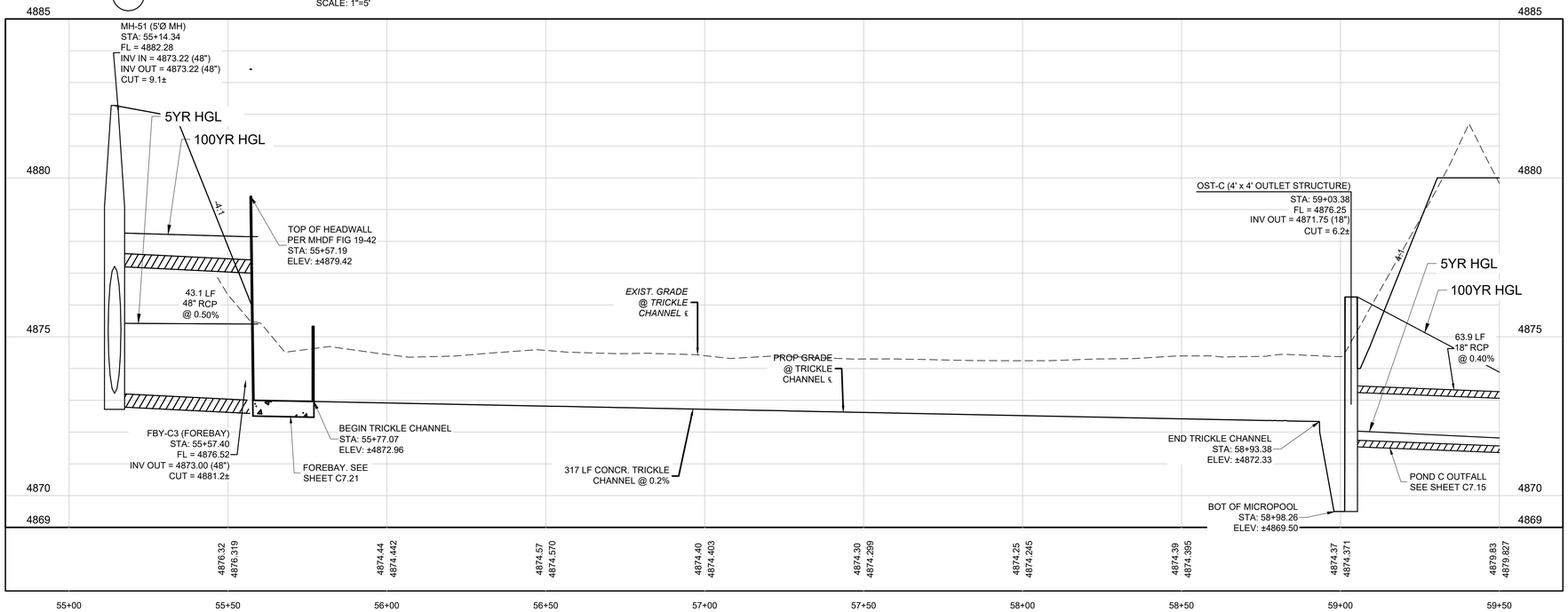


KEYMAP
SCALE: 1" = 400'



C-C CONCRETE LOW FLOW CHANNEL
SCALE: NTS

C-1 MAINTENANCE ACCESS ROAD
SCALE: 1"=5'



PROFILE STM-C8-OUTFALL (STA: 55+00 TO 59+50)
SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL

LEGEND

X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
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	PROP. STORM SEWER
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	PROP. TYPE 'R' INLET
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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND C PLAN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.19
SHEET 56 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C7\C7.21 POND C DETAILS.DWG - 2/20/2023 10:23:53 AM - Gregory Rivera

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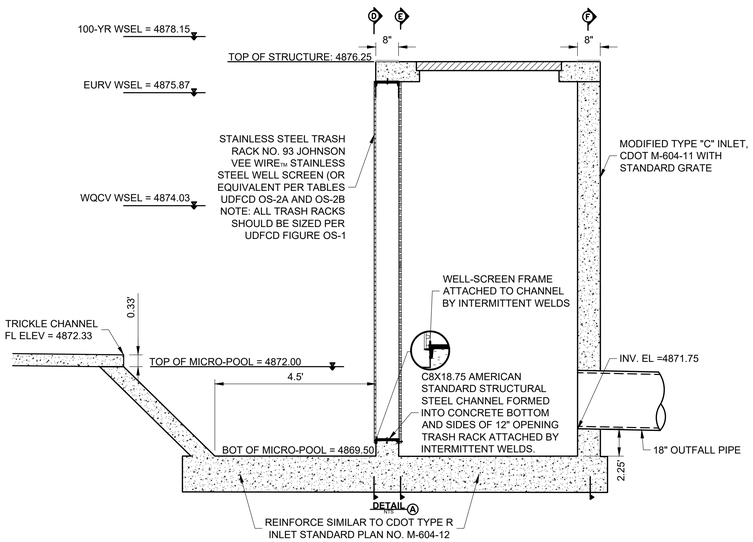
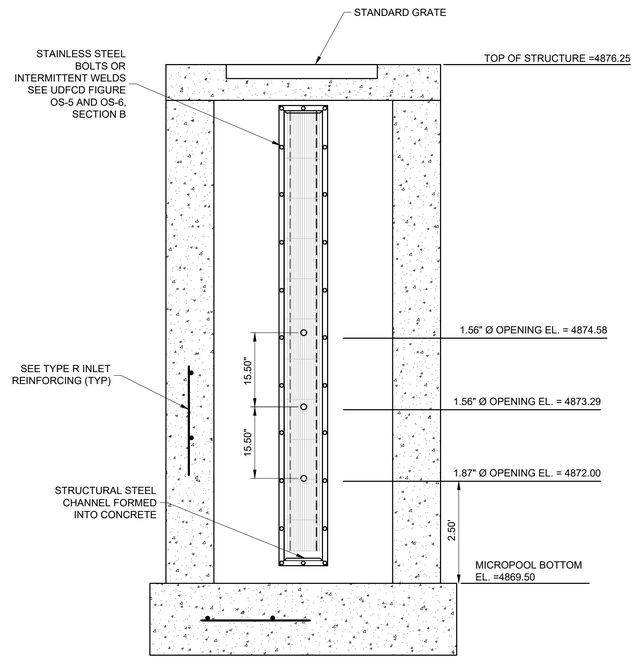
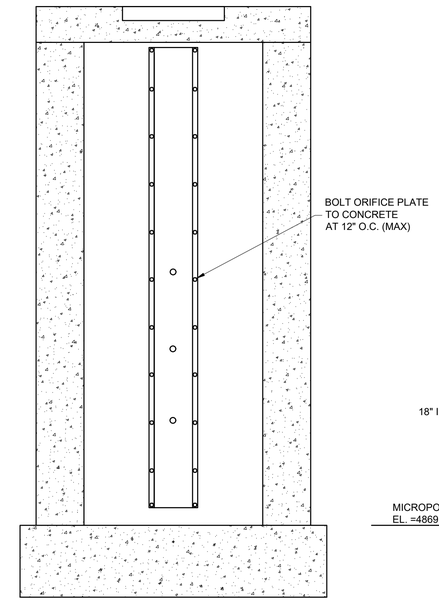
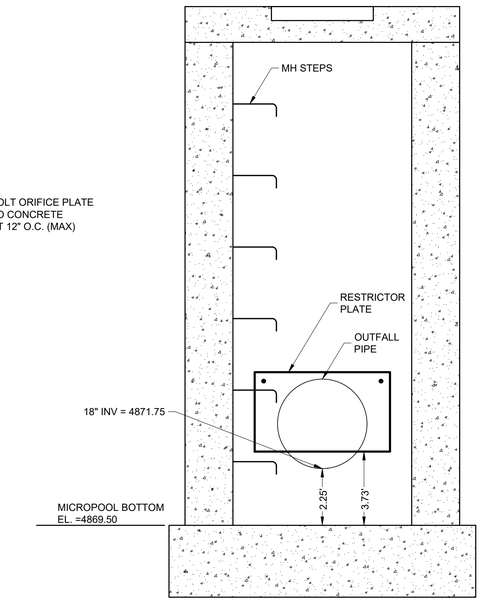




SECTION D
NTS



SECTION E
NTS



SECTION F
NTS

WARNING

KEEP SCREEN AND GRATE CLEAN. UNAUTHORIZED MODIFICATION OF THIS OUTLET IS A CODE VIOLATION

DETENTION WARNING 12" X 12"

POND SIGN
NTS

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
811 Know what's below. Call before you dig.

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.21 POND C DETAILS.DWG - 2/20/2023 10:24:02 AM - Gregory Rivera

No.	REVISION	BY	DATE

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EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504

POND C DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.20
SHEET 57 OF 109

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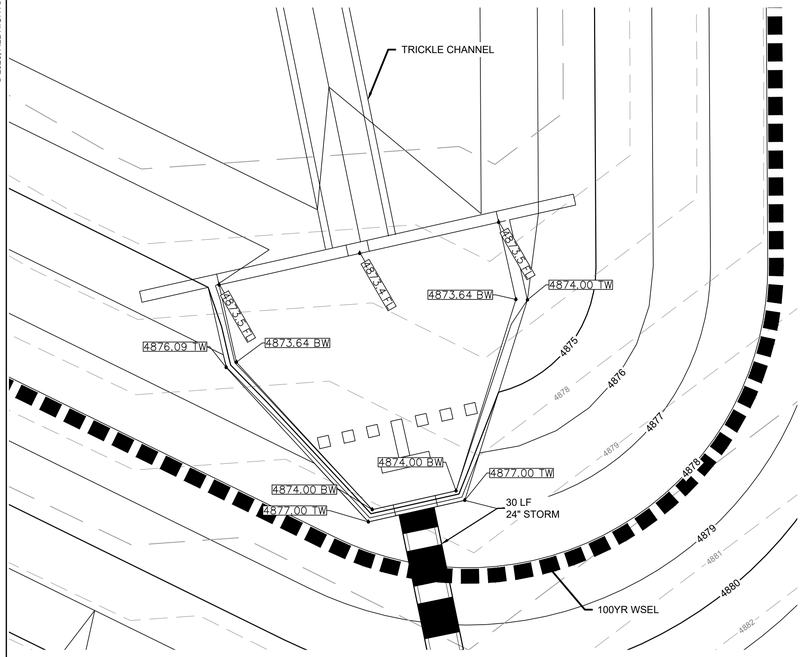
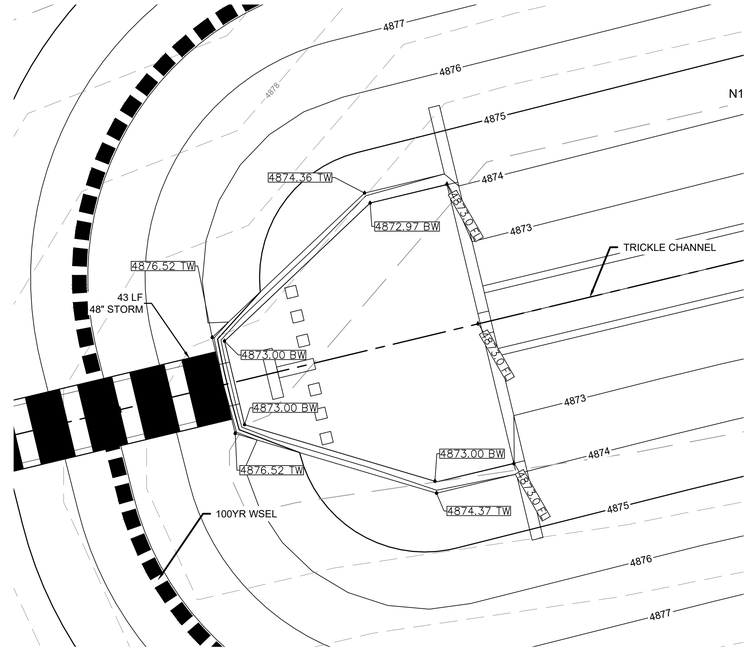
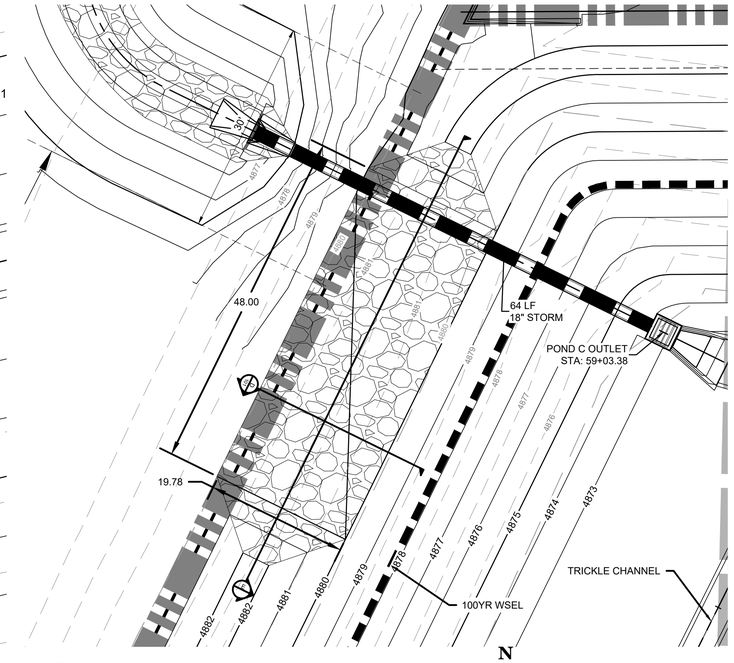


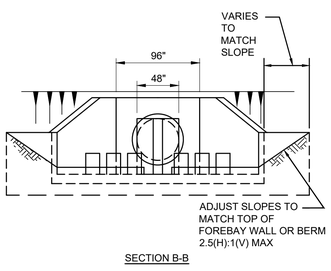
A POND C MODIFIED IMPACT STILLING BASIN PLAN VIEW
SCALE: 1" = 5'



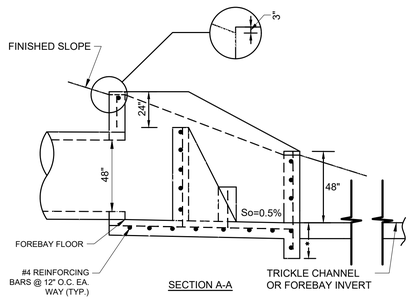
B POND C MODIFIED IMPACT STILLING BASIN PLAN VIEW
SCALE: 1" = 5'



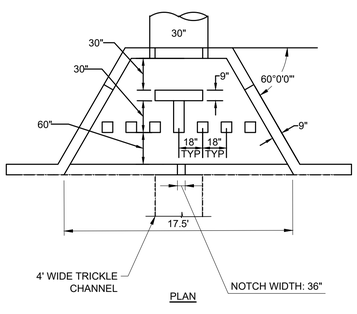
C POND C EMERGENCY OVERFLOW SPILLWAY
SCALE: 1" = 10'



SECTION B-B

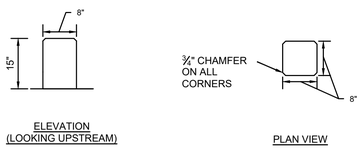


SECTION A-A



PLAN

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 1 OF 2)

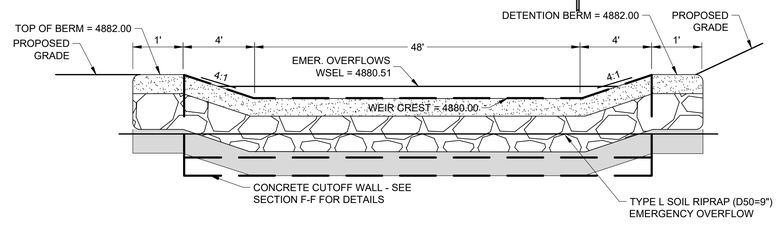


ELEVATION
(LOOKING UPSTREAM)

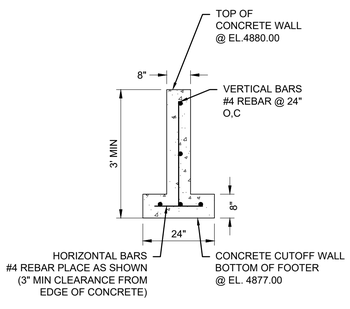
PLAN VIEW

BAFFLE BLOCK GEOMETRY

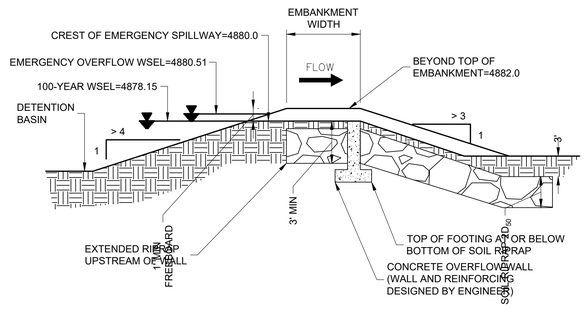
MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 2 OF 2)



E-E EMERGENCY OVERFLOW SPILLWAY PROFILE
SCALE: NTS



F-F CUTOFF WALL CROSS SECTION
SCALE: NTS



D-D EMERGENCY OVERFLOW SPILLWAY SECTION
SCALE: NTS

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CENTER OF COLORADO
1-800-922-1987 or 811
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Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5". CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND C FOREBAY DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.21
SHEET 58 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.21 POND C DETAILS.DWG - 2/20/2023 10:24:24 AM - Gregory Rivera

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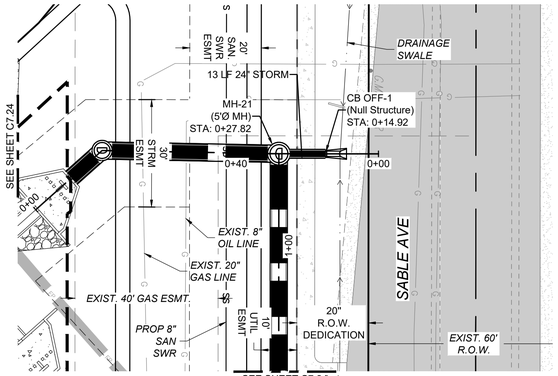
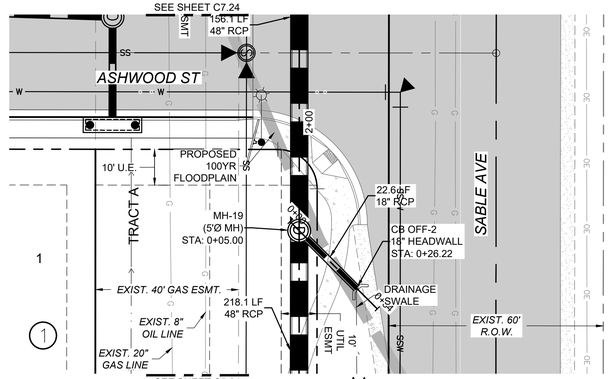


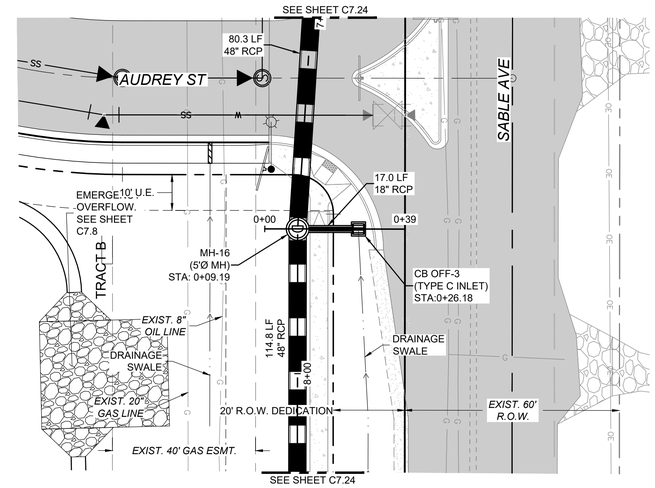
SCALE IN FEET
0 20 40

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



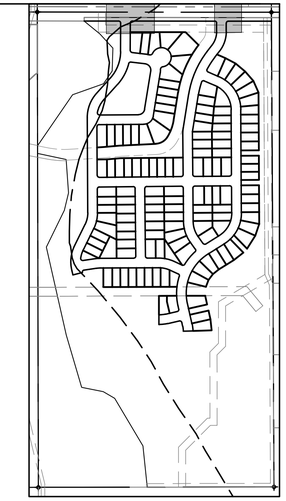
SCALE IN FEET
0 20 40

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



SCALE IN FEET
0 20 40

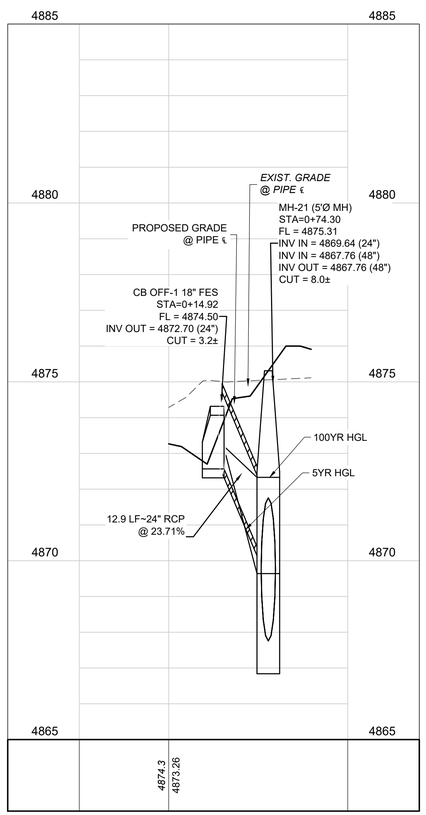
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

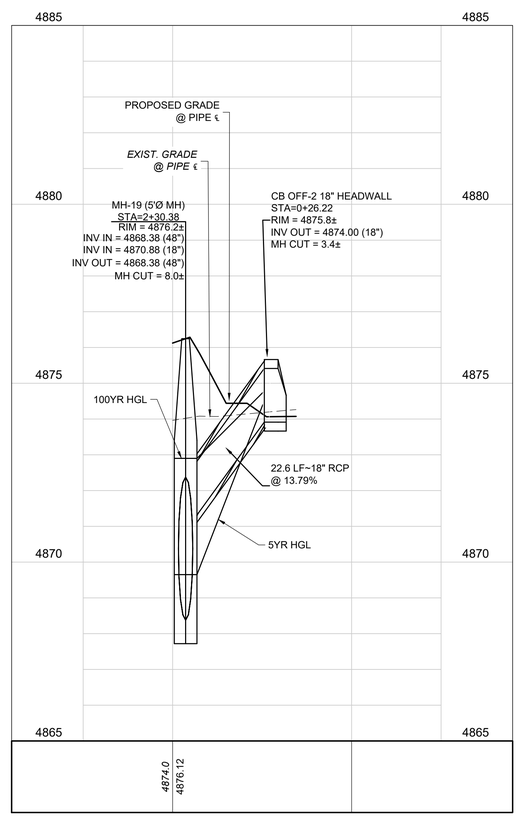
LEGEND

X	*EXIST. FENCE*
E	*EXIST. ELECTRIC LINE*
G	*EXIST. GAS MAIN*
CTV	*EXIST. CATV*
COM	*EXIST. COMMUNICATION*
FO	*EXIST. FIBER OPTICS*
S	*EXIST. SANITARY SEWER*
	EXIST. STORM SEWER
W	*EXIST. WATER MAIN*
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



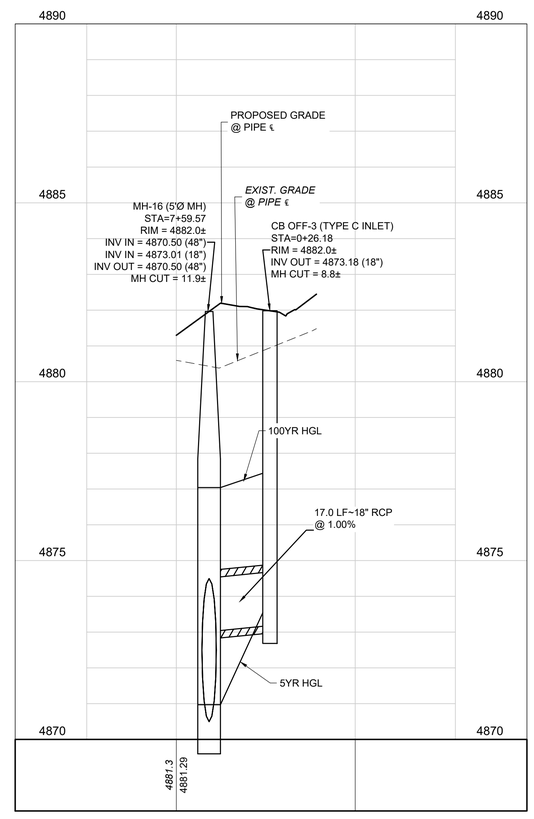
PROFILE STM-E4-SABLE (STA: -0+25 TO 0+50)

SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL



PROFILE STM-E3-SABLE (STA: -0+25 TO 0+75)

SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL



PROFILE STM-E2-SABLE (STA: -0+25 TO 0+78)

SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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

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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.24 STORM P&P- POND E SABLE CULVERTS.DWG - 2/20/2023 10:52:39 AM - Gregory Rivera

No.	REVISION	BY	DATE

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P- POND E SABLE CULVERTS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.22
SHEET 59 OF 109

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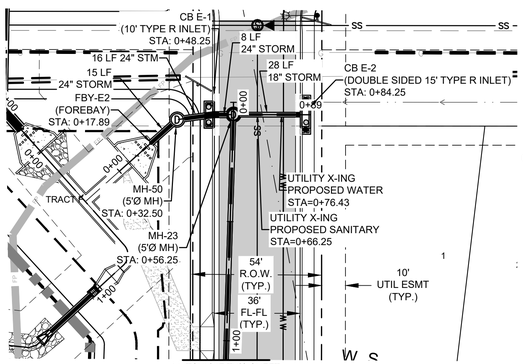
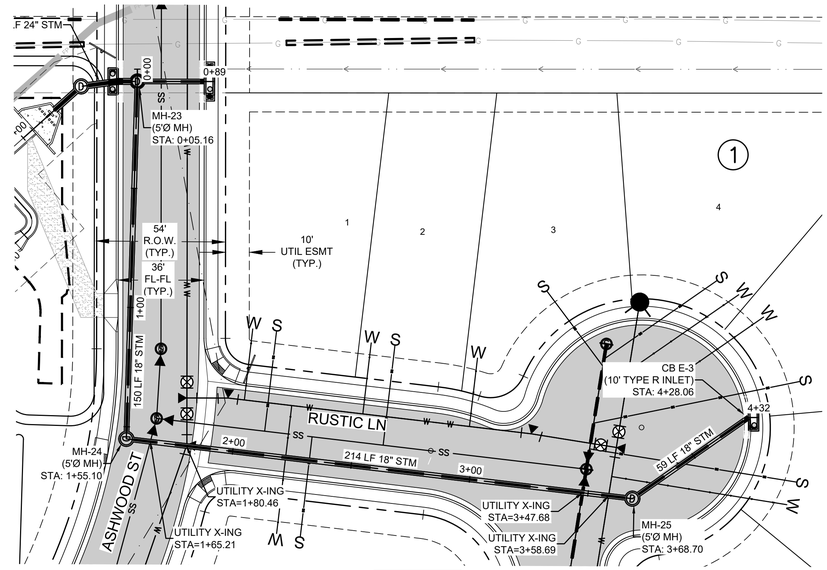


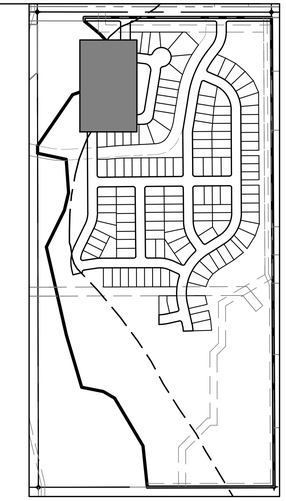
SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



SCALE IN FEET
0 30 60

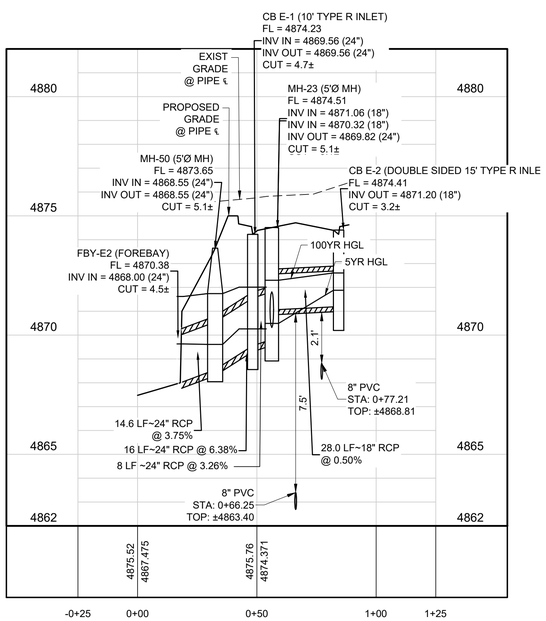
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

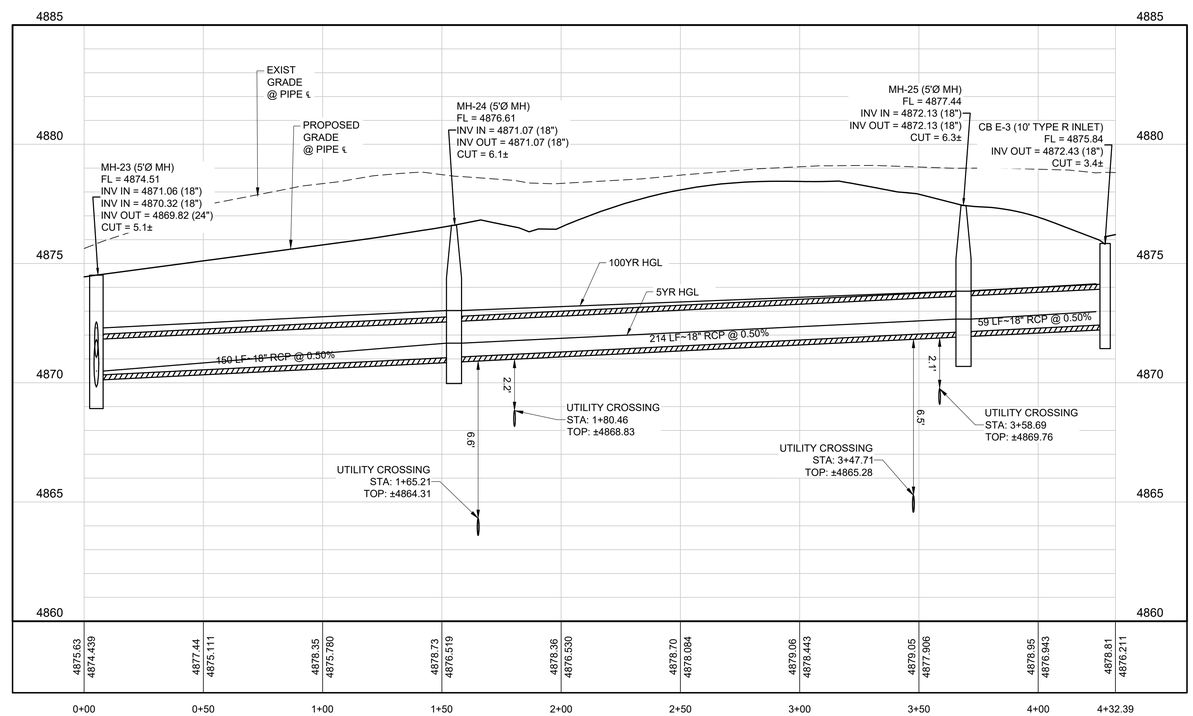
LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST



PROFILE STM-E5-ASHWOOD (STA: -0+25 TO 1+25)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL



PROFILE STM-E6-ASHWOOD (STA: 0+00 TO 4+32)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P- POND E - ASHWOOD

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.23
SHEET 60 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\98 CAD\SHEETS\CD\C7.2X STORM PLAN & PROFILE - POND E - ASHWOOD.DWG - 2/20/2023 9:37:41 PM - Gregory Rivera

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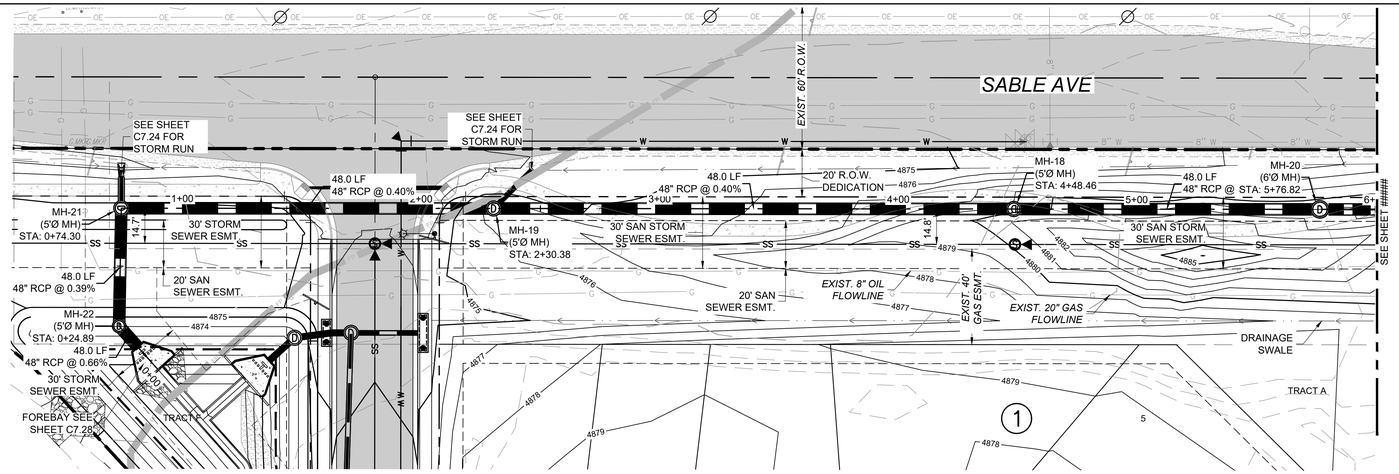


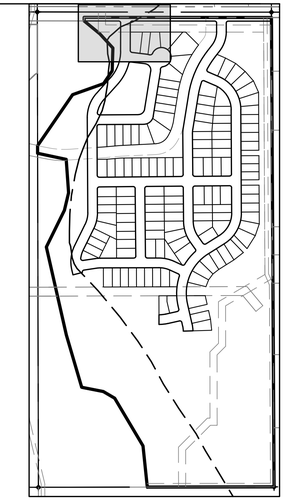
REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

N

SCALE IN FEET
0 30 60

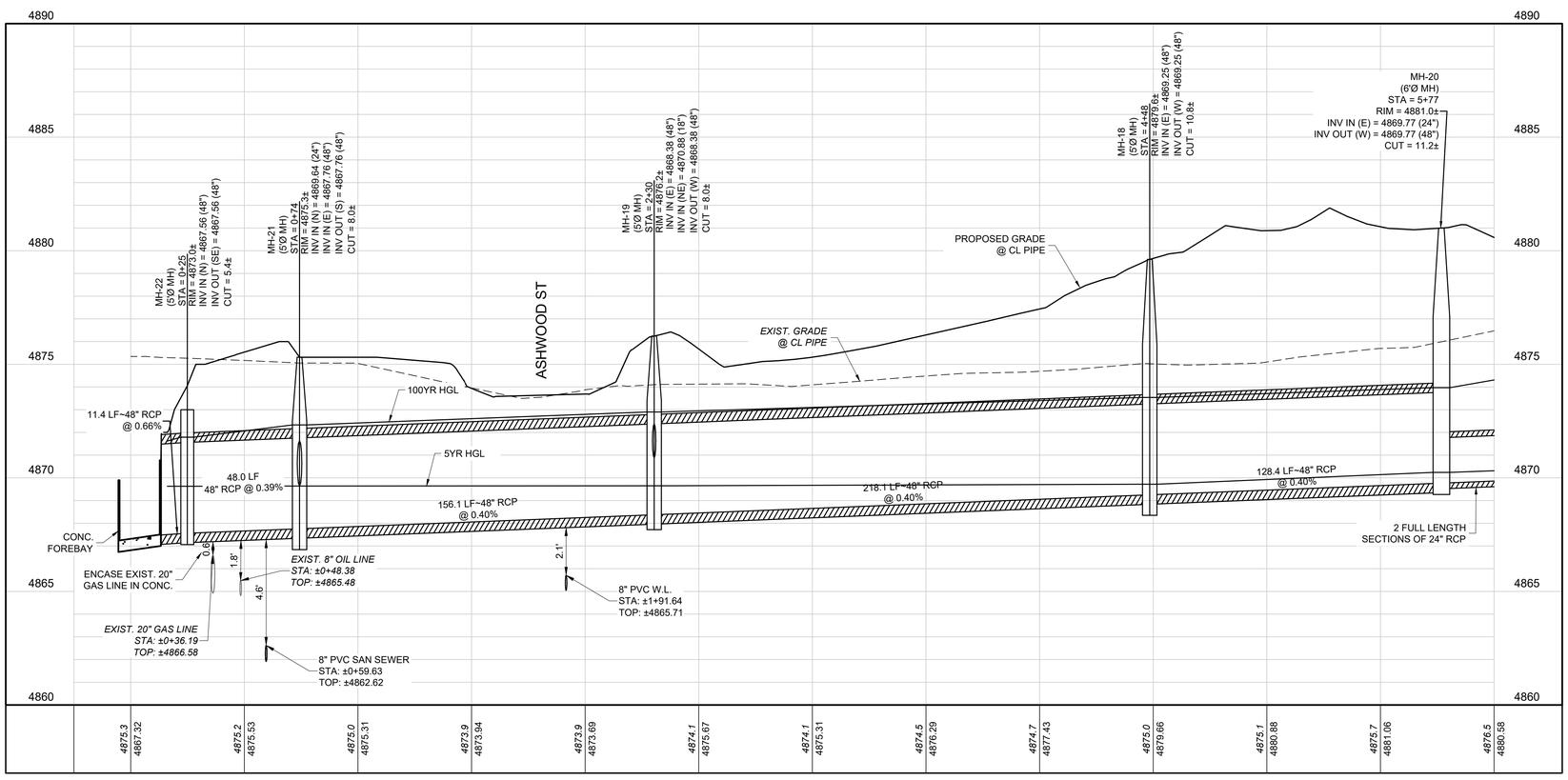
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- •MP PROP. MARKER POST



PROFILE STM-E1-SABLE (STA: -0+25 TO 6+00)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P- POND E - SABLE AVE 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C7.24
SHEET 61 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.28 STORM PP - SABLE AVE.DWG - 2/20/2023 10:27:49 AM - Gregory Rivera

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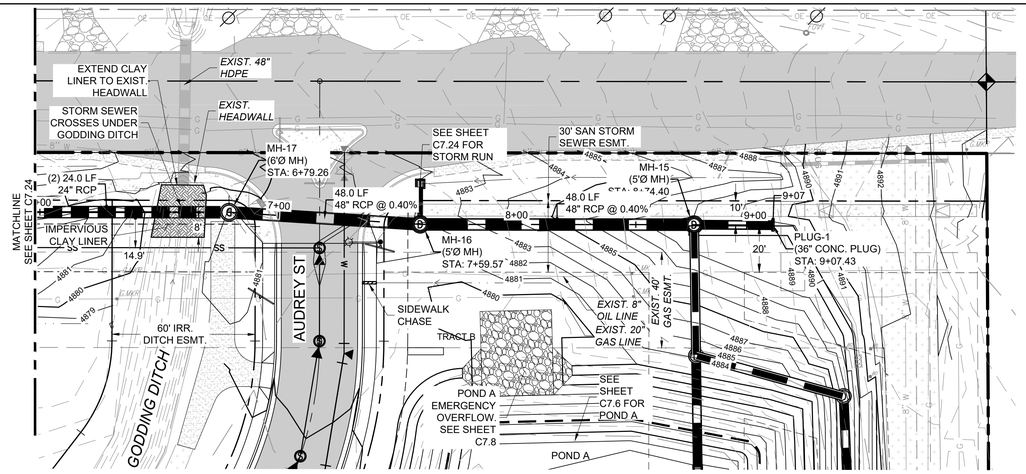
P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.25 STORM PP - SABLE AVE.DWG - 2/20/2023 10:28:09 AM - Gregory Rivera



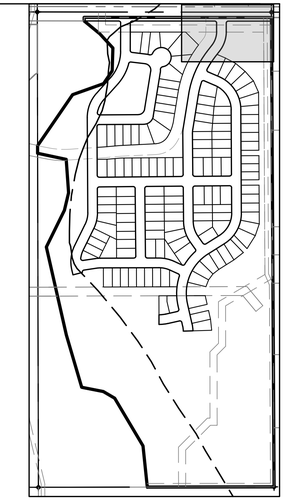
REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

N

SCALE IN FEET
0 30 60

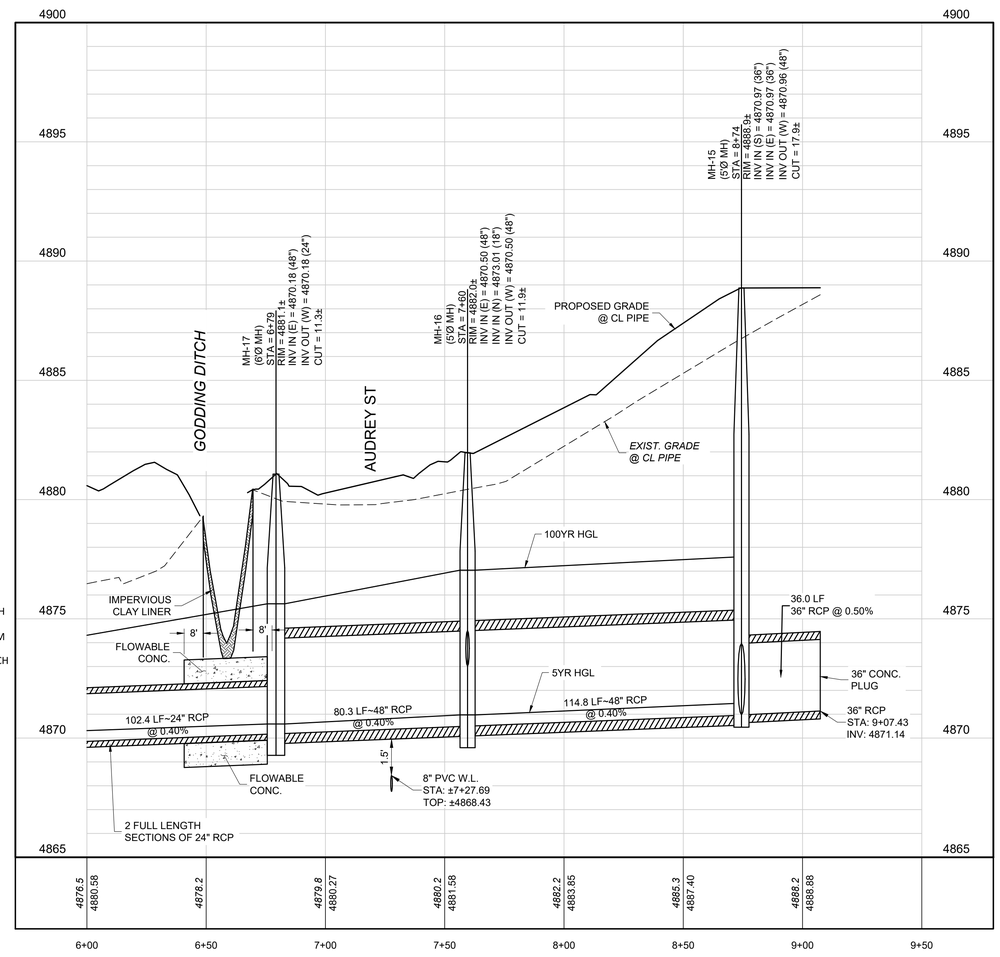
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- •MP — PROP. MARKER POST



PROFILE STM-E1-SABLE (STA: 6+00 TO 9+50)
SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

GODDING DITCH CROSSING NOTES:

CONTRACTOR TO BACKFILL THE STORM SEWER TRENCH TO THE TOP OF PIPE WITH FLOWABLE CONCRETE EXTENDING 8-FEET FROM EACH TOP OF BANK (EAST AND WEST). PLACE IMPERVIOUS CLAY LINER IN PLACE OF THE EXISTING DITCH BOTTOM AND BANKS FOR 8-FEET PAST EACH SIDE OF THE STORM SEWER TRENCH WITH A THICKNESS OF 2-FEET. THE CLAY LINER SHALL BE OVERBUILT INTO THE FINAL DITCH TRAPEZOIDAL PRISM USING PLACEMENT IN HORIZONTAL LIFTS, MOISTURE CONDITIONED, COMPACTED, TRIMMED TO FINAL GRADE, THEN REVEGETATED INCLUDING EROSION CONTROL FABRIC.

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

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BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P- POND E - SABLE AVE 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C7.25
SHEET 62 OF 109

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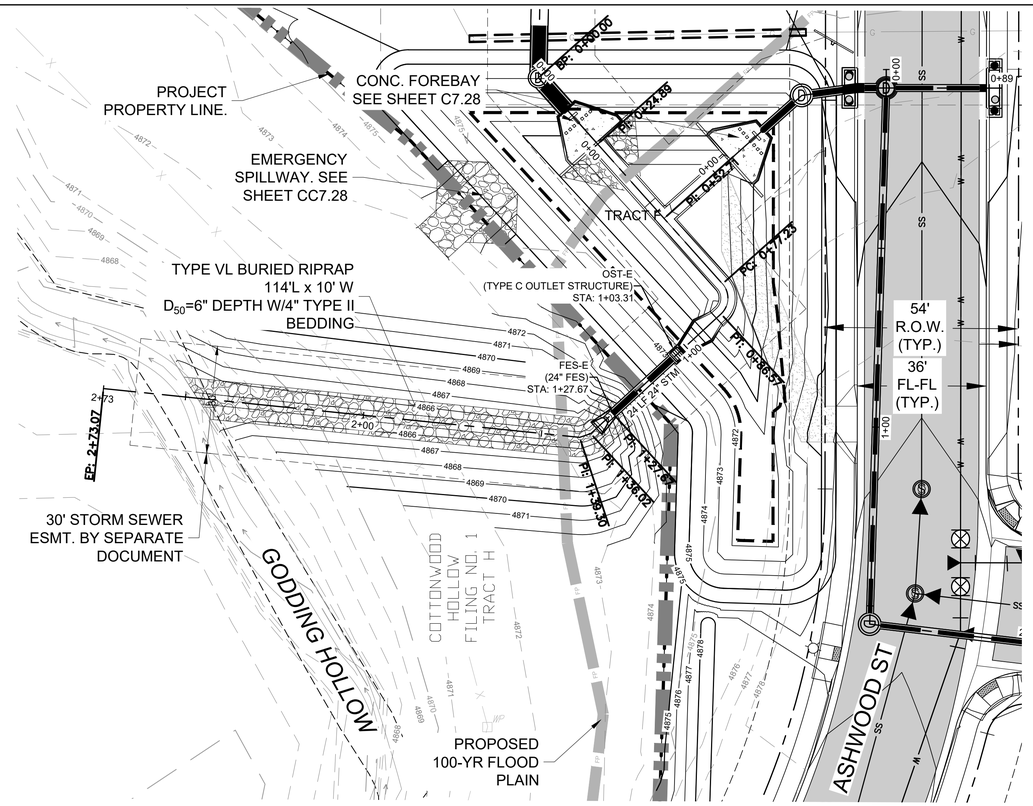
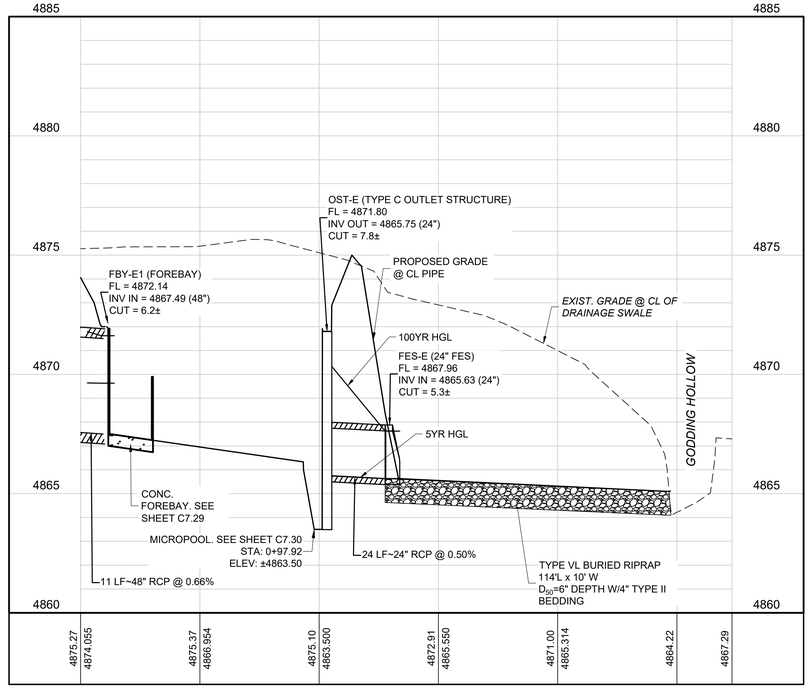
P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.2X STORM PLAN & PROFILE - POND E - ASHWOOD.DWG - 2/20/2023 10:29:02 AM - Gregory Rivera





PROFILE STM-E6-OUTFALL (STA: 0+00 TO 2+73)

SCALES: 1'=30' HORIZONTAL, 1"=3' VERTICAL

STORM PROFILE NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS, SIZES, CONDITIONS AND DEPTHS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO CONSTRUCTION.

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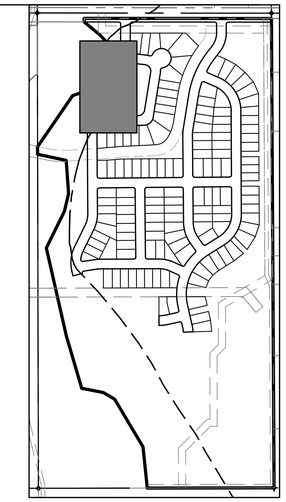
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

N

SCALE IN FEET
0 20 40

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ½ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P- POND E - OUTFALL

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/10/2023

C7.26
SHEET 63 OF 109

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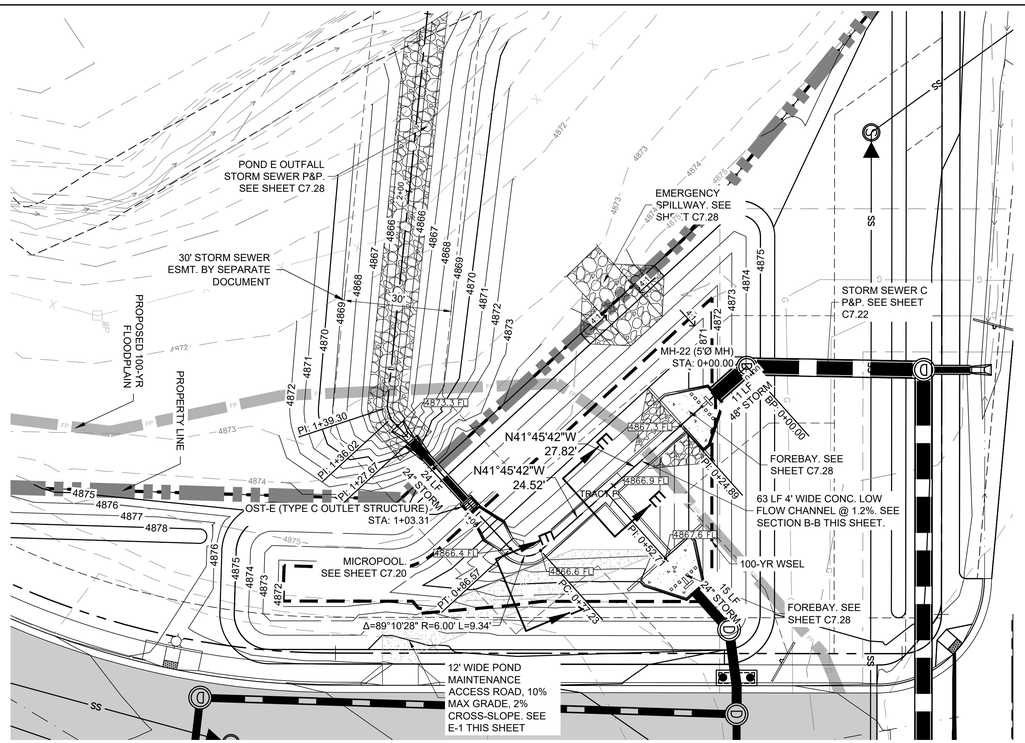
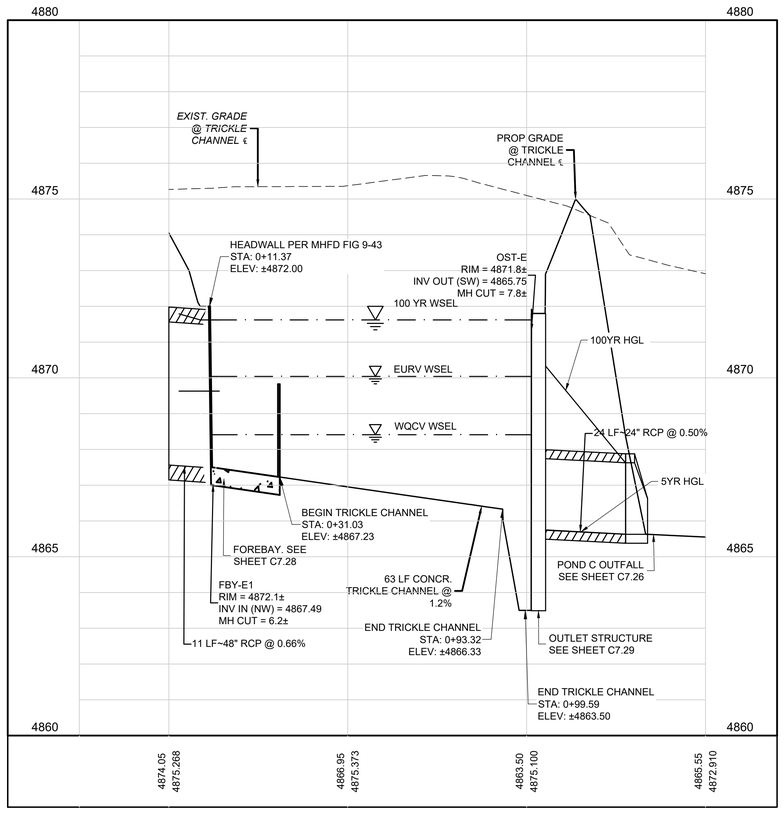




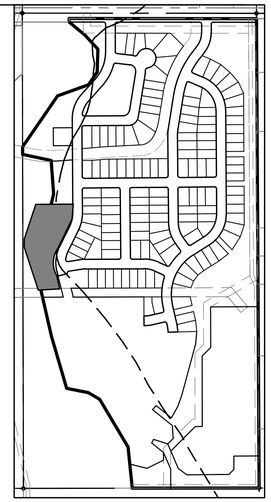
PROFILE STM-E6-OUTFALL (STA: -0+25 TO 1+50)

SCALES: 1'=20' HORIZONTAL, 1"=2' VERTICAL

N

SCALE IN FEET
0 20 40

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

LEGEND

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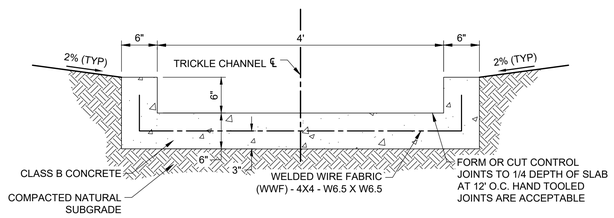
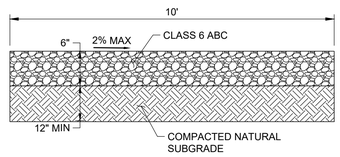


E-E CONCRETE LOW FLOW CHANNEL
SCALE: NTS



E-1 MAINTENANCE ACCESS ROAD
SCALE: 1"=5'

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.29 POND E PLAN.DWG - 2/20/2023 2:00:45 PM - Luke Breedlove

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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Denver, CO 80210
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND E PLAN

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.27
SHEET 64 OF 109

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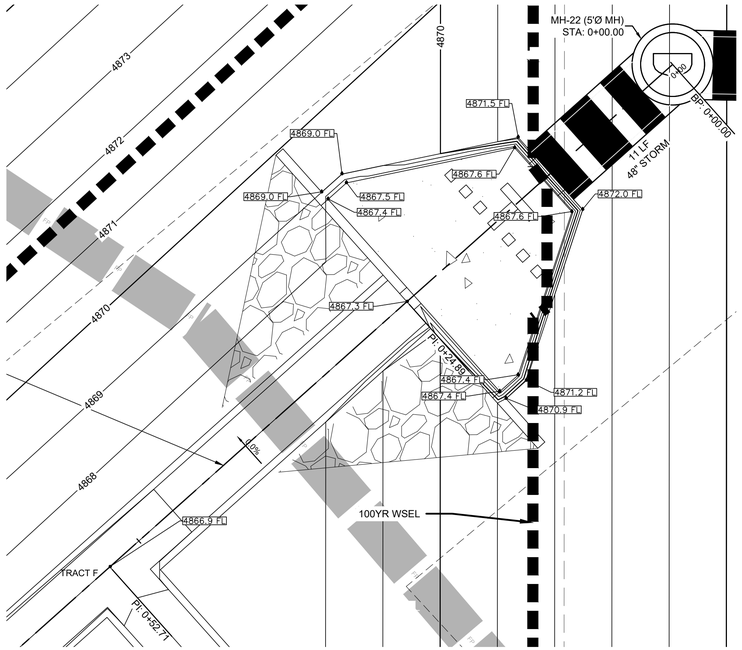
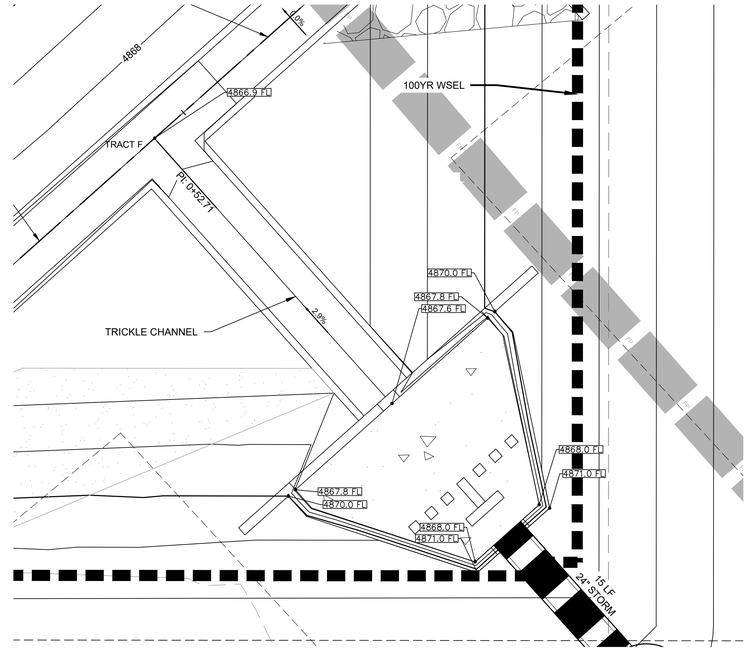
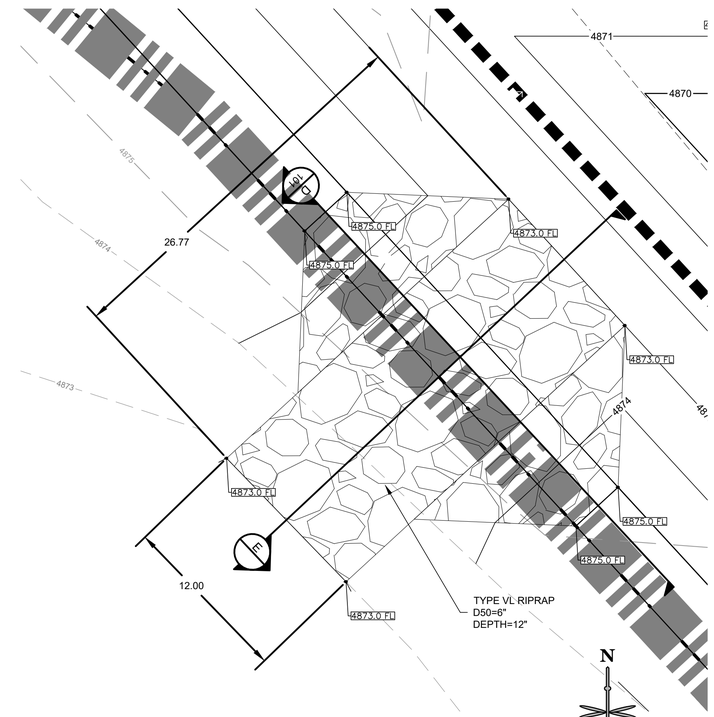


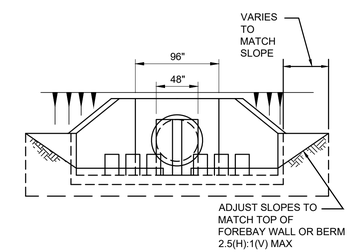
A POND C MODIFIED IMPACT STILLING BASIN PLAN VIEW
SCALE: 1" = 5'



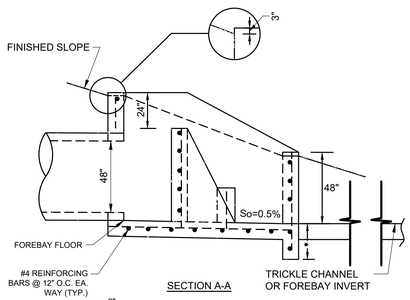
B POND C MODIFIED IMPACT STILLING BASIN PLAN VIEW
SCALE: 1" = 5'



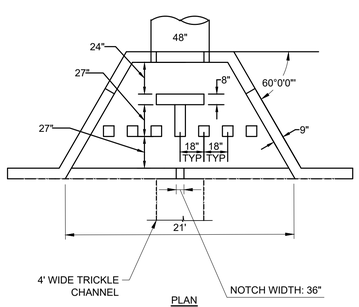
C POND C EMERGENCY OVERFLOW SPILLWAY
SCALE: 1" = 10'



SECTION B-B

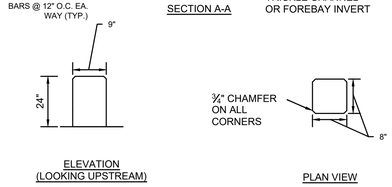


SECTION A-A



PLAN

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 1 OF 2)

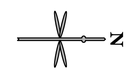


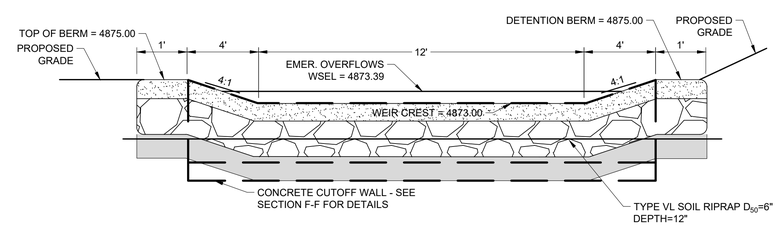
ELEVATION
(LOOKING UPSTREAM)

PLAN VIEW

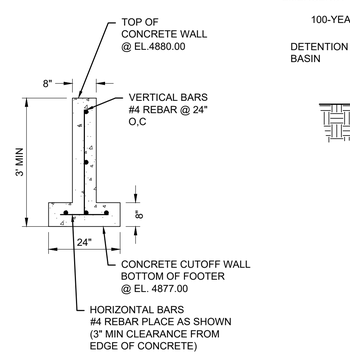
BAFFLE BLOCK GEOMETRY

MODIFIED IMPACT STILLING BASIN
FOR CONDUITS 18" TO 48" IN DIAMETER
(PART 2 OF 2)

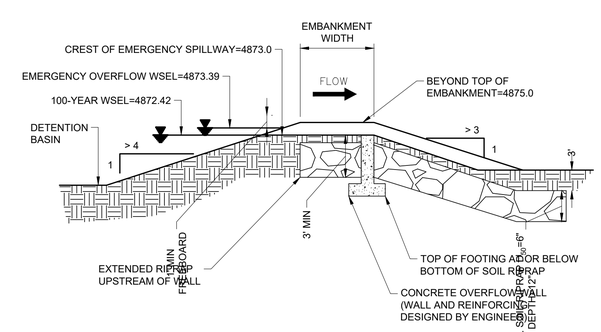




E-E EMERGENCY OVERFLOW SPILLWAY PROFILE
SCALE: NTS



F-F CUTOFF WALL CROSS SECTION
SCALE: NTS



D-D EMERGENCY OVERFLOW SPILLWAY SECTION
SCALE: NTS

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
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NOT FOR
CONSTRUCTION

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ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
POND E FOREBAY DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.28
SHEET 65 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.29 POND E PLAN.DWG - 2/20/2023 10:30:07 AM - Gregory Rivera

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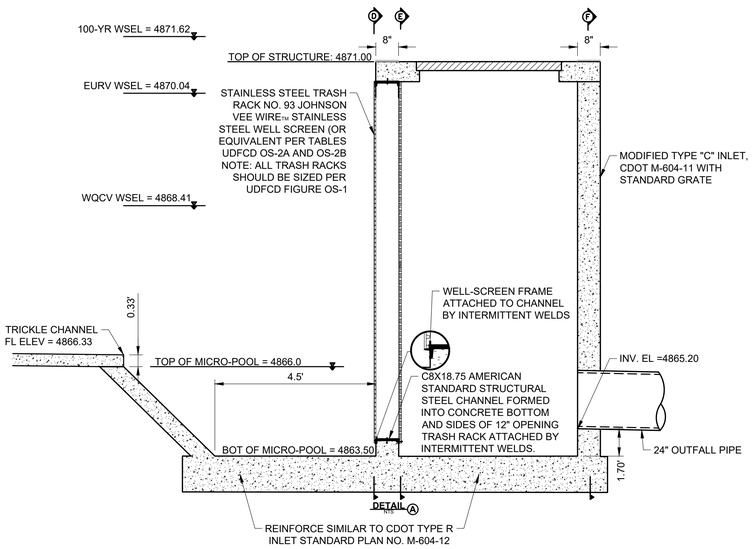
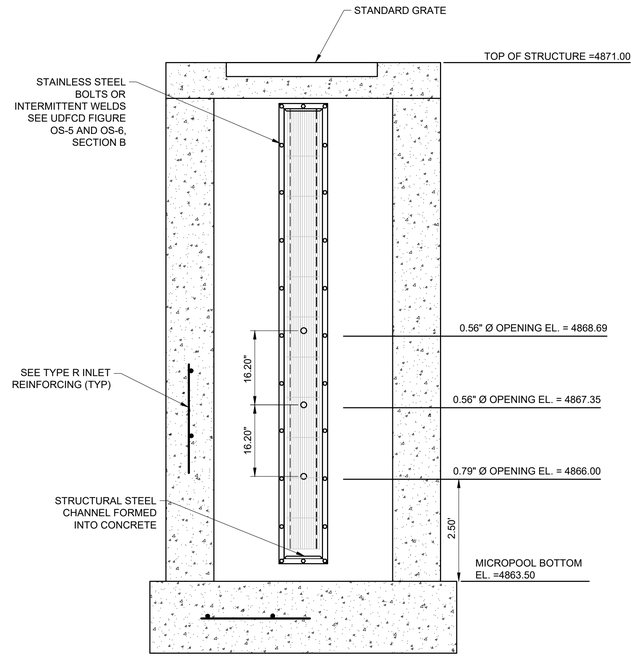
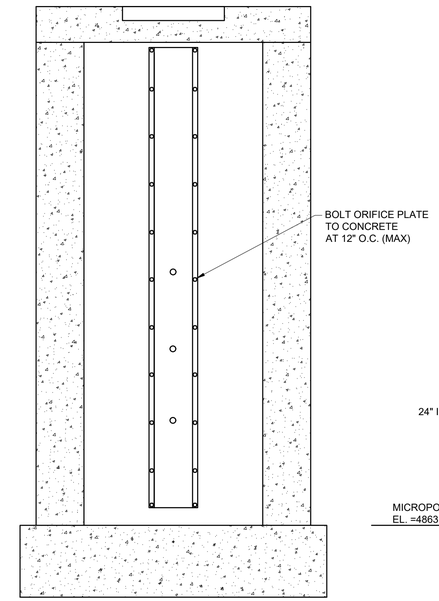
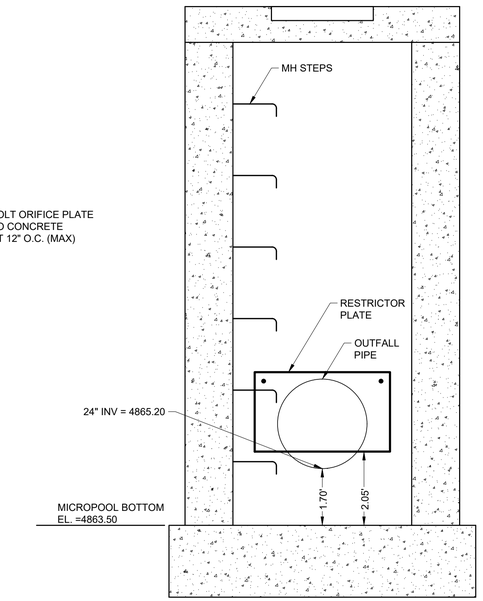




SECTION D
NTS



SECTION E
NTS



SECTION F
NTS

WARNING

KEEP SCREEN AND GRATE CLEAN. UNAUTHORIZED MODIFICATION OF THIS OUTLET IS A CODE VIOLATION

DETENTION WARNING 12" X 12"

POND SIGN
NTS

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.29 POND E PLAN.DWG - 2/20/2023 10:30:17 AM - Gregory Rivera

No.	REVISION	BY	DATE

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504

POND E DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.29
SHEET 66 OF 109

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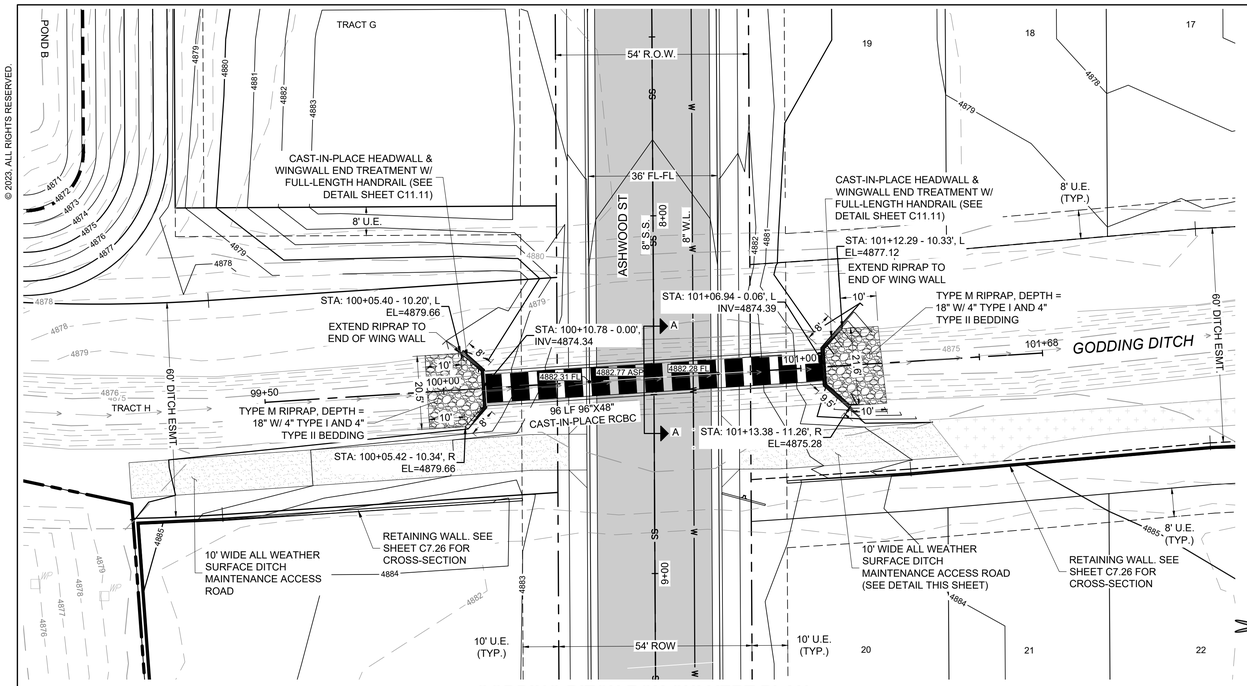
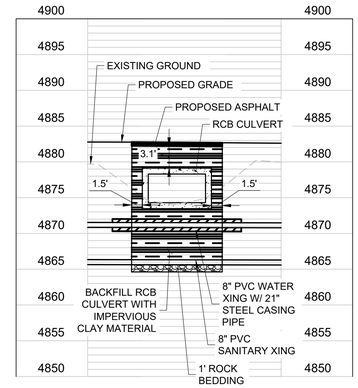
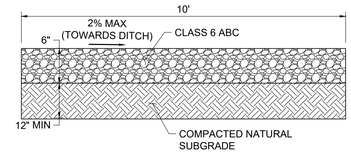


GODDING DITCH BOX CULVERT PLAN

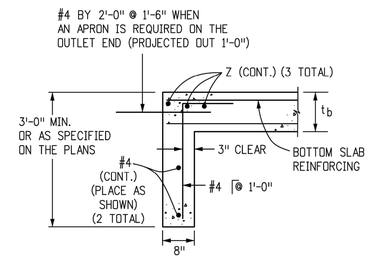


BOX CULVERT TRENCH DETAIL - A-A

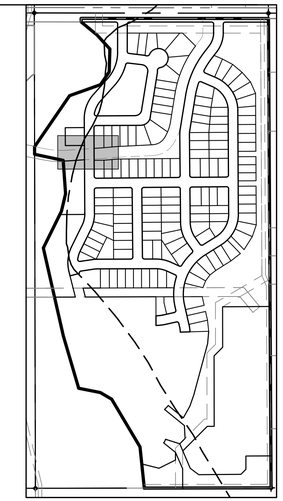
1. NOTE: CULVERT COMPACTION AND BACKFILL PER TOWN OF FIRESTONE STANDARDS AND SPECIFICATIONS 350.00



MAINTENANCE ACCESS ROAD



CUTOFF WALL CROSS SECTION



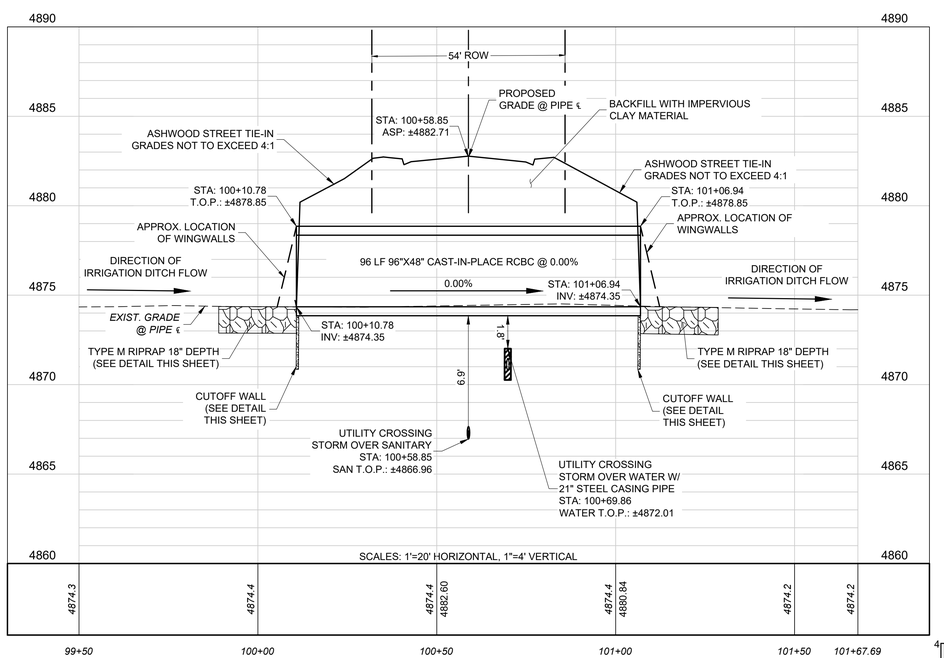
KEYMAP
SCALE: 1" = 400'

N

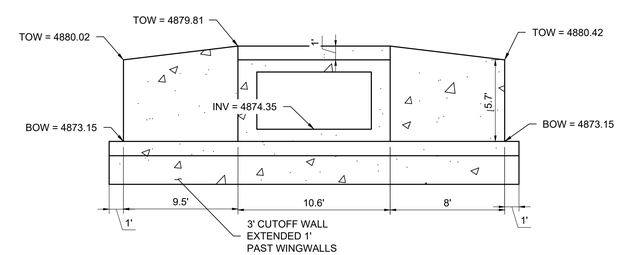
SCALE IN FEET
0 20 40

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

GODDING DITCH BOX CULVERT PROFILE (STA: 99+50 TO 101+68)

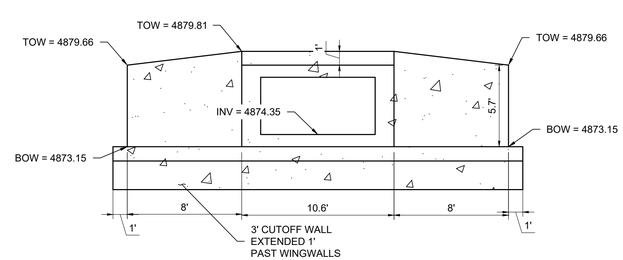


SCALE:
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'
0 20 40



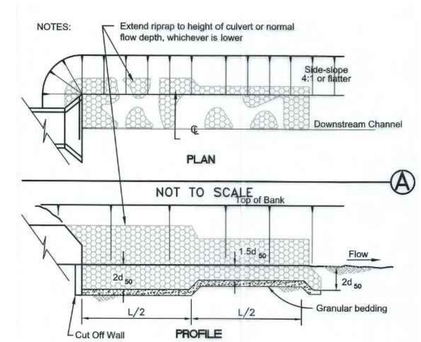
EAST WINGWALL DETAIL

SCALE: 1" = 5'



WEST WINGWALL DETAIL

SCALE: 1" = 5'



CULVERT AND PIPE OUTLET PROTECTION (OP)

1. Headwall with wingwalls or flared end section required at all culvert outlets.
2. Cutoff wall required at end of wingwall aprons and end section. Min depth of cutoff wall=2*d50 or 3-ft, whichever is deeper.
3. Provide joint fasteners for flared end sections.
4. All riprap shall be placed on a minimum 4" thick layer of bedding material of Type I or Type II CDOH classification.

RIPRAP DETAIL

GENERAL NOTES

1. CONTRACTOR TO OBTAIN EXISTING GODDING DITCH INVERT ELEVATIONS AT UPSTREAM AND DOWNSTREAM FACE OF PROPOSED 96" X 48" BOX CULVERT AND SUBMIT TO ENGINEER PRIOR TO BOX AND WINGWALL CONSTRUCTION.
2. SEE SHEET C9.0 FOR ASHWOOD STREET PLAN AND PROFILE IMPROVEMENTS.
3. ALL RCBC JOINTS SHALL HAVE A RUBBER GASKET TO PROVIDE A WATERTIGHT JOINT.

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

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1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - GODDING DITCH BOX CULVERT

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.30
SHEET 67 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.32 STORM P&P - GODDING DITCH BOX CULVERT.DWG - 2/20/2023 10:31:25 AM - Gregory Rivera

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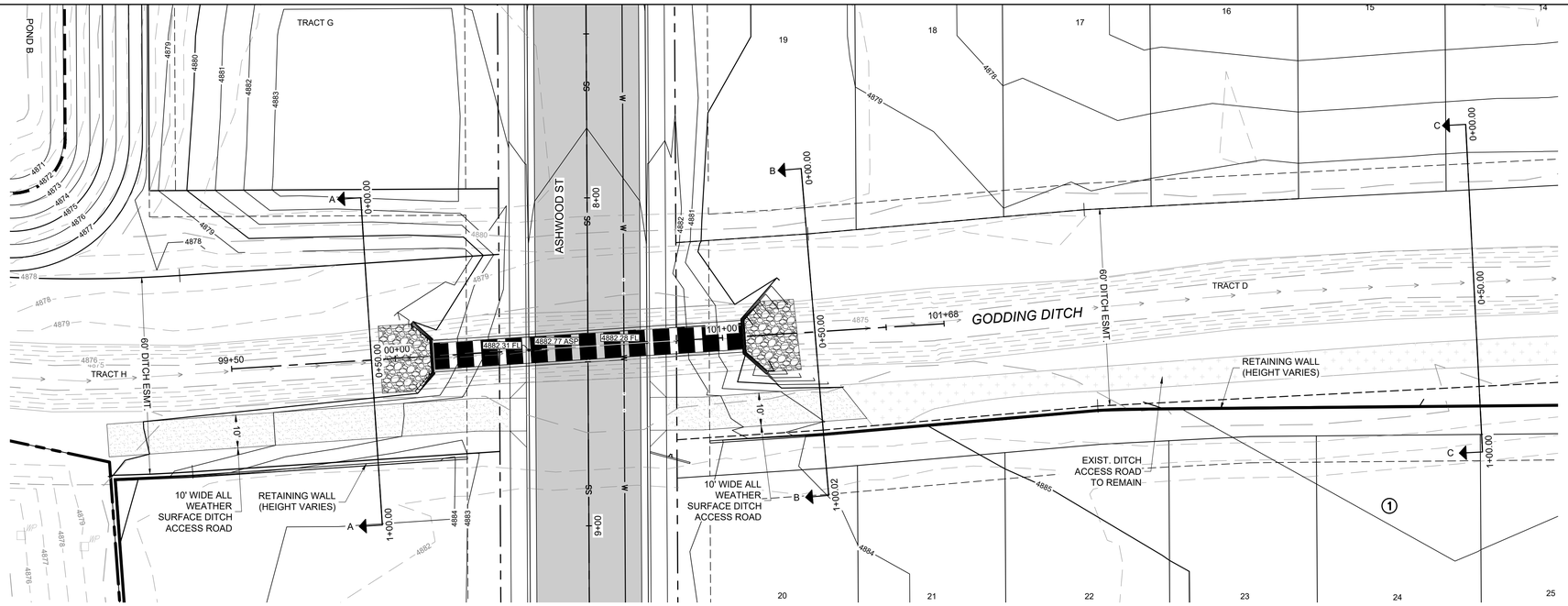
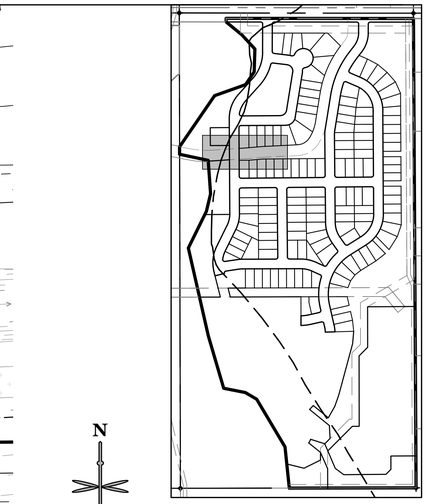


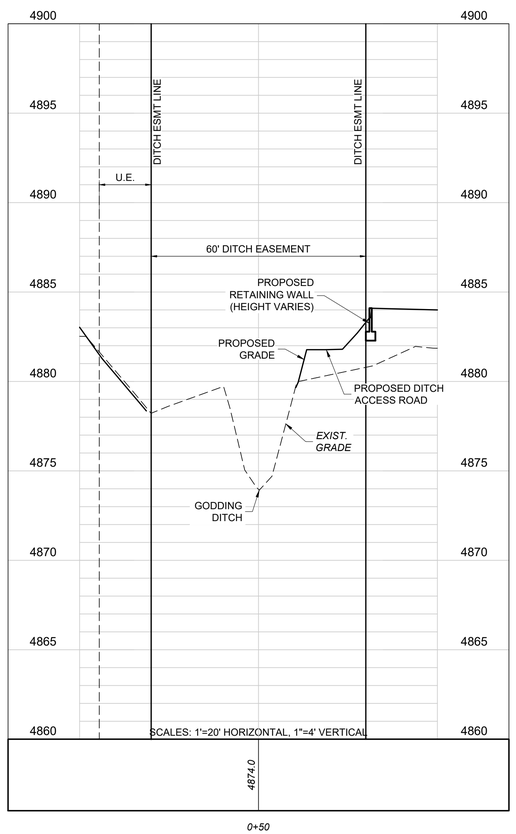


KEYMAP
SCALE: 1" = 400'

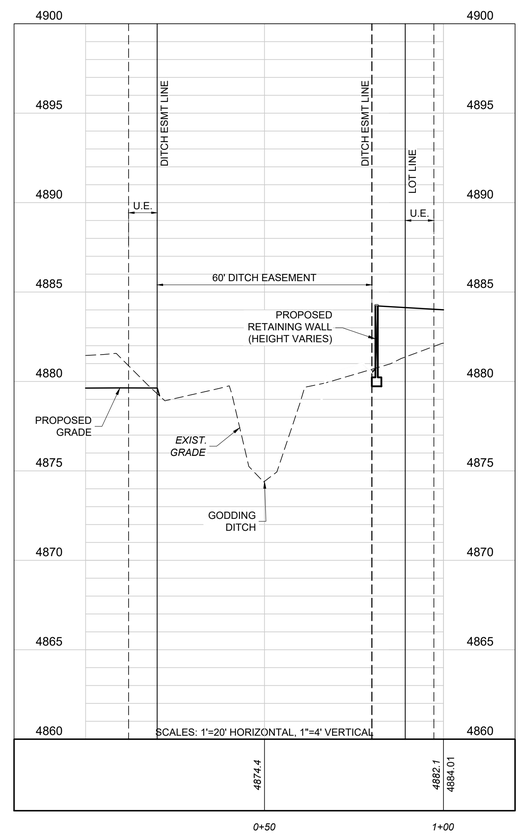
N

SCALE IN FEET
0 20 40

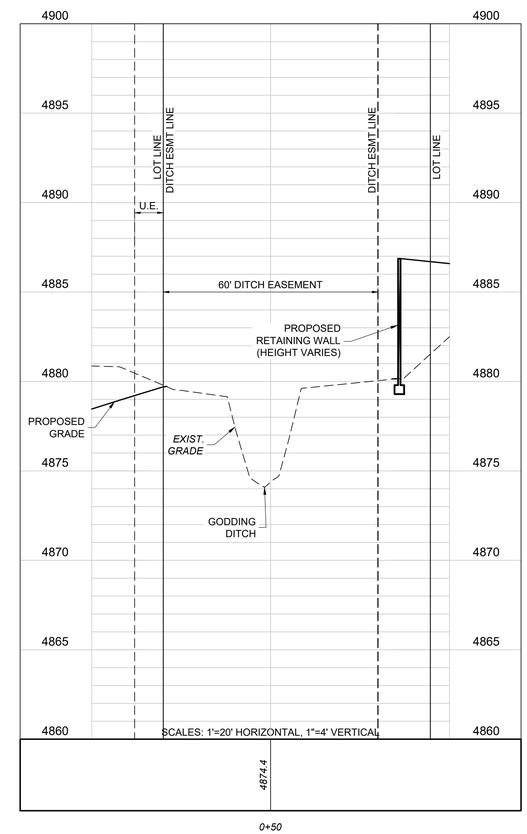
IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE



SECTION A-A



SECTION B-B



SECTION C-C

SCALE:
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'
0 2 4
0 20 40

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1-800-922-1987 or 811
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811 Know what's below. Call before you dig.

NOTE:
RETAINING WALL ELEVATIONS ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR TO REFER TO RETAINING WALL PLANS UNDER SEPARATE COVER, BY OTHERS

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
GODDING DITCH CROSS SECTIONS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C7.31
SHEET 68 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.33 GODDING DITCH CROSS SECTIONS.DWG - 2/20/2023 3:38:23 PM - Gregory Rivera

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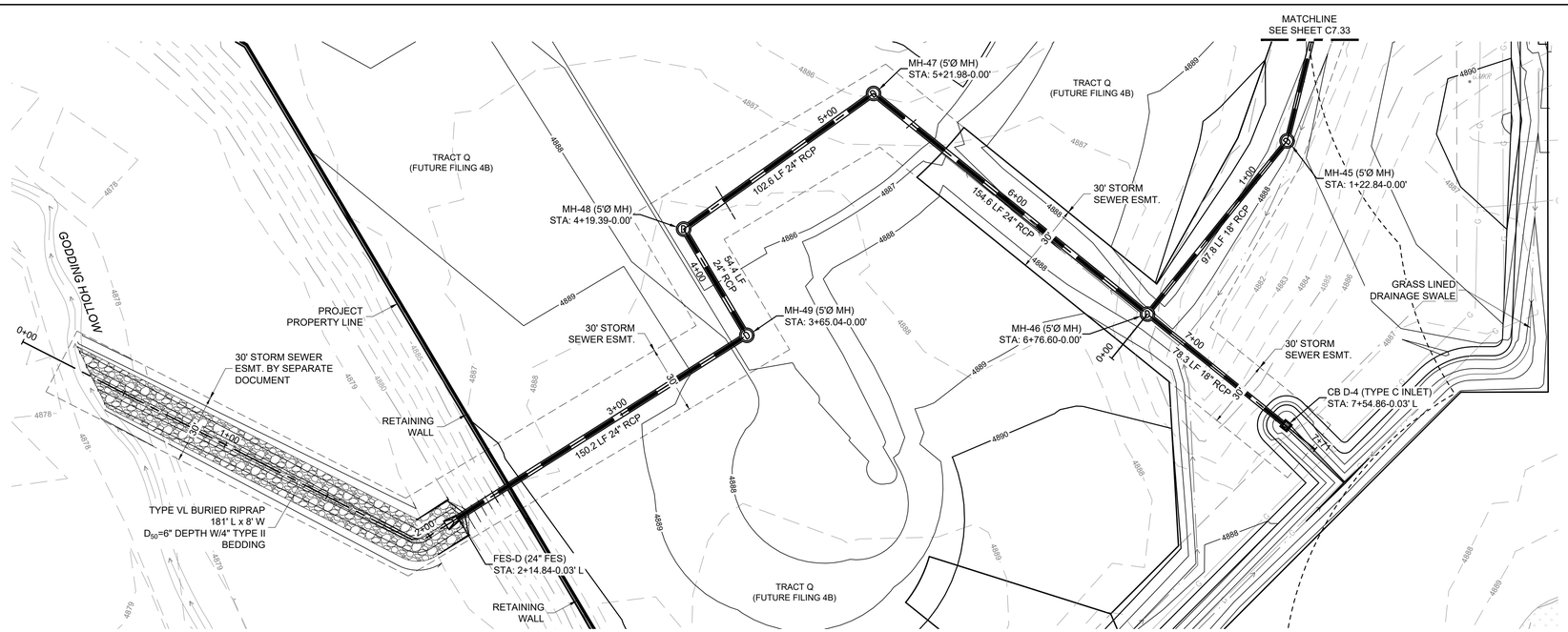
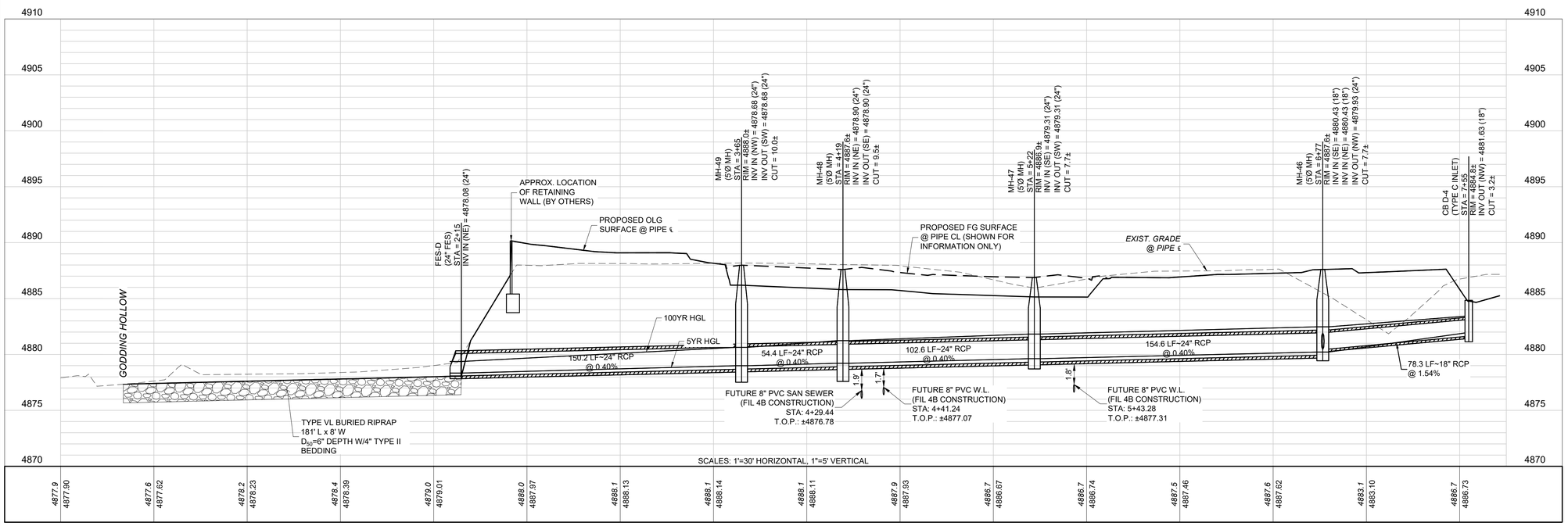


STORM SEWER - OFF-SITE 1

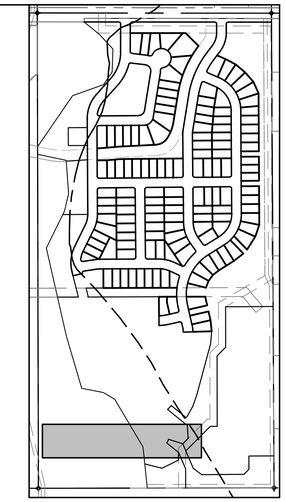


OFF-SITE STORM SEWER PP PROFILE (STA: -0+00 TO 7+75)

N

SCALE IN FEET
0 30 60

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE



KEYMAP
SCALE: 1" = 400'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- S — PROP. SANITARY SEWER
- W — PROP. WATER MAIN
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE R COMBINATION INLET
- PROP. STORM MANHOLE
- PROP. FIRE HYDRANT
- PROP. SIGN
- PROP. STREET LIGHT

No.	REVISION	BY	DATE

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FIRESTONE
COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - OFF-SITE 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.32
SHEET 69 OF 109

811
Know what's below.
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CENTER OF COLORADO
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P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C7.35 STORM P&P - OFF-SITE - 4B.DWG - 2/20/2023 10:33:21 AM - Gregory Ruana

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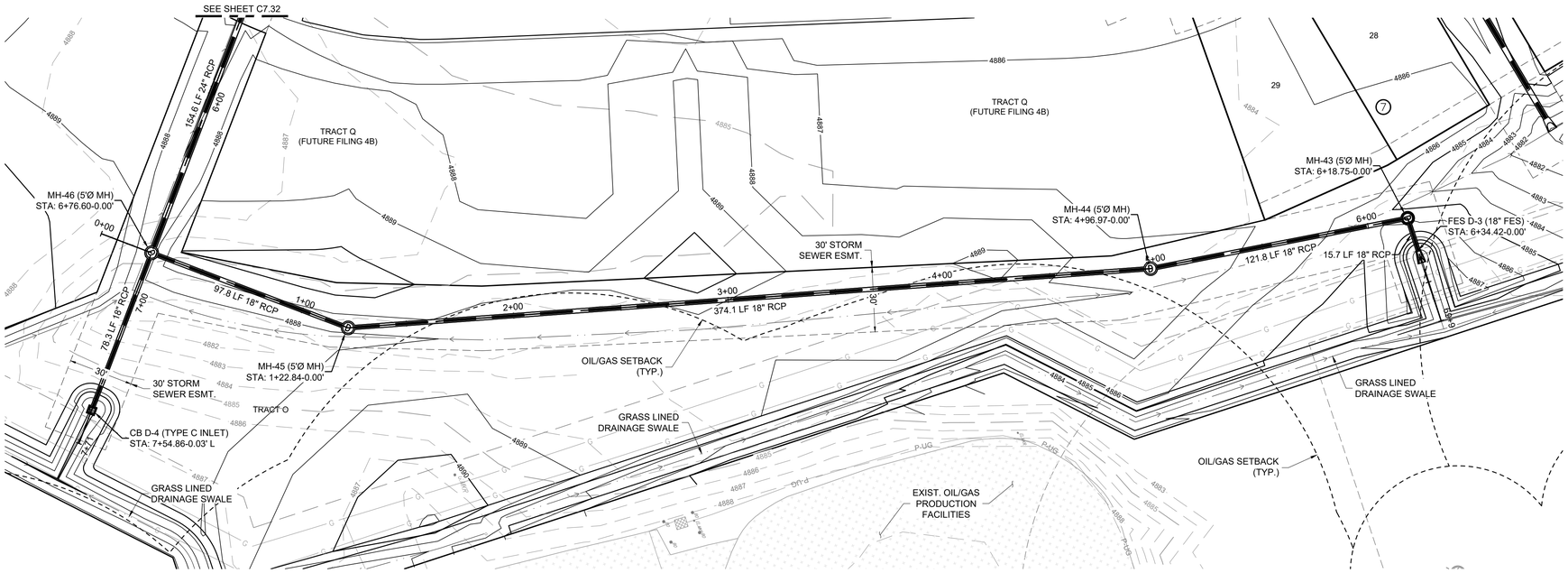
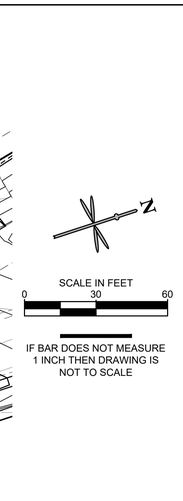
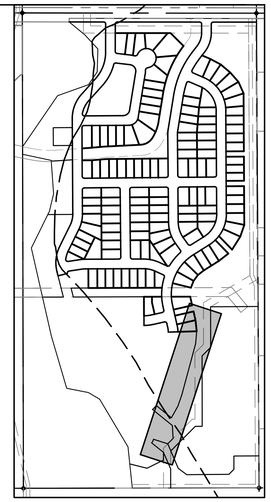


STORM SEWER - OFF-SITE 2





KEYMAP
SCALE: 1" = 400'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- S — EXIST. SANITARY SEWER
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- W — EXIST. WATER MAIN
- EXIST. SANITARY SEWER MH
- EXIST. STORM MANHOLE
- EXIST. FIRE HYDRANT
- EXIST. WATER VALVE
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- S — PROP. SANITARY SEWER
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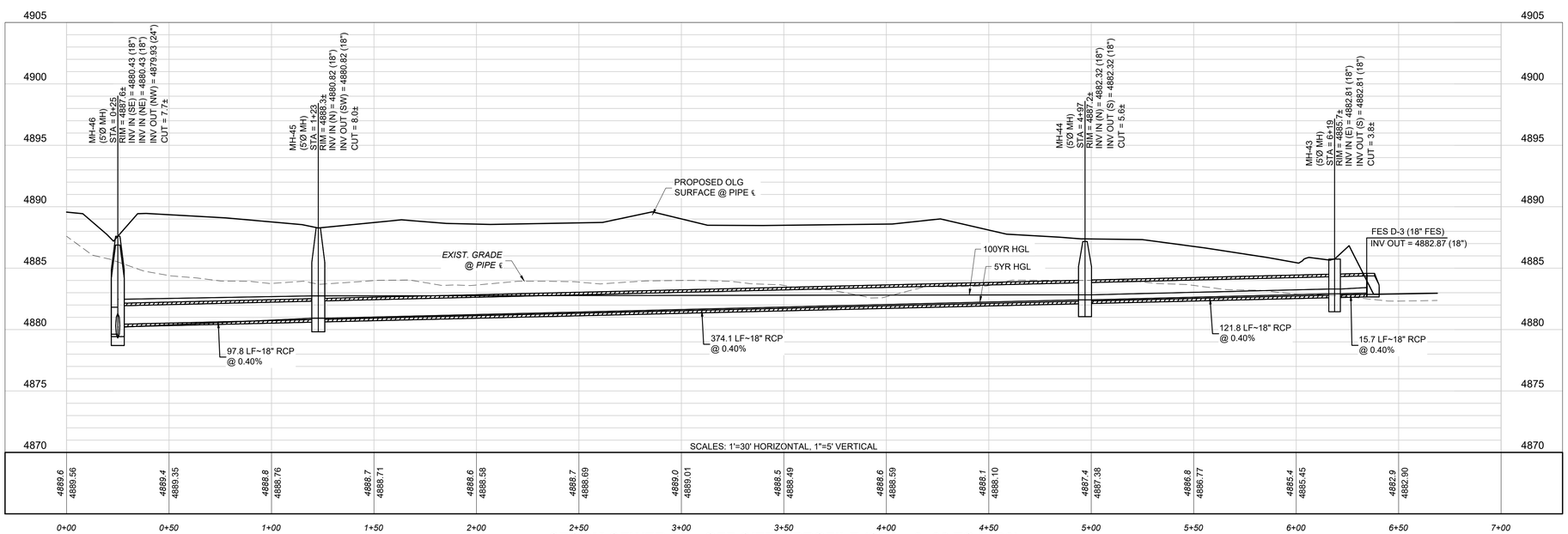
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE R COMBINATION INLET
- PROP. STORM MANHOLE
- PROP. FIRE HYDRANT
- PROP. SIGN
- PROP. STREET LIGHT



STORM SEWER PP - OFF-SITE 2 PROFILE (STA: -0+00 TO 7+00)

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811
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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM P&P - OFF-SITE 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/14/2023

C7.33
SHEET 70 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C7.35 STORM P&P - OFF-SITE - 4B.DWG - 2/20/2023 10:33:51 AM - Gregory Rivera

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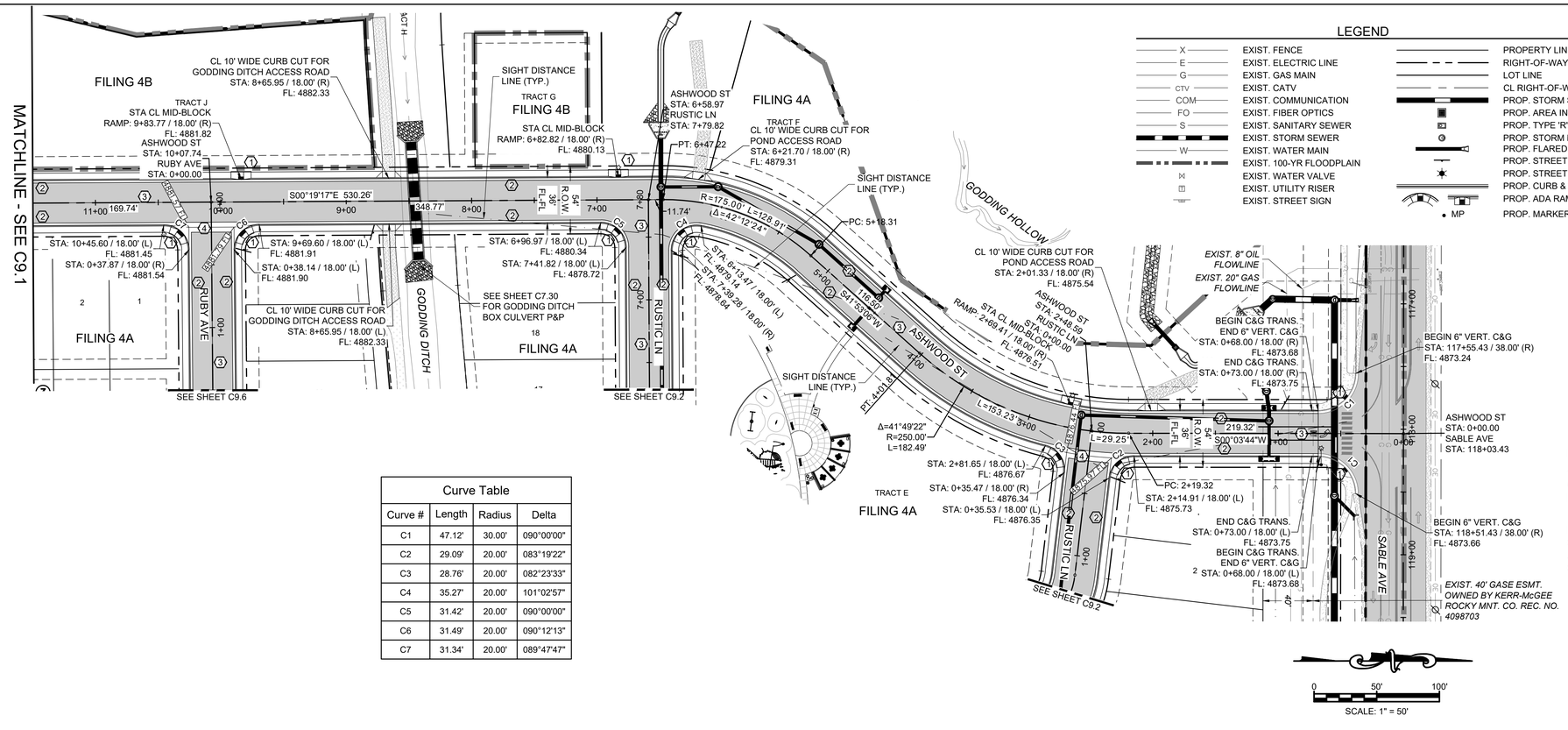
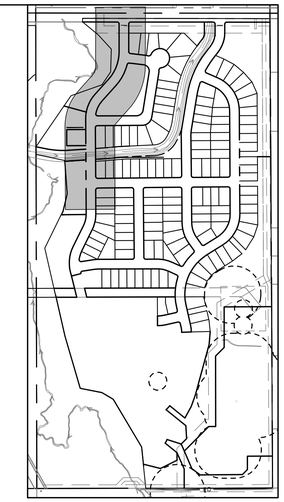


LEGEND

X	EXIST. FENCE		PROPERTY LINE
E	EXIST. ELECTRIC LINE		RIGHT-OF-WAY
G	EXIST. GAS MAIN		LOT LINE
CTV	EXIST. CATV		CL RIGHT-OF-WAY
COM	EXIST. COMMUNICATION		PROP. STORM SEWER
FO	EXIST. FIBER OPTICS		PROP. AREA INLET
S	EXIST. SANITARY SEWER		PROP. TYPE 'R' INLET
	EXIST. STORM SEWER		PROP. STORM MANHOLE
W	EXIST. WATER MAIN		PROP. FLARED END SECTION
	EXIST. 100-YR FLOODPLAIN		PROP. STREET SIGN
	EXIST. WATER VALVE		PROP. STREET LIGHT
	EXIST. UTILITY RISER		PROP. CURB & GUTTER
	EXIST. STREET SIGN		PROP. ADA RAMPS
		• MP	PROP. MARKER POST



KEYMAP
SCALE: 1"=400'

REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

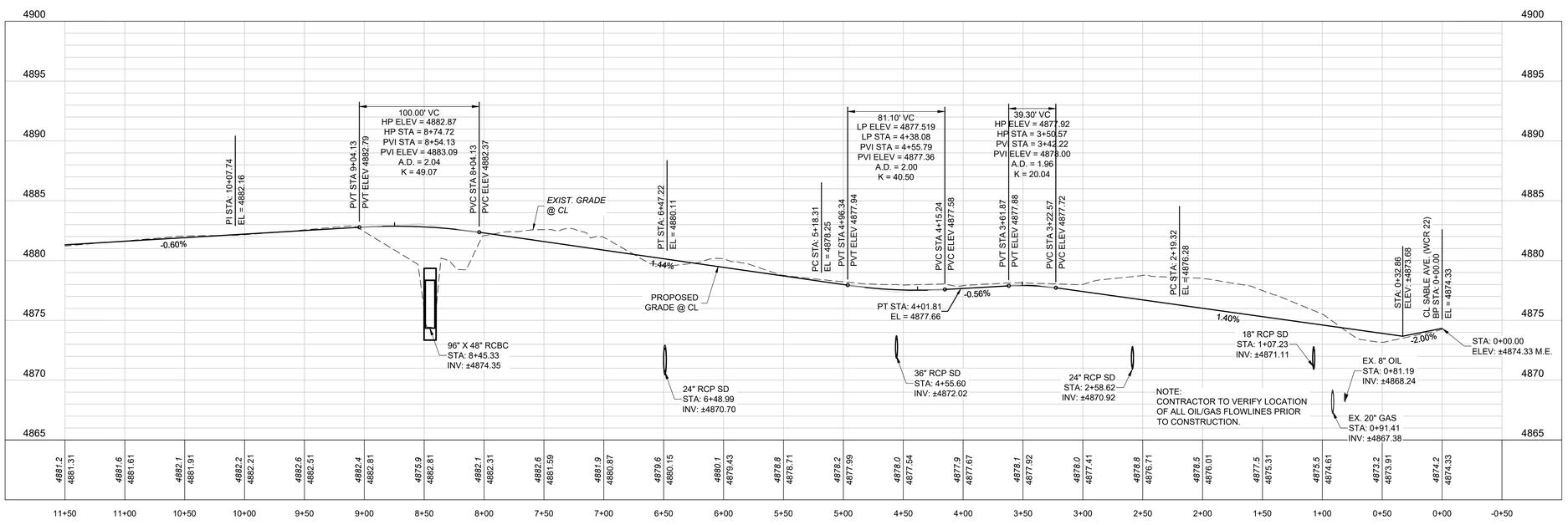
NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12

Curve Table

Curve #	Length	Radius	Delta
C1	47.12'	30.00'	090°00'00"
C2	29.09'	20.00'	083°19'22"
C3	28.76'	20.00'	082°23'33"
C4	35.27'	20.00'	101°02'57"
C5	31.42'	20.00'	090°00'00"
C6	31.49'	20.00'	090°12'13"
C7	31.34'	20.00'	089°47'47"



PROFILE ASHWOOD ST (STA: -0+50 TO 11+50)

SCALES: 1'=50' HORIZONTAL, 1'=5' VERTICAL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ASHWOOD ST - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C9.0
SHEET 71 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C9.0 ASHWOOD ST - PP.DWG - 2/20/2023 2:10:21 PM - Luke Breedlove

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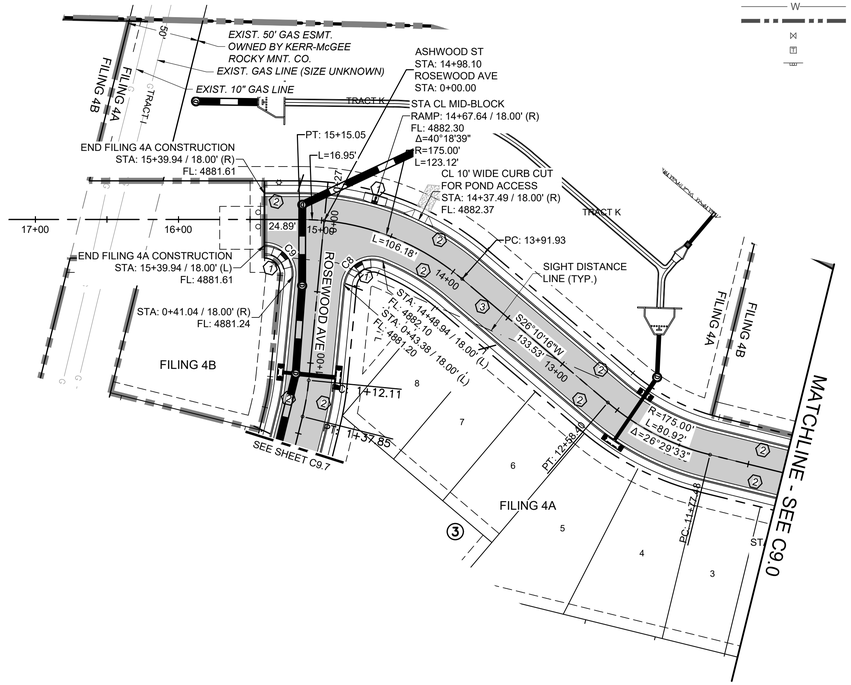
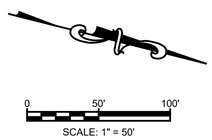
P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C9.0 ASHWOOD ST - PP.DWG - 2/20/2023 12:24:02 PM - Luke Breedlove

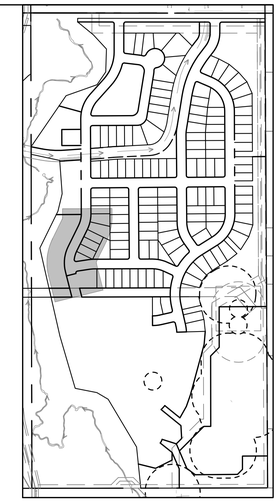
LEGEND

X	EXIST. FENCE		PROPERTY LINE
E	EXIST. ELECTRIC LINE		RIGHT-OF-WAY
G	EXIST. GAS MAIN		LOT LINE
CTV	EXIST. CATV		CL RIGHT-OF-WAY
COM	EXIST. COMMUNICATION		PROP. STORM SEWER
FO	EXIST. FIBER OPTICS		PROP. AREA INLET
S	EXIST. SANITARY SEWER		PROP. TYPE 'R' INLET
	EXIST. STORM SEWER		PROP. STORM MANHOLE
W	EXIST. WATER MAIN		PROP. FLARED END SECTION
	EXIST. 100-YR FLOODPLAIN		PROP. STREET SIGN
	EXIST. WATER VALVE		PROP. STREET LIGHT
	EXIST. UTILITY RISER		PROP. CURB & GUTTER
	EXIST. STREET SIGN		PROP. ADA RAMPS
		MP	PROP. MARKER POST



Curve Table			
Curve #	Length	Radius	Delta
C8	37.04'	20.00'	106°06'12"
C9	33.35'	20.00'	095°32'23"

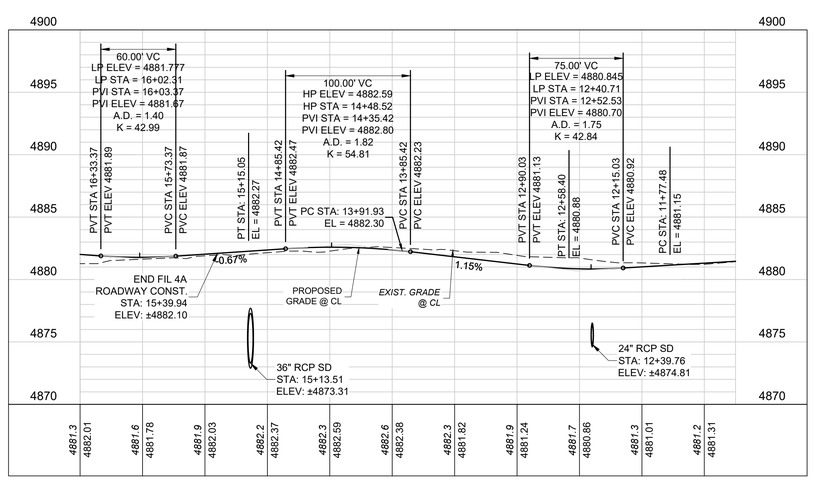




KEYMAP
SCALE: 1"=400'

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12



PROFILE ASHWOOD ST (STA: 11+25 TO 16+50)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ½ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504

ASHWOOD ST - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C9.1
SHEET 72 OF 109

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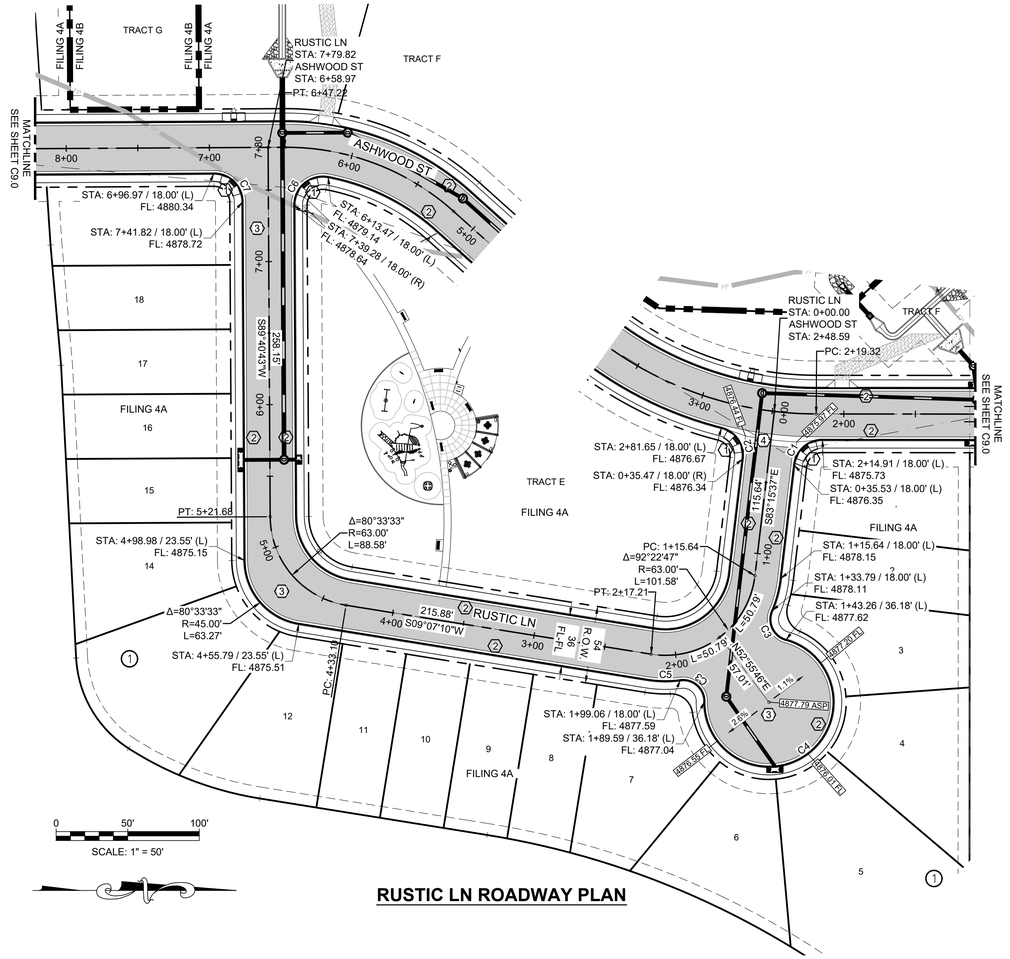
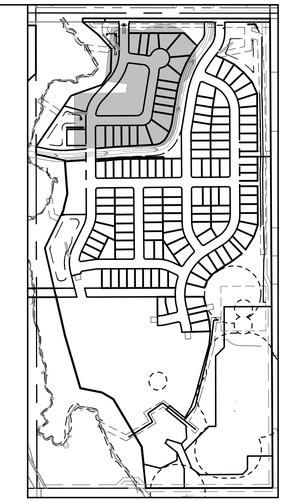
Curve Table			
Curve #	Length	Radius	Delta
C6	35.27'	20.00'	101°02'57"
C7	31.42'	20.00'	090°00'00"
C3	25.63'	15.00'	097°54'42"
C4	200.43'	45.00'	255°11'27"
C5	23.34'	81.00'	016°30'22"
C1	29.09'	20.00'	083°19'22"
C2	28.76'	20.00'	082°23'33"



0 50' 100'
SCALE: 1" = 50'

RUSTIC LN ROADWAY PLAN



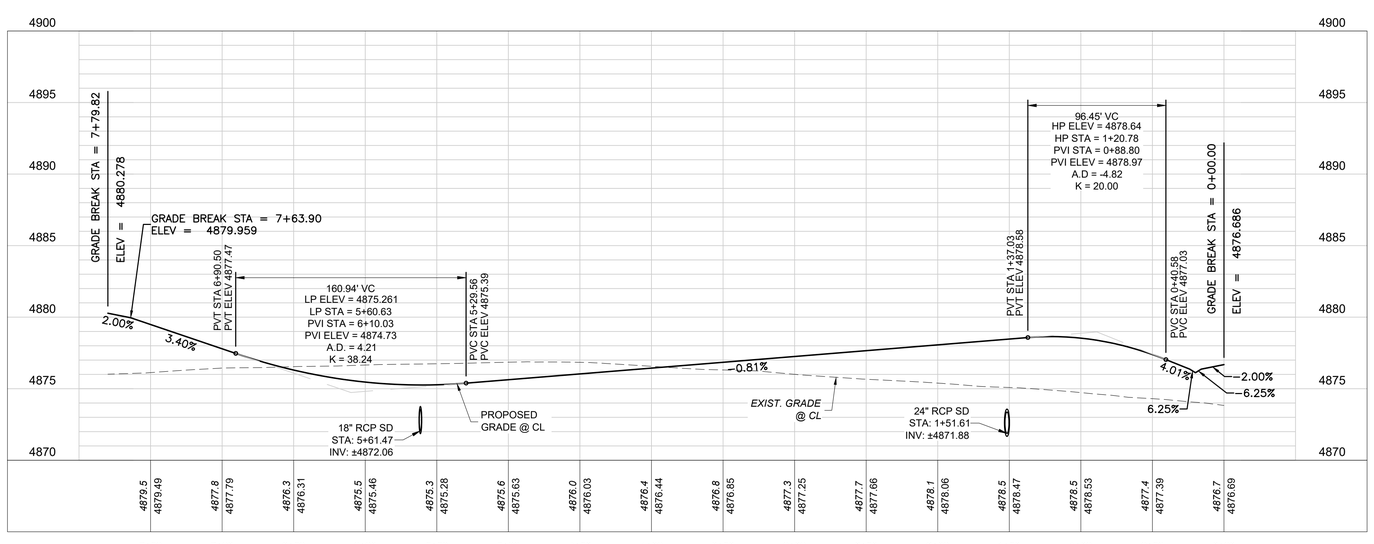
KEYMAP
SCALE: 1"=400'

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12

LEGEND

X	EXIST. FENCE		PROPERTY LINE
E	EXIST. ELECTRIC LINE		RIGHT-OF-WAY
G	EXIST. GAS MAIN		LOT LINE
CTV	EXIST. CATV		CL RIGHT-OF-WAY
COM	EXIST. COMMUNICATION		PROP. STORM SEWER
FO	EXIST. FIBER OPTICS		PROP. AREA INLET
S	EXIST. SANITARY SEWER		PROP. TYPE 'R' INLET
	EXIST. STORM SEWER		PROP. STORM MANHOLE
W	EXIST. WATER MAIN		PROP. FLARED END SECTION
	EXIST. 100-YR FLOODPLAIN		PROP. STREET SIGN
	EXIST. WATER VALVE		PROP. STREET LIGHT
	EXIST. UTILITY RISER		PROP. CURB & GUTTER
	EXIST. STREET SIGN		PROP. ADA RAMPS
		MP	PROP. MARKER POST



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CONSTRUCTION

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
RUSTIC LN - PLAN & PROFILE

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/11/2023

C9.2
SHEET 73 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C9.2 RUSTIC LN PP.DWG - 2/20/2023 12:24:22 PM - Luke Breedlove

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LEGEND

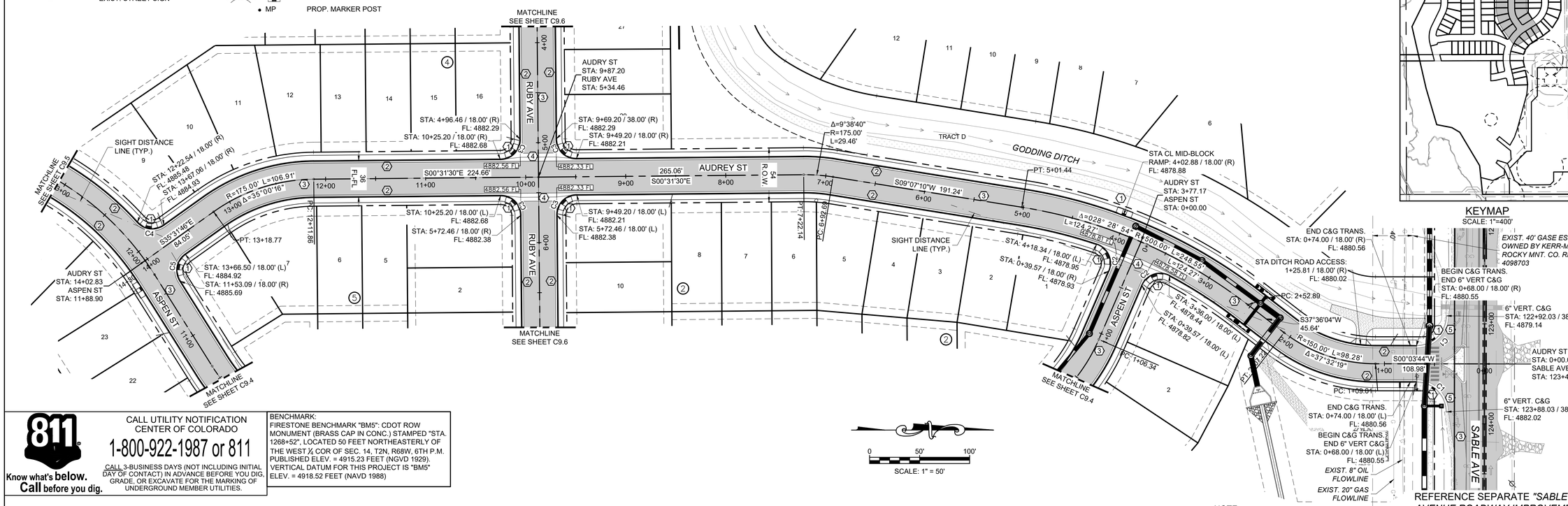
- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- MP — PROP. MARKER POST

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12

Curve Table

Curve #	Length	Radius	Delta
C5	30.24'	20.00'	086°37'55"
C4	29.07'	20.00'	083°17'08"
C1	47.12'	30.00'	089°59'59"
C2	33.06'	20.00'	094°43'05"
C3	31.42'	20.00'	090°00'00"



NOTE:
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REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.

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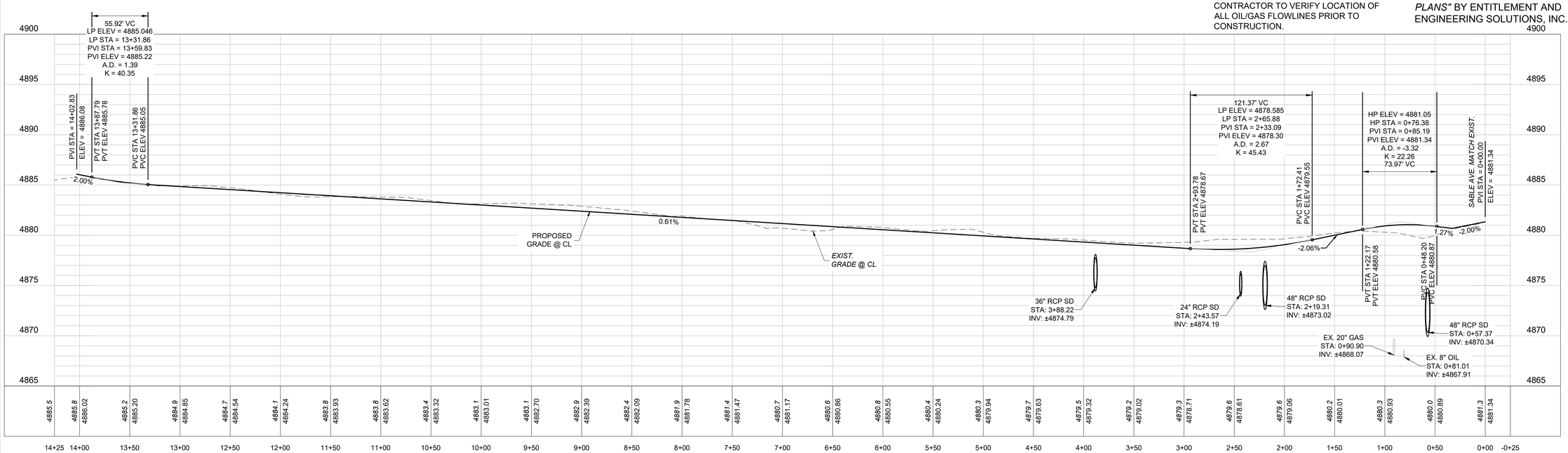

NOTE:
CONTRACTOR TO VERIFY LOCATION OF ALL OIL/GAS FLOWLINES PRIOR TO CONSTRUCTION.

PROFILE AUDREY ST (STA: -0+25 TO 14+25)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C9.3 AUDREY ST PP.DWG - 2/20/2023 12:24:47 PM - Luke Breedlove

No.	REVISION	BY	DATE

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
AUDREY ST - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C9.3
SHEET 74 OF 109

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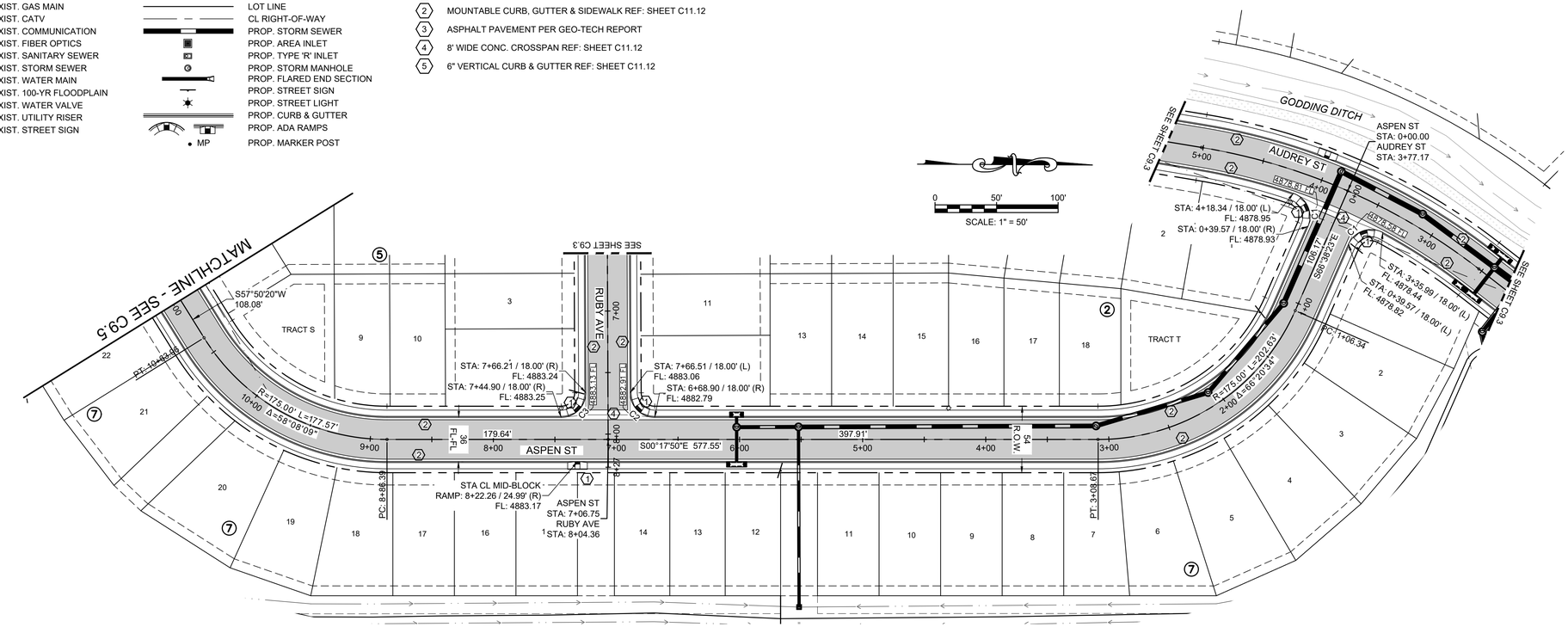
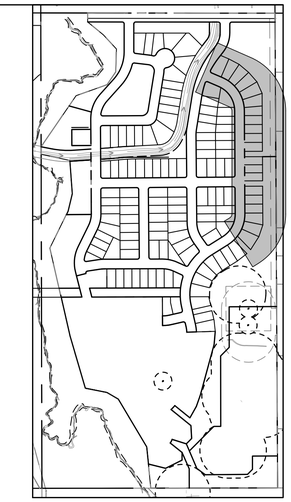
LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

CONSTRUCTION KEY:

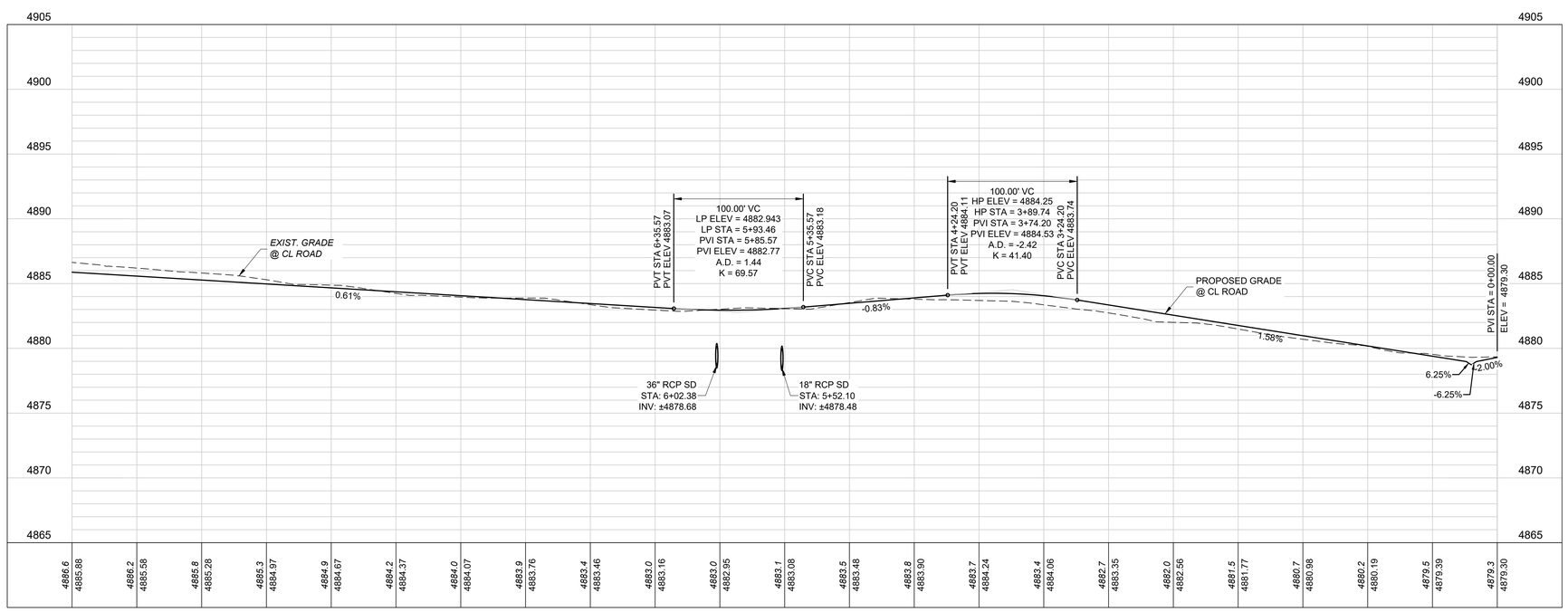
1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12





KEYMAP
SCALE: 1"=400'

Curve Table			
Curve #	Length	Radius	Delta
C1	33.06'	20.00'	094°43'05"
C2	31.34'	20.00'	089°46'20"
C3	31.50'	20.00'	090°13'40"



PROFILE ASPEN ST (STA: -0+00 TO 11+00)

SCALES: 1"=50' HORIZONTAL, 1"=5' VERTICAL

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

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ASPEN ST - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/11/2023

C9.4
SHEET 75 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C9.4 ASPEN ST PP.DWG - 2/20/2023 12:25:10 PM - Luke Breedlove

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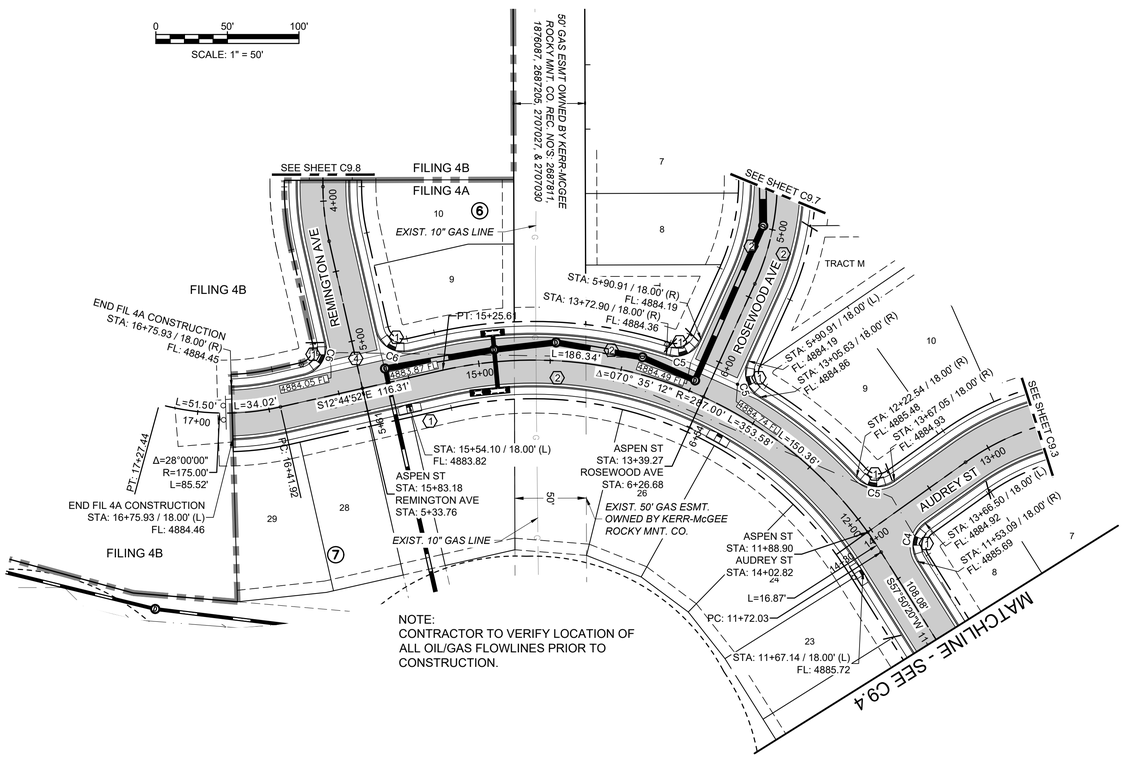
LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

0 50' 100'
SCALE: 1" = 50'



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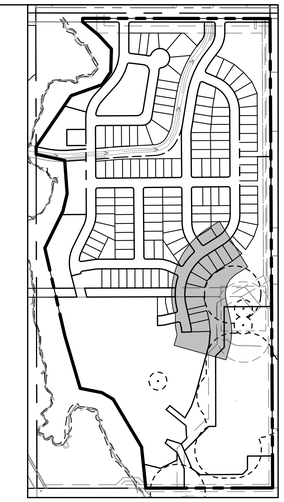

KEYMAP
SCALE: 1"=400'

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
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Curve #	Length	Radius	Delta
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C5	29.07'	20.00'	083°17'08"
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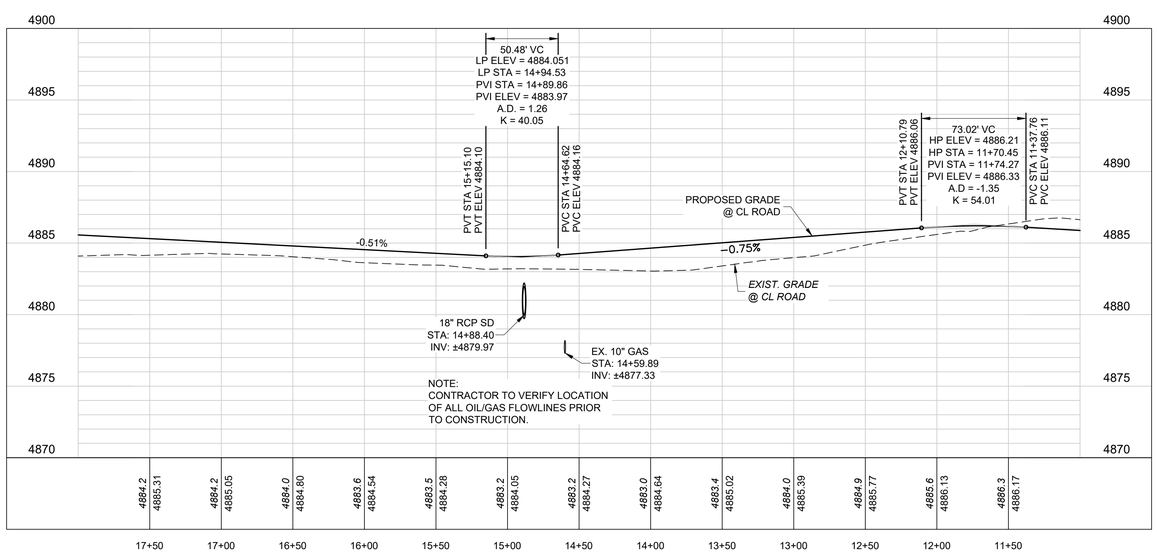

PROFILE ASPEN ST (STA: 11+00 TO 18+00)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

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1-800-922-1987 or 811
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Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ½ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ASPEN ST - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/11/2023

C9.5
SHEET 76 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\CD\C9.4 ASPEN ST PP.DWG - 2/20/2023 12:25:17 PM - Luke Breedlove

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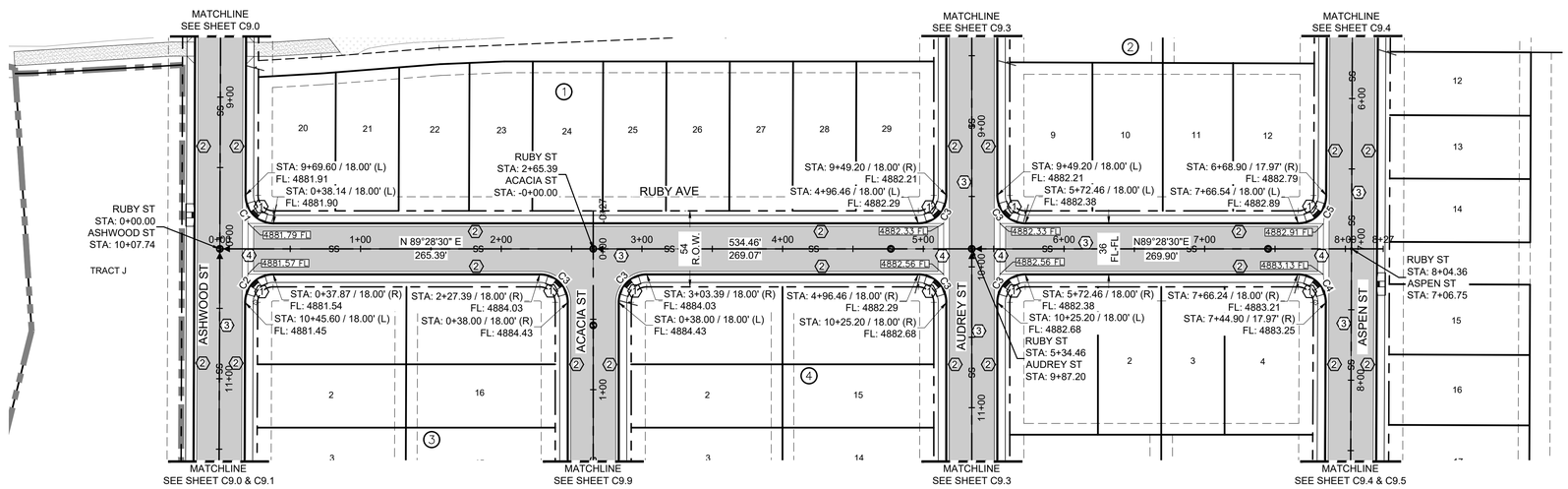
Curve Table			
Curve #	Length	Radius	Delta
C1	31.49'	20.00'	090°12'13"
C2	31.34'	20.00'	089°47'47"
C3	31.42'	20.00'	090°00'00"
C4	31.50'	20.00'	090°13'40"
C5	31.34'	20.00'	089°46'20"

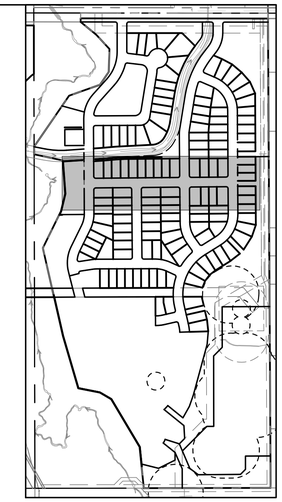
LEGEND

- X — EXIST. FENCE
- E — EXIST. ELECTRIC LINE
- G — EXIST. GAS MAIN
- CTV — EXIST. CATV
- COM — EXIST. COMMUNICATION
- FO — EXIST. FIBER OPTICS
- S — EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- W — EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- MP — PROP. MARKER POST

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12

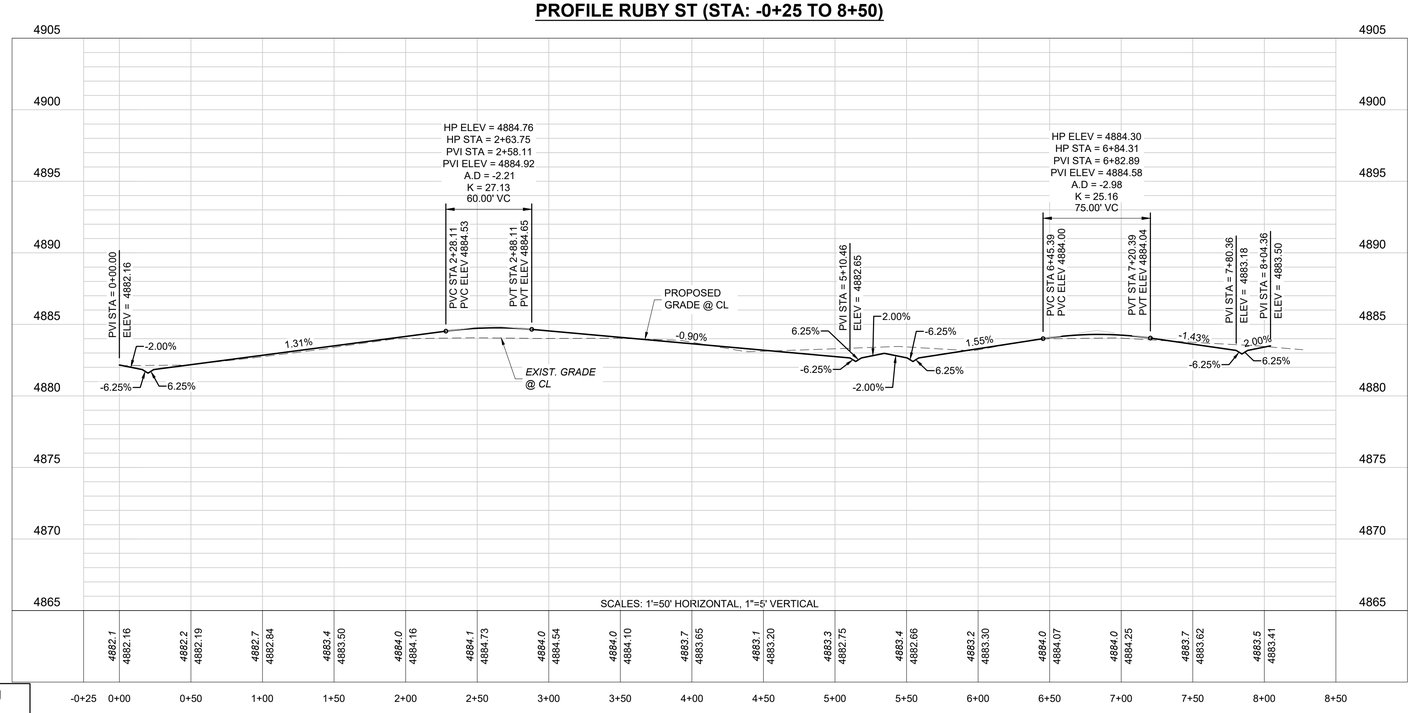




KEYMAP
SCALE: 1"=400'

0 50' 100'
SCALE: 1" = 50'

PROFILE RUBY ST (STA: -0+25 TO 8+50)



CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
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811 Know what's below. Call before you dig.

BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ¼ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
RUBY AVE - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/15/2023

C9.6
SHEET 77 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\RUBY AVE - PLAN AND PROFILE.DWG - 2/20/2023 12:25:35 PM - Luke Breedlove

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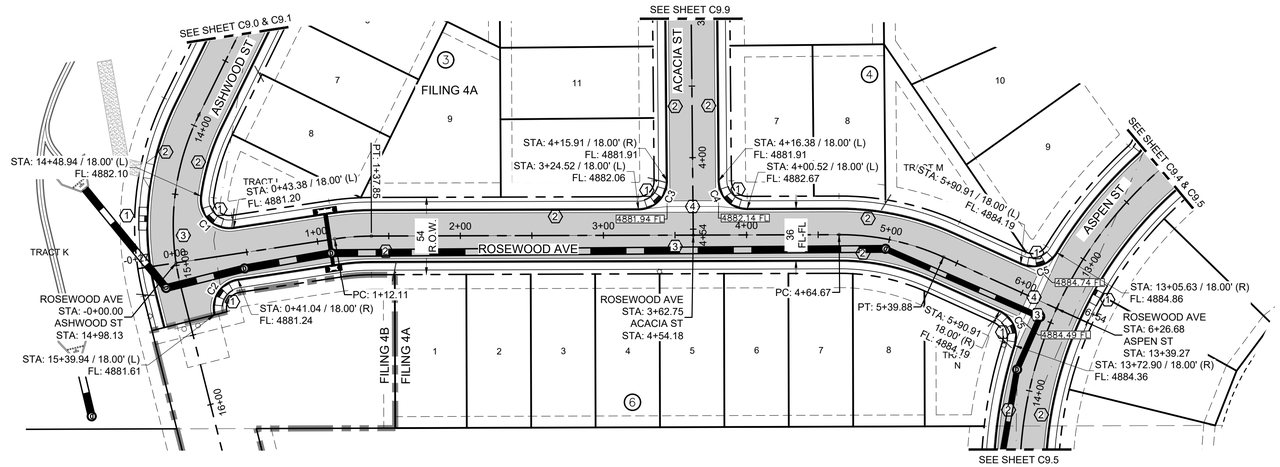
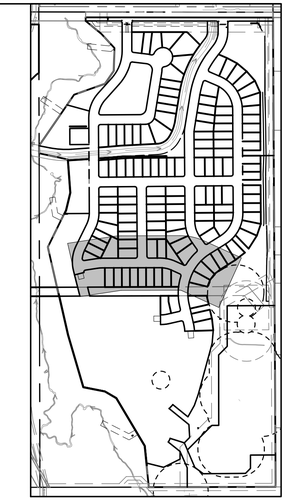




KEYMAP
SCALE: 1"=400'

Curve Table

Curve #	Length	Radius	Delta
C1	37.04'	20.00'	106°06'12"
C2	33.35'	20.00'	095°32'23"
C3	31.54'	20.00'	090°21'08"
C4	31.29'	20.00'	089°38'52"
C5	29.07'	20.00'	083°17'08"

LEGEND

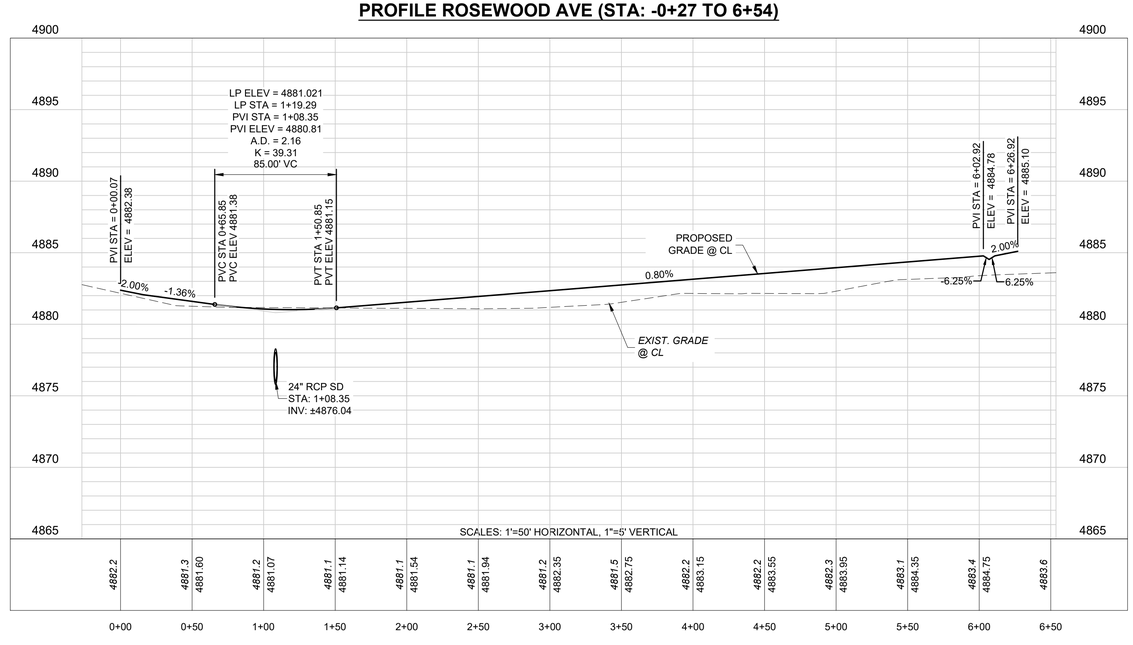
- EXIST. FENCE
- EXIST. ELECTRIC LINE
- EXIST. GAS MAIN
- EXIST. CATV
- EXIST. COMMUNICATION
- EXIST. FIBER OPTICS
- EXIST. SANITARY SEWER
- EXIST. STORM SEWER
- EXIST. WATER MAIN
- EXIST. 100-YR FLOODPLAIN
- EXIST. WATER VALVE
- EXIST. UTILITY RISER
- EXIST. STREET SIGN
- PROPERTY LINE
- RIGHT-OF-WAY
- LOT LINE
- CL RIGHT-OF-WAY
- PROP. STORM SEWER
- PROP. AREA INLET
- PROP. TYPE 'R' INLET
- PROP. STORM MANHOLE
- PROP. FLARED END SECTION
- PROP. STREET SIGN
- PROP. STREET LIGHT
- PROP. CURB & GUTTER
- PROP. ADA RAMPS
- PROP. MARKER POST

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12

0 50' 100'
SCALE: 1" = 50'

PROFILE ROSEWOOD AVE (STA: -0+27 TO 6+54)



BENCHMARK:
FIRESTONE BENCHMARK "BM5": CDOT ROW MONUMENT (BRASS CAP IN CONC.) STAMPED "STA. 1268+52", LOCATED 50 FEET NORTHEASTERLY OF THE WEST ½ COR OF SEC. 14, T2N, R68W, 6TH P.M. PUBLISHED ELEV. = 4915.23 FEET (NGVD 1929). VERTICAL DATUM FOR THIS PROJECT IS "BM5" ELEV. = 4918.52 FEET (NAVD 1988)

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ROSEWOOD AVE - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/11/2023

C9.7
SHEET 78 OF 109

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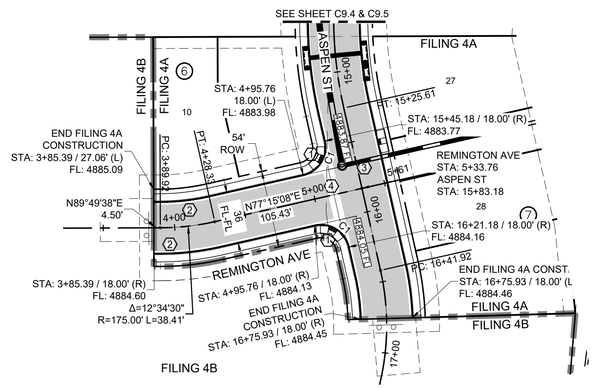
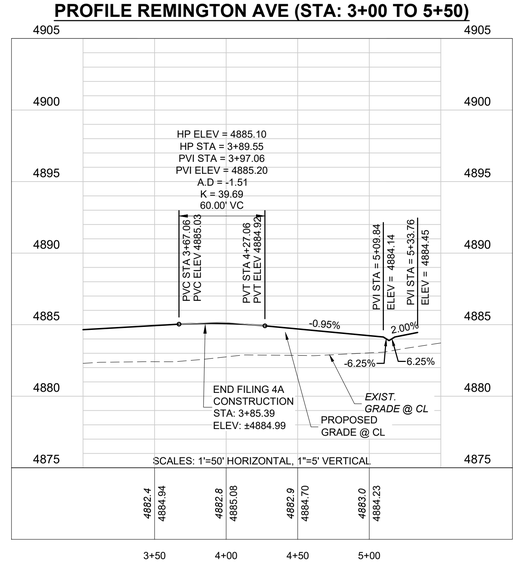


KEYMAP
SCALE: 1" = 400'

Curve Table			
Curve #	Length	Radius	Delta
C1	31.42'	20.00'	090°00'00"

PROFILE REMINGTON AVE (STA: 3+00 TO 5+50)



CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
	PROP. AREA INLET
	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

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No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
REMINGTON AVE - PLAN & PROFILE

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	02/11/2023

C9.8
SHEET 79 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\06 CAD\SHEETS\C\REMINGTON AVE - PLAN AND PROFILE.DWG - 2/20/2023 12:26:04 PM - Luke Breidlove

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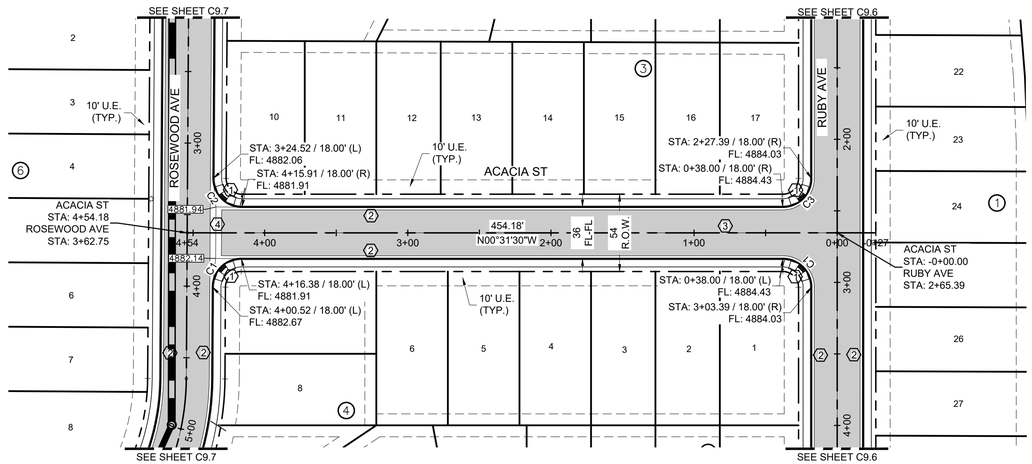
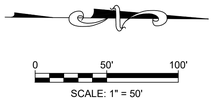
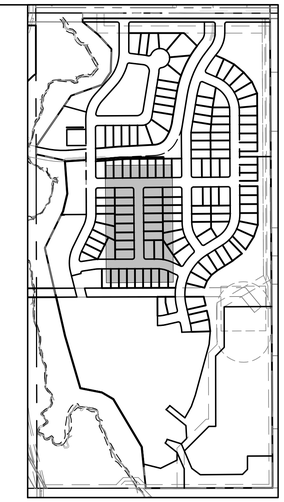


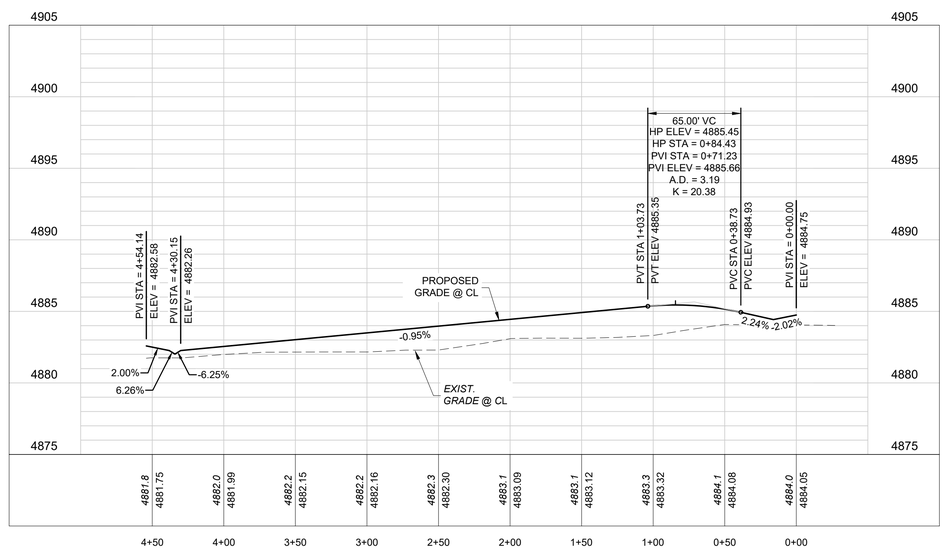




KEYMAP
SCALE: 1"=400'

CONSTRUCTION KEY:

1. ADA RAMP REF: SHEET C11.12
2. MOUNTABLE CURB, GUTTER & SIDEWALK REF: SHEET C11.12
3. ASPHALT PAVEMENT PER GEO-TECH REPORT
4. 8' WIDE CONC. CROSSPAN REF: SHEET C11.12
5. 6" VERTICAL CURB & GUTTER REF: SHEET C11.12



PROFILE ACACIA ST (STA: -0+50 TO 5+00)

SCALES: 1'=50' HORIZONTAL, 1"=5' VERTICAL

LEGEND

X	EXIST. FENCE
E	EXIST. ELECTRIC LINE
G	EXIST. GAS MAIN
CTV	EXIST. CATV
COM	EXIST. COMMUNICATION
FO	EXIST. FIBER OPTICS
S	EXIST. SANITARY SEWER
	EXIST. STORM SEWER
W	EXIST. WATER MAIN
	EXIST. 100-YR FLOODPLAIN
	EXIST. WATER VALVE
	EXIST. UTILITY RISER
	EXIST. STREET SIGN
	PROPERTY LINE
	RIGHT-OF-WAY
	LOT LINE
	CL RIGHT-OF-WAY
	PROP. STORM SEWER
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	PROP. TYPE 'R' INLET
	PROP. STORM MANHOLE
	PROP. FLARED END SECTION
	PROP. STREET SIGN
	PROP. STREET LIGHT
	PROP. CURB & GUTTER
	PROP. ADA RAMPS
MP	PROP. MARKER POST

Curve Table			
Curve #	Length	Radius	Delta
C1	31.29'	20.00'	089°38'52"
C2	31.54'	20.00'	090°21'08"
C3	31.42'	20.00'	090°00'00"

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No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ACACIA ST - PLAN & PROFILE

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 02/11/2023

C9.9
SHEET 80 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C\DA\CAC\A ST - PLAN AND PROFILE.DWG - 2/20/2023 12:26:23 PM - Luke Breedlove

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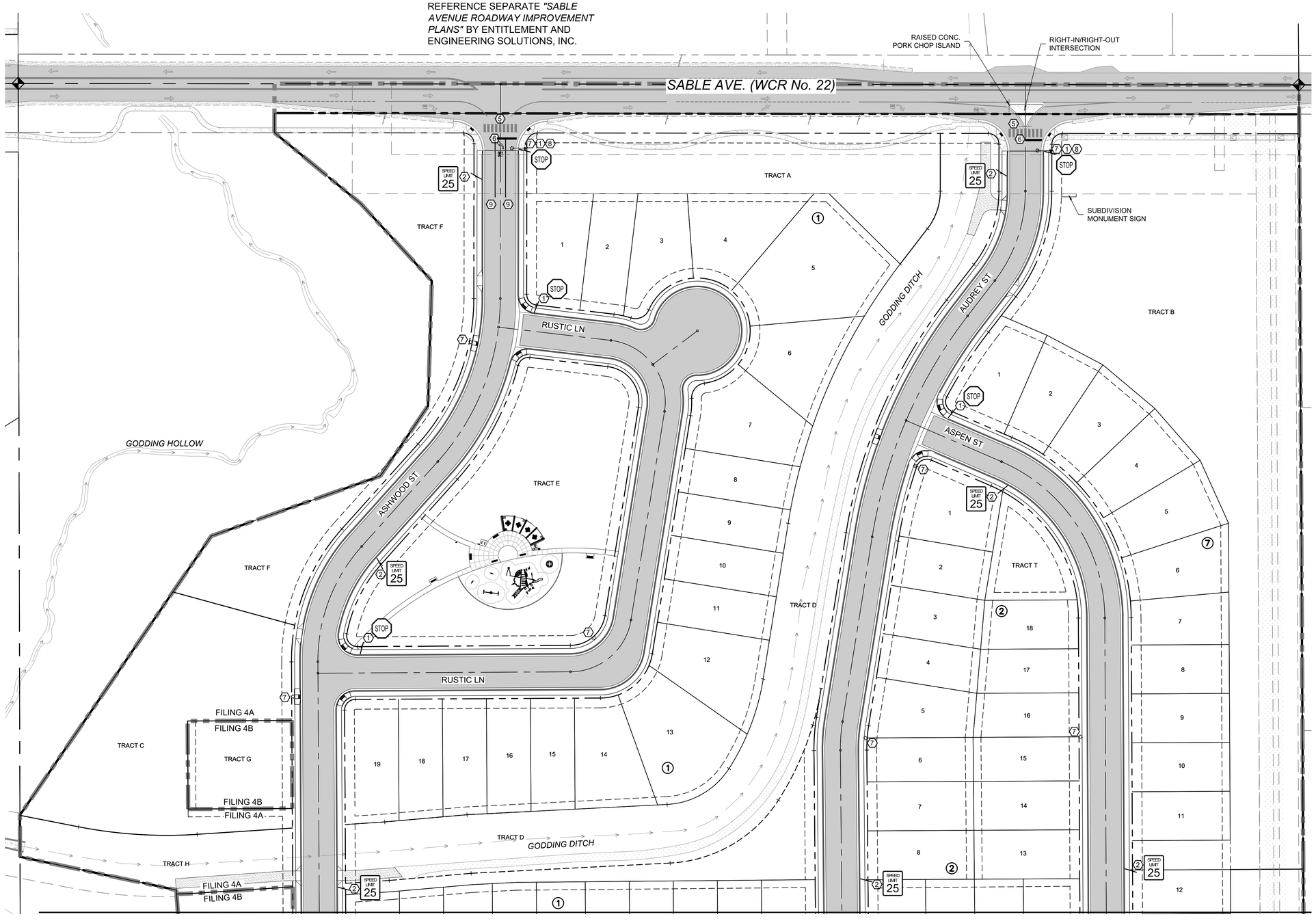
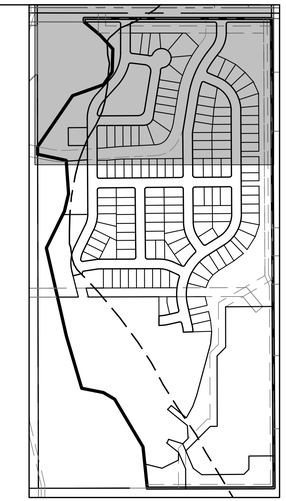
REFERENCE SEPARATE *"SABLE AVENUE ROADWAY IMPROVEMENT PLANS"* BY ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.





KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

SIGNAGE, STRIPING & LIGHTING KEY

1. R1-1 & D3 STOP SIGN AND STREET SIGN
2. R2-1 SPEED LIMIT SIGN
3. W14-2 NO OUTLET STREET
4. CDOT TYPE 3 BARRICADE
5. STOP BAR LINE, 24" WIDE SOLID WHITE
6. 24"x10' SOLID WHITE CROSSWALK LINE SPACED 24" APART
7. 70-WATT POST TOP LIGHT
8. 250-WATT COBRA HEAD DROP GLASS
8. 250-WATT COBRA HEAD DROP GLASS
9. SOLID 8" WHITE CHANNELIZED STRIPE

LEGEND

PROPOSED 70 WATT POST TOP LIGHT
RE: DETAIL, SHEET C11.11

PROPOSED 250 WATT COBRA HEAD DROP GLASS
RE: DETAIL, SHEET C11.11

PROPOSED SIGN RE: DETAILS SHEET C11.13

NOTES:

1. ALL SIGNS ARE TO BE BLADE STREET/ STOP (R1-1 AND D3) UNLESS OTHERWISE NOTED.
2. ALL STREET NAME SIGNS ALONG ARTERIALS SHALL BE MIN. 6" HIGH LETTERS.

R1-1

D3

W14-2

R2-1

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
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No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SIGNAGE, STRIPING & LIGHTING PLAN 1

PROJECT NO:	OLS001.01
DESIGNED BY:	JMK
DRAWN BY:	RAK
DATE:	02/15/2023

C10.1
SHEET 81 OF 109

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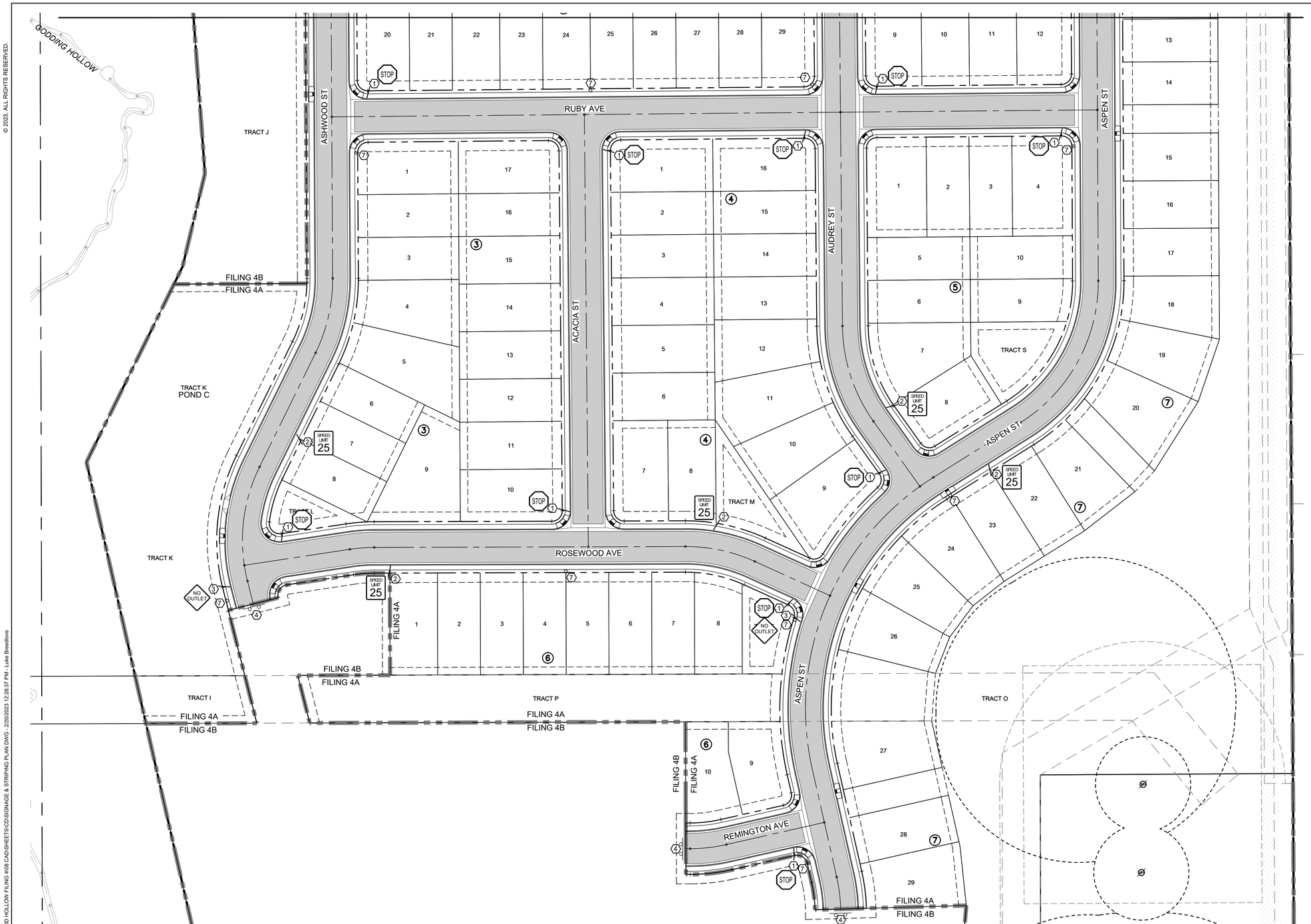

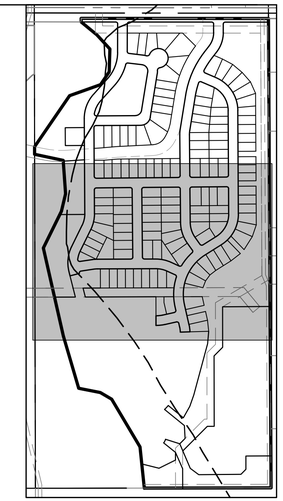

KEYMAP
SCALE: 1" = 400'

N

SCALE IN FEET
0 50 100

IF BAR DOES NOT MEASURE 1 INCH THEN DRAWING IS NOT TO SCALE

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LEGEND

PROPOSED 70 WATT POST TOP LIGHT RE: DETAIL, SHEET C11.11

PROPOSED 250 WATT COBRA HEAD DROP GLASS RE: DETAIL, SHEET C11.11

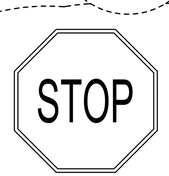
PROPOSED SIGN

NOTES:

1. ALL SIGNS ARE TO BE BLADE STREET/ STOP (R1-1 AND D3) UNLESS OTHERWISE NOTED.
2. ALL STREET NAME SIGNS ALONG ARTERIALS SHALL BE MIN. 6" HIGH LETTERS.

SIGNAGE, STRIPING & LIGHTING KEY

1. R1-1 & D3 STOP SIGN AND STREET SIGN
2. R2-1 SPEED LIMIT SIGN
3. W14-2 NO OUTLET STREET
4. CDOT TYPE 3 BARRICADE
5. STOP BAR LINE, 24" WIDE SOLID WHITE
6. 24"x10' SOLID WHITE CROSSWALK LINE SPACED 24" APART
7. 70-WATT POST TOP LIGHT
8. 250-WATT COBRA HEAD DROP GLASS
9. 250-WATT COBRA HEAD DROP GLASS
10. SOLID 8" WHITE CHANNELIZED STRIPE



R1-1

D3

W14-2

R2-1

811
Know what's below.
Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	BY	DATE

PRELIMINARY
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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
SIGNAGE, STRIPING & LIGHTING PLAN 2

PROJECT NO:	OLS001.01
DESIGNED BY:	JMK
DRAWN BY:	RAK
DATE:	02/15/2023

C10.2
SHEET 82 OF 109

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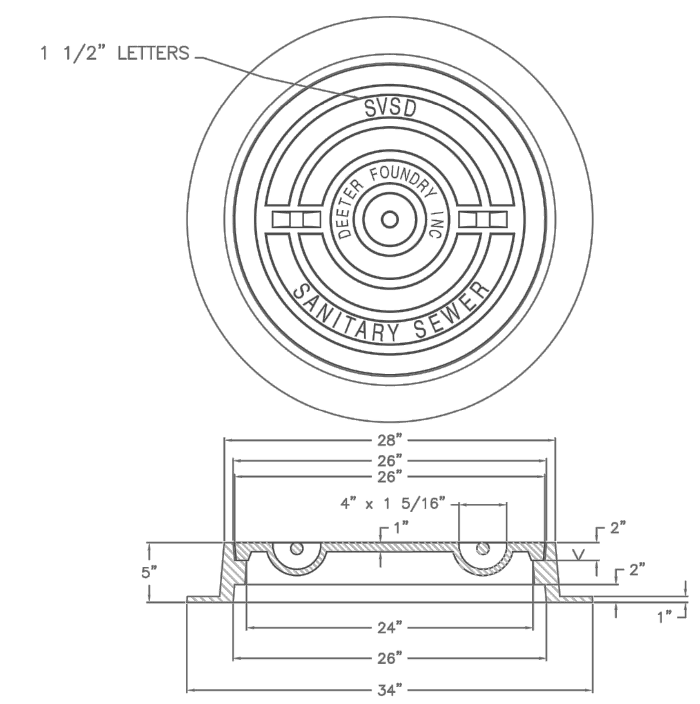
ST. VRAIN SANITATION DISTRICT APPENDIX B GENERAL CONSTRUCTION NOTES

1. District shall refer to the St. Vrain Sanitation District in these notes.
2. District's acceptance of these plans is valid for one year.
3. All materials and construction shall conform to the District standards.
4. Contractor to verify locations and elevations of existing utilities prior to commencing any construction.
5. The contractor shall notify the District a minimum of 48 hours and a maximum of 96 hours prior to starting consnstruction or prior to resuming construction after a break.
6. Sanitary sewer shall be polyvinyl chloride (PVC) pipe, ASTM D3034–SDR35 or as indicated on the plans.
7. All concrete shall be minimum 4000 psi at 28 day strength.
8. Maintain a minimum of 10 feet horizontal separation outside diameter to outside diameter between water lines and all sewer lines and manholes.
9. All sewer mains crossing water mains with less than 18 inches of separation shall be encased in concrete.
10. Rim elevations shown are approximate and should not be taken as final. All manholes shall be final adjusted after paving such that the rim is ¼ to ½ inch below finished asphalt. Manholes in unpaved areas shall be set so that the rim is 0.5' above finished grade.
11. Invert data shall be collected by a licensed surveyor on each pipe invert in a manhole. Center of manhole surveying is not acceptable for slope calculations. Record drawings (asbuilts) must demostrate conformance to District standards.
12. The contractor shall have a set of approved plans on site at all times. The contractor shall be responsible for recording actual record drawing dimensions and distances as well as service locations on these plans and submitting them to the engineer for preparation of record drawings. These drawings shall be kept current at all times.
13. Before any construction commences, a plug shall be installed to prevent drainage through the new sewer line from entering the existing sewer line. This plug will be installed in the manhole, which connects new work with the existing and not be removed until initial acceptance.
14. Underdrains, if installed, are the responsibility of the developer. District assumes no liability for any portion of or any damage caused by underdrains. Absolutely no part of an underdrain system, including clean outs, will be allowed inside of sanitary sewer manholes. All underdrains shall be installed below the sanitary sewer and offset to the side. Pipe material shall be different color than sanitary sewer.
15. No service laterals smaller than 8 inch in diameter shall enter manholes.
16. Service crossings of curb shall be marked with a cut "S" in curb face. Paint is not acceptable. Service shall be extended into the lot a minimum of 10 feet.
17. Contractor shall mark the end of all sewer services with a 2" x 4" board with minimum of four (4) feet above grade, painted green.
18. All pipes shall have squeegie (CDOT #8 bedding) unless otherwise shown or the District may approve an alternate bedding in special cases.
19. Cut off walls will be installed 10' down stream of each manhole where the Subdivision line connects to the existing sanitary sewer main line.
20. The warranty bond shall be in the amount of $5,000.00 or 15% of the total cost of the sewer, whichever is greater.
21. Prior to approval, all sanitary sewer pipes shall be pressure–tested per ASTM C924. All manholes shall be vacuum–tested per UNI–B–98.
22. Prior to removal of plugs at manholes, pipe shall be jet–cleaned and vacuumed to remove debris and videoed. Notice shall be given to the District Inspector one (1) week prior to cleaning. Inspector must be present during the operation. Once approval has been given by Inspector, plugs may only be removed after initial acceptance by the District.
23. The final recorded plat and recorded address plat shall be provided to the District for initial acceptance.
24. Twenty (20) months after construction and prior to the expiration of warranty, the developer shall camera/video the sanitary sewer lines and provide a DVD to the District for review.

REVISED 1/2017

ST. VRAIN SANITATION DISTRICT MANHOLE RING AND COVER



NOTES:

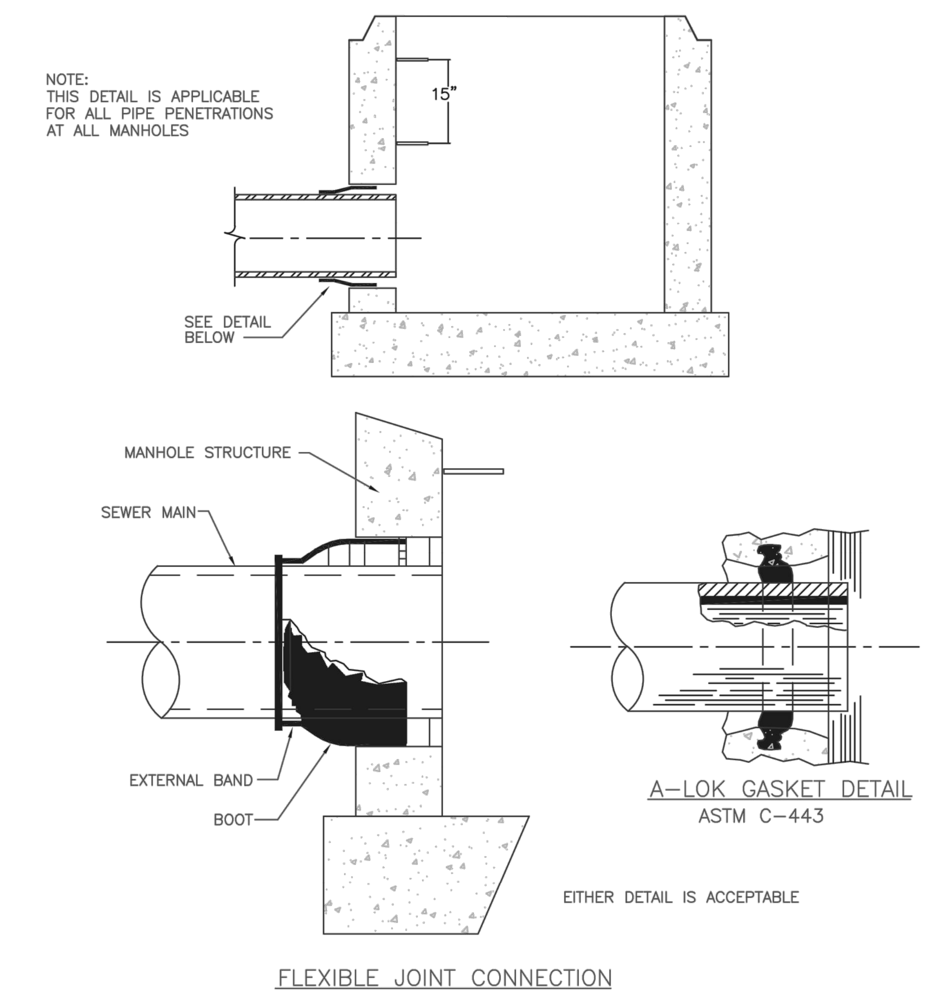
1. RING AND COVER SHALL BE IRON (AS MANUFACTURED FOR CURRENT AWWA STANDARD).
2. SANITARY SEWER MANHOLE COVERS SHALL BE NONPERFORATED WITH "SVSD SANITARY SEWER" FORGED ON THE TOP OF THE LID AS SHOWN ABOVE.
3. COVER SHALL BE BOLTED, WATER RESISTANT IF LOCATED IN 100 YEAR FLOOD PLAIN, BACK YARDS, OPEN SPACE AND/OR DITCHES.
4. ALL MANHOLES SHALL BE EQUIVALENT TO DEETER MODEL NUMBER 1156 OR D&L FOUNDRY MODEL A–1480.
5. MANHOLE LID AND RING SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
6. SMOOTH SURFACE ONLY FOR THE TOWN OF FREDERICK.

Detail Number: 2

REVISED: 1/2017

ST. VRAIN SANITATION DISTRICT ALL BASE SECTIONS

PIPE PENETRATIONS



Detail Number: 7

REVISED: 1/2017

ST. VRAIN SANITATION DISTRICT PIPE PRESSURE TEST PARAMETERS

MINIMUM SPECIFIED TIME REQUIRED FOR A 0.5 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

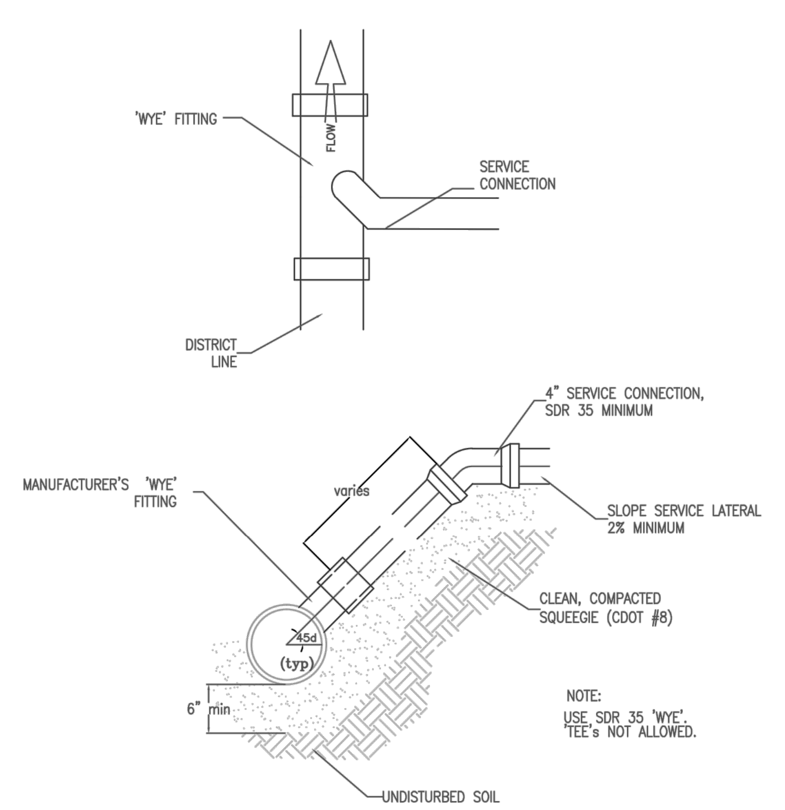
1 PIPE DIAMETER (IN.)	2 MINIMUM TIME (MIN:SEC)	3 LENGTH FOR MINIMUM TIME (FT)	4 TIME FOR LONGER LENGTH (SEC)	SPECIFICATIONS TIME FOR LENGTH (L) SHOWN (MIN:SEC)							
				100 FT	150 FT	200 FT	250 FT	300 FT	350 FT	400 FT	450 FT
4	1:53	597	0.190 L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53
6	2:50	398	0.427 L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12
8	3:47	298	0.760 L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	5:42
10	4:43	239	1.187 L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	8:54
12	5:40	199	1.709 L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50
15	7:05	159	2.671 L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02
18	8:30	133	3.846 L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51
21	9:55	114	5.235 L	9:55	13:05	17:27	21:49	26:11	30:32	34:54	39:16
24	11:20	99	6.837 L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17
27	12:45	88	8.653 L	14:25	21:38	28:51	36:04	43:16	50:30	57:42	64:54
30	14:10	80	10.683 L	17:48	26:43	35:37	44:31	53:25	62:19	71:13	80:07
33	15:35	72	12.926 L	21:33	32:19	43:56	53:52	64:38	75:24	86:10	96:57
36	17:00	66	15.384 L	25:39	38:28	51:17	64:06	76:55	89:44	102:34	115:23
42	19:54	57	20.942 L	34:54	52:21	69:49	87:15	104:42	122:10	139:37	157:04
48	22:47	50	27.352 L	45:35	68:23	91:11	113:58	136:46	159:33	182:21	205:09
54	25:31	44	34.618 L	57:42	86:33	115:24	144:15	173:05	201:56	230:47	259:38
60	28:20	40	42.738 L	71:14	106:51	142:28	178:05	213:41	249:18	284:55	320:32

NOTE: IF THERE HAS BEEN NO LEAKAGE (ZERO PSIG DROP) AFTER ONE HOUR OF TESTING, THE TEST SECTION SHALL BE ACCEPTED AND THE TEST SHALL BE COMPLETE.

Detail Number: 20

REVISED: 1/2017

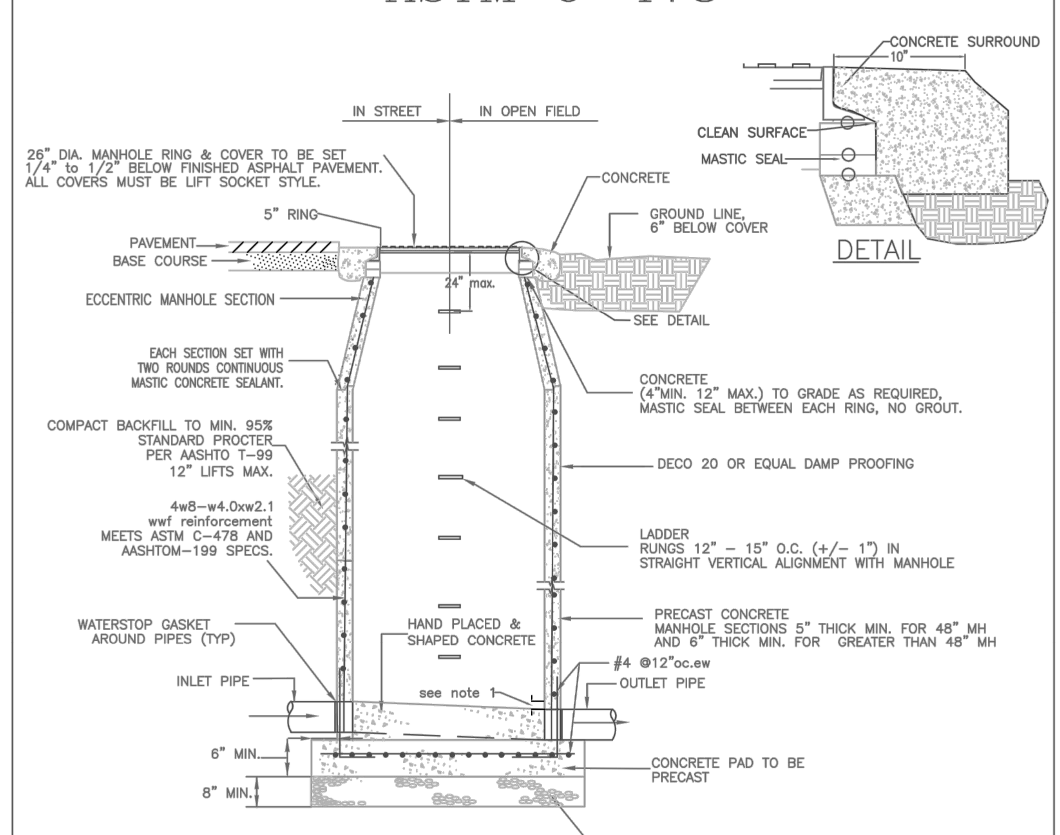
ST. VRAIN SANITATION DISTRICT TYPICAL SERVICE CONNECTION



Detail Number: 9

REVISED: 1/2017

ST. VRAIN SANITATION DISTRICT STANDARD MANHOLE ASTM C–478



ELEVATION

PIPE SIZE	MIN. MH DIAM.
15">pipe	48"
18"<pipe<27"	60"
30"<pipe	72"

NOTE 1 MIN. DROP THRU MANHOLE:

FLOW DIRECTION CHANGE(FDC)	MIN. DROP
0 DEG< FDC < 30 DEG.	0.1'
90 DEG < FDC < 30 DEG	0.2'
90 DEG<	NOT ALLOWED

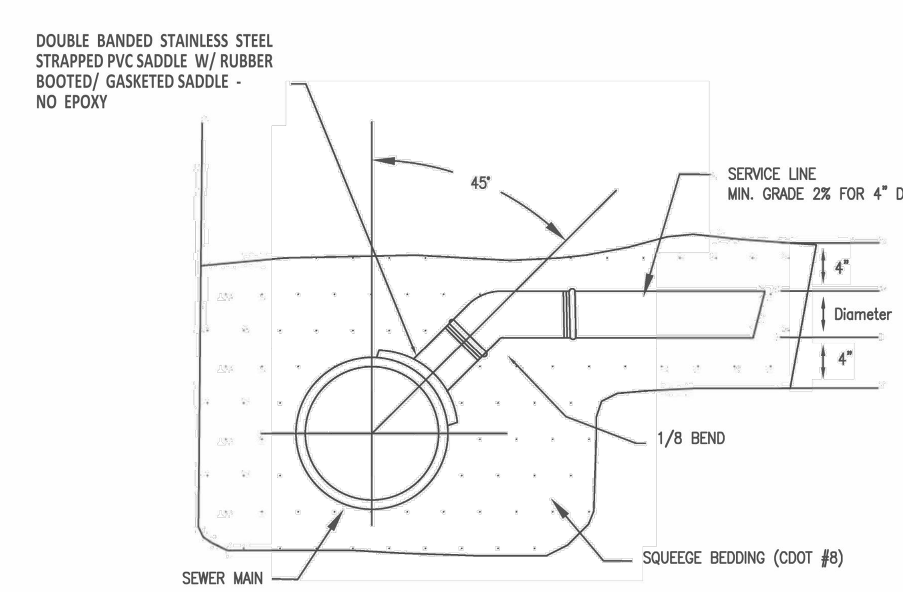
NOTES:

1. MANHOLES SHALL BE SEALED WATERTIGHT.
2. NO GROUT ALLOWED EXCEPT AT PIPE PENETRATIONS.
3. GROUT CEMENT SHALL BE CALCIUM ALUMINATE ONLY.
4. MANHOLE EXTERIORS SHALL BE DAMP–PROOFED.

Detail Number: 1

REVISED: 12/2021

ST. VRAIN SANITATION DISTRICT SERVICE CONNECTION USING A TAPPING SADDLE



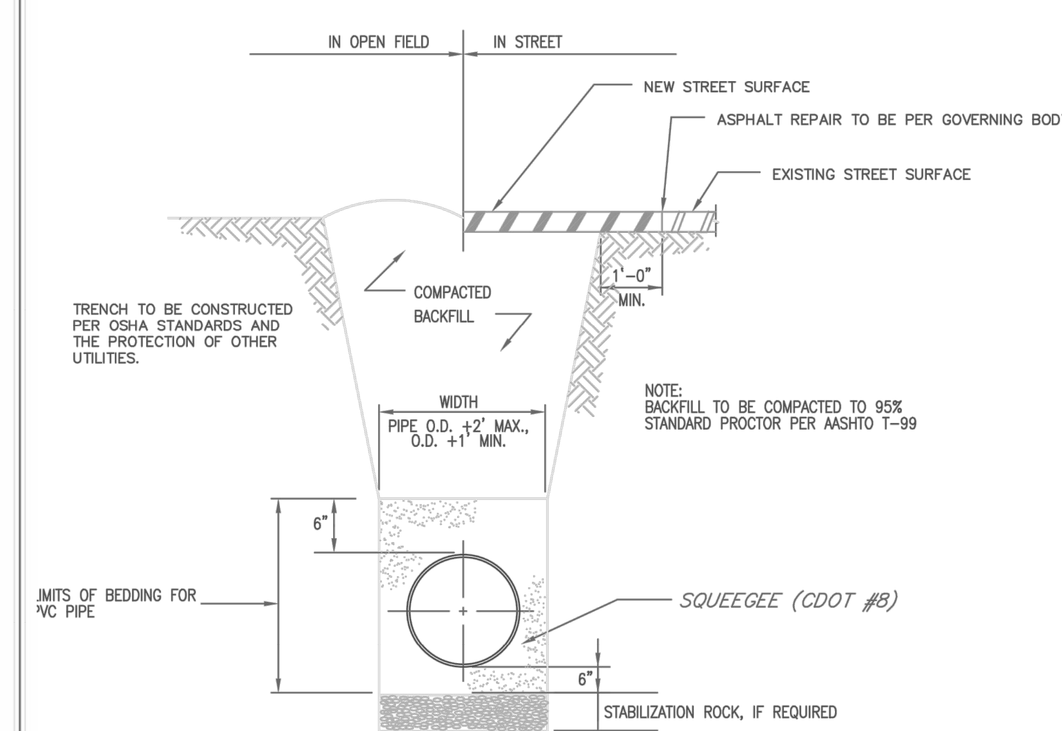
NOTES:

1. APPROVED TAPPING SADDLE TO BE USED FOR NEW SERVICES TO EXISTING MAINS SHALL BE TEES. PIPE PENETRATIONS SHALL BE MECHANICALLY DRILLED.
2. TAPHOLE MUST BE ABOVE THE SPRINGLINE.
3. 4" SEWER SERVICES SHALL HAVE A MINIMUM SLOPE OF 2.0%.
4. 6" SEWER SERVICES SHALL HAVE A MINIMUM SLOPE OF 1.0%.
5. SERVICES SHALL NOT BE CLOSER THAN 5 FT. FROM EACH OTHER ON THE MAIN.

Detail Number: 10

REVISED: 7/2022

ST. VRAIN SANITATION DISTRICT TYPICAL TRENCH FOR 8" TO 12" DIAMETER SANITARY SEWERS



NOTES:

1. SQUEEGEE SAND IS DEFINED AS CDOT NO. 8, SHOWN IN DETAIL 21.
2. ALL CAMPACTION MUST BE BY MECHANICAL MEANS. NO JETTING OR FLOODING OF TRENCH.
3. UNDER NO CIRCUMSTANCES WILL PIPE BE LAID IN A PROPOSED FILL AREA PRIOR TO IT BEING COMPLETELY FILLED. THE FILL WILL BE PLACED FIRST TO PROPOSED GRADE AND COMPACTED AS REQUIRED. A TRENCH THEN WILL BE EXCAVATED AND THE PIPE INSTALLED IN THE USUAL MANNER.

Detail Number: 11

REVISED: 12/2021

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504

ST. VRAIN SAN SEWER DETAILS

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 01/25/2023

C11.1

SHEET 83 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:37:56 PM - Luke Breedlove

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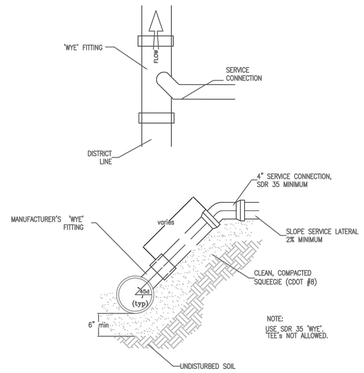
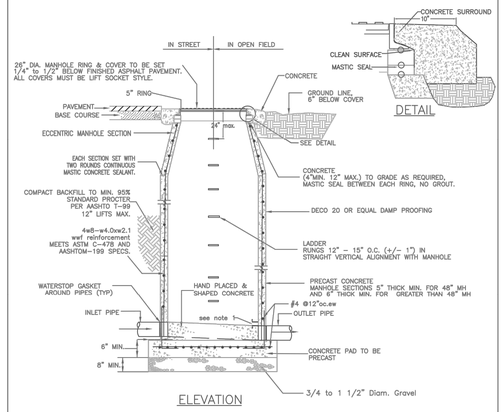
ST. VRAIN SANITATION DISTRICT TYPICAL SERVICE CONNECTION



Detail Number: 9

REVISED: 1/2017

ST. VRAIN SANITATION DISTRICT STANDARD MANHOLE ASTM C-478



ELEVATION

PIPE SIZE	MIN. MH DIAM.
15"-24pipe	48"
18"-42pipe-C27	60"
30"-60pipe	72"

NOTE 1 MIN. DROP THRU MANHOLE:

FLOW DIRECTION CHANGE(FDC)	MIN. DROP
0 DEG< FDC < 30 DEG.	0.1'
90 DEG. < FDC < 30 DEG	0.2'
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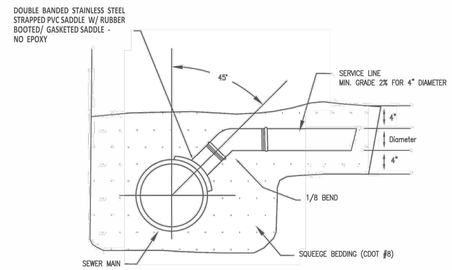
Detail Number: 1

REVISED: 12/2021

ST. VRAIN SANITATION DISTRICT SERVICE CONNECTION USING A TAPPING SADDLE



NOTES:

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2. TAPHOLE MUST BE ABOVE THE SPRINGLINE.
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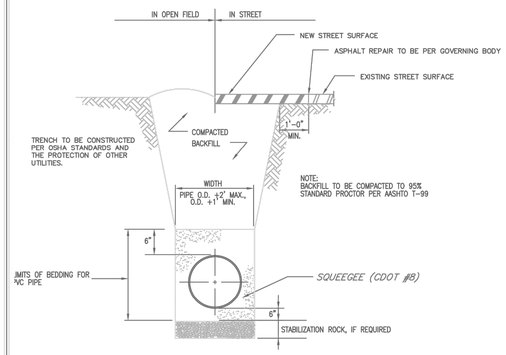
4. 6" SEWER SERVICES SHALL HAVE A MINIMUM SLOPE OF 1.0%.
5. SERVICES SHALL NOT BE CLOSER THAN 5 FT. FROM EACH OTHER ON THE MAIN.

Detail Number: 10

REVISED: 7/2022

ST. VRAIN SANITATION DISTRICT TYPICAL TRENCH FOR 8" TO 12" DIAMETER SANITARY SEWERS



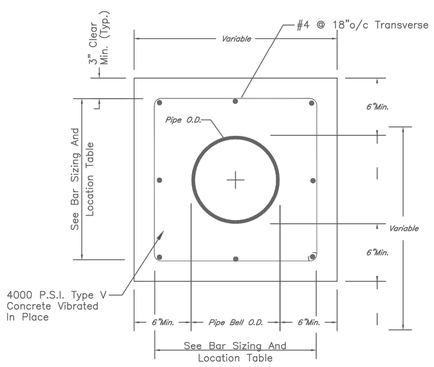
NOTES:

1. SQUEEGEE SAND IS DEFINED AS CDOT NO. 8, SHOWN IN DETAIL 21.
2. ALL CAMPACTION MUST BE BY MECHANICAL MEANS. NO JETTING OR FLOODING OF TRENCH.
3. UNDER NO CIRCUMSTANCES WILL PIPE BE LAID IN A PROPOSED FILL AREA PRIOR TO IT BEING COMPLETELY FILLED. THE FILL WILL BE PLACED FIRST TO PROPOSED GRADE AND COMPACTED AS REQUIRED. A TRENCH THEN WILL BE EXCAVATED AND THE PIPE INSTALLED IN THE USUAL MANNER.

Detail Number: 11

REVISED: 12/2021

ST. VRAIN SANITATION DISTRICT CONCRETE ENCASEMENT

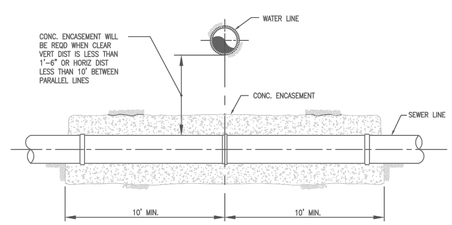


PIPE I.D.	LONGITUDINAL BARS - LOCATION	
6 IN.	4-#4 BARS	1 EACH CORNER
8 IN.	4-#4 BARS	1 EACH CORNER
10 IN.	8-#4 BARS	3 EACH SIDE
12 IN.	8-#4 BARS	3 EACH SIDE
15 IN.	8-#4 BARS	3 EACH SIDE
18 IN.	8-#4 BARS	3 EACH SIDE
21 IN.	12-#4 BARS	4 EACH SIDE
24 IN.	12-#4 BARS	4 EACH SIDE
27 IN.	12-#4 BARS	4 EACH SIDE
30 IN.	12-#4 BARS	4 EACH SIDE
33 IN.	12-#4 BARS	4 EACH SIDE
36 IN.	16-#4 BARS	5 EACH SIDE

Detail Number: 13

REVISED: 1/2017

ST. VRAIN SANITATION DISTRICT UTILITY ENCASEMENT



NOTES:

1. CONCRETE ENCASEMENT REQUIRED IN ALL CASES WHERE SEWE LINE IS ABOVE WATER LINE.
2. MINIMUM WIDTH AND DEPTH ARE 12" + PIPE O.D.
3. INSTALL REBAR PER DETAIL #13.

Detail Number: 14

REVISED: 1/2017

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ST. VRAIN SAN SEWER DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.2

SHEET 84 OF 109

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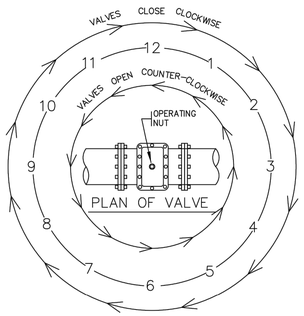
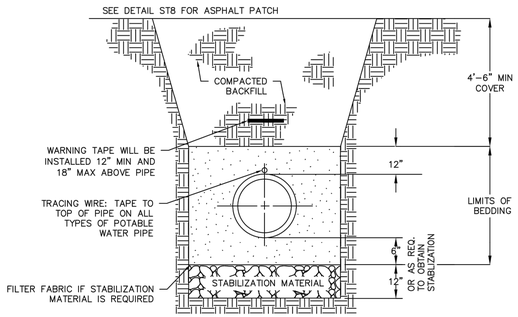


NOTES:

1. NORMALLY VALVES WITH A BLACK OPERATING NUT INDICATE A STANDARD FIRESTONE VALVE (OPEN LEFT).

VALVE OPERATION

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W1

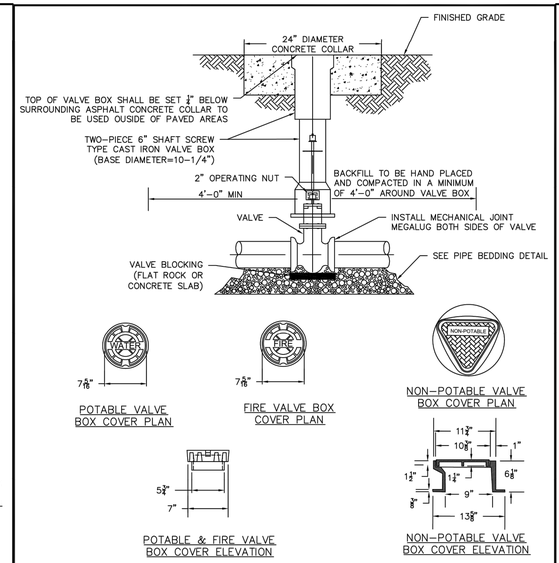


NOTES:

1. COMPACTION SHALL BE AS FOLLOWS: PIPE ZONE BEDDING 6" UNDER AND 12" OVER PIPE WILL REQUIRE 90% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 95% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D.
2. 12 AWG. SINGLE STRAND INSULATED COPPER WIRE SHALL BE INSTALLED AS TRACING WIRE ABOVE ALL POTABLE WATER PIPES. THE WIRE SHALL BE CONNECTED AND COME TO THE SURFACE BEHIND THE FIRE HYDRANTS IN A TESTBOX.
3. FILTER FABRIC IS REQUIRED IF STABILIZATION MATERIAL IS USED. THE FABRIC SHALL BE INSTALLED AS SHOWN IN THE DETAIL.
4. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
5. PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
6. TRENCH WIDTH SHALL NOT BE MORE THAN 24" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.

WATER TRENCH DETAIL

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W2

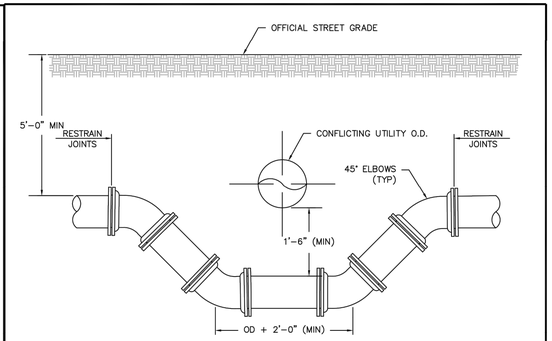


NOTES:

1. POTABLE & FIRE VALVE BOX LID RESTS INSIDE THE UPPER VALVE BOX SECTION.
2. NON-POTABLE VALVE BOX LID SLIDES OVER THE TOP OF THE UPPER VALVE BOX SECTION.
3. NON-POTABLE, WATER OR FIRE CAST IN TOP OF APPROPRIATE VALVE BOX COVER.
4. VALVE BOX SHALL NOT BE SUPPORTED BY WATER LINE.
5. VALVE BOX TO BE PLUMB AND CENTERED OVER NUT.
6. UTILIZING A VALVE BOX ALIGNMENT DEVICE IS OPTIONAL.
7. IF 2" OPERATING NUT IS MORE THAN 6" BELOW FINISHED GRADE, A VAULT NUT EXTENDER SHALL BE INSTALLED TO PUT THE VALVE NUT AT AN ELEVATION OF 4' BELOW FINISHED GRADE.

STANDARD VALVE AND BOX

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W3



NOTES:

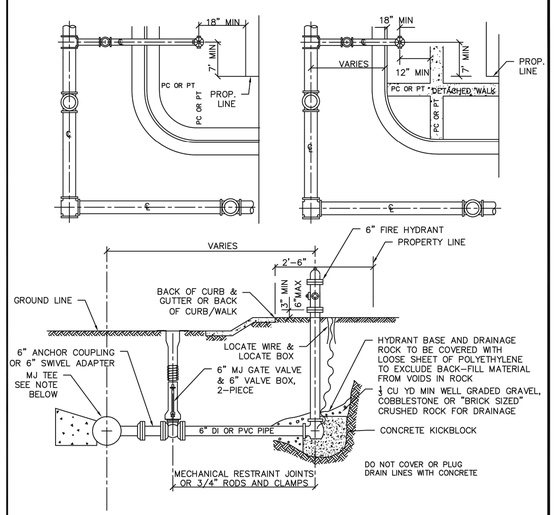
1. LOWERING OF THIS TYPE WILL BE RESTRAINED BY MEANS OF THRUST BLOCKING AND MEGALUGS OR RODDING.
2. FOR SIZING INFORMATION OF THRUST BLOCKS REFER TO THRUST BLOCK DETAILS.
3. WHEN RESTRAINING PIPE BY MEANS OF RODDING JOINTS, ¾" TIE RODS, NUTS AND WASHERS WILL BE USED AND ARE TO BE MADE OF "COR-TEN" STEEL AS PER A.S.T.M. A242.
4. FOR FURTHER INFORMATION ON RODDING OF JOINTS REFER TO TABLE 1.
5. ALL METALLIC PIPE, FITTINGS AND APPURTENANCES WILL BE WRAPPED IN POLYETHYLENE.
6. REQUIREMENTS FOR LARGER THAN 12" DIAMETER PIPE WILL BE DETERMINED ON A CASE BY CASE BASIS.
7. LENGTH OF EXTENSION OF PIPE AND RESTRAINED JOINTS SHALL BE IN ACCORDANCE WITH THE ENGINEERING STANDARDS.
8. CATHODIC PROTECTION SHALL BE AS REQUIRED IN ACCORDANCE WITH THE ENGINEERING STANDARDS.
9. A BORED CROSSING MAY BE REQUIRED BY THE ENGINEER.

Pipe Size	Test Pressure (psi)	Min. Number of Tie Rods
10" and Under	150	2
	200	2
12"	150	2
	200	4

TABLE 1

WATERLINE LOWERING

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W5

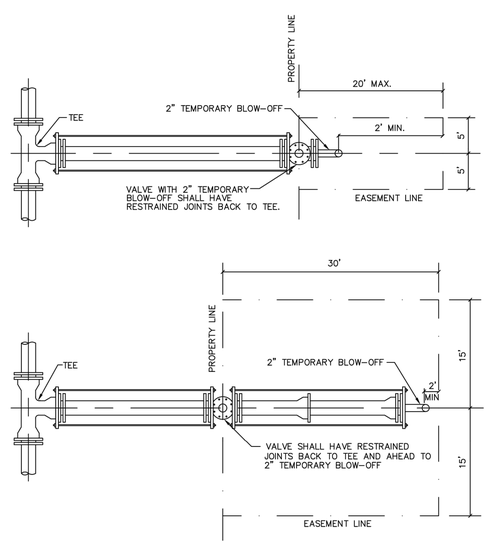


NOTES:

1. ALTERNATE TO THE ABOVE: FASTEN MJ VALVE DIRECTLY TO A MJ ANCHOR TEE (ALSO CALLED SWIVEL TEE)
2. NO HORIZONTAL OR VERTICAL BENDS ARE ALLOWED IN FIRE HYDRANT BRANCH OR SPRINKLER LINES
3. MAXIMUM OF ONE FIRE HYDRANT EXTENSION
4. CONTRACTOR TO TAKE CARE NOT TO BLOCK WEEP HOLES
5. ALL DUCTILE IRON PIPE TO BE POLYETHYLENE WRAPPED

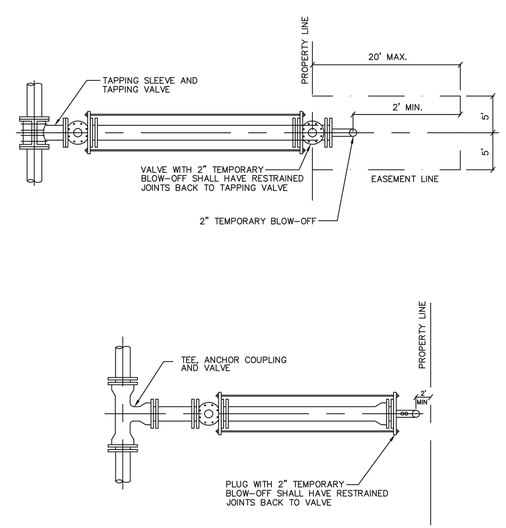
FIRE HYDRANTS, MAINS AND VALVES

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W6



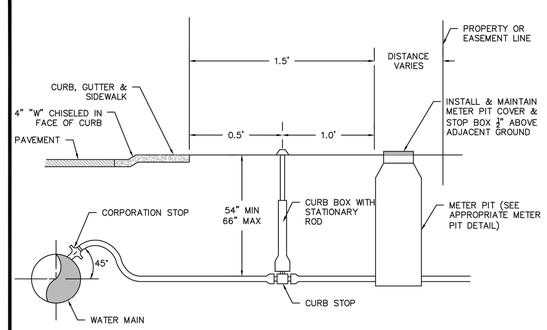
STUB-OUT CONFIGURATIONS (1 OF 2)

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W7A



STUB-OUT CONFIGURATIONS (2 OF 2)

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W7B



NOTES:

1. FOR 5/8-INCH THROUGH 1-INCH SERVICES, USE SADDLE TAP.
2. FOR 1 1/2-INCH AND 2-INCH SERVICES, INSTALL WITH SADDLE TAP AND CORPORATION STOP AT TIME OF CONSTRUCTION .
3. LOCATION OF CURB BOX AND METER PIT SHALL BE ACCORDING TO APPROVED UTILITY DRAWINGS.
4. TOWN'S RESPONSIBILITY FOR MAINTENANCE SHALL BE THE WATER MAIN, CORPORATION STOP, CURB STOP, SERVICE PIPING UP TO AND INCLUDING THE METER PIT. OWNER'S RESPONSIBILITY SHALL BE FROM THE METER PIT TO THE BUILDING.
5. NO COUPLINGS SHALL BE ALLOWED BETWEEN CURB STOP AND METER SETTER.
6. SERVICE SHALL BE TYPE K COPPER FROM CORPORATION STOP TO 5-FEET PAST METER PIT (MINIMUM).

WATER SERVICE DETAIL

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W8

No.	REVISION	BY	DATE

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER DETAILS 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.3

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C3D\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:00 PM - Luke Breedlove

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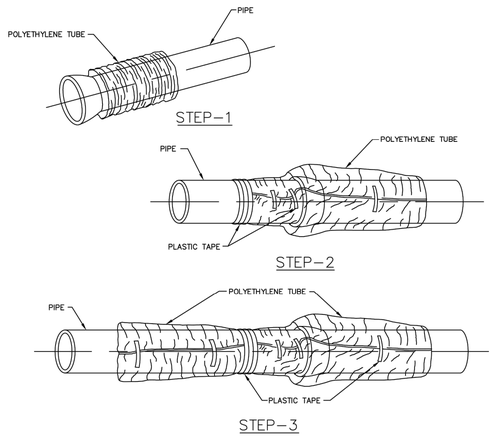


FIELD INSTALLATION–POLYETHYLENE WRAP

STEP–1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH.

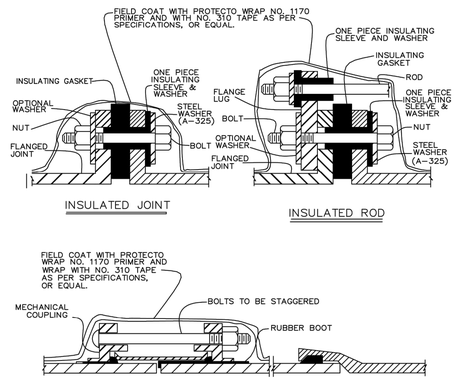
STEP–2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE CIRCUMFERENTIAL TURNS OF TWO–INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END.

STEP–3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL AND SHOULD BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FOOT INTERVALS.

NOTE: ALL RODDING TO BE ENCASED IN POLYETHYLENE SEPARATED FROM THE PIPE

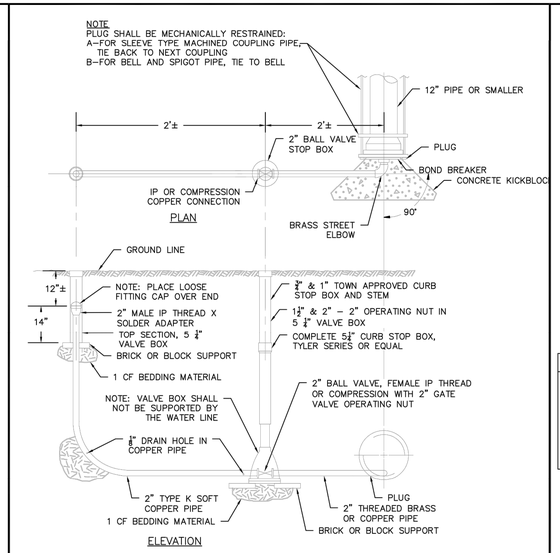
POLYETHYLENE WRAP

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W12



INSULATORS

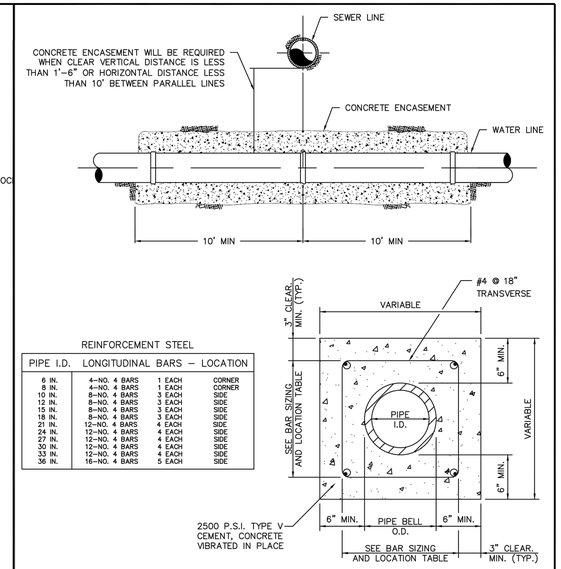
FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W13



NOTE: FOR 12" AND SMALLER PIPE

TEMPORARY BLOWOFF FOR 12" AND SMALLER PIPE

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W14



REINFORCEMENT STEEL

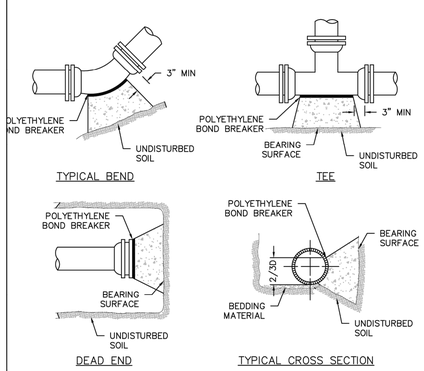
PIPE I.D.	LONGITUDINAL BARS – LOCATION		
6 IN.	4–NO. 4 BARS	1 EACH	CORNER
8 IN.	4–NO. 4 BARS	1 EACH	CORNER
10 IN.	8–NO. 4 BARS	3 EACH	SIDE
12 IN.	8–NO. 4 BARS	3 EACH	SIDE
15 IN.	8–NO. 4 BARS	3 EACH	SIDE
18 IN.	8–NO. 4 BARS	3 EACH	SIDE
21 IN.	12–NO. 4 BARS	4 EACH	SIDE
24 IN.	12–NO. 4 BARS	4 EACH	SIDE
27 IN.	12–NO. 4 BARS	4 EACH	SIDE
30 IN.	12–NO. 4 BARS	4 EACH	SIDE
33 IN.	12–NO. 4 BARS	4 EACH	SIDE
36 IN.	16–NO. 4 BARS	5 EACH	SIDE

NOTES:

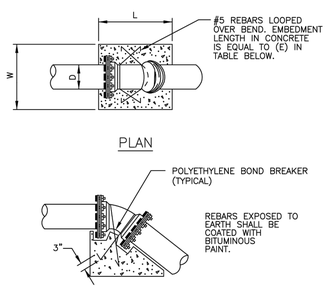
1. CONCRETE ENCASEMENT REQUIRED IN ALL CASES WHERE SEWER LINE IS ABOVE WATER LINE.
2. THE TOWN SHALL REVIEW THIS DETAIL FOR USE ON A CASE BY CASE BASIS. SPECIAL ENCASEMENTS MAY BE REQUIRED AT CREEK CROSSINGS AND CONDUIT CROSSINGS

UTILITY ENCASEMENT DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W15



BEARING AREA (SQUARE FEET) FOR CONCRETE THRUST BLOCKS								
SIZE	BENDS				TEES	DEAD ENDS	CROSS W/ 1 BRANCH PLUGGED	CROSS W/ 2 BRANCHES PLUGGED
	90°	45°	22–1/2°	11–1/4°				
3	1.5	0.8	0.4	0.2	1.1	1.1	1.1	1.1
4	2.7	1.4	0.7	0.4	1.9	1.9	1.9	1.9
6	6.0	3.2	1.7	0.8	4.2	4.2	4.2	4.2
8	10.7	5.8	2.9	1.5	7.5	7.5	7.5	7.5
10	16.7	9.0	4.6	2.3	11.8	11.8	11.8	11.8
12	24.0	13.0	6.6	3.3	17.0	17.0	17.0	17.0
14	32.7	17.7	9.0	4.5	23.1	23.1	23.1	23.1
15	37.5	20.3	10.3	5.2	26.5	26.5	26.5	26.5
16	42.7	23.1	11.8	5.9	30.2	30.2	30.2	30.2
18	54.0	29.2	14.9	7.5	38.2	38.2	38.2	38.2
20	66.6	36.1	18.4	9.2	47.1	47.1	47.1	47.1
21	73.5	39.8	20.3	10.2	52.0	52.0	52.0	52.0
22	80.6	43.6	22.2	11.2	57.0	57.0	57.0	57.0
24	96.0	51.9	26.5	13.3	67.9	67.9	67.9	67.9
30	149.9	81.2	41.4	20.8	106.0	106.0	106.0	106.0
36	215.9	116.9	59.6	29.9	152.7	152.7	152.7	152.7



SIZE OF PIPE (D)	11 1/4 DEG.					22 1/2 DEG.					45 DEG.				
	L"	W"	H"	E"	VOL	L"	W"	H"	E"	VOL	L"	W"	H"	E"	VOL
4"	12	24	24	12	4	12	34	34	12	8	22	37	32	22	15
6"	18	32	27	18	9	15	52	40	15	18	28	64	32	28	33
8"	21	40	33	21	16	22	61	40	22	31	35	64	45	35	58
10"	24	50	36	24	25	30	59	48	30	49	42	72	52	42	90
12"	31	56	36	31	36	36	70	48	36	70	45	80	62	45	129

NOTES:

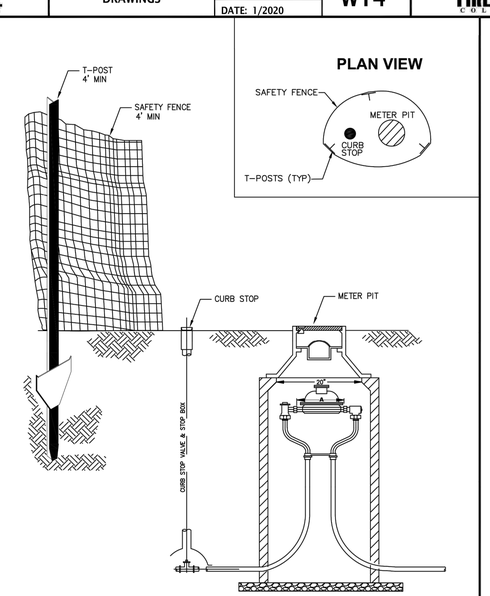
1. REFER TO CONCRETE THRUST BLOCK TABLE FOR MINIMUM BEARING SURFACE AREAS.
2. ALL FITTINGS TO BE WRAPPED WITH POLYETHYLENE.
3. PIPE INSTALLED UNDER CONDITIONS DIFFERENT FROM THOSE NORMALLY ENCOUNTERED SHALL REQUIRE THRUST BLOCKS DESIGNED FOR THOSE PARTICULAR CONDITIONS.
4. THRUST BLOCKS ON PIPE LARGER THAN 12" SHALL BE DESIGNED FOR CONDITIONS EXISTING AT THE INSTALLATION SITE.
5. REFER TO SECTION 03300 FOR CONCRETE REQUIREMENTS.
6. CALCULATION MADE FOR THIS TABLE ASSUME:
   100 P.S.I. INTERNAL STATIC PRESSURE
   1,000 P.S.F. SOIL BEARING CAPACITY
   1.5 FACTOR OF SAFETY
7. FOR STATIC PRESSURES GREATER THAN 100 P.S.I. AND/OR SOIL BEARING CAPACITY LESS THAN 1,000 P.S.F., THE DESIGN ENGINEER SHALL PROVIDE SPECIFIC CALCULATIONS FOR REVIEW AND APPROVAL.
8. ALL CONCRETE SHALL BE 4000 P.S.I. MINIMUM.

VERTICAL THRUST BLOCK NOTES:

1. THRUST BLOCKING SHALL BE CAST AGAINST UNDISTURBED EARTH. FORMS SHALL BE USED AS REQUIRED TO OBTAIN ADEQUATE BEARING AND TO CONFINE THE CONCRETE. THRUST BLOCKING SHALL BEAR ON THE FITTING OR END CAP ONLY AND SHOULD NOT BE ALLOWED TO SPILL OVER THE JOINT OR AGAINST THE PIPE.
2. VOLUME IS IN CUBIC FEET.
3. ALL CONCRETE TO BE 4000 P.S.I. MIN.
4. BLOCKS TO BE CENTERED HORIZONTALLY ON THE BEND.
5. DESIGN BASED ON A TEST PRESSURE OF 150 P.S.I. AND SAFETY FACTOR (S_f) OF 1.5
6. $V_g = \frac{S_f \ PA \ SIN \ \theta}{W_m}$
7. $W_m = 140 \ \# \ / \ FT^3$
8. THE DESIGN ENGINEER IS RESPONSIBLE FOR VERIFYING THE ACTUAL SITE CONDITIONS WITH RESPECT TO THE ASSUMPTIONS LISTED ABOVE.

CONCRETE THRUST BLOCK DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W16

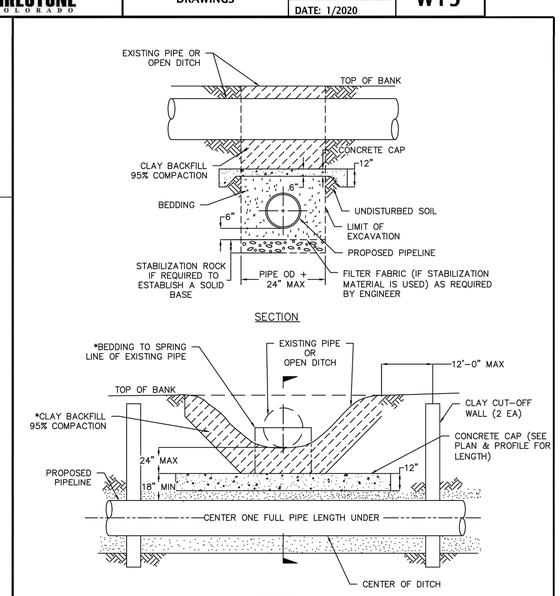


NOTE:

ALL METER PITS AND CURB STOPS SHALL BE PROTECTED AT THE TIME OF INSTALLATION WITH A MINIMUM OF 3–T POSTS AND ORANGE SAFETY FENCE. THE T–POSTS AND SAFETY FENCE SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL THE LANDSCAPING IS INSTALLED.

METER PIT AND CURB STOP PROTECTION

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W17



*USE CLAY BACKFILL ONLY WHEN CROSSING OPEN DITCH. USE BEDDING MATERIAL TO SPRING LINE OF EXISTING PIPE WHEN CROSSING PIPE.

DITCH OR PIPE CROSSING DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W18

No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER DETAILS 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.4

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:05 PM - Luke Breedlove

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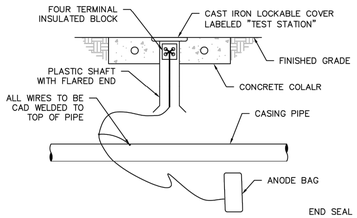
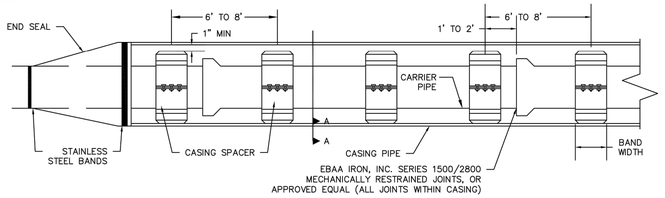


CATHODIC TEST STATION DETAIL

CATHODIC PROTECTION NOTES:

1. INSTALL THE ANODES VERTICALLY OR HORIZONTALLY IN SOIL WITH TOP OF ANODES BELOW THE SPRINGLINE OF THE PIPE. ANODES MUST BE PLACED IN NATIVE SOIL, NOT SELECT BACKFILL SUCH AS SAND, BEDDING, OR CRUSHED ROCK.
2. INSTALL A 17 LB HIGH POTENTIAL MAGNESIUM ANODE BAG ON EACH END OF STEEL CASING PIPES WITH A CATHODIC TEST STATION.
3. STATION TEST WIRES TO BE THHN/THWH.
4. INSTALL A MINIMUM OF 2 FT SLACK AT EACH END OF WIRES.
5. BE CAUTIOUS DURING BACKFILLING. DO NOT DAMAGE OR STRESS WIRES OR CONNECTIONS.

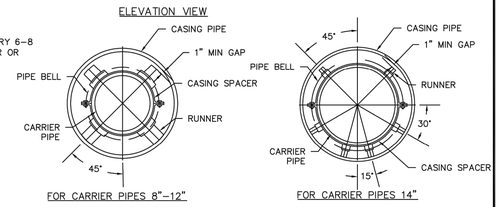
CARRIER PIPE DIAMETER (in)	MINIMUM CASING PIPE INSIDE DIAMETER (in)	BORINGS AND ENCASEMENTS	CASING SPACERS (Y or N)
		STEEL CASING PIPE MIN WALL THICKNESS (in)	
8"	21"	0.375	Y
10"	23"	0.375	Y
12"	26"	0.500	Y
14"	30"	0.500	Y



NOTES:

1. CASING PIPE, CASING SPACERS, AND END SEALS TO BE INSTALLED PER WATER CONSTRUCTION SPECIFICATIONS.
2. RECOMMENDED CASING SPACER POSITIONING – PLACE ONE CASING SPACER 1–2 FT ON EITHER SIDE OF THE BELL JOINT AND ONE EVERY 6–8 FT APART THERE AFTER FOR A TOTAL OF 3 CASING SPACERS PER PIPE LENGTH UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER OR TOWN.
3. FOR 12" DIAMETER AND SMALLER CARRIER PIPES USE 8" CASING SPACER BANDWIDTH.
4. FOR CARRIER PIPES LARGER THAN 12' DIAMETER USE 12" CASING SPACER BANDWIDTH.
5. CASING SPACERS TO BE IN THE "CENTER RESTRAINED" POSITION.
6. ALL BORINGS & ENCASEMENTS WILL REQUIRE END SEALS AS SHOWN.
7. TRACER WIRE SHALL BE EXTENDED THROUGH THE CASING PIPE.

ELEVATION VIEW



FOR CARRIER PIPES 8"–12"

FOR CARRIER PIPES 14"

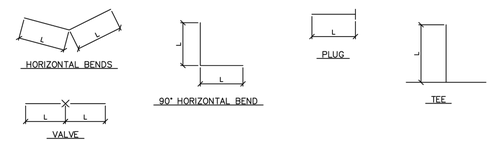
SECTION A–A

CASING PIPE DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W19

ROD DIAMETER, GRADE & LENGTH OF RESTRAINED PIPE

PIPE SIZE	4"			6"			8"			12"			16"			20"			24"		
FITTING	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
90° BEND, TEE, PLUG	3/4"	30'	MS	3/4"	45'	MS	3/4"	60'	MS	3/4"	86'	MS	1"	108'	HS	1 1/4"	132'	HS	–	155'	–
VALVE	–	–	–	–	–	–	–	–	–	–	–	–	1"	108'	HS	1 1/4"	132'	HS	–	155'	–
45° BEND	3/4"	9'	MS	3/4"	13'	MS	3/4"	18'	MS	3/4"	25'	MS	1"	32'	MS	3/4"	39'	HS	–	45'	–
22 1/2° BEND	3/4"	1'	MS	3/4"	4'	MS	3/4"	5'	MS	3/4"	7'	MS	3/4"	8'	MS	3/4"	10'	MS	–	12'	–
11 1/4° BEND	–	–	–	–	–	–	3/4"	1'	MS	3/4"	2'	MS	3/4"	2'	MS	3/4"	3'	MS	–	3'	–

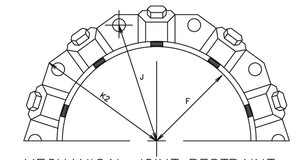


NOTES:

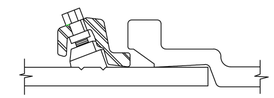
1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. CLAMPS AND RODS NOT ALLOWED FOR 24" & LARGER PIPES.
3. D=DIAMETER, L=LENGTH, G=GRADE, MS=MILD STEEL, HS=HIGH STRENGTH.
4. MIN 4.5' GROUND COVER REQD.
5. BASED ON 150 PSI INTERNAL PRESSURE.
6. MS = MILD STEEL ROD ASTM A 36.
7. HS = HIGH STRENGTH ROD ASTM A 193 GRADE B7.
8. NUTS SHALL BE ASTM A 307 GRADE A OR B HEXAGON HEAVY SERIES. HS NUTS SHALL CONFORM TO MS-22.
9. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER.
10. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.
11. TEES & CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
12. 12" AND SMALLER IN LINE VALVES AND TEES SHALL HAVE A MECHANICAL JOINT RESTRAINT DEVICE ON EACH SIDE OF THE FITTING OR VALVE.
13. A SECOND VALVE WILL BE REQD TO BE CLOSED WHEN EXCAVATING NEXT TO A EXIST VALVE.
14. WHEN REDUCERS ARE USED ON VALVE INSTALLATIONS THE LENGTH OF RESTRAINT SHALL BE BASED ON THE SIZE OF THE PIPE NOT THE SIZE OF THE VALVE.
15. ALL REDUCERS/INCREASERS SHALL HAVE MECHANICAL RESTRAINT DEVICES ON EACH SIDE OF FITTING.
16. PIPE JOINT RESTRAINT MAY BE ACCOMPLISHED USING HARNESS RODS, MECHANICAL JOINT RESTRAINT OR RESTRAINED JOINT PIPE AND FITTINGS.
17. AN ANALYSIS OF THE NECESSARY RESTRAINT LENGTH FOR PIPE LARGER THAN 24" SHALL BE SUBMITTED TO THE TOWN ENGINEER FOR REVIEW AND APPROVAL ON A CASE BY CASE BASIS.

RESTRAINED PIPE LENGTHS

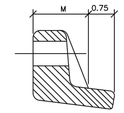
FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W20



MECHANICAL JOINT RESTRAINT



WEDGE DETAIL



BOLT HOLE DETAIL

DIMENSIONS

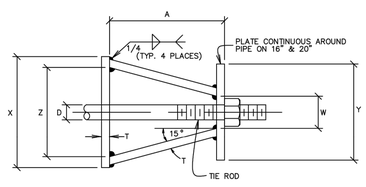
	NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES	
PVC	4"	2	2					PVC
	6"	6	3	11.12	9.50	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	
DI	4"	4	2					DI
	6"	6	3	11.12	9.50	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	

NOTES:

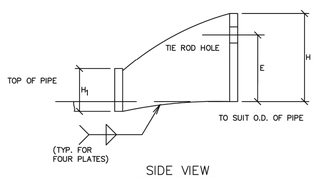
1. DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.
2. OTHER MECHANICAL JOINT RESTRAINT DEVICES MUST BE APPROVED BEFORE INSTALLATION.

MECHANICAL JOINT RESTRAINT DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W23



TOP VIEW



SIDE VIEW

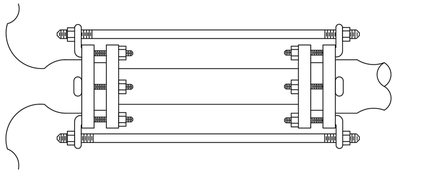
	CARRIER PIPE NOMINAL DIA.	STUD DIA. D	A	W	Z	T	H	E	H_1	Y	X
W/O FLANGED LUGS	4" TO 12"	3/4"	5"	1–1/2"	3–3/4"	3/8"	4–1/8"	3–1/8"	2"	4–1/2"	5"
	16"	1"	5–3/4"	1–3/4"	4–1/2"	1/2"	4–1/2"	3–1/4"	2"	RING	6"
	20"	1–1/4"	7–1/2"	2"	5–3/4"	5/8"	5"	3–3/4"	2–1/2"	RING	7–1/2"

NOTES:

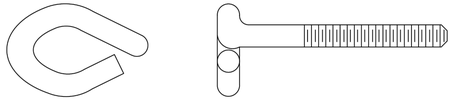
1. USE TWO HIGH–STRENGTH STEEL TIE–RODS AT END OF CASING.
2. TIE–ROD HOLE DIAMETER ⅛" LARGER THAN STUD DIAMETER.
3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT O.D. OF PIPE.
4. HARNESS LUGS AS PER AWWA MANUAL M–11.

COMBINATION FLANGED HARNESS LUG DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W24



PLAN



DETAIL

DIMENSIONS

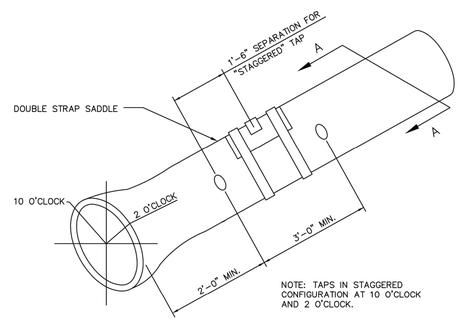
ALLOWABLE PIPE DIAMETER INCHES	BOLT SIZE	NO . OF BOLTS REQUIRED
4	3/4"	2
6	3/4"	2
8	3/4"	2
10	3/4"	4
12	3/4"	6

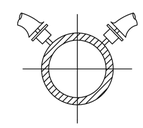
NOTES:

1. THE BOLT SHALL BE MANUFACTURED OF "COR–TEN" OR APPROVED EQUAL.
2. THE BOLT MAY BE HEAT TREATED.

JOINT RESTRAINT DETAIL

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W25





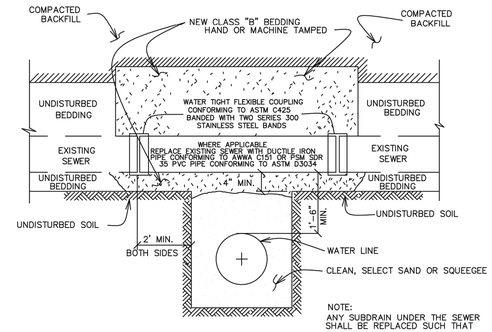
SECTION A–A

NOTE:

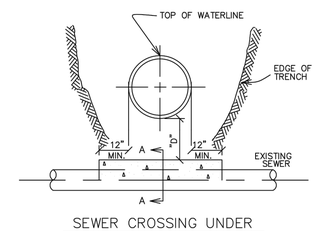
SERVICE TAP – WATER SERVICE TAP SHALL BE MADE AT EITHER THE 2 O'CLOCK OR THE 10 O'CLOCK POSITION ON THE CIRCUMFERENCE OF A WATER MAIN. THE MINIMUM DISTANCE BETWEEN A TAP MADE AT THE 2 O'CLOCK POSITION AND THE ONE MADE A THE 10 O'CLOCK POSITION SHALL BE 18" MEASURED ALONG THE PIPE. THE MINIMUM DISTANCE BETWEEN SUCCESSIVE TAPS MADE EITHER AT THE 2 O'CLOCK OR THE 10 O'CLOCK POSITION SHALL BE 3'. THE MINIMUM DISTANCE FROM EITHER THE BELL OR SPIGOT END OF A PIPE TO TAP SHALL BE 2'. A MAXIMUM OF 4 WATER SERVICE TAPS SHALL BE ALLOWED PER LENGTH OF PIPE. DOUBLE STRAP SADDLE (ROMAC 202B OR APPROVED EQUAL) SHALL BE USED FOR ALL SERVICE TAPS.

DOMESTIC WATER TAPPING DETAIL

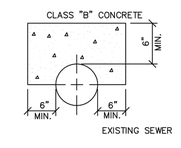
FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W28



NOTE:
ANY SUBDRAIN UNDER THE SEWER SHALL BE REPLACED SUCH THAT NO FLOW SHALL ENTER THE WATER LINE TRENCH.



SEWER CROSSING UNDER
WITH "D" LESS THAN 2'



SECTION A–A

NOTE:

ALL EXISTING SEWER DAMAGED DURING INSTALLATION MUST BE REPLACED WITH PVC PIPE

CROSSING STORM AND SANITARY SEWERS

FIRESTONE COLORADO | WATER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: W29

No.	REVISION	BY	DATE

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER DETAILS 3

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.5
SHEET 87 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C2\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:09 PM - Luke Breedlove

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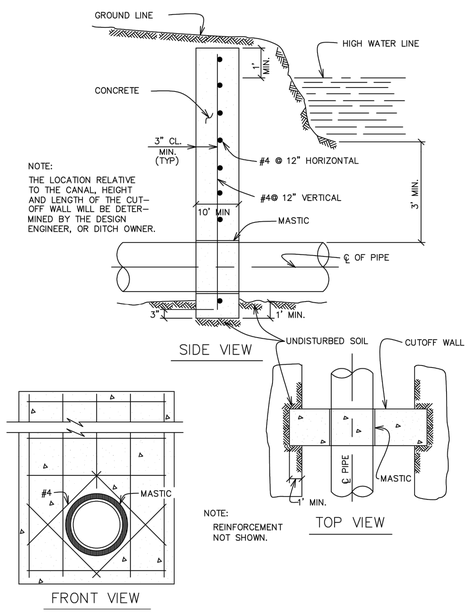
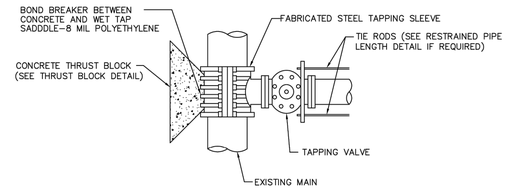


NOTE:
THE LOCATION RELATIVE TO THE CANAL, HEIGHT AND LENGTH OF THE CUT-OFF WALL WILL BE DETERMINED BY THE DESIGN ENGINEER, OR DITCH OWNER.

NOTE:
REINFORCEMENT NOT SHOWN.

TYPICAL CUTOFF WALL FOR DITCH CROSSING

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W31

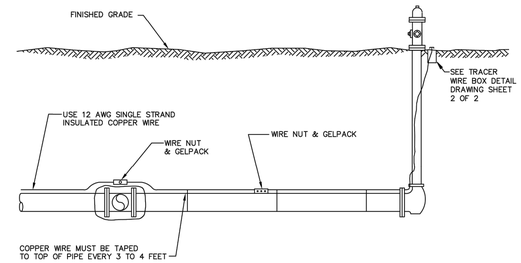


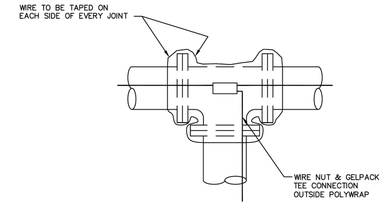
NOTES:

1. FABRICATED STEEL TAPPING SLEEVE SHALL BE:
   ROMAC FTS419 OR APPROVED EQUAL TO BE USED FOR PVC UP TO 75% OF EXISTING MAIN
   ROMAC FTS420 OR APPROVED EQUAL TO BE USED FOR DIP UP TO 75% OF EXISTING MAIN
   ROMAC FTS425 OR APPROVED EQUAL TO BE USED ON ALL AC PIPE AND ANYTIME A BRANCH LINE IS GREATER THAN 75% OF EXISTING MAIN

TAPPING TEE AND VALVE

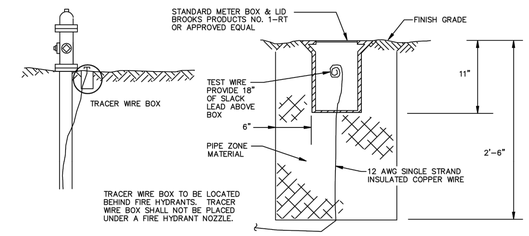
FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W27



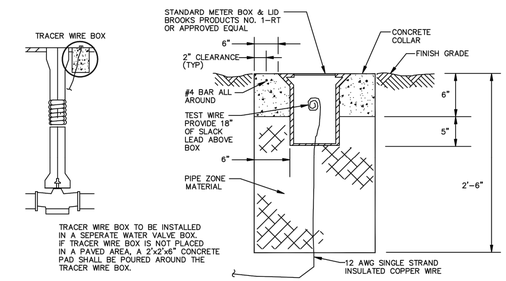


TRACER WIRE (1 OF 2)

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W33A



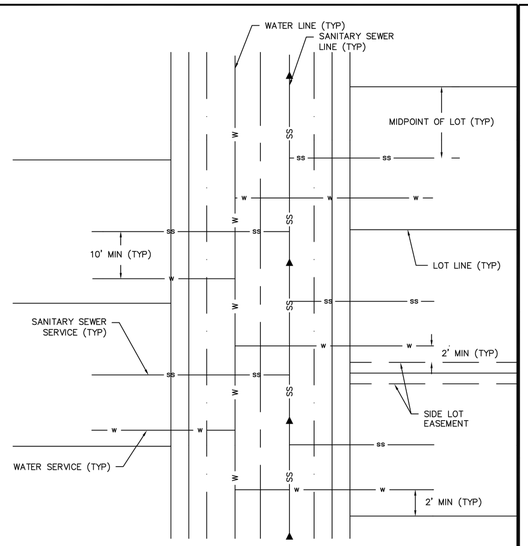
TRACER WIRE BOX AT FIRE HYDRANT



TRACER WIRE BOX FOR AREA WITH NO FIRE HYDRANT

TRACER WIRE (2 OF 2)

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W33B

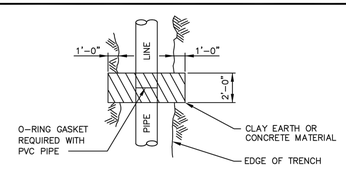


NOTES:

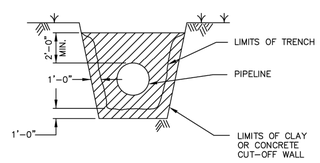
1. SANITARY SEWER SERVICES SHALL BE INSTALLED IN THE CENTER OF THE LOT PER THE ST. VRAIN SANITATION DISTRICT STANDARDS.
2. WATER SERVICES SHALL BE INSTALLED A MINIMUM OF 10 FEET FROM THE SEWER SERVICE.
3. WATER SERVICES SHALL NOT BE LOCATED UNDER DRIVEWAYS.
4. STAMP AN "S" AND A "W" IN THE FACE OF CURB (4" HEIGHT) AT THE LOCATION OF THE WATER AND SANITARY SEWER SERVICE LOCATIONS, "S" FOR SEWER AND "W" FOR WATER.

WATER AND SEWER SERVICE LOCATIONS

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W36



PLAN



SECTION

NOTES:

1. CLAY OR CONCRETE WALL EXTENDS A MINIMUM OF 12" INTO UNDISTURBED SOIL ON EACH SIDE AND ON BOTTOM OF TRENCH.
2. CLAY MATERIAL TO BE CLASSIFIED AS CL, CH OR OH.
3. APPROVED FLOW-FILL MATERIAL MAY BE USED INSTEAD OF CLAY MATERIAL.

CLAY OR CONCRETE CUT-OFF WALL

FIRESTONE COLORADO	WATER CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 1/2020	DRAWING: W37

No.	REVISION	BY	DATE

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
WATER DETAILS 4

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.6
SHEET 88 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:11 PM - Luke Breedlove

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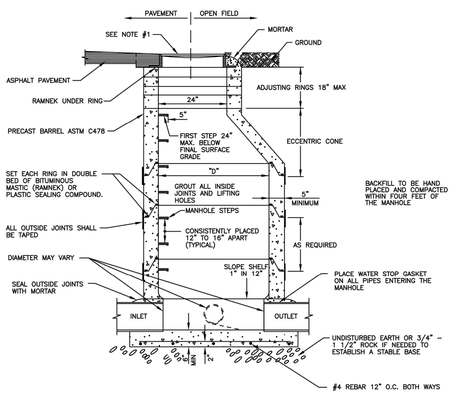


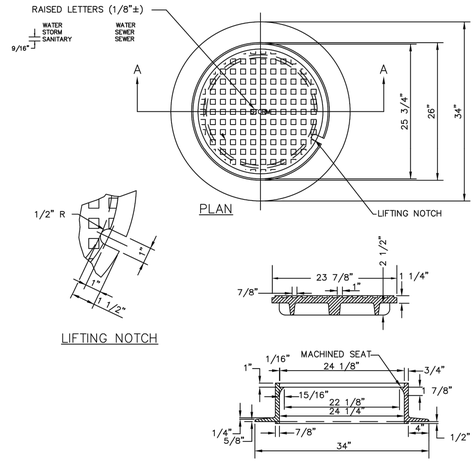
SECTION

NOTES:

1. FINAL GRADE OF MANHOLE COVERS SHALL BE 1/4" LOWER THAN FINAL STREET.
2. NO STEPS ALLOWED IN THE ADJUSTING RING AREA.
3. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C-478.
4. BLOCK-OUTS, WHEN APPROVED, SHALL EXTEND A MAX. OF 6" PAST MANHOLE O.D. AND BE SATISFACTORILY PLUGGED AND SEALED.
5. MANHOLES NOT IN ASPHALT OR CONCRETE SHALL BE RAISED 6" ABOVE FINAL GRADE AND A CONCRETE COLLAR INSTALLED WITH A GREEN CARSONITE POST

STANDARD MANHOLE

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM8A



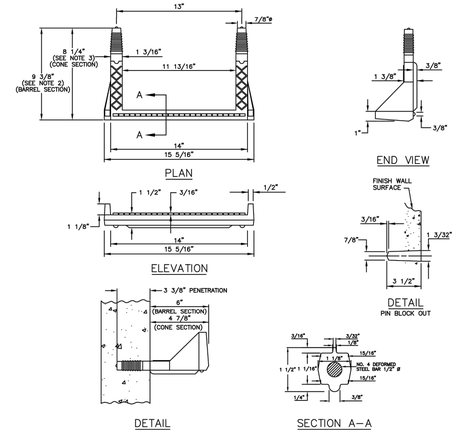
1. CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 25 KSI (CLASS 25)
2. ALL CASTINGS TO BE DIPPED IN ASPHALT BASE PAINT (OR APPROVED EQUAL)
3. CASTINGS SHALL BE AS SPECIFIED BELOW OR APPROVED EQUAL:

MANUFACTURERS	CAT. #
NEENAH	R-1706
CASTINGS, INC.	MH-400-24 C.I.
HUTCHINSON FDRY. & STL. INC.	MH-400

4. ALL NEW MANHOLES MUST INCLUDE PLASTIC OR VINYL TAG ATTACHED TO THE TOP STEP STATING THE FOLLOWING: "CAUTION CONFINED SPACE: ENTRY PERMIT REQUIRED."
5. **SEE STM10 FOR MANHOLE RING AND COVER FOR INLETS.**

24" MANHOLE RING AND COVER

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM8B



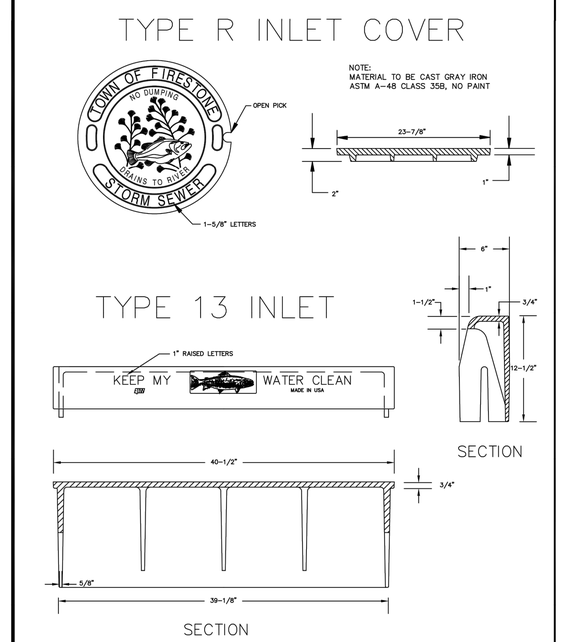
POLYPROPYLENE REINFORCED PLASTIC STEP

NOTES:

1. ASTM SPECIFICATIONS:
   A. ASTM C-478
   B. ASTM A-615 GRADE 60 (STEEL REBAR).
   C. ASTM 2146-89, TYPE III, GRADE 16906 (POLYPROPYLENE).
2. STEPS INSTALLED IN MANHOLE BARREL SECTIONS OR VERTICAL WALLS OF STRUCTURES SHALL HAVE A 9 3/8 INCH LEG AND SHALL PROJECT FROM THE WALL 6 INCHES.
3. STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 8 1/4 INCH LEG AND SHALL PROJECT FROM THE WALL 4 7/8 INCHES.
4. ALL STEPS SHALL HAVE A PENETRATION DEPTH INTO THE WALL OF 3 3/8 INCHES.
5. STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD UTILIZING A SPECIALLY TAPERED PIN TO FORM THE INSERT HOLE AS SHOWN, FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURE AND SHALL NOT BE GROUTED IN PLACE.
6. INSTALLED STEPS SHALL BE CAPABLE OF WITHSTANDING A PULL OUT FORCE OF 2500 LB. PER LEG FOR A MINIMUM PERIOD OF TWO MINUTES.
7. PINS MUST BE SMOOTH AND CONTINUOUSLY TAPERED. DIMENSIONS OF THE PIN AND THE INSERTED PORTION OF THE MANHOLE STEP ARE TYPICAL ONLY. M.M.D. INSTALLATIONS REQUIRE A MATCHED COMBINATION OF A TAPERED INSERT PIN AMD MANHOLE STEP, AS RECOMMENDED OR REQUIRED BY SPECIFIC MANUFACTURER OF THE STEP TO BE USED.
8. THIS STEP CAN ALSO BE USED IN TOE POCKET INSTALLATIONS PROVIDED 5" TOE CLEARANCE IS ALLOWED.

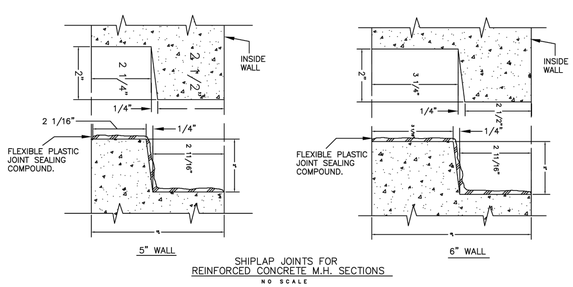
MANHOLE STEPS

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM9



INLET AND INLET COVER

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM10



SHIPLAP JOINTS FOR REINFORCED CONCRETE M.H. SECTIONS

NO SCALE

NOTES:

1. T= WALL THICKNESS OF PIPE FURNISHED.
2. THE CONTRACTOR SHALL SUBMIT ALL TOLERANCES AND DIMENSIONS, REQUIRED BY THE SPECIFIC PIPE JOINT DETAILS SHOWN, TO THE ENGINEER PRIOR TO FABRICATION.
3. ALL DIMENSIONS SHALL BE GIVEN IN INCHES, UNLESS OTHERWISE NOTED, AND ARE FOR BELL AND SPIGOT IN CONCENTRIC POSITION. DEFLECTED PIPE JOINT TOLERANCES & DIMENSIONS SHALL ALSO BE FURNISHED.
4. JOINT CLEARANCE DIMENSION K IS AT CLOSEST POINT WITHIN DISTANCE A.
5. THESE JOINT CONFIGURATIONS ARE IN ACCORDANCE WITH BUREAU OF RECLAMATION'S "TYPE R" JOINT DETAILS.
6. RUBBER "O" RING GASKET SHALL BE IN CONFORMANCE W/ASTM C-443 OR C-361.
7. APPLICABLE CONCRETE PIPE JOINT SPECIFICATIONS:
   A. ASTM C-76
   B. ASTM C-361
8. STEEL REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE APPROPRIATE ASTM SPECIFICATION FOR THE PIPE SIZE AND STRENGTH CLASS AS SPECIFIED ON PLAN/PROFILE DRAWINGS.

CONCRETE PIPE JOINTS - SHIPLAP

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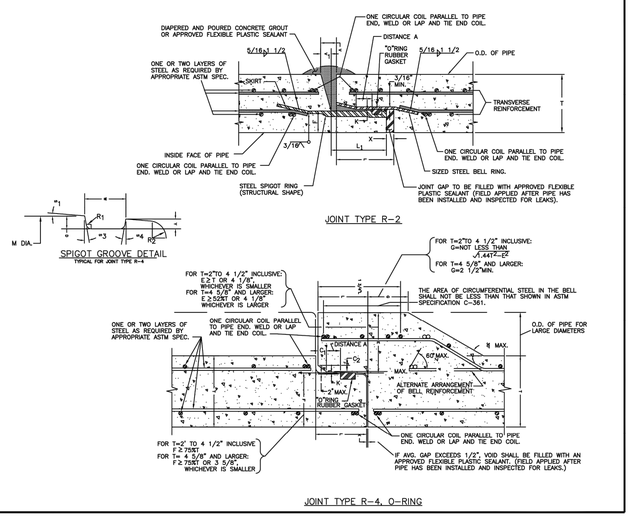

CONCRETE PIPE JOINTS - TYPE 'R'

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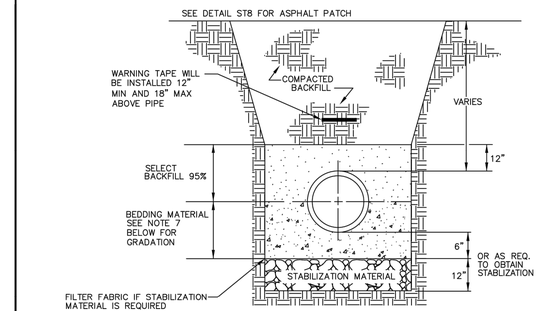

NOTES:

1. FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 95% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D.
2. FILTER FABRIC IS REQUIRED IF STABILIZATION MATERIAL IS USED. THE FABRIC SHALL BE INSTALLED AS SHOWN IN THE DETAIL.
3. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
4. PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO THE HORIZONTAL CENTERLINE OF THE PIPE. SEE NOTE 7 FOR BEDDING MATERIAL GRADATION.
5. TRENCH WIDTH SHALL NOT BE MORE THAN 24" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.
6. SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500 P.S.I. CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
7. BEDDING MATERIAL SHALL MEET THE GRADATION OF CDOT "NO.67 COARSE AGGREGATE" AS SPECIFIED IN SECTION 703.02 IN THE LATEST EDITION OF THE CDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

STORM SEWER TRENCH DETAIL

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM SEWER DETAILS 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.7

SHEET 89 OF 109

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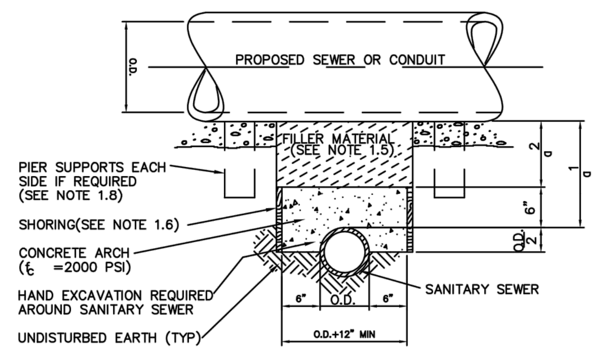
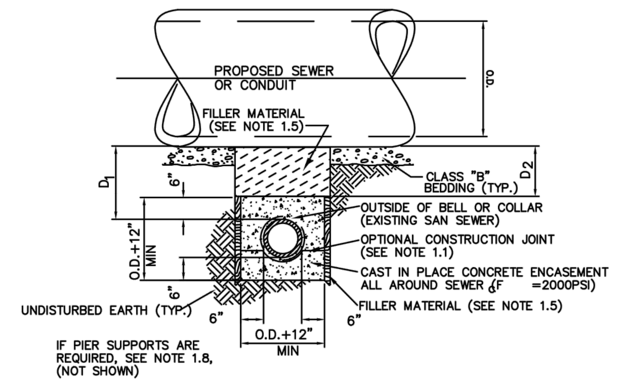
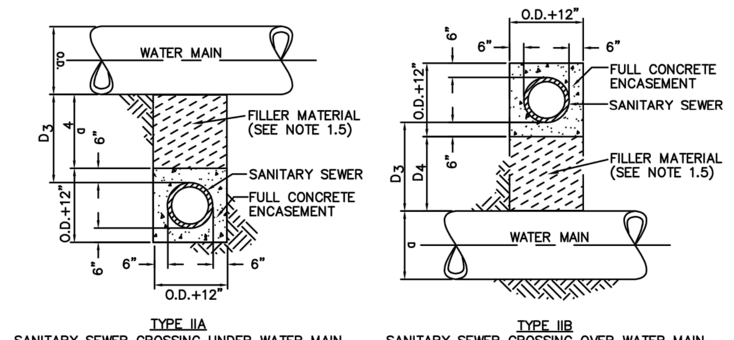
CONCRETE ENCASEMENT OF RIGID CONDUITS (1 OF 2)



TYPE I
CONCRETE ENCASEMENT FOR SANITARY SEWERS
(CONCRETE ARCH) NO SCALE (RIGID CONDUITS ONLY)



TYPE III
CONCRETE ENCASEMENT FOR SANITARY SEWERS
(FULL ENCASEMENT) NO SCALE (RIGID CONDUITS ONLY)



TYPE IIA
SANITARY SEWER CROSSING UNDER WATER MAIN
IF D_3 > 2FT, ENCASEMENT NOT REQUIRED

TYPE IIB
SANITARY SEWER CROSSING OVER WATER MAIN
FULL ENCASEMENT REQUIRED REGARDLESS OF DIMENSION D_3

TYPE II
CONCRETE ENCASEMENT FOR SANITARY SEWERS CROSSING OVER OR UNDER WATER MAIN
NO SCALE (RIGID CONDUITS ONLY)

GENERAL NOTES FOR TYPE I,II & III ENCASEMENT

1.1 CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED & BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.

1.2 LENGTH OF ENCASEMENT FOR :
(A) TYPE I & III ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
(B) TYPE II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.

1.3 UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I,II,&III ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, TO BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.

1.4 TYPE I, II OR III ENCASEMENT REQUIRED UNDER FOLLOWING CONDITIONS :
(A) TYPE I OR TYPE III IF $D_1 \leq 18"$($D_2 \leq 12"$) EXCEPT FOR SANITARY SEWERS CROSSING OVER OR UNDER WATER MAINS.
(B) TYPE IIA REQUIRED FOR SANITARY SEWERS CROSSING UNDER WATER MAINS AND $D_3 \leq 24"$($D_4 \leq 18"$).
(C) TYPE IIB REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION "D_3".
(D) EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS, OR WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
(E) IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF CAST IRON PIPE (AWWA C-106 OR C-108) OR DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.

1.5 FILLER MATERIAL BETWEEN CONDUITS TO BE :
(A) APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC., IF D_2 & $D_4 \leq 6"$.
(B) COMPACTED CLASS "B" BEDDING IF D_2 & $D_4 > 6"$. (IF $D_4 > 6"$ FOR TYPE IIB ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).

1.6 SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.

1.7 THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.

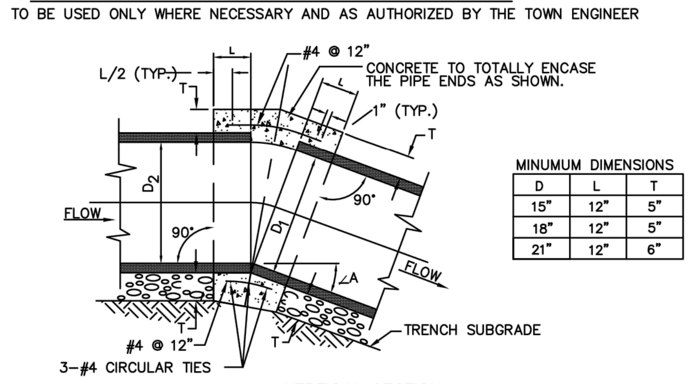
1.8 IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIER SUPPORTS EACH SIDE OF SANITARY SEWER MAY ALSO BE REQUIRED. IF REQUIRED, SUPPORTS TO BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS. NO PIPE JOINTS OVER TOP OF WATER MAIN.

1.9 DETAILS SHOWN CONSIDER RIGID CONDUITS ONLY. FLEXIBLE CONDUITS REQUIRE SPECIAL CONSIDERATION.

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM13A

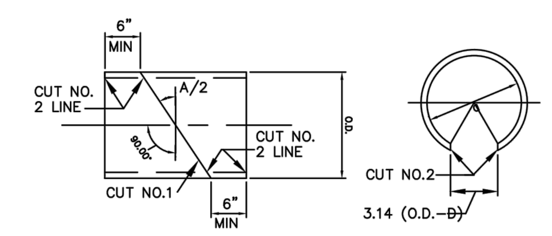
CONCRETE ENCASEMENT OF RIGID CONDUITS (2 OF 2)

STORM CONNECTOR PIPE CLOSURE DETAIL
TO BE USED ONLY WHERE NECESSARY AND AS AUTHORIZED BY THE TOWN ENGINEER



VERTICAL SECTION

MINUMUM DIMENSIONS		
D	L	T
15"	12"	5"
18"	12"	5"
21"	12"	6"



CUT NO.1: SAW THE TUBE AT AN ANGLE OF A/2 WITH THE TRANSVERSE PLANE. REVERSE ONE SECTION AND TAPE BOTH SECTIONS TOGETHER FORMING THE DEFLECTION ANGLE A.
CUT NO.2: SAW THE TUBE LONGITUDINALLY REMOVING A STRIP 3.14 (D_o-D) INCHES WIDE ON THE SIDE OPPISITE THE OPEN JOINT. BEND THE ENDS OF THE CUT TOGETHER AND INSERT THE TUBE IN THE PIPE.

NOTES: FOR STORM LINE CONNECTORS ONLY, NOT TO BE USED ON MAINLINE SEWERS.

AN INTERIOR FORM OF UNSEALED SONO-TUBE OR EQUAL SHALL BE USED TO PROVIDE A SMOOTH INTERIOR JOINT. (SEE DETAIL A)

DETAIL "A"
SONO-TUBE, OR EQUAL, INTERIOR FORM

GENERAL NOTES

1. A CONCRETE COLLAR IS REQUIRED WHERE THE CHANGE IN GRADE EXCEEDS 0.10 OF A FOOT PER FOOT.
2. GAP LIMITS

PIPE DIAMETER	COLUMN "A" (SEE A BELOW)	COLUMN "B" (SEE B BELOW)
21" OR LESS	1/2"	1"

A. IF THE "EXTREME OUTER ENDS" OF THE PIPE LEAVE A GAP THAT EXCEEDS VALUES IN COLUMN "A" OR COLUMN "B", A CONCRETE COLLAR IS REQUIRED.
B. IF THE GAP EXCEEDS 6 INCHES, A MANHOLE STRUCTURE IS REQUIRED.

3. CONCRETE COLLAR SHALL NOT BE USED FOR A SIZE CHANGE ON THE MAIN LINE.
4. FOR PIPE SIZE NOT LISTED USE NEXT SIZE LARGER.
5. WHERE REINFORCING IS REQUIRED THE DIAMETER OF THE CIRCULAR TIES SHALL BE D+(2X WALL THICKNESS)+T.
6. REINFORCING SHALL BE USED WHERE THE SPACES BETWEEN THE EXTREME OUTER ENDS IS 2 1/2" OR LARGER.

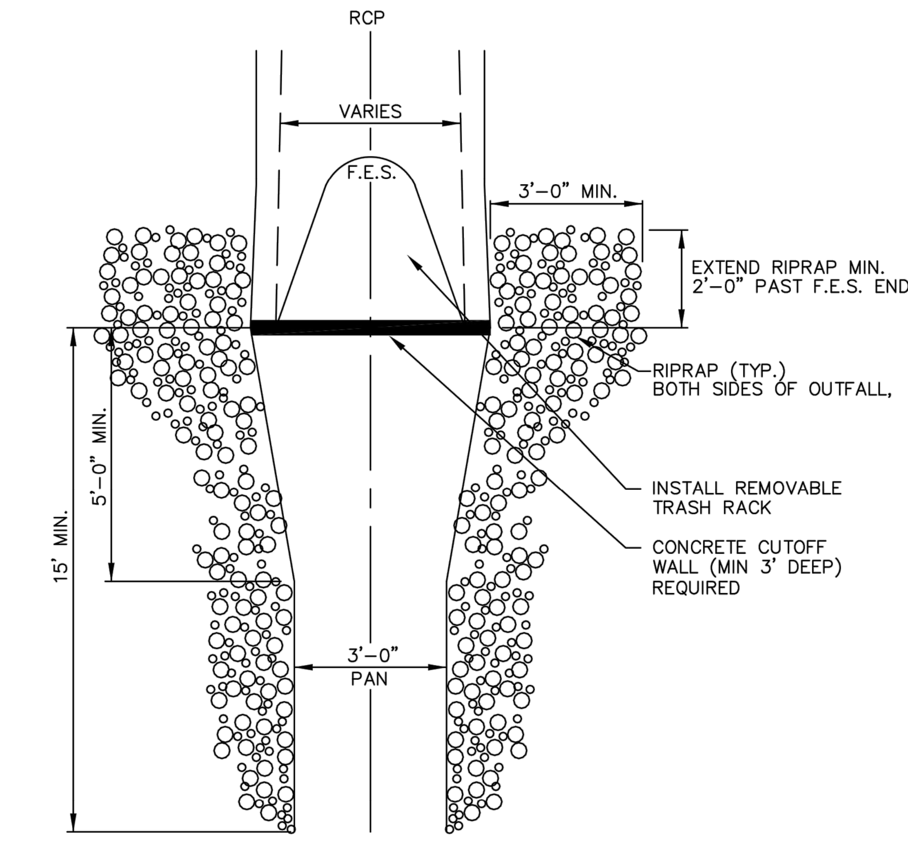
CIRCULAR TIES:

PIPE DIAMETER	SPACE BETWEEN EXTREME OUTER ENDS	NO. OF CIRCULAR TIES
21" OR LESS	2 1/2"	3

WHERE THE SPACE BETWEEN PIPE LONGITUDINAL ENDS EXCEEDS 2 1/2", THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN AN APPROXIMATE SPACING OF 6" OC.

7. AN INTERIOR FORM OF UNSEALED SONO-TUBE OR EQUAL SHALL BE USED TO PROVIDE A SMOOTH INTERIOR JOINT. THE PAPER FORM MAY BE LEFT IN PLACE (SEE DETAIL A).
8. THIS DETAIL APPLIES "ONLY" TO PIPE 21" DIAMETER OR LESS.

FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM13B



FLARED END SECTION WITH TRICKLE CHANNEL

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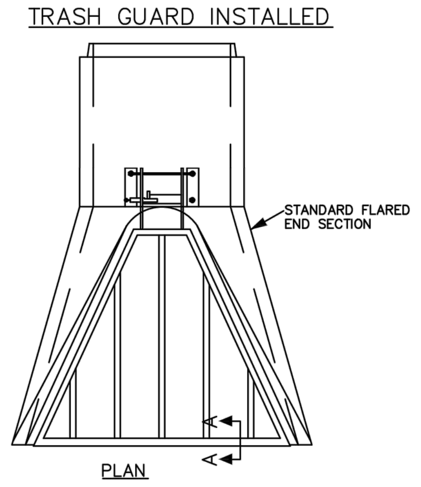
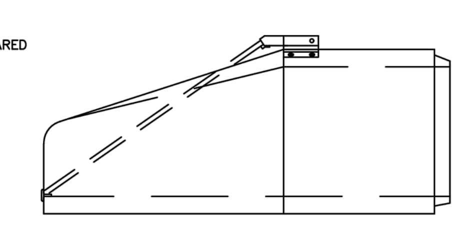
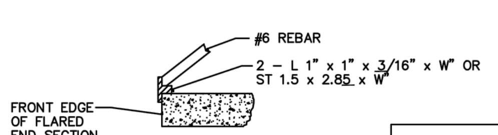
TRASH GUARD INSTALLED



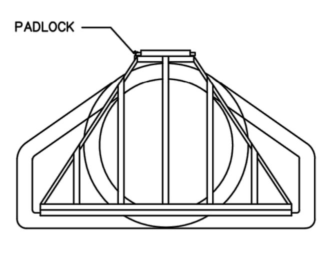
PLAN



SIDE VIEW



SECTION A-A



ELEVATION

TABLE OF DIMENSIONS												
	TRASH GUARD									MOUNTING		
INSIDE DIA	A	B	D	G	L	W	C	H	J	R	S	T
	(INCHES)						(EA)	(DEGREE)		(INCHES)		
18	10	6-1/2	8	3	31	28	3	45	45	11-1/2	5	5
24	12	9-1/2	8	3	47-1/2	40	5	35	55	15	6-1/2	5-1/2
30	15	12-1/2	9	3	59-3/4	52	5	35	55	18-1/2	8	6
36	15	15-1/2	8-1/2	4	71-1/4	58	7	35	55	22	9-1/2	6-1/2
42	21	18-1/2	9	4	75	64	7	40	50	25-1/2	11	7
48	24	21-1/2	8	4	82-3/4	70	9	40	50	29	12-3/4	7-1/2

NOTE: AN INDEPENDENT DESIGN AND DETAIL WILL BE REQUIRED FOR PIPE DIAMETERS GREATER THAN 48"

GENERAL NOTES

1. TRASH GUARDS SHALL BE INSTALLED AT LOCATIONS SHOWN IN THE PLANS OR SPECIFIED BY THE ENGINEER
2. PADLOCKS FOR LOCKING BAR WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND KEYS SUBMITTED TO THE PUBLIC WORKS DEPT.
3. THE TRASH GUARDS ARE NOT DESIGNED TO CARRY WHEEL LOADINGS AND SUCH ARE NOT TO BE USED AS SAFETY GRATES
4. IF THE FLARED END DIMENSIONS VARY FROM THOSE SHOWN IN THE STANDARD PLANS, NECESSARY ADJUSTMENTS SHALL BE MADE TO THE TRASH GUARD DIMENSIONS

TRASH GUARD FOR CONDUIT (1 OF 3)

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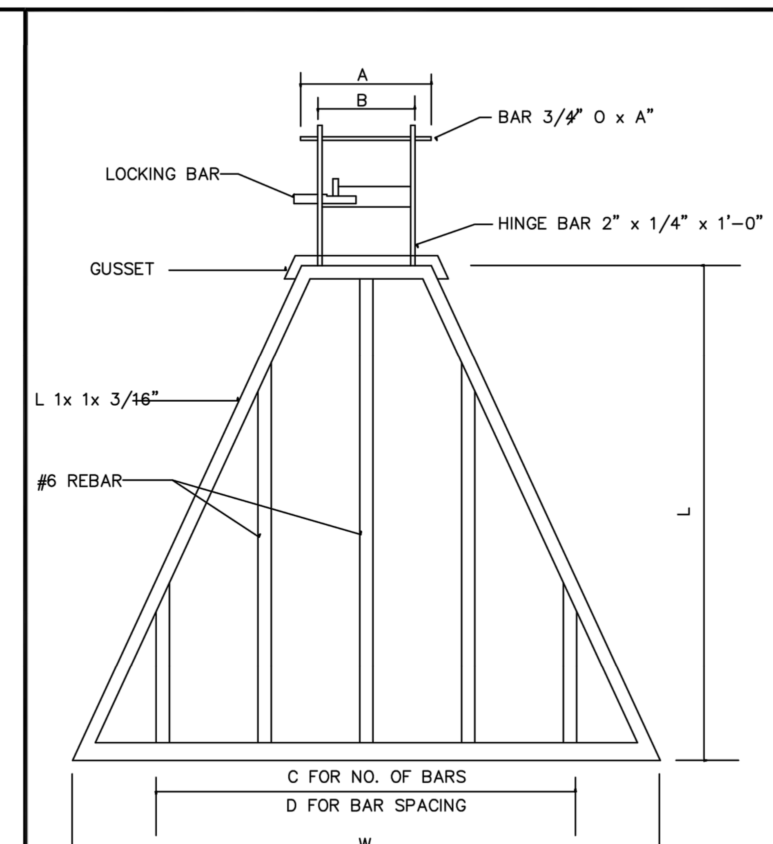
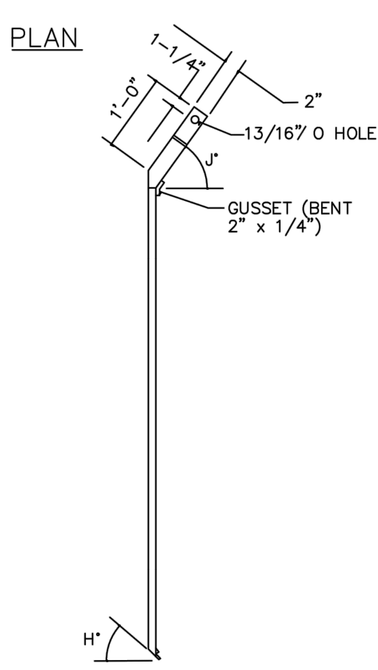
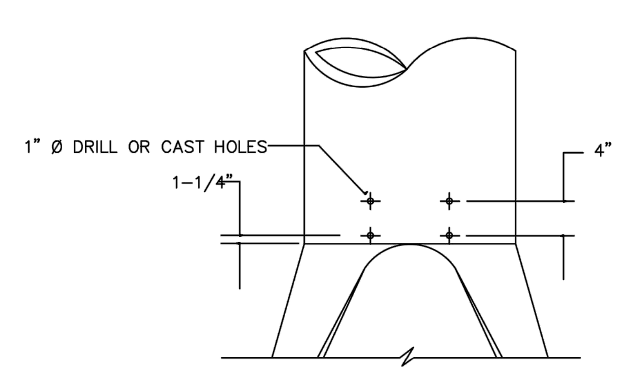


RACK DETAIL

PLAN

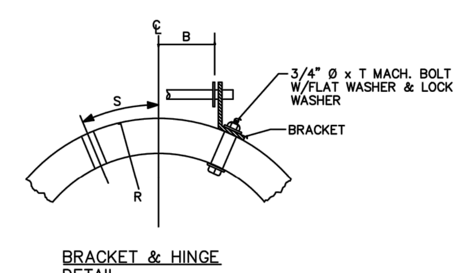




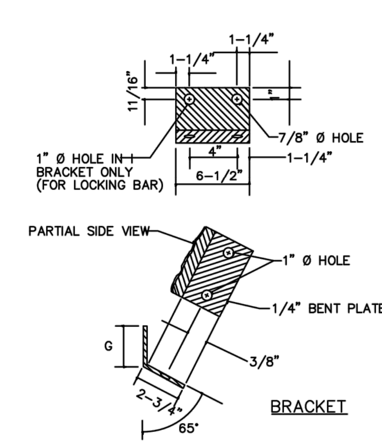
HOLES FOR BRACKETS

TRASH GUARD FOR CONDUIT (2 OF 3)

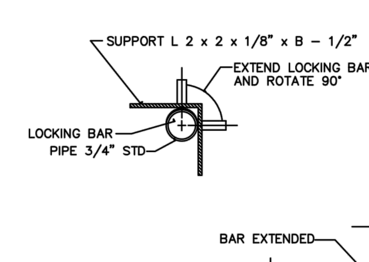
FIRESTONE COLORADO | STORM SEWER CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: STM15B

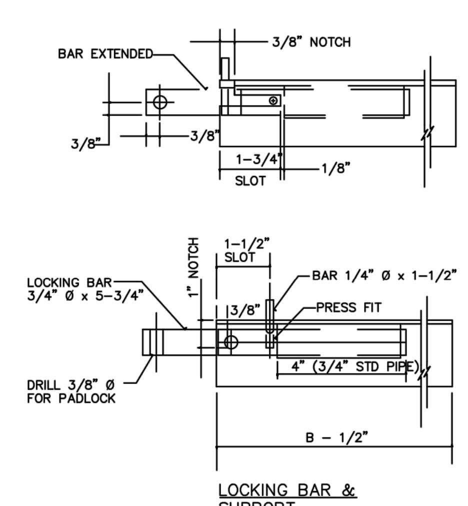


BRACKET & HINGE DETAIL



BRACKET





LOCKING BAR & SUPPORT

TRASH GUARD FOR CONDUIT (3 OF 3)

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM SEWER DETAILS 2

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 01/25/2023

C11.8
SHEET 90 OF 109

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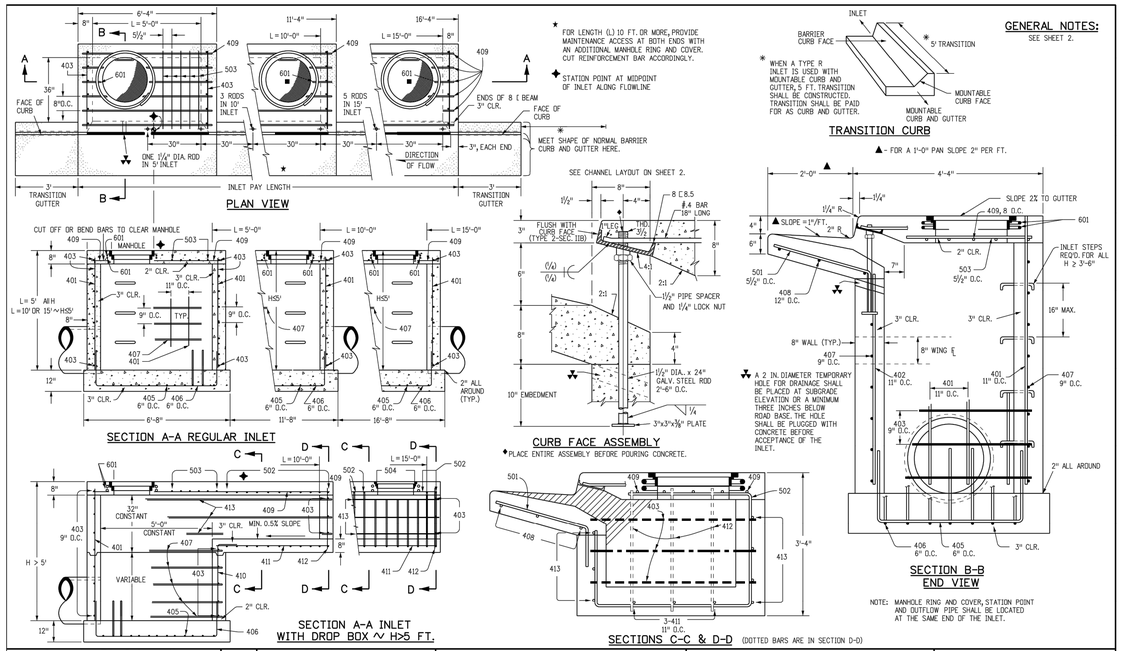

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4201 East Arkansas Avenue
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Project Development Branch DD/LTA

CURB INLET TYPE R

Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-604-12
Sheet No. 1 of 2

MARK	BAR # OR SIZE	O.C. SPACING	TYPE	ALL INLETS L = 5 FT. NO. REQ'D.	ALL INLETS L = 5 FT. LENGTH	INLETS: H ≤ 5 FT. L = 10 FT. NO. REQ'D.	INLETS: H ≤ 5 FT. L = 10 FT. LENGTH	INLETS: H ≤ 5 FT. L = 15 FT. NO. REQ'D.	INLETS: H ≤ 5 FT. L = 15 FT. LENGTH	INLETS: H > 5 FT. L = 10 FT. NO. REQ'D.	INLETS: H > 5 FT. L = 10 FT. LENGTH	INLETS: H > 5 FT. L = 15 FT. NO. REQ'D.	INLETS: H > 5 FT. L = 15 FT. LENGTH
401	4	11"	II	15	*	21	*	26	*	11	*	11	*
402	4	11"	II	7	*	13	*	18	*	7	*	7	*
403	4	9"	II	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-0"
405	4	6"	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"
406	4	6"	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"
407	4	9"	II	*	5'-10"	*	10'-10"	*	15'-10"	*	5'-10"	*	5'-10"
408	4	12"	II	3	6'-10"	3	11'-10"	3	16'-0"	3	11'-10"	3	16'-0"
409	4	8"	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410	4	11"	VII							3		3	*
411	4	11"	II							3	5'-2"	3	10'-2"
412	4	11"	II							3	2'-9"	3	2'-9"
413	4	9"	II							7	10'-10"	7	15'-10"
501	5	5½"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5	5½"	III							11	11'-5"	17	11'-5"
503	5	5½"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
504	5	5½"	IX									5	8'-4"
601	6	2½"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
■ R8.5				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
				2 BARS, 1 RODS	—	4 BARS, 3 RODS	—	8 BARS, 5 RODS	—	4 BARS, 3 RODS	—	8 BARS, 5 RODS	—

* VARIABLE REFER TO TABLE TWO.
■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

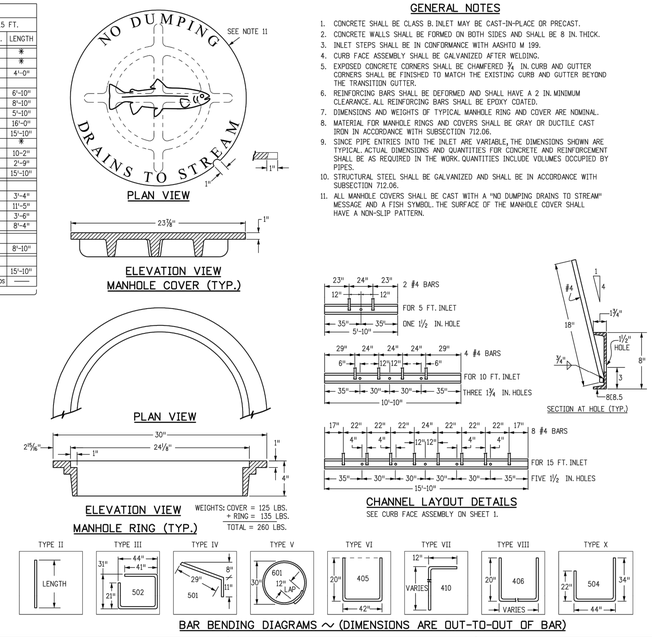
REGULAR INLETS | DROP BOX INLETS

TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

"H"	LENGTH 401	LENGTH 402	LENGTH 410	NO. REQ'D. REGULAR 403	NO. REQ'D. REGULAR 407	NO. REQ'D. DROP BOX 403	NO. REQ'D. DROP BOX 407	L = 5 FT. CONC. CU. YDS.	L = 5 FT. STEEL LBS.	L = 10 FT. CONC. CU. YDS.	L = 10 FT. STEEL LBS.	L = 15 FT. CONC. CU. YDS.	L = 15 FT. STEEL LBS.
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3'-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3'-11"	16	13	16	6	4.6	382	6.2	616	7.6	860
6'-6"	6'-2"	5'-2"	4'-5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	6'-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'-0"	7'-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	8'-2"	7'-5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'-0"	9'-8"	8'-8"	7'-11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	9'-2"	8'-5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTES: FOR L = 5 FT., L = 10 FT., AND L = 15 FT.
REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.
STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"



GENERAL NOTES

1. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 IN. THICK.
3. INLET STEPS SHALL BE IN CONFORMANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN. CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.
6. REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.
9. SINGE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
11. ALL MANHOLE COVERS SHALL BE CAST WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE AND A FISH SYMBOL. THE SURFACE OF THE MANHOLE COVER SHALL HAVE A NON-SLIP PATTERN.

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CURB INLET TYPE R

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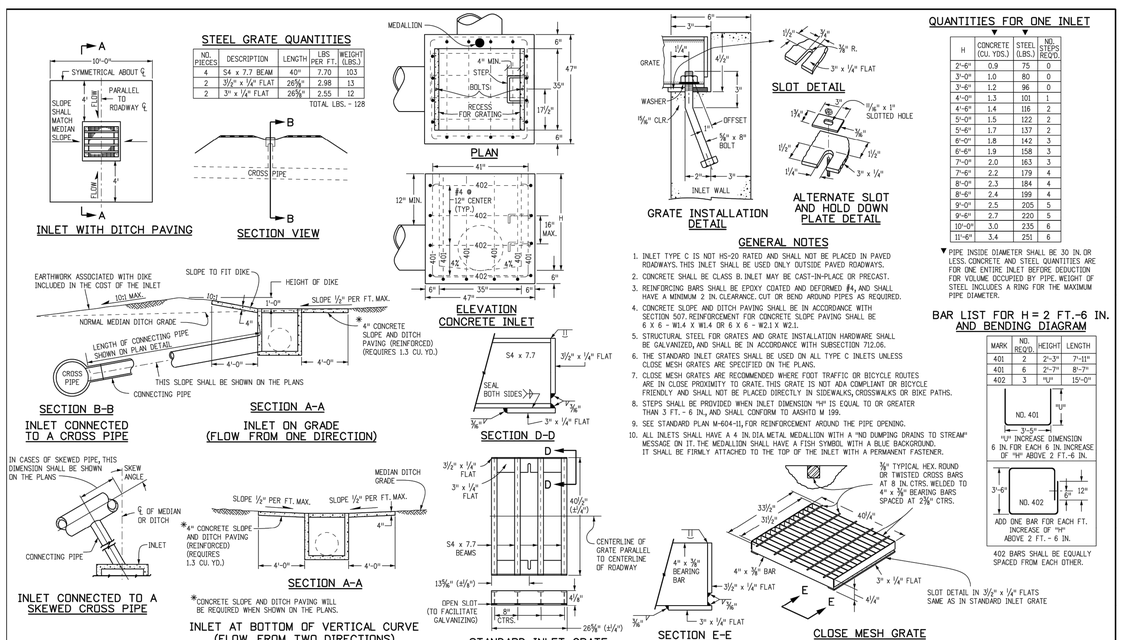

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
4	S4 x 7.7 BEAM	40"	7.70	103
2	3½" x ¼" FLAT	26⅝"	2.98	13
2	3" x ¼" FLAT	26⅝"	2.55	12
		TOTAL LBS. = 128		

QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NO. STEPS REQ'D.
2'-6"	0.8	75	0
3'-0"	1.0	80	0
3'-6"	1.2	96	0
4'-0"	1.3	101	1
4'-6"	1.4	116	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-6"	3.4	251	6

▼ PIPE INSIDE DIAMETER SHALL BE 30 IN. OR LESS. CONCRETE AND STEEL QUANTITIES ARE FOR ONE ENTIRE INLET BEFORE DEDUCTION FOR VOLUME OCCUPIED BY PIPE. WEIGHT OF STEEL INCLUDES A RING FOR THE MAXIMUM PIPE DIAMETER.

GENERAL NOTES

1. INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
2. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
3. REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4, AND SHALL HAVE A MINIMUM 2 IN. CLEARANCE. CUT OR BEND AROUND PIPES AS REQUIRED.
4. CONCRETE SLOPE AND DITCH PAVING SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6 X 6 - W1.4 X W1.4 OR 6 X 6 - W2.1 X W2.1.
5. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
6. THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
7. CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
8. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT. - 6 IN., AND SHALL CONFORM TO AASHTO M 199.
9. SEE STANDARD PLAN M-604-11, FOR REINFORCEMENT AROUND THE PIPE OPENING.
10. ALL INLETS SHALL HAVE A 4 IN. DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.

BAR LIST FOR H = 2 FT.-6 IN. AND BENDING DIAGRAM

MARK	NO. REQ'D.	HEIGHT	LENGTH
401	2	2'-3"	7'-11"
401	6	2'-7"	8'-7"
402	3	*U*	15'-0"

NO. 401 — *U* INCREASE DIMENSION 6 IN. FOR EACH 4 IN. INCREASE OF "H" ABOVE 2 FT.-6 IN.

NO. 402 — ADD ONE BAR FOR EACH FT. INCREASE OF "H" ABOVE 2 FT.-6 IN.

402 BARS SHALL BE EQUALLY SPACED FROM EACH OTHER.

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INLET, TYPE C

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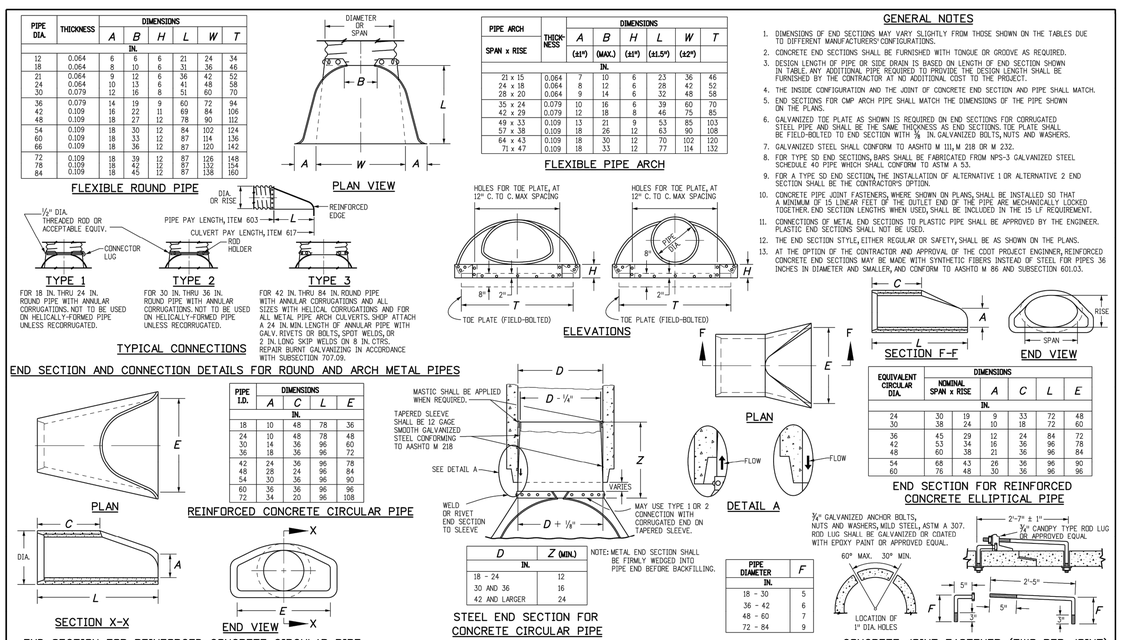

PIPE DIA.	THICKNESS	DIMENSIONS A	B	H	L	W	T
		IN.					
12	0.064	6	6	6	21	24	34
18	0.064	8	10	6	31	36	46
21	0.064	9	12	6	36	42	52
24	0.064	10	13	6	41	48	58
30	0.079	12	16	8	51	60	70
36	0.079	14	19	9	60	72	94
42	0.109	16	22	11	69	84	106
48	0.109	18	27	12	78	90	112
54	0.109	18	30	12	84	102	124
60	0.109	18	33	12	87	114	136
66	0.109	18	36	12	87	120	142
72	0.109	18	39	12	87	126	148
78	0.109	18	42	12	87	132	154
84	0.109	18	45	12	87	138	160

PIPE ARCH SPAN x RISE	THICKNESS	DIMENSIONS A (±1")	B (MAX.)	H (±1")	L (±1.5")	W (±2")	T
		IN.					
21 x 15	0.064	7	10	6	23	36	46
24 x 18	0.064	8	12	6	28	42	52
28 x 20	0.064	9	14	6	32	48	58
35 x 24	0.079	10	16	6	39	60	70
42 x 29	0.079	12	18	8	46	75	85
49 x 33	0.109	13	21	9	53	85	103
57 x 38	0.109	18	26	12	63	90	108
64 x 43	0.109	18	30	12	70	102	120
71 x 47	0.109	18	33	12	77	114	132

GENERAL NOTES

1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURED CONFIGURATIONS.
2. CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
3. DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
4. THE INSIDE CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH.
5. END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN ON THE PLANS.
6. GALVANIZED TOE PLATE AS SHOWN IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH ⅜ IN. GALVANIZED BOLTS, NUTS AND WASHERS.
7. GALVANIZED STEEL SHALL CONFORM TO AASHTO M 111, M 218 OR M 232.
8. FOR TYPE SD END SECTIONS, BARS SHALL BE FABRICATED FROM NPS-3 GALVANIZED STEEL SCHEDULE 40 PIPE WHICH SHALL CONFORM TO ASTM A 53.
9. FOR A TYPE SD END SECTION, THE INSTALLATION OF ALTERNATIVE 1 OR ALTERNATIVE 2 END SECTION SHALL BE THE CONTRACTOR'S OPTION.
10. CONCRETE PIPE JOINT FASTENERS, WHERE SHOWN ON PLANS, SHALL BE INSTALLED SO THAT A MINIMUM OF 15 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. END SECTION LENGTHS WHEN USED, SHALL BE INCLUDED IN THE 15 LF REQUIREMENT.
11. CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.
12. THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.
13. AT THE OPTION OF THE CONTRACTOR AND APPROVAL OF THE CDOT PROJECT ENGINEER, REINFORCED CONCRETE END SECTIONS MAY BE MADE WITH SYNTHETIC FIBERS INSTEAD OF STEEL FOR PIPES 36 INCHES IN DIAMETER AND SMALLER, AND CONFORM TO AASHTO M 86 AND SUBSECTION 601.03.

EQUIVALENT CIRCULAR DIA.	NOMINAL SPAN x RISE	DIMENSIONS A	C	L	E
		IN.			
24	30	19	9	33	72
30	38	24	10	18	72
36	45	29	12	24	84
42	53	34	16	36	96
48	60	38	21	36	96
54	68	43	26	36	96
60	76	48	30	36	96

PIPE I.D.	DIMENSIONS A	C	L	E
	IN.			
18	10	48	78	36
24	10	48	78	48
30	13	36	96	60
36	18	36	96	72
42	24	36	96	78
48	28	24	96	84
54	30	36	96	90
60	36	36	96	96
72	34	20	96	108

D	Z (MIN.)
IN.	
18 - 24	12
30 AND 36	16
42 AND LARGER	24

NOTE: METAL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING.

PIPE DIAMETER IN.	F
18 - 30	5
36 - 42	6
48 - 60	7
72 - 84	9

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CONCRETE AND METAL END SECTIONS

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STANDARD PLAN NO.
M-603-10
Sheet No. 1 of 2

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM SEWER DETAILS 3

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 01/25/2023

C11.9
SHEET 91 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 - 1:38:22 PM - Luke Breedlove

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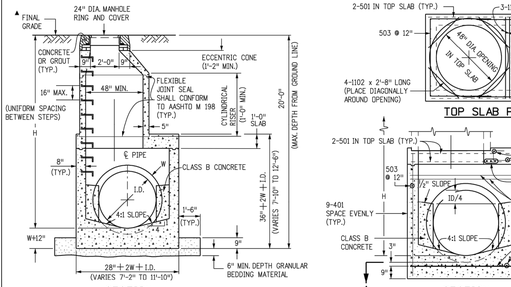
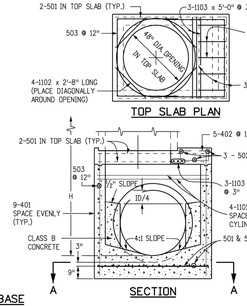


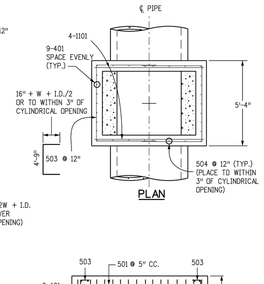
SECTION



TOP SLAB PLAN

SECTION

MAHOLE BOX BASE



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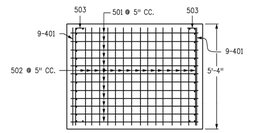


SECTION A-A
(STEEL IN BOTTOM OF BASE)

GENERAL NOTES

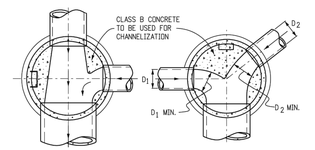
1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8 FT.
3. THE MANHOLE RING FRAME SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A CEMENT GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF PIPE OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO AASHTO M 199 (ASTM C 478).
6. CAST-IN-PLACE MANHOLES SHALL BE CLASS B CONCRETE.
7. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3 FT.-6 IN. AND SHALL CONFORM TO AASHTO M 199.
8. ALL REINFORCING STEEL SHALL BE GRADE 60 AND EPOXY COATED. VERTICAL STEEL SHALL BE PLACED AT CENTERLINE OF WALL. ALL BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
9. ALL PIPE ENTRIES INTO THE BASE OF MANHOLE SHALL BE CONNECTED BY OPEN CHANNELIZATION ADJUSTED FOR PIPE SIZE, SHAPE, SLOPE, AND DIRECTION OF FLOW. DETAILS SHOWN ARE TYPICAL FOR INSTALLATIONS WITH ALL INVERTS OF SAME RELATIVE ELEVATION. FOR EXCESSIVE ELEVATION DIFFERENCE BETWEEN INVERTS, SPECIAL BASE/CHANNEL DETAILS WILL BE SHOWN ON THE PLANS.
10. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
11. STUB-OUTS SHALL EXTEND 2 FT. MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
12. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.

▲ WHEN FINAL GRADE IS PAVEMENT SURFACE, RECESS MANHOLE RING AND COVER ¾" MIN. TO ½" MAX.

MARK	SIZE	TYPE	WT. #/FT.	BARS	I.D. 54"	I.D. 60"	I.D. 66"	I.D. 72"	I.D. 84"	I.D. 96"	FORMULAS
401	4	I	0.668	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	18 8'-1" 97.2	18 8'-8" 104.2	18 9'-3" 111.2	18 9'-10" 118.2	18 11'-0" 132.3	18 12'-2" 146.3	401 BAR LENGTH = 32" + 2W + I.D.
402	4	III	0.668	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	5 5'-5" 18.1	5 6'-0" 20.0	5 6'-7" 22.0	5 7'-2" 23.9	5 8'-4" 27.8	5 9'-6" 31.7	402 BAR LENGTH = I.D. + 2W
501	5	I	1.043	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	17 7'-5" 131.5	17 8'-0" 141.8	17 8'-7" 152.2	17 9'-2" 162.5	17 10'-4" 183.2	17 11'-6" 203.9	501 BAR LENGTH = 24" + I.D. + 2W
502	5	I	1.043	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	22 5'-0" 114.7	23 5'-0" 119.9	25 5'-0" 130.4	26 5'-0" 135.6	29 5'-0" 151.2	32 5'-0" 166.9	502 NUMBER BARS REQ'D. = 3 + (24+I.D.+2W / @ 12" +1) @ 5"
503	5	II	1.043	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	16 12'-10" 214.2	16 13'-5" 223.9	18 14'-7" 262.8	18 14'-7" 273.8	20 15'-9" 328.5	24 16'-11" 423.5	503 NUMBER BARS REQ'D. = 2 (134+I.D.+2W / @ 12" +1) BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	5.313	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	12 8'-1" 101.2	14 8'-8" 126.6	14 9'-3" 135.1	16 9'-10" 164.1	16 11'-0" 206.5	20 12'-2" 253.8	504 NUMBER BARS REQ'D. = 2 (2W+I.D.-4 / @ 12" +1) BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	4 7'-2" 152.3	4 7'-9" 164.9	4 8'-4" 177.4	4 8'-11" 189.5	4 10'-1" 214.3	4 11'-3" 239.1	1101 BAR LENGTH = 21" + I.D. + 2W
1102	11	I	5.313	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	TYPE I STRAIGHT 4'-9"
1103	11	I	5.313	(NO. REQ'D. ↓LENGTH ↓WEIGHT #)	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	TYPE II 16"+W+I.D./2
* REINFORCING STEEL TOTAL					965.6	1,037.5	1,127.2	1,204.0	1,380.2	1,601.6	TYPE III 12" 12" 7" I.D.+2W-38"
CONCRETE - CUBIC YARDS - TOTAL					6.0	6.6	7.3	8.0	9.5	11.1	

NOTE: QUANTITIES ARE BASED ON SAME SIZE PIPE ENTRANCE TO AND EXIT FROM, BASE AND A 4 FT. MANHOLE ENTRANCE INTO TOP SLAB OF BASE.

QUANTITIES FOR CONCRETE MANHOLE BOX BASE



THROUGH PIPE ONE LATERAL

ANGLED LATERALS

SHARP ANGLE

TYPICAL CHANNELIZATION DETAILS

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Project Development Branch JBK

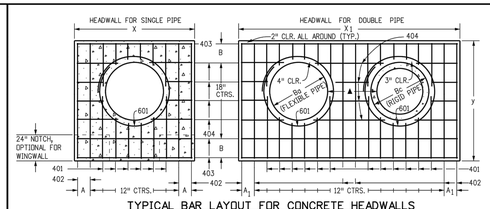
MANHOLES

STANDARD PLAN NO. M-604-20

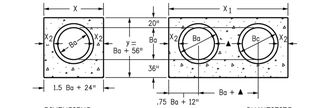
Standard Sheet No. 1 of 3

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:

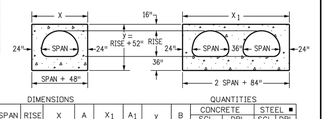


TYPICAL BAR LAYOUT FOR CONCRETE HEADWALLS



DIMENSIONS Bo IN.	Bc IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	Y FT.-IN.	B IN.	X_2 IN.	QUANTITIES CONCRETE SGL CU.YD.	CONCRETE DBL CU.YD.	STEEL ■ SGL LBS.	STEEL ■ DBL LBS.
54	65	8-9	8½	15-6	7	9-2	17	20	2.12	3.55	209	364
60	72	9-6	7	17-0	10	9-8	11	21	2.35	3.99	236	414
66	79	10-3	11½	18-6	7	10-2	14	22	2.60	4.44	249	453
72	86	11-0	10	20-0	10	10-8	17	23	2.85	4.91	270	476
78	93	11-9	8½	21-3	11	11-2	11	24	3.11	5.29	306	527
84	100	12-6	7	22-6	7	11-8	14	25	3.38	5.68	333	572
90	107	13-3	11½	23-9	8½	12-2	17	26	3.66	6.08	335	593
96	114	14-0	10	25-0	10	12-8	11	27	3.94	6.48	379	649
102	121	14-9	8½	26-3	11½	13-2	14	28	4.24	6.89	400	664
108	128	15-6	7	27-6	7	13-8	17	29	4.54	7.30	424	707

HEADWALL FOR RIGID ROUND PIPE



DIMENSIONS EQUIV. Bo IN.	SPAN IN.	RISE IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	Y FT.-IN.	B IN.	QUANTITIES CONCRETE SGL CU. YD.	CONCRETE DBL CU. YD.	STEEL ■ SGL LBS.	STEEL ■ DBL LBS.
72	81	59	10-9	8½	20-6	7	9-3	17½	2.72	5.10	250	467
78	87	63	11-3	11½	21-6	7	9-7	10½	2.85	5.34	275	531
84	95	67	11-9	8½	22-10	9	9-11	12½	3.08	5.79	290	547
90	103	71	12-7	7½	24-2	11	10-3	15	3.30	6.21	321	591
96	112	75	13-4	12	25-8	8	10-7	16½	3.52	6.65	314	606
102	117	79	13-9	8½	26-6	7	10-11	9½	3.63	6.86	356	672
108	128	83	14-8	8	28-4	12	11-3	11½	3.96	7.51	376	699

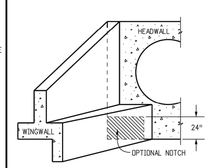
HEADWALL FOR FLEXIBLE PIPE ARCH

GENERAL NOTES

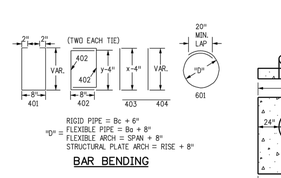
1. CONCRETE SHALL BE CLASS B.
2. HEADWALL SHALL BE PERPENDICULAR TO THE PIPE ℄ UNLESS OTHERWISE SHOWN ON THE PLANS. TABULATED DIMENSIONS AND QUANTITIES MUST BE ADJUSTED FOR SKEWED INSTALLATIONS.
3. FOR WINGWALL DETAILS, SEE STANDARD PLAN M-601-20.
4. VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED FROM STEEL AND CONCRETE QUANTITIES.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
6. ALL REINFORCING BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.

▲ WHEN TWO OR MORE PIPES ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE ½ INSIDE DIAMETER APART, OR ½ INSIDE SPAN APART, OR 3 FT. APART (INCLUDING WALL THICKNESS), WHICHEVER IS LESS.

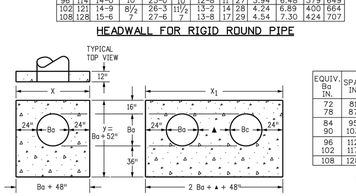
■ ADD 0.89 x (X OR X_1) (LB.) WHEN APRON IS REQUIRED.



FRONT VIEW



BAR BENDING

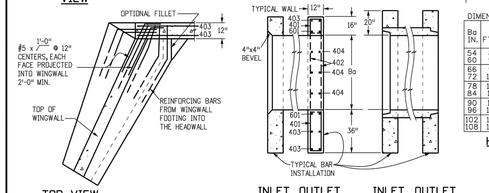


DIMENSIONS Bo IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	Y FT.-IN.	B IN.	QUANTITIES CONCRETE SGL CU. YD.	CONCRETE DBL CU. YD.	STEEL ■ SGL LBS.	STEEL ■ DBL LBS.
54	8-6	7	15-3	11½	8-10	15	2.19	3.81	211	358
60	9-0	10	16-6	7	9-4	18	2.38	4.25	217	396
66	9-6	7	17-9	8½	9-10	12	2.58	4.70	252	454
72	10-0	10	19-0	10	10-4	15	2.78	5.17	255	472
78	10-6	7	20-0	10	10-10	18	2.98	5.56	276	499
84	11-0	10	21-0	10	11-4	12	3.19	5.95	297	553
90	11-6	7	22-0	10	11-10	15	3.40	6.36	317	517
96	12-0	10	23-0	10	12-4	18	3.62	6.79	321	597
102	12-6	7	24-0	10	12-10	12	3.84	7.21	364	663
108	13-0	10	25-0	10	13-4	15	4.06	7.63	362	678

HEADWALL FOR FLEXIBLE PIPE ARCH

DIMENSIONS EQUIV. Bo IN.	SPAN FT.-IN.	RISE FT.-IN.	X FT.-IN.	A IN.	X_1 FT.-IN.	A_1 IN.	Y FT.-IN.	B IN.	QUANTITIES CONCRETE SGL CU. YD.	CONCRETE DBL CU. YD.	STEEL ■ SGL LBS.	STEEL ■ DBL LBS.
66	6-1	4-7	10-1	10½	19-2	11	8-11	15½	2.52	4.70	232	424
75	7-0	5-1	11-0	10	21-0	10	9-5	9½	2.80	5.25	282	509
84	7-11	5-7	11-11	9½	22-10	9	9-11	12½	3.08	5.79	291	540
93	8-10	6-1	12-10	9	24-8	8	10-5	15½	3.36	6.34	309	622
102	9-9	6-7	13-9	8½	26-6	7	10-11	9½	3.63	6.86	379	673
111	10-11	7-1	14-11	9½	28-10	9	11-5	12½	4.05	7.67	377	711
120	11-10	7-7	15-10	9	30-8	8	11-11	15½	4.36	8.28	395	731
132	12-10	8-4	16-10	9	32-8	8	12-8	11	4.75	9.03	441	839
141	14-1	8-9	18-1	10½	35-2	11	13-1	13½	5.17	9.86	448	931
150	15-4	9-3	19-4	12	37-8	8	13-7	16½	5.69	10.88	490	953
159	15-10	9-10	19-10	9	38-8	8	14-2	11	5.89	11.25	534	1019

HEADWALL FOR STRUCTURAL PLATE ARCH

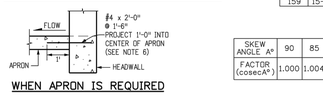


TOP VIEW

WINGWALL CONNECTION

INLET OUTLET
ENDS OF FLEXIBLE PIPE

INLET OUTLET
ENDS OF RIGID PIPE



WHEN APRON IS REQUIRED

SKEW ANGLE A°	90	85	80	75	70	65	60	55	50	45	40	35	30
FACTOR (cosecA°)	1.000	1.004	1.015	1.035	1.064	1.103	1.155	1.221	1.305	1.414	1.556	1.743	2.000

SKEW FACTOR TABLE

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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HEADWALL FOR PIPES

STANDARD PLAN NO. M-601-10

Standard Sheet No. 1 of 1

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
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Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
STORM SEWER DETAILS 4

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.10
SHEET 92 OF 109

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:24 PM - Luke Breedlove

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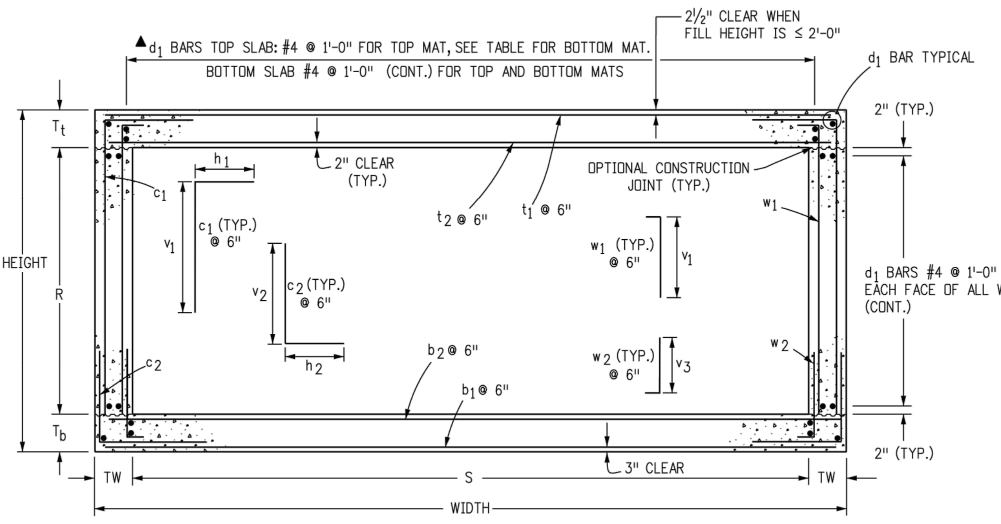
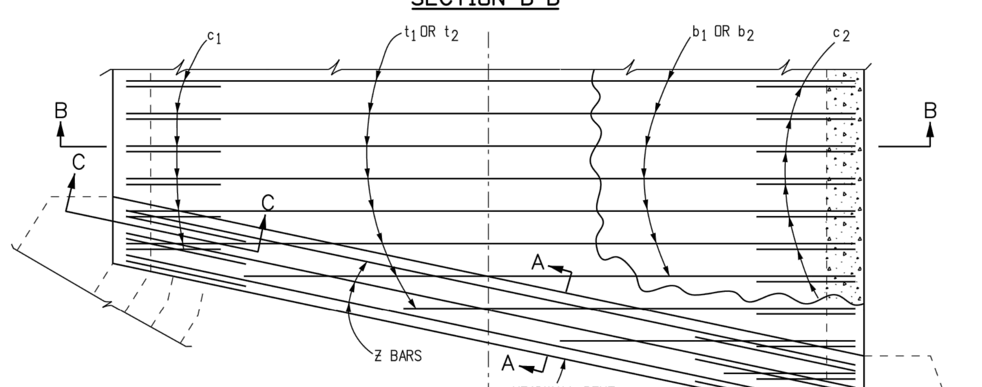
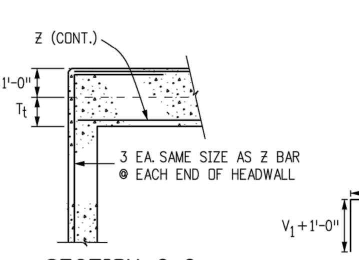


SECTION B-B



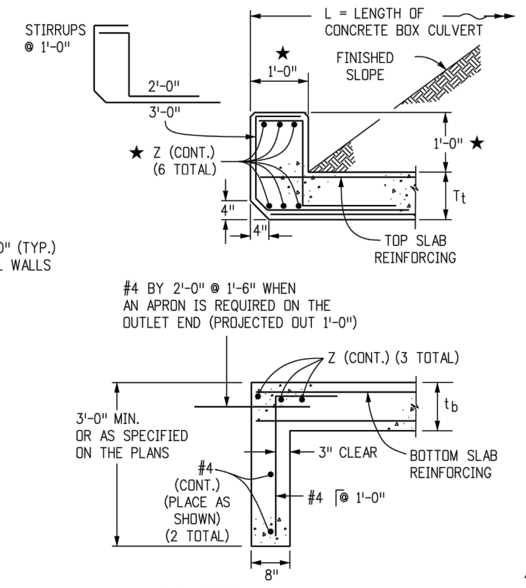
REINFORCING PLAN

BAR SIZE (#)	EPOXY X (FT.-IN.)	BLACK X (FT.-IN.)
4	2-4	1-11
5	2-10	2-4
6	3-5	2-10
7	4-1	3-3
8	5-3	4-3
9	6-8	5-5

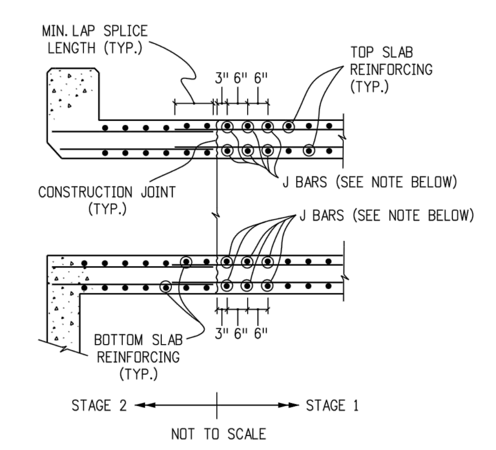


SECTION C-C

HEADWALL CORNER REINFORCING DETAIL



SECTION A-A



CONSTRUCTION JOINT DETAIL FOR STAGED CONSTRUCTION

NOTE: THIS DETAIL IS FOR CONSTRUCTION JOINTS INSTALLED PERPENDICULAR TO THE ℄ OF THE BOX ONLY. THE CONTRACTOR CAN DESIGN AND INSTALL J BARS AT HIS EXPENSE TO SUPPORT TEMPORARY LIVE LOADS DURING STAGE 1 CONSTRUCTION. J BARS SHALL BE THE SAME SIZE AS THE TOP AND BOTTOM SLAB REINFORCING WHEN THERE ARE NO TEMPORARY LIVE LOADS TO SUPPORT.

GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS D (BOX CULVERT).
2. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS PLACED.
3. ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE CONSTRUCTED ONLY IF APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL MAINTAIN THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
5. STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH STANDARD PLAN M-206-1.
6. ANY CULVERT SPAN 20 FT. OR GREATER, A FOUNDATION INVESTIGATION AND REPORT ARE REQUIRED.
7. BACKFILL SHALL NOT BEGIN UNTIL TOP SLAB HAS REACHED DESIGN STRENGTH, f'c.
8. SPLICE QUANTITIES FOR LONGITUDINAL AND TRANSVERSE BARS ARE NOT INCLUDED.
9. REINFORCING STEEL SHALL BE GRADE 60.
10. THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"

THE ABOVE SPLICE LENGTHS ARE FOR CLASS B SPLICES.

11. ALL DIMENSIONS ARE PERPENDICULAR TO THE CENTERLINE OF THE BOX.
12. WINGWALLS SHALL BE TIED TO CONCRETE BOX CULVERT IN ACCORDANCE WITH STANDARD PLAN M-601-20.
13. ALL TRANSVERSE REINFORCING SHALL BE NORMAL TO THE CENTERLINE OF THE BOX.
14. THE FILL HEIGHT IS THE DISTANCE MEASURED FROM THE TOP OF THE TOP SLAB TO THE TOP OF PAVEMENT.
15. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾".
16. FOR FILL HEIGHTS LESS THAN 2 FT. A WATERPROOFING MEMBRANE SHALL BE PROVIDED FOR THE TOP OF THE TOP SLAB AND 18 INCHES DOWN FROM THE TOP OF THE EXTERIOR WALLS.
17. FOR FILL HEIGHTS LESS THAN 2 FT, THE d_1 BARS FOR THE BOTTOM MAT OF THE TOP SLAB SHALL BE AS FOLLOWS: ▲

S	6	8	10	12, 14, 16, 18, 20
BAR SIZE:	#5	#6	#6	#5
SPACING	1'-0"	1'-0"	0'-6"	0'-6"

DESIGN DATA: 7TH EDITION, 2014, OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
RATING DATA: 2ND EDITION, 2011, OF THE AASHTO MANUAL FOR BRIDGE EVALUATION
f_y = 60,000 psi.,
f'_c = 4,500 psi.,

LOADING DATA:

LIVE LOAD = AASHTO LRFD, HL-93 TRUCK, HL-93 TANDEM, COLORADO PERMIT TRUCK, AND NRL

DEAD LOAD CASE 1: VERTICAL EARTH LOAD = 120 LBS./CU. FT.
HORIZONTAL EARTH LOAD = 30 LBS./CU.FT.

DEAD LOAD CASE 2: VERTICAL EARTH LOAD = 120 LBS./CU. FT.
HORIZONTAL EARTH LOAD = 60 LBS./CU. FT.
THRUST IS NOT CONSIDERED IN THIS STANDARD, I.E. THRUST = 0.

WEARING SURFACE - 12 INCHES THICK CONCRETE PAVEMENT.
DEAD LOAD - TYPE 7 BARRIER.
EXTREME HEADWATER TO DEPTH RATIO IS IN ACCORDANCE WITH THE CDOT DRAINAGE MANUAL.
EXTREME HEADWATER TO DEPTH RATIO WAS INCLUDED IN THE DESIGN BUT EXCLUDED FROM THE RATINGS AS PER THE AASHTO MANUAL FOR BRIDGE EVALUATION.
LIVE LOAD SURCHARGE ON EXTERIOR WALLS = 2 FT. OF EARTH

★ IF HEADWALL MOUNT GUARDRAIL IS USED (SEE STANDARD PLAN M-606-1, SHEET 20, AND THE INFORMATION BELOW):
- ALL REINFORCING STEEL SHALL BE ACCORDING TO THIS BOX CULVERT PLAN.
- ANY SPECIAL DESIGN FOR STIRRUPS WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- HEADWALL DIMENSION AND CONCRETE QUANTITY SHALL BE ACCORDING TO STANDARD PLAN M-606-1, SHEET 20.
- POST ANCHORS SHALL BE PROVIDED ACCORDING TO STANDARD PLAN M-606-1, SHEET 20.
- POST ANCHORS AND CONCRETE FOR HEADWALL MOUNT OF GUARDRAIL WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- POST ANCHORS WHEN REQUIRED AND ENCASED IN HEADWALL CONCRETE, SHALL CONFORM TO ASTM A 36 OR AASHTO M 169 STEEL.

18. SEE M-603-3 FOR PRECAST CONCRETE BOX CULVERT DETAILS.

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Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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Project Development Branch JBK

SINGLE CONCRETE BOX CULVERT (CAST-IN-PLACE)

STANDARD PLAN NO. M-601-1
Standard Sheet No. 1 of 2

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:

SINGLE CONCRETE BOX CULVERT DIMENSIONS, QUANTITIES & RATING FACTORS (EXCLUDING HEADWALL & TOEWALL QUANTITIES)

BOX SIZE S (FT)	R (FT)	HT. (FT-IN)	WIDTH (FT-IN)	FILL HEIGHT ALLOWED (FT-FT)	T_t	T_b	TW	t_1* & b_1 (#)	t_2 (#)	b_2 (#)	w_1* & w_2 (#)	c_1* (#)	c_2 (#)	d_1▲ NO.	h_1 (FT-IN)	h_2 (FT-IN)	v_1 (FT-IN)	v_2 (FT-IN)	v_3 (FT-IN)	CONCRETE CY/LF	REBAR STL LBS/LF	WATERPROOFING SY/LF	HL-93 INVENTORY	HL-93 OPERATING	COLORADO PERMIT	NRL VEHICLE
6	7	8-8	7-8	< 2	10	10	10	4	6	6	4	5	5	64	3-5	4-4	7-7	3-1	1-11	0.905	215	1.185	1.23	1.59	2.03	2.09
		8-4.5	7-8	2 TO 8	8.5	8	10	4	5	5	4	5	5	64	3-10	4-4	7-6	2-11	1-9	0.823	199		1.67	2.17	2.51	2.58
		8-5	7-8	8 TO 15	8.5	8.5	10	4	5	5	4	5	5	64	3-8	2-4	7-6	3-0	1-9	0.834	190		◆	◆	◆	◆
		8-5	7-8	15 TO 20	8.5	8.5	10	4	5	5	4	5	5	64	3-8	2-4	7-6	3-0	1-9	0.834	190		◆	◆	◆	◆
8	6	7-9	9-8	< 2	11	10	10	4	7	7	4	5	5	68	4-9	2-4	6-8	3-1	1-11	0.997	251	1.407	1.10	1.43	1.65	1.63
		7-6	9-8	2 TO 8	8.5	9.5	10	4	6	6	4	5	5	66	4-8	2-4	6-6	3-1	1-10	0.907	220		1.59	2.07	2.39	2.46
		7-6	9-8	8 TO 15	8.5	9.5	10	4	6	6	4	5	5	66	3-7	2-4	6-6	3-1	1-10	0.907	216		◆	◆	◆	◆
		7-6	9-8	15 TO 20	8.5	9.5	10	4	6	6	4	5	5	66	3-7	2-4	6-6	3-1	1-10	0.907	216		◆	◆	◆	◆
	8	9-9.5	9-8	< 2	11.5	10	10	4	7	7	4	5	5	76	5-8	5-4	8-9	3-1	1-11	1.135	287	1.407	1.07	1.38	1.60	1.58
		9-7	9-8	2 TO 8	9	10	10	4	6	6	4	5	5	74	4-8	2-4	8-7	3-1	1-11	1.061	240		1.61	2.09	2.54	2.57
		9-7	9-8	8 TO 15	9	10	10	4	6	6	4	5	5	74	3-7	2-4	8-7	3-1	1-11	1.061	235		◆	◆	◆	◆
		9-7	9-8	15 TO 20	9	10	10	4	6	6	4	5	5	74	3-7	2-4	8-7	3-1	1-11	1.061	235		◆	◆	◆	◆
	10	11-10	9-8	< 2	11.5	10.5	10	4	7	7	4	5	5	84	3-5	2-4	10-9	3-2	2-0	1.274	285	1.407	1.12	1.46	1.69	1.66
		11-7	9-8	2 TO 8	9	10	10	4	6	6	4	5	5	82	5-6	2-4	10-7	3-1	1-11	1.184	262		1.61	2.09	2.52	2.56
		11-7	9-8	8 TO 15	9	10	10	4	6	6	4	5	5	82	4-6	2-4	10-7	3-1	1-11	1.184	258		◆	◆	◆	◆
		11-9	9-11	15 TO 20	10	11	11.5	4	6	6	4	6	6	85	4-7	2-5	10-8	3-1	1-11	1.353	302		◆	◆	◆	◆
10	6	7-11.5	11-8	< 2	12.5	11	10	4	8	8	4	5	5	87	5-8	2-7	6-10	3-2	2-0	1.217	321	1.630	1.05	1.36	1.49	1.48
		7-7	11-8	2 TO 10	9	10	10	4	6	6	4	5	5	72	5-5	2-7	6-7	3-1	1-11	1.055	246		1.25	1.62	1.88	1.84
		7-8	11-8	10 TO 15	10	10	10	4	6	6	4	5	5	72	4-2	2-7	6-8	3-1	1-11	1.091	242		◆	◆	◆	◆
		8-1	11-10	15 TO 20	13	12	11	4	6	6	4	5	5	75	4-7	2-9	6-11	3-3	2-1	1.320	251		◆	◆	◆	◆
	8	9-11.5	11-8	< 2	12.5	11	10	4	9	9	4	5	5	95	5-8	2-7	8-10	3-2	2-0	1.340	383	1.630	1.02	1.32	1.44	1.43
		9-7.5	11-8	2 TO 10	9.5	10	10	4	6	6	4	5	5	80	5-5	2-7	8-7	3-1	1-11	1.196	265		1.21	1.57	1.82	1.78
		9-8	11-8	10 TO 15	10	10	10	4	6	6	4	5	5	80	4-3	2-7	8-8	3-1	1-11	1.214	261		◆	◆	◆	◆
		10-0	12-0	15 TO 20	12	12	12	4	6	6	4	5	5	83	4-7	2-10	8-10	3-3	2-1	1.481	271		◆	◆	◆	◆
	10	12-0	11-8	< 2	12.5	11.5	10	4	9	9	4	5	5	103	6-7	6-5	10-10	3-3	2-1	1.481	423	1.630	1.07	1.39	1.51	1.50
		11-7.5	11-8	2 TO 10	9.5	10	10	4	6	6	4	5	5	88	5-5	2-7	10-7	3-1	1-11	1.319	285		1.16	1.51	1.74	1.71
		11-9	11-10	10 TO 15	10	11	11	4	6	6	4	5	5	91	4-4	2-8	10-8	3-2	1-11	1.446	285		◆	◆	◆	◆
		12-0.5	12-0	15 TO 20	12	12.5	12	4	6	6	5	5	5	91	4-7	2-10	10-10	3-4	2-6	1.648	315		◆	◆	◆	◆
12	6	8-1.5	13-8	< 2	13.5	12	10	4	9	9	4	6	6	97	5-5	3-0	6-11	3-7	2-1	1.446	433	1.852	1.03	1.33	1.42	1.39
		7-7.5	13-8	2 TO 8	9.5	10	10	4	7	7	4	6	6	78	6-4	3-0	6-7	3-5	1-11	1.193	339		1.27	1.65	1.89	1.84
		7-9	13-8	8 TO 12	9.5	11.5	10	4	7	7	4	6	6	78	5-1	3-0	6-7	3-7	2-0	1.256	333		2.28	2.95	3.25	3.54
		8-0.5	13-10	12 TO 16	12	12.5	11	4	7	7	4	6	6	81	5-0	3-1	6-10	3-7	2-0	1.453	339		◆	◆	◆	◆
		8-0.5	14-0	16 TO 20	12	12.5	12	5	7	7	5	6	6	81	5-2	3-2	6-10	3-8	2-6	1.503	361		◆	◆	◆	◆
	8	10-1.5	13-8	< 2	13.5	12	10	4	9	9	4	6	6	105	6-6	3-0	8-11	3-7	2-1	1.569	462	1.852	1.00	1.29	1.37	1.35
		9-8	13-8	2 TO 8	9.5	10.5	10	4	7	7	4	6	6	86	5-1	3-0	8-7	3-6	1-11	1.337	355		1.21	1.57	1.77	1.73
		9-9.5	13-8	8 TO 12	10	11.5	10	4	7	7	4	6	6	86	5-5	3-0	8-8	3-7	2-0	1.401	358		2.32	3.01	3.31	3.60
		9-9.5	13-10	12 TO 16	10	11.5	11	4	7	7	4	6	6	89	5-0	3-1	8-8	3-7	2-0	1.461	360		◆	◆	◆	◆
		10-0.5	14-0	16 TO 20	12	12.5	12	5	7	7	4	6	6	89	5-1	3-1	8-10	3-7	2-1	1.651	385		◆	◆	◆	◆
	10	12-2	13-8	< 2	13.5	12.5	10	4	9	9	4	6	6	113	7-10	6-3	10-11	3-8	2-2	1.714	513	1.852	1.04	1.35	1.43	1.41
		11-8	13-8	2 TO 8	9.5	10.5	10	4	7	7	4	6	6	94	6-4	3-0	10-7	3-6	1-11	1.461	385		1.15	1.50	1.69	1.65
		11-9.5	13-8	8 TO 12	10	11.5	10	4	7	7	4	6	6	94	5-1	3-0	10-8	3-7	2-0	1.524	379		2.08	2.70	2.97	2.16
		11-9.5	13-10	12 TO 16	10	11.5	11	5	7	7	4	7	7	97	5-1	3-2	10-8	4-0	2-0	1.597	456		◆	◆	◆	◆
		12-1	14-0	16 TO 20	12.5	12.5	12	5	7	7	4	7	7	97	5-2	3-3	10-10	4-0	2-1	1.821	462		◆	◆	◆	◆
14	6	8-3.5	15-8	< 2	14	13.5	10	4	9	9	4	6	6	107	5-10	3-5	6-11	3-9	2-0	1.700	479	2.074	1.10	1.43	1.48	1.41
		7-8	15-8	2 TO 6	9.5	10.5	10	4	8	8	4	7	7	84	7-3	3-5	6-7	3-11	1-11	1.337	460		1.13	1.47	1.65	1.59
		7-8.5	15-8	6 TO 8	9.5	11	10	4	8	8	4	7	7	84	5-9	3-5	6-7	3-11	2-0	1.362	448		1.67	2.16	2.50	3.01
		7-10.5	15-8	8 TO 10	10.5	12	10	4	8	8	4	7	7	84	5-9	3-5	6-8	4-0	2-1	1.458	450		2.66	3.45	3.89	4.43
		7-11.5	15-8	10 TO 12	11	12.5	10	4	8	8	4	7	7	84	5-9	3-5	6-9	4-1	2-1	1.507	452		2.65	3.44	3.79	4.11
		8-1.5	15-8	12 TO 14	12	13.5	10	4	8	8	4	7	7	84	5-9	3-5	6-10	4-2	2-2	1.603	453		3.13	4.05	4.38	4.89
		8-1.5	15-10	14 TO 18	12	13.5	11	5	8	8	5	7	7	87	5-9	3-6	6-10	4-2	2-7	1.654	500		◆	◆	◆	◆
	8	10-4	15-8	< 2	14	14	10	4	9	9	4	6	6	115	5-10	3-6	8-11	3-9	2-0	1.848	502	2.074	1.12	1.46	1.60	1.52
		9-8	15-8	2 TO 6	9.5	10.5	10	4	8	8	4	7	7	92	7-3	3-5	8-7	3-11	1-11	1.461	487		1.16	1.51	1.69	1.63
		9-9	15-8	6 TO 8	9.5	11.5	10	4	8	8	4	7	7	92	5-9	3-5	8-7	4-0	2-0	1.509	476		1.70	2.21	2.56	3.08
		9-10.5	15-8	8 TO 10	10.5	12	10	4	8	8	4	7	7	92	5-9	3-5	8-8	4-0	2-1	1.582	477		2.78	3.61	4.08	4.64
		9-11.5	15-8	10 TO 12	11	12.5	10	4	8	8	4	7	7	92	5-9	3-5	8-9	4-1	2-1	1.630	479		2.62	3.40	3.74	4.07
		10-1.5	15-8	12 TO 14	12	13.5	10	4	8	8	4	7	7	92	5-9	3-5	8-10	4-2	2-2	1.727	480		2.51	3.25	3.51	3.92
		10-1.5	15-10	14 TO 18	12	13.5	11	5	8	8	5	7	7	95	5-9	3-6	8-10	4-2	2-7	1.789	530		◆	◆	◆	◆
	10	12-4	15-8	< 2	14	14	10	4	9	9	5	6	6	123	7-4	3-6	10-11	3-9	2-3	1.971	558	2.074	1.10	1.42	1.50	1.42
		11-8.5	15-8	2 TO 6	9.5	11	10	4	8	8	5	7	7	100	7-3	3-5	10-7	3-11	2-5	1.609	538		1.17	1.51	1.67	1.63
		11-9	15-8	6 TO 8	9.5	11.5	10	4	8	8	5	7	7	100	5-9	3-5	10-7	4-0	2-3	1.633	526		1.64	2.13	2.47	2.97
		11-10.5	15-8	8 TO 10	10.5	12	10	4	8	8	5	7	7	100	5-9	3-5	10-8	4-0	2-5	1.705	528		2.53	3.28	3.71	2.77
		12-0	15-8	10 TO 12	11	13	10	4	8	8	5	7	7	100	5-9	3-5	10-9	4-1	2-6	1.778	530		2.40	3.11	3.20	2.27
		12-1.5	15-8	12 TO 14	12	13.5	10	4	8	8	5	7	7	100	5-9	3-5	10-10	4-2	2-5	1.850	531		1.78	2.31	2.23	1.58
		12-1.5	15-10	14 TO 18	12	13.5	11	5	8	8	5	7	7	103	5-9	3-6	10-10	4-2	2-7	1.925	560		◆	◆	◆	◆
16	6	8-5.5	17-8	< 2	15	14.5	10	4	9	9	5	7	7	117	6-7	3-10	7-0	4-3	2-3	1.979	596	2.296	1.11	1.44	1.46	1.37
		7-10	17-8	2 TO 6	10.5	11.5	10	4	8	8	5	7	7	90	8-3	3-10	6-8	4-0	2-3	1.570	522		1.02	1.32	1.36	1.32
		7-10.5	17-8	6 TO 8	10.5	12	10	4	8	8	5	8	8	90	6-6	3-10	6-8	4-9	2-5	1.597	569		1.78	2.32	2.63	3.15
		8-0	17-8	8 TO 10	11.5	12.5	10	4	8	8	5	8	8	90	6-6	3-10	6-9	4-10	2-4	1.679	570		2.00	2.60	2.88	3.27
	8	10-6	17-8	< 2	15	15	10	4	9	9	5	7	7	125	6-7	3-10	9-0	4-3	2-3	2.130	626	2.296	1.17	1.51	1.62	1.51
		9-10	17-8	2 TO 6	10.5	11.5	10	4	8	8	5	7	7	98	8-3	3-10	8-8	4-0	2-3	1.693	552		1.09	1.42	1.49	1.45
		9-10.5	17-8	6 TO 8	10.5	12	10	4	8	8	5	8	8	98	6-6	3-10	8-8	4-9	2-5	1.721	604		1.77	2.29	2.52	3.02
		10-0	17-8	8 TO 10	11.5	12.5	10	4	8	8	5	8	8	98	6-6	3-10	8-9	4-10	2-4	1.802	606		1.64	2.13	2.35	2.68
	10	12-6	17-8	< 2	15	15	10	4	9	9	5	7	7	133	8-3	3-10	11-0	4-3	2-3	2.253	669	2.296	1.12	1.46	1.47	1.38
		11-10	17-8	2 TO 6	10.5	11.5	10	4	8	8	5	7	7	106	8-3	3-10	10-8	4-0	2-3	1.817	582		1.04	1.35	1.43	1.38
		11-10.5	17-8	6 TO 8	10.5	12	10	4	8	8	5	8	8	106	6-6	3-10	10-8	4-9	2-5	1.844	639		1.59	2.06	2.26	2.72
		12-0.5	17-8	8 TO 10	11.5	13	10	4	8	8	5	8	8	106	6-6	3-10	10-9	4-10	2-6	1.953	641		1.47	1.91	2.11	2.40
18	8	10-8	19-8	< 2	16	16	10	4	10	10	5	8	8	135	7-3	4-3	9-1	5-1	2-3	2.436	817	2.519	1.17	1.51	1.50	1.36
		9-11	19-8	2 TO 5	10.5	12.5	10	4	9	9	5	8	8	104	9-2	4-3	8-8	4-10	2-4	1.890	724		1.12	1.45	1.43	1.37
		9-11.5	19-8	5 TO 7	11	12.5	10	4	9	9	5	8	8	104	7-3	4-3	8-9	4-10	2-4	1.920	705		1.60	2.08	2.24	2.71
	10	12-8	19-8	< 2	16	16	10	4	10	10	5	8	8	143	7-3	4-3	11-1	5-1	2-3	2.560	852	2.519	1.14	1.47	1.46	1.32
		11-11	19-8	2 TO 5	10.5	12.5	10	4	9	9	5	8	8	112	9-2	4-3	10-8	4-10	2-4	2.013	759		1.11	1.44	1.50	1.42
		12-0.5	19-8	5 TO 7	11.5	13	10	4	9	9	5	8	8	112	7-3	4-3	10-9	4-10	2-6	2.104	741		1.89	2.45	2.60	3.18
20	8	10-9.5	21-8	< 2	16.5	17	10	4	10	10	5	8	8	145	8-0	4-9	9-2	5-2	2-10	2.734	883	2.741	1.19	1.55	1.48	1.35
		10-0	21-8	2 TO 3	11.5	12.5	10	4	9	9	5	8	8	110	8-0	4-8	8-9	4-10	2-4	2.099	754		1.00	1.29	1.25	1.17
		10-2	21-8	3 TO 6	12.5	13.5	10	4	9	9	5	8	8	110	8-0	4-8	8-10	4-10	2-5	2.233	756		1.37	1.78	1.71	1.59
		10-3	21-10	6 TO 8	13	14	11	4	9	9	5	8	8	113	8-0	4-8	8-11	4-11	2-7	2.363	763		1.66	2.16	2.16	2.51
		10-5.5	22-1	8 TO 10	14	15.5	12.5	4	9	9	5	8	8	113	8-0	4-10	9-0	5-11	2-7	2.628	781		1.99	2.58	2.69	3.02
	10	12-10	21-10	< 2	17	17	11	4	10	10	5	8	8	210	8-0	4-9	11-2	5-2	2-10	2.970	980	2.759	1.14	1.48	1.41	1.29
		12-0	21-8	2 TO 3	11.5	12.5	10	4	9	9	5	8	8	118	8-0	4-8	10-9	4-10	2-4	2.222	789		1.01	1.31	1.33	1.23
		12-2	21-8	3 TO 6	12.5	13.5	10	4	9	9	5	8	8	118	8-0	4-8	10-10	4-11	2-5	2.356	792		1.30	1.69	1.74	1.58
		12-3.5	21-10	6 TO 8	13	14.5	11	4	9	9	5	8	8	121	8-0	4-10	10-11	5-10	2-7	2.532	810		1.80	2.34	2.40	2.73
		12-5.5	22-1	8 TO 10	14	15.5	12.5	4	9	9	5	8	8	121	8-0	4-10	11-0	5-11	2-7	2.782	816		2.12	2.75	2.89	3.17

HEADWALL AND TOEWALL QUANTITIES

HEADWALL BENT ANGLE	90° TO 75°			74° TO 60°			59° TO 45°		
CLEAR SPAN (S)	Z	STIRRUPS	REBAR QUANT.	Z	STIRRUPS	REBAR QUANT.	Z	STIRRUPS	REBAR QUANT.
	#	#	LBS/LF	#	#	LBS/LF	#	#	LBS/LF
6	4	4	22.8	4	4	22.2	6	4	34.6
8	4	4	23.0	5	4	28.8	7	4	44.0
10	5	4	28.5	6	4	35.1	9	4■	68.7
12	6	4	35.3	6	4	34.4	9	5■	71.7
14	6	4	34.2	7	4	41.5	★	★	★
16	6	4	33.1	8	5	54.0	★	★	★
18	7	4	39.5	9	5	63.3	★	★	★
20	7	4	39.3	★	★	★	★	★	★

CONCRETE QUANTITY = 0.086 CY/LF

NOTES

■ 1. SIX INCH SPACING AT EACH END OF THE SPAN FOR A DISTANCE OF 1/4 OF THE SPAN LENGTH; 12 INCH SPACING ELSEWHERE.

2. QUANTITIES ARE GIVEN FOR ONE HEADWALL AND ONE TOEWALL AND ARE BASED ON PER LINEAR FOOT OF HEADWALL. STEEL QUANTITIES INCLUDE ALL REINFORCING. QUANTITIES SHALL BE PAID FOR AS SHOWN ON THE PLANS.

★ 3. SKEWED HEADWALLS ARE NOT RECOMMENDED FOR THESE SPANS. A SPECIAL DESIGN IS REQUIRED.

4. FOR HEADWALL AND TOEWALL DETAILS SEE M-601-1, SHEET 1 OF 2.

5. WHEN THE FILL HEIGHTS ARE LESS THAN OR EQUAL TO 2 FT, ALL REINFORCING BARS IN THE HEADWALL, ALL REINFORCING BARS DESIGNATED BY AN ASTERISK (*), AND THE d_1 BARS IN THE TOP MAT OF THE TOP SLAB SHALL BE EPOXY COATED.

6. REINFORCING QUANTITIES INCLUDE BOTH EPOXY-COATED AND UNCOATED BARS.

7. WHEN A (RISE) R OF LESS THAN 6 FT IS REQUIRED, USE THE BAR SIZES AND THE SLAB AND WALL THICKNESSES FOR THE 6 FT RISE (IF AVAILABLE ON THE TABLE).

▲ 8. FOR SIZE AND SPACING OF THE BOTTOM MAT BARS IN THE TOP SLAB SEE TABLE ON M-601-1, SHEET 1 OF 2. ALL OTHER d_1 BARS ARE #4's AT 1'-0" SPACING. THE NUMBER OF BARS REQUIRED IS LISTED ON THIS SHEET AND INCLUDES BOTH #4 BARS AND THOSE FROM THE TABLE.

◆ 9. LIVE LOAD IS NEGLECTED AS PER AASHTO LRFD SECTION 3.6.1.2.6. FOR THESE STRUCTURES REFER TO THE CDOT RATING MANUAL.

10. FOR ALL NEW CULVERT DESIGNS, A RATING IS REQUIRED. THE RATING SUMMARY SHEET SHOULD BE PRINTED FROM THE CDOT EXTERNAL WEBSITE AND SUBMITTED TO THE BRIDGE RATING UNIT OR INCLUDED AS PART OF A LARGER DESIGN PACKAGE. FOR ADDITIONAL INFORMATION, SEE THE CDOT RATING MANUAL.

Computer File Information		Sheet Revisions	
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2829 West Howard Place
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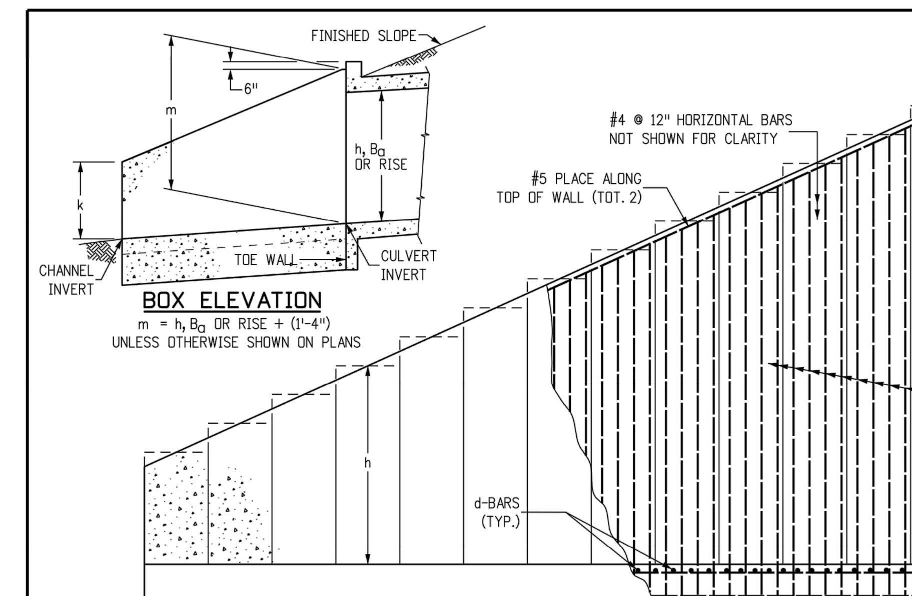
Project Development Branch JBK

SINGLE CONCRETE BOX CULVERT (CAST-IN-PLACE)

STANDARD PLAN NO. M-601-1
Standard Sheet No. 2 of 2

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:

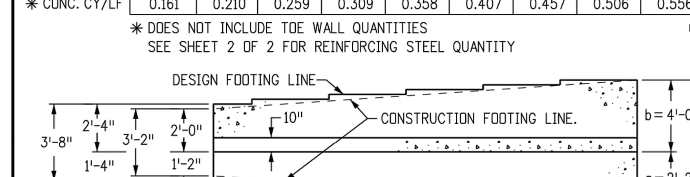


BOX ELEVATION
m = h, B_a OR RISE + (1'-4")
UNLESS OTHERWISE SHOWN ON PLANS

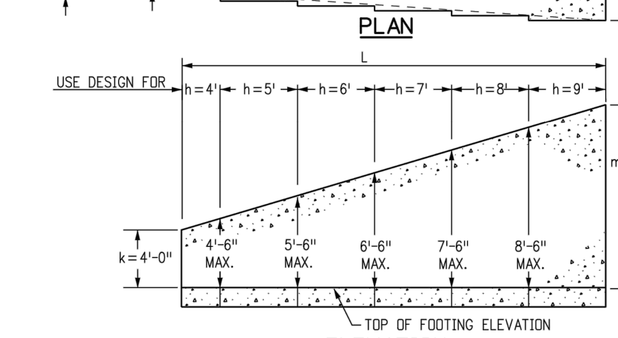
h =	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	■ 12'	■ 13'	■ 14'
a =	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-10"	2'-0"	2'-2"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"
b =	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-0"	5'-4"	5'-8"
w =	2'-8"	3'-2"	3'-8"	4'-2"	4'-8"	5'-2"	5'-8"	6'-2"	6'-8"	7'-2"	7'-8"	8'-2"	8'-8"
d-BARS	#4 @ 9"	#4 @ 9"	#4 @ 9"	#4 @ 9"	#4 @ 9"	#4 @ 9"	#5 @ 11"	#5 @ 10"	#5 @ 10"	#5 @ 8"	#6 @ 8"	#7 @ 9"	#7 @ 7"
✱ CONC. CY/LF	0.161	0.210	0.259	0.309	0.358	0.407	0.457	0.506	0.556	0.605	0.654	0.704	0.753

✱ DOES NOT INCLUDE TOE WALL QUANTITIES
SEE SHEET 2 OF 2 FOR REINFORCING STEEL QUANTITY

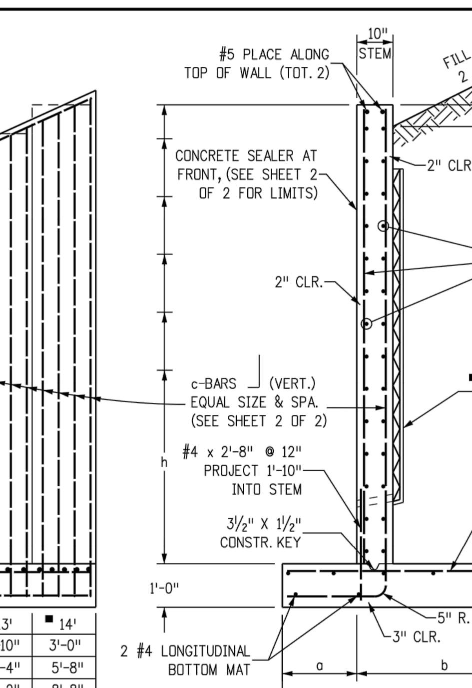
■ REQUIRED DRAINAGE BEHIND WINGWALLS
SEE NOTE 6



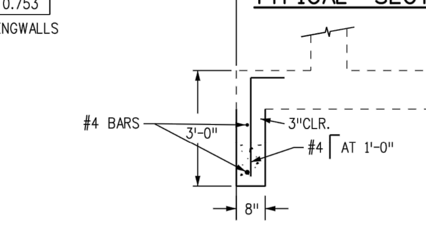
PLAN



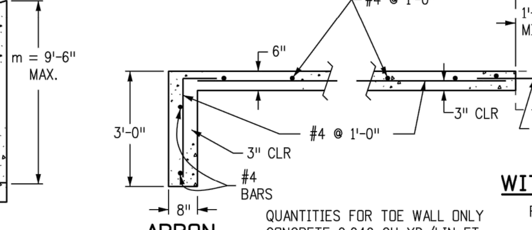
ELEVATION
DESIGN EXAMPLE



TYPICAL SECTION



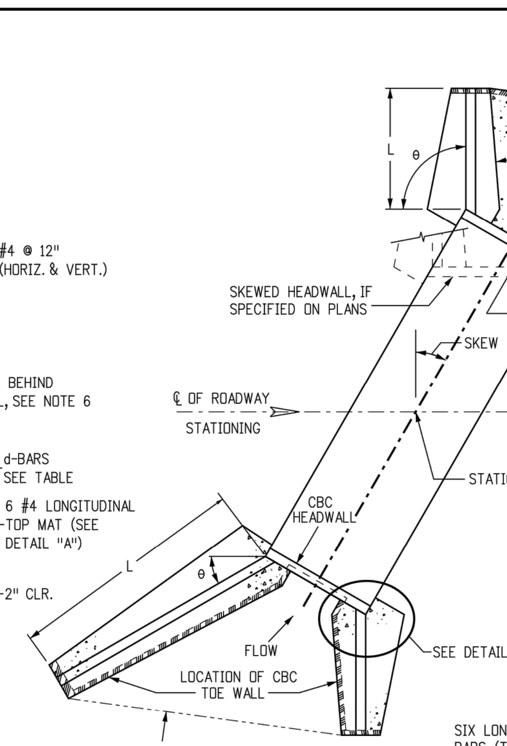
WITH TOE WALL



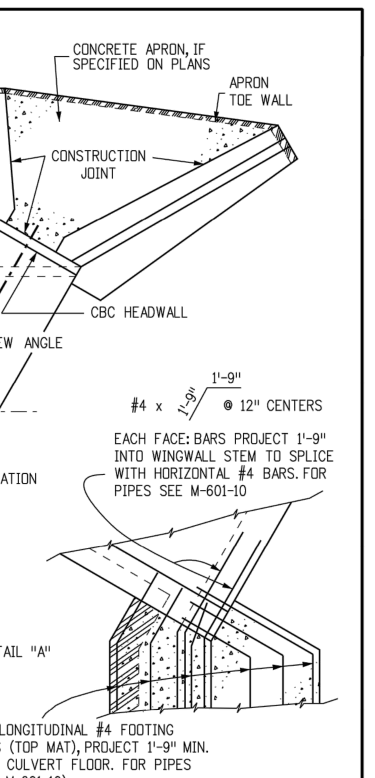
APRON TOE WALL

QUANTITIES FOR TOE WALL ONLY
CONCRETE 0.049 CU. YD./LIN. FT.
REINFORCEMENT 5.1 LB./LIN. FT.

WITH CONCRETE APRON
REINFORCEMENT 1.34 LB./SQ. FT.



TYPICAL CULVERT LAYOUT



DETAIL "A"

DESIGN DATA:

AASHTO LRFD EIGHTH EDITION, 2017
DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN, YIELD LINE METHOD

REINFORCED CONCRETE:
CONCRETE CLASS D (BOX CULVERT): f'_c = 4,500 PSI
REINFORCING STEEL: f_y = 60,000 PSI

LOADING:
AT-REST EARTH (FLUID) PRESSURE FOR CONCRETE STEM DESIGN = 55 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
ACTIVE EARTH (FLUID) PRESSURE FOR CONCRETE FOOTING DESIGN = 40 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
LIVE LOAD SURCHARGE = 2'
MINIMUM RESISTANCE FOR SOIL BEARING = 5.5 KSF
SOIL BEARING RESISTANCE FACTOR = 0.45

GENERAL NOTES:

1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
2. WINGWALL FOOTING AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
3. DIMENSIONS "h", "k", "L", "m" AND ANGLE "θ" FOR WINGWALL SHALL BE AS SHOWN ON THE PLANS.
4. MINIMUM CLASS B LAP SPLICE LENGTH FOR BLACK REINFORCING BARS:

BAR SIZE:	#4	#5	#6	#7
SPLICE LENGTH:	1'-6"	1'-11"	2'-3"	2'-7"

5. DESIGN DOES NOT CONSIDER ANY SCOUR EFFECTS.
6. WINGWALL DRAIN SHALL BE REQUIRED IF "h" ≥ 12.0 FT., SEE SHEET 2 OF 2 FOR DETAILS.

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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Project Development Branch JBK

WINGWALLS FOR PIPE OR BOX CULVERTS

STANDARD PLAN NO. M-601-20
Standard Sheet No. 1 of 2

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:

c-BARS AND REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)

✱ REINFORCING STEEL QUANTITY INCLUDES STEM AND FOOTING QUANTITIES, BUT DOES NOT INCLUDE TOE WALL QUANTITIES.

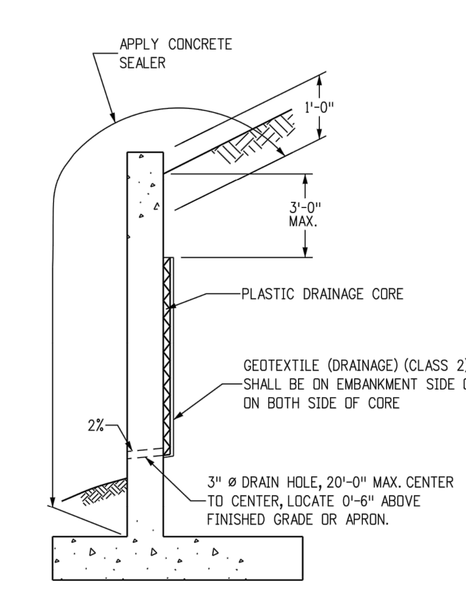
L (MULTIPLE OF m)		≤ (1.0 x m)		≤ (1.25 x m)		≤ (1.5 x m)		≤ (1.75 x m)		≤ (2.0 x m)		≤ (2.25 x m)		≤ (2.5 x m)		≤ (2.75 x m)		≤ (3.0 x m)		≤ (3.25 x m)		≤ (3.5 x m)	
m (FT)	k (FT)	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.	c-BARS	✱ REINF. LB./L.F.
14	4	#4 @ 10"	53.60	#5 @ 10"	57.95	#5 @ 10"	57.10	#5 @ 8"	60.22	#5 @ 7"	62.43	#5 @ 7"	62.09	#5 @ 6"	65.38	#5 @ 6"	65.15	#6 @ 8"	67.10	#6 @ 8"	66.94	#6 @ 7"	70.66
	5	#4 @ 10"	55.86	#5 @ 10"	60.46	#5 @ 10"	59.60	#5 @ 8"	62.89	#5 @ 7"	65.23	#5 @ 7"	64.88	#5 @ 6"	68.34	#5 @ 6"	68.11	#6 @ 8"	70.17	#6 @ 8"	70.00	#6 @ 7"	73.90
	6	#5 @ 10"	64.43	#6 @ 10"	70.60	#6 @ 10"	69.69	#6 @ 8"	74.93	#6 @ 8"	74.45	#6 @ 7"	78.30	#6 @ 6"	83.64	#6 @ 6"	83.40	#6 @ 6"	83.22	#6 @ 6"	83.05	#7 @ 7"	89.64
	7	#5 @ 10"	67.29	#6 @ 10"	73.76	#6 @ 10"	72.83	#6 @ 8"	78.32	#6 @ 8"	77.84	#6 @ 7"	81.87	#6 @ 6"	87.45	#6 @ 6"	87.21	#6 @ 6"	87.02	#6 @ 6"	86.86	#7 @ 7"	93.73
	8	#5 @ 8"	74.71	#6 @ 8"	83.46	#6 @ 7"	87.09	#6 @ 6"	92.54	#7 @ 7"	99.47	#7 @ 7"	99.08	#7 @ 6"	107.11	#7 @ 6"	106.86	#7 @ 6"	106.66	#7 @ 6"	106.49	#7 @ 6"	106.35
	9	#5 @ 8"	78.10	#6 @ 8"	87.23	#6 @ 7"	91.03	#6 @ 6"	96.72	#7 @ 7"	103.93	#7 @ 7"	103.54	#7 @ 6"	111.90	#7 @ 6"	111.65	#7 @ 6"	111.45	#7 @ 6"	111.28	#7 @ 6"	111.13
13	4	#4 @ 10"	50.51	#4 @ 10"	49.25	#5 @ 10"	53.71	#5 @ 10"	53.09	#5 @ 10"	52.36	#5 @ 9"	53.85	#5 @ 8"	55.54	#5 @ 7"	57.85	#5 @ 7"	57.67	#5 @ 7"	57.51	#6 @ 9"	59.93
	5	#4 @ 10"	52.66	#4 @ 10"	51.37	#5 @ 10"	56.09	#5 @ 10"	55.46	#5 @ 10"	54.99	#5 @ 9"	56.29	#5 @ 8"	58.08	#5 @ 7"	60.51	#5 @ 7"	60.33	#5 @ 7"	60.17	#6 @ 9"	62.72
	6	#4 @ 10"	54.92	#5 @ 10"	59.48	#5 @ 9"	60.31	#6 @ 9"	67.56	#6 @ 9"	67.08	#6 @ 9"	66.70	#6 @ 8"	69.53	#6 @ 8"	69.28	#6 @ 7"	73.12	#6 @ 7"	72.95	#6 @ 7"	72.81
	7	#4 @ 10"	57.36	#5 @ 10"	62.16	#5 @ 9"	63.05	#6 @ 9"	70.66	#6 @ 9"	70.16	#6 @ 9"	69.78	#6 @ 8"	72.75	#6 @ 8"	72.50	#6 @ 7"	76.52	#6 @ 7"	76.35	#6 @ 7"	76.20
	8	#5 @ 10"	66.39	#6 @ 10"	72.82	#6 @ 8"	77.97	#6 @ 7"	81.68	#6 @ 7"	81.19	#6 @ 6"	86.67	#6 @ 6"	86.37	#7 @ 7"	93.18	#7 @ 7"	92.97	#7 @ 7"	92.80	#7 @ 7"	92.64
	9	#5 @ 10"	69.37	#6 @ 10"	76.10	#6 @ 8"	81.49	#6 @ 7"	85.37	#6 @ 7"	84.87	#6 @ 6"	90.59	#6 @ 6"	90.29	#7 @ 7"	97.39	#7 @ 7"	97.18	#7 @ 7"	97.00	#7 @ 7"	96.85
12	2	#4 @ 10"	43.91	#4 @ 10"	42.65	#4 @ 10"	41.82	#4 @ 10"	41.22	#4 @ 10"	40.78	#4 @ 9"	41.29	#5 @ 10"	44.61	#5 @ 10"	44.37	#5 @ 10"	44.18	#5 @ 10"	44.01	#5 @ 10"	43.87
	3	#4 @ 10"	45.82	#4 @ 10"	44.55	#4 @ 10"	43.71	#4 @ 10"	43.11	#4 @ 10"	42.66	#4 @ 9"	43.22	#5 @ 10"	46.75	#5 @ 10"	46.51	#5 @ 10"	46.32	#5 @ 10"	46.15	#5 @ 10"	46.01
	4	#4 @ 10"	47.80	#4 @ 10"	46.51	#4 @ 10"	45.65	#5 @ 10"	50.06	#5 @ 10"	49.59	#5 @ 10"	49.23	#5 @ 10"	48.94	#5 @ 10"	48.69	#5 @ 9"	50.00	#5 @ 8"	51.72	#5 @ 8"	51.57
	5	#4 @ 10"	49.84	#4 @ 10"	48.53	#4 @ 10"	47.66	#5 @ 10"	52.33	#5 @ 10"	51.85	#5 @ 10"	51.48	#5 @ 10"	51.19	#5 @ 10"	50.94	#5 @ 9"	52.33	#5 @ 8"	54.14	#5 @ 8"	54.00
	6	#4 @ 10"	51.99	#4 @ 10"	50.65	#5 @ 10"	55.34	#5 @ 8"	58.41	#5 @ 8"	57.93	#6 @ 10"	60.60	#6 @ 10"	60.29	#6 @ 9"	62.42	#6 @ 9"	62.22	#6 @ 9"	62.04	#6 @ 8"	64.89
	7	#4 @ 10"	54.30	#5 @ 10"	58.80	#5 @ 10"	57.87	#5 @ 8"	61.10	#5 @ 8"	60.61	#6 @ 10"	63.43	#6 @ 10"	63.11	#6 @ 9"	65.35	#6 @ 9"	65.15	#6 @ 9"	64.97	#6 @ 8"	67.96
	8	#5 @ 10"	62.91	#5 @ 10"	61.45	#5 @ 7"	67.46	#5 @ 6"	70.68	#5 @ 6"	70.20	#6 @ 7"	76.44	#6 @ 7"	76.13	#6 @ 7"	75.87	#6 @ 6"	81.30	#6 @ 6"	81.12	#6 @ 6"	80.98
	9	#5 @ 10"	65.64	#5 @ 10"	64.15	#5 @ 7"	70.44	#5 @ 6"	73.82	#5 @ 6"	73.33	#6 @ 7"	79.86	#6 @ 7"	79.54	#6 @ 7"	79.28	#6 @ 6"	84.95	#6 @ 6"	84.77	#6 @ 6"	84.62
11	2	#4 @ 10"	41.70	#4 @ 10"	40.42	#4 @ 10"	39.57	#4 @ 10"	38.96	#4 @ 10"	38.50	#4 @ 10"	38.15	#4 @ 10"	37.87	#4 @ 10"	37.63	#4 @ 9"	38.25	#5 @ 10"	41.46	#5 @ 10"	41.31
	3	#4 @ 10"	43.57	#4 @ 10"	42.27	#4 @ 10"	41.40	#4 @ 10"	40.79	#4 @ 10"	40.33	#4 @ 10"	39.97	#4 @ 10"	39.69	#4 @ 10"	39.45	#4 @ 9"	40.12	#5 @ 10"	43.54	#5 @ 10"	43.39
	4	#4 @ 10"	45.48	#4 @ 10"	44.16	#4 @ 10"	43.28	#4 @ 10"	42.66	#4 @ 9"	43.09	#5 @ 10"	46.57	#5 @ 10"	46.27	#5 @ 10"	46.02	#5 @ 10"	45.82	#5 @ 10"	45.65	#5 @ 10"	45.50
	5	#4 @ 10"	47.46	#4 @ 10"	46.10	#4 @ 10"	45.21	#4 @ 10"	44.58	#4 @ 9"	45.06	#5 @ 10"	48.74	#5 @ 10"	48.44	#5 @ 10"	48.19	#5 @ 10"	47.99	#5 @ 10"	47.81	#5 @ 10"	47.67
	6	#4 @ 10"	49.52	#4 @ 10"	48.14	#4 @ 9"	48.23	#5 @ 10"	51.88	#5 @ 10"	51.38	#5 @ 9"	52.57	#5 @ 9"	52.27	#5 @ 8"	53.99	#5 @ 8"	53.79	#5 @ 7"	56.16	#5 @ 7"	56.01
	7	#4 @ 10"	51.73	#4 @ 10"	50.31	#4 @ 9"	50.43	#5 @ 10"	54.29	#5 @ 10"	53.78	#5 @ 9"	55.04	#5 @ 9"	54.73	#5 @ 8"	56.55	#5 @ 8"	56.35	#5 @ 7"	58.84	#5 @ 7"	58.70
	8	#4 @ 10"	54.00	#5 @ 10"	58.44	#5 @ 10"	57.45	#5 @ 8"	60.64	#5 @ 7"	62.92	#5 @ 6"	66.25	#5 @ 6"	65.94	#5 @ 6"	65.69	#6 @ 8"	67.76	#6 @ 8"	67.57	#6 @ 7"	71.45
	9	#4 @ 10"	56.20	#5 @ 10"	60.87	#5 @ 10"	59.85	#5 @ 8"	63.21	#5 @ 7"	65.60	#5 @ 6"	69.09	#5 @ 6"	68.78	#5 @ 6"	68.52	#6 @ 8"	70.69	#6 @ 8"	70.51	#6 @ 7"	74.57
10	2	#4 @ 10"	39.84	#4 @ 10"	38.53	#4 @ 10"	37.65	#4 @ 10"	37.03	#4 @ 10"	36.57	#4 @ 10"	36.20	#4 @ 10"	35.91	#4 @ 10"	35.67	#4 @ 10"	35.48	#4 @ 9"	36.07	#4 @ 9"	35.93
	3	#4 @ 10"	41.68	#4 @ 10"	40.35	#4 @ 10"	39.47	#4 @ 10"	38.84	#4 @ 10"	38.36	#4 @ 10"	38.00	#4 @ 10"	37.71	#4 @ 10"	37.46	#4 @ 10"	37.27	#4 @ 9"	37.91	#4 @ 9"	37.76
	4	#4 @ 10"	43.58	#4 @ 10"	42.22	#4 @ 10"	41.31	#4 @ 10"	40.67	#4 @ 10"	40.19	#4 @ 10"	39.82	#4 @ 10"	39.53	#4 @ 10"	39.28	#4 @ 10"	39.08	#4 @ 9"	39.77	#4 @ 9"	39.63
	5	#4 @ 10"	45.53	#4 @ 10"	44.14	#4 @ 10"	43.21	#4 @ 10"	42.56	#4 @ 10"	42.07	#5 @ 10"	46.44	#5 @ 10"	46.13	#5 @ 10"	45.87	#5 @ 10"	45.67	#5 @ 10"	45.49	#5 @ 10"	45.34
	6	#4 @ 10"	47.58	#4 @ 10"	46.14	#4 @ 10"	45.20	#4 @ 10"	44.53	#4 @ 10"	44.03	#5 @ 10"	48.67	#5 @ 10"	48.35	#5 @ 10"	48.08	#5 @ 10"	47.88	#5 @ 10"	47.69	#5 @ 10"	47.54
	7	#4 @ 10"	49.79	#4 @ 10"	48.31	#4 @ 10"	47.34	#5 @ 10"	51.97	#5 @ 10"	51.45	#5 @ 10"	51.04	#5 @ 9"	52.29	#5 @ 9"	52.03	#5 @ 8"	53.79	#5 @ 8"	53.61	#5 @ 7"	56.00
	8	#4 @ 10"	52.06	#4 @ 10"	50.54	#4 @ 10"	49.54	#5 @ 10"	54.43	#5 @ 10"	53.89	#5 @ 10"	53.47	#5 @ 9"	54.80	#5 @ 9"	54.53	#5 @ 8"	56.39	#5 @ 8"	56.20	#5 @ 7"	58.72
9	2	#4 @ 10"	38.01	#4 @ 10"	36.75	#4 @ 10"	35.85	#4 @ 10"	35.21	#4 @ 10"	34.73	#4 @ 10"	34.36	#4 @ 10"	34.06	#4 @ 10"	33.81	#4 @ 10"	33.61	#4 @ 10"	33.44	#4 @ 10"	33.30
	3	#4 @ 10"	39.93	#4 @ 10"	38.56	#4 @ 10"	37.64	#4 @ 10"	36.99	#4 @ 10"	36.51	#4 @ 10"	36.13	#4 @ 10"	35.83	#4 @ 10"	35.58	#4 @ 10"	35.38	#4 @ 10"	35.21	#4 @ 10"	35.06
	4	#4 @ 10"	41.81	#4 @ 10"	40.40	#4 @ 10"	39.47	#4 @ 10"	38.81	#4 @ 10"	38.31	#4 @ 10"	37.93	#4 @ 10"	37.63	#4 @ 10"	37.37	#4 @ 10"	37.17	#4 @ 10"	36.99	#4 @ 10"	36.84
	5	#4 @ 10"	43.75	#4 @ 10"	42.30	#4 @ 10"	41.35	#4 @ 10"	40.67	#4 @ 10"	40.17	#4 @ 10"	39.78	#4 @ 10"	39.47	#4 @ 10"	39.20	#4 @ 9"	39.86	#5 @ 10"	43.28	#5 @ 10"	43.12
	6	#4 @ 10"	45.79	#4 @ 10"	44.30	#4 @ 10"	43.31	#4 @ 10"	42.62	#4 @ 10"	42.10	#4 @ 10"	41.71	#4 @ 10"	41.39	#4 @ 10"	41.12	#4 @ 9"	41.82	#5 @ 10"	45.46	#5 @ 10"	45.30
	7	#4 @ 10"	48.04	#4 @ 10"	46.50	#4 @ 10"	45.49	#4 @ 10"	44.77	#5 @ 10"	49.29	#5 @ 10"	48.86	#5 @ 10"	48.53	#5 @ 10"	48.24	#5 @ 10"	48.03	#5 @ 10"	47.84	#5 @ 10"	47.67
	8	#4 @ 10"	50.43	#4 @ 10"	48.84	#4 @ 10"	47.80	#4 @ 10"	47.06	#5 @ 10"	51.83	#5 @ 10"	51.40	#5 @ 10"	51.05	#5 @ 10"	50.77	#5 @ 10"	50.54	#5 @ 10"	50.35	#5 @ 10"	50.18
8	2	#4 @ 10"	36.41	#4 @ 10"	35.01	#4 @ 10"	34.08	#4 @ 10"	33.42	#4 @ 10"	32.92	#4 @ 10"	32.54	#4 @ 10"	32.23	#4 @ 10"	31.97	#4 @ 10"	31.77	#4 @ 10"	31.59	#4 @ 10"	31.44
	3	#4 @ 10"	38.23	#4 @ 10"	36.80	#4 @ 10"	35.85	#4 @ 10"	35.18	#4 @ 10"	34.67	#4 @ 10"	34.28	#4 @ 10"	33.97	#4 @ 10"	33.70	#4 @ 10"	33.50	#4 @ 10"	33.32	#4 @ 10"	33.17
	4	#4 @ 10"	40.09	#4 @ 10"	38.61	#4 @ 10"	37.64	#4 @ 10"	36.95	#4 @ 10"	36.44	#4 @ 10"	36.04	#4 @ 10"	35.72	#4 @ 10"	35.45	#4 @ 10"	35.25	#4 @ 10"	35.07	#4 @ 10"	34.91
	5	#4 @ 10"	41.99	#4 @ 10"	40.47	#4 @ 10"	39.47	#4 @ 10"	38.76	#4 @ 10"	38.24	#4 @ 10"	37.83	#4 @ 10"	37.50	#4 @ 10"	37.23	#4 @ 10"	37.02	#4 @ 10"	36.84	#4 @ 10"	36.68
	6	#4 @ 10"	43.97	#4 @ 10"	42.40	#4 @ 10"	41.36	#4 @ 10"	40.64	#4 @ 10"	40.10	#4 @ 10"	39.68	#4 @ 10"	39.35	#4 @ 10"	39.07	#4 @ 9"	43.33	#5 @ 10"	43.13	#5 @ 10"	42.96
	7	#4 @ 10"	46.19	#4 @ 10"	44.56	#4 @ 10"	43.49	#4 @ 10"	42.74	#4 @ 10"	42.18	#4 @ 10"	41.75	#4 @ 10"	41.41	#4 @ 10"	41.13	#4 @ 9"	45.65	#5 @ 10"	45.45	#5 @ 10"	45.28
7	2	#4 @ 10"	34.90	#4 @ 10"	33.44	#4 @ 10"	32.47	#4 @ 10"	31.78	#4 @ 10"	31.27	#4 @ 10"	30.86	#4 @ 10"	30.54	#4 @ 10"	30.27	#4 @ 10"	30.06	#4 @ 10"	29.88	#4 @ 10"	29.72
	3	#4 @ 10"	36.73	#4 @ 10"	35.23	#4 @ 10"	34.23	#4 @ 10"	33.53	#4 @ 10"	33.00	#4 @ 10"	32.59	#4 @ 10"	32.26	#4 @ 10"	31.99	#4 @ 10"	31.78	#4 @ 10"	31.59	#4 @ 10"	31.43
	4	#4 @ 10"	38.59	#4 @ 10"	37.04	#4 @ 10"	36.01	#4 @ 10"	35.29	#4 @ 10"	34.75	#4 @ 10"	34.33	#4 @ 10"	33.99	#4 @ 10"	33.71	#4 @ 10"	33.50	#4 @ 10"	33.31	#4 @ 10"	33.14
	5	#4 @ 10"	40.48	#4 @ 10"	38.86	#4 @ 10"	37.80	#4 @ 10"	37.06	#4 @ 10"	36.50	#4 @ 10"	36.07	#4 @ 10"	35.73	#4 @ 10"	35.44	#4 @ 10"	35.22	#4 @ 10"	35.03	#4 @ 10"	34.86
	6	#4 @ 10"	42.39	#4 @ 10"	40.71	#4 @ 10"	39.61	#4 @ 10"	38.84	#4 @ 10"	38.26	#4 @ 10"	37.82	#4 @ 10"	37.47	#4 @ 10"	37.17	#4 @ 10"	36.95	#4 @ 10"	36.75	#4 @ 10"	36.58

EXAMPLE:

SELECT THE c-BARS SIZE, SPACING AND STEEL QUANTITY FOR A 25.0 FEET LONG WINGWALL WITH m = 11.8 FT. AND k = 6.3 FT.

SOLUTION:

1. DETERMINE WINGWALL LENGTH IN MULTIPLE OF m:
   L / m = 25.0 / 11.8 = 2.12
   L = (2.12 x m), USE L ≤ (2.25 x m)
2. ROUND TO REAREST WHOLE NUMBER FOR m AND k:
   m = 11.8 FT., USE m = 12.0 FT.
   k = 6.3 FT., USE k = 6.0 FT.
3. DETERMINE c-BARS BY USING THE TABLE:
   L ≤ (2.25 x m)
   m = 12
   k = 6
   c-BARS: #6 @ 10"
   REINF. STEEL = 60.60 LB / LF
4. DETERMINE REINFORCING STEEL QUANTITY OF WHOLE WINGWALL:
   REINFORCING STEEL QUANTITY = 25.0 x 60.60 = 1,515 LB.



LIMITS OF CONCRETE SEALER AND WINGWALL DRAIN DETAILS

NOTES: 1. THE GEOCOMPOSITE SHALL BE SECURED TO THE WALL TO PREVENT MOVEMENT DURING BACKFILLING.

2. COST OF GEOCOMPOSITE DRAIN AND CONCRETE SEALER SHALL BE INCLUDED IN THE WORK.

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

WINGWALLS FOR PIPE OR BOX CULVERTS

STANDARD PLAN NO. M-601-20
Standard Sheet No. 2 of 2

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:

No.	REVISION	BY	DATE

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3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
BOX CULVERT DETAILS

PROJECT NO: OLS001.01
DESIGNED BY: GSR
DRAWN BY: RAK
DATE: 01/25/2023

C11.11

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:25 PM - Luke Breedlove

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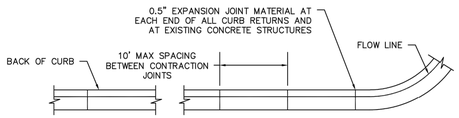
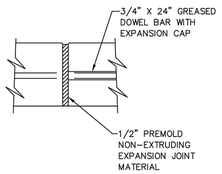
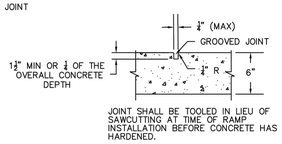


LAYOUT



EXPANSION JOINT



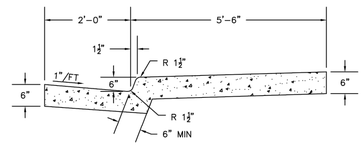
CONTRACTION JOINT

NOTES:

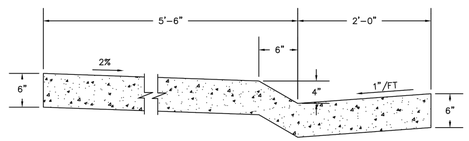
1. EXPANSION JOINT MATERIAL SHALL BE NON-EXTRUDING AND RESILIENT TYPE TO MEET AASHTO SPEC. M-213.
2. ANY OVER-EXCAVATION SHALL BE REPLACED BY GRANULAR BACKFILL COMPACTED TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698.

CURB AND GUTTER JOINT DETAIL

FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW1



VERTICAL



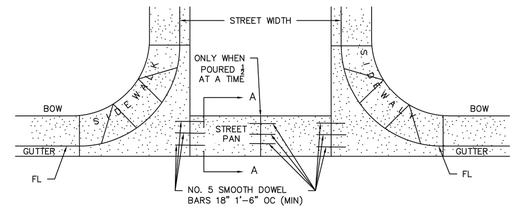
ROLLOVER

NOTES:

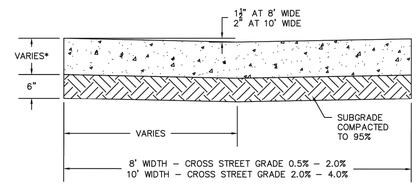
1. EXPANSION JOINT MATERIAL SHALL BE NON-EXTRUDING AND RESILIENT TYPE TO MEET AASHO SPEC. M-213.
2. ANY OVER-EXCAVATION SHALL BE REPLACED BY GRANULAR BACKFILL COMPACTED TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698.
3. SEE DETAILS ON DRAWING SW1 FOR EXPANSION AND CONTRACTION JOINT DETAILS.
4. FOR USE IN RESIDENTIAL AREAS OR RESIDENTIAL COLLECTORS ONLY.

MONOLITHIC INTEGRAL CURBWALK

FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW2



PLAN



SECTION A-A

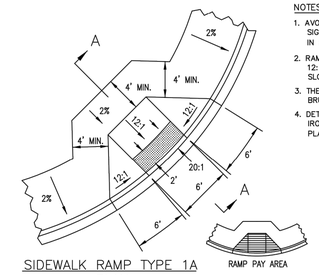
VARIES*
8" - #4 @ 18" OC EACH WAY
10" - NO REBAR REQUIRED

CONCRETE CROSS PAN

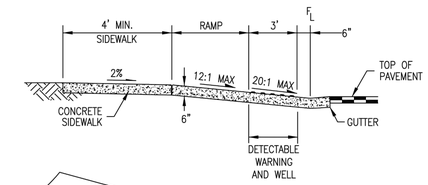
FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW3

NOTES:

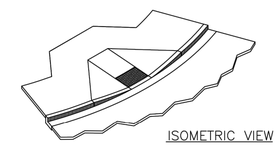
1. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS
2. RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1. THE DETECTABLE WARNING AND WELL AREA SLOPES SHALL NOT BE STEEPER THAN 20:1.
3. THE RAMP AREA SHALL RECEIVE A COARSER BRUSH TREATMENT THAN THE SIDEWALK.
4. DETECTABLE WARNINGS SHALL BE EAST JORDON IRON WORKS 7005 SERIES DETECTABLE WARNING PLATES OR APPROVED EQUAL.



SIDEWALK RAMP TYPE 1A
PLAN



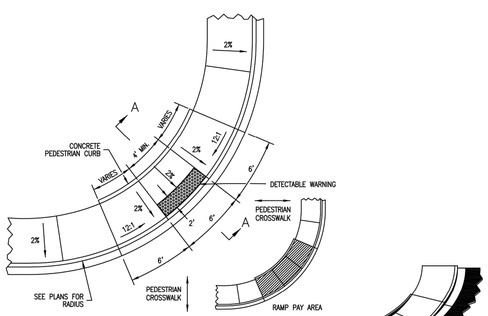
SECTION A-A



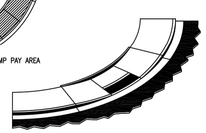
ISOMETRIC VIEW

CURB RAMP TYPE 1 ATTACHED WALK

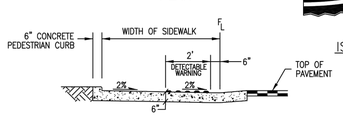
FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW5



SIDEWALK RAMP TYPE 2A
PLAN



ISOMETRIC VIEW



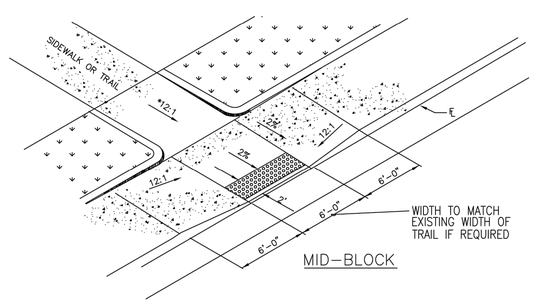
SECTION A-A

NOTES:

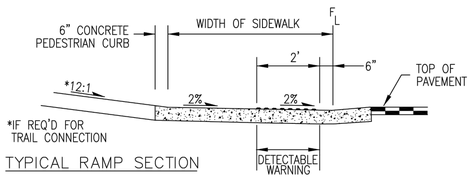
1. THE RAMP AREA SHALL RECEIVE A COARSER BRUSH TREATMENT THAN THE SIDEWALK.
2. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
3. RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1. THE DETECTABLE WARNING AREA SLOPE SHALL NOT BE STEEPER THAN 20:1.
4. CONSTRUCTION OF THE CONCRETE PEDESTRIAN CURB TO BE INCLUDED IN THE COST OF THE CURB RAMP.
5. DETECTABLE WARNINGS SHALL BE EAST JORDAN IRON WORKS 7005 SERIES DETECTABLE WARNING PLATES OR APPROVED EQUAL.

CURB RAMP TYPE 2A ATTACHED WALK

FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW6



MID-BLOCK



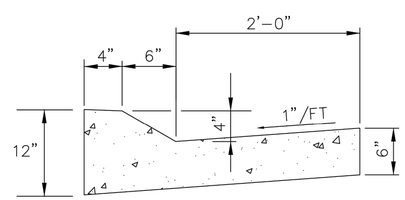
TYPICAL RAMP SECTION

NOTES:

1. THERE SHALL BE NO LOP WHERE THE RAMP MEETS THE GUTTER.
2. RAMP SURFACE SHALL HAVE A COARSE BROOM FINISH.
3. CURB RAMPS SHALL BE POURED MONOLITHICALLY WITH THE CURB, GUTTER AND APRON.
4. RAMP DIMENSIONS SHALL BE SPECIFIED ON THE CONSTRUCTION PLANS.
5. RAMP AND WING SLOPES SHALL NOT BE STEEPER THAN 12:1.
6. THE DETECTABLE WARNING AREA SLOPE SHALL NOT BE STEEPER THAN 20:1.
7. DETECTABLE WARNINGS SHALL BE EAST JORDAN IRON WORKS 7005 SERIES DETECTABLE WARNING PLATES OR APPROVED EQUAL.

CURB RAMP MID BLOCK TYPE 2 ATTACHED WALK

FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW9C



ROLLOVER

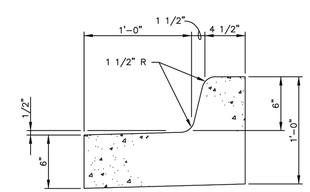
MOUNTABLE CURB & GUTTER
CATCH

NOTE:

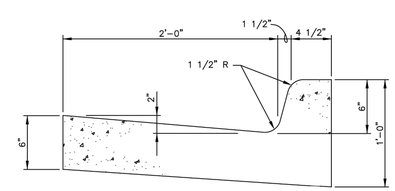
1. SUBGRADE TO BE COMPACTED TO 95% MODIFIED PROCTOR.

MOUNTABLE CURB SECTION

FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW10



MEDIAN CURB & GUTTER
SPILL



VERTICAL CURB & GUTTER
CATCH

NOTE:

1. SUBGRADE TO BE COMPACTED TO 95% MODIFIED PROCTOR.

VERTICAL CURB SECTION

FIRESTONE COLORADO | CURB, GUTTER AND SIDEWALK CONSTRUCTION DRAWINGS | BY: JME | SCALE: NTS | DATE: 1/2020 | DRAWING: SW11

No.	REVISION	BY	DATE

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303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ROADWAY DETAILS 1

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.12

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\CD\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:31 PM - Luke Breedlove

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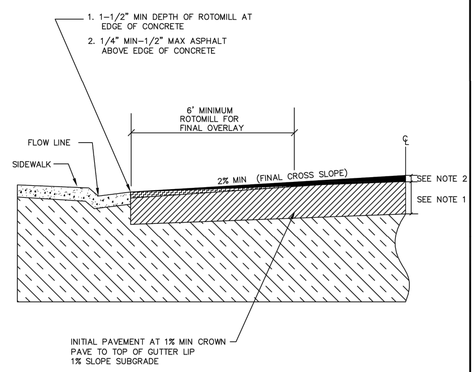


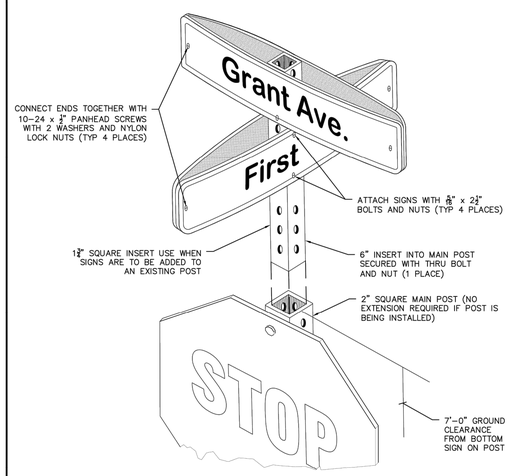
NOTES:

1. INITIAL PAVEMENT DEPTH AT CONSTRUCTION ACCEPTANCE SHALL BE FULL DESIGN DEPTH FOR THE ENTIRE WIDTH OF THE ROAD SECTION.
2. FINAL OVERLAY DEPTH AT FINAL ACCEPTANCE IS IN ADDITION TO THE DESIGN DEPTH. THE DEPTH WILL VARY DEPENDING UPON THE PAVEMENT WIDTH TO ENSURE A MINIMUM OF A 2% PAVEMENT CROSS SLOPE.
3. THE FINAL OVERLAY SHALL BE COMPLETED AT FINAL ACCEPTANCE WHICH IS AFTER THE END OF THE 2 YEAR WARRANTY PERIOD WHEN ALL FINAL PUNCH LIST REPAIRS ARE COMPLETE.
4. THE FINAL OVERLAY MUST BE SX MIX.
5. DETERMINATION OF CROWN FOR CUL DE SAC PAVING SHALL BE EVALUATED ON A CASE BY CASE BASIS.

PAVEMENT PHASING - NEW ROADS

FIRESTONE COLORADO	STREET CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 11/2019	DRAWING: ST7

STANDARD ORIENTATION:
NORTH-SOUTH STREETS ON TOP
EAST-WEST STREETS ON BOTTOM



GROUND MOUNT STREET NAME SIGN

FIRESTONE COLORADO	STREET CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 11/2019	DRAWING: ST10A

9" STREET SIGN WITH TOWN OF FIRESTONE LOGO

3/8" HOLE FOR MOUNTING (TYP)

6" STREET SIGN WITHOUT TOWN OF FIRESTONE LOGO

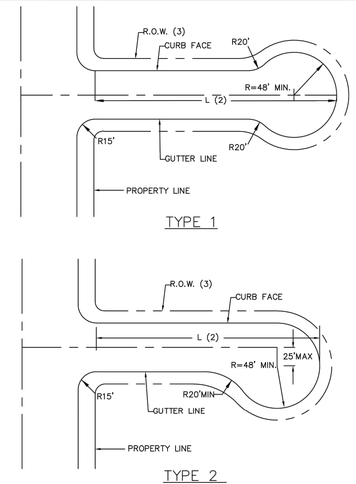
INTERSECTION TYPE	SIGN BLANK SIZE (30" MINIMUM ON ALL LENGTHS)	MOUNTING	RECOMMENDED MINIMUM			
			LETTER HEIGHT		SUFFIX (ST, AVE, CT ETC)	
			INITIAL UPPER CASE	LOWER CASE	INITIAL UPPER CASE	LOWER CASE
ARTERIALS AT SIGNAL LIGHTS WITH LOGO		OVERHEAD	12 INCHES	9 INCHES	6 INCHES	4.5 INCHES
MULTI LANE ARTERIALS AND ALL OTHERS DIRECTED BY PUBLIC WORKS DEPT WITH LOGO	10" X AS NEEDED	POST MOUNTED	8 INCHES	6 INCHES	4.5 INCHES	3.5 INCHES
ARTERIALS & COLLECTORS AND ALL OTHERS DIRECTED BY PUBLIC WORKS DEPT WITH LOGO	9" X AS NEEDED	POST MOUNTED	8 INCHES	4.5 INCHES	4 INCHES	3 INCHES
LOCAL/NO LOGO	9" X AS NEEDED	POST MOUNTED	6 INCHES	4.5 INCHES	4 INCHES	3 INCHES
*LOCAL/NO LOGO	6" X AS NEEDED	POST MOUNTED	4 INCHES	3 INCHES	3 INCHES	2.25 INCHES
*ON LOCAL TWO-LANE STREETS WITH SPEED LIMITS OF 25 MPH OR LESS, 4 INCH INITIAL UPPER-CASE LETTERS WITH 3 INCH LOWER CASE LETTERS MAY BE USED						
NO BORDERS EXCEPT ON OVERHEAD LIGHTED STREET SIGNS AT SIGNALIZED INTERSECTIONS						
WHEN LOGO IS DISPLAYED, THE HEIGHT AND WIDTH OF THE LOGO SHALL NOT EXCEED THE UPPER CASE LETTER HEIGHT OF THE PRINCIPAL LEGEND OF THE SIGN AND LOCATED LEFT OF THE STREET NAME						

NOTES:

1. SIGN BLANKS SHALL BE 6061 OR 5052-H38 ALUMINUM ALLOY MIN 0.080" THICK.
2. FACING SHALL BE GREEN HI-INTENSITY RETROREFLECTIVE SHEETING.
3. LETTERS AND NUMBERS SHALL BE WHITE RETROREFLECTIVE SHEETING.
4. TOWN OF FIRESTONE COLOR LOGO IS TO BE USED FOR COLLECTOR AND ARTERIAL STREET BLADES ONLY.
5. 30" MIN. LENGTH ON ALL STREET SIGNS, SINGLE FACE FOR BACK TO BACK INSTALLATION AND ¼" HOLES FOR PINNING ENDS OF SIGNS TOGETHER.
6. THE SIZING OF ALL SIGNS AT AN INTERSECTION SHALL BE UNIFORM AND BE DETERMINED BY THE HIGHEST CLASSIFICATION ROAD AT AN INTERSECTION.

ROAD AND STREET NAME SIGNS

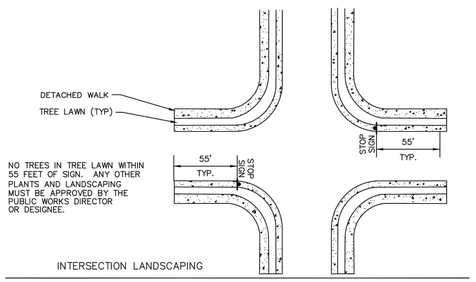
FIRESTONE COLORADO	STREET CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 11/2019	DRAWING: ST10B



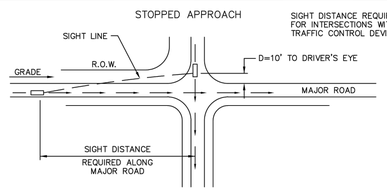
NOTES:
(1) WIDTH OF TYPE 1 & 2 CUL-DE-SACS TO CONFORM TO APPLICABLE TYPICAL STREET CROSS SECTIONS.
(2) SEE SECTION 526.00 CUL-DE-SACS FOR LENGTH (L) REQUIREMENTS.
(3) R.O.W. LINES ARE TO BE PARALLEL TO AND OFFSET FROM THE CURB FACE AND THE DISTANCE SHALL MATCH THE STREET SECTION DETAIL.

CUL-DE-SAC

FIRESTONE COLORADO	STREET CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 11/2019	DRAWING: ST11



INTERSECTION LANDSCAPING

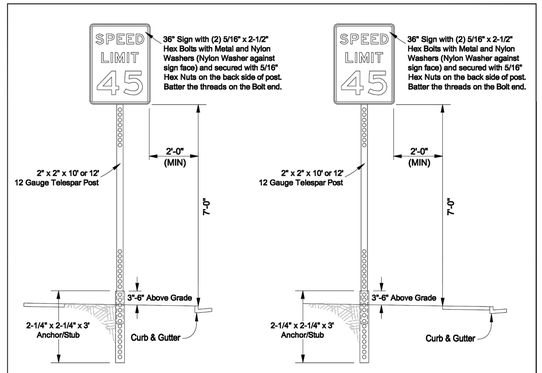


SIGHT DISTANCE REQUIREMENT FOR INTERSECTIONS WITH TRAFFIC CONTROL DEVICES

DESIGN SPEED OF THRU ROADWAY (MPH)	MINIMUM SIGHT DISTANCE FOR STOPPED VEHICLE (FEET)	GRADE CORRECTION DISTANCE (FEET)				
		SPEED	UPGRADE TO 3%	UPGRADE TO 6%	DOWNGRADES 3%	DOWNGRADES 6%
25	250	25	0	−10	+10	+20
30	300	30	0	−10	+10	+20
35	350	35	−10	−15	+10	+25
40	400	40	−10	−20	+10	+30
45	450	45	−15	−25	+15	+40

SIGHT DISTANCE

FIRESTONE COLORADO	STREET CONSTRUCTION DRAWINGS	BY: JME SCALE: NTS DATE: 11/2019	DRAWING: ST12



DETACHED WALK

ATTACHED WALK

CRITERIA FOR SINGLE POST		
Max. Sign Panel	Base Sleeve *	Post Size *
36" x 36"	2.25" x 2.25" x 3'-0"	2" x 2" x 10'-0"

* 12 Gauge

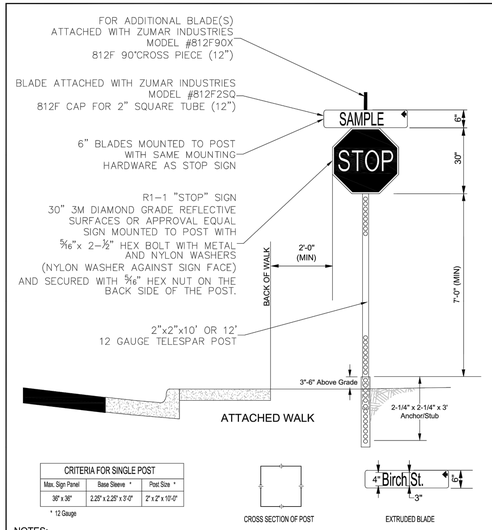
Cross section of post

NOTES:

1. Attach the sign panels tightly to the post and use oversized washers to keep the sign from breaking loose from the post if hit by a vehicle.
2. Sign panels should be mounted a minimum of 7 feet above the pavement or ground.
3. Signs larger than 36 inches in length or width require wind bracing and special post design.
4. Anchor Stub and post are square steel tube (perforated).

RESIDENTIAL SIGN POST DETAIL

FIRESTONE A COMMUNITY IN MOTION	STREET CONSTRUCTION DRAWINGS	SCALE: N.T.S. DATE: JULY 2008	



CRITERIA FOR SINGLE POST		
Max. Sign Panel	Base Sleeve *	Post Size *
36" x 36"	2.25" x 2.25" x 3'-0"	2" x 2" x 10'-0"

* 12 Gauge

NOTES:

1. FOR DETACHED WALK THE EDGE OF THE SIGN SHALL BE SET A MINIMUM OF 2' FROM THE FLOWLINE.
2. ATTACH THE SIGN PANELS TIGHTLY TO THE POST AND USE OVERSIZED WASHERS TO KEEP THE SIGN FROM BREAKING LOOSE FROM THE POST IF HIT BY A VEHICLE.
3. SIGN PANELS SHOULD BE MOUNTED A MINIMUM OF 7 FEET ABOVE THE PAVEMENT OR GROUND.
4. SIGNS LARGER THAN 36 INCHES IN LENGTH OR WIDTH REQUIRE WIND BRACING AND SPECIAL POST DESIGN.
5. ANCHOR STUB AND POST ARE SQUARE STEEL TUBE (PERFORATED).
6. CAPITIAL LETTERS ON ROAD NAME BLADE SHALL BE 4" TALL AND LOWERCASE LETTERS SHALL BE 3" TALL.

RESIDENTIAL STOP SIGN AND ROAD NAME BLADE INSTALLATION DETAIL

FIRESTONE A COMMUNITY IN MOTION	STREET CONSTRUCTION DRAWINGS	BY: CCG SCALE: N.T.S. DATE: JAN 2014	DRAWING ST-XX

No.	REVISION	BY	DATE

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EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504
ROADWAY DETAILS 2

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.13

P:\ALBERTA DEVELOPMENT PARTNERS\COTTONWOOD HOLLOW FILING 4\08 CAD\SHEETS\C2\C10.0 CIVIL DETAILS.DWG - 2/20/2023 1:38:34 PM - Luke Breedlove

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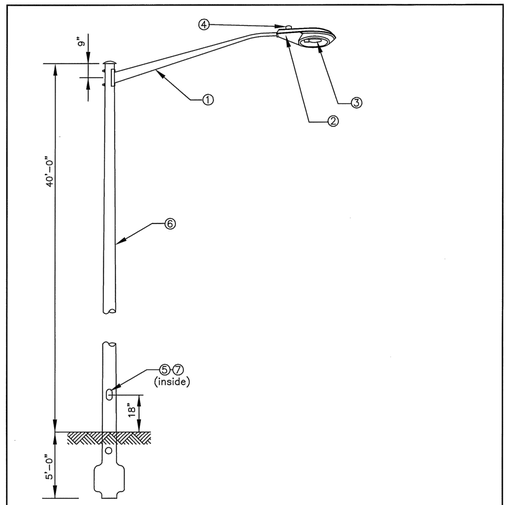


ITEM	QTY	MATERIAL	ITEM	QTY	MATERIAL
1	1	10' Arm	5	1	Fuseholder, In-line, #12-8 AWG
2	1	Luminaire, 250W HPS	6	1	Light pole, Fiberglass, 45'
3	1	Lamp HPS, 250W	7	1	Fuse, Tube-Type, Sec.- 10 Amp
4	1	Photoelectric Eye			

REVISIONS		
DATE	BY	DESCRIPTIONS
08/02	KWD	General Revision

UNITEDPOWER
UNITED POWER, INC.
P.O. BOX 929 • BRIGHTON, CO. 80601

DWN BY: K.Ross
ENG. APPROVAL: DATE: ISSUED BY:
OPER. APPROVAL: DATE: ISSE DT:

FIBERGLASS LIGHTPOLE WITH 250W LUMINAIRE

M26-250F

Submitted by Visual Interest, Inc.

visual interest

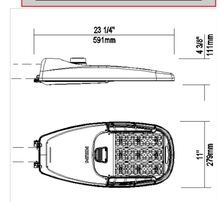
Job Name: United Power - Lighting
Distributor: Western United Electric (Brighton)

Catalog Number: RFM-160W48LED4K-T-R3M-UNIV-DMG-HS-RCD-GY3
Notes:

Type:
VILTG16-44862

United Power (78847)

Sign Here for Approval



EPA: 0.523 sq ft / weight: 12.3 lb (5.6 kg)
Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty **1358** Luminaire **RFM-160W48LED4K-T-R3M-UNIV-DMG-HS-RCD-GY3**

Description of Components:

Housing: Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 2 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5° increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

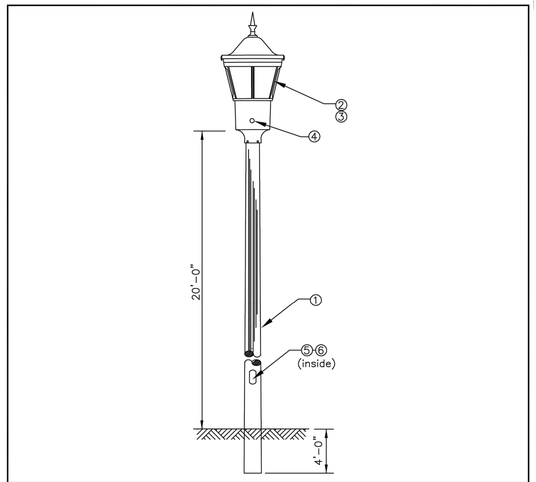
Light Engine: Composed of 4 main components: **Heat Sink / LED Module / Optical System / Driver**
Electrical components are RoHS compliant, IP66 sealed light engine equipped with Philips Lumileds LUXEON T LEDs.
LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimising their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +40°C / +104°F.

LED Module: LED type Philips Lumileds LUXEON T. Composed of 48 high-performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000 Kelvin nominal (3985K +/- 275K or 3710K to 4260K), CRI 70 Min. 75 Typical.

SPEC20161214_082522_78847_4.DOCX
12-14-2016 Page 1 / 4

PHILIPS



ITEM	QTY	MATERIAL	ITEM	QTY	MATERIAL
1	1	Fiberglass Light Pole, 24'			
2	1	Luminarie, HPS 70W			
3	1	Lamp HPS, 70W.			
4	1	Photoelectric Eye.			
5	1	Fuseholder, In-line, #12-8 AWG			
6	1	Fuse, Tube-Type, Sec-10 amp			

REVISIONS		
DATE	BY	DESCRIPTIONS
08/02	KWD	General Revision

UNITEDPOWER
UNITED POWER, INC.
P.O. BOX 929 • BRIGHTON, CO. 80601

DWN BY: K.Ross
ENG. APPROVAL: DATE: ISSUED BY:
OPER. APPROVAL: DATE: ISSE DT:

ORNAMENTAL LIGHT ON FIBERGLASS POLE

M26-70F

Submitted by Visual Interest, Inc.

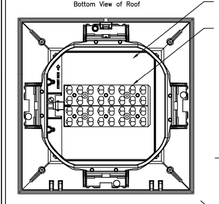
visual interest

Job Name: United Power - Lighting
Distributor: Western United Electric (Brighton)

Catalog Number: C13933B
Notes:

Type:
VILTG16-44862

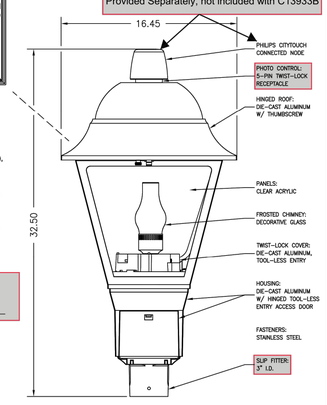
Philips LEDgine
Bottom View of Roof



Ordering Guide:
C13933B: LUMINAIRE

Color:
Black

Provided Separately, not included with C13933B



Philips LEDgine Specifications:

- 32, 4000K (neutral) Philips Lumileds Luxeon R LEDs, typical 75 Color Rendering Index (CRI), >100,000 hours of operational life (at 25°C ambient temperature & 70% lumen maintenance), type III light distribution.
- Integral Philips Advance Xitanium Programmable LED driver set to 0-10V, class 1, IP66 rated, 530mA, IntelliWatt 120-277 VAC, 50-60Hz, RoHS compliant, field replaceable 10kA/10kA surge suppression.
- Manufactured to ISO 9001:2008 Standards, photometric testing performed in accordance w/ IESNA LM-79 guidelines.

Sign Here for Approval

CONFIDENTIAL:
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NOTICE:
This drawing is for reference only. Check for latest revision prior to ordering.

100 Craftway Drive
Littlestown, Pa 17340
Phone: 800-331-4185
Fax 717-359-9289
www.philips.com

PHILIPS HADCO

JOB NAME: United Power Roadway LED Upgrade Phase I

SCALE:	DATE:	DRAWN BY:	DRAWING NUMBER:
1:6	11/14/16	SMK	C13933-DWG02

PRODUCT APPROVALS	
HADCO	SDK
CUSTOMER	

REP: Visual Interest
REV: B
PON: 16-031
BY: SMK
DATE: 12/15/16

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No.	REVISION	BY	DATE

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4A
FIRESTONE, COLORADO 80504

STREET LIGHT DETAILS

PROJECT NO:	OLS001.01
DESIGNED BY:	GSR
DRAWN BY:	RAK
DATE:	01/25/2023

C11.14
SHEET 96 OF 109

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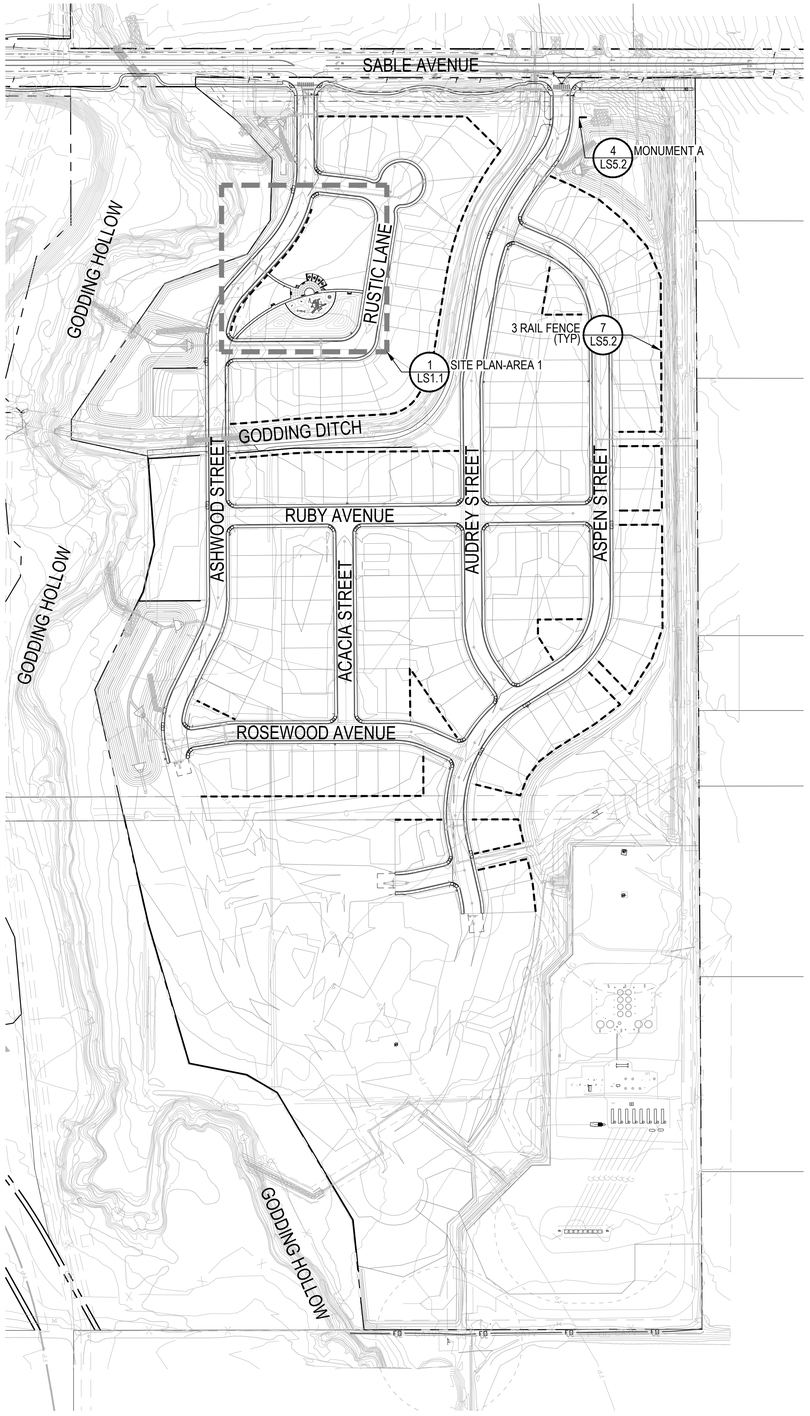

NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES AND LICENSES ASSOCIATED WITH THE WORK AS SHOWN ON THE DRAWINGS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE SCHEDULING AND COORDINATION OF ALL REQUIRED INSPECTIONS WITH THE TOWN.
3. THE CONTRACTOR IS TO COORDINATE LOCATIONS OF ALL TRANSFORMERS, SWITCHING BOXES AND OTHER UTILITY APPURTENANCES BEFORE INSTALLATION. ANY AND ALL TRANSFORMERS, SWITCH BOXES, UTILITY CABINETS INSTALLED ON TOWN LAND (R.OW., OUTLOTS AND TOWN UTILITY EASEMENTS) REQUIRE APPROVAL FROM THE TOWN.
4. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL ABOVE AND BELOW GROUND SERVICES BEFORE THE COMMENCEMENT OF ANY WORK. CONTRACTOR TO VERIFY WITH THE TOWN FOR ANY RELOCATIONS OR MODIFICATION REQUIRED IN ORDER TO UNDERTAKE WORKS DESCRIBED IN THIS CONSTRUCTION DOCUMENT SET.
5. CONTRACTOR SHALL STAKE LAYOUT OF ALL WALLS, STRUCTURES, COLUMNS, PROPERTY LINES, WALKS, TREES, ETC., FOR OWNER'S REPRESENTATIVE TO REVIEW PRIOR TO INSTALLATION. FAILURE TO RECEIVE REVIEW AND APPROVAL OF DIMENSIONAL LAYOUT MAY BE CAUSE TO REQUIRE REMOVAL AND REPLACEMENT OF INSTALLED WORK BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. CONTRACTOR SHALL ARRANGE FOR LAYOUT APPROVAL WITH OWNER'S REPRESENTATIVE PROVIDING A MINIMUM OF TWO WORKING DAYS NOTICE PRIOR TO ANY EXECUTION OF WORK.
7. DEVIATIONS FROM OR MODIFICATION OF LAYOUT AND DIMENSIONS SHOWN ON THIS PLAN SHALL REQUIRE PRIOR APPROVAL BY THE OWNER.
8. ALL EQUIPMENT ILLUSTRATED ON THIS PLAN SHALL BE PURCHASED AND INSTALLED BY THE CONTRACTOR.
9. LAYOUT OF ALL EQUIPMENT SHALL BE PERFORMED BY THE CONTRACTOR AND IS SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.
10. ALL PLAYGROUND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND U.S.C.P.S/ASTM GUIDELINES. STRICT FALL ZONE COMPLIANCE WILL BE ENFORCED.
11. CONTRACTOR SHALL PROVIDE AND INSTALL PLAYGROUND SURFACING PER MANUFACTURER'S SPECIFICATIONS.
12. CONTRACTOR TO OBTAIN ALL APPROPRIATE STRUCTURAL CERTIFICATION AND VERIFICATION OF MONUMENTS, WALLS, STRUCTURES, ETC., PRIOR TO CONSTRUCTION AS PART OF SHOP DRAWING'S TO BE APPROVED BY OWNER'S REPRESENTATIVE.
13. CONTRACTOR SHALL BE REQUIRED TO SUBMIT ALL SHOP DRAWINGS, CUT SHEETS AND COLOR SELECTION INFORMATION ASSOCIATED WITH EQUIPMENT TO BE INSTALLED ON SITE TO OWNER'S REPRESENTATIVES PRIOR TO INSTALLATION.
14. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN'S STANDARDS.
15. VERIFY ALL EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OR OWNER IF ANY CONFLICT WITH THE DRAWINGS OCCUR.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT EXISTING UTILITY LINES SHOWN ON THE PLANS AND THOSE UTILITY LINES WHICH MAY NOT BE SHOWN. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES FORTY-EIGHT HOURS PRIOR TO CONSTRUCTION

PUBLIC LAND DEDICATION CHART

PARK REQUIREMENT
8.5 ACRES X (NUMBER OF DWELLING UNITS) X (PERSONS PER DWELLING UNIT) / 1000 = AREA TO BE
POCKET PARK: 0.5 ACRE PER 1,000 RESIDENTS
NEIGHBORHOOD PARK: 3 ACRES PER 1,000 RESIDENTS
COMMUNITY PARK: 5 ACRES PER 1,000 RESIDENTS
OPEN SPACE REQUIREMENT
14 ACRES X (NUMBER OF DWELLING UNITS) X (PERSONS PER DWELLING UNIT) / 1000 = AREA TO BE

NUMBER OF DWELLING UNITS	129
PERSONS PER DWELLING UNIT	3.09
NUMBER OF RESIDENTS	398.61

PUBLIC LAND TYPE	REQUIRED	PROVIDED
POCKET PARK	0.20 AC	1.28 AC
NEIGHBORHOOD PARK	1.20 AC	CASH IN LIEU
COMMUNITY PARK	1.99 AC	CASH IN LIEU
PARK TOTALS	3.39 AC	1.28 AC

OPEN SPACE REQUIREMENT HAS BEEN MEET THROUGH THE ODP.

FENCING LEGEND

- - - - - - - 7 / LS5.1 3-RAIL FENCE

1 MASTER SITE PLAN
SCALE: 1"=150'
NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=150'-0"
0 75 150 300 450 NORTH

Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	BY	DATE
1	REVIEW COMMENTS		07.22.2022
2.	REVIEW COMMENTS		11.11.2022
3.	REVIEW COMMENTS		02.21.2023

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www.pcsgroupco.com
p.o. box 18287
denver, co 80218
t 303.531.4905 f 303.531.4908

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
MASTER SITE PLAN

PROJECT NO: 056829
DESIGNED BY: CGR
DRAWN BY: CGR
DATE: 03.15.2022

LS0.1
SHEET 97 OF 109

Y:\COTTONWOOD HOLLOW\LANDSCAPE ARCHITECTURE\FILING 4\SITE PLAN\SHEETS-01 FILING 4.DWG - 2/17/2023 9:48:34 AM - Kurt Moje

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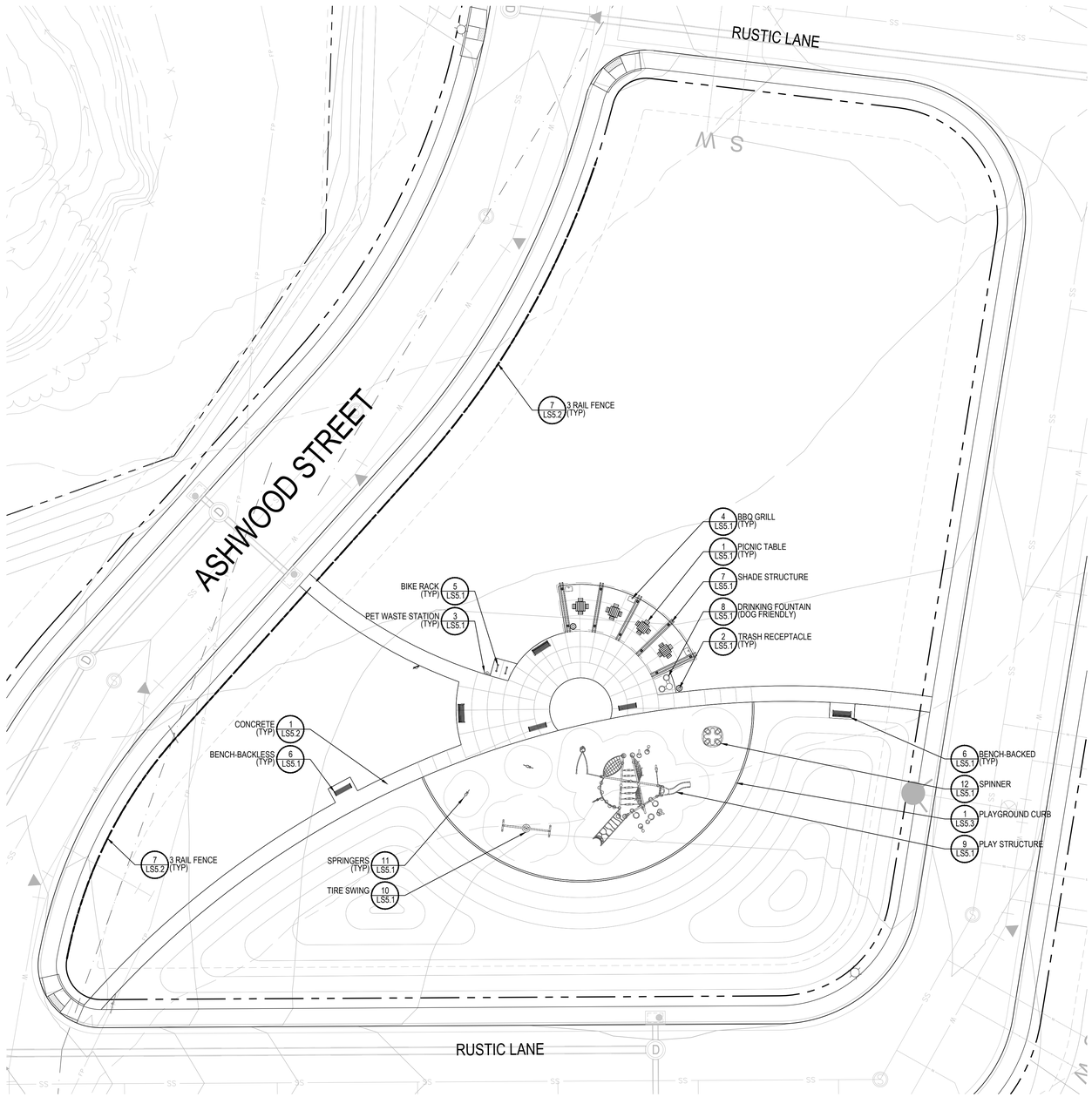

1 SITE PLAN-AREA 1
SCALE: 1"=20'

SCALE: 1"=20'
0 10 20 40 60 NORTH

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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2.	REVIEW COMMENTS		11.11.2022
3.	REVIEW COMMENTS		02.21.2023

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www.pcsgroupco.com
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denver, co 80218
t 303.531.4905 f 303.531.4908

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
SITE PLAN

PROJECT NO:	056829
DESIGNED BY:	CGR
DRAWN BY:	CGR
DATE:	03.15.2022

LS1.1
SHEET 98 OF 109

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PICNIC TABLES BY MAGLIN
STD MODEL: MLPT400 SERIES CLUSTER SEATING
MATERIAL: METAL
COLOR: GUNMETAL
MOUNTING: SURFACE
INSTALL PER MANUFACTURER'S SPECS

CONTACT: MAGLIN SITE FURNISHING
REP: JENNY GRIFFIN
PHONE: 800 716 5506 X 197
WWW.MAGLIN.COM

1 PICNIC TABLE
Scale: NTS

TRASH RECEPTACLE BY MAGLIN
MODEL: MLWR400-25-M TRASH CONTAINER
MATERIAL: METAL
COLOR: GUNMETAL
MOUNTING: SURFACE
INSTALL PER MANUFACTURER'S SPECS

CONTACT: MAGLIN SITE FURNISHING
REP: JENNY GRIFFIN
PHONE: 800 716 5506 X 197
WWW.MAGLIN.COM

2 TRASH RECEPTACLE
Scale: NTS

PET WASTE STATION BY DOG ON IT PARKS
MODEL: 7408-R, COMPLETE DOG WASTE STATION WITH ROLL DISPENSER, GREEN
INSTALL PER MANUFACTURER'S SPECS OR APPROVED EQUAL.

CONTACT: ATOZ RECREATION
PHONE: 303.670.3789
WWW.ATOZRECREATION.COM

3 PET WASTE STATION
Scale: NTS

GRILL BY DUMOR INC
MODEL: 22-00
MOUNTING: SURFACE
INSTALL PER MANUFACTURER'S SPECS.
OR APPROVED EQUAL.

CONTACT: ROCKY MOUNTAIN RECREATION
PHONE: 800.636.0199
WWW.RMREC.COM

4 BBQ GRILL
Scale: NTS

BIKE RACK BY MAGLIN
STD MODEL: 500 SERIES
MATERIAL: METAL
COLOR: GUNMETAL
MOUNTING: DIRECT BURIAL
INSTALL PER MANUFACTURER'S SPECS

CONTACT: MAGLIN SITE FURNISHING
REP: JENNY GRIFFIN
PHONE: 800 716 5506 X 197
WWW.MAGLIN.COM

5 BIKE RACK
Scale: NTS

BENCH BY MAGLIN
MODEL: MLB400-R
MATERIAL: METAL W/ WOOD GRAIN TEXTURE HIGH DENSITY POLYETHYLENE SLATS
COLOR: GUNMETAL & GREY SLATS
MOUNTING: SURFACE
INSTALL PER MANUFACTURER'S SPECS

CONTACT: MAGLIN SITE FURNISHING
REP: JENNY GRIFFIN
PHONE: 800 716 5506 X 197
WWW.MAGLIN.COM

6 BENCH - BACKED & BACKLESS
Scale: NTS

TRELLIS STRUCTURE BY ICON SHELTERS
MODEL: AC8X20K-P0-20-90-30 MODIFIED
MOUNTING: SURFACE
INSTALL PER MANUFACTURER'S SPECS.
OR APPROVED EQUAL.

CONTACT: RECREATION PLUS LTD
PHONE: 303.278.1455
WWW.RECREATIONPLUS.COM/

7 SHADE STRUCTURE
Scale: NTS

DOG WATER FOUNTAIN BY GYMS FOR DOGS
ITEM: DL-2000-ADA-STE
MATERIALS: HEAVY-DUTY 316 STAINLESS STEEL
COLOR: GREEN
MOUNTING: SURFACE
INSTALL PER MANUFACTURER'S SPECS

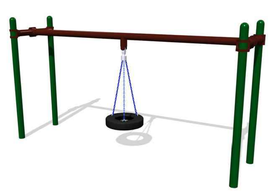
CONTACT: GYMS FOR DOGS™
PHONE: 800.931.1562
WWW.GYMSFORDOGS.COM

8 DRINKING FOUNTAIN (DOG FRIENDLY)
Scale: NTS

EVOS CONFIGURATION
BY LANDSCAPE STRUCTURES
DRAWING #: 44129-2-11
6TH AVENUE PLAYGROUND - BALBOA PARK
INSTALL PER MANUFACTURER'S SPECS

CONTACT: ROCKY MOUNTAIN RECREATION
PHONE: 800.636.0199
WWW.RMREC.COM

9 MULTI-LEVEL PLAY STRUCTURE
Scale: NTS



TIRE SWING W/ 4 POSTS
BY LANDSCAPE STRUCTURES
MODEL: #120892
INSTALL PER MANUFACTURER'S SPECS

CONTACT: ROCKY MOUNTAIN RECREATION
PHONE: 800.636.0199
WWW.RMREC.COM

10 TIRE SWING
Scale: NTS

DIGIRIDER BEAR
BY LANDSCAPE STRUCTURES
MODEL: #233059
INSTALL PER MANUFACTURER'S SPECS

CONTACT: ROCKY MOUNTAIN RECREATION
PHONE: 800.636.0199
WWW.RMREC.COM

11 SPRINGER
Scale: NTS

OMNISPIN SPINNER
BY LANDSCAPE STRUCTURES
MODEL: #173591
INSTALL PER MANUFACTURER'S SPECS

CONTACT: ROCKY MOUNTAIN RECREATION
PHONE: 800.636.0199
WWW.RMREC.COM

12 SPINNER
Scale: NTS

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	BY	DATE
1	REVIEW COMMENTS		07.22.2022
2.	REVIEW COMMENTS		11.11.2022
3.	REVIEW COMMENTS		02.21.2023

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denver, co 80218
t 303.531.4905 f 303.531.4908

FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
SITE DETAILS

PROJECT NO:	056829
DESIGNED BY:	CGR
DRAWN BY:	CGR
DATE:	03.15.2022

LS5.1
SHEET 99 OF 109

Y:\COTTONWOOD HOLLOW\LANDSCAPE ARCHITECTURE\FILING 4\SITE PLAN\SHEETS\01 FILING 4.DWG - 2/17/2023 9:48:40 AM - Kurt Maje

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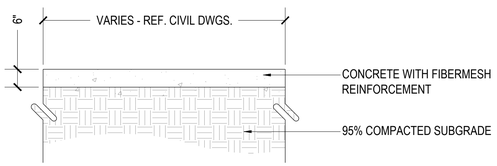
NOTES:
1. EXPANSION JOINTS TO BE EVERY 50' ALONG SIDEWALK AND AS ILLUSTRATED ON PLANS AND DETAILS.
2. CONCRETE 1.1 - COLOR: STANDARD GRAY, FINISH: MEDIUM BROOM.
3. CONCRETE 1.2 - COLOR: DAVIS COLOR SAN DIEGO BUFF 5237, FINISH: MEDIUM BROOM.
4. CONTROL JOINTS TO BE EVERY 4' ALONG SIDEWALK, UNLESS ILLUSTRATED ON PLANS.
5. REFERENCE GEOTECH REPORT FOR FURTHER SPECIFICS FOR APPROVED CONCRETE MIX AND THICKNESS/DEPTH.
6. DETAIL FOR REFERENCE ONLY.
7. CHECK PAVEMENT THICKNESS WITH SOILS REPORT SPECIFIC TO PROJECT, CHANGE DIMENSION.
8. IF CONCRETE WILL BE COLORED OR HAVE UNIQUE TEXTURE/FINISH ADD TO DETAIL NOTES.
9. CHANGE CONTROL JOINT SPACING TO BE PER LANDSCAPE SITE PLAN OR BY WIDTH OF WALK IF NOT 5'-0".



1 CONCRETE
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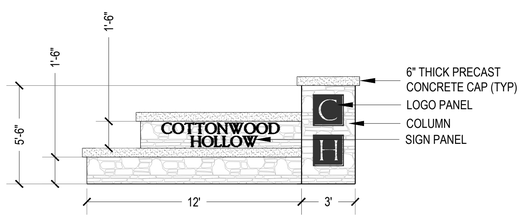
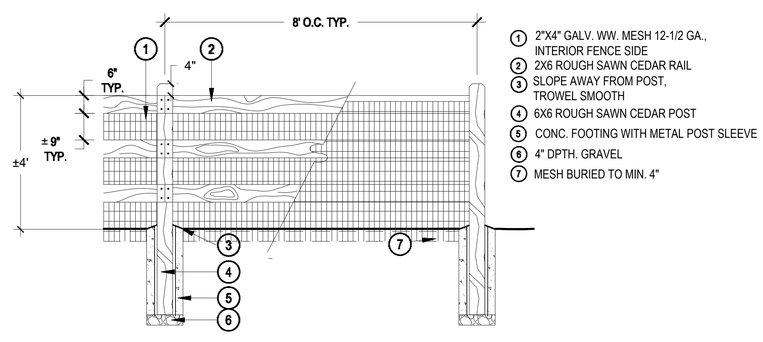


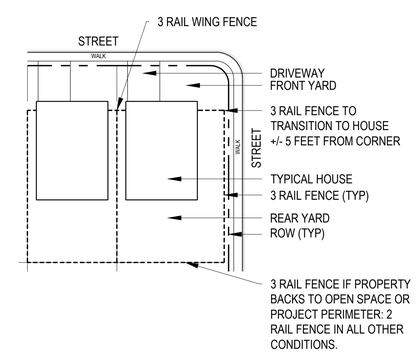
MONUMENT A ELEVATION

NOTES:
1. STONE VENEER SHALL BE ELDORADO STONE: CLIFSTONE-MESQUITE , OR APPROVED EQUAL.
2. CONCRETE CAP COLOR SHALL BE WHITE CONCRETE WITH ACID ETCHED FINISH, OR APPROVED EQUAL
3. METAL LETTERS SHALL BE REVERSE PLAN CHANNEL WITH HALO ILLUMINATION.
4. METAL TO BE POWDER COATED COLOR BLACK.
5. SIGN PANEL - METAL LETTER FONT IS IMPERATOR SMALL CAPS BOLD, 6" HIGH AND 1" THICK.
6. LOGO PANEL-METAL LOGO FONT IS IMPERATOR PLAQUE, 24" HIGH AND 2" THICK.
7. SIGN CONTRACTOR AND/OR GENERAL CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER'S REP. FOR REVIEW AND APPROVAL. SHOP DRAWINGS TO INCLUDE STRUCTURAL ENGINEERING FOR WALLS AND FOOTINGS.

4 MONUMENT A
Scale: NTS



7 3-RAIL FENCE
Scale: NTS



TYPICAL LOT FENCE DETAIL

FENCE NOTES:
1. ALL FENCING ILLUSTRATED IN THIS DRAWING SET WILL BE INSTALLED BY THE BUILDER PRIOR TO CERTIFICATE OF OCCUPANCY. THIS INCLUDES ALL ON LOT FENCES; SIDE, REAR AND WING FENCES.

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CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

No.	REVISION	BY	DATE
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2.	REVIEW COMMENTS		11.11.2022
3.	REVIEW COMMENTS		02.21.2023

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
SITE DETAILS

PROJECT NO: 056829
DESIGNED BY: CGR
DRAWN BY: CGR
DATE: 03.15.2022

LS5.2
SHEET 100 OF 109

Y:\COTTONWOOD HOLLOW\LANDSCAPE ARCHITECTURE\FILING 4\SITE PLAN\SHEETS-01 FILING 4.DWG - 2/17/2023 9:49:23 AM - Kurt Moge

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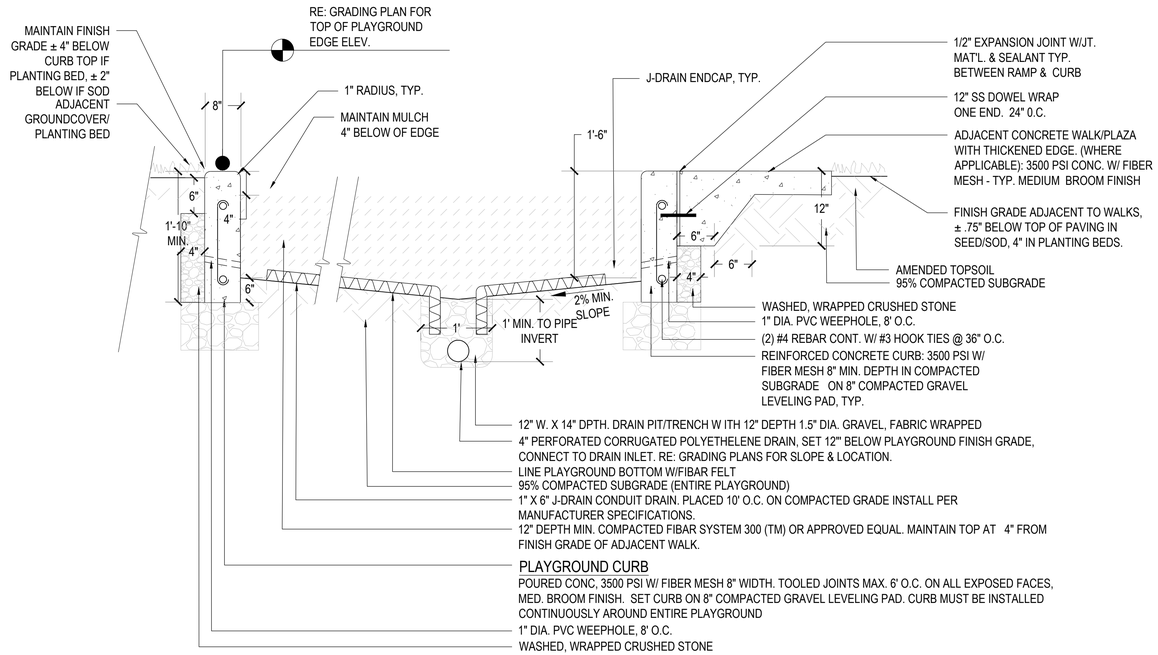

1 PLAYGROUND CURB
Scale: NTS

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LS5.3
SHEET 101 OF 109

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1 MASTER LANDSCAPE PLAN
SCALE: 1"=150'
NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=150'-0"
0 75 150 300 450 NORTH

LEGEND

- DECIDUOUS TREE
- EVERGREEN TREE
- ORNAMENTAL TREE
- SHRUB BED
- SOD
- NATIVE SEED

PLANT SCHEDULE

CANOPY TREE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER/HT.
CS2	16	Catalpa speciosa	Northern Catalpa	B & B	2"Cal
CO	15	Celtis occidentalis	Common Hackberry	B & B	2"Cal
GI	12	Gleditsia triacanthos `Imperial`	Imperial Honeylocust	B & B	2"Cal
QM	9	Quercus muehlenbergii	Chinkapin Oak	B & B	2"Cal
QUE	12	Quercus robur	English Oak	B & B	2"Cal
TG	20	Tilia cordata `Glenleven`	Glenleven Littleleaf Linden	B & B	2"Cal
UA	10	Ulmus x `Accolade`	Accolade Elm	B & B	2"Cal

EVERGREEN TREE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER/HT.
PP	4	Pinus edulis	Pinon Pine	B & B	8` Ht
PL	5	Pinus flexilis	Limber Pine	B & B	8` Ht
PH	38	Pinus heldreichii	Bosnian Pine	B & B	8` Ht
PN	60	Pinus nigra	Austrian Black Pine	B & B	8` Ht

ORNAMENTAL TREE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER/HT.
AT	4	Acer tataricum `Hot Wings`	Hot Wings Tatarian Maple	B & B	2"Cal
CP	2	Crataegus phaenopyrum	Washington Hawthorn	B & B	2"Cal

DECIDUOUS SHRUB	QTY	BOTANICAL NAME	COMMON NAME	SIZE
CC	113	Caryopteris x clandonensis `Blue Mist`	Blue Mist Shrub	5 gal
FN	22	Forestiera neomexicana	New Mexican Privet	5 gal
FA	6	Forsythia x intermedia `Arnold`s Dwarf`	Dwarf Forsythia	5 gal
PO	9	Physocarpus opulifolius `Dart`s Gold`	Yellow Ninebark	5 gal
RG2	90	Rhus aromatica `Gro-Low`	Gro-Low Fragrant Sumac	5 gal
RL	8	Rhus typhina `Laciniata`	Cutleaf Staghorn Sumac	5 gal
SW	6	Spiraea japonica `Anthony Waterer`	`Anthony Waterer` Spirea	5 gal
VL	10	Viburnum lentago	Nannyberry	5 gal

EVERGREEN SHRUB	QTY	BOTANICAL NAME	COMMON NAME	SIZE
JB	5	Juniperus horizontalis `Blue Chip`	Blue Chip Juniper	5 gal
JA	13	Juniperus sabina `Arcadia`	Arcadia Juniper	5 gal
BUF	121	Juniperus sabina `Buffalo`	Buffalo Juniper	5 gal
JM	37	Juniperus scopulorum `Moonglow`	Moonglow Juniper	5 gal
JS	12	Juniperus x media `Sea Green`	Sea Green Juniper	5 gal
PC	7	Pinus mugo `Compacta`	Dwarf Mugo Pine	5 gal

ORNAMENTAL GRASS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
CK	46	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	1 gal
MM	16	Miscanthus sinensis `Morning Light`	Morning Light Silver Grass	1 gal
PEN	13	Pennisetum alopecuroides `Red Head`	Red Head Fountain Grass	1 gal

PERENNIAL	QTY	BOTANICAL NAME	COMMON NAME	SIZE
ES	26	Echinacea purpurea `Ruby Star`	Purple Coneflower	1 gal
NW	33	Nepeta x faassenii `Walkers Low`	Walkers Low Catmint	1 gal
RG3	55	Rudbeckia fulgida sullivantii `Goldsturm`	Black-eyed Susan	1 gal

NATIVE SEED MIX

LOW GROW MIX BY ARKANSAS VALLEY SEED, INC.

30% EPHRAIM CRESTED WHEATGRASS
25% SHEEP FESCUE
20% PERENNIAL RYE
15% CHEWINGS FESCUE
10 CANADA BLUEGRASS

SEEDING RATE:
NEW SEEDING:
DRYLAND: 20-25 LBS/ACRE
IRRIGATED: 40 LBS/ACRE

LANDSCAPE INTENT STATEMENT:

THE INTENT OF THE LANDSCAPE IS TO PROVIDE A WATER EFFICIENT DESIGN, UTILIZING DROUGHT TOLERANT PERENNIALS, GRASSES, SHRUBS AND TREES WHILE CREATING SEASONAL INTEREST FOR THE ENTIRE SITE.
SCREENING OF ADJACENT PROPERTIES AND THEIR ASSOCIATED INDUSTRIAL USES IS ACCOMPLISHED WITH EVERGREEN PLANT MATERIAL AND FENCING .
CANOPY TREES LINE BOTH SIDES OF THE STREETS PROVIDING SHADE AND REDUCING THE HEAT EFFECT OF THE ADJACENT WALKS AND ROADWAYS WHILE CREATING AN INVITING ATMOSPHERE FOR PEDESTRIANS.
THE LANDSCAPE WILL BE INSTALLED IN PHASES CLOSELY FOLLOWING THE PHASES OF VERTICAL CONSTRUCTION.

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
MASTER LANDSCAPE PLAN

PROJECT NO: 056829
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LP0.1
SHEET 102 OF 109

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LANDSCAPE NOTES

SITE PREP

1. LANDSCAPE CONTRACTOR TO REFERENCE CIVIL ENGINEERING DRAWINGS REGARDING DRAINAGE AND EROSION CONTROL NOTES, DETAILS AND PROCEDURES.
2. ALL WORK SHALL CONFORM TO LOCAL TOWN AND COUNTY CODES. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THE LANDSCAPE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
3. ALL UTILITY EASEMENTS SHALL REMAIN UNOBSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR USE OF MAINTENANCE EQUIPMENT ENTRY.
4. SEE CIVIL ENGINEER'S DRAWINGS FOR GRADING AND DRAINAGE, EROSION CONTROL, PAVING AND SLEEVES, UTILITIES, AND OTHER ENGINEERED DETAILS.
5. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
6. A PRE-CONSTRCUTION MEETING IS REQUIRED BETWEEN THE LANDSCAPE CONTRACTOR, PROPERTY OWNER AND COT LANDSCAPE ARCHITECTURE PERSONNEL BEFORE START OF CONSTRUCTION.
7. CONTRACTOR SHALL MINIMIZE ALL DISTURBANCE TO NON-IMPACTED AREAS.
8. SITE MUST BE CLEAN AND FREE OF ALL CONSTRUCTION DEBRIS BEFORE FINAL ACCEPTANCE.
9. CONTRACTOR IS RESPONSIBLE FOR SETUP OF BARRICADES, WARNING SIGNAGE, OR OTHER PROTECTIVE DEVICES IF ANY EXCAVATIONS ARE LEFT EXPOSED AFTER ON-SITE WORK HOURS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE ALL NECESSARY PERMITS FOR CONSTRUCTION WORK WITHIN THE TOWN. A SEPARATE LANDSCAPE CONSTRUCTION PERMIT IS REQUIRED AND USE AND SALES TAX WILL BE COLLECTED. WATER CONNECTION FEES ARE TO BE PAID PRIOR TO THE METER SETTING. A BACK FLOW PERMIT AND INSPECTION IS REQUIRED PRIOR TO THE METER BEING INSTALLED IN THE VAULT.
11. TOPSOIL IS TO BE STRIPPED & STOCKPILED ON-SITE FOR LATER USE.
12. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING OR NEW SITE IMPROVEMENTS DISTURBED OR DAMAGED DUE TO THEIR OPERATIONS. DAMAGED MATERIALS SHALL BE REPLACED/REPAIRED TO ITS PRIOR CONDITION.
13. LOCATE ALL UTILITIES PRIOR TO ANY DIGGING OR LANDSCAPE PLANTING. CONTRACTOR SHALL HAND DIG ALL PLANTING PITS ADJACENT TO UTILITIES. IF UTILITIES ARE DAMAGED, REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
14. PRIOR TO INSTALLATION OF PLANT MATERIALS, AREAS THAT HAVE BEEN COMPACTED OR DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE THOROUGHLY LOOSENED & AMENDED.
15. SOIL AMENDMENTS-A MINIMUM 4 CUBIC YARDS PER 1,000 SF OF A CLASS I OR II COMPOST SHALL BE DISTRIBUTED ACROSS THE SOIL SURFACE OF ALL LANDSCAPE AREAS IN A UNIFORM 1⅓" (6 CUBIC YARDS = 2 INCH LAYER) AND INCORPORATED INTO THE TOP 8 INCHES OF SOIL WITH A ROTOTILLER CAPABLE OF TILLING TO 8 INCHES IN DEPTH. SHRUB BEDS SHALL BE AMENDED THROUGHOUT THE ENTIRE BED PRIOR TO PLANTING, NOT JUST THE PLANTING HOLE.

TURF, PLANT & GROUNDCOVER MATERIAL

1. ANY SUBSTITUTION OR ALTERATION OF PLANT OR LANDSCAPE MATERIALS IN LOCATION, SPECIES, TYPE, ETC. SHALL BE ALLOWED ONLY WITH APPROVAL OF THE LANDSCAPE ARCHITECT, OWNER OR OWNERS REPRESENTATIVE . OVERALL PLANT QUANTITY AND QUALITY TO BE CONSISTENT WITH APPROVED PLANS.
2. ALL PLANT MATERIALS SHALL BE IN ACCORDANCE WITH AAN SPECIFICATIONS FOR NUMBER ONE GRADE.
3. ALL TREES IN TURF AND SEED AREAS TO RECEIVE MAX. 6' DIA. MULCH RING WITH 4" DEPTH. OF SPECIFIED WOOD MULCH. NO STEEL EDGING IS REQUIRED AROUND TREE RING EDGES WITHIN TURF AREAS.
4. PROPOSED TREE LOCATIONS SHALL HAVE A MINIMUM SEPARATION OF 4' BETWEEN WATER OR SEWER SERVICE LINES AND A MINIMUM SEPARATION OF 10' BETWEEN WATER OR SEWER MAIN LINES. PROPOSED TREE LOCATIONS SHALL HAVE A MINIMUM SEPARATION OF 10' BETWEEN GAS LINES.
5. ALL PROPOSED IRRIGATED TURF AREAS SHALL BE SODDED. SOD SHALL BE LAID ON A FIRM BED WITH TIGHT JOINTS AND WITHOUT VOIDS.
6. ALL SOD SHALL BE 90/10 FESCUE/ BLUEGRASS FROM A SINGLE GROWER.
7. TREE WRAP TO BE APPLIED IN LATE FALL AFTER INSTALLATION, AND REMOVED THE FOLLOWING SPRING. REMOVE ANY STRING OR WIRE AROUND TREE TRUNKS AT TIME OF INSTALLATION.
8. HOME BUILDER INSTALLED STREET TREE LOCATIONS SHALL BE ADJUSTED TO ALLOW FOR A MINIMUM OF A 30' CLEARANCE TO STREET LIGHTS (15' MINIMUM IF THE TREE IS ORNAMENTAL). STREET TREE LOCATIONS SHALL ALSO BE ADJUSTED TO AVOID CONFLICT WITH DRIVEWAY, POSTAL BOXES & UTILITY LOCATIONS.
9. CONTRACTOR SHALL REPORT ANY DISCREPANCY FOUND IN THE FIELD VERSUS THE LANDSCAPE DRAWINGS IMMEDIATELY TO THE LANDSCAPE ARCHITECT, OWNER'S REPRESENTATIVE, AND/OR THE TOWN/COUNTY PRIOR TO ANY CONSTRUCTION OR DEMOLITION ACTIVITY. FAILURE TO MAKE SUCH CONFLICTS KNOWN WILL RESULT IN THE CONTRACTOR'S LIABILITY TO RELOCATE AND REPAIR.
10. MAINTAIN A MINIMUM THREE FOOT CLEARANCE AROUND FIRE HYDRANTS, FIRE DEPARTMENT CONNECTIONS OR OTHER FIRE SERVICE EQUIPMENT. NO TREES OR SHRUBS WILL BE ALLOWED WITHIN THIS AREA.
11. NO PLANT MATERIAL SHALL BE PLANTED WITHIN 10' OF ANY EXISTING OR PROPOSED ELECTRICAL SWITCHGEARS, TRANSFORMERS OR OTHER ELECTRICAL UTILITY EQUIPMENT. PLANT MATERIAL MAY BE FIELD ADJUSTED TO PROVIDE THE 10' CLEAR SPACE AND ACCESSIBILITY REQUIRED BY THE UTILITY'S OWNER/OPERATOR. PROPOSED PLANT SPECIES MAY BE SUBJECT TO CHANGE PENDING COMMERCIAL AVAILABILITY AT TIME OF CONSTRUCTION. ALL SPECIES SUBSTITUTIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. OVERALL PLANT QUANTITIES & SIZES SHALL REMAIN AS INDICATED ON THE PLANT SCHEDULE. CONTRACTOR SHALL VERIFY THAT ANY SUBSTITUTED PLANT SPECIES ARE ACCEPTABLE TO THE LOCAL MUNICIPALITY OR GOVERNING JURISDICTIONS.

PLANTING BEDS

1. ALL PROPOSED PLANTING BEDS SHALL CONTAIN THE SPECIFIED MULCH AND INCLUDE MIRAFI WEED BARRIER FABRIC OR EQUAL SECURED WITH PINS. OVERLAP FABRIC MIN. 24" AT EDGES.
2. ALL PLANTING BEDS SHALL RECEIVED WOOD MULCH.
3. WOOD MULCH SHALL BE 'GORILLA HAIR' OR EQUAL SHREDDED CEDAR MULCH, 4" DEPTH.
4. EDGING BETWEEN TURF AND PLANTING BEDS SHALL BE RYERSON 12-GAUGE, GREEN COLOR, PERFORATED STEEL EDGING OR EQUIVALENT. ANY ALTERNATE EDGING MUST BE A ROLLED-TOP, PERFORATED, CORROSION RESISTANT STEEL PRODUCT. NO EDGING IS REQUIRED AGAINST HARDSCAPE/WALK AREAS OR AT TREE RING EDGES. EDGING SHALL BE INSTALLED TO AVOID IMPEDING DRAINAGE. RE: DETAILS FOR INSTALLATION IN LOW DRAINAGE AREAS.
5. FOR TREES NOT IN PLANTING BEDS, ALLOW A 6'-0" DIAMETER BED (TREE RING) WITHOUT SOD AROUND ROOT COLLAR. APPLY SPECIFIED WOOD MULCH & DEPTH AROUND COLLAR FOLLOWING SOD INSTALLATION. NO FABRIC OR EDGER IS NECESSARY WITHIN TREE RINGS IN NATIVE AREAS. TREES IN PLANTING BEDS SHALL NOT HAVE WEED BARRIER INSTALLED WITHIN 6' OF THEIR TRUNKS.
6. ALL SHRUBS IN SEEDED AREAS ARE TO BE GROUPED INTO BEDS AND RECEIVE 4" DEPTH OF MULCH SPECIFIED IN THE DRAWINGS.. NO EDGER OR WEED CONTROL FABRIC IS REQUIRED. BED SHALL EXTEND TO DRIP ZONES OF PLANT MATERIAL.

IRRIGATION

1. ALL TURF AREAS TO BE SPRAY IRRIGATED. ALL SHRUB BEDS TO BE DRIP IRRIGATED. ALL PERENNIAL AREAS TO BE IRRIGATED WITH 12" POP-UP SPRAY HEADS. TREES AND SHRUBS MUST BE IRRIGATED BY A SEPARATE ZONE THAN SOD/GRASS; THIS INCLUDES TREES PLANTED IN SOD AND NATIVE SEED AREA. THIS SYSTEM IS AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM.

HARDSCAPE

1. REFER TO SITE PLANS & DETAILS FOR SPECIALTY CONCRETE LOCATIONS WHERE APPLICABLE.

WARRANTY & MAINTENANCE

1. CONTRACTOR IS TO MAINTAIN ALL PLANTINGS AND ASSOCIATED IRRIGATION SYSTEM INSTALLED UNDER THIS CONTRACT UNTIL FINAL ACCEPTANCE AND TURNOVER TO OWNER. THIS MAINTENANCE SHALL INCLUDE PROPER WATERING OF ALL PLANTS, AND MOWING OF TURF/SEED AREAS IF NECESSARY.
2. SITE MUST BE CLEAN AND FREE OF ALL CONSTRUCTION DEBRIS BEFORE FINAL ACCEPTANCE.
3. ALL PLANT MATERIAL WILL BE COVERED BY A ONE (1) CALENDAR YEAR WARRANTY. THE CONTRACTOR SHALL REPLACE DEAD. UNHEALTHY, OR OTHERWISE UNSATISFACTORY MATERIAL THROUGHOUT THIS PERIOD. THE WARRANTY SHALL BEGIN UPON FINAL ACCEPTANCE OF THE JOB.
4. LANDSCAPING SHALL BE PLANTED AND MAINTAINED IN A LIVING CONDITION BY THE OWNER OR ASSIGNS OR OWNERS ASSOCIATION. TREES AND SHRUBS MUST HAVE A 100% ONGOING SURVIVAL RATE. ANY DEAD OR DAMAGED PLANT MATERIAL (AS DETERMINED BY THE OWNER) SHALL BE REPLACED. NON-LIVING GROUND COVERS, SUCH AS ROCK OR MULCH, MUST BE 100% INTACT AFTER ONE YEAR AND 100% INTACT THEREAFTER.
5. LANDSCAPE AREAS WITHIN THE PROPERTY AND WITHIN THE ADJACENT RIGHT OF WAY SHALL BE MAINTAINED BY THE PROPERTY OWNER.

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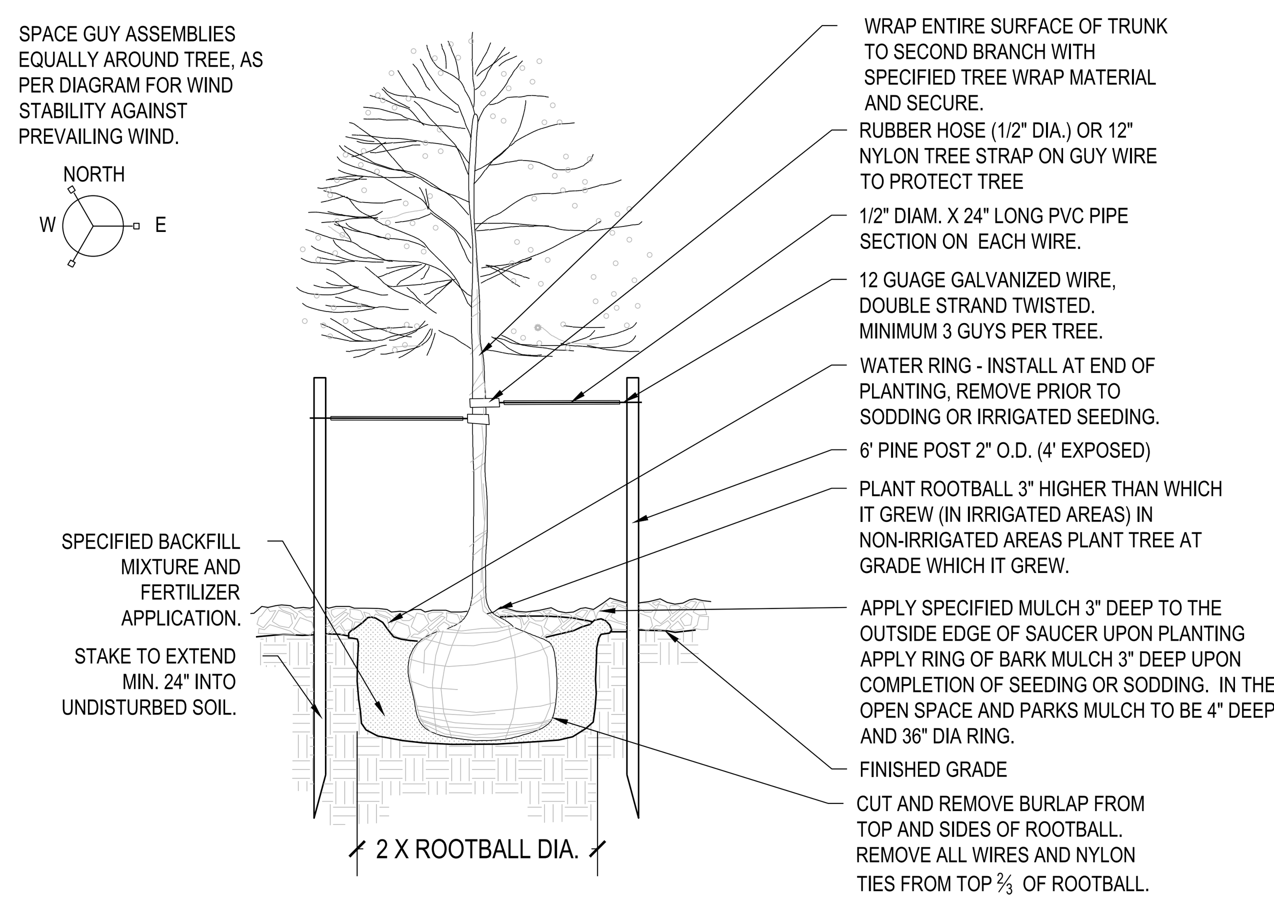
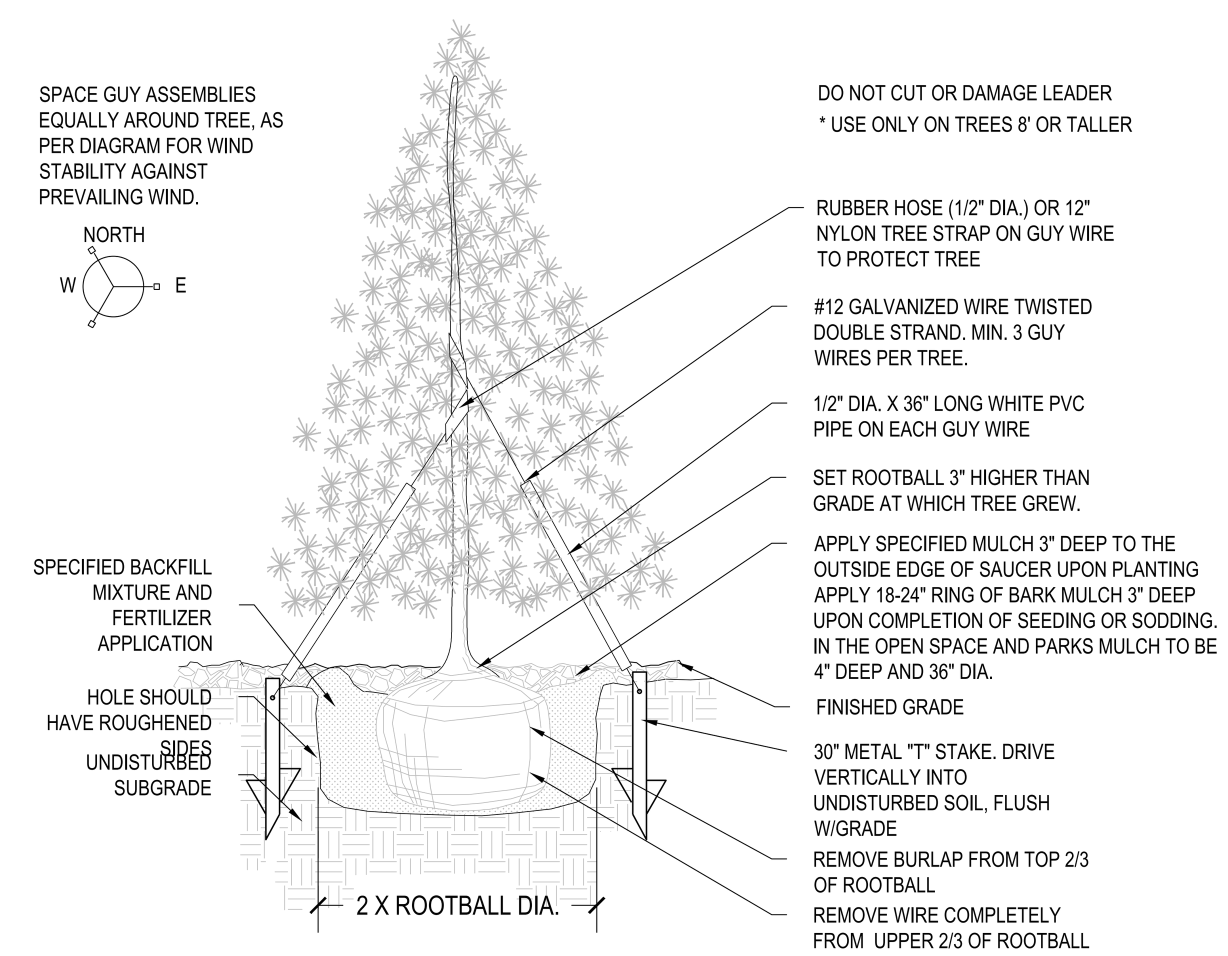
NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
3. STREET TREES ARE TO BE LIMBED UP TO 8'. PRUNING SHALL OCCUR IN THE APPROPRIATE MANNER AT THE NURSERY. SUBSTANTIAL PRUNING WILL NOT BE ALLOWED ON-SITE.



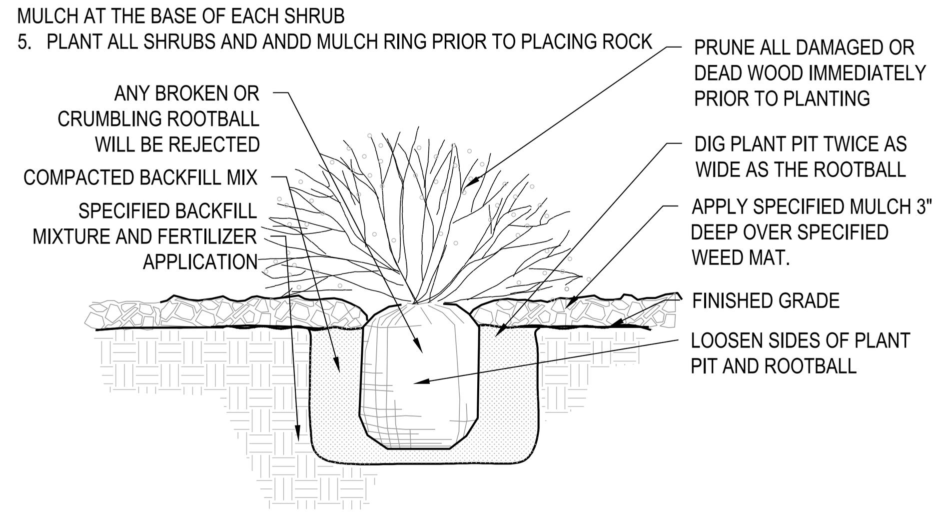
1 DEDIDUOUS TREE PLANTING
Scale: NTS

NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
2. TREES PLANTED WITHIN DRAIN STRIP OR SCREE AREA SHALL HAVE 3'-0" DIAMETER RING OF MULCH 5" DEEP AT THE BASE OF EACH TREE.

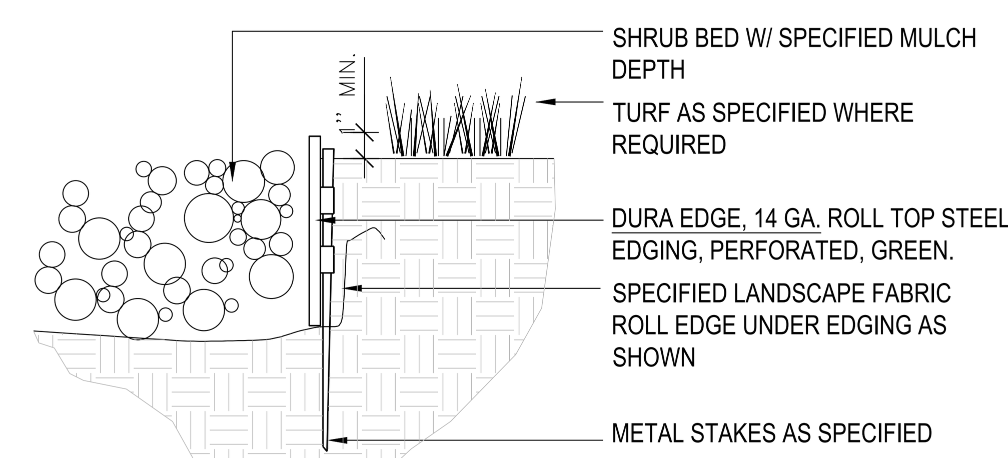


2 EVERGREEN TREE PLANTING
Scale: NTS

NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS
2. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB.
3. ALL JUNIPER PLANTS SHOULD BE PLANTED SO TOP OF ROOT MASS OCCURS AT FINISH GRADE OF MULCH LAYER
4. SHRUBS PLANTED WITHIN THE DRAIN STRIP OR SCREE AREAS SHALL HAVE A 12" DIAMETER RING OF MULCH AT THE BASE OF EACH SHRUB
5. PLANT ALL SHRUBS AND ANDD MULCH RING PRIOR TO PLACING ROCK



3 SHRUB PLANTING
Scale: NTS



NOTES:
1. SET ALL EDGING 1" ABOVE FINISH GRADE AS SHOWN.
2. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR, AND FLUSH W/ GRADES OF CONCRETE.
3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
4. FOR PRODUCT ORDERING, DIVIDE NUMBER OF FEET NEEDED BY 9.33 TO OBTAIN THE NUMBER OF 10' PIECES NEEDED.

4 STEEL EDGER - PERFORATED
Scale: NTS

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No.	REVISION	BY	DATE
1	REVIEW COMMENTS		07.22.2022
2.	REVIEW COMMENTS		11.11.2022
3.	REVIEW COMMENTS		02.21.2023

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
LANDSCAPE NOTES AND DETAILS

PROJECT NO:	056829
DESIGNED BY:	CGR
DRAWN BY:	CGR
DATE:	03.15.2022

LP0.2

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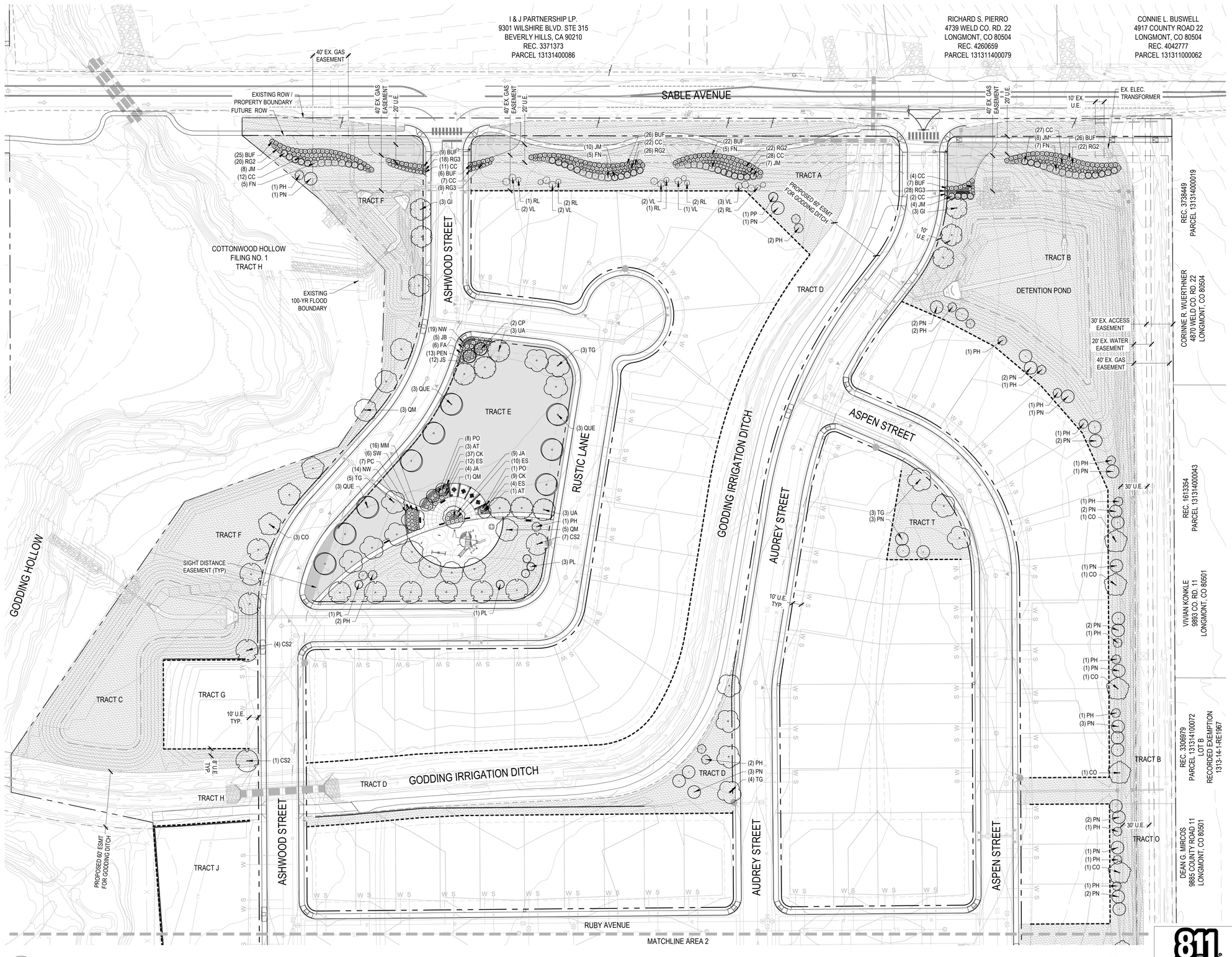
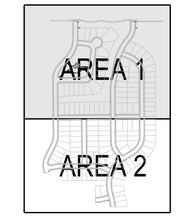


KEY MAP



LANDSCAPE KEY

- DECIDUOUS TREES
- EVERGREEN TREES
- ORNAMENTAL TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- PERENNIALS
- SOD
- NATIVE SEED MIX
- MULCH
- CRUSHER FINES
- EDGER - PERFORATED
- 3-RAIL FENCE
- SIGHT DISTANCE EASEMENT*

* THE SIGHT DISTANCE EASEMENT IS A NO-BUILD AREA AND RESTRICTS VEGETATION AND PERMANENT STRUCTURES MORE THAN THREE FEET TALL, EXCEPT FOR DECIDUOUS TREES AND OPEN RAIL FENCE.

1 LANDSCAPE PLAN-AREA 1

SCALE: 1"=50'

NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=50'

0 25 50 100 150 NORTH

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CONSTRUCTION PLANS

COTTONWOOD HOLLOW - FILING 4

FIRESTONE, COLORADO

LANDSCAPE PLAN

PROJECT NO:	056829
DESIGNED BY:	CGR
DRAWN BY:	CGR
DATE:	03.15.2022

LP1.1

SHEET 104 OF 109

Y:\COTTONWOOD HOLLOW\LANDSCAPE ARCHITECTURE\FILING 4\SITE PLAN\SHEETS-01 FILING 4.DWG - 2/17/2023 9:49:11 AM - Kurt Moje

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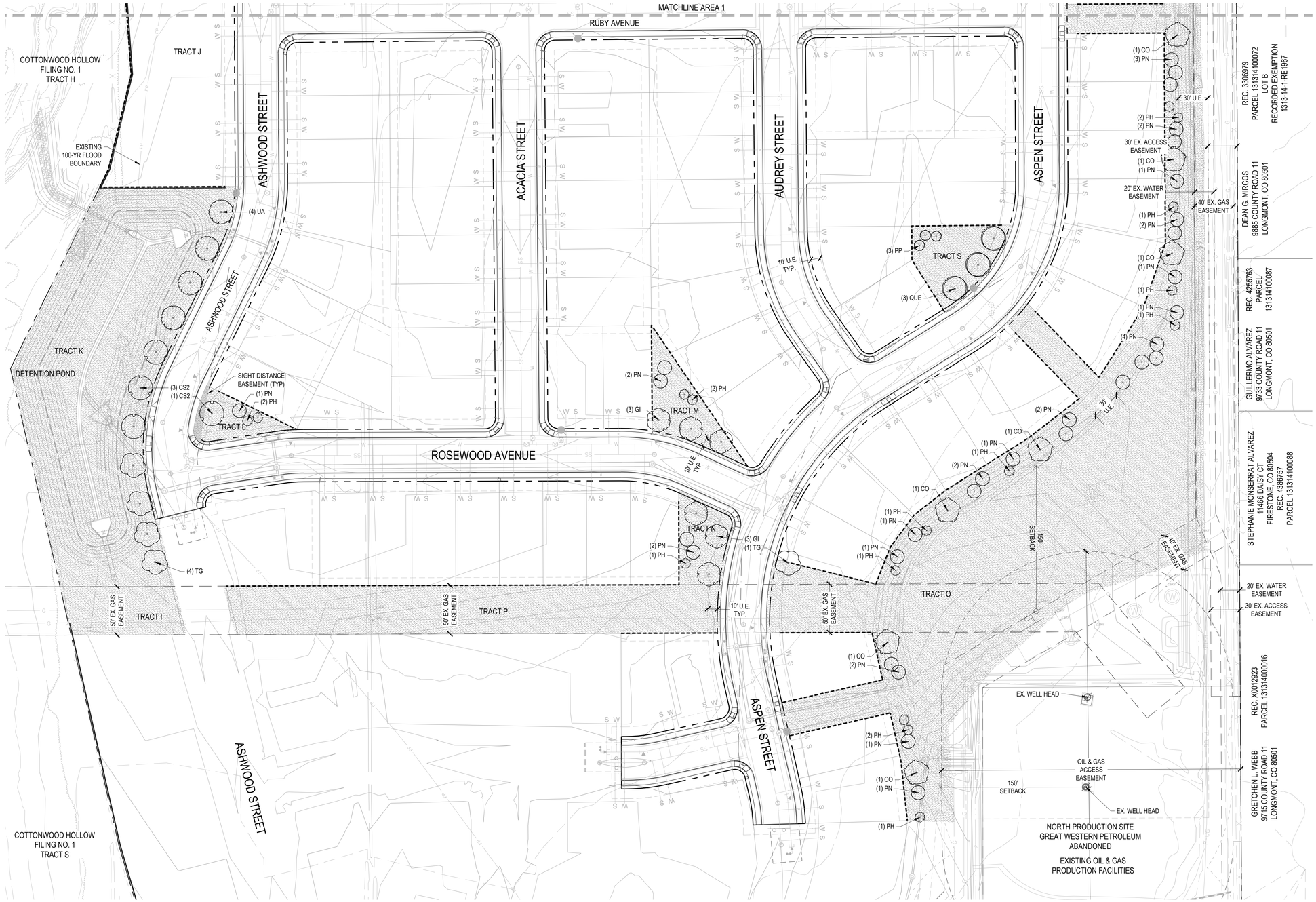

1 LANDSCAPE PLAN-AREA 2

SCALE: 1"=50'
NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=50'
0 25 50 100 150 NORTH

KEY MAP

LANDSCAPE KEY

- DECIDUOUS TREES
- EVERGREEN TREES
- ORNAMENTAL TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- ORNAMENTAL GRASSES
- PERENNIALS
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LANDSCAPE PLAN

PROJECT NO:	056829
DESIGNED BY:	CGR
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SHEET 105 OF 109

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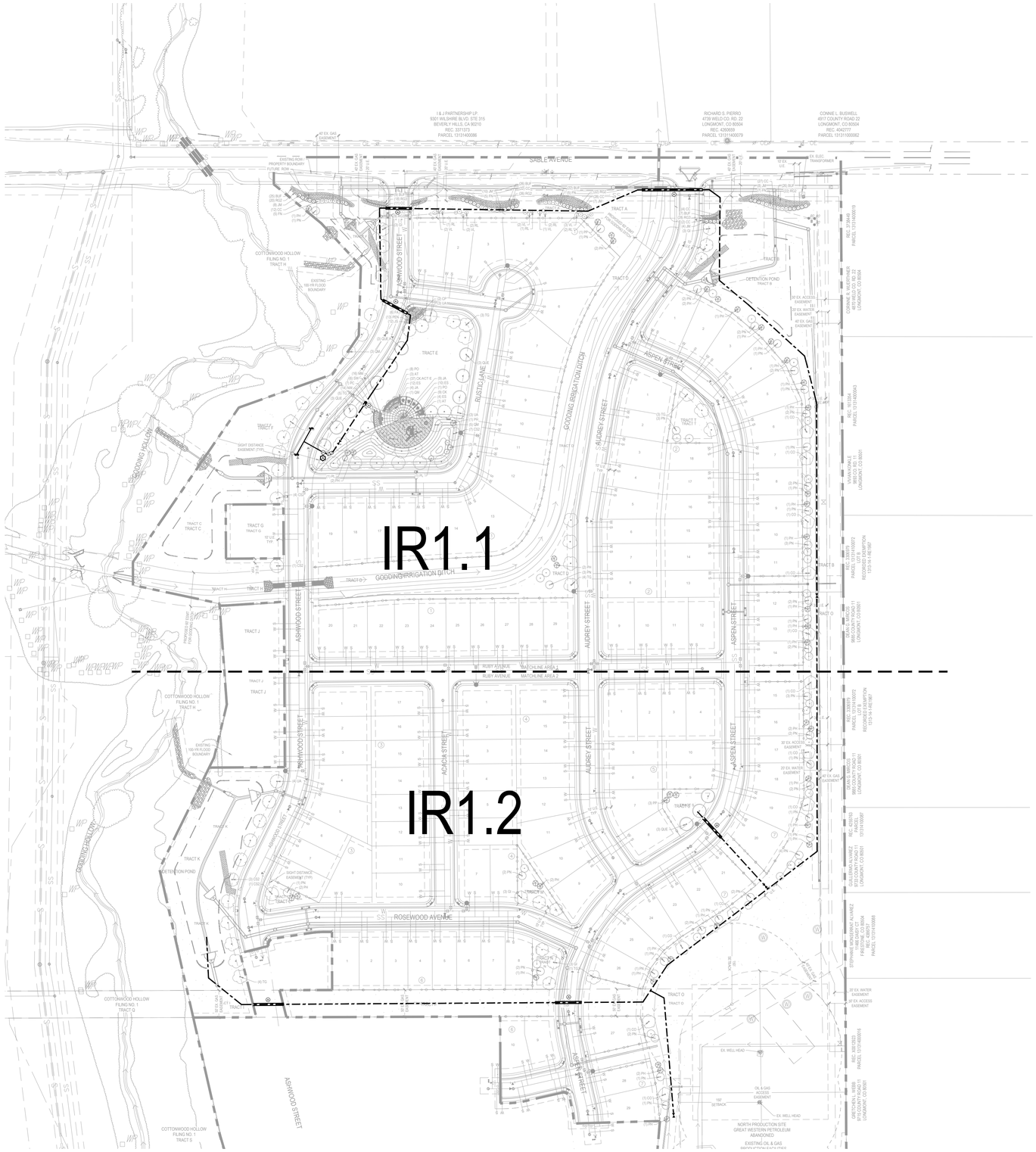

1 IRRIGATION KEYMAP PLAN
SCALE: 1"=150'
NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=100'-0"
0 50 100 200 300 NORTH

IRRIGATION SCHEDULE

SYMBOL	DESCRIPTION	DETAIL NO.
A	ELECTRIC CONTROLLER	1
	PVC MAINLINE - 3" OR LARGER	2
	PVC SLEEVING	3
	FEBCO 825YA BACKFLOW PREVENTER	4
M	WATER METER	NA

SLEEVE LEGEND

SYMBOL	SLEEVE (COUNT) SIZE
A	(1)6" & (1)2"
PIPE MATERIAL	CL. 160 PVC
INSTALLATION DEPTH	24"

IRRIGATION DEVELOPMENT DESIGN NOTES

1. THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PROVIDE PEAK SEASON IRRIGATION WITHIN AN SIX NIGHT, TEN HOUR PER NIGHT WATERING PERIOD DURING NATIVE GRASS ESTABLISHMENT. IRRIGATION SHALL OCCUR BETWEEN THE HOURS OF 8:00 PM AND 6:00 AM.

2. THE MAINLINE SYSTEM WILL BE DESIGNED SUCH THAT VELOCITIES WITHIN THE MAINLINE PIPING DO NOT EXCEED FIVE FEET PER SECOND.

3. THE MAXIMUM FLOW RATE REQUIRED FOR THE SITE IS 78 GPM. THE STATIC PRESSURE AVAILABLE AT THE SITE HAS NOT BEEN DETERMINED. THE REQUIRED STATIC PRESSURE FOR THE SITE IS 90 PSI AND A BOOSTER PUMP MAY BE REQUIRED.

4. THE IRRIGATION INFORMATION SHOWN ON THESE PLANS IS CONCEPTUAL.

5. IRRIGATION DESIGN APPROACH
   - 5.1. TURF AREAS
     - 5.1.1. SMALL AREAS (25 FEET WIDE OR LESS) SHALL BE IRRIGATED WITH FIXED NOZZLE POP-UP SPRAY HEADS WITH MATCHED PRECIPITATION NOZZLES. NOZZLES SHALL BE SIZES TO PROVIDE HEAD TO HEAD COVERAGE.
     - 5.1.2. LARGE TURF AREAS (WIDER THAN 25 FEET) SHALL BE IRRIGATED WITH GEAR DRIVEN ROTOR HEADS WITH A MINIMUM PRECIPITATION RATE OF .45" PER HOUR FOR A FULL CIRCLE HEAD.
   - 5.2. SHRUB BED AREAS - BED AREAS WITH PLANT MATERIAL ONE GALLON IN SIZE OR LARGER SHALL BE DRIP IRRIGATED.
   - 5.3. PERENNIAL AND ANNUAL BED AREAS - PERENNIAL AND ANNUAL BED AREAS SHALL BE SPRAY IRRIGATED WITH 12" POP-UP SPRAY HEADS WITH A MAXIMUM SPACING OF 10' O.C. OR IN AREAS ARE LESS THAN 10 FT. WIDE SHALL BE IRRIGATED WITH SUBSURFACE IRRIGATION.
   - 5.4. NATIVE GRASS AREAS- SHALL BE IRRIGATED WITH LARGE ROTOR SPRINKLERS WHEREVER POSSIBLE, HEADS WILL BE LAID OUT USING A SPREAD SPACING TECHNIQUE TO REDUCE THE QUANTITY OF EQUIPMENT.

6. IRRIGATION SYSTEM SHALL BE FULLY AUTOMATIC AND INCLUDE A WEATHER SENSING DEVICE.

DIRECTORY

IRRIGATION SCHEDULE	IR0.1
IRRIGATION NOTES	IR0.1
IRRIGATION KEYMAP	IR0.1
IRRIGATION PLANS	IR1.1 - IR1.2
IRRIGATION DETAILS	IR2.1

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
IRRIGATION NOTES, SCHEDULE & KEYMAP

PROJECT NO:	056829
DESIGNED BY:	EWP
DRAWN BY:	EWP
DATE:	02/21/2023

IR0.1
SHEET 106 OF 109

T:\7500-7599_JOBS\7521-COTTONWOOD HOLLOW\7521-COTTONWOOD HOLLOW-IRR-JOD 2023.02.17.DWG - 2/20/2023 8:39:58 AM - Ed

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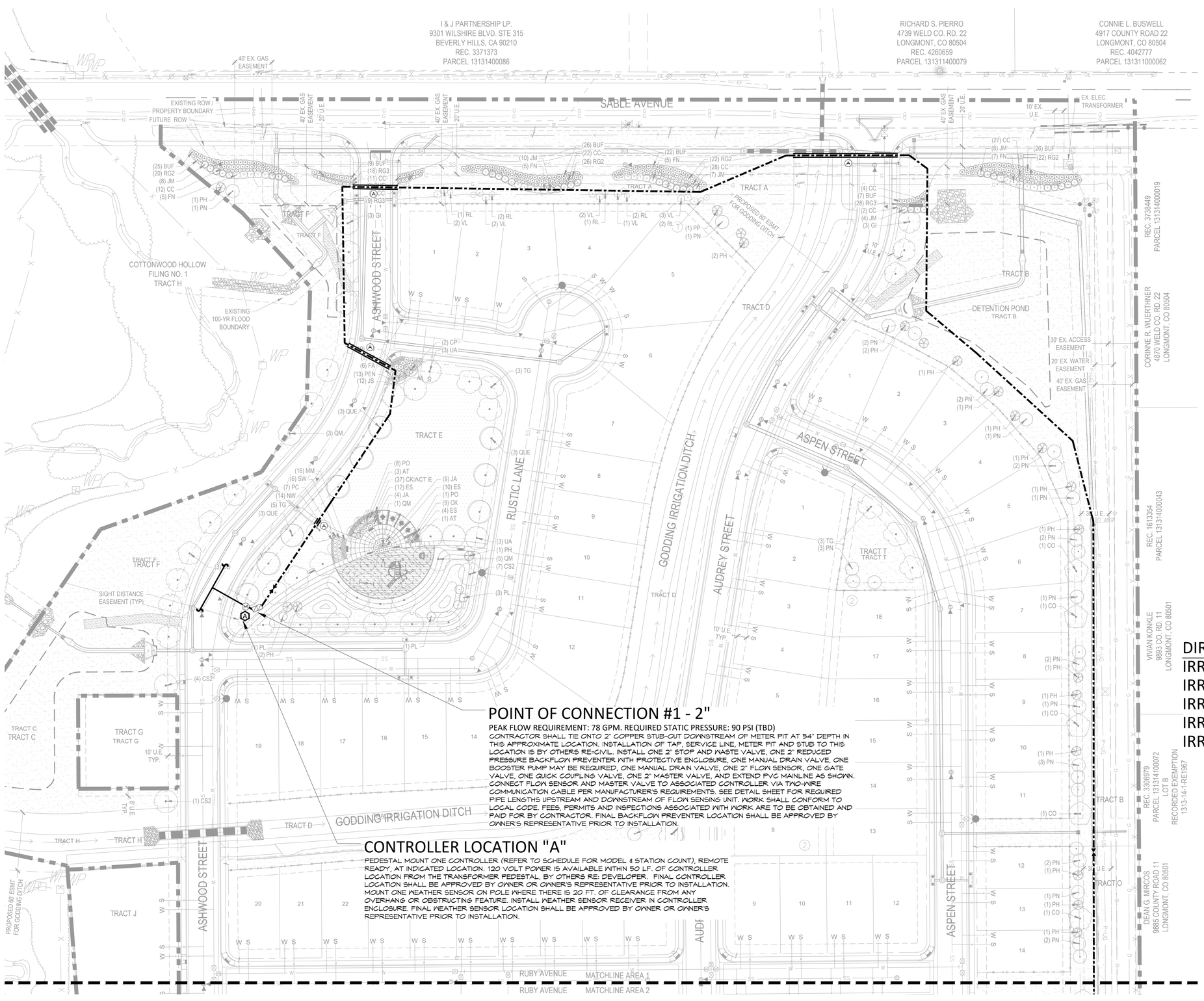


POINT OF CONNECTION #1 - 2"

PEAK FLOW REQUIREMENT: 78 GPM. REQUIRED STATIC PRESSURE: 90 PSI (TBD)

CONTRACTOR SHALL TIE ONTO 2" COPPER STUB-OUT DOWNSTREAM OF METER PIT AT 54" DEPTH IN THIS APPROXIMATE LOCATION. INSTALLATION OF TAP, SERVICE LINE, METER PIT AND STUB TO THIS LOCATION IS BY OTHERS RE-CIVIL. INSTALL ONE 2" STOP AND WASTE VALVE, ONE 2" REDUCED PRESSURE BACKFLOW PREVENTER WITH PROTECTIVE ENCLOSURE, ONE MANUAL DRAIN VALVE, ONE BOOSTER PUMP MAY BE REQUIRED, ONE MANUAL DRAIN VALVE, ONE 2" FLOW SENSOR, ONE GATE VALVE, ONE QUICK COUPLING VALVE, ONE 2" MASTER VALVE, AND EXTEND PVC MAINLINE AS SHOWN. CONNECT FLOW SENSOR AND MASTER VALVE TO ASSOCIATED CONTROLLER VIA TWO-WIRE COMMUNICATION CABLE PER MANUFACTURER'S REQUIREMENTS. SEE DETAIL SHEET FOR REQUIRED PIPE LENGTHS UPSTREAM AND DOWNSTREAM OF FLOW SENSING UNIT. WORK SHALL CONFORM TO LOCAL CODE. FEES, PERMITS AND INSPECTIONS ASSOCIATED WITH WORK ARE TO BE OBTAINED AND PAID FOR BY CONTRACTOR. FINAL BACKFLOW PREVENTER LOCATION SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

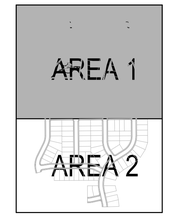
CONTROLLER LOCATION "A"

PEDESTAL MOUNT ONE CONTROLLER (REFER TO SCHEDULE FOR MODEL & STATION COUNT), REMOTE READY, AT INDICATED LOCATION. 120 VOLT POWER IS AVAILABLE WITHIN 50 LF. OF CONTROLLER LOCATION FROM THE TRANSFORMER PEDESTAL, BY OTHERS RE: DEVELOPER. FINAL CONTROLLER LOCATION SHALL BE APPROVED BY OWNER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. MOUNT ONE WEATHER SENSOR ON POLE WHERE THERE IS 20 FT. OF CLEARANCE FROM ANY OVERHANG OR OBSTRUCTING FEATURE. INSTALL WEATHER SENSOR RECEIVER IN CONTROLLER ENCLOSURE. FINAL WEATHER SENSOR LOCATION SHALL BE APPROVED BY OWNER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

1 IRRIGATION PLAN-AREA 1
SCALE: 1"=50'
NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=50'
0 25 50 100 150 NORTH

KEY MAP



DIRECTORY

IRRIGATION SCHEDULE	IR0.1
IRRIGATION NOTES	IR0.1
IRRIGATION KEYMAP	IR0.1
IRRIGATION PLANS	IR1.1 - IR1.2
IRRIGATION DETAILS	IR2.1

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FIRESTONE COLORADO

CONSTRUCTION PLANS
COTTONWOOD HOLLOW - FILING 4
FIRESTONE, COLORADO
IRRIGATION PLAN

PROJECT NO:	056829
DESIGNED BY:	EWP
DRAWN BY:	EWP
DATE:	02/21/2023

IR1.1
SHEET 107 OF 109

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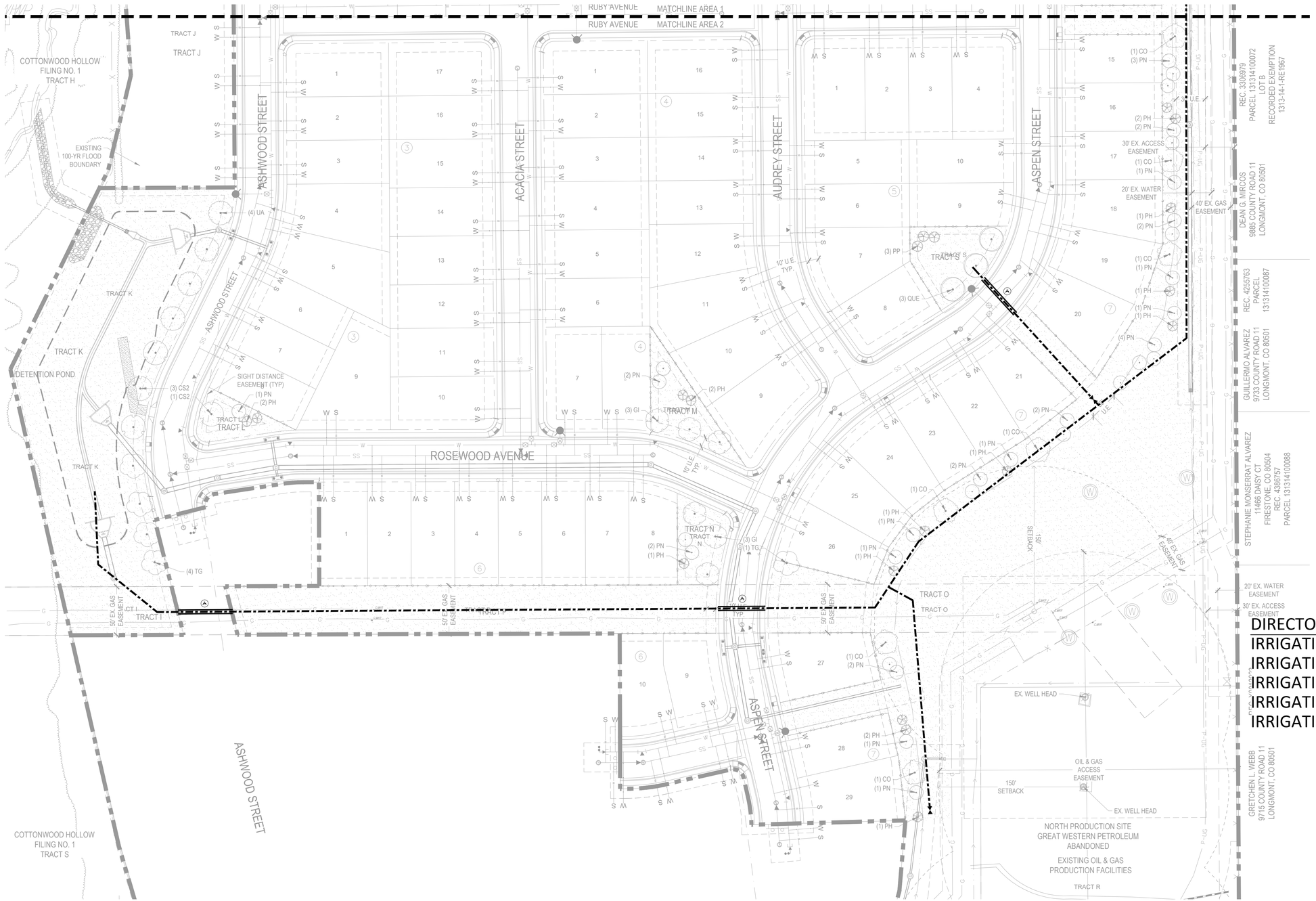
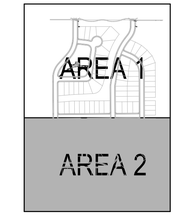


KEY MAP



DIRECTORY

IRRIGATION SCHEDULE	IR0.1
IRRIGATION NOTES	IR0.1
IRRIGATION KEYMAP	IR0.1
IRRIGATION PLANS	IR1.1 - IR1.2
IRRIGATION DETAILS	IR2.1

REVIEW
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1 IRRIGATION PLAN-AREA 2

SCALE: 1"=50'
NOTE: SHADED AREA IS PHASE 2.

SCALE: 1"=50'
0 25 50 100 150 NORTH

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SHEET 108 OF 109

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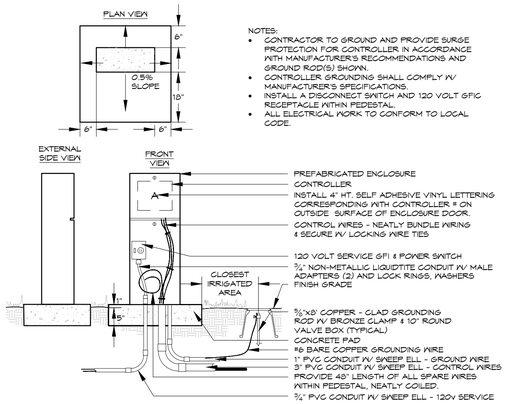
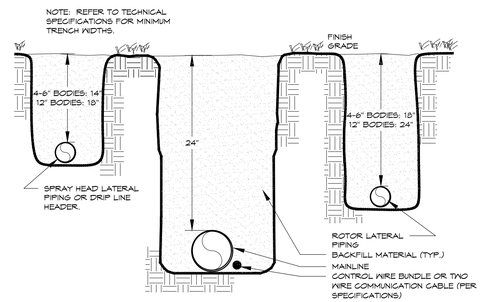


NOTES:
- CONTRACTOR TO GROUND AND PROVIDE SURGE PROTECTION FOR CONTROLLER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND GROUND ROD(S) SHOWN.
- CONTROLLER GROUNDING SHALL COMPLY W/ MANUFACTURER'S SPECIFICATIONS.
- INSTALL A DISCONNECT SWITCH AND 120 VOLT GFIC RECEPTACLE WITHIN PEDESTAL.
- ALL ELECTRICAL WORK TO CONFORM TO LOCAL CODE.

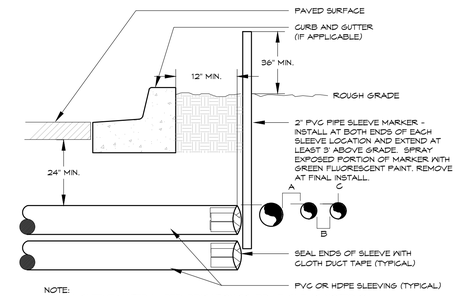
ELECTRIC CONTROLLER (1)

PEDESTAL - FRONT OPENING - TYPICAL



TRENCH (2)

24" MAINLINE

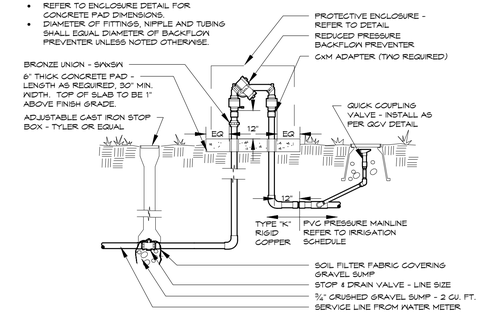


NOTE:
- ALL SLEEVE MATERIAL PER IRRIGATION SCHEDULE, SIZE AS NOTED ON PLAN.
- INSTALL SLEEVES IN SIDE-BY-SIDE CONFIGURATION WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED. SPACE SLEEVES 4" TO 6" APART. DO NOT STACK SLEEVES VERTICALLY.
- CONTRACTOR TO COORDINATE WITH FLATWORK INSTALLER TO BRAND A "V" IN SIDEWALK OR CURB AT BOTH ENDS OF SLEEVE CROSSING.
- SLEEVING THROUGH OR UNDER RETAINING WALLS, PLANTER WALLS, POND LINING, OR WATER QUALITY AREAS SHALL BE COORDINATED WITH CIVIL WORK AT APPROXIMATE LOCATIONS SHOWN.
- AN INDIVIDUAL SLEEVE SHALL CONTAIN NO MORE THAN ONE PIPE OR WIRE BUNDLE.

IRRIGATION SLEEVING (3)

TYPICAL

NOTE:
- CONCRETE PAD PENETRATIONS TO BE 1" LARGER THAN TUBING DIAMETER.
- REFER TO ENCLOSURE DETAIL FOR CONCRETE PAD DIMENSIONS.
- DIAMETER OF FITTINGS, NIPPLE AND TUBING SHALL EQUAL DIAMETER OF BACKFLOW PREVENTER UNLESS NOTED OTHERWISE.



BACKFLOW PREVENTER (4)

3/4" - 2" SYSTEMS WITH PVC CONNECTION

DIRECTORY

IRRIGATION SCHEDULE	IR0.1
IRRIGATION NOTES	IR0.1
IRRIGATION KEYMAP	IR0.1
IRRIGATION PLANS	IR1.1 - IR1.2
IRRIGATION DETAILS	IR2.1

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SHEET 109 OF 109

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COTTONWOOD HOLLOW FILING 4A
SUBDIVISION AGREEMENT

THIS SUBDIVISION AGREEMENT ("Agreement") is made and entered into this ____ day of _____ 20___, by and between the **TOWN OF FIRESTONE, a Colorado municipal corporation**, PO Box 750, Firestone, Colorado, 80516, hereinafter referred to as "Firestone" or "Town," and **COTTONWOOD COLORADO RESIDENTIAL, LLC, a Colorado limited liability company**, 5750 DTC Parkway, No. 200, Greenwood Village, Colorado, 80111, hereinafter referred to as "Owner;" and

WHEREAS, Owner has submitted a Final Plat for Cottonwood Hollow Filing 4A ("Development") attached hereto as "Exhibit A" and incorporated herein by reference. Said Final Plat has been approved by Firestone; and

WHEREAS, The Town has reviewed its Water Supply Plan, which addresses the Town's existing water obligations and its present and future water supplies. The Town has also reviewed its Conservation Plan and its Municipal Code regarding water dedications, and has determined, at its sole discretion, that it will be able to provide an adequate water supply to serve the Properties water needs at full build out pursuant to Section 29-20-301 C.R.S. et seq. As a term and condition of providing said water, the Developer hereby agrees to comply with the Town's Municipal Code regarding water dedications and cash in lieu of water dedications; and

WHEREAS, the regulations of Firestone require that the Owner enter into an Agreement with Firestone relative to improvements related to the development; and

WHEREAS, this standard agreement has been modified by the parties as indicated by the addition of certain special provisions, if any, in Section IX.

NOW, THEREFORE, in consideration of the foregoing, the parties hereto promise, covenant and agree as follows:

I. TOWN ADMINISTRATIVE OFFICIAL

For the purposes of this Agreement, "Town Administrative Official" shall be defined as the Town Manager or his or her designee.

II. DEVELOPMENT OBLIGATION AND COORDINATION

Owner shall be responsible for performance of the covenants set forth herein. Unless specifically provided in this Agreement to the contrary, all submittals to Firestone and acceptances required of Firestone in connection with this Agreement shall be submitted to, or rendered by, the Town Administrative Official, who shall have general responsibility for coordinating development with Owner.

III. PUBLIC USE DEDICATION

Owner shall convey to Firestone certain lands as described as open space and park in "Exhibit A"

attached hereto and incorporated herein by reference. Conveyance of these lands shall be by plat dedication in form and substance acceptable to Firestone. If not already conveyed, conveyance shall be made within thirty (30) days of the date of this Agreement. Owner shall also furnish at the time of conveyance, at its own expense, an ALTA title policy for all interest(s) so conveyed, subject to acceptance by the Town of Firestone. The property shall be free and clear of liens, taxes and encumbrances except for ad valorem real property taxes up to the date of dedication to the Town, but subject to all easements, rights-of-way, reservations, restrictions or other title burdens of record.

IV. PUBLIC AND COMMON FACILITIES IMPROVEMENTS

Owner agrees to design, construct and install according to Town accepted plans, all public improvements and common facilities specifically regulated necessary for the Development including, but not limited to, street, alley, curb, gutter, sidewalks, landscaping, irrigation, fencing, street lights, water, waste water, storm sewer and drainage improvements, trails and park improvements on and off of the Development (hereinafter, "Public Improvements" and "Common Facilities") and as described in "Exhibit B" attached hereto and made part hereof. Owner agrees to dedicate said improvements to Firestone, or others for the common facilities, and give a two (2) year guarantee for all improvements constructed.

A. Construction Standards

Owner shall construct all improvements required by this Agreement, and any other improvements constructed in relation to the Development, in accordance with plans and specifications accepted in writing by Firestone, and in full conformity with Firestone's current Design Standards and Construction Specifications for Public Improvements ("Standards and Specifications"), ordinances and regulations.

B. Engineering and Consulting Services

Owner agrees to furnish, at its expense, all necessary engineering and consulting services relating to the design and construction of the Development, including but not limited to, street, alleys, curb, gutter, sidewalks, landscaping, irrigation, fencing, street lights, signage, water, waste water, storm sewer and drainage improvements, trails and park improvements. Said engineering and consulting services shall conform to the standards and criteria for Public Improvements as established and accepted by Firestone. These services shall be performed by or under the supervision of a Registered Professional Engineer and/or Registered Land Surveyor, or other professionals as appropriate, licensed by the State of Colorado, and in accordance with applicable Colorado law. The design services shall include inspection services deemed necessary by Firestone.

C. Plan Submission and Acceptance

Owner shall furnish to the Town Administrative Official the required fees and complete plans for all improvements and development phases. Firestone shall issue its written acceptance or rejection of said plans as expeditiously as reasonably possible. Said acceptance or rejection shall be based upon the standards and criteria for Public Improvements as established by Firestone, and Firestone shall notify Owner of all deficiencies which must be corrected prior to acceptance. All deficiencies shall be

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corrected and said plans shall be resubmitted to and accepted by Firestone prior to construction. All acceptances required hereunder from Firestone shall be made by the Town Administrative Official.

D. Public Improvement Permits ("PIP")

Before the construction or installation of any improvements, Owner shall obtain a PIP from Firestone as provided in the Code. The PIP application, fees, plans, specifications and any other data filed by Owner will be reviewed by Firestone. If found to be complete and in accordance with Firestone's current Standards and Specifications and other pertinent requirements, Firestone will issue Owner the PIP. Owner shall reimburse Firestone for any additional expenses incurred by Firestone for the review of plans or inspection of construction work by consultants engaged by Firestone for that purpose. The Developer shall also apply and pay for a PIP for all common facilities.

E. Licensing of Contractors and/or Subcontractors

Owner shall ensure that all Contractors and subcontractors employed by the Owner shall be licensed by the Town before any work on the Improvements is commenced.

F. Testing and Inspection

Testing and inspection of the construction and materials shall be in accordance with Firestone's current Standards and Specifications. In addition, Owner shall employ, at its own expense, a licensed and registered testing company, to perform all testing of materials or construction that may be required by Firestone. Owner shall furnish copies of test results to the Town Administrative Official on a timely basis for review and acceptance prior to commencement or continuation of that particular phase of construction. At all times during said construction, Firestone shall have access to inspect the materials and workmanship of said construction and all materials and work not conforming to the accepted plans and specifications shall be repaired or removed and replaced at Owner's expense so as to conform to the accepted plans and specifications.

All work shown on the accepted plans requires inspection by the Engineering Division. Except Town of Firestone holidays, inspection services are provided Monday through Friday, from 8:00 a.m. to 4:00 p.m. During the hours listed above, inspections shall be scheduled a minimum of 24 hours in advance with the Engineering Division. Requests for inspection services beyond the hours listed above shall be submitted a minimum of 48 hours in advance in writing to the Town Engineer for acceptance. Owner shall reimburse the Town for all direct costs of the after-hours inspection services. If the request is denied, the work shall not proceed before or after the hours listed above.

Common Facilities shall have inspections performed by a professional consulting service acceptable to Firestone. At all times Firestone shall have access to inspect the materials and workmanship of the Common Facilities if deemed necessary by Firestone. Inspection services for landscaping will also include the selection and tagging of plant materials prior to delivery to the site. Landscape and irrigation inspection services shall conform to the Firestone's current Standards and Specifications or Development Code.

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G. Rights-of-way, Easements and Permits

Prior to commencement of construction of Public Improvements that require additional rights-of-way to be acquired, Owner shall acquire at its own expense and convey to Firestone, all necessary land, rights-of-way and easements required by Firestone for the construction of the proposed improvements related to the Development. Owner is only obligated to acquire that portion of land, rights-of-way and easements necessary for the construction of Public Improvements, roads and utilities required by this Agreement.

All such conveyances shall be free and clear of liens, taxes and encumbrances and shall be by Special Warranty Deed or easement in a form and substance acceptable to Firestone. All title documents shall be recorded by Firestone at Owner's expense. Owner shall also furnish, at its own expense, an ALTA title insurance policy for all interest(s) so conveyed, subject to acceptance by Firestone.

Owner shall be responsible for obtaining the following to the extent applicable:

1. All permits as required by the United States Corps of Engineers.

2. Colorado Department of Health and Environment ("CDPHE") "General Permit for Stormwater Discharges Associated with Construction Activity", required during construction.

3. Town of Firestone "Stormwater Quality Permit" per Firestone's current Standards and Specifications.

4. Air Quality Permit.

H. Street Improvements

Owner shall furnish and install, at its own expense, the street improvements in conformance with the drawings, plans and specifications accepted by Firestone and in accordance with the PIP.

I. Sidewalk Improvements

Owner shall furnish and install, at its own expense, all sidewalk improvements in conformance with the drawings, plans and specifications accepted by Firestone.

J. Street Signs, Traffic Signs, and Striping

Owner will furnish and install at Owners expense street name signs, striping, stop signs, speed limit and other signs on all streets, in accordance with the Manual of Uniform Traffic Control Devices, as from time to time amended, and other applicable legal requirements.

K. Street Lights

Owner shall furnish complete plans for street lighting to be reviewed and accepted by Firestone. The total cost of street light installation shall be Owner's obligation. Owner shall

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cause, at its own expense, United Power to install all required street lighting pursuant to United Power plans and specifications as submitted to and accepted in writing by the Town Administrative Official. Said street lights shall be installed concurrently with the streets on which they are located. The type of street lights shall be accepted by Firestone. Street lights shall be operational before the streets are open to the public. Owner shall be responsible for payment of all utility billing for street lights prior to Final Acceptance.

L. Water Improvements

Owner shall furnish and install all water mains, lines, and appurtenances in conformance with the drawings, plans and specifications accepted by Firestone.

M. Wastewater Improvements

Owner shall furnish and install all sewer lines and appurtenances in conformance with the drawings, plans and specifications approved by the St. Vrain Sanitation District.

N. Drainage Improvements

1. Drainage improvements for the Development shall be constructed by Owner in accordance with drawings, plans and specifications accepted by Firestone. Unless otherwise approved by Town, over lot grading shall not be initiated by Owner until Firestone approves drainage improvement plans by the issuance of the PIP. Owner shall provide temporary erosion control during and after over lot grading until the site is stabilized.

2. Drainage improvements for the Development shall be constructed by the Owner in accordance with accepted construction plans.

3. Owner shall be responsible for obtaining a CDPHE "General Permit for Stormwater Discharges Associated with Construction Activity" required during construction. A copy of this permit shall be submitted to Firestone.

4. Owner agrees that all construction shall be in conformance with any and all National Pollutant Discharge Elimination Systems (NPDES) standards including compliance with and applicable NPDES and CDPHE permits issued to the Owner, applicable to the Development. The Owner further agrees that in the event there is any violation of such standards or permits issued, if the Town, as a result of the Owner's actions, is subject to or is given a monetary fine, penalty or any type of obligation is imposed; such circumstance will constitute a default under the terms of this Agreement. Failure of the Owner to cure the default by reimbursement to the Town, upon notice to cure as required by Section X.C herein, shall result in a default of this Agreement.

5. Owner shall be responsible for obtaining a Town of Firestone "Stormwater Quality Permit" per Firestone's current Standards and Specifications.

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6. All drainage improvements not located on Town owned property shall be maintained by the Owner, {HOA Name} ("HOA"), {Metro District Name}, maintenance district, or final property owner (the "Obligated Entity"). Drainage improvements may include, but are not limited to: landscaping, open areas, grass, shrubs, trees, retaining walls, sidewalks, ponds, pipes, underdrains, swales, drain pans, and inlet and outlet structures.

7. Owner shall include the Obligated Entity in the final inspection procedures for the drainage improvements and shall provide Firestone with the Obligated Entity's written acceptance of the maintenance responsibility for the drainage improvements prior to Final Acceptance.

O. Landscape Improvements

For public lands, common facilities, and rights-of-way, Owner shall furnish Firestone complete final landscape and irrigation plans for each phase and obtain acceptance by Firestone prior to commencement of construction. Owner shall construct landscape improvements as required in the landscape plan before the constructed improvements are accepted by Firestone. Landscape plans need not be provided for private landscaping on single-family residential lots. For all development and Common Facilities other than single-family detached development, Owner shall furnish final landscape and irrigation plans to the Town Administrative Official for acceptance prior to installation of landscape improvements.

P. Utility Coordination and Installation

Owner shall be responsible for coordination of and payment for installation of on-site and off-site electric, street lights, natural gas, telephone, cable television and other such utilities. All new and existing utilities shall be placed underground as required by the Firestone Municipal Code ("Code") prior to the issuance of any building permit for the Development. Necessary aboveground appurtenances (meters, transformers, etc.) shall be carefully located with maximum aesthetic considerations, and outside of any sight triangles. Any aboveground appurtenances that will be visible from the public rights-of-way shall be screened from view. Screening shall consist of landscaping and/or, low fencing shall be installed in accordance with the Firestone Development Code. Specifics of the screening requirements shall be reviewed with the Landscape Plans and as amended once utilities are installed.

Q. Underdrains

The Owner may choose to install foundation underdrains and a site wide underdrain collection system under the sanitary sewer system. The Town grants the use of Town owned right-of-way for these facilities but the Town assumes no maintenance responsibility for the facilities. These underdrain systems shall be maintained by the Obligated Entity.

The Owner shall install a curb underdrain system pursuant to the Standards and Specifications and as shown on the Town accepted construction plans. This system shall

be maintained by the Town.

R. Maintenance Definition

Maintenance is the process of preserving capital improvements, structures, development, or systems to meet its function or original intent of the facility. This is the preservation, conservation, keeping in good conditions, operating safely, operating efficiently, testing, inspection, servicing, repairing, grading, cleaning, picking up trash and debris, pest control, painting, mowing, pruning, and prolonging of these facilities. Maintenance also includes the provision of financial support to maintain the facilities. Facilities include but are not limited to: landscaping, open areas, grass, shrubs, trees, playgrounds, site furniture and fixtures, retaining walls, signs, sidewalks, drainage structures such as ponds, swales, drain pans, inlets, and outlet structures.

Maintenance may involve many different number and types of companies, services, individuals to look after the facility and the ability to coordinate these efforts. Maintenance includes both routinely scheduled activities, as well as non-routine repairs that may be required.

A maintenance plan should be prepared and submitted as part of the development review/approval process and be provided to the Obligated Entity responsible for maintenance activities.

V. IMPROVEMENT ACCEPTANCE

A. Initial Acceptance

No later than ten (10) days after Public Improvements and/or Common Facilities are substantially complete, Owner shall request of the Town Administrative Official an inspection by Firestone. If Owner does not request this inspection within ten (10) days of completion of the Public Improvements and/or Common Facilities, Firestone may conduct the inspection without the approval of Owner. Owner shall provide Firestone with complete "as-built" drawings in a form as defined in Firestone's current Standards and Specifications. If Owner has not completed appropriate Public Improvements and/or Common Facilities as provided for in this Agreement, Firestone may exercise its right to secure performance as provided in Section X.C of this Agreement. If Public Improvements and/or Common Facilities completed by Owner are satisfactory, the Town Administrative Official shall grant "Initial Acceptance," which shall be subject to "Final Acceptance" as set forth herein. If Public Improvements and/or Common Facilities are not satisfactory, the Town Administrative Official shall provide written notice to Owner of the repairs, replacements, construction or other work required to receive Initial Acceptance. Owner shall complete all needed repairs, replacements, construction or other work within thirty (30) days of said notice, weather permitting. After Owner completes the repairs, replacements, construction or other work required, Owner shall request of the Town Administrative Official a re-inspection of such work to determine if Initial Acceptance can be granted, and Firestone shall provide written notice to Owner of the acceptability or unacceptability of such work prior to proceeding to complete any such work at Owner's

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expense. If Owner does not complete the repairs, replacements, or other work required within thirty (30) days of said notice, Firestone may exercise its rights to secure performance as provided in Section X.C. of this Agreement. Firestone reserves the right to schedule re-inspections. No "Certificate of Occupancy" will be issued by Firestone prior to Initial Acceptance without written approval from the Town Administrative Official.

Additionally, for Common Facilities, the Owner shall include the Obligated Entity in the final inspection procedures and provide Firestone with written acceptance of the Common Facilities for maintenance from this final Obligated Entity.

B. Maintenance of Improvements

1. **Warranty**

   Owner shall provide Firestone with a warranty starting from the date of Initial Acceptance until the date of Final Acceptance. This warranty period shall be for a minimum of two (2) years or until eighty percent (80%) of the building permits have been issued for the phase, whichever occurs later, on all Public Improvements and shall provide a two (2) year Warranty to the Obligated Entity for the Common Facilities.

2. **Maintenance of Improvements**

   For the entire Warranty period, Owner shall, at its own expense, take all actions necessary to maintain said Public Improvements and make all needed repairs or replacements which, in the reasonable opinion of Firestone, shall become necessary, except that Firestone shall be responsible for snow removal on public streets. If within thirty (30) days after Owner's receipt of written notice from Firestone requesting such repairs or replacements, Owner has not completed such repairs, Firestone may exercise its rights to secure performance as provided in Section X.C of this Agreement. In the event that said repair is solely determined by the Town to be an emergency, the Town may immediately complete said repairs and invoice the Owner the Town's actual costs. The owner shall reimburse the Town within sixty (60) days after receipt of written notification or repair and supporting documentation from the Town Administrative Official. No acceptances shall be issued until Owner has made full payment for said repairs.

C. Final Acceptance

At least thirty (30) days before the Warranty period elapses from the issuance of Initial Acceptance, or as soon thereafter as weather permits, Owner shall request a Final Acceptance inspection in writing. The request shall be made to the Town Administrative Official. The Town Administrative Official shall inspect the Public Improvements and shall notify Owner in writing of all deficiencies and necessary repairs. After Owner has corrected all deficiencies and made all necessary repairs identified in said written notice, the Town Administrative Official shall issue to Owner a letter of Final Acceptance, as soon as reasonably possible thereafter. If Owner does not correct all deficiencies and make

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repairs identified in said inspection to Firestone's satisfaction within thirty (30) days after receipt of said notice, weather permitting, Firestone may exercise its rights to secure performance as is provided in Section X.C of this Agreement. If any mechanic's liens have been filed with respect to the Public Improvements, Firestone may retain all or a portion of the Improvement Guarantee up to the amount of such liens. If Owner fails to have Public Improvements finally accepted within two (2) years of the date of the issuance of Initial Acceptance or any Public Improvements are found not to conform to this Agreement, and Firestone's current Standards and Specifications, then the Owner shall be in default of the Agreement and Firestone may exercise its rights under Section X.C of this Agreement.

D. Reimbursement to Firestone

In the event it becomes necessary for Firestone to complete the Public Improvements and/or Common Facility improvements due to the failure of Owner to complete said Public Improvements and/or Common Facility improvements, Firestone may complete construction, repairs, replacements, or other work with funds other than the Improvement Guarantee, in which event Owner shall reimburse Firestone within sixty (60) days after receipt of written demand and supporting documentation from the Town Administrative Official. If Owner fails to so reimburse Firestone, then Owner shall be in default of this Agreement and Firestone may exercise its rights under Section X.C of this Agreement.

VI. IMPROVEMENT GUARANTEE

A. Public Improvement and Common Facilities Schedule

Owner has submitted the certified Public Improvement and Common Facilities Schedule shown as "Exhibit B" attached hereto and incorporated herein by reference. Said exhibit generally identifies those Public Improvements to be furnished, installed or constructed relative to the Development. Omission of any improvement from "Exhibit B" does not relieve Owner from responsibility for furnishing, installing or constructing such improvement. The Owner shall list all Common Facilities separately and subtotal separately on "Exhibit B."

B. Improvement Guarantee

Owner shall submit to the Town Administrative Official an Improvement Guarantee for all Public Improvements for the Final Plat prior to recordation of this agreement. Said guarantee may be in cash or a letter of credit in form and substance.

1. Said Improvement Guarantee shall include, but not be limited to, street, curb, gutter, sidewalks, landscaping, fencing, street lights, water, sewer, storm sewer and drainage improvements, trails and park improvements on or off the Development.

2. The total amount of the guarantee for the Development shall be calculated as a percentage of the total estimated cost including labor and materials of all Public Improvements to be constructed in the Development as described on "Exhibit B." The total minimum amounts are as follows:

a) Prior to commencement of construction of Public Improvements and Common Facilities improvements: 115% of the amount(s) shown on "Exhibit B."

b) Upon Initial Acceptance of the Public Improvements in each phase through Final Acceptance: 25% of the amount(s) shown on "Exhibit B." The guarantees may be reduced on a phased basis as shown on "Exhibit D."

c) Upon Initial Acceptance of Common Facilities: 0%.

d) After Final Acceptance of Public Improvements: 0%. The guarantees may be released on a phased basis as shown on "Exhibit D."

3. In addition to any other remedies it may have, Firestone may, at any time prior to Final Acceptance, draw on any letter of credit or Improvement Guarantee received pursuant to this Agreement.

In the event that, a) the Owner fails to extend or replace the letter of credit at least sixty (60) days prior to expiration of such letter of credit, b) the letter of credit is set to expire, c) Firestone receives notice that the letter of credit will not be renewed, d) the entity issuing the letter of credit becomes non-qualifying, or e) the letter of credit, in the sole determination of Firestone, is at risk of being lost as a guarantee, then, in any of these events, the Owner shall be in default of this Agreement and Firestone may immediately draw on the letter of credit for the full amount of the letter of credit. In such event as identified herein, no notice or prior notice shall be required prior to drawing on the letter of credit.

The Town may hold the funds obtained from the letter of credit until the Public Improvements and Common Facilities as set forth on "Exhibit B" are completed and accepted by the Town. In the event the Public Improvements and Common Facilities are not completed by the Owner within the time period set forth in this Agreement or in the manner as required by this Agreement, the Town may, at its sole discretion, use any or all of the funds to complete some or all of the Public Improvements and Common Facilities. In any event, the Town shall have no obligation to complete any or all of the Public Improvements and Common Facilities. Owner is further subject to the provisions of Section X.C of this Agreement, as well as the suspension of development activities by Firestone including, but not limited to, the withholding of building permits and certificates of occupancy.

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In the event that the cost of the Public Improvements and Common Facilities and construction is reasonably determined by Firestone to be greater than the amount of the security guarantee provided by the Owner to the Town, then Firestone shall furnish written notice to Owner of the condition, and within thirty (30) days of receipt of such notice Owner shall provide Firestone with a substituted qualifying Improvement Guarantee, or augment the deficient security as necessary to bring the security into compliance. If Owner fails to provide Firestone with a substituted qualifying Improvement Guarantee, or augment the deficient security as necessary to bring the security into compliance, then Owner is in default of this Agreement, without further notice, and is subject to the provisions of Section X.C of this Agreement, as well as the suspension of development activities by Firestone including, but not limited to, the withholding of building permits and certificates of occupancy.

4. If Firestone draws on the letter of credit to correct deficiencies or complete Public Improvements and Common Facilities, any portion of said guarantee not utilized in correcting the deficiencies and/or completing improvements shall be returned to Owner within thirty (30) days after Final Acceptance of said Public Improvements and Common Facilities.

5. **Building Permit Restrictions**

Owner agrees that the execution of this Agreement, the Town's approval of construction plans, or the Town's issuance of any type of permit for construction of the Public Improvements does not in any way, constitute an approval of building permit allocations or building permits.

a) Owner expressly understands and acknowledges that the expenditure of funds for the construction and installation of any Public Improvements prior to approval of building permit allocations or building permits is exclusively at the Owner's risk. The Town reserves the right, in exercise of its police power, to choose not to grant building permits, or otherwise restrict or condition the granting of building permits for the Development based on current or future resolutions or ordinances of the Town. Unless specifically restricted or conditioned by current or future resolutions or ordinances of the Town, building permits may be granted once all Public Improvements for the development or within each Phase of the development are operational as solely determined by the Town.

b) Upon written request of the Owner, at the sole discretion of the Town, the Owner may begin construction of the Public Improvements without furnishing an Improvement Guarantee, as provided in this Agreement, upon the following conditions:

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i. The Owner has not transferred title to any portion of the Development.

ii. The Owner shall be required to obtain Initial Acceptance of all Public Improvements for the development or within each Phase of the development prior to the issuance of a building permit.

iii. After the Owner begins construction of the Public Improvements, if the Public Improvements remain unfinished for a period of one (1) year from the date this Agreement becomes effective, the Town shall require an Improvement Guarantee in accordance with this Agreement in lieu of the building permit restriction required by this Subsection. The Owner will have fifteen (15) days to provide the Town such an Improvement Guarantee, or the Town may issue a stop work order to remain in effect until the Improvement Guarantee is provided to the Town. The Town Administrative Official, at their sole discretion, may grant a single extension of up to one (1) additional year.

iv. The Owner shall not transfer title to any portion of the Development prior to Initial Acceptance being granted by the Town or upon providing the Town an Improvement Guarantee in accordance with this Agreement.

c) Upon the Town's Initial Acceptance of the Public Improvements, which shall include receipt of the Improvement Guarantee as outlined in Section VI.B, this building permit restriction shall be removed.

VII. OVERSIZING AND REIMBURSEMENT

Firestone may require Owner to build utility lines and other infrastructure large enough to serve property other than Owner's (oversizing). Firestone may also require Owner to construct or participate in the construction of certain off-site Public Improvements. Certain such improvements qualify for reimbursement pursuant to the policies of Firestone.

A. Reimbursement due to Owner for Qualifying Public Improvements Constructed by Owner

Owner is entitled to reimbursement for the oversize part of utilities and other infrastructure and/or a pro-rata portion of the cost of off-site Public Improvements. At the time of final approval of a subdivision plat or other development plans for properties that use these utilities or Public Improvements, Firestone will require as a condition of approval, a proportional reimbursement to Owner as described in "Exhibit C," attached hereto and incorporated herein by this reference. Nothing contained in this Agreement shall operate to create an obligation on the part of Firestone to pay or reimburse any costs to Owner in the event such costs are not recovered by Firestone as contemplated herein, for any reason,

from the properties or property owners that use the utilities or Public Improvements, so long as Firestone has made a good faith effort to recover such costs.

B. Reimbursement due from Owner for Qualifying Public Improvements Constructed by Others

Owner will be required to reimburse Firestone or others who have constructed oversized utilities and other infrastructure that will be utilized by Owner's property. The amount of the reimbursement due, if any, is described in "Exhibit C."

VIII. MISCELLANEOUS CONSTRUCTION STANDARDS

A. Trash, Debris, Mud

Owner agrees that during construction of the Development and improvements described herein, Owner will take appropriate steps necessary to control trash, debris and wind or water erosion in the Development. If Firestone determines that said trash, debris or wind or water erosion causes substantial damage or injury or creates a nuisance, Owner agrees to abate said nuisance in accordance with Town Ordinances but no later than twenty-four (24) hours after notification of said nuisance. If Owner does not abate said nuisance, Firestone may abate the nuisance and/or correct any drainage or injury without notice to Owner, at Owner's expense. Owner also agrees to take any and all reasonable steps necessary to prevent the transfer of mud or debris from the construction site onto public rights-of-way and to immediately remove such mud and debris from public rights-of-way after notification by Firestone. If Owner does not abate, or if an emergency exists as solely determined by the Town, Firestone may abate at Owner's expense. Owner is further subject to the provisions of Section X.C of this Agreement, as well as the suspension of development activities by Firestone including, but not limited to, the withholding of building permits and certificates of occupancy.

B. Operation of Construction Equipment

The operation of construction equipment outside an enclosed structure shall be prohibited on weekdays between the hours of 7:00 p.m. and 7:00 a.m. With the prior written approval of the Town Administrative Official, the operation of such equipment outside an enclosed structure may be permitted on weekend days and legal holidays between the hours of 8:00 a.m. and 4:00 p.m. The Town Administrative Official may alter the hours of operation for good cause. All construction activities shall operate in accordance with all Town codes, ordinances, and policies in regards to sound and noise. Failure to comply with this provision may result in the Owner to subjected to the provisions of Section X.C of this Agreement, as well as the suspension of development activities by Firestone including, but not limited to, the withholding of building permits and certificates of occupancy.

IX. SPECIAL PROVISIONS

A. Transportation

Improvements to Sable Avenue shall be constructed in accordance with the Town accepted Final Construction Plans. No building permits shall be issued until these

improvements are completed and determined to be operational by the Town.

B. Phasing Map ("Exhibit D")

The Development shall be constructed as a single phase as outlined in "Exhibit D".

C. Dedication of Open Space

Owner is not responsible to pay any fee in lieu for open space land dedication.

D. Installation of Parks, Landscaping and Trails

Owner shall design and construct {Park, Landscape, Trail Improvements} on Tracts {_} as shown on the accepted construction plans. Owner shall purchase a water tap and pay necessary raw water dedication fees for Tracts {_}.

E. Maintenance of Parks, Trails, Open Space and Landscaping

Tracts {_} shall be maintained by the Obligated Entity.

F. Maintenance of Vacant Lots

Owner shall be responsible for maintenance, including weed control, on all lots until such time the lots are sold to a homeowner.

G. Fencing and Screening

Fencing within the Development shall be installed in accordance with Title 16 of the Code.

H. Utilities

Owner shall provide the Town with all necessary permanent and temporary drainage and utility easements prior to construction.

I. Disclosure Statements

1. The Metropolitan District Disclosure statement indicating the existence of a Title 32 Metropolitan District ("Exhibit F") shall be signed by the property owner purchasing a new home from a homebuilder with execution of the sales contract for the property.

2. The Oil and Gas Well Disclosure is evidenced by the recordation of the existing Surface Use Agreements and various Letter Agreements with the Oil and Gas companies. A statement indicating the existence of such documents ("Exhibit G") shall be signed by the property owner with the execution of the sales contract for the property.

X. MISCELLANEOUS TERMS

A. Ground Water Dedication

As provided by Firestone ordinances, all tributary and not non-tributary ground water rights not already transferred to Firestone shall be dedicated to Firestone at the time of Final Plat

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recordation. Transfer of the water rights shall be by Special Warranty Deed tendered to Firestone prior to signatures being affixed to this agreement.

B. Default

If Owner fails to fulfill the terms and conditions of this Agreement, Firestone, in its sole discretion, may declare Owner in default and may call the security and draw on the letter of credit provided for in Section VI, and may further exercise all remedies available to Firestone in law and equity. Firestone may also, withhold any additional building permits, certificates of occupancy, or provision of new utilities fixtures or services until the completion of the Public Improvements and Common Facilities and/or the default has been cured by Owner. Any costs incurred by Firestone, including, but not limited to, reasonable administrative costs and reasonable attorney's fees, in pursuit of any remedies due to the breach by Owner shall be paid by Owner. Firestone may deduct these costs from the Improvement Guarantee. Firestone shall have the right to enforce the Owner's obligations hereunder by an action for any equitable remedy, including injunction or specific performance, or an action to recover damages. No remedy or election hereunder shall be deemed exclusive but shall, whenever possible, be cumulative with all other remedies at law or in equity.

If Owner fails to fulfill the terms and conditions of Section VI of this Agreement, or any other monetary, security or surety default, Firestone, in its sole discretion, may declare Owner in default and may immediately call the security due and draw on the letter of credit provided for in Section VI without notice to Owner, and may further exercise all remedies available to Firestone in law and equity and as provided for herein.

C. Insurance and Safety

Owner shall, through contract requirements and other normal means, guarantee and furnish to Firestone proof thereof that all employees and contractors engaged in the construction of improvements are covered by adequate Workman's Compensation Insurance and Public Liability Insurance, and shall require the faithful compliance with all provisions of the Federal Occupational Safety and Health Act (OSHA).

D. Indemnification and Release of Liability

Owner agrees to indemnify and hold harmless Firestone, its officers, employees, agents, or servants, and to pay any and all judgments rendered against said persons on account of any suit, action, or claim caused by arising from, or on account of acts or omissions by Owner, its officers, employees, agents, consultants, contractors, and subcontractors, and/or suit, action, or claim resulting from mineral right disputes and/or Owner's failure to abide by the terms of this Agreement, and to pay to Firestone and said persons their reasonable expenses, including but not limited to, reasonable attorney's fees and reasonable expert witness fees, incurred in defending any such suit, action or claim. Owner's obligation herein shall not apply to the extent said suit, action or claim results from any acts or omissions of officers, employees, agents, or servants of Firestone or conformance with requirements imposed by Firestone, said obligation of Owner shall be limited to suits, actions, or claims based upon conduct prior to Final Acceptance by Firestone of the

construction work. Owner acknowledges that Firestone's review and acceptance of plans for development of the Development is done in furtherance of the general public's health, safety and welfare and that no immunity is waived and no specific relationship with or duty of care to, Owner or third parties is assigned by such review acceptance.

E. Recording Agreement

Firestone shall record this Agreement at Owner's expense in the office of the Clerk and Recorder, County of Weld, State of Colorado, and Firestone shall retain the recorded Agreement.

F. Binding Effect of Agreement

This Agreement shall be binding upon and inure to the benefit of the parties, their successors in interest, or their legal representatives, including all developers, purchasers and subsequent owners of any lots or parcels within the Property, and shall constitute covenants running with the land. Owner shall not be released from its obligations hereunder until written notice to the Town Administrative Official of the assignment of said obligations to a successor, accompanied by written acceptance of such obligations by the successor, have been received by Firestone and consent to such assignment by Firestone as required by Paragraph X.H has been granted. This Agreement shall be recorded with the County Clerk & Recorder of Weld County, Colorado, at Owner's expense. Subject to the conditions precedent herein, this Agreement may be enforced in any court of competent jurisdiction.

G. Assignment, Delegation and Notice

Owner shall provide to the Town Administrative Official, for consent, written notice of: 1) any proposed transfer of title to all or any portion of the Development, 2) arrangements for delegation or transfer of the Improvement obligations hereunder to any successor, and 3) successor's written acceptance of such Improvement obligations. Notwithstanding the forgoing, Owner may sell developed lots or all of the multi-family tracts without Firestone's consent, provided that the purchaser deposits with Firestone all guaranties, security and sureties required under this Agreement. Until the Town Administrative Official provides written consent to the assignment, Owner and Owner's successors and assigns shall be jointly and severally liable for the assigned Improvement obligations. Firestone may withhold its consent in the event it reasonably determines that the Improvement obligations or any constituent element of this Agreement may not be fulfilled through assignment or that the benefit of Firestone's bargain under this Agreement may be materially and adversely impaired by such assignment.

H. Modification and Waiver

No modification of the terms of this Agreement shall be valid unless in writing and executed with the same formality as this Agreement, and no waiver of the breach of the provisions of any sections of this Agreement shall be construed as a waiver of any subsequent breach of the same section or any other sections which are contained herein.

I. Addresses for Notice

DRAFT

Any notice or communication required or permitted thereunder shall be given in writing and shall be personally delivered, or sent by United States mail, postage, prepaid, registered or certified mail, return receipt requested, addressed as follows:

Firestone:	Owner:
Town of Firestone	{Owner Name}
Town Manager	{Onwer's Contact Name & Title}
P.O. Box 100	{Owner's Address}
Firestone, CO 80520	{Owner's City, State Zip Code}
William P. Hayashi	{Owner's Attorney Name}
Williamson and Hayashi, LLC	{Onwer's Attorney's Firm}
1650 38th Street, Suite 103	{Firm's Address}
Boulder, CO 80301	{Firm's City, State Zip Code}

With a copy to such other address or the attention of such other person(s) as hereafter designated in writing by the applicable parties in conformance with this procedure. Notices shall be effective upon mailing or personal delivery in compliance with this paragraph.

J. Force Majeure

Whenever Owner is required to complete construction, maintenance, repair, or replacement of improvements by an agreed upon deadline, Firestone shall grant a reasonable extension of time if the performance cannot, as a practical matter, be completed in a timely manner due to Acts of God or other circumstances constituting force majeure or beyond the reasonable control of Owner.

K. Approvals

Whenever approval or acceptance of a matter is required or requested of Firestone pursuant to any provisions of the Agreement, Firestone shall act reasonably in responding to such matter.

L. Previous Agreements

All previous written agreements between the parties, their successors, and assigns, including, but not limited to, any Annexation, Pre-Annexation Agreement, or Development Agreement shall remain in full force and effect and shall control this Development. If any prior agreements conflict with this Agreement, then this Agreement controls.

M. Title and Authority

Owner warrants to Firestone that it is the record owner for the property within the Development. The undersigned further warrant having full power and authority to enter into this Agreement.

N. Severability

If any part, section, subsection, sentence, clause or phrase of this Agreement is for any

reason held to be invalid, such invalidity shall not affect the validity of the remaining sections of the Agreement. The parties hereby declare that they would have ratified this Agreement including each part, section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more parts, sections, subsections, sentence, clauses or phrases be declared invalid.

O. Legal Fees; Venue

In the event that either party finds it necessary to retain an attorney in connection with a default by the other as to any of the provisions contained in this agreement, the defaulting party shall pay the other's reasonable attorney's fees and costs incurred in enforcing the provisions of this Agreement. For the resolution of any dispute arising hereunder, venue shall be in the Courts of the County of Weld, State of Colorado.

P. Agreement Status After Final Acceptance

Upon Final Acceptance by Firestone of all improvements and compliance by Owner with all terms and conditions of this Agreement, and provided that no litigation or claim is pending relating to this Agreement, this Agreement, with the exception of any maintenance and reimbursement obligations, shall terminate and no longer be in effect.

Q. Enforceability

This Agreement is made only between the Owner and Firestone, or their successors and assigns, and is not intended to benefit, and may not be enforced by, any third parties.

[SIGNATURES ON FOLLOWING PAGE]

DRAFT

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first set forth above.

TOWN OF FIRESTONE, COLORADO

By: _____
Drew Peterson, Mayor

ATTEST:

_____
Kristi Bashor, Town Clerk

APPROVED AS TO FORM:

_____
William P. Hayashi, Town Attorney

DRAFT

OWNER:
{Owner Name}

By:_____
{Name}

Title: {Title}

ACKNOWLEDGMENT

STATE OF _____)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ___ day of _____, 202__, by {Name}, as {Title} of {Owner Name}.

Witness my hand and official seal.

My commission expires: _____

(SEAL) _____
Notary Public

DRAFT

EXHIBITS LIST

EXHIBIT A – COTTONWOOD HOLLOW FILING 4A FINAL PLAT

EXHIBIT B – PUBLIC IMPROVEMENT SCHEDULE

EXHIBIT C – PUBLIC IMPROVEMENT REIMBURSEMENT SCHEDULE

EXHIBIT D – PHASING PLAN

EXHIBIT E – LANDSCAPE MAINTENANCE MAP

EXHIBIT F – METROPOLITAN DISTRICT DISCLOSURE

EXHIBIT G – OIL & GAS DISCLOSURE

DRAFT

EXHIBIT A

Cottonwood Hollow Filing 4A Final Plat

DRAFT

EXHIBIT B

Public Improvement Schedule

DRAFT

EXHIBIT C

Public Improvement Reimbursement and Fee In Lieu Schedule

There are no reimbursements or Fee in Lieu.

DRAFT

EXHIBIT D

Phasing Plan

This Filing will be constructed as one phase.

DRAFT

EXHIBIT E

Landscape Maintenance Map

DRAFT

EXHIBIT F

Metropolitan District Disclosure

The undersigned, being the purchasers identified in that certain _____ _____ ("Purchase Contract") dated _____, 20___, between _____, a _____, as seller, and the undersigned, as purchaser, with respect to Block ____, Lot ____, _____(name of subdivision)_____, Town of Firestone, County of Weld, State of Colorado (the "Lot") do hereby acknowledge and agree as follows, which acknowledgments and agreements are given in consideration of and as a condition to Seller's agreement to sell to the undersigned the Lot and the home to be constructed thereon:

Purchaser acknowledges that the Lot being purchased is within the boundaries of the _____ Metropolitan District, a special taxing district (the "District"). The District has issued or expects to issue general obligation bonds that are paid by revenues produced from annual ad valorem property tax levies imposed on all of the taxable real and personal property within the District. The Purchaser has been advised and hereby acknowledges that it has been advised that financing plans of the District are available and detail the proposed or existing ad valorem property tax mill levies of the District servicing such indebtedness, and the potential for an increase in such mill levies.

Purchaser acknowledges that the additional ad valorem property tax mill levies imposed by the District are in addition to other ad valorem taxes imposed by other taxing entities against said Lot.

The following examples compare the tax impacts between a property within the boundaries of a District levying an annual ad valorem property tax mill levy of 50 mills, and a property not within the boundaries of a District. This example is based on a single-family residence on a property with an Actual Value (as determined by the County Assessor) of $300,000.

PROPERTY WITHIN DISTRICT

TAXING AUTHORITY	MILL LEVY	TAX AMOUNT
COUNTY	25	597.00
SCHOOL DISTRICT	48	1146.24
TOWN	18	429.84
FIRE	12	286.56
LIBRARY	4	95.52
METROPOLITAN DISTRICT	50	1321.76
TOTAL	157	3876.92

DRAFT

PROPERTY WITHOUT DISTRICT

TAXING AUTHORITY	MILL LEVY	TAX AMOUNT
COUNTY	25	597.00
SCHOOL DISTRICT	48	1146.24
TOWN	18	429.84
FIRE	12	286.56
LIBRARY	4	95.52
TOTAL	107	2555.16

IN WITNESS WHEREOF, the undersigned has/have executed this Metropolitan District Disclosure this ____ day of _____, 20___.

_____
Purchaser

_____
Purchaser

STATE OF COLORADO)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this ____ day of _____, 20___, by _____.

WITNESS my hand and official seal.

My commission expires:_____

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this ____ day of _____, 20___, by _____.

WITNESS my hand and official seal.

My commission expires:_____

_____
Notary Public

DRAFT

EXHIBIT G

OIL AND GAS DISCLOSURE

The undersigned, being the purchaser(s) identified in that certain _____ ("Purchase Contract") dated _____, 20____, between _____, a _____, as seller, and the undersigned, as purchaser, with respect to Block ____, Lot ____, {Final Plat Name}, Town of Firestone, County of Weld, State of Colorado (the "Lot") do hereby acknowledge and agree as follows, which acknowledgements and agreements are given in consideration of and as a condition of Seller's agreement to sell the undersigned the Lot and the home to be constructed thereon:

The undersigned hereby acknowledges the current existence of oil and gas wells and related well facilities (and the possibility of additional future wells and facilities) located within the real property encompassed by the {Final Plat Name} subdivision plat(s) ("Plat"). The locations of the current and possible future oil and gas wells and related well facilities are identified on the {Final Plat Name}Final Plat, as amended from time to time. In addition to the foregoing, other oil and gas interests affecting the property may exist which may or may not be recorded in the real property records. The oil and gas leases and other interests generally permit certain surface activity on the premises which activity may include drill sites, gathering pipelines, production sites and facilities, and access roads, all as further described in the oil and gas leases and other documents affecting the premises.

The undersigned acknowledge that neither they nor Seller will own any interest in the oil and gas or mineral estate underlying the property comprising {Final Plat Name}. There may be ongoing oil and gas operation and production of oil and gas within {Final Plat Name}, including in the vicinity of the Lots, as well as the existence of pipeline easements and access routes across portions of {Final Plat Name}. Additional oil and gas wells may be drilled, and oil and gas operations and production will likely take place within {Final Plat Name}, including in the vicinity of the Lots, which oil and gas production will affect portions of the surface of the real property comprising {Final Plat Name}. Heavy drilling equipment will be used in connection with the operation and drilling of oil and gas wells within {Final Plat Name}and in conjunction with any production obtained from successor wells. Such operations may be conducted on a 24 hour/seven days a week basis. Owners of real property within {Final Plat Name}will be bound by the terms and provisions of surface use agreements entered into between the surface owners or developer of the land and certain oil and gas owners and/or operators. These surface use agreements contain waivers, including a waiver of surface damage payments, a waiver of setback and waivers of other requirements contained in the Rules and Regulations of the Colorado Oil and Gas Conservation Commission, as well as a waiver of the right by an owner of any portion of the surface of the real property within {Final Plat Name} to object in any forum to the use by oil and gas companies of a portion of the surface of the real property within {Final Plat Name}.

The undersigned acknowledges and recognizes the existence of such oil and gas leases and other interests, and the surface activity associated with such oil and gas leases, and the undersigned,

to the extent it owns or becomes the owner of real property in {Final Plat Name}, assume the risk of owning property near or adjacent to an oil and gas well operation. Such risks include, without limitation, injury or damage to person and/or property arising out of, or resulting from the drilling, operation and maintenance of an oil and gas well; noise associated with an oil and gas well operation; explosion and fire; leakage of oil and/or gas from drilling or production facilities; vehicles servicing the oil and gas site.

IN WITNESS WHEREOF, the undersigned has/have executed this Oil and Gas Well disclosure the ____day of _____, 20____.

_____
Purchaser

_____
Purchaser

STATE OF COLORADO)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this ____ day of _____, 20___, by _____.

Witness my hand and official seal.

My Commission expires _____.

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this ____ day of _____, 20___, by _____.

Witness my hand and official seal.

My Commission expires _____.

_____
Notary Public

DRAFT

Fred and Gretchen Webb
9715 County Road 11
Longmont, Colorado 80504

Town of Firestone
Planning and Development
9950 Park Avenue
Firestone, Colorado 80504

March 3, 2023

RE: Final plat for Cottonwood Hollow Filing No. 4A

1. The vicinity map does not show the irrigation tail-water ditch along the Eastern boundary of Filing 4A. We request that you require the developer to maintain this historic ditch and provide water drainage to Godding Hollow.
2. Weld County is a Right-To-Farm County. This should be noted in Cottonwood Hollow Filing 4A, if approved by the town.

Please include these comments in the public record of the Town of Firestone Planning and Zoning Commission hearing, Thursday, March 16, 2023 and at the Board of Trustees of the Town of Firestone hearing, March 22, 2023.

Thank you,

Fred Webb Gretchen Webb

Fred and Gretchen Webb
9715 County Road 11
Longmont, Colorado 80504

Mail: P.O. Box 1089
Frederick, Colorado 80530

303-682-5286

FIRESTONE PLANNING AND ZONING COMMISSION

RESOLUTION NO. PC-23-04

A RESOLUTION OF THE PLANNING AND ZONING COMMISSION OF THE TOWN OF FIRESTONE, COLORADO, RECOMMENDING APPROVAL OF THE FINAL PLAT FOR COTTONWOOD HOLLOW FILING NO. 4A

WHEREAS, Cottonwood Colorado Residential, LLC and Cottonwood Residential V, LLC, ("Applicants"), as owners of certain real property located within the Town of Firestone, Colorado (the "Property"), have submitted a proposed final plat for the Property (the "Application"); and

WHEREAS, after a duly-noticed public hearing, at which evidence and testimony were entered into the record, the Planning and Zoning Commission finds and determines that the Application is complete, and that the Applicant has met the applicable requirements and standards set forth in the Firestone Municipal Code and Firestone Development Code; and

WHEREAS, the Planning and Zoning Commission wishes to make a recommendation to the Board of Trustees regarding the Application.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING AND ZONING COMMISSION OF THE TOWN OF FIRESTONE, COLORADO:

Section 1. The Town of Firestone Planning and Zoning Commission hereby recommends the Board of Trustees approve the Cottonwood Hollow Filing No. 4A Final Plat, attached hereto as **Exhibit A** and incorporated herein by this reference, subject to and contingent upon compliance with the following conditions:

1. All remaining technical corrections to the Cottonwood Hollow Filing No. 4A final plat and construction drawings requested by Town staff shall be made to the Town staff's satisfaction.
2. Prior to commencement of construction, Final Construction Plans shall be approved by the Town.
3. Prior to recordation of the final plat, a Phase III Drainage Report shall be approved by the Town.
4. Prior to recordation of the final plat, the Sable Avenue Construction Plans shall be approved by the Town.
5. Prior to recordation of the final plat, all agreements and easements with the Godding Ditch Company shall be fully executed.
6. Prior to recordation of the final plat, the Town and the Applicant shall execute a subdivision agreement, in a form to be approved by the Town Attorney.
7. Prior to recordation of the final plat, a Traffic Report shall be approved by the Town.

PASSED AND ADOPTED this 16 day of March, 2023.

Vice-Chairperson

ATTEST:

Secretary

FIRESTONE PLANNING AND ZONING COMMISSION TOWN SEAL

EXHIBIT A
COTTONWOOD HOLLOW FILING NO. 4A FINAL PLAT

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 8.a **Discussion/Action** **Meeting Date:** March 22, 2023 **Initiated By:** Julie Pasillas **Dept:** Public Works

AGENDA TITLE

Resolution 23-35: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND ASPHALT SPECIALTIES COMPANY INC FOR THE MILL AND OVERLAY PAVING PROJECT FOR PORTIONS OF ROADWAYS IN ST VRAIN RANCH, RIDGE CREST AND SAGEBRUSH SUBDIVISIONS AND FOR REMOVAL AND REPLACEMENT PROJECT FOR ROSEWOOD AVENUE AND A PORTION OF BIRCH STREET AND CRACK REPAIR PROJECT FOR STONE RIDGE SUBDIVISION

RECOMMENDATION

Staff recommends approval of Resolution 23-35, authorizing the execution of the Construction Contract with Asphalt Specialties Company, Inc. for pavement services and authorizing staff to expend funds.

SUMMARY

Asphalt Specialties has been selected to complete the pavement project addressing the areas listed below. The project will begin no later than April 1, 2023, weather depending, and will be completed within 90 days.

Edge mill and overlay:

- Ebony St- from Thistle Ridge Ave. to Echo St.
- Thistleridge Ave- from Echo St. to Echo St.
- Sunburst Ave-from North of Thistle Ridge Ave to South of Ferncrest St.
- TenderfootAve-from Cr 15 1449 feet North.
- Farmdale St- from Sage Ave. to Shenandoah Ave.
- Summerset Ave- from Cr 15 to Quigley Cir.
- Quigley Cir- from St Vrain Ranch Blvd to Foxfire St.
- Eastview St- from Sandy Ridge Ct. to Sage Ave

Full removal and replacement:

- Rosewood Ave.
- A section of Birch St

Crack Repair:

- 300 tons of crack repair will be completed on 2” or larger cracks in the Stone Ridge subdivision.

FINANCIAL CONSIDERATIONS

The contract includes an amount not to exceed $760,000.00. Sufficient funds were budgeted in 2023 in the Capital Projects Fund.

HISTORY AND PREVIOUS BOARD ACTION

During the 2023 budget work sessions with the Board of Trustees, staff presented this project as part of the CIP pavement maintenance.

In February of 2023, staff prepared and advertised an invitation to bid for these projects. Seven potential bidders attended the mandatory pre-bid meeting, and four bids were submitted. Staff evaluated the bids and selected Asphalt Specialties for this project.

ATTACHMENTS

1. Res No 23-35 CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND ASPHALT SPECIALTIES COMPANY INC
2. Firestone 2023 Paving Project Contract
3. Map-Edge Mill and Overlay
4. Map-R & R-Crack Repair

RESOLUTION NO. 23-35

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND ASPHALT SPECIALTIES COMPANY INC FOR THE MILL AND OVERLAY PAVING PROJECT FOR PORTIONS OF ROADWAYS IN ST VRAIN RANCH, RIDGE CREST AND SAGEBRUSH SUBDIVISIONS AND FOR REMOVAL AND REPLACEMENT PROJECT FOR ROSEWOOD AVENUE AND A PORTION OF BIRCH STREET AND CRACK REPAIR PROJECT FOR STONE RIDGE SUBDIVISION

WHEREAS, the Town of Firestone ("Town") is in need of mill and overlay work for portions of roadways in St Vrain Ranch, Ridge Crest and Sagebrush Subdivision; and

WHEREAS, the Town of Firestone ("Town") is in need of full removal and replacement of asphalt work on Rosewood Avenue and portions of Birch Street; and

WHEREAS, the Town of Firestone ("Town") is in need of crack repair work for portions of roadways in Stone Ridge Subdivision; and

WHEREAS, the Town issued an invitation for bids for the work and upon review of those submitted selected Asphalt Specialties Company, Inc as the lowest responsive and responsible bidder.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO:

The Construction Contract between the Town of Firestone and Asphalt Specialties Company, Inc for the mill and overlay paving project for portions of roadways in St Vrain Ranch, Ridge Crest and Sagebrush Subdivision, full removal and replacement of asphalt work on Rosewood Avenue and portions of Birch Street, and crack repair work for portions of roadways in Stone Ridge Subdivision is approved in substantially the same form as the copy attached hereto and made a part of this Resolution and the Mayor is authorized to execute the Contract on behalf of the Town.

INTRODUCED, READ AND ADOPTED this 22nd day of March, 2023.

TOWN OF FIRESTONE, COLORADO

_____
Drew Alan Peterson, Mayor

ATTEST:

_____
Kristi K Bashor, CMC, Town Clerk

APPROVED AS TO FORM:

_____

William P. Hayashi, Town Attorney

CONSTRUCTION CONTRACT

THIS CONSTRUCTION CONTRACT (the "Construction Contract" or "Agreement") is made and entered into this 22nd day of March, 2023 (the "Effective Date"), by and between the **TOWN OF FIRESTONE**, a Colorado municipal corporation with an address of of 9950 Park Avenue, Firestone, Colorado 80504 (the "Town" or the "Owner"), and **ASPHALT SPECIALTIES COMPANY, INC**, an independent contractor with a principal place of business at 10100 Dallas Street, Henderson, Colorado 80640 ("Contractor") (each a "Party" and collectively the "Parties").

WHEREAS, the Town requires services; and

WHEREAS, the Town has found the Contractor to have the expertise and experience to perform the required services.

NOW THEREFORE, consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

I. SCOPE OF WORK

A. The Contractor shall complete all Work and perform all Services described or reasonably implied from the Scope of Work set forth in Exhibit A and the Contract Documents, attached hereto and incorporated herein by this reference and known as: **2023 Paving Project S2023-9234**.

B. A change in the Scope of Work shall not be effective unless authorized as a written amendment to this Agreement or change order in accordance with the Contract Documents. If the Contractor proceeds without such written authorization, the Contractor shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

C. Within ten days of the Effective Contract Date, the Contractor shall provide the performance bond, labor & material payment bond, and certificate of insurance required by the contract Documents.

II. RESERVE

III. CONTRACT TIMES; COMMENCEMENT AND COMPLETION OF WORK

A. The Work shall be substantially completed within 60 days of the Effective Date of this contract. It shall continue until the Contractor completes the Scope of Services to the Town's satisfaction, or until terminated as provided herein.

B. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay the Contractor for all Work previously authorized and completed prior to the date of termination. If, however, the Contractor has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

C. Should a delay in completion constitute a compensable inconvenience to the Town and its residents, the liquidated damages established in this Section shall be enforced. Such damages are not a penalty, and the parties recognize the delays, expenses, and difficulties involved in proving the actual loss suffered by the Town if the Work is not completed on time. For each day that all or a portion of the Work is delayed beyond the deadlines set forth in Section III hereof, plus any extensions thereof allowed, the Contractor shall be assessed the amount of two hundred fifty dollars ($250) each day until the Work is complete.

IV. COMPENSATION

In consideration for the completion of the Work by Contractor, the Town shall pay Contractor, subject to all of the terms and conditions of the Contract Documents, an amount not to exceed **$760,000.00** (the "Contract Price"). The Contract Price shall include all fees, costs, and expenses incurred by the Contractor, and no additional amounts shall be paid by the Town for such fees, costs, and expenses.

V. PAYMENT PROCEDURES

A. The Contractor may submit Applications for Payment for completed Work per the UNIT-PRICE BID FORM or the LUMP-SUM BID FORM. The Contractor may submit periodic invoices, which the Town shall pay within 30 days of receipt.

B. The Town may retain up to five percent (5%) of the calculated value of completed work from each application of payment up until the contract is completed satisfactorily and finally accepted by the Town.

C. Upon issuing a final acceptance of the Work for the Project, the Town shall pay to Contractor the remainder of the funds or monies previously withheld as retainage

VI. RESPONSIBILITY

A. Contractor hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and licenses in good standing, required by law.

B. The Work performed by Contractor shall be in accordance with generally accepted practices and the level of competency presently maintained by other practicing contractors in the same or similar type of Work in the applicable community.

C. The Work performed by the Contractor hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations, including the Keep Jobs in Colorado Act, C.R.S. 8-17-101, et seq. (the "Act") and the rules adopted by the Division of Labor of the Colorado Department of Labor and Employment implementing the Act (the "Rules").

D. The Town's review, approval or acceptance of, or payment for any completed Work shall not be construed to operate as a waiver of any rights under this Construction Contract or of any cause of action arising out of the performance of this Construction Contract.

E. The Contractor hereby warrants to the Town that all materials and equipment used in the Work, and made a part of the Work, or placed permanently in the Work, shall be new unless otherwise specified in the Contract Documents. The Contractor further warrants that all equipment and materials shall be of good quality, conform to the requirements of the Contract Documents and will be free from defects. All Work, materials, or equipment not conforming to the Contract Documents shall be considered defective.

F. The Contractor shall warrant and guarantee all materials and equipment furnished under the contract and all Work performed for one year after the date of Substantial Completion. Under this warranty, Contractor agrees to repair or replace, at its own expense, any Work that is found to be defective. The expiration of the warranty period shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for Work negligently or defectively performed.

VII. OWNERSHIP

Any materials, items, and Work specified in the Scope of Work, and any and all related documentation and materials provided or developed by the Contractor shall be exclusively owned by the Town. The Contractor expressly acknowledges and agrees that all Work performed under the Scope of Work constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," the Contractor hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such Work. The Town may, with respect to all or any portion of such Work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change such Work without providing notice to or receiving consent from Contractor.

VIII. INDEPENDENT CONTRACTOR

The Contractor is an independent contractor. Notwithstanding any other provision of this Construction Contract, all personnel assigned by Contractor to perform Work under the terms of this Construction Contract shall be, and remain at all times, employees or agents of Contractor for all purposes. Contractor shall make no representation that it is a Town employee for any purposes.

IX. INSURANCE

A. Contractor agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Contractor pursuant to this Construction Contract. At a minimum, Contractor shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees, or its contractors shall be excess and not contributory insurance to that provided by the Contractor. The Contractor shall be solely responsible for any deductible losses under any policy.

C. Contractor shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Construction Contract.

X. INDEMNIFICATION

The Contractor agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs, and assigns from and against all claims, liability, damages, losses, expenses, and demands, including attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Construction Contract if such injury, loss, or damage is caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other faults of the Contractor, any subcontractor of Contractor, or any officer, employee, representative, or agent of Contractor, or which arise out of a worker's compensation claim of any employee of Contractor or of any employee of any subcontractor of Contractor.

XI. WORKER WITHOUT AUTHORIZATION

A. Certification. By entering into this Construction Contract, Contractor hereby certifies that, at the time of this certification, it does not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who will perform Work under this Construction Contract and that Contractor will participate in either the E-Verify Program administered by the U.S. Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment to confirm the employment eligibility of all employees who are newly hired to perform Work under this Construction Contract.

B. Prohibited Acts. The Contractor shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform Work under this Construction Contract, or enter into a contract with a subcontractor that fails to certify to Contractor that the subcontractor shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform Work under this Construction Contract.

C. Verification.

1. If the Contractor has employees, the Contractor has confirmed the employment eligibility of all employees who are newly hired to perform Work under this Construction Contract through participation in either the E-Verify Program or the Department Program.

2. Contractor shall not use the E-Verify Program or Department Program procedures to undertake pre-employment screening of job applicants while this Construction Contract is being performed.

3. If the Contractor obtains actual knowledge that a subcontractor performing Work under this Construction Contract knowingly employs or contracts with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing Work under this Construction Contract, Contractor shall: notify the subcontractor and the Town within 3 days that Contractor has actual knowledge that the subcontractor is employing or contracting with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing Work under this Construction Contract; and terminate the subcontract with the subcontractor if within 3 days of receiving the notice required pursuant to subsection 3 hereof, the subcontractor does not stop employing or contracting with the worker without authorization who is performing Work under this Construction Contract; except that Contractor shall not terminate the subcontract if during such 3 days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing Work under this Construction Contract.

D. Duty to Comply with Investigations. The contractor shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that the Contractor is complying with the terms of this Section

XII. CONTRACT DOCUMENTS

The Contract Documents, which comprise the entire Agreement between the Town and Contractor concerning the Scope of Services, consist of the following:

A. Exhibit to this Construction Contract:
   1. Exhibit A: Scope of Work.

B. The following which may be delivered or issued after the Effective Date of the Construction Contract
   a. Performance Bond and Labor & Material Payment Bond.
   b. Notice of Award.
   c. Notice to Proceed

There are no Contract Documents other than those listed above in this Section XII.

XIII. CHANGE ORDERS

A. A Change Order is a written instrument issued after execution of the Agreement signed by Town and Contractor, stating their Agreement, as applicable, upon all of the following:
   a. The scope of the change in the Work;
   b. The amount of the adjustment to the Contract Price; and
   c. The extent of the adjustment to the Contract Times(s).

B. All changes in the Work authorized by applicable Change Order shall be performed under the applicable conditions of the Contract Documents. Town and Contractor shall negotiate in good faith and as expeditiously as possible the appropriate adjustment such changes.

XIV. MISCELLANEOUS

A. Governing Law and Venue. This Construction Contract shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Weld County, Colorado.

B. No Waiver. Delays in enforcement or the waiver of any one or more defaults or breaches of this Construction Contract by the Town shall not constitute a waiver of any of the other terms or obligation of this Construction Contract.

C. Integration. This Construction Contract and any attached exhibits constitutes the entire Agreement between the Parties, superseding all prior oral or written communications.

D. Third Parties. There are no intended third-party beneficiaries to this Construction Contract.

E. Notice. Any notice under this Construction Contract shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class U.S. Mail to the Party at the address set forth on the first page of this Agreement.

F. Severability. If any provision of this Construction Contract is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

G. Modification. This Construction Contract may only be modified upon written Agreement of the Parties.

H. Assignment. Neither this Construction Contract nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

I. Governmental Immunity. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

J. Rights and Remedies. The rights and remedies of the Town under this Construction Contract are in addition to any other rights and remedies provided by law. The expiration of this Construction Contract shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for Work negligently or defectively performed.

K. Subject to Annual Appropriation. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

IN WITNESS WHEREOF, the Parties have executed this Construction Contract as of the Effective Date.

TOWN OF FIRESTONE, COLORADO

_____

Drew Alan Peterson, Mayor

ATTEST:

_____

Kristi K Bashor, CMC, Town Clerk

APPROVED AS TO FORM:

_____

William P. Hayashi, Town Attorney

ASPHALTSPECIALTIES COMPANY, INC

By: _____

Daniel W. Hunt - President

ASPHALT SPECIALTIES CO. INC. CORPORATE SEAL 1992 COLORADO

STATE OF COLORADO)

) ss.

COUNTY OF **Adams**)

The foregoing instrument was subscribed, sworn to and acknowledged before me this **13th** day of **March**, 2023 by **Daniel W. Hunt** as **President** of **Asphalt Specialties Company, Inc.**

My commission expires: April 29, 2024

(S E A L)

JAN NELSON
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19994030527
My Commission Expires April 29, 2024

Jan Nelson

Notary Public **Jan Nelson**

FIRESTONE
COLORADO

JAN NELSON
NOTARY PUBLIC
STATE OF COLORADO

SCOPE OF WORK

Contractor's Duties

During the term of this Construction Contract, the Contractor shall perform the following duties, as directed by the Town:

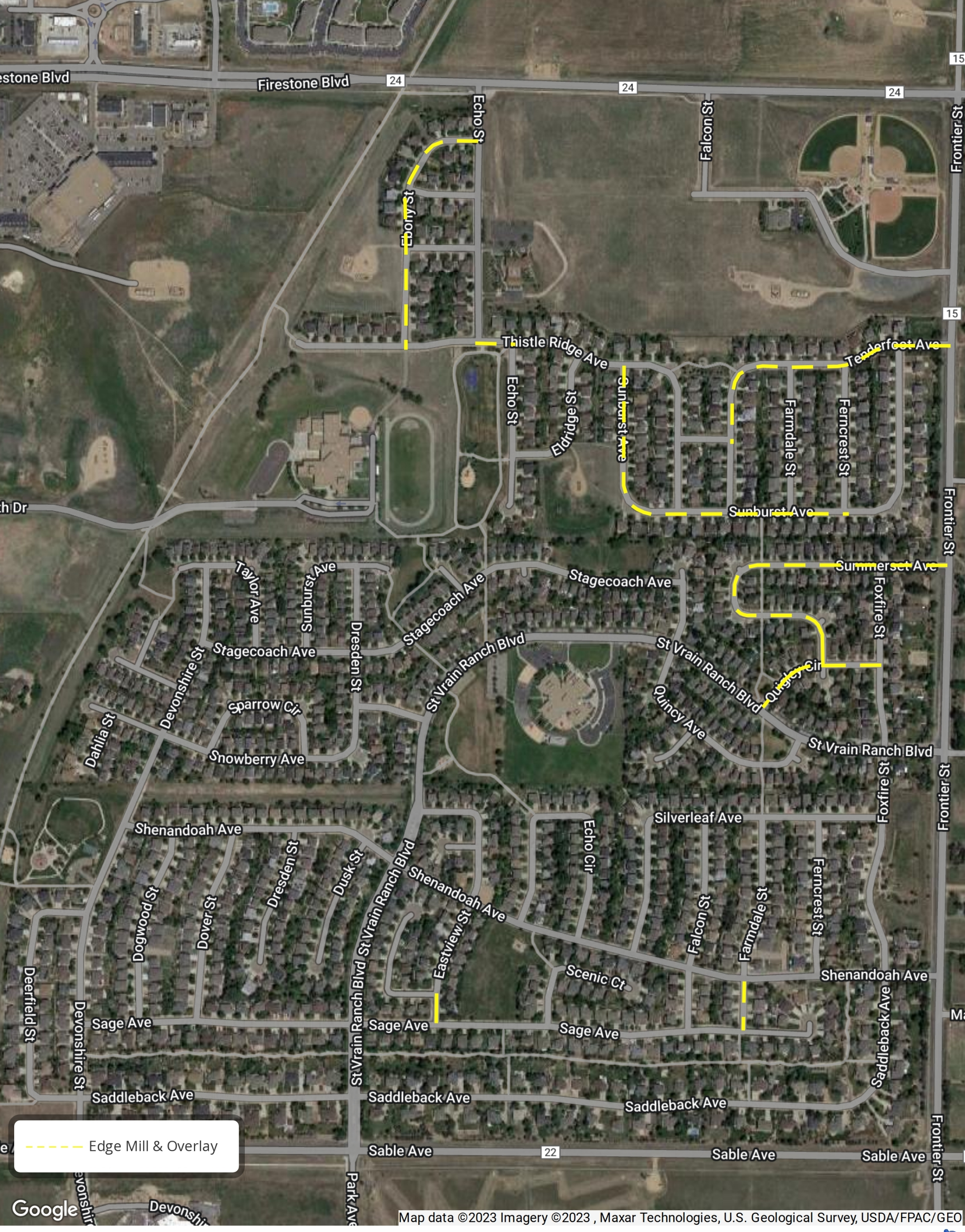
- 4' edge mill and 2" overlay of roads to be edge milled and overlayed: $376,107.80
  - Ebony St- from Thistle Ridge Ave. to Echo St.
  - Thistleridge Ave- from Echo St. to Echo St.
  - Sunburst Ave-from North of Thistle Ridge Ave to South of Ferncrest St.
  - TenderfootAve-from Cr 15 1449 feet North.
  - Farmdale St- from Sage Ave. to Shenandoah Ave.
  - Summerset Ave- from Cr 15 to Quigley Cir.
  - Quigley Cir- from St Vrain Ranch Blvd to Foxfire St.
  - Eastview St- from Sandy Ridge Ct. to Sage Ave.
- Full R&R of Rosewood Ave: $106,221.00
- Full R&R of Birch St: $120,576.00
- 300 ton of Crack repair 3' wide 3" deep with Geo-mat cracks 2" or larger: $150,206.00
- Minor quanity adjustments: $6,888.20 (must receive prior approval from the Town)

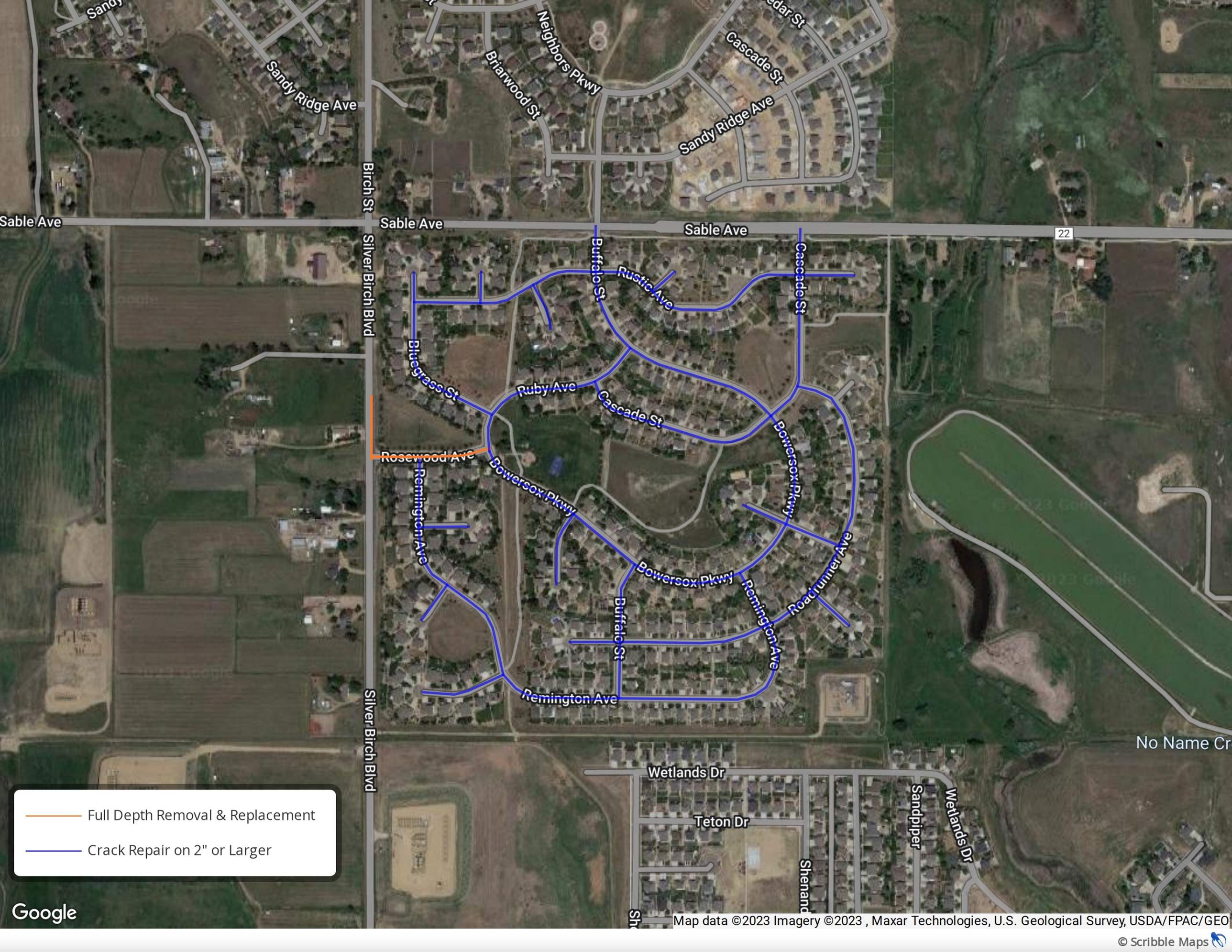
* Totals are derived as per attached Firestone 2023 Paving Program Contract Cost Breakdown.

- Contractor shall complete work in the order specified by the Town.
- Contractor shall complete the above-stated projects.
- Contractor shall restripe roadway and intersections where applicable.
- Contractor shall reinstall all thermoplastic markings where applicable.
- Work to start no later than 4/1/2023 weather depending. Substantial completion in 60 days from Notice to Proceed and full completion in 90.
- Contractor shall provide and maintain all traffic control devices and measures for the project.
- Contractor shall provide for all no parking notifications as well as door knockers placed in neighbors in advance of work starting.
- All Towns Standards and Specifications to be followed to include the procedures outlined in the Town's Street, Curb, and Gutter Maintenance/Replacement SOP to ensure stormwater compliance including installation and maintenance of stormwater control measures. https://www.firestoneco.gov/DocumentCenter/View/6348/Section-500---Roadway--Asphalt-Design?bidIdContractor shall be responsible for all geotechnical services per Towns Standards and Specifications.

FIRESTONE - 2023 PAVING PROGRAM CONTRACT COST BREAKDOWN

Description	Quantity	Units	Unit Price	Total
4' Edge Mill & 2" Overlay				
Edge Milling - 2" along the gutter line to zero 4'	7715	SY	$ 2.00	$ 15,430.00
Overlay - "S" (3/4" nominal) 2-inch thickness	3587	TONS	$ 83.00	$297,721.00
R & R Concrete @ MH's & WV's w/Asphalt	82	TON	$ 330.00	$ 27,060.00
Epoxy Pavement Striping where applicabe	0	LF	$ -	$ -
Thermoplastic Pavement Markings where applicable	0	LF	$ -	$ -
Traffic Control	1	LS	$ 31,446.80	$ 31,446.80
Stormwater BMP Compliance	1	LS	$ 4,450.00	$ 4,450.00
Total 4' Edge Mill & 2" Overlay				$376,107.80
R & R Rosewood Avenue				
Full Depth R&R Rosewood Ave. (Removal of Asphalt)	2322	SY	$ 10.00	$ 23,220.00
6" Asphalt Paving	795	TONS	$ 83.00	$ 65,985.00
Epoxy Pvmt Marking 4"	368	LF	$ 2.00	$ 736.00
Thermoplastic Pavement Markings Arrows	2	EA	$ 415.00	$ 830.00
Traffic Control	1	LS	$ 15,000.00	$ 15,000.00
Stormwater BMP Compliance	1	LS	$ 450.00	$ 450.00
Total R & R Rosewood Avenue				$106,221.00
R & R Birch Street				
Full-depth R&R Birch Street	2427	SY	$ 11.00	$ 26,697.00
6" Asphalt Paving	830	TONS	$ 85.50	$ 70,965.00
Epoxy Pvmt Marking 4"	2304	LF	$ 1.00	$ 2,304.00
Epoxy Pvmt Marking 8"	190	LF	$ 2.00	$ 380.00
Thermoplastic Pavement Marking Arrows	2	EA	$ 415.00	$ 830.00
Thermoplastic Pavement Marking ONLY	1	EA	$ 500.00	$ 500.00
Traffic Control	1	LS	$ 17,500.00	$ 17,500.00
Stormwater BMP Compliance	1	LS	$ 1,400.00	$ 1,400.00
Total R & R Birch Street				$120,576.00
Stoneridge Crack Repair				
Stoneridge Crack repair - mill 3' wide 3" deep w/G	300	TONS	$ 87.50	$ 26,250.00
R & R Concrete around Manholes & VB's	50	TON	$ 330.00	$ 16,500.00
Asphalt Paving (3/4" nominal)	300	TONS	$ 236.50	$ 70,950.00
Thermoplastic Pavement Markings where applicable	6	LF	$ 1.00	$ 6.00
Traffic Control	1	LS	$ 34,000.00	$ 34,000.00
Stormwater BMP Compliance	1	LS	$ 2,500.00	$ 2,500.00
Total Stoneridge Crack Repair				$150,206.00
Minor Quantity Adjustments	1	LS	$ 6,888.20	$ 6,888.20
		TOTAL CONTRACT AMOUNT		$759,999.00


Edge Mill & Overlay
Firestone Blvd
Echo St
Falcon St
Frontier St
Ebony St
Thistle Ridge Ave
Tenderfoot Ave
Eldridge St
Sunburst Ave
Farmdale St
Ferncrest St
Summerset Ave
Taylor Ave
Stagecoach Ave
Dresden St
St Vrain Ranch Blvd
Quincy Ave
Quincy Cir
Foxfire St
Devonshire St
Sparrow Cir
Dahlia St
Snowberry Ave
Shenandoah Ave
Silverleaf Ave
Dusk St
Dogwood St
Dover St
Eastview St
Scenic Ct
Deerfield St
Sage Ave
Saddleback Ave
Sable Ave
Park Ave
Google
Map data ©2023 Imagery ©2023 , Maxar Technologies, U.S. Geological Survey, USDA/FPAC/GEO
© Scribble Maps



© Scribble Maps

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 8.b **Discussion/Action** **Meeting Date:** March 22, 2023 **Initiated By:** Julie Pasillas **Dept:** Public Works

AGENDA TITLE

Resolution 23-34: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND A-ONE CHIPSEAL COMPANY FOR CHIPSEAL SERVICES IN THE ST VRAIN RANCH, RIDGE CREST, SAGEBRUSH, OWL LAKE ESTATES, SADDLEBACK HEIGHTS AND SADDLEBACK/FALCON POINT SUBDIVISIONS

RECOMMENDATION

Staff recommends approval of Resolution 23-34, authorizing the execution of the Construction Contract with A-One Chipseal Company for chipseal services and authorizing staff to expend funds.

SUMMARY

A-ONE Chipseal Company has been selected to complete a Chipseal project for the areas listed below. The project will begin no later than July 1, 2023, and will be completed within 90 days.

Chipseal application:

- St Vrain Ranch
- Ridgecrest
- Sagebrush
- Saddleback Heights
- Owl Lakes
- Saddleback/Falcon Point

FINANCIAL CONSIDERATIONS

The contract includes an amount not to exceed $1,200,000.00. Sufficient funds were budgeted in 2023 in the Capital Projects Fund.

HISTORY AND PREVIOUS BOARD ACTION

During the 2023 budget work sessions with the Board of Trustees, staff presented this project as part of the CIP pavement maintenance.

In February of 2023, staff prepared and advertised an invitation to bid for this project. Two potential bidders attended the mandatory pre-bid meeting, and one submitted a bid. The staff evaluated the bid, and A-ONE Chipseal Company was selected for this project.

ATTACHMENTS

1. Res No 23-34 CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND A-ONE CHIPSEAL COMPANY
2. Construction Contract-2023 Chip Seal Program

3. Map-Chip Seal St Vrain Ridge Crest Sagebrush
4. Map-Chip Seal Owl Lake Saddleback Heights Saddleback-Falcon Point

RESOLUTION NO. 23-34

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING A CONSTRUCTION CONTRACT BETWEEN THE TOWN OF FIRESTONE AND A-ONE CHIPSEAL COMPANY FOR CHIPSEAL SERVICES IN THE ST VRAIN RANCH, RIDGE CREST, SAGEBRUSH, OWL LAKE ESTATES, SADDLEBACK HEIGHTS AND SADDLEBACK/FALCON POINT SUBDIVISIONS

WHEREAS, the Town of Firestone ("Town") is in need of chipseal services for the St. Vrain Ranch, Ridgecrest, Sagebrush, Owl Lake Estates, Saddleback Heights, and Saddleback/Falcon Point Subdivisions Project; and

WHEREAS, the Town issued an invitation for bids for the work and upon review of those submitted selected A-One Chipseal Company as the lowest responsive and responsible bidder.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO:

The Construction Contract between the Town of Firestone and A-One Chipseal Company for the St. Vrain Ranch, Ridgecrest, Sagebrush, Owl Lake Estates, Saddleback Heights, and Saddleback/Falcon Point Subdivisions Project is approved in substantially the same form as the copy attached hereto and made a part of this resolution and the Mayor is authorized to execute the Contract on behalf of the Town.

INTRODUCED, READ AND ADOPTED this 22nd day of March, 2022.

TOWN OF FIRESTONE, COLORADO

_____
Drew Alan Peterson, Mayor

ATTEST:

_____
Miriam Luna Gonzalez, Deputy Town Clerk

APPROVED AS TO FORM:

_____
William P. Hayashi, Town Attorney

CONSTRUCTION CONTRACT

THIS CONSTRUCTION CONTRACT (the "Construction Contract" or "Agreement") is made and entered into this 22nd day of March, 2023 (the "Effective Date"), by and between the **TOWN OF FIRESTONE**, a Colorado municipal corporation with an address of of 9950 Park Avenue, Firestone, Colorado 80504 (the "Town" or the "Owner"), and **A-One Chipseal Company**, an independent contractor with a principal place of business at 2505 East 74th Aveune, Denver, Colorado 80229 ("Contractor") (each a "Party" and collectively the "Parties").

WHEREAS, the Town requires services; and

WHEREAS, the Town has found the Contractor to have the expertise and experience to perform the required services.

NOW THEREFORE, consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

I. SCOPE OF WORK

A. The Contractor shall complete all Work and perform all Services described or reasonably implied from the Scope of Work set forth in Exhibit A and the Contract Documents, attached hereto and incorporated herein by this reference and known as: : **2023 Chip Seal Program S2023-9233**.

B. A change in the Scope of Work shall not be effective unless authorized as a written amendment to this Agreement or change order in accordance with the Contract Documents. If the Contractor proceeds without such written authorization, the Contractor shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

C. Within ten days of the Effective Contract Date, the Contractor shall provide the performance bond, labor & material payment bond, and certificate of insurance required by the contract Documents.

II. RESERVED

III. CONTRACT TIMES; COMMENCEMENT AND COMPLETION OF WORK

A. The Work shall be substantially completed within 60 days of the Effective Date of this contract. It shall continue until the Contractor completes the Scope of Services to the Town's satisfaction, or until terminated as provided herein.

B. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay the Contractor for all Work previously authorized and completed prior to the date of termination. If, however, the Contractor has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

C. Should a delay in completion constitute a compensable inconvenience to the Town and its residents, the liquidated damages established in this Section shall be enforced. Such damages are not a penalty, and the parties recognize the delays, expenses, and difficulties involved in proving the actual loss suffered by the Town if the Work is not completed on time. For each day that all or a portion of the Work is delayed beyond the deadlines set forth in Section III hereof, plus any extensions thereof allowed, the Contractor shall be assessed the amount of two hundred fifty dollars ($250) each day until the Work is complete.

IV. COMPENSATION

In consideration for the completion of the Work by Contractor, the Town shall pay Contractor, subject to all of the terms and conditions of the Contract Documents, an amount not to exceed **$1,200,000.00** (the "Contract Price"). The Contract Price shall include all fees, costs, and expenses incurred by the Contractor, and no additional amounts shall be paid by the Town for such fees, costs, and expenses.

V. PAYMENT PROCEDURES

A. The Contractor may submit Applications for Payment for completed Work per the UNIT-PRICE BID FORM or the LUMP-SUM BID FORM. The Contractor may submit periodic invoices, which the Town shall pay within 30 days of receipt.

B. The Town may retain up to five percent (5%) of the calculated value of completed work from each application of payment up until the contract is completed satisfactorily and finally accepted by the Town.

C. Upon issuing a final acceptance of the Work for the Project, the Town shall pay to Contractor the remainder of the funds or monies previously withheld as retainage

VI. RESPONSIBILITY

A. Contractor hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and licenses in good standing, required by law.

B. The Work performed by Contractor shall be in accordance with generally accepted practices and the level of competency presently maintained by other practicing contractors in the same or similar type of Work in the applicable community.

C. The Work performed by the Contractor hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations, including the Keep Jobs in Colorado Act, C.R.S. 8-17-101, et seq. (the "Act") and the rules adopted by the Division of Labor of the Colorado Department of Labor and Employment implementing the Act (the "Rules").

D. The Town's review, approval or acceptance of, or payment for any completed Work shall not be construed to operate as a waiver of any rights under this Construction Contract or of any cause of action arising out of the performance of this Construction Contract.

E. The Contractor hereby warrants to the Town that all materials and equipment used in the Work, and made a part of the Work, or placed permanently in the Work, shall be new unless otherwise specified in the Contract Documents. The Contractor further warrants that all equipment and materials shall be of good quality, conform to the requirements of the Contract Documents and will be free from defects. All Work, materials, or equipment not conforming to the Contract Documents shall be considered defective.

F. The Contractor shall warrant and guarantee all materials and equipment furnished under the contract and all Work performed for one year after the date of Substantial Completion. Under this warranty, Contractor agrees to repair or replace, at its own expense, any Work that is found to be defective. The expiration of the warranty period shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for Work negligently or defectively performed.

VII. OWNERSHIP

Any materials, items, and Work specified in the Scope of Work, and any and all related documentation and materials provided or developed by the Contractor shall be exclusively owned by the Town. The Contractor expressly acknowledges and agrees that all Work performed under the Scope of Work constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," the Contractor hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such Work. The Town may, with respect to all or any portion of such Work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change such Work without providing notice to or receiving consent from Contractor.

VIII. INDEPENDENT CONTRACTOR

The Contractor is an independent contractor. Notwithstanding any other provision of this Construction Contract, all personnel assigned by Contractor to perform Work under the terms of this Construction Contract shall be, and remain at all times, employees or agents of Contractor for all purposes. Contractor shall make no representation that it is a Town employee for any purposes.

IX. INSURANCE

A. Contractor agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Contractor pursuant to this Construction Contract. At a minimum, Contractor shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees, or its contractors shall be excess and not contributory insurance to that provided by the Contractor. The Contractor shall be solely responsible for any deductible losses under any policy.

C. Contractor shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Construction Contract.

X. INDEMNIFICATION

The Contractor agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs, and assigns from and against all claims, liability, damages, losses, expenses, and demands, including attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Construction Contract if such injury, loss, or damage is caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other faults of the Contractor, any subcontractor of Contractor, or any officer, employee, representative, or agent of Contractor, or which arise out of a worker's compensation claim of any employee of Contractor or of any employee of any subcontractor of Contractor.

XI. WORKER WITHOUT AUTHORIZATION

A. Certification. By entering into this Construction Contract, Contractor hereby certifies that, at the time of this certification, it does not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who will perform Work under this Construction Contract and that Contractor will participate in either the E-Verify Program administered by the U.S. Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment to confirm the employment eligibility of all employees who are newly hired to perform Work under this Construction Contract.

B. Prohibited Acts. The Contractor shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform Work under this Construction Contract, or enter into a contract with a subcontractor that fails to certify to Contractor that the subcontractor shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform Work under this Construction Contract.

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3. If the Contractor obtains actual knowledge that a subcontractor performing Work under this Construction Contract knowingly employs or contracts with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing Work under this Construction Contract, Contractor shall: notify the subcontractor and the Town within 3 days that Contractor has actual knowledge that the subcontractor is employing or contracting with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing Work under this Construction Contract; and terminate the subcontract with the subcontractor if within 3 days of receiving the notice required pursuant to subsection 3 hereof, the subcontractor does not stop employing or contracting with the worker without authorization who is performing Work under this Construction Contract; except that Contractor shall not terminate the subcontract if during such 3 days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing Work under this Construction Contract.

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   b. The amount of the adjustment to the Contract Price; and
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F. Severability. If any provision of this Construction Contract is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

G. Modification. This Construction Contract may only be modified upon written Agreement of the Parties.

H. Assignment. Neither this Construction Contract nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

I. Governmental Immunity. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

J. Rights and Remedies. The rights and remedies of the Town under this Construction Contract are in addition to any other rights and remedies provided by law. The expiration of this Construction Contract shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for Work negligently or defectively performed.

K. Subject to Annual Appropriation. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

IN WITNESS WHEREOF, the Parties have executed this Construction Contract as of the Effective Date.

TOWN OF FIRESTONE, COLORADO

_____

Drew Alan Peterson, Mayor

ATTEST:

_____

Kristi K Bashor, CMC, Town Clerk

APPROVED AS TO FORM:

_____

William P. Hayashi, Town Attorney

A-One Chipseal Company

By: Josh Krueger

STATE OF COLORADO)

) ss.

COUNTY OF Adams)

The foregoing instrument was subscribed, sworn to and acknowledged before me this 10 day of March, 2023 by Josh Krueger as Vice President of A-1 Chipseal Co.

My commission expires:

(SEAL)

STEPHANIE WALLIS
Notary Public
State of Colorado
Notary ID # 20054012221
My Commission Expires 04-02-2025

Stephanie Wallis

Notary Public

FIRESTONE

SCOPE OF WORK

Contractor's Duties

During the term of this Construction Contract, the Contractor shall perform the following duties, as directed by the Town:

- Chip seal program the following subdivisions:
  - St. Vrain Ranch $467,779.72
  - Ridge Crest $336,471.93
  - Sagebrush $203,293.48
  - Owl Lakes $33,217.20
  - Saddleback Heights $43,601.72
  - Saddleback/Falcon Point 109,834.92
  - Minor quanity adjustments: $5,801.03 (must receive prior approval from the Town)

- Contractor shall Chip seal selected subdivisions with ¼" aggragate.

- Contractor shall restripe roadways and intersections where applicable.

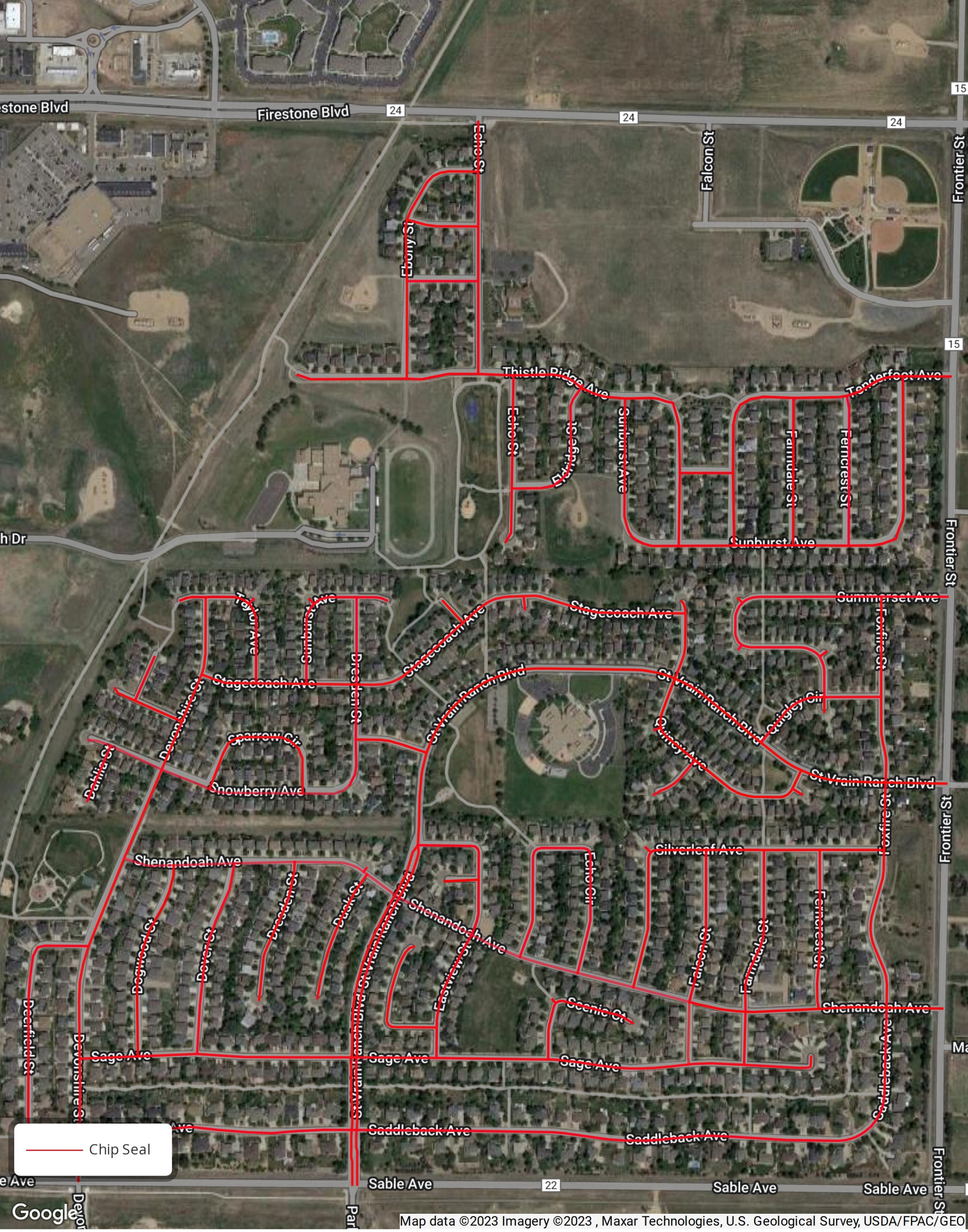
- Contractor shall reinstall all thermoplastic markings where applicable.

- Work to start no later than 7/1/2023 Substantial completion in 60 days full completion in 90.

- Contractor shall provide and maintain all traffic control devices and measures for the project.

- Contractor shall provide for all no parking notifications as well as door knockers placed in neighbors in advance of work starting.

- All Towns standards and specifications to be followed to include the procedures outlined in the Towns Street, Curb and gutter maintenance/Replacement SOP to ensure stormwater compliance including installation and maintenance of stormwater control measures. https://www.firestoneco.gov/DocumentCenter/View/6348/Section-500---Roadway--Asphalt-Design?bidId


Firestone Blvd
24
Echo St
Ebony St
Falcon St
Frontier St
15
Thistle Ridge Ave
Tenderfoot Ave
Sunburst Ave
Fairdale St
Fernrest St
Summerset Ave
Stagecoach Ave
St Vrain Ranch Blvd
Quigley Cir
Quincy Ave
Taylor Ave
Devonshire St
Dresden St
Sparrow Cir
Snowberry Ave
Dahlia St
Shenandoah Ave
Silverleaf Ave
Eastview St
Falcon St
Scenic Ct
Dogwood St
Dover St
Bush St
Deerfield St
Sage Ave
Saddleback Ave
Sable Ave
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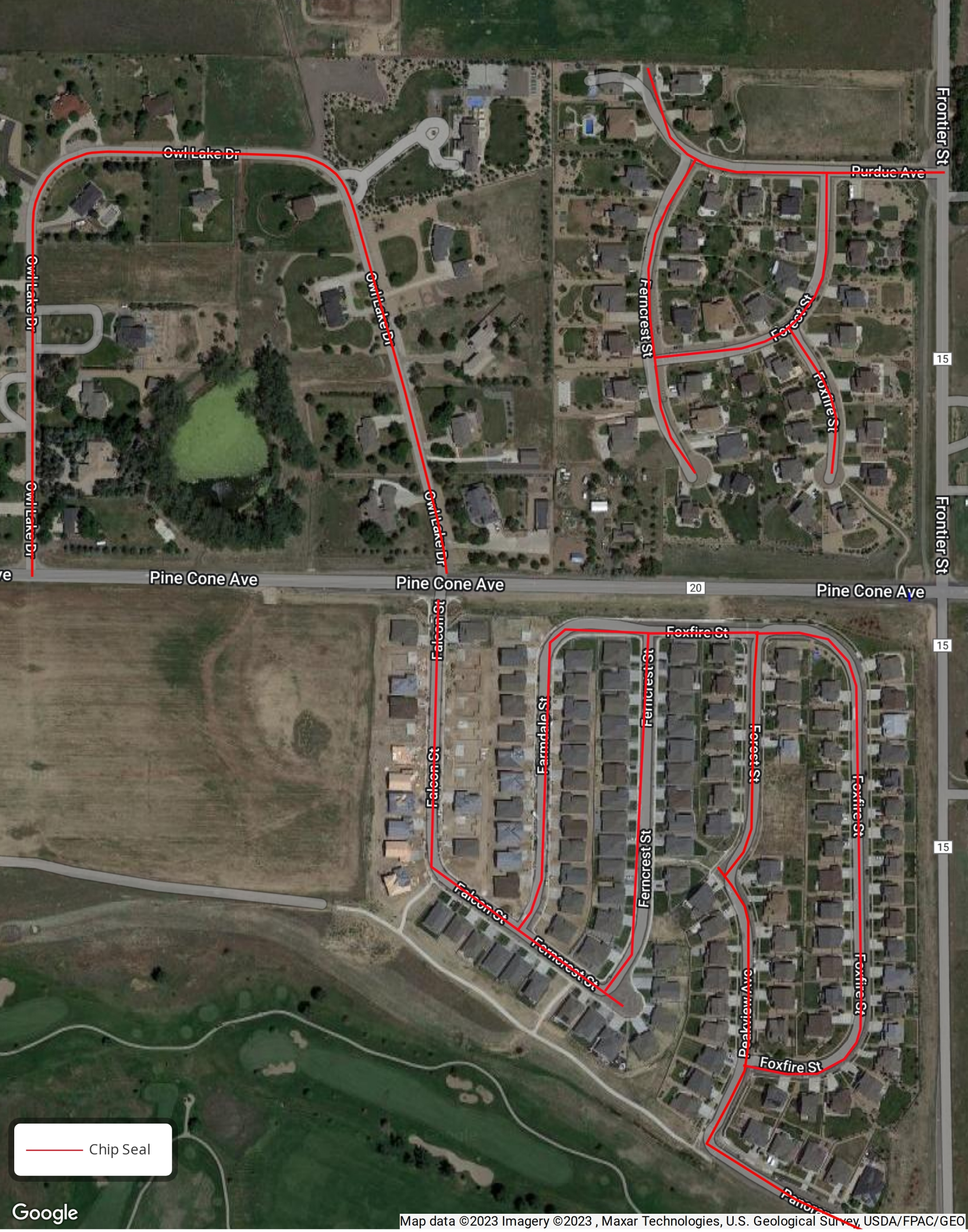
Chip Seal
Google
Map data ©2023 Imagery ©2023 , Maxar Technologies, U.S. Geological Survey, USDA/FPAC/GEO
© Scribble Maps


Owl Lake Dr
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Frontier St
Pine Cone Ave
Pine Cone Ave
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Pine Cone Ave
Falcon St
Foxfire St
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Farmdale St
Ferncrest St
Forest St
Foxfire St
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Falcon St
Ferncrest St
Ferncrest St
Foxfire St
Foxfire St
Chip Seal
Google
Map data ©2023 Imagery ©2023 , Maxar Technologies, U.S. Geological Survey, USDA/FPAC/GEO
© Scribble Maps

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 8.c **Discussion/Action** **Meeting Date:** March 22, 2023 **Initiated By:** Nate Haasis **Dept:** Engineering - Town

AGENDA TITLE

Resolution 23-32: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND BOHANNAN HUSTON FOR ENGINEERING DESIGN SERVICES PERTAINING TO THE WELD COUNTY ROAD 20 AND COAL RIDGE DITCH BRIDGE REPLACEMENT PROJECT

RECOMMENDATION

Staff recommends the Board approve Resolution 23-32, approving an agreement with Bohannan Hutson, Inc., and authorizing the expenditure of funds.

SUMMARY

In March 2022, the structure located at Pine Cone Ave (WCR 20) and Coal Ridge Ditch was inspected by CDOT and received a condition rating of Poor. Due to this Poor condition, the Town will need to replace this bridge. The scope of work for this project includes the steps to achieve the design of the bridge replacement project.

Bohannan Hutson, Inc. (BHI) provided a project scope and fee of $284,269.80 for design, and Staff are recommending a contract with a design contingency of $15,730.02 (approximately 5%) and a not-to-exceed amount of $300,000.00. The overall design schedule is approximately 12-14 months. Once the design is complete, the anticipated next steps would include a request for bids for construction.

This project is a collaboration between the consultant, the Town, and the Colorado Department of Transportation Region 4 (CDOT). CDOT involvement in this project is required as the Town is attempting to receive a portion of the construction funding through CML's Off-System Bridge Funds grant. CML should notify the Town in the coming months if our grant application has been accepted, but regardless of that outcome, the bridge is in poor condition and needs replaced.

FINANCIAL CONSIDERATIONS

The agreement includes an amount not to exceed $300,000.00. The 2023 Budget included $1,000,000.00 for the total project budget for the WCR 20 and Coal Ridge Ditch structure replacement.

HISTORY AND PREVIOUS BOARD ACTION

The Board approved the 2023 Budget, which included $1,000,000.00 for the total project budget for the WCR 20 and Coal Ridge Ditch structure replacement.

A Request For Proposals (RFP) was posted on December 2, 2022, inviting engineering consultants to submit proposals for design services for the replacement of the bridge structure located at Pine Cone Ave (WCR 20) and Coal Ridge Ditch. The Town received proposals from four consultants. Engineering and Public Work's staff reviewed the proposals, selected a top-ranked firm, and began finalizing the scope and fee for the project with them. During scope and fee discussions, Town staff sought clarification on their assumptions and exclusions, which led to them submitting an increased fee. As a result, Town staff notified the firm they were no longer the top-ranked firm. The Town contacted the next highest-ranked firm, Bohannan Huston, Inc. (BHI) to notify them they were now the top-ranked firm. BHI is currently under contract with the Town to perform On-Call Traffic Engineering services,

completed the design of the King Soopers and Oak Meadows Traffic Signals, and has experience with other similar bridge replacement design projects.

ATTACHMENTS

1. Reso 23-32 Bohannan Huston PSA (WCR 20 and Coal Ridge Ditch Bridge Replacement) (002)
2. WCR 20 Bridge Contract

RESOLUTION NO. 23-32

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND BOHANNAN HUSTON FOR ENGINEERING DESIGN SERVICES PERTAINING TO THE WELD COUNTY ROAD 20 AND COAL RIDGE DITCH BRIDGE REPLACEMENT PROJECT

WHEREAS, the Town of Firestone ("Town") is in need of professional engineering design services for the Weld County Road 20 and Coal Ridge Ditch Bridge Replacement Project (the "Project"); and

WHEREAS, the Town published a request for proposals for such services for the Project; and

WHEREAS, the Town has evaluated the proposals submitted in response to the request for proposals, and finds that Bohannan Huston ("Bohannan") is the most qualified for the professional services described in the request for proposals; and

WHEREAS, the Town finds that Bohannan has the expertise, qualifications, and experience to perform the work and duties required for the Project, and desires to select Bohannan for the request for proposals and to enter into an agreement with Bohannan to provide the services as described in the scope of services, attached to the Professional Services Agreement as Exhibit A.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO:

The Professional Services Agreement between the Town of Severance and Bohannan Huston is approved in substantially the same form as the copy attached hereto and made a part of this Resolution, and the Mayor is authorized to execute the Agreement on behalf of the Town.

PASSED AND ADOPTED this ____ day of _____, 2023.

_____
Drew Peterson, Mayor

ATTEST:

_____
Miriam Luna Gonzalez, Deputy Town Clerk

APPROVED AS TO FORM:

_____
William P. Hayashi, Town Attorney

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT FOR PROFESSIONAL SERVICES (the "Agreement") is made and entered into this _____ day of _____, 2023 (the "Effective Date"), by and between the **TOWN OF FIRESTONE**, a Colorado municipal corporation with an address of 9950 Park Avenue, Firestone, Colorado 80504 (the "Town"), and **Bohannan Huston** an Independent Consultant with a principal place of business at 9785 Maroon Circle, Englewood, Colorado 80112 ("Consultant ") (each a "Party" and collectively the "Parties").

WHEREAS, the Town requires professional services; and

WHEREAS, Consultant has held itself out to the Town as having the requisite expertise and experience to perform the required professional services.

NOW, THEREFORE, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

I. SCOPE OF SERVICES

A. Consultant shall furnish all labor and materials required for the complete and prompt execution and performance of all duties, obligations, and responsibilities which are described or reasonably implied from the Scope of Services set forth in **Exhibit A**, attached hereto and incorporated herein by this reference and known as: **Weld County Road 20 and Coal Ridge Ditch Bridge Replacement S2022-9227.**

B. A change in the Scope of Services shall not be effective unless authorized as an amendment to this Agreement. If Consultant proceeds without such written authorization, Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

II. TERM AND TERMINATION

A. This Agreement shall commence on the Effective Date and shall continue until Consultant completes the Scope of Services to the satisfaction of the Town or until terminated as provided herein.

B. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay Consultant for all work previously authorized and completed prior to the date of termination. If, however, Consultant has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

III. COMPENSATION

In consideration for the completion of the Scope of Services by Consultant, the Town shall pay Consultant based upon services rendered and billed in accordance with the rate schedule attached hereto as **Exhibit B**, but in no event shall the total compensation exceed $284,269.80. This amount shall include all fees, costs and expenses incurred by Consultant, and no additional amounts shall be paid by the Town for

such fees, costs, and expenses. Consultant may submit periodic invoices, which shall be paid by the Town within 30 days of receipt.

IV. PROFESSIONAL RESPONSIBILITY

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community. The work and services to be performed by Consultant hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations.

B. The Town's review, approval or acceptance of, or payment for any services shall not be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

C. Because the Town has hired Consultant for its professional expertise, Consultant agrees not to employ Sub-Consultants to perform any work except as expressly set forth in the Scope of Services.

V. OWNERSHIP

Any materials, items, and work specified in the Scope of Services, and any and all related documentation and materials provided or developed by Consultant shall be exclusively owned by the Town. Consultant expressly acknowledges and agrees that all work performed under the Scope of Services constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," Consultant hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such work. The Town may, with respect to all or any portion of such work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change such work without providing notice to or receiving consent from Consultant.

If the Town reuses or makes any modification to Consultant's designs, documents or work product without the prior written authorization of Consultant, the Town agrees, to the fullest extent permitted by law, to release the Consultant, its officers, directors, employees and sub-consultants from all claims and causes of action arising from such uses, and shall indemnify and hold them harmless from all costs and expenses, including the cost of defense, related to claims and causes of action to the extent such costs and expenses arise from the Town's modification or reuse of the documents.

The Town expressly acknowledges and agrees that the documents and data to be provided by Consultant under the Agreement may contain certain design details, features and concepts from the Consultant's own practice detail library, which collectively may form portions of the design for the Project, but which separately, are, and shall remain, the sole and exclusive property of Consultant. Nothing herein shall be construed as a limitation on the Consultant's right to re-use such component design details, features and concepts on other projects, in other contexts or for other clients.

VI. INDEPENDENT CONSULTANT

Consultant is an independent Consultant. Notwithstanding any other provision of this Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is a Town employee for any purposes.

VII. INSURANCE

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to this Agreement. At a minimum, Consultant shall procure and maintain, and shall cause any Sub-Consultant to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and Consultants as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

3. Professional liability insurance with minimum limits of $1,000,000 each claim and $2,000,000 general aggregate.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees or its Consultants shall be excess and not contributory insurance to that provided by Consultant. Consultant shall be solely responsible for any deductible losses under any policy.

C. Consultant shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Agreement.

VIII. INDEMNIFICATION

A. Consultant agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement if such injury, loss, or damage is caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other fault of Consultant, any Sub-Consultant of Consultant, or

any officer, employee, representative, or agent of Consultant, or which arise out of a worker's compensation claim of any employee of Consultant or of any employee of any Sub-Consultant of Consultant. Consultant's liability under this indemnification provision shall be to the fullest extent of, but shall not exceed, that amount represented by the degree or percentage of negligence or fault attributable to Consultant, any Sub-Consultant of Consultant, or any officer, employee, representative, or agent of Consultant or of any Sub-Consultant of Consultant.

B. If Consultant is providing architectural, engineering, surveying or other design services under this Agreement, the extent of Consultant's obligation to indemnify and hold harmless the Town may be determined only after Consultant's liability or fault has been determined by adjudication, alternative dispute resolution or otherwise resolved by mutual Agreement between the Parties, as provided by C.R.S. § 13-50.5-102(8)(c).

IX. WORKER WITHOUT AUTHORIZATION

A. Certification. By entering into this Agreement, Consultant hereby certifies that, at the time of this certification, it does not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who will perform work under this Agreement and that Consultant will participate in either the E-Verify Program administered by the United States Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment to confirm the employment eligibility of all employees who are newly hired to perform work under this Agreement.

B. Prohibited Acts. Consultant shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform work under this Agreement, or enter into a contract with a Sub-Consultant that fails to certify to Consultant that the Sub-Consultant shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform work under this Agreement.

C. Verification.

1. If Consultant has employees, Consultant has confirmed the employment eligibility of all employees who are newly hired to perform work under this Agreement through participation in either the E-Verify Program or the Department Program.

2. Consultant shall not use the E-Verify Program or Department Program procedures to undertake pre-employment screening of job applicants while this Agreement is being performed.

3. If Consultant obtains actual knowledge that a Sub-Consultant performing work under this Agreement knowingly employs or contracts with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing work under this Agreement, Consultant shall: notify the Sub-Consultant and the Town within 3 days that Consultant has actual knowledge that the Sub-Consultant is employing or contracting with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing work under this Agreement; and terminate the subcontract with the Sub-Consultant if within 3 days of receiving the notice required pursuant to subsection 3 hereof, the Sub-Consultant does not stop employing or contracting with the worker without authorization who is performing work under this Agreement;

except that Consultant shall not terminate the subcontract if during such 3 days the Sub-Consultant provides information to establish that the Sub-Consultant has not knowingly employed or contracted with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing work under this Agreement.

D. Duty to Comply with Investigations. Consultant shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that Consultant is complying with the terms of this Agreement.

X. CHANGE ORDERS

A. A Change Order is a written instrument issued after execution of the Agreement signed by Town and Contractor, stating their Agreement, as applicable, upon all of the following:
   a. The scope of the change in the Work;
   b. The amount of the adjustment to the Contract Price; and
   c. The extent of the adjustment to the Contract Times(s).

B. All changes in the Work authorized by applicable Change Order shall be performed under the applicable conditions of the Contract Documents. Town and Contractor shall negotiate in good faith and as expeditiously as possible the appropriate adjustment such changes.

XI. MISCELLANEOUS

A. Governing Law and Venue. This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Weld County, Colorado.

B. No Waiver. Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of this Agreement.

C. Integration. This Agreement constitutes the entire Agreement between the Parties, superseding all prior oral or written communications.

D. Third Parties. There are no intended third-party beneficiaries to this Agreement.

E. Notice. Any notice under this Agreement shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class United States Mail to the Party at the address set forth on the first page of this Agreement.

F. Severability. If any provision of this Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

G. Modification. This Agreement may only be modified upon written Agreement of the Parties.

H. Assignment. Neither this Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

I. Governmental Immunity. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities or protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

J. Rights and Remedies. The rights and remedies of the Town under this Agreement are in addition to any other rights and remedies provided by law. The expiration of this Agreement shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

K. Subject to Annual Appropriation. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

L. Representative Authority. Each person signing this Agreement represents and warrants that he or she is duly authorized and has the legal capacity to execute the Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

TOWN OF FIRESTONE, COLORADO

_____

Drew Peterson, Town Mayor

ATTEST:

_____

Miriam Luna Gonzalez, Deputy Town Clerk

APPROVED AS TO FORM:

_____

William P. Hayashi, Town Attorney

CONSULTANT: BOHANNAN HUSTON

By: _____

Exhibit A

WCR 20 Bridge Replacement

Detailed Scope of Work

The following duties shall be performed by the S during the term of their agreement with the Town of Firestone:

The design of the replacement of the Weld County Road 20 Bridge over the Coal Ridge Ditch structure and all associated elements of the bridge. The scope of work for this project includes the steps to achieve the complete design of the structure.

1. General

1.1. Project Management

The project management team shall consist of the Town of Firestone Project Manager, also referred to by CDOT as the Resident Engineer and the Consultant Project Manager.

1.2. Project Communication and Billing

1.2.1. The regular working contact will be between the Town of Firestone Project Manager and the consultant Project Manager. Consultant Project Manager and the Town Project Manager shall provide each other with copies of pertinent written communications.

1.2.2. Consultant Project Manager shall provide the Town Project Manager with periodic project updates and reports, monthly billings, and minutes of all meetings on a routine basis

1.3. Project Coordination

1.3.1. Responsibilities of Consultant

1.3.1.1. Consultant shall be responsible for planning and holding meetings, identifying potential problems, assisting with, but not entirely responsible for, keeping the Town up to date with all Local agency deliverables needed to acquire CDOT approval and federal funding (keep up with forms and requirements).

1.3.1.2. Consultant shall coordinate with Coal Ridge Ditch company and call all their meetings together, submitting and filing all required paperwork.

1.3.1.3. Consultant shall be responsible for planning and holding meetings with CDOT, filling out all required paperwork, and required communication with the CDOT

1.4. Schedule Preparation, Tracking, and Coordination

1.4.1. Consultant shall prepare a schedule and see to it that is followed. Consultant shall give the Town of Firestone sufficient prior notice of any situation that would change the project schedule.

1.4.2. Deliverables
Project Schedule

1.5. Project, Stakeholder, and Public Meetings

Bi-weekly progress meetings shall be arranged and conducted by the consultant to review the following:

- Latest Project developments
- Activities required to be completed since the last meeting
- Coordination and tracking of work effort
- Problems encountered/anticipated and resolution/potential solutions
- Project schedule update
- Action Items
- Coordination required with other agencies
- Revised Construction Cost Estimate

These meetings shall coincide with important project milestones; However, the type and number of meetings, documents, etc shall depend on the category and characteristics of the project work. It is anticipated that the following meetings will be required:

- Structure Selection Report
- Design Scope Review/Kickoff Meeting
- FIR Meeting
- FOR Meeting
- Meetings with Coal Ridge Ditch Company
- Utility Coordination meetings

Project meeting minutes shall be completed and provided to the Project Manager within five (5) working days of the actual meeting. When a definable task is discussed during a meeting, the minutes shall identify the "Action Item", the party responsible for accomplishing it, and the proposed completion date.

2. Project Start-Up

2.1. Design Scope Review/Kickoff Meeting

Before the meeting, the consultant shall provide the following:

- Kickoff meeting agenda
- Develop questions for the Town
- Develop a list of documents or data to be requested from the Town and from CDOT

2.1.1. Deliverables

- Kick-off Meeting minutes with Action items

2.2. Development of Project Standards and Design Criteria

2.2.1. Design Criteria: The consultant shall develop project standards and guidance documents based on their review of the project site and in coordination with the CDOT standards

2.2.2. According to a Town-developed masterplan, the proposed structure width shall accommodate a future widened 4-lane roadway. However, construction plans shall maintain the existing 2 lane roadway as part of this project.

2.2.3. Deliverables: Design Criteria Memo

2.3. Municipality, Utility, Stakeholder, and Public Notification List

2.3.1. Deliverables: Property Owner/Stakeholder List (Excel Format)

2.4. Right of Entry (ROE)

2.4.1. CDOT Right-of-Entry Forms shall be used to notify landowners

2.4.2. Need to Verify Coal Ridge Ditch Company

2.5. Utility Coordination

2.5.1. The consultant shall be responsible for coordinating with the utility companies for conflict resolutions and utility relocations.

3. Data Collection

3.1. Site Visit (Included with kickoff meeting)

3.1.1. Field visit to verify the scope of work. The scope may change at this stage.

3.2. Geotechnical Data

3.2.1. Consultant shall acquire all geotechnical information required for a complete design

3.2.2. Geotechnical investigation shall include pavement design recommendations

3.3. Subsurface Utility Engineering (SUE) in accordance with state regulations

3.4. CDOT Clearances

The consultant shall initiate this process with CDOT to obtain all clearances needed for construction:

- Environmental
- Right of Way (ROW)
- Utility
- All others required

3.4.1. The consultant shall initiate this process with Coal Ridge Ditch Company to obtain all clearances needed for construction.

3.5. Initial Survey

3.5.1. The consultant shall prepare plans for submittal and the survey shall be performed under the direct supervision of and sealed by a Licensed Professional Land Surveyor (PLF) in the State of Colorado

3.5.2. Deliverables: Land Survey Control Diagram and Topographic Exhibit

4. **Field Inspection Review (FIR) Plans**

4.1. WCR 20 traffic counts shall be provided by the Town of Firestone

4.2. FIR Preliminary Plan Set

4.2.1. A CDOT-format Structure Selection Report (SSR) shall be developed by the consultant through design discussions with the Town.

4.2.2. The consultant shall develop FIR-level plans (60 % level) using CDOT Drawing Standards to complete an on-site review of preliminary construction plans. The replacement plans shall be based on established project design criteria. The plans shall include preliminary structure replacement plans, preliminary roadway improvement plans inclusive of stormwater management for the mainline and connecting roadway (if applicable), and construction phasing plans inclusive of traffic control. Necessary variances and design decisions shall be identified with justification and concurrence by the Town of Firestone.

4.2.3. Deliverables

- Structure Selection Report
- FIR Preliminary Plans
- Index of anticipated CDOT Standards Specifications and Special Project Provision and Specifications
- Quality Assurance Review Certification Memo

4.3. FIR Meeting

4.3.1. The FIR plan package shall be submitted to the Town for review prior to the meeting. A meeting agenda shall be prepared and submitted to the Town prior to the meeting. Consultant shall conduct a project review meeting with the Town Resident Engineer, CDOT presentative, and consultant team.

4.3.2. Deliverables

- FIR Meeting Minutes

4.4. Quality Control Review and Audit

4.4.1. Consultant shall perform a quality review and audit on the deliverables package before submission to the Town, CDOT, and related project stakeholders.

4.5. Local Agency (LA) Requirements

4.5.1. The consultant shall work with Town regarding all local agency clearances and other requirements to submit prior to the following Final Office Review (Phase 5). All clearances shall be completed and sighed by a CDOT representative during this phase.

5. Final Office Review (FOR) Construction Documents

5.1. FOR Deliverable Package

5.1.1. The consultant shall develop FOR-level Construction Documents (90% level) to complete an office review of the plan, details, specifications, cost estimates, and other elements pertinent to the final design. Design decisions and variances shall be finalized at this phase and submitted for final review prior to 100% construction documents.

5.1.2. Deliverables

- FOR Final Construction Plans
- Final Project Special Provisions and Specifications
- Final Opinion of Engineer's Estimate
- Local Agency Clearance letters and other required forms
- Utility Plans
- ROW Plans
- Stormwater Management Plans

5.2. FOR Meeting

5.2.1. The FOR submittal package shall be submitted to the Town for review prior to the meeting. The meeting agenda shall be prepared and submitted to the Town prior to the meeting. The consultant shall conduct the final project review meeting with the Town representative, CDOT representative, and consultant team.

5.2.2. Deliverables:

- FOR Meeting Minutes

5.3. Quality Control Review and Audit

5.3.1. The consultant shall perform a quality review and audit of the deliverable package before submission to the Town, CDOT, and related project stakeholders.

6. **Design Phase Completion (100% CD)**
   6.1. Revise Construction Documents from FOR Meeting
      6.1.1. The original plan sheets and specifications shall be revised per the 90% design review meeting comments and submitted to the Town
   6.2. Revise and Amend Final Reports
      6.2.1. The consultant shall finalize and procure copies of the final reports and submit to the Town.
   6.3. Revise and Finalize Rehabilitation Exceptions and Variances
      6.3.1. Finalize and procure copes of variances, design decisions, and variance approvals
   6.4. Coal Ridge Ditch Company Exhibits and Potential Agreements
   6.5. Quality Assurance/Quality Control (QA/QC) Review and Audit
   6.6. Review Design Phase Completion (100% CDs)
   6.7. Review Audit and Certification Memo
   6.8. Deliverables
      6.8.1. Construction Plan Package
         - Revised Final Plans
         - Project Standards and special provisions
         - Final Opinion of probable cost
         - Final bid schedule
      6.8.2. Final Engineering Package (In accordance with CDOT Structure submittal requirements)
         - Project Calculations or worksheets
         - Copies of variances, design decisions, and variance approvals
7. **Bidding Assistance**
   7.1. The consultant shall work with Firestone Staff to assemble front-end bid documents. These documents shall be included with the project specifications and construction drawings prepared during the design phase.
   7.2. The consultant shall attend one pre-bid meeting. It is anticipated this meeting will be held in the field for prospective contractors.
   7.3. The consultant will work with the Town to prepare answers to questions during the bidding phase
8. **Engineering services during construction**
   Scope and fee for these services including RFI review/response, construction submittal review, shop drawing review, construction observation site visits, precast structure fabrication inspection, etc. shall be included in this scope.

9. **Additional Services**
   9.1. Design Additional Services
      These services shall cover any additional work items that arise during the design phase of the project. The services shall be requested in writing by the Town of Firestone that fall within the budge amount shown in the Proposal fee and Manhour estimate for approximately $20,000.

Exhibit B

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

WCR20/Coal Ridge Ditch Bridge Replacement
Firestone, CO

Proposal Fee and Manhour Estimate
REV **February 22, 2023**

			Concrete Box Culvert Option		
	Task		**Total BHI Labor Hrs**	**Direct Costs including SubConsultants**	**Total Project Cost**
1	***General/Project Control***		**135.0**	**$ 200.00**	**$ 29,315.00**
	Project Management (incld. Communication and Billings)		*35.0*		*$ 8,625.00*
	Project Meetings		*100.0*	*$ 200.00*	*$ 20,690.00*
2	***Project Start-up***		**65.0**	**$ 150.00**	**$ 11,670.00**
	Kick-Off		*26.0*	*$ 50.00*	*$ 4,790.00*
	Project Standards and Design Criteria Memo		*14.0*	*$ -*	*$ 2,675.00*
	Project Notifications/ROE/Initial Utility Coordination		*25.0*	*$ 100.00*	*$ 4,205.00*
3	***Data Collection***		**205.0**	**$ 50,019.80**	**$ 78,574.80**
	Initial Site Visit/Engineering Research		*18.0*	*$ 50.00*	*$ 3,030.00*
	Geotechnical Investigation and Report		*8.0*	*$ 19,178.80*	*$ 21,218.80*
	Pavement Design		*5.0*	*$ 4,000.00*	*$ 4,855.00*
	Design Survey and Mapping (including utility locates)		*166.0*	*$ 2,360.00*	*$ 23,420.00*
	Environmental Investigation and Permitting		*8.0*	*$ 24,431.00*	*$ 26,051.00*
4	***Field Inspection Review (FIR) Plans***		**320.0**	**$ -**	**$ 51,975.00**
	Structural Selection Report and Review Meeting		*80.0*	*-*	*12,705.00*
	FIR Preliminary Plan Set and Review Meeting		*240.0*		*39,270.00*
5	***Final Office Review (FOR) Construction Documents***		**310.0**	**$ -**	**$ 50,790.00**
6	***Design Phase Completion (100% CD)***		**40.0**	**$ -**	**$ 6,390.00**
7	***Bidding Assistance***		**42.0**	**$ 50.00**	**$ 7,415.00**
8	***Construction Administration Support***		**120.0**	**$ 500.00**	**$ 20,840.00**
	Subtotal		**1,237**	**$ 50,919.80**	**$ 256,969.80**
9	***Additional Services:***				
9.1	*Title Research*		*3.0*	*$ 4,310.00*	*$ 5,000.00*
9.2	*Legal Exhibits/Property Descriptions (one)*		*16.0*	*$ -*	*$ 2,300.00*
9.3	Additional Design Services				$ 20,000.00
	TOTAL				**$ 284,269.80**

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

WCR20/Coal Ridge Ditch Bridge Replacement
Firestone, CO

Proposal Fee and Manhour Estimate
REV **February 22, 2023**

ASSUMPTIONS:

1 Includes 25 Bi-Weekly Project Meetings
2 Includes 4 Stakeholder Meetings
3 Geotechnical Investigation includes 2 bores
4 Include CDOT M-E Pavement Design
5 Structural Selection report includes 2 options - Bridge and CBC
6 Above fee is based on CBC - bridge design fee can be negotiated if determined to be the preferred option
7 Aesthetic design components are not Included
8 CDOT Standard CBC Design will not be applicable - Design will be required
9 Road Closure and Detour will be allowed
10 Hydraulic design flow will be provided by Ditch Company
11 Floodplain modeling is not included
12 1-D HEC-RAS model will be sufficient
13 Preliminary and Final Design include scour protection design.
14 The following environmental items will not be required or CDOT will be responsible for clearances: Air Quality, Noise, Non-historic Section 4(f) Resources, Section 6(f), Archaeology, and Paleontology .

EXCLUSIONS:

1 Vesting Documents & Property Acquisition Services
2 Utility Potholes
3 Sidewalk or Trail design
4 Embankment or retaining wall design beyond structure
5 CLOMR/LOMR
6 Public or Board Meetings Presentation or Attendance
7 Permitting fees
8 Full time Construction Management
9 Construction Inspection
10 Material Testing

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 8.d **Discussion/Action** **Meeting Date:** March 22, 2023 **Initiated By:** Nate Haasis **Dept:** Engineering - Town

AGENDA TITLE

Resolution 23-36: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND BOHANNAN HUSTON FOR TRAFFIC ENGINEERING SERVICES PERTAINING TO THE NEIGHBORS POINT TRAFFIC CALMING AND SCHOOL ZONE ASSESSMENT PROJECT

RECOMMENDATION

Staff recommends the Board approve Resolution 23-36, approving an agreement with Bohannan Hutson, Inc., and authorizing the expenditure of funds.

SUMMARY

The area surrounding Centennial Elementary School in the Neighbor's Point Subdivision was identified by the Board as an area of concern regarding pedestrian and traffic safety. Town staff engaged in a scoping meeting with our On-Call Traffic Engineer, Bohannan Huston, Inc. (BHI) to provide a proposal for traffic calming and school zone assessment of the area. BHI provided a project scope and fee of $31,175.00, and Staff is recommending a contract with a design contingency of $3,825.00 for a not-to-exceed amount of $35,000.00.

As part of this Traffic Calming and School Zone Assessment contract, BHI shall perform data collection, traffic analysis and provide an assessment with recommendations to provide traffic calming in this area. Data collection will be performed this spring while students are in school to provide accurate data for the assessment. BHI's scope also includes meetings with several stakeholders, including the Neighbor's Point HOA and School District staff, as well as a presentation to the Board of Trustees. The design schedule is approximately 6-8 weeks.

FINANCIAL CONSIDERATIONS

The agreement includes an amount not to exceed $35,000.00. The 2023 Budget included $250,000.00 total for Neighbor's Point Traffic Calming.

HISTORY AND PREVIOUS BOARD ACTION

The Board approved the 2023 Budget, which included $250,000.00 for Neighbor's Point Traffic Calming. This $250,000.00 funding is from the Neighbor's Point Metro District.

ATTACHMENTS

1. Reso 23-36 Bohannan Huston PSA (Neighbors Point Traffic Study) (002)
2. Contract Bohannan Huston Traffic Engineering Service Neighbord Point & School Assessent Project

RESOLUTION NO. 23-36

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO, APPROVING AN AGREEMENT BETWEEN THE TOWN OF FIRESTONE AND BOHANNAN HUSTON FOR TRAFFIC ENGINEERING SERVICES PERTAINING TO THE NEIGHBORS POINT TRAFFIC CALMING AND SCHOOL ZONE ASSESSMENT PROJECT

WHEREAS, the Town of Firestone ("Town") is in need of professional traffic engineering services for the Neighbors Point Traffic Calming and School Zone Assessment Project (the "Project"); and

WHEREAS, the Town finds that Bohannan Huston ("Bohannan") has the expertise, qualifications, and experience to perform the work and duties required for the Project, and desires to enter into an agreement with Bohannan to provide the services as described in the scope of services, attached to the Professional Services Agreement as Exhibit A.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF FIRESTONE, COLORADO:

The Professional Services Agreement between the Town of Severance and Bohannan Huston is approved in substantially the same form as the copy attached hereto and made a part of this Resolution, and the Mayor is authorized to execute the Agreement on behalf of the Town.

PASSED AND ADOPTED this ____ day of _____, 2023.

_____
Drew Peterson, Mayor

ATTEST:

_____
Miriam Luna Gonzalez, Deputy Town Clerk

APPROVED AS TO FORM:

_____
William P. Hayashi, Town Attorney

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT FOR PROFESSIONAL SERVICES (the "Agreement") is made and entered into this _____ day of _____, 2023 (the "Effective Date"), by and between the **TOWN OF FIRESTONE**, a Colorado municipal corporation with an address of 9950 Park Avenue, Firestone, Colorado 80504 (the "Town"), and **Bohannan Huston** an Independent Consultant with a principal place of business at 9785 Maroon Circle, Englewood, Colorado 80112 ("Consultant ") (each a "Party" and collectively the "Parties").

WHEREAS, the Town requires professional services; and

WHEREAS, Consultant has held itself out to the Town as having the requisite expertise and experience to perform the required professional services.

NOW, THEREFORE, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

I. SCOPE OF SERVICES

A. Consultant shall furnish all labor and materials required for the complete and prompt execution and performance of all duties, obligations, and responsibilities which are described or reasonably implied from the Scope of Services set forth in **Exhibit A**, attached hereto and incorporated herein by this reference and known as: **Neighbors Point - Traffic Calming and School Zone Assessment (S2023-9232).**

B. A change in the Scope of Services shall not be effective unless authorized as an amendment to this Agreement. If Consultant proceeds without such written authorization, Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

II. TERM AND TERMINATION

A. This Agreement shall commence on the Effective Date and shall continue until Consultant completes the Scope of Services to the satisfaction of the Town or until terminated as provided herein.

B. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay Consultant for all work previously authorized and completed prior to the date of termination. If, however, Consultant has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

III. COMPENSATION

In consideration for the completion of the Scope of Services by Consultant, the Town shall pay Consultant based upon services rendered and billed in accordance with the rate schedule attached hereto as **Exhibit B**, but in no event shall the total compensation exceed $31,175.00. This amount shall include all fees, costs and expenses incurred by Consultant, and no additional amounts shall be paid by the Town for

such fees, costs, and expenses. Consultant may submit periodic invoices, which shall be paid by the Town within 30 days of receipt.

IV. PROFESSIONAL RESPONSIBILITY

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community. The work and services to be performed by Consultant hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations.

B. The Town's review, approval or acceptance of, or payment for any services shall not be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

C. Because the Town has hired Consultant for its professional expertise, Consultant agrees not to employ Sub-Consultants to perform any work except as expressly set forth in the Scope of Services.

V. OWNERSHIP

Any materials, items, and work specified in the Scope of Services, and any and all related documentation and materials provided or developed by Consultant shall be exclusively owned by the Town. Consultant expressly acknowledges and agrees that all work performed under the Scope of Services constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," Consultant hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such work. The Town may, with respect to all or any portion of such work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change such work without providing notice to or receiving consent from Consultant.

If the Town reuses or makes any modification to Consultant's designs, documents or work product without the prior written authorization of Consultant, the Town agrees, to the fullest extent permitted by law, to release the Consultant, its officers, directors, employees and sub-consultants from all claims and causes of action arising from such uses, and shall indemnify and hold them harmless from all costs and expenses, including the cost of defense, related to claims and causes of action to the extent such costs and expenses arise from the Town's modification or reuse of the documents.

The Town expressly acknowledges and agrees that the documents and data to be provided by Consultant under the Agreement may contain certain design details, features and concepts from the Consultant's own practice detail library, which collectively may form portions of the design for the Project, but which separately, are, and shall remain, the sole and exclusive property of Consultant. Nothing herein shall be construed as a limitation on the Consultant's right to re-use such component design details, features and concepts on other projects, in other contexts or for other clients.

VI. INDEPENDENT CONSULTANT

Consultant is an independent Consultant. Notwithstanding any other provision of this Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is a Town employee for any purposes.

VII. INSURANCE

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to this Agreement. At a minimum, Consultant shall procure and maintain, and shall cause any Sub-Consultant to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and Consultants as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

3. Professional liability insurance with minimum limits of $1,000,000 each claim and $2,000,000 general aggregate.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees or its Consultants shall be excess and not contributory insurance to that provided by Consultant. Consultant shall be solely responsible for any deductible losses under any policy.

C. Consultant shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Agreement.

VIII. INDEMNIFICATION

A. Consultant agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement if such injury, loss, or damage is caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other fault of Consultant, any Sub-Consultant of Consultant, or

any officer, employee, representative, or agent of Consultant, or which arise out of a worker's compensation claim of any employee of Consultant or of any employee of any Sub-Consultant of Consultant. Consultant's liability under this indemnification provision shall be to the fullest extent of, but shall not exceed, that amount represented by the degree or percentage of negligence or fault attributable to Consultant, any Sub-Consultant of Consultant, or any officer, employee, representative, or agent of Consultant or of any Sub-Consultant of Consultant.

B. If Consultant is providing architectural, engineering, surveying or other design services under this Agreement, the extent of Consultant's obligation to indemnify and hold harmless the Town may be determined only after Consultant's liability or fault has been determined by adjudication, alternative dispute resolution or otherwise resolved by mutual Agreement between the Parties, as provided by C.R.S. § 13-50.5-102(8)(c).

IX. WORKER WITHOUT AUTHORIZATION

A. Certification. By entering into this Agreement, Consultant hereby certifies that, at the time of this certification, it does not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who will perform work under this Agreement and that Consultant will participate in either the E-Verify Program administered by the United States Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment to confirm the employment eligibility of all employees who are newly hired to perform work under this Agreement.

B. Prohibited Acts. Consultant shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform work under this Agreement, or enter into a contract with a Sub-Consultant that fails to certify to Consultant that the Sub-Consultant shall not knowingly employ or contract with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, to perform work under this Agreement.

C. Verification.

1. If Consultant has employees, Consultant has confirmed the employment eligibility of all employees who are newly hired to perform work under this Agreement through participation in either the E-Verify Program or the Department Program.

2. Consultant shall not use the E-Verify Program or Department Program procedures to undertake pre-employment screening of job applicants while this Agreement is being performed.

3. If Consultant obtains actual knowledge that a Sub-Consultant performing work under this Agreement knowingly employs or contracts with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing work under this Agreement, Consultant shall: notify the Sub-Consultant and the Town within 3 days that Consultant has actual knowledge that the Sub-Consultant is employing or contracting with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing work under this Agreement; and terminate the subcontract with the Sub-Consultant if within 3 days of receiving the notice required pursuant to subsection 3 hereof, the Sub-Consultant does not stop employing or contracting with the worker without authorization who is performing work under this Agreement;

except that Consultant shall not terminate the subcontract if during such 3 days the Sub-Consultant provides information to establish that the Sub-Consultant has not knowingly employed or contracted with a worker without authorization, as that term is defined in C.R.S. § 8-17.5-101(9), as amended, who is performing work under this Agreement.

D. Duty to Comply with Investigations. Consultant shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that Consultant is complying with the terms of this Agreement.

X. CHANGE ORDERS

A. A Change Order is a written instrument issued after execution of the Agreement signed by Town and Contractor, stating their Agreement, as applicable, upon all of the following:
   a. The scope of the change in the Work;
   b. The amount of the adjustment to the Contract Price; and
   c. The extent of the adjustment to the Contract Times(s).

B. All changes in the Work authorized by applicable Change Order shall be performed under the applicable conditions of the Contract Documents. Town and Contractor shall negotiate in good faith and as expeditiously as possible the appropriate adjustment such changes.

XI. MISCELLANEOUS

A. Governing Law and Venue. This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Weld County, Colorado.

B. No Waiver. Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of this Agreement.

C. Integration. This Agreement constitutes the entire Agreement between the Parties, superseding all prior oral or written communications.

D. Third Parties. There are no intended third-party beneficiaries to this Agreement.

E. Notice. Any notice under this Agreement shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class United States Mail to the Party at the address set forth on the first page of this Agreement.

F. Severability. If any provision of this Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

G. Modification. This Agreement may only be modified upon written Agreement of the Parties.

H. Assignment. Neither this Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

I. Governmental Immunity. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities or protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

J. Rights and Remedies. The rights and remedies of the Town under this Agreement are in addition to any other rights and remedies provided by law. The expiration of this Agreement shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

K. Subject to Annual Appropriation. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

L. Representative Authority. Each person signing this Agreement represents and warrants that he or she is duly authorized and has the legal capacity to execute the Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

TOWN OF FIRESTONE, COLORADO

_____

Drew Peterson, Town Mayor

ATTEST:

_____

Kristi Bashor, Town Clerk

APPROVED AS TO FORM:

_____

William P. Hayashi, Town Attorney

CONSULTANT: BOHANNAN HUSTON

By: _____

EXHIBIT A

Bohannan Huston

Meridian One
9785 Maroon Circle
Suite 140
Englewood, CO
80112-5928

www.bhinc.com

voice: 303.799.5103
facsimile: 303.799.5104
toll free: 877.799.5103

March 10, 2023

Matt Wiederspahn, P.E.
Town of Firestone, Town Engineer
151 Grant Avenue, Firestone, CO 80520
mwiederspahn@firestoneco.gov

Re: Town of Firestone Traffic Engineering On-Call
Neighbor Parkway School Zone Study and Traffic Safety Study

Dear Mr. Wiederspahn,

Per your request, Bohannan Huston, Inc. (BHI) has prepared the following scope and fee for Traffic Safety and School Zone Study along Neighbors Parkway and the intersections of Birch St and Neighbors Parkway and Buffalo St and Sable Avenue.

Task 1: Traffic and School Zone Safety Evaluation

BHI will prepare traffic analysis and report for the above project, including:

1. Project Initiation and Data Collection
    a. Kick-off meeting
    b. Collect Turn Movement Counts (TMC) at the intersections of Birch St and Neighbors Parkway and Buffalo St and Sable Avenue and Tube Speed and Counts at two locations along Neighbors Parkway via a sub-consultant.
2. Traffic Analysis
    a. Safety Assessment Crash Types and Crash Frequency
    b. Speed Assessment – 85th Percentile Speed, Speed trends
    c. Pedestrian Hybrid Beacon Warrants and Analysis for other Pedestrian Crossing Treatments
    d. Sight Distance Concern and Analysis for Blue Grass St and Cul-de-Sac
3. Develop Conceptual Recommendations and Report
    a. Develop feasible traffic calming recommendations.
    b. Update Signing and Striping in School Zone area to align with MUTCD.
    c. Draft and Final Report
    d. Engineer's Estimate of Construction Cost for recommendations
4. Meetings and Public Engagement
    a. Project progress meetings (2 meetings)
    b. Draft Report review meeting (1 meeting)
    c. Meeting with HOA, School Board and other stakeholders (2 total)
    d. Presentation to Town Board (1 meeting)

Assumptions:

- *Existing available LiDAR/Imagery, traffic data, and site observations will be the basis of analysis.*
- *City will provide historic crash data for the area.*

- *City will provide future development planning documents and/or traffic volumes if to be included in analysis*
- *Deliverables will be digital files (.DOC, DWG, or .PDF).*
- *Kick-off and review meetings will be held in-person. Progress meetings will be virtual.*

Exclusions:

- *Topographic or Boundary Survey*
- *Title Work, vesting documents, Right-of-way appraisal, negotiations and acquisition*
- *Geotechnical engineering or pavement design*
- *Environmental investigation or documentation*
- *Intersection or roadway reconfiguration or redesign*
- *Drainage Improvements*
- *ADA ramp improvements*
- *Traffic Control or Construction Phasing Plans*
- *Structural Design*
- *Photometrics or Electrical Engineering*
- *Public Meetings*
- *Permitting or associated fees*
- *Preparation of Final Design or Construction Documents is not included.*
- *Full time construction management or observation.*
- *Performing construction staking, or materials testing is not included.*

Fee:

The table below contains the estimated fees to provide these services:

Task 1: Traffic and School Zone Safety Evaluation

Project Initiation and Data Collection	$ 4,550.00
Traffic Analysis	$ 6,800.00
Develop Recommendations and Report	$ 10,435.00
Meetings and Public Engagement	$ 9,390.00
Total	**$ 31,175.00**

We look forward to continuing to work with the Town of Firestone. Thank you again for the opportunity to provide these services. Should you have any questions around the scope and fee above, please do not hesitate to contact me.

Sincerely,

Jared M Lee, P.E., LEED AP
Senior Vice President

cc: Nate Haasis, Town of Firestone
Adji Witjaksono, BHI

EXHIBIT B

TASK BREAKDOWN AND COST ESTIMATE
Firestone Neighbor Parkway Traffic Study
Town of Firestone
March 13, 2023

Bohannan Huston
Engineering
Spatial Data
Advanced Technologies

	TASKS	E7	E5	E3/ET7	E2	E1	AA4	Hours	Direct Costs	Total Cost
		255	195	150	130	115	90			
1	**Data Collection and Evaluation of Existing Conditions**									
2.1	Project Management	2.0			4.0			6.0	$ -	$ 1,030.00
1.1	Kickoff Meeting	2.0	1.0	1.0	2.0			6.0	$ -	$ 1,115.00
1.2	Project Management Plan & Schedule	1.0			3.0			4.0	$ -	$ 645.00
1.3	Traffic Counts (All Traffic Data)				2.0			2.0	$ 1,500.00	$ 1,760.00
								18.0	**$ 1,500.00**	**$ 4,550.00**
2	**Project Management/Meetings**									
2.2	Stakeholder Meeting (2)	8.0			8.0			16.0	$ 100.00	$ 3,180.00
2.3	Board Meeting (1)	4.0			8.0			12.0	$ 500.00	$ 2,560.00
2.4	Progress Meeting (2)	4.0			8.0			12.0	$ -	$ 2,060.00
2.5	Review Meeting	4.0			4.0			8.0	$ 50.00	$ 1,590.00
								40.0	**$ 650.00**	**$ 9,390.00**
3	**Traffic Analysis**									
3.1	Safety and Crash Assessment				8.0			8.0		$ 1,040.00
3.2	Speed Safety Analysis	1.0	2.0		8.0			11.0		$ 1,685.00
3.3	Pedestrian Hybrid Beacon Signal Warrants/Applicable Pedestrian Control Analysis		2.0		12.0			14.0	$ -	$ 1,950.00
3.4	Sight Distance Analysis and Recommendation		1.0		6.0	10.0		17.0	$ -	$ 2,125.00
								50.0	**$ -**	**$ 6,800.00**
4	**Develop Conceptual Recommendations and Report**									
4.1	Develop feasible traffic calming recommendations		1.0		12.0	10.0		23.0	$ -	$ 2,905.00
4.2	Update Signing and Striping School Zone area to align with MUTCD				8.0			8.0	$ -	$ 1,040.00
4.3	Cost Estimates		1.0	2.0	8.0	8.0		19.0	$ -	$ 2,455.00
4.4	Draft Report	1.0	1.0		8.0		4	14.0	$ -	$ 1,330.00
4.5	Quality Control	1.0	4.0		4.0			9.0	$ -	$ 1,555.00
4.6	Final Report	1.0	1.0		4.0		2	8.0	$ -	$ 1,150.00
								81.0	**$ -**	**$ 10,435.00**
		29.0	**14.0**	**3.0**	**117.0**	**28.0**	**6.0**	**139.0**	**$ 2,150.00**	**$ 31,175.00**

AGENDA INFORMATION MEMORANDUM FIRESTONE TOWN BOARD OF TRUSTEES	**AIM#:** 8.e **Discussion/Action** **Meeting Date:** March 22, 2023 **Initiated By:** **Dept:** Administration

AGENDA TITLE
Broadband Discussion

RECOMMENDATION

SUMMARY

FINANCIAL CONSIDERATIONS

HISTORY AND PREVIOUS BOARD ACTION

ATTACHMENTS
None

Town of Firestone | Payroll Monthly Board Report | March 6, 2023

Paycheck Issue Dates: 2/1/2023 to 2/28/2023

Hours/Units/Types Summary

PC	Title	Hours
1-00	Regular Pay	11,367.00
1-06	PD Shift Supervisor	13.00
2-00	Overtime Pay	113.00
3-00	Paid Time Off	1,147.51
4-00	Misc Leave: EIB, FF, ELP	0.00
5-00	Call Outs, Standby	39.00
7-00	HolidayTO, Holidy Wrk	951.50
8-10	PD Grant/Contracts	0.00
8-00	Miscellaneous Pay	48.00
8-26	PHE - Public Health Emer	37.50
9-01	Comp Time Earned	124.00
9-02	Comp Time Used	25.25
	Grand Totals:	13,865.76

Net Type	Amount
Direct Deposit Net	560,058.74
Net	0.00
3rd Party Pay Net	0.00
	560,058.74

Info Type	Amount
Informational	0.00
Fringe Benefits	1372.09
	1372.09

Pay Code Totals - Employee

PC	Title	Amount
1-01	Regular Pay	716,553.52
1-03	Mayor/Trustee	2,150.00
1-06	PD Shift Supervisor	920.32
2-00	Overtime	6,295.52
3-00	PTO	29,151.55
3-05	PTO Payout	2,933.22
4-00	Misc Earned Leave	0.00
5-00	Call Outs, Standby	1,669.85
7-01	Holiday Time Off	21,637.06
7-02	Holiday Work SW	7,413.57
7-03	Holiday Work NSW	486.00
8-01	Misc Pay	0.00
8-02	Retro Pay	541.26
8-04	Bereavement	218.40
8-06	Snow Day	0.00
8-08	Pd Admin Leave	1,600.40
8-10	PD Grant	0.00
8-12	Jury Duty	0.00
8-13	Military Leave	0.00
8-20	Retro Pay (non-FPPA)	0.00

PC	Title	Amount
8-26	PHE - Public Health Emergenc	1,299.75
9-02	Comp Time	785.00
19-00	3rd Party Pay	0.00
21-02	Cell Phone Stipend	250.00
30-04	Life Ins > 50k	1,372.09
50-01	FPPA 457	-2,169.18
50-02	FPPA PD Pension	-30,767.52
50-03	FPPA ROTH	-50.00
51-01	PERA	-46,365.54
51-02	PERA+457	-847.46
51-03	PERA Life	-108.50
51-05	PERA 401k	-904.68
51-07	PERA 457 Roth	-889.60
52-01	Mission Square 401a	0.00
52-02	Mission Sq 457b-PreTax	-192.30
52-04	MissionSqu 457b-PostTax	-192.30
60-00	Health Insurance	-13,621.20
61-03	HSA3850 RMR	-2,100.64
61-04	HSA7750 RMR	-14,075.26
61-10	FSA- Dependent Care	-2,714.96

PC	Title	Amount
61-11	FSA- Limited Purpose	-159.00
61-12	FSA - Medical	-3,019.96
64-96	Hospital Idemnity	-940.47
64-97	Critical Illness Insurance	-937.75
64-98	Vol/ADD, Sps,Chld LIFE	-2,121.90
64-99	Accident Insurance	-1,261.93
70-01	Misc Deduction	0.00
70-02	Child Support	-837.50
70-03	Garnishment	0.00
70-04	Equipment	-243.00
70-05	Mission Sq Loan Repay	0.00
74-00	Soc Sec	-976.72
75-00	Medicare	-11,010.35
76-00	FWT	-70,726.96
77-00	SWT	-26,612.00
79-00	3rd Party Medicare	0.00
85-00	Net Pay - check	0.00
86-00	Dir Deposit	560,058.74
89-00	3rd Party Net	0.00

Pay Code Totals - Employer

PC	Title	Amount
50-02	FPPA - Polic	24,357.59
51-01	PERA	76,039.42
51-04	PERA AED/SAED	597.70
52-01	Mission Square 401a	1,600.00
52-02	Mission Sq 457b-PreTax	1,938.46
60-00	Health Insurance	124,567.68

PC	Title	Amount
61-03	HSA3850 RMR	675.00
61-04	HSA7750 RMR	3,300.00
62-00	Dental Insurance	8,904.08
63-00	Vision Insurance	1,601.71
74-00	Social Security	976.72
75-00	Medicare	11,010.35

PC	Title	Amount
91-00	Long Term Disability	1,876.32
92-00	Short Term Disability	2,434.62
93-00	Police Pension	8,403.12
94-00	Basic Life & AD&D	1,503.00
95-01	Employee Asst Plan	723.72
98-00	State Unemployment	1,550.63

Name	Total Paid
Total 24/7 Networks, Inc.:	529.80
Total ACCESS/ADAMS DATA MANAGEMENT, LLC:	322.06
Total ADAMSON POLICE PRODUCTS:	2,077.65
Total AIRGAS INC:	154.77
Total ALERUS (FEE FUND):	858.65
Total ALERUS (WKLY CARD FUND):	1,692.28
Total AMAYA SOLUTIONS INC:	8,370.94
Total AMAZON CAPITAL SERVICES:	3,436.25
Total AMERICAN CONSERVATION & BILLING SOLUTION:	200.00
Total ANATUM GEOMOBILE SOLUTIONS:	8,461.00
Total AQ PROPERTY SOLUTIONS LLC:	2,733.12
Total AUSMUS LAW FIRM, P.C.:	1,200.00
Total B K TIRE, INC:	125.00
Total BAREFOOT RESIDENTIAL LLC:	3,741.77
Total BC INTERIORS:	11,355.12
Total BEACON COMMUNICATIONS LLC:	1,072.50
Total BOBCAT OF THE ROCKIES:	665.61
Total BOHANNAN HUSTON INC:	1,069.00
Total BRENNTAG PACIFIC INC:	10,223.81
Total BUTLER SNOW LLP:	2,821.50
Total CASELLE, INC.:	69.30
Total CCNC, INC:	100.00
Total CELEGANS LABS INC:	24,929.19
Total CENTRAL WELD COUNTY WATER DISTRICT:	29.27
Total CENTRAL WELD COUNTY WATER DISTRICT.-TREA:	64,096.27
Total CENTURY LINK:	543.59
Total CERTIFIED LABORATORIES:	223.45
Total CHASE PAYMENTNET:	81,774.76
Total CHECK-IT CODE CONSULTING LLC:	9,778.04
Total CIGNA HEALTH & LIFE INSURANCE CO:	137,912.89
Total CINTAS FIRST AID & SAFETY:	406.71
Total CITY OF GREELEY:	50.00
Total CITY OF WESTMINSTER:	756.00
Total CIVIC PLUS, INC:	15,664.17
Total CMS ENVIRONMENTAL SOLUTIONS LLC:	395.00
Total COLORADO CIVIL GROUP INC.:	40,912.35
Total COLORADO DEPT.OF PUBLIC HEALTH & ENVIRON:	135.00
Total COLORADO JUMPS DBA AIRBOUND:	8,934.00
Total COLORADO RURAL WATER ASSOCIATION:	650.00

Name	Total Paid
Total CONCENTRA MEDICAL CENTERS:	505.00
Total CORE & MAIN LP:	9,597.50
Total DANA KEPNER COMPANY INC.:	48,585.34
Total DBC IRRIGATION SUPPLY:	2,853.85
Total DELTA DENTAL OF COLORADO, INC:	9,034.41
Total DIVINYL GRAPHICS INC:	205.00
Total DOUGLAS COUNTY:	2,000.00
Total EMPLOYEE REIMBURSEMENTS & PER DIEMS:	1,897.07
Total EMPLOYERS COUNCIL SERVICES, INC:	140.40
Total ENTERPRISE FLEET MGMT CUSTOMER BILLINGS:	42,768.10
Total ENVIROTECH SERVICES INC.:	16,716.77
Total ESRI:	27,500.00
Total FACTORY MOTOR PARTS CO.:	77.61
Total FASTENAL COMPANY:	38.60
Total FIRST AMERICAN TITLE CO:	138.32
Total FIT FOR YOU LLC:	320.00
Total FLEXX PRODUCTIONS LLC:	4,581.64
Total FORCE SCIENCE, LTD:	2,195.00
Total FRANCE PUBLICATIONS, INC:	850.00
Total FRED DIEHL CONSULTING:	4,200.00
Total FRONT RANGE COMPLIANCE SERVICE, LLC:	1,418.00
Total FRONTIER BUSINESS PRODUCTS:	11,383.46
Total FUZION FIELD SERVICES LLC:	3,313.50
Total GRAINGER:	2,181.04
Total GREEN GIRL RECYCLING SERVICES:	225.00
Total HARCROS CHEMICALS INC:	1,188.00
Total HAYASHI & MACSALKA, LLC:	18,548.50
Total HAYNIE & COMPANY:	8,000.00
Total HD SUPPLY INC:	3,467.00
Total HEI CIVIL:	478,903.41
Total HERITAGE TITLE-BOULDER:	46.67
Total I BENEFIT TECHNOLOGY RESOURCES, LLC:	200.00
Total INTERSTATE BATTERY OF THE ROCKIES:	1,833.95
Total INTERSTATE FORD:	424.35
Total JAIME BROWER PSYCHOLOGICAL SERVICES:	1,050.00
Total JONES, STEPHEN:	1,100.00
Total KATHLEEN A. OATIS:	1,250.00
Total KENZ & LESLIE DISTRIBUTING CO.:	652.70
Total KG CLEAN INC:	5,500.28

Name	Total Paid
Total KIMBALL MIDWEST:	4,049.33
Total KING CHEVROLET BUICK GMC:	25.66
Total KINSCO, LLC:	1,750.36
Total L.A.W.S.:	518.00
Total LANGUAGE NEXUS, INC:	220.00
Total LANGUAGELINE SOLUTIONS:	44.44
Total LAST CHANCE DITCH COMPANY:	100.00
Total LAW ENFORCEMENT TARGETS:	319.13
Total LAWRENCE CUSTER GRASMICK JONES & DONOVAN:	26,591.91
Total LEADSONLINE LLC:	2,536.00
Total LENNAR COLORADO:	764.41
Total LEONARD RICE ENGINEERS, INC:	37,021.82
Total LEXISNEXIS RISK SOLUTIONS:	766.66
Total LONGMONT HUMANE SOCIETY:	1,225.00
Total LOOPUP LLC:	405.74
Total MAC EQUIPMENT INC LONGMONT:	2,472.67
Total MAIN STREET MAT COMPANY, INC:	502.15
Total MILLER GROUNDWATER ENGINEERING, LLC:	2,274.00
Total MISC VENDOR:	38,709.56
Total MOORE IACOFANO GOLTSMAN, INC:	6,053.75
Total MORGAN STANLEY SMITH BARNEY LLC:	5,716.88
Total NORTHERN COLORADO WATER CONSERVANCY DIST:	113,421.47
Total O.J. WATSON COMPANY, INC.:	492.96
Total ODP BUSINESS SOLUTIONS LLC:	334.92
Total O'REILLY AUTO PARTS:	913.78
Total PAVEMENT REPAIR & SUPPLIES INC:	2,994.00
Total Police Executive Research Forum:	200.00
Total POLLARD WATER:	676.25
Total POO FREE PARKS:	714.90
Total PRAIRIE MOUNTAIN PUBLISHING:	328.28
Total PRESTIGE DODGE, INC:	18.30
Total PSYCHOLOGICAL DIMENSIONS, LLC:	375.00
Total PUREWATER DYNAMICS, INC:	699.55
Total QUADIENT LEASING USA INC:	1,001.00
Total RAMEY ENVIRONMENTAL COMPLIANCE, INC:	108.00
Total RED WING SHOE STORE:	870.69
Total RESTITUTION / COURT REFUNDS:	1,853.47
Total RIPTIDE CAR & PET WASH:	621.50
Total ROCKY MOUNTAIN INFORMATION NETWORK, INC:	100.00

Name	Total Paid
Total ROCKY MOUNTAIN RESERVE LLC:	404.75
Total SAFETY AND CONSTRUCTION SUPPLY INC:	3,800.00
Total SHERWIN WILLIAMS CO.:	211.77
Total SHRED VAULT COLORADO LLC:	90.00
Total SILVER STATE CONSULTING GROUP LLC:	750.00
Total SIMPLIFILE:	40.50
Total SIRCHIE FINGER PRINT LABORATORIES:	248.46
Total ST VRAIN SANITATION DISTRICT:	4,865.00
Total STEVE BALCEROVICH:	1,250.00
Total SUN VALLEY ELECTRIC INC:	49,590.00
Total TARGET SPECIALTY PRODUCTS:	4,106.65
Total THE EMPIRE AGENCY:	2,000.00
Total THOMSON REUTERS-WEST:	228.09
Total TISCHLERBISE INC:	2,500.00
Total TLTC DISTRIBUTING LLC:	709.65
Total TOWN OF FREDERICK:	6,847.17
Total TRANSWEST TRUCK TRAILER RV:	23.85
Total TRI-TECH FORENSICS INC:	169.00
Total UME CUSTOM EMBROIDERY:	1,051.00
Total UNIVERSITY AUTO PARTS, INC:	2,427.27
Total UTILITY NOTIFICATION CENTER OF COLORADO:	354.75
Total UTILITY REFUNDS -1:	7,426.01
Total VALLI INFORMATION SYSTEMS:	2,759.65
Total VIA MOBILITY SERVICES:	9,600.00
Total WAAS CAMPBELL RIVERA JOHNSON & VELASQUEZ:	4,926.00
Total WAGNER WELDING SUPPLY CO.:	8.68
Total WELD COUNTY DEPT OF PUBLIC HEALTH & ADMI:	973.00
Total WELD COUNTY REGIONAL COMMUNICATIONS CNTR:	95,535.00
Total WESTERN PAPER DISTRIBUTORS:	261.76
Total WHITESIDE'S BOOTS & CLOTHING 2 - BRIGHTO:	2,095.81
Total WICKHAM TRACTOR CO, Inc:	1,673.23
Total WINWATER DENVER CO COMPANY:	1,901.30
Total XPRESS BILL PAY / XPRESS SOLUTIONS:	2,364.56
Total Zivaro Inc:	335.34
Grand Totals:	1,632,681.08

Name	Total Paid
MISC VENDOR	
Total 19 & 26 LLC:	1,225.09
Total AMAZING GATES OF COLORADO:	295.44
Total BROOKFIELD COLORADO MANAGEMENT LLC:	2,576.89
Total CARLSON LAND DEVELOPMENT LLC:	3,421.67
Total FIRELIGHT DEVELOPMENT INC:	3,654.50
Total KTK GENERAL CONTRACTING LIMITED:	26,450.00
Total SL5 ASSOCIATES LLC:	18.00
Total TRIPOINTE HOMES:	1,067.97
Grand Totals:	38,709.56