



January 19, 2026

El Paso County
Planning & Community Development
2880 International Circle, Suite 110
Colorado Springs, CO 80910

Attn.: Project Manager

RE: Crossroads Mixed Use Filing No. 1
Private Detention/Stormwater Quality Pond

Dear Project Manager:

Per the approved construction drawings for "Crossroads Mixed Use Filing No. 1" improvements were made to construct a water quality facility in compliance with the current El Paso County Drainage Criteria and with the approved Final Drainage Report for this project. It should be noted that at the onset of construction, the Colorado Department of Transportation requested that all permanent drainage structures associated with the project be removed from the Highway 24 Rights-of-Way. The provided as-builts reflect the "field changes" associated with the revision. It should be noted that modification of the outlet works do not affect the intended functionality of the facility nor do they negatively affect downstream facilities and or water quality.

Based upon this information and periodic site visits to the project during significant/key phases of the stormwater BMP installation, M&S Civil Consultants, Inc. is of the opinion that the stormwater BMPs have been constructed in general compliance with the approved design plans, and specifications as filed with El Paso County.

Statement Of Engineer In Responsible Charge

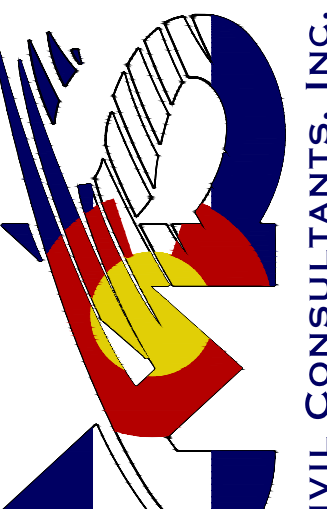
To the best of my knowledge, information and belief, for the referenced project above, the improvements have been constructed in general compliance with the approved design plans and specifications as filed with El Paso County to provide the required storage volume and meet the required release rates documented by the SDI design form, the stage areas, elevations and outlet dimensions. In addition, to the best of my knowledge, information and belief, for the referenced project above, the site and adjacent properties (as affected by work performed under the County permit) are stable with respect to settlement and subsidence, sloughing of cut and fill slopes, revegetation or other ground cover, and that the improvements (public improvements, common development improvements, site grading and paving) meet or exceed the minimum design requirements.

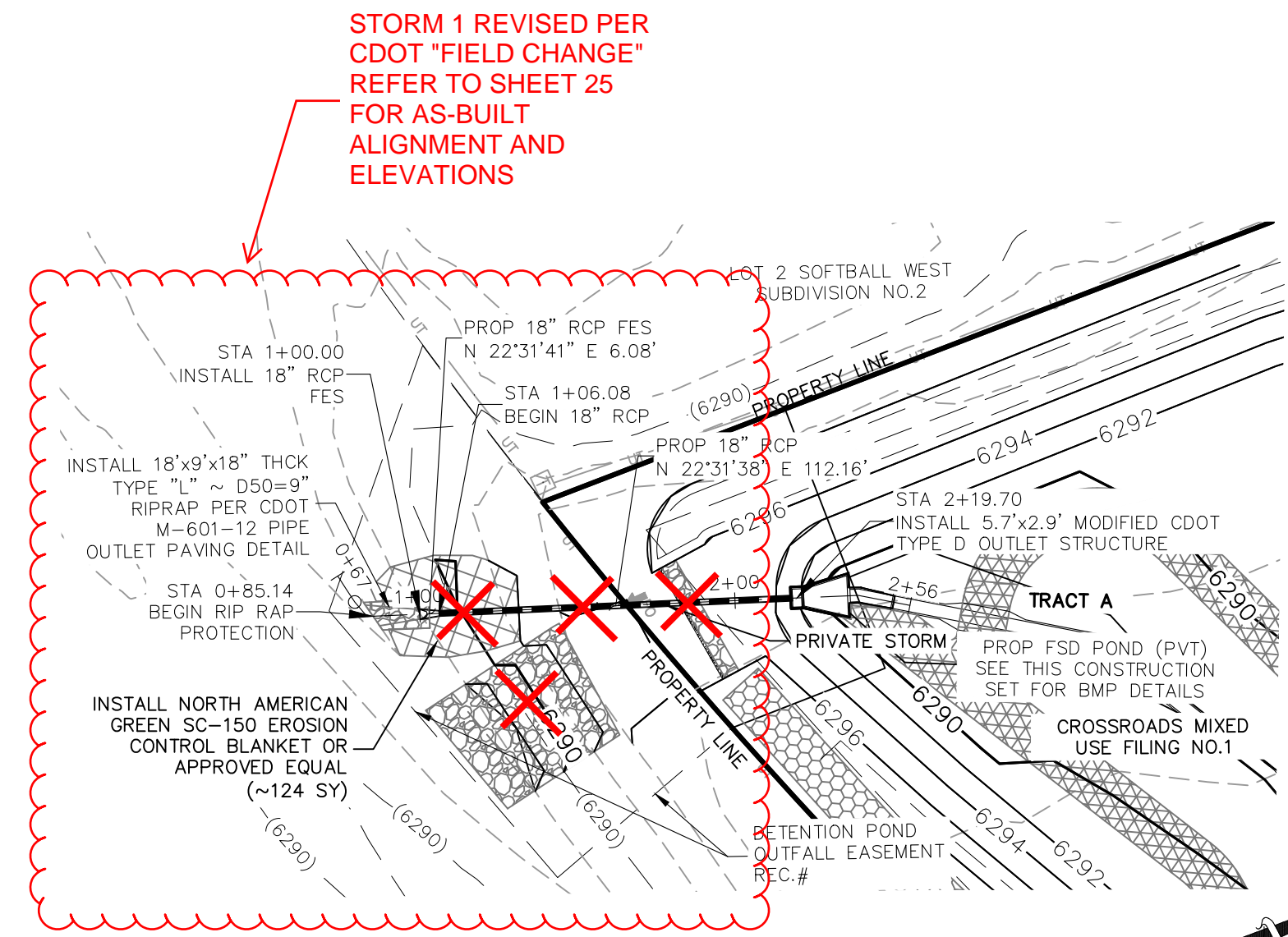


Virgil A. Sanchez
Colorado P.E. No.37160
For and on behalf of M&S Civil
Consultants, Inc.

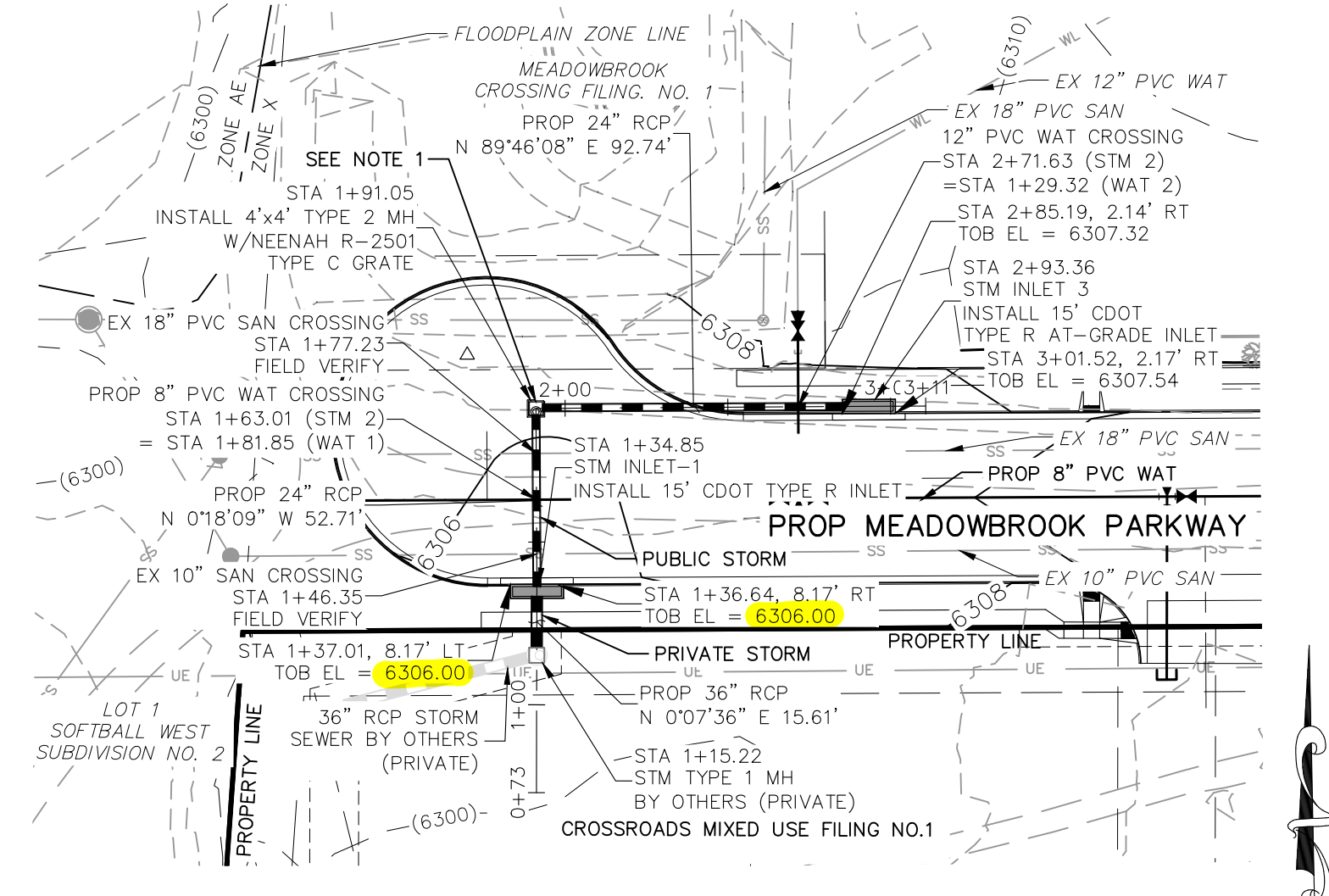
FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
 FOR BURIED UTILITY INFORMATION
 48 HRS BEFORE YOU DIG
 CALL 1-800-922-1987

CROSSROADS MIXED USE FILING NO. 1
 STORM SEWER PLANS
 PROJECT NO. 18-003
 DATE: 04/20/2022
 SCALE: HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'
 DESIGNED BY: GT
 DRAWN BY: GT
 CHECKED BY: VAS
 SHEET 15 OF 24
 ST01

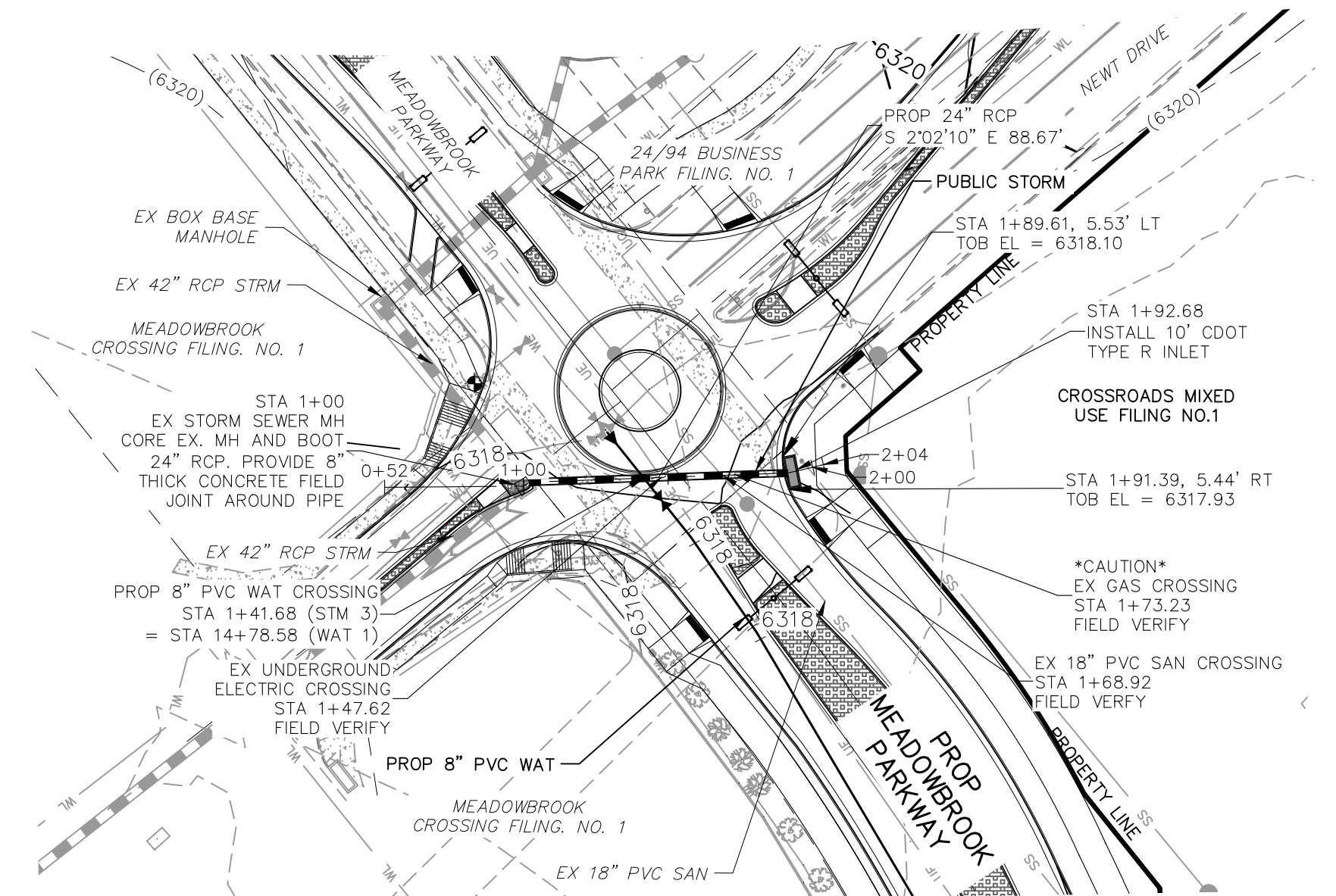
217 N. WAHATCH AVE, STE 305
 COLORADO SPRINGS CO 80903
 PHONE 719.555.5485

 CIVIL CONSULTANTS, INC.



STORM 1 FSD POND OUTFALL
STA 1+00.00 TO STA 2+19.70
(PUBLIC/PRIVATE)

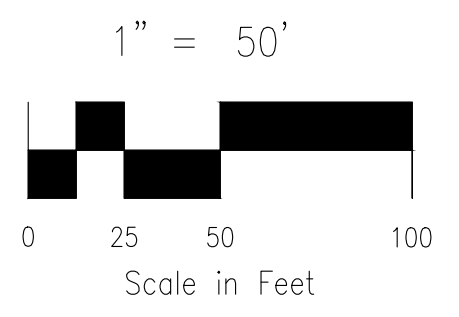


STORM 2
STA 1+15.22 TO STA 2+93.36
(PUBLIC/PRIVATE)

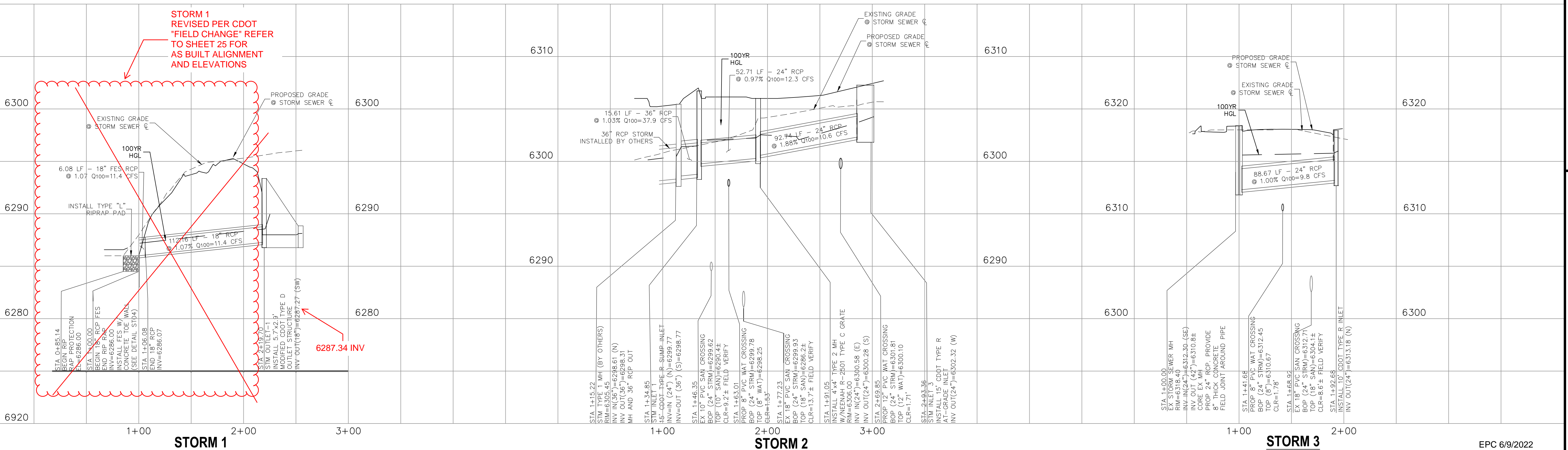


STORM 3
STA 1+00.00 TO STA 1+92.26
(PUBLIC)

AS-BUILT ENGINEERING RECORD DRAWINGS



- NOTE:
- 1.) GRATED INLET TO BE REPLACED WITH CRUB FACE INLET AT TIME OF MEADOWBROOK PARKWAY EXTENSION
 - 2.) ALL PRIVATE STORM SEWER CONSTRUCTED WITH THESE PLANS TO BE MAINTAINED BY THE CROSSROADS METROPOLITAN DISTRICT NO. 1



STORM 1

STORM 2

STORM 3

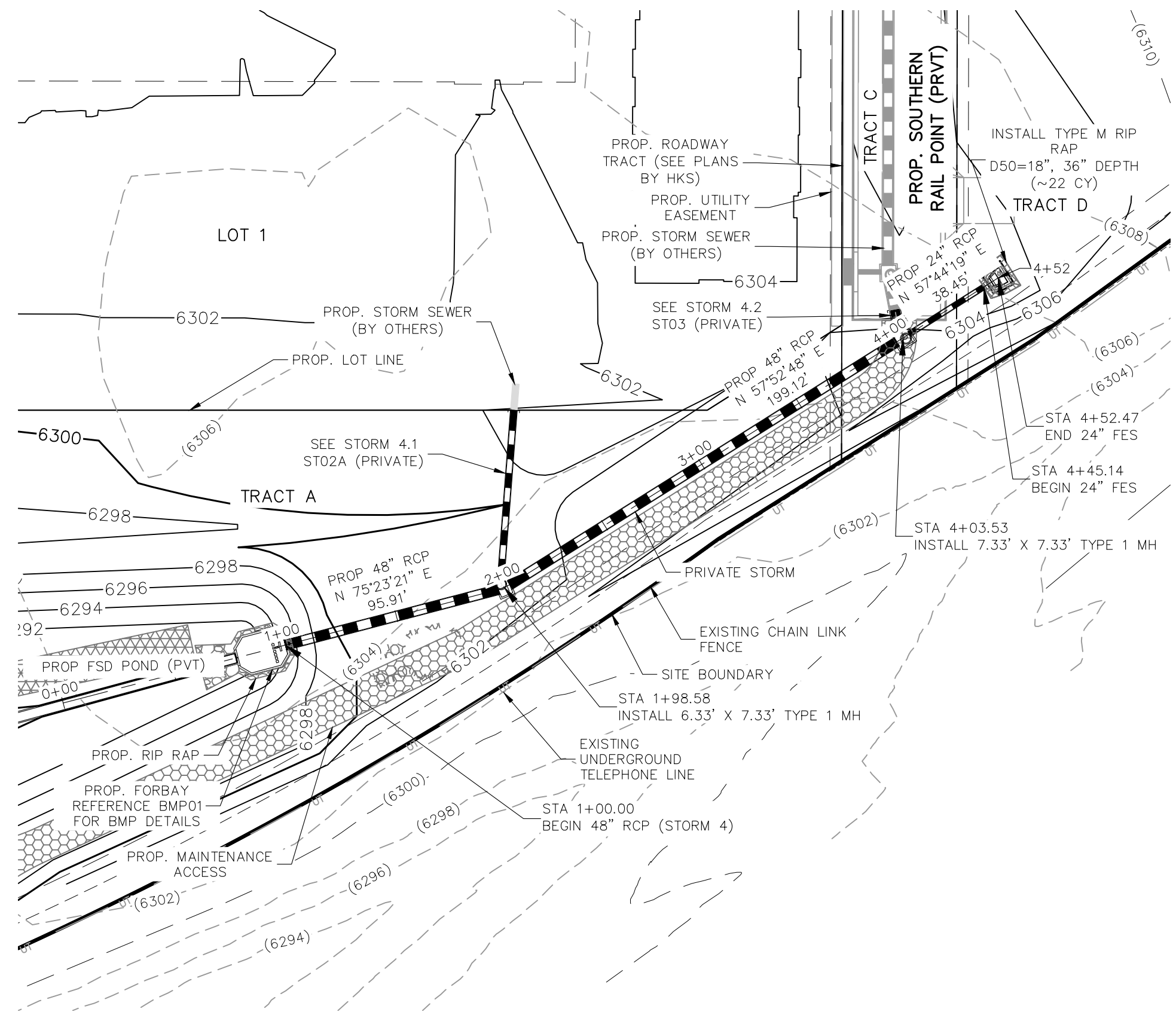
EPC 6/9/2022



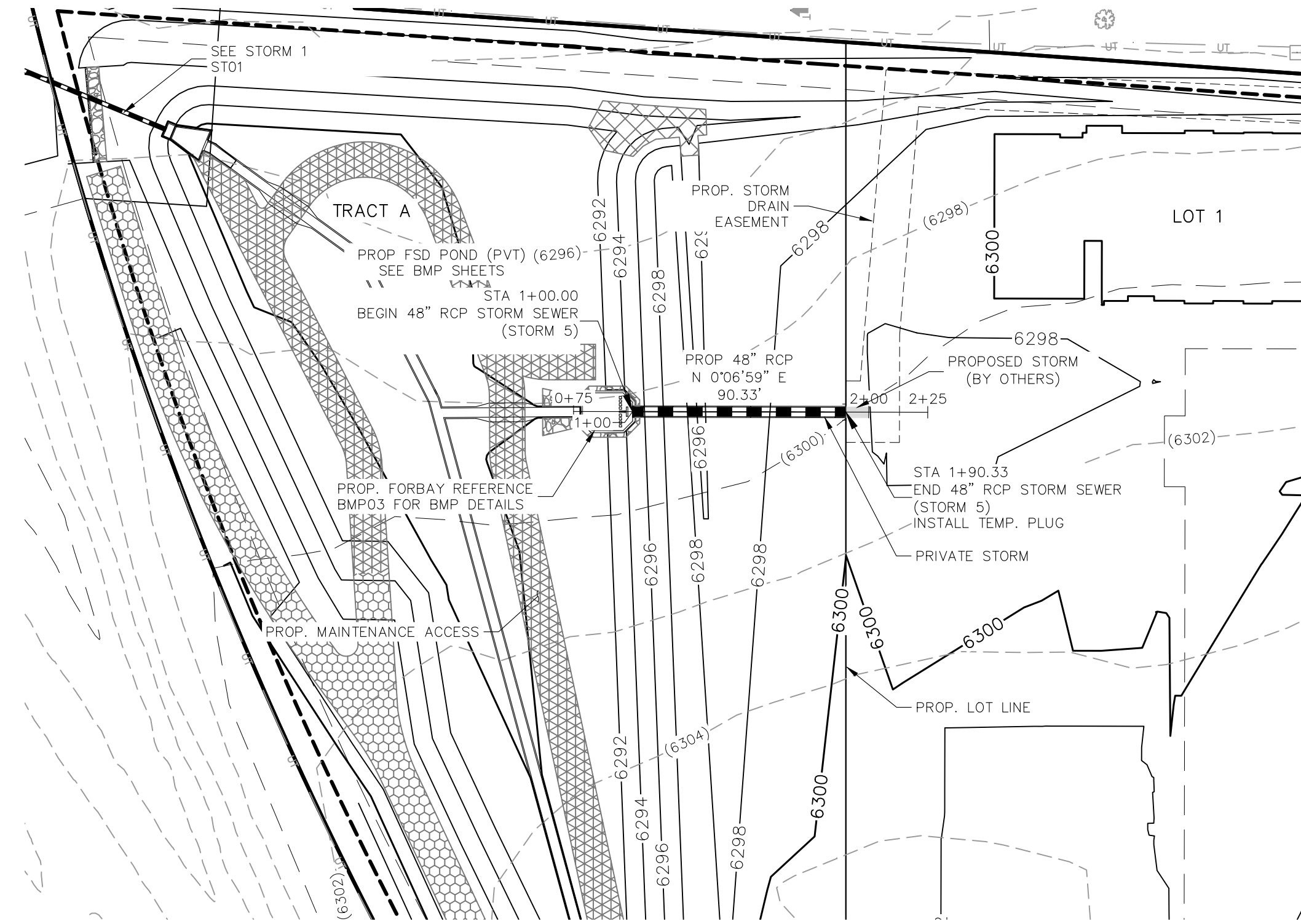
NO.	DATE	BY	DESCRIPTION

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARE OF THESE PLANS.

CAUTION



STORM 4 (PRIVATE)
STA 1+00.00 TO STA 4+52.47

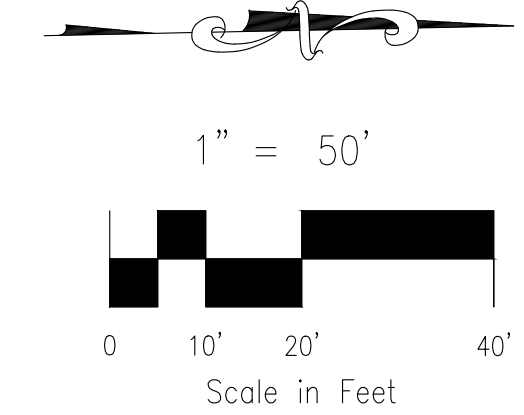
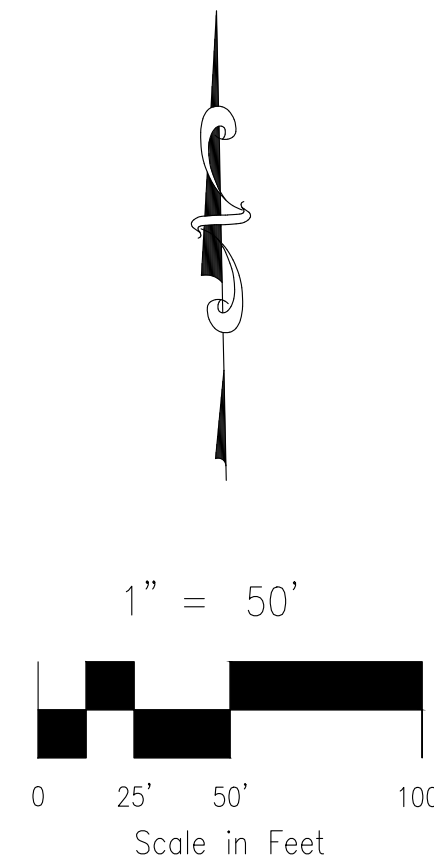


STORM 5 (PRIVATE)
STA 1+00.00 TO STA 1+90.33

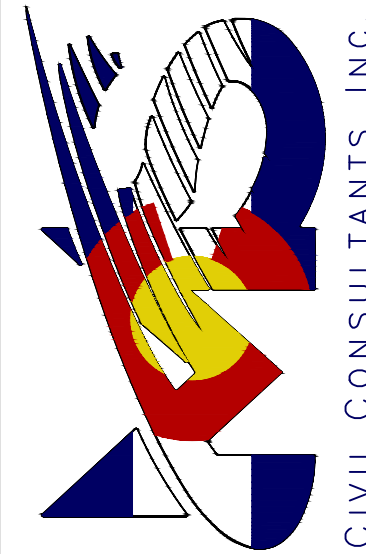
NOTES:

ALL PRIVATE STORM SEWER CONSTRUCTED WITH THESE PLANS TO BE MAINTAINED BY THE CROSSROADS METROPOLITAN DISTRICT NO. 1

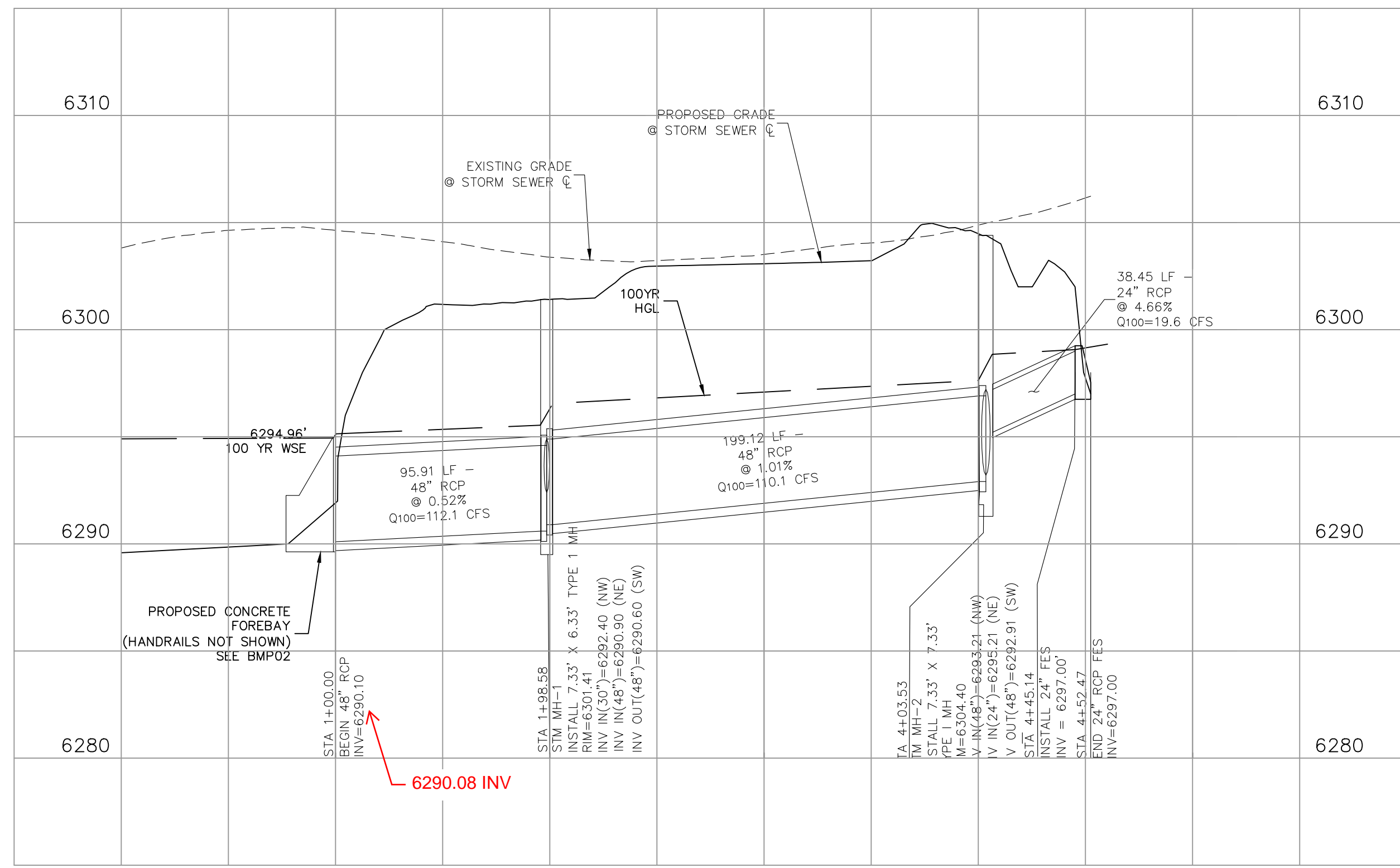
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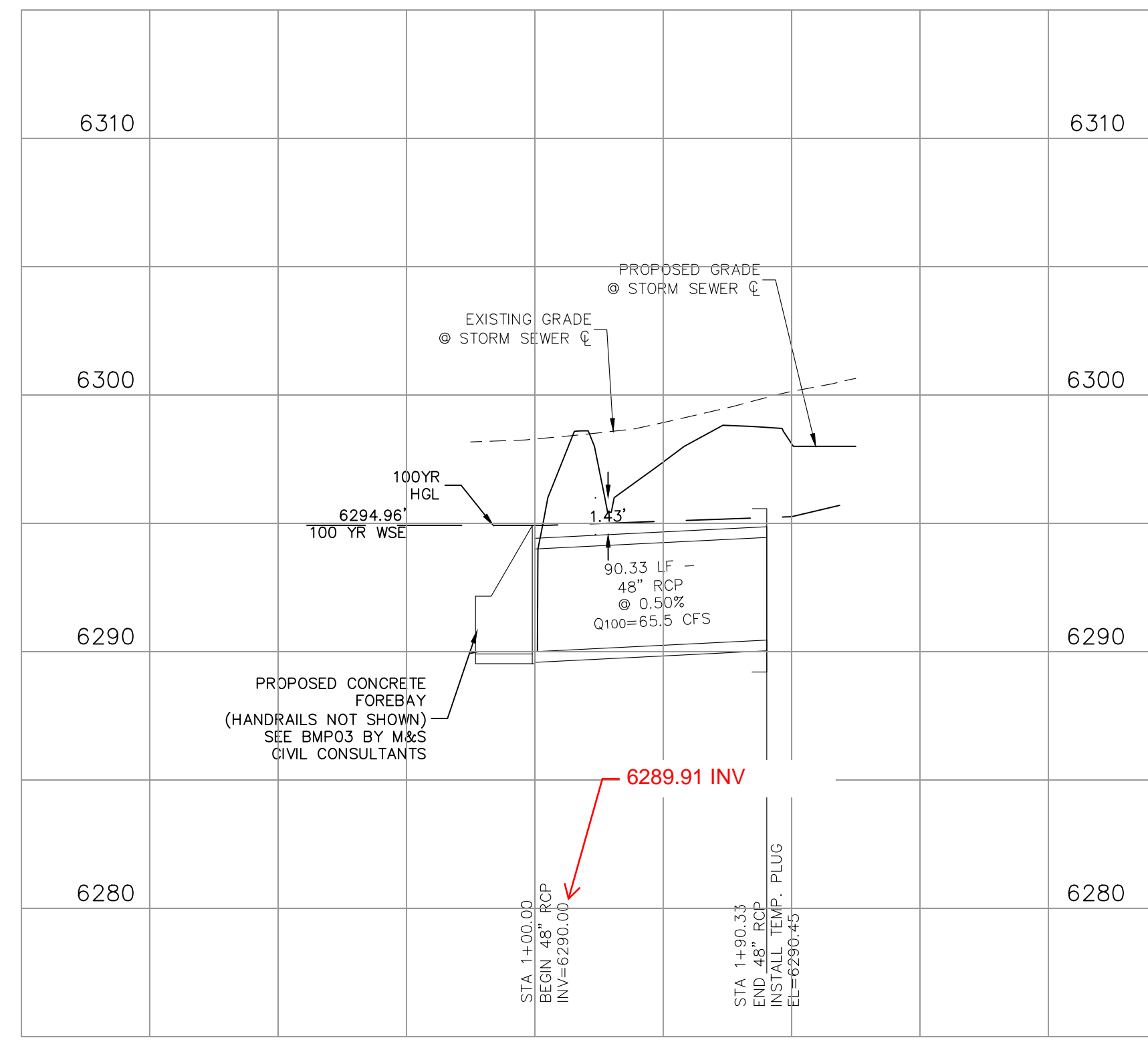
217 N. WABATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5885



**AS-BUILT
ENGINEERING RECORD DRAWINGS**



STORM 4 (PRIVATE)



STORM 5 (PRIVATE)

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

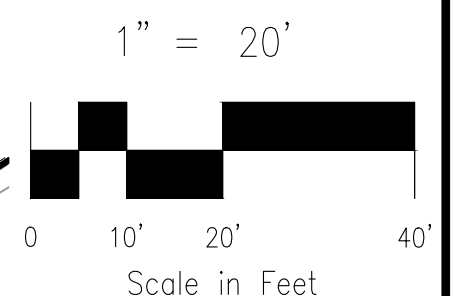
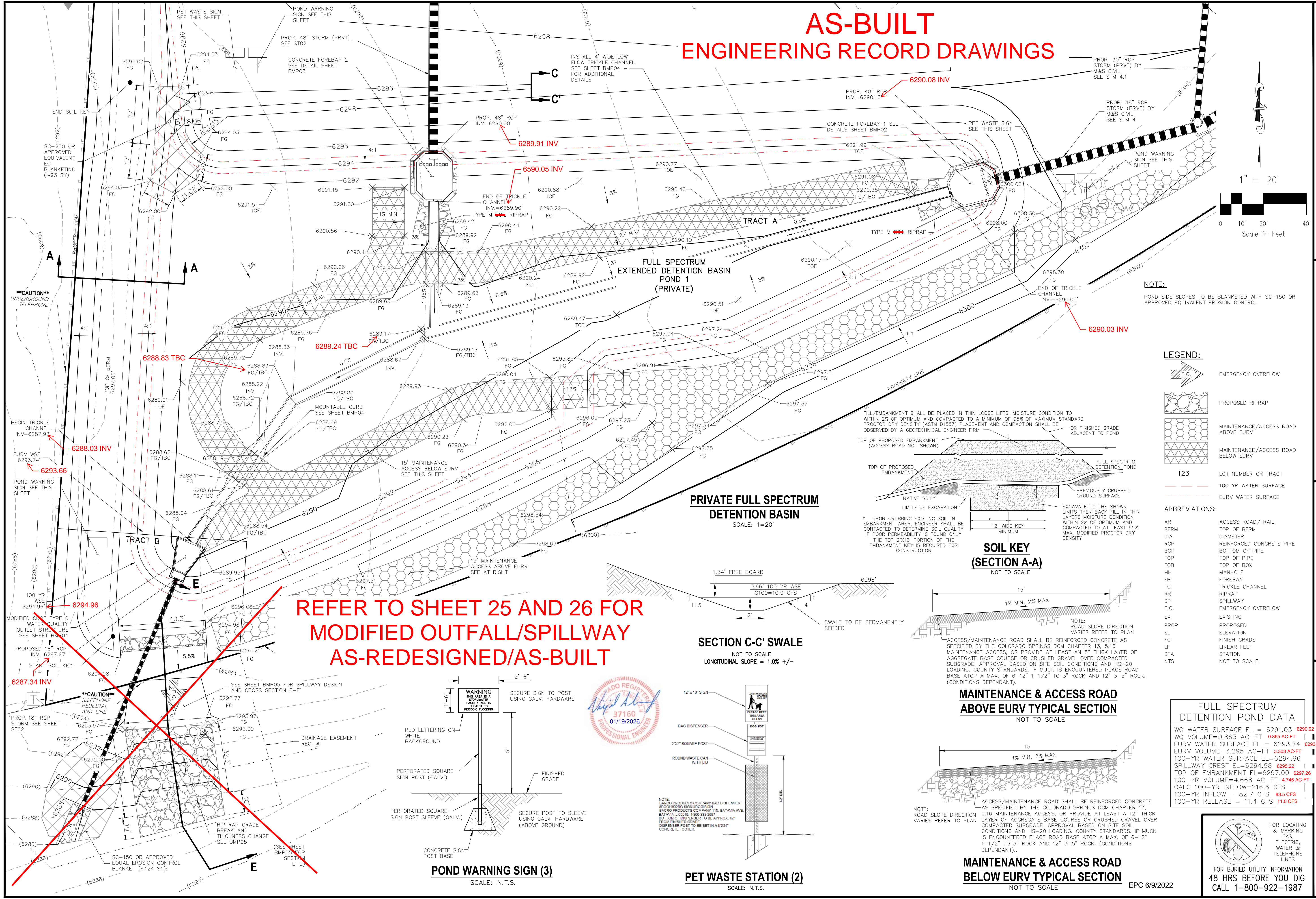


NO.	DATE	BY	DESCRIPTION	APPROV'D. BY	DATE

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CAUTION

AS-BUILT ENGINEERING RECORD DRAWINGS



NOTE:
POND SIDE SLOPES TO BE BLANKETED WITH SC-150 OR APPROVED EQUIVALENT EROSION CONTROL

- LEGEND:**
- EMERGENCY OVERFLOW
 - PROPOSED RIPRAP
 - MAINTENANCE/ACCESS ROAD ABOVE EURV
 - MAINTENANCE/ACCESS ROAD BELOW EURV
 - 123 LOT NUMBER OR TRACT
 - 100 YR WATER SURFACE
 - EURV WATER SURFACE
- ABBREVIATIONS:**
- AR ACCESS ROAD/TRAIL
 - BERM TOP OF BERM
 - DIA DIAMETER
 - RCP REINFORCED CONCRETE PIPE
 - BOP BOTTOM OF PIPE
 - TOP TOP OF PIPE
 - TOB TOP OF BOX
 - MH MANHOLE
 - FB FOREBAY
 - TC TRICKLE CHANNEL
 - RR RIPRAP
 - SP SPILLWAY
 - E.O. EMERGENCY OVERFLOW
 - EX EXISTING
 - PROP PROPOSED
 - EL ELEVATION
 - FG FINISH GRADE
 - LF LINEAR FEET
 - STA STATION
 - NTS NOT TO SCALE

FULL SPECTRUM DETENTION POND DATA

WQ WATER SURFACE EL = 6291.03	6290.92
WQ VOLUME=0.863 AC-FT	0.865 AC-FT
EURV WATER SURFACE EL = 6293.74	6293.66
EURV VOLUME=3.295 AC-FT	3.303 AC-FT
100-YR WATER SURFACE EL=6294.96	
SPILLWAY CREST EL=6294.98	6295.22
100-YR VOLUME=4.668 AC-FT	4.745 AC-FT
CALC 100-YR INFLOW=216.6 CFS	
100-YR INFLOW = 82.7 CFS	83.5 CFS
100-YR RELEASE = 11.4 CFS	11.0 CFS

CROSSROADS MIXED USE FILING NO. 1

PERMANENT BMP PLAN

DATE: 04/20/2022

SCALE: HORIZONTAL: VERTICAL: N/A

PROJECT NO. 18-003

DESIGNED BY: CW

DRAWN BY: CW

CHECKED BY: DLM

217 N. WAHATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE 719.555.5485

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

REGISTERED PROFESSIONAL ENGINEER
37160
0903/22

DATE: _____

APPROVED BY: _____

DESCRIPTION: _____

NO. _____

DATE: _____

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

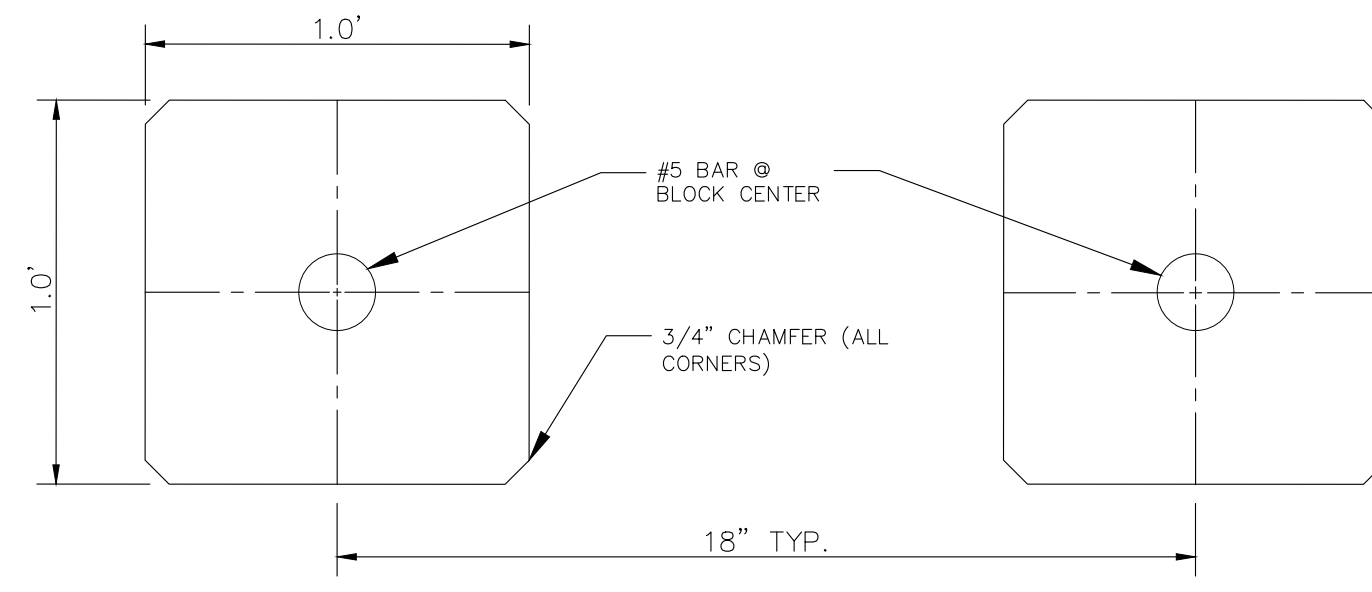
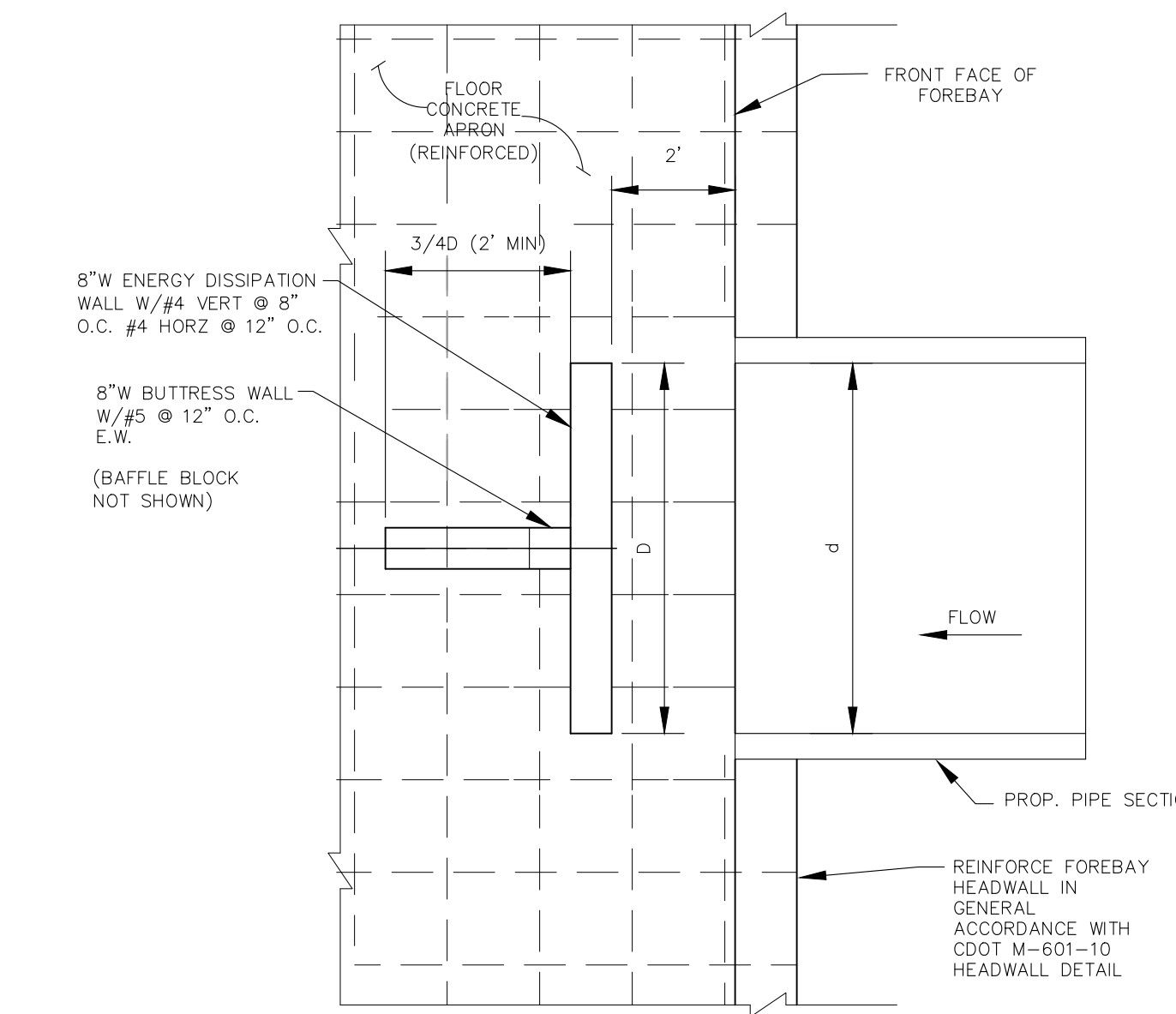
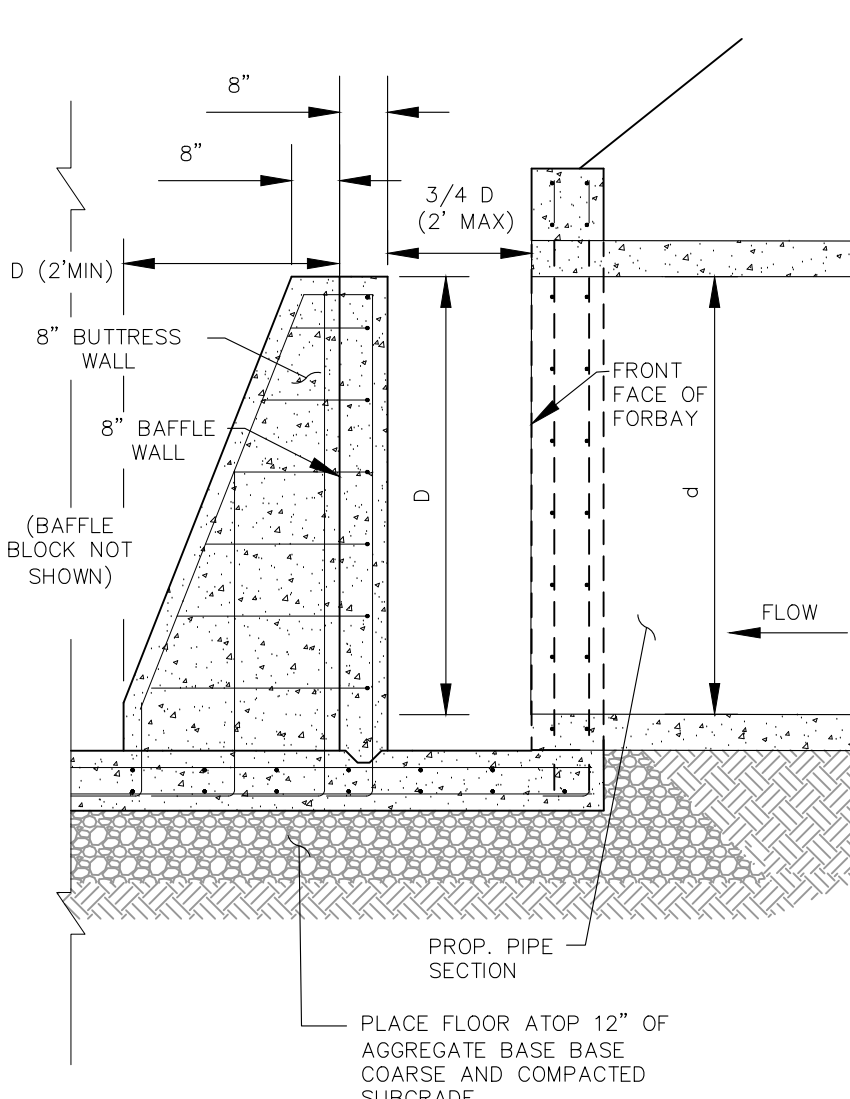
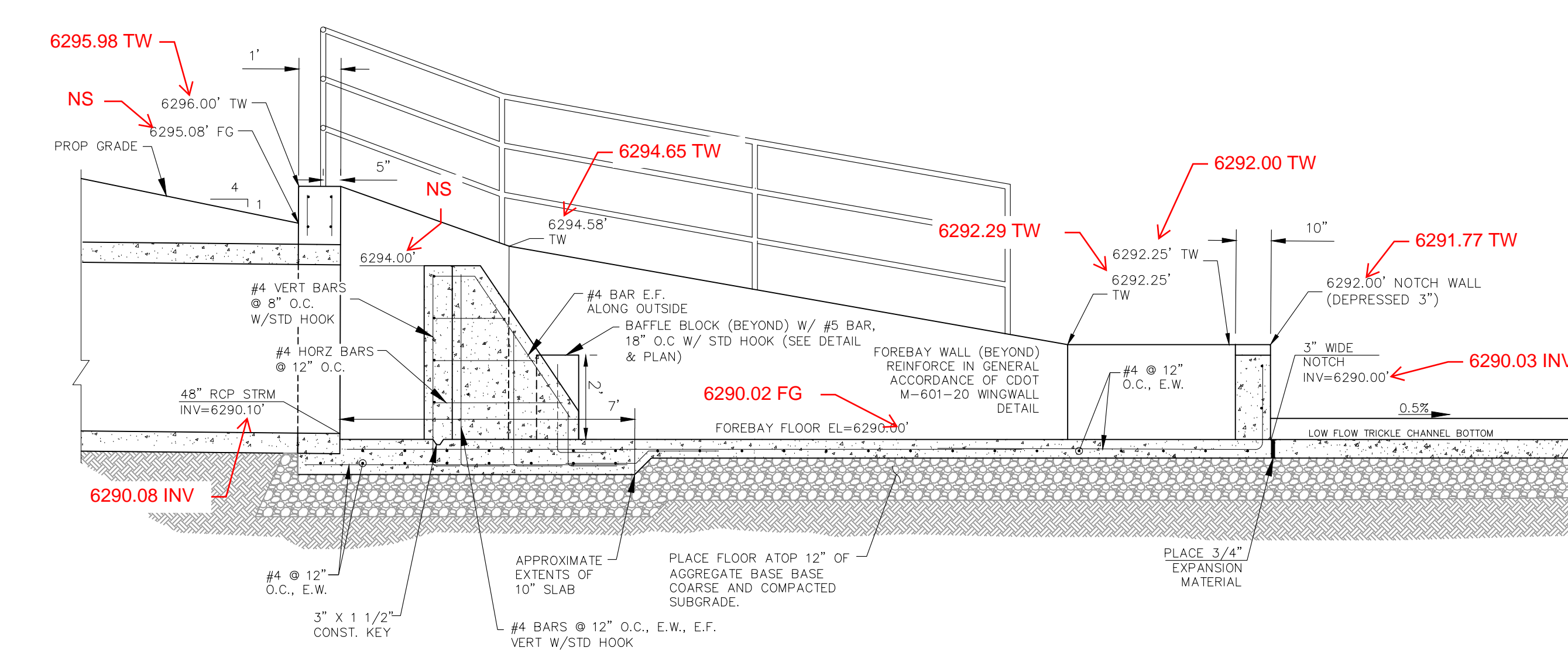
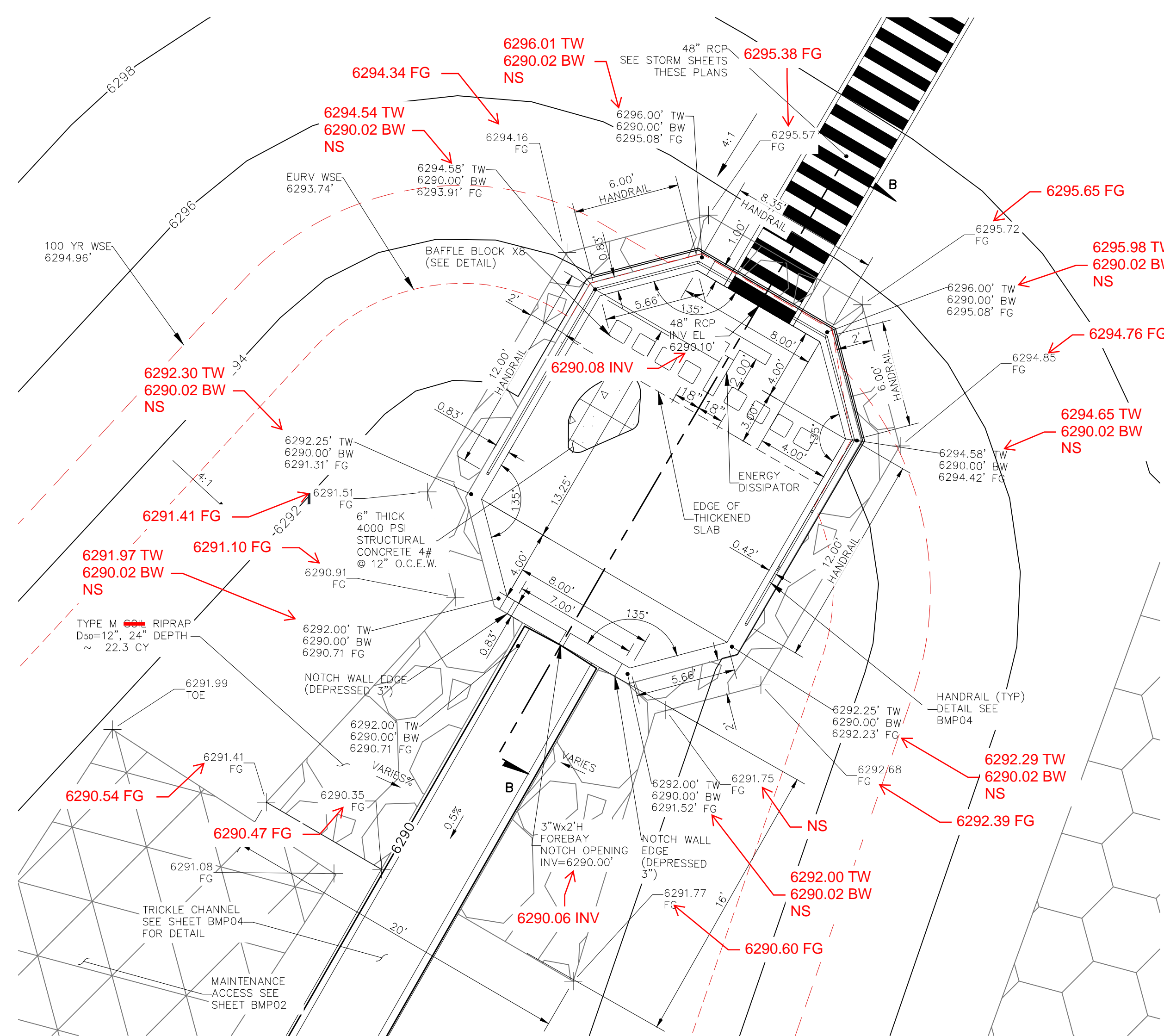
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CAUTION

File: C:\18003A-Crossroads Mixed Use\BMP Plans\18003A-BMP01.dwg Plotstamp: 4/14/2022 11:34 AM

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**AS-BUILT
ENGINEERING RECORD DRAWINGS**

EPC 6/9/2022

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CROSSROADS MIXED USE FILING NO. 1

FOREBAY DETAILS

DATE: 04/20/2022

SCALE: HORIZONTAL: PROJECT NO. 18-003

DESIGNED BY: CWV CHECKED BY: DLM

DRAWN BY: CWV

VERTICAL: N/A

SHEET 21 OF 24

BMP02

217 N. WAHATCH AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

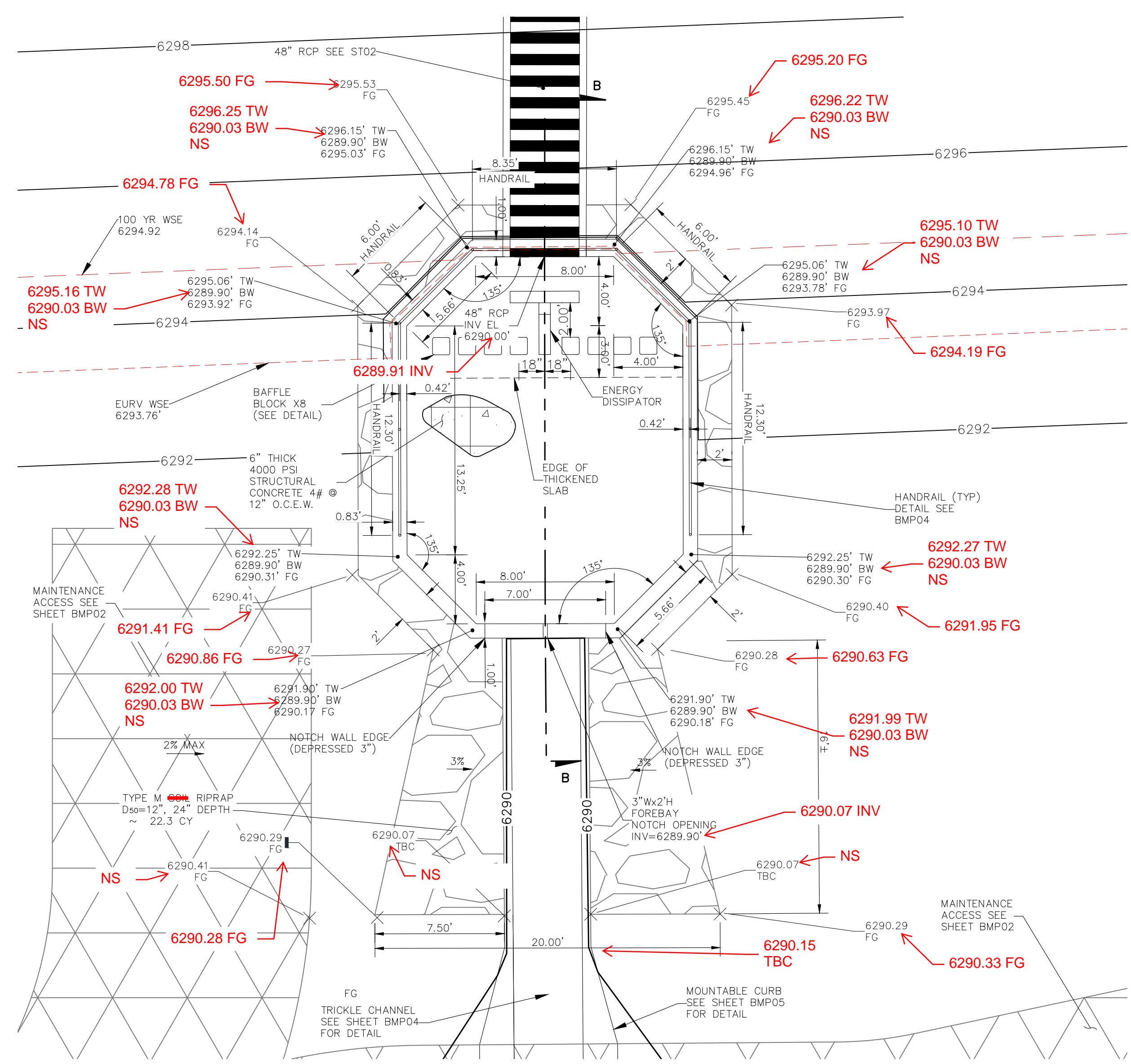
REGISTERED PROFESSIONAL ENGINEER
37160
05/03/22

REVISIONS: NO. DATE: BY: DESCRIPTION: APPROV'D. BY: DATE:

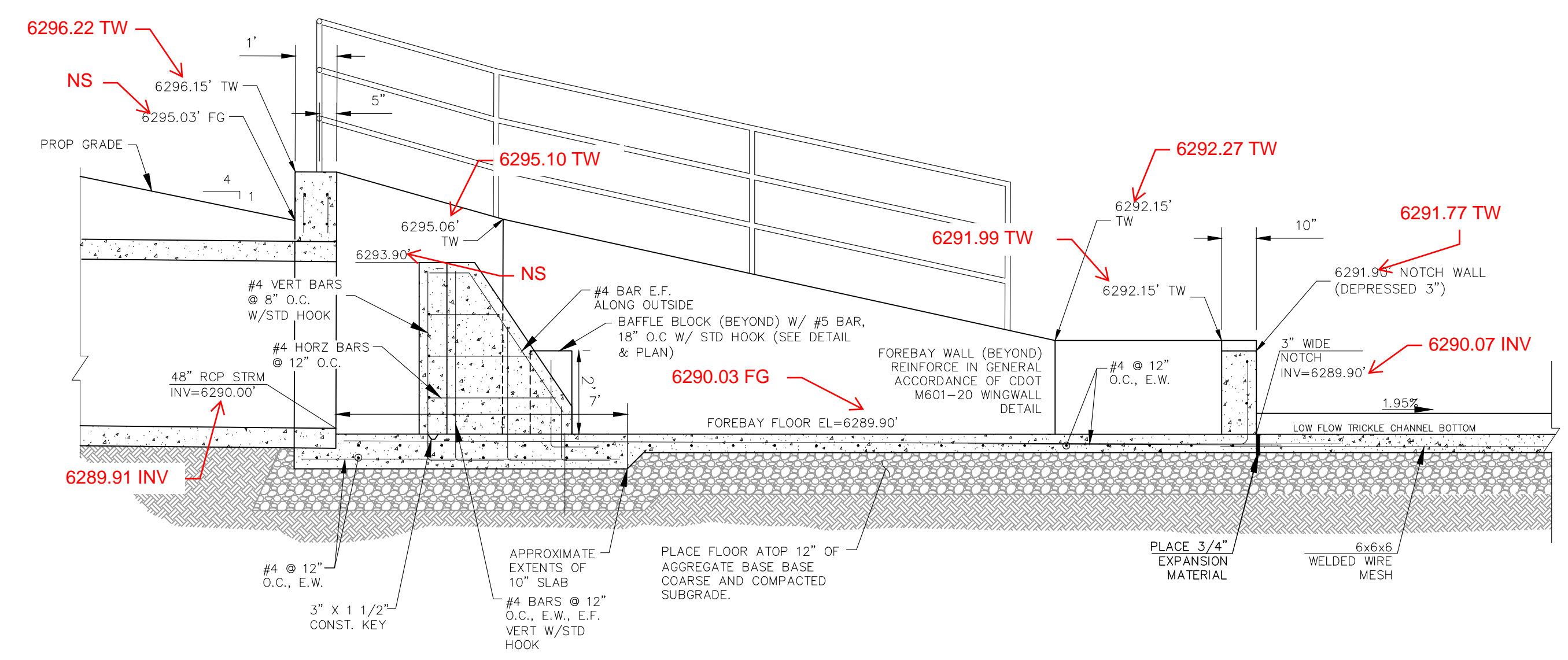
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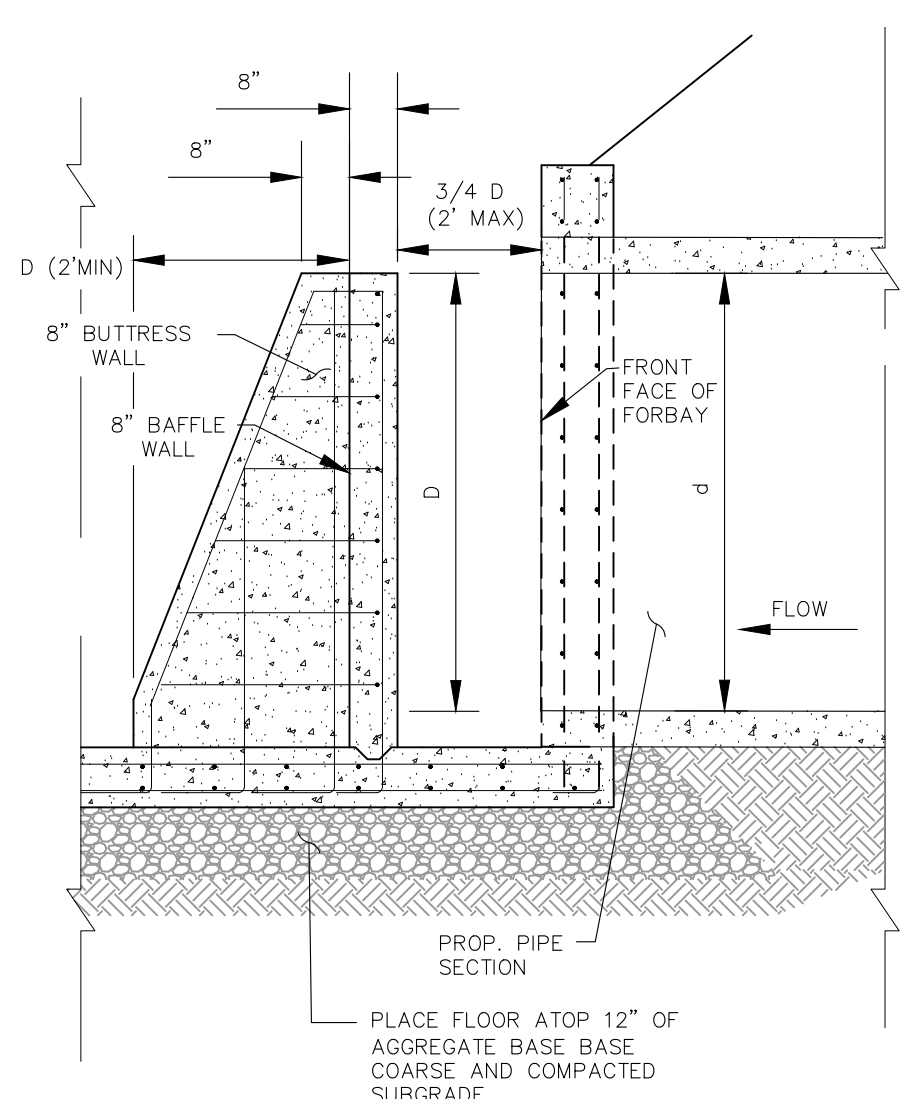
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TRACT B FOREBAY 2 CROSS SECTION
SCALE: 1" = 5'



FOREBAY CROSS SECTION B-B
SCALE: 3/8" = 1'



TYPICAL ENERGY DISSIPATION WALL DETAILS
SCALE: 1" = 5'

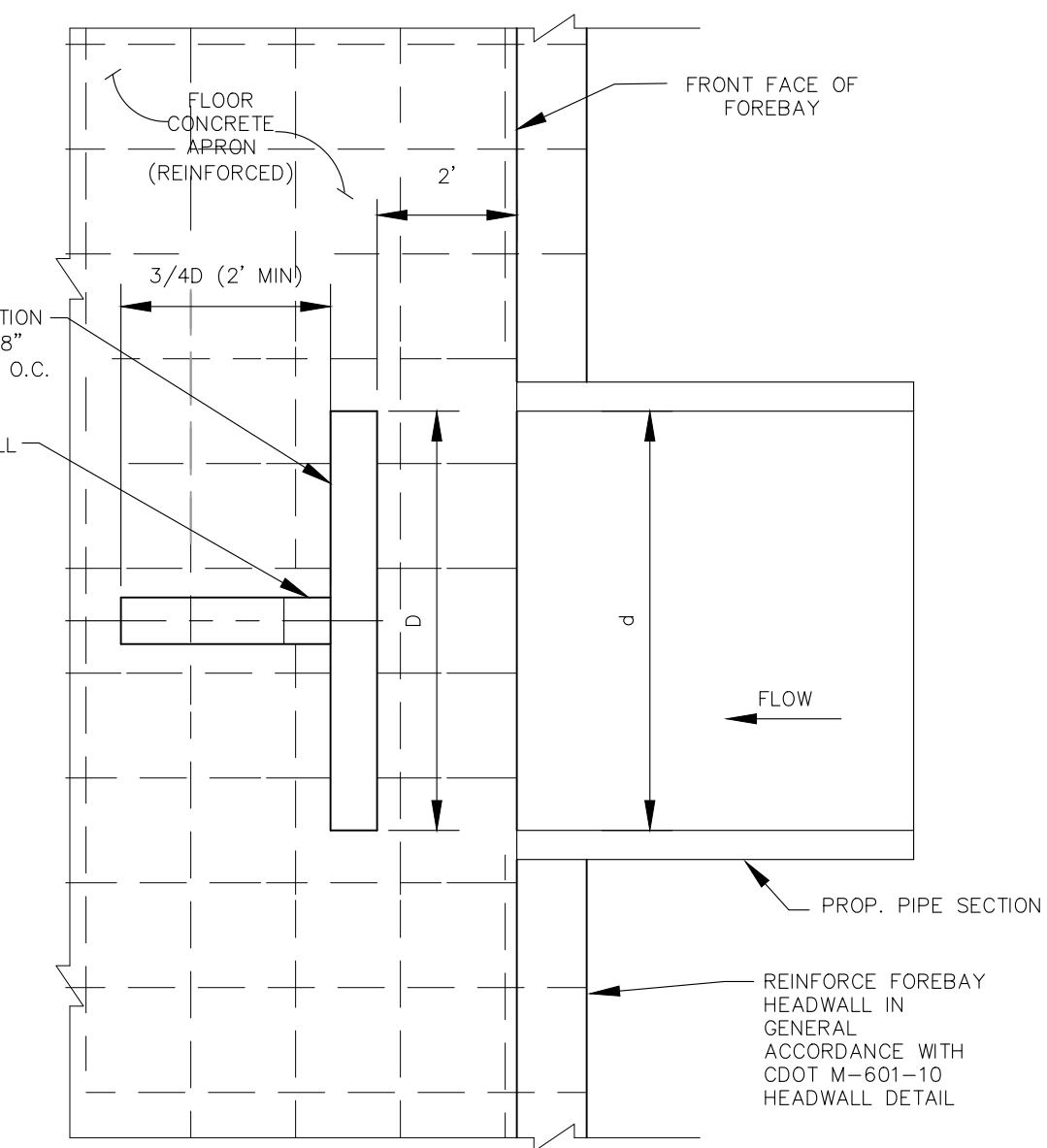
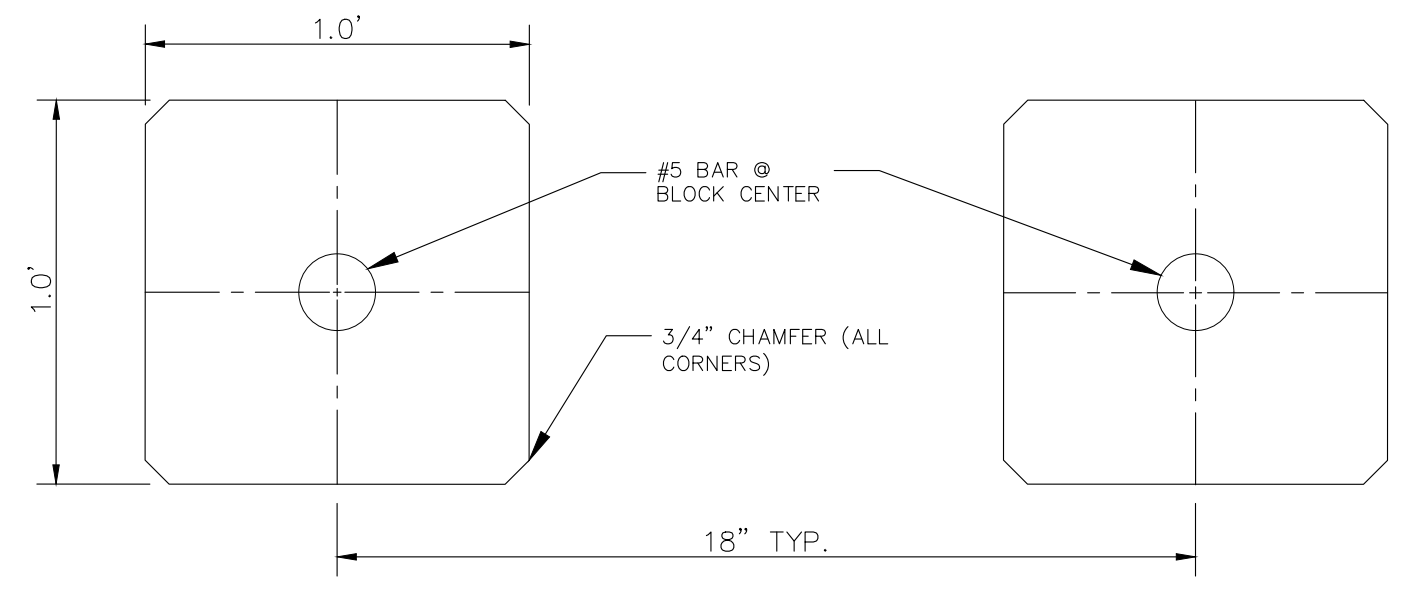


TABLE			
RCP PIPE SIZE INCH	d (WIDTH) INCH	BUTTRESS WALL FT	DISSIPATION WALL (D) FT
48"	48"	3'	4'

NOT TO SCALE



BAFFLE BLOCK DETAIL
SCALE: N.T.S.

**AS-BUILT
ENGINEERING RECORD DRAWINGS**



EPC 6/9/2022

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987

CROSSROADS MIXED USE FILING NO. 1

FOREBAY DETAILS

PROJECT NO. 18-003
DATE: 04/20/2022
SCALE: HORIZONTAL: N/A
VERTICAL: N/A
DESIGNED BY: CW
DRAWN BY: CW
CHECKED BY: DLM

217 N. WAHATCH AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

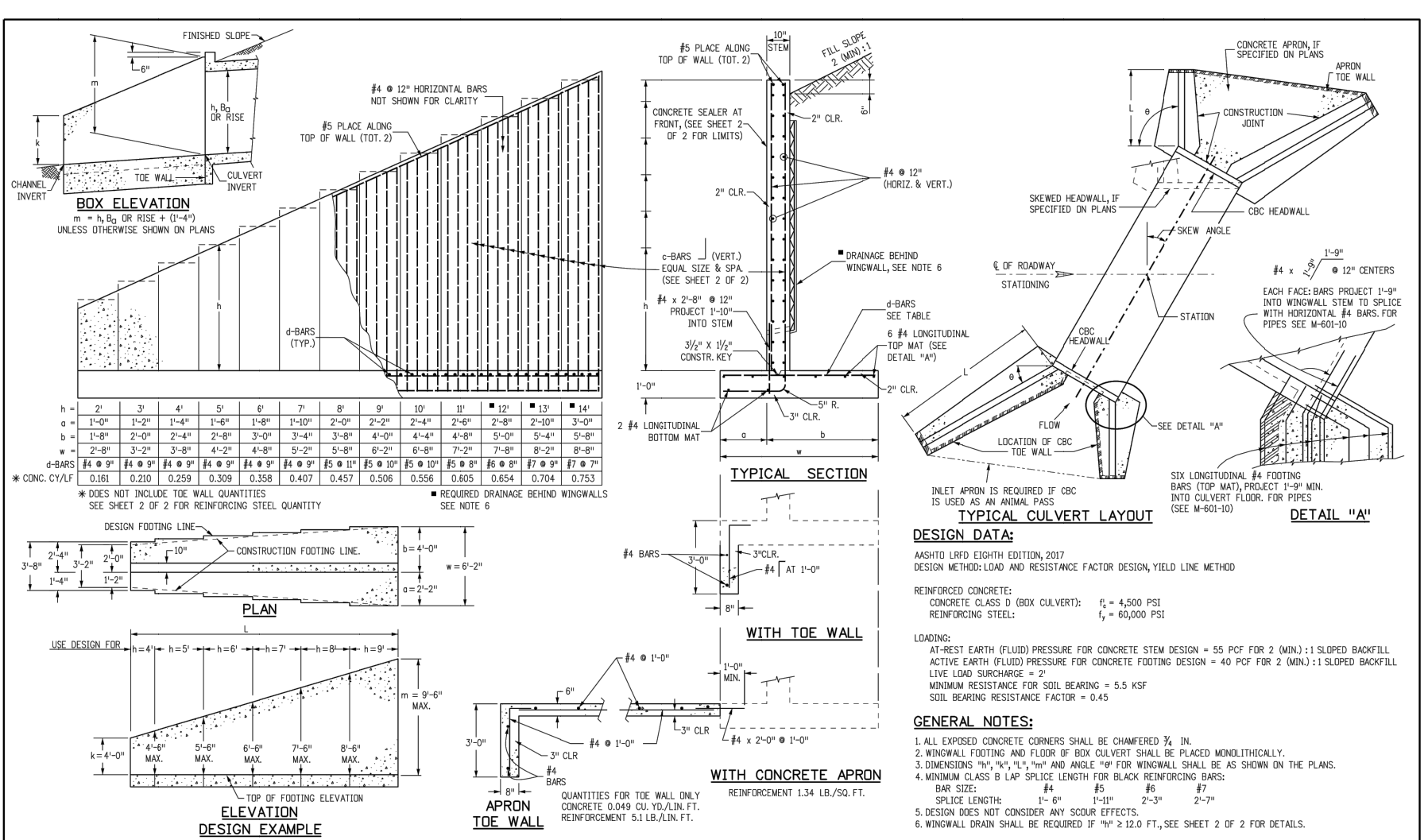
FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.

PROFESSIONAL ENGINEER

REVISIONS: NO. DATE: BY: DESCRIPTION: APPROV. BY: DATE:

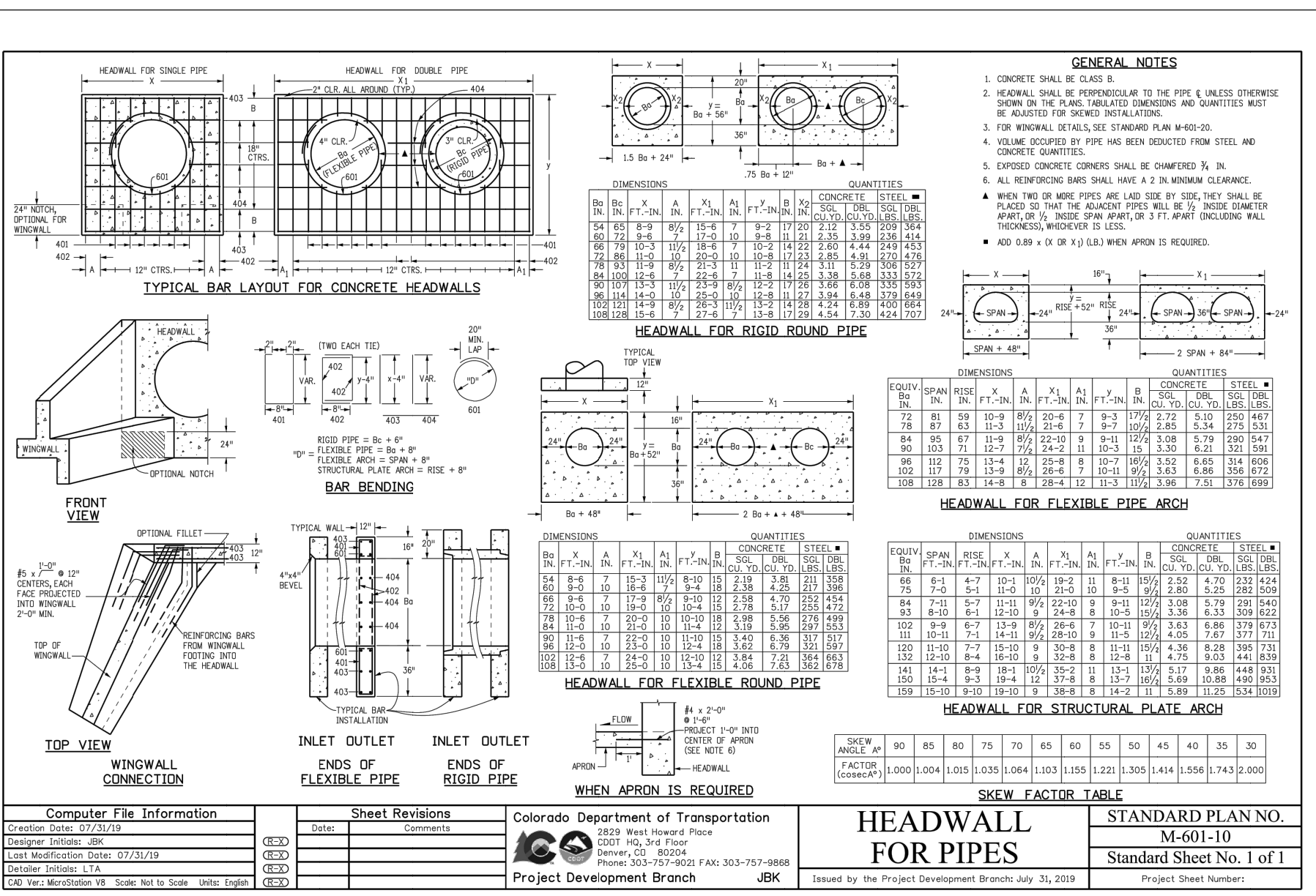
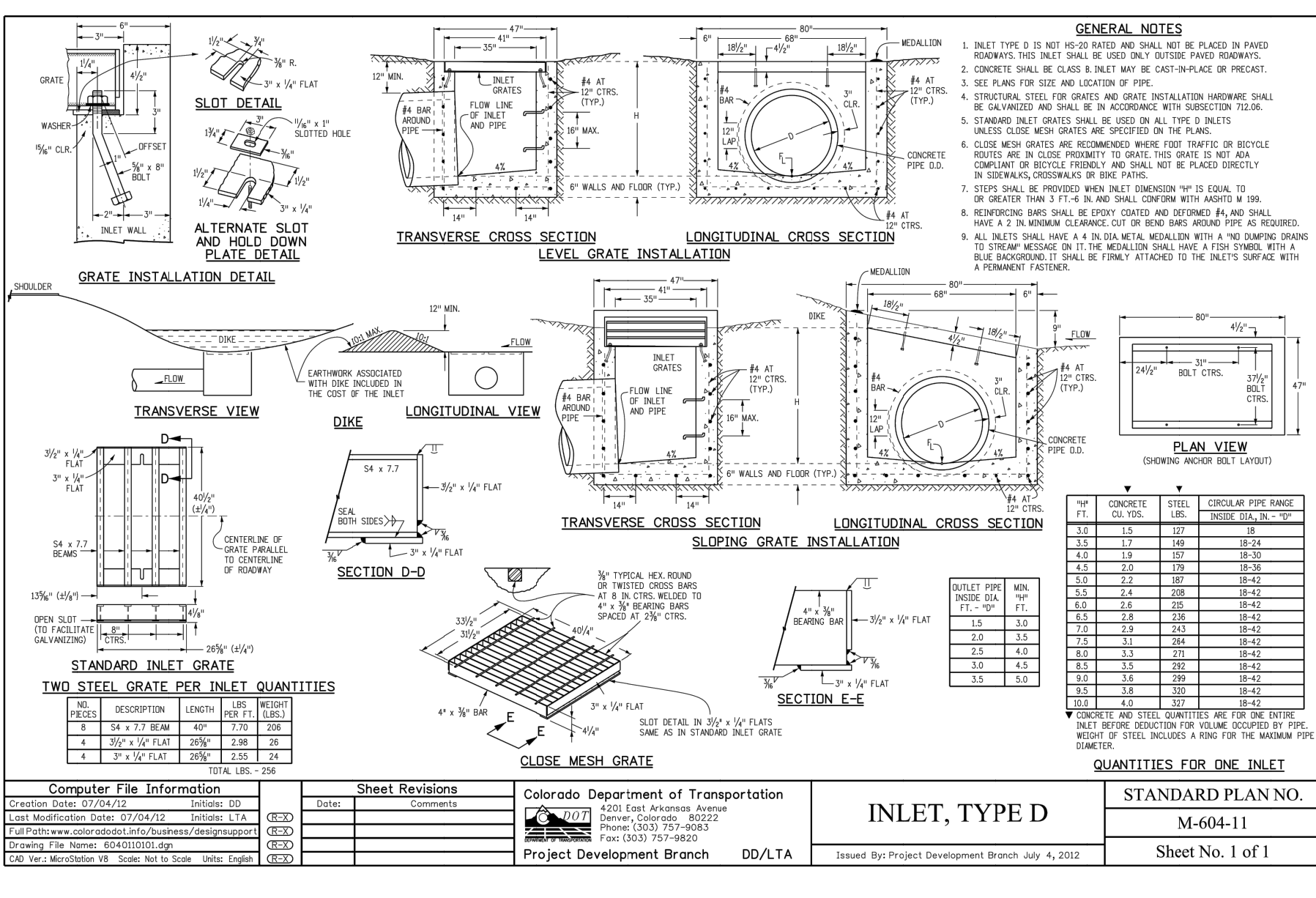
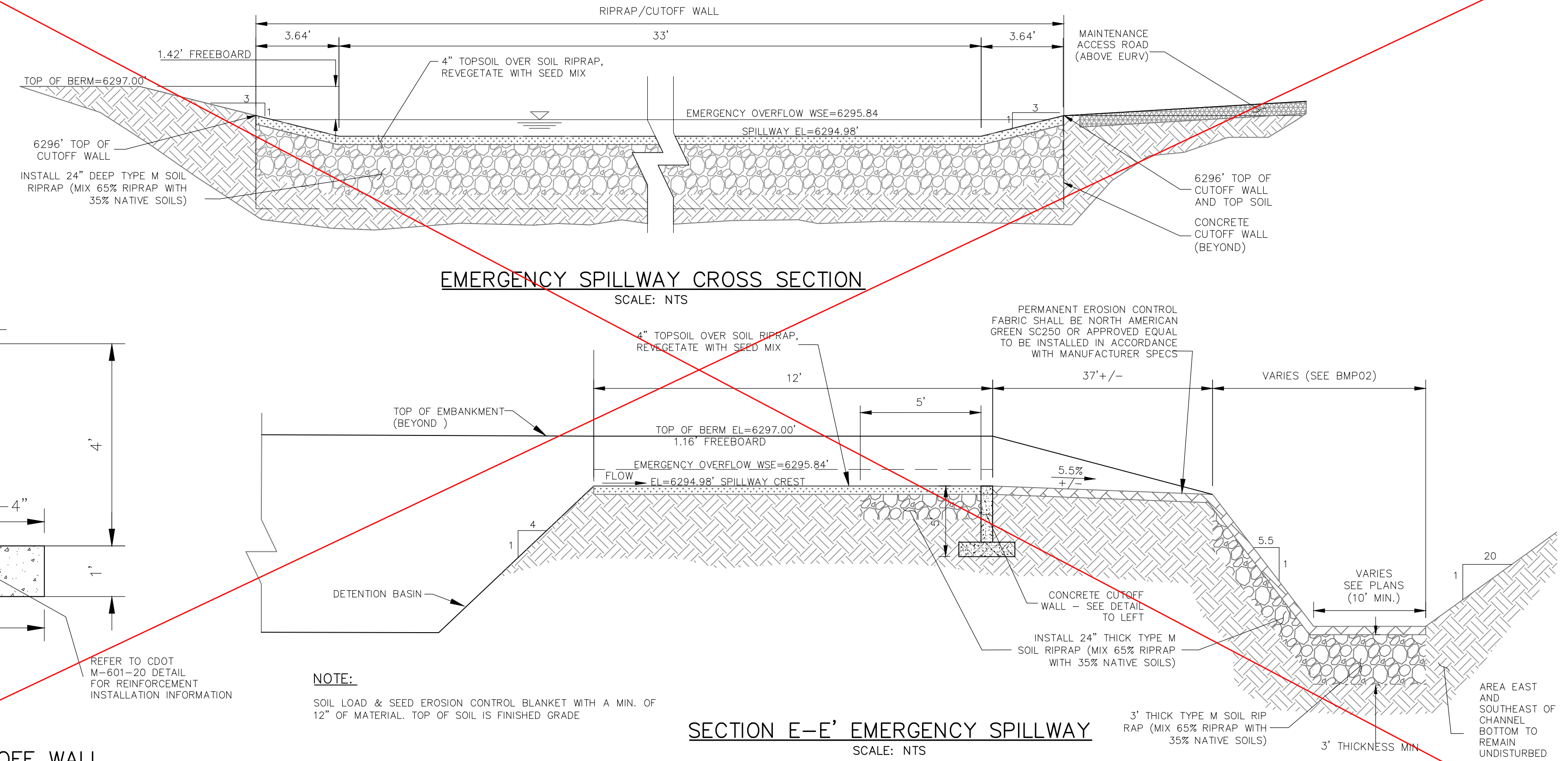
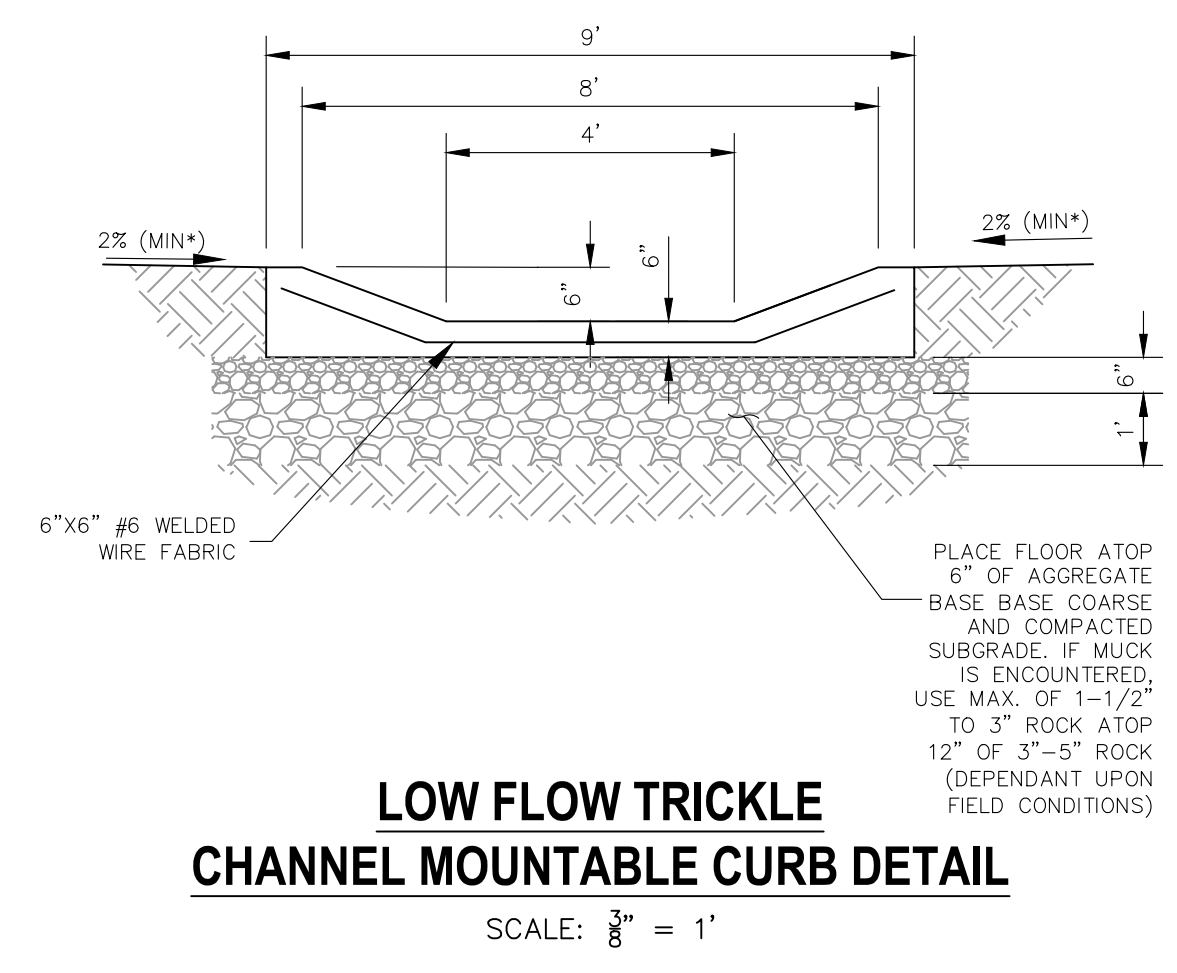
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CAUTION



Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLAN NO.	
Creation Date: 07/20/19	Drawn: JBK	Comments:		215 West Nevada Pkwy	Denver, CO 80204	M-601-20	
Design: JBK	Checked: JBK			Phone: 303-757-9023	Fax: 303-757-9988		Standard Sheet No. 1 of 2
Location: LTA	Scale: Not to Scale	Issue: Design		Project Development Branch			Project Sheet Number:

- SOIL RIPRAP NOTES:**
1. THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH SIXTY FIVE PERCENT (65%) RIPRAP AND THIRTY FIVE PERCENT (35%) SOIL BY VOLUME.
 2. SOIL RIPRAP SHALL CONSIST OF A UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.
 3. CONTRACTOR SHALL COOPERATE WITH ENGINEER IN OBTAINING AND PROVIDED SAMPLES OF ALL SPECIFIED MATERIALS.
 4. CONTRACTOR SHALL SUBMIT CERTIFIED LABORATORY TEST CERTIFICATES FOR ALL ITEMS REQUIRED FOR SOIL RIPRAP.
 5. RIPRAP USED SHALL BE THE TYPE DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO TABLE SHOWN TO THE RIGHT.
 6. THE RIPRAP DESIGNATION AND TOTAL THICKNESS OF RIPRAP SHALL BE AS SHOWN ON THE DRAWINGS. THE MAXIMUM STONE SIZE SHALL NOT LARGER THAN THE THICKNESS OF THE RIPRAP.
 7. NEITHER WIDTH NOR THICKNESS OF A SINGLE STONE OF RIPRAP SHALL BE LESS THAN ONE-THIRD ($\frac{1}{3}$) OF ITS LENGTH.
 8. THE SPECIFIC GRAVITY OF THE RIPRAP SHALL BE TWO AND ONE-HALF (2.5) OR GREATER.
 9. MINIMUM DENSITY FOR ACCEPTABLE RIPRAP SHALL BE ONE HUNDRED AND SIXTY FIVE (165) POUNDS PER CUBIC FOOT.
 10. RIPRAP SPECIFIC GRAVITY SHALL BE ACCORDING TO THE BULK-SATURATED, SURFACE-DRY BASIS, IN ACCORDANCE WITH AASHTO T85.
 11. BROKEN CONCRETE OR ASPHALT PAVEMENT SHALL NOT BE ACCEPTABLE FOR USE IN THE WORK.
 12. ROUNDED RIPRAP (RIVER ROCK) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS.



Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLAN NO.	
Creation Date: 07/20/19	Drawn: JBK	Comments:		215 West Nevada Pkwy	Denver, CO 80204	M-601-10	
Design: JBK	Checked: JBK			Phone: 303-757-9023	Fax: 303-757-9988		Standard Sheet No. 1 of 1
Location: LTA	Scale: Not to Scale	Issue: Design		Project Development Branch			Project Sheet Number:

REFER TO SHEET 25 FOR MODIFIED SPILLWAY AS-DESIGNED/AS-BUILT



AS-BUILT ENGINEERING RECORD DRAWINGS

EPC 6/9/2022

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987

CROSSROADS MIXED USE FILING NO. 1

MISCELLANEOUS DETAILS

PROJECT NO. 18-003 DATE: 04/20/2022

SCALE: HORIZONTAL: N/A VERTICAL: N/A

DESIGNED BY: CWV DRAWN BY: CWV CHECKED BY: DLM

212 N WAHATCH AVE, STE 305 COLORADO SPRINGS CO 80903 PHONE 719.555.5485

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REGISTERED PROFESSIONAL ENGINEER VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

REVISIONS: NO. DATE: BY: DESCRIPTION:

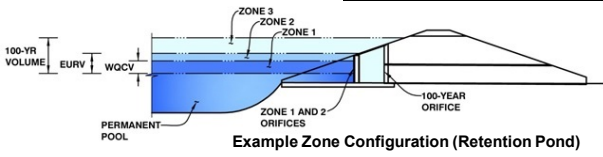
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CAUTION

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-*Detention, Version 4.03 (May 2020)*

Project: CROSSROADS MIXED USE
Basin ID: POND 1



	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	3.35	0.859	Orifice Plate
Zone 2 (EURV)	6.08	2.433	Orifice Plate
Zone 3 (100-year)	7.38	1.430	Weir&Pipe (Restrict)
Total (all zones)		4.723	

Example Zone Configuration (Retention Pond)

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

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

Calculated Parameters for Underdrain

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

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

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate =	6.18	ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing =	N/A	inches
Orifice Plate: Orifice Area per Row =	N/A	inches

Calculated Parameters for Plate

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

these do not match what is shown in as-built CDs

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

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	2.23	4.37					
Orifice Area (sq. inches)	3.98	6.49	12.57					

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

User Input: Vertical Orifice (Circular or Rectangular)

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

Calculated Parameters for Vertical Orifice

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

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe))

	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, H _o =	6.35	N/A	ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length =	5.71	N/A	feet
Overflow Weir Grate Slope =	0.00	N/A	H:V
Horiz. Length of Weir Sides =	2.91	N/A	feet
Overflow Grate Open Area % =	70%	N/A	%, grate open area/total area
Debris Clogging % =	50%	N/A	%

Calculated Parameters for Overflow Weir

	Zone 3 Weir	Not Selected	
Height of Grate Upper Edge, H _u =	6.35	N/A	feet
Overflow Weir Slope Length =	2.91	N/A	feet
Grate Open Area / 100-yr Orifice Area =	13.62	N/A	
Overflow Grate Open Area w/o Debris =	11.63	N/A	ft ²
Overflow Grate Open Area w/ Debris =	5.81	N/A	ft ²

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

	Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.23	N/A	ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter =	18.00	N/A	inches
Restrictor Plate Height Above Pipe Invert =	8.76		inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

	Zone 3 Restrictor	Not Selected	
Outlet Orifice Area =	0.85	N/A	ft ²
Outlet Orifice Centroid =	0.42	N/A	feet
Half-Central Angle of Restrictor Plate on Pipe =	1.54	N/A	radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage =	7.65	ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length =	35.00	feet
Spillway End Slopes =	3.00	H:V
Freeboard above Max Water Surface =	1.00	feet

Calculated Parameters for Spillway

Spillway Design Flow Depth =	0.82	feet
Stage at Top of Freeboard =	9.47	feet
Basin Area at Top of Freeboard =	1.34	acres
Basin Volume at Top of Freeboard =	6.06	acre-ft

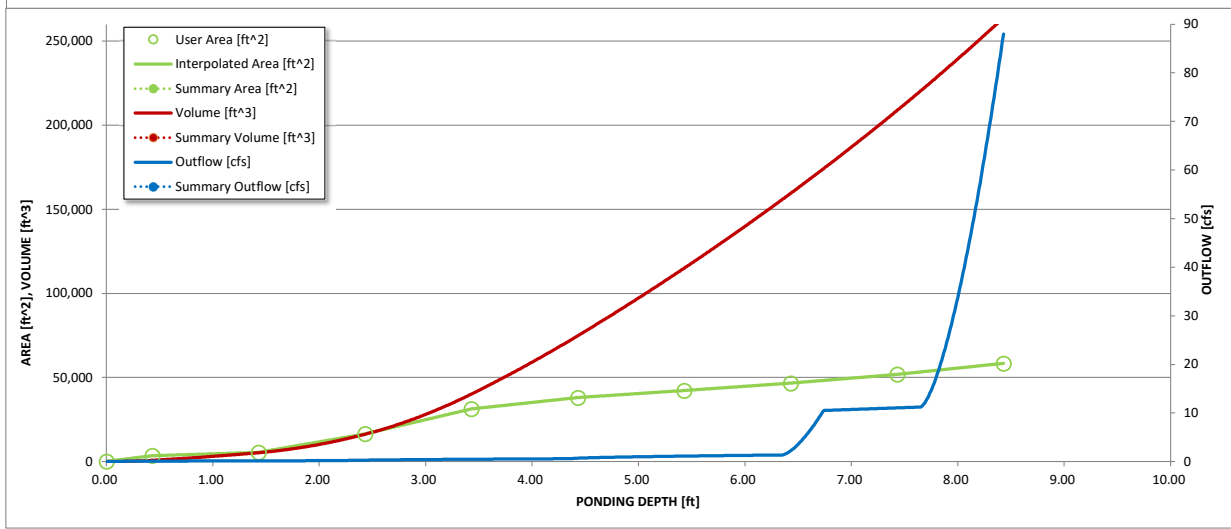
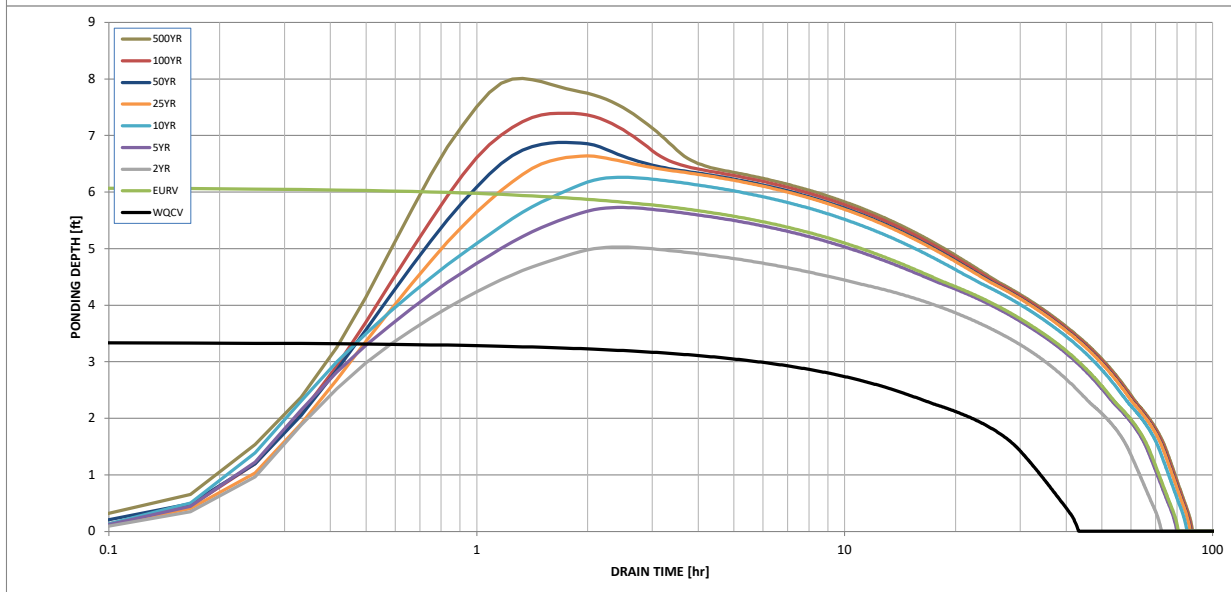
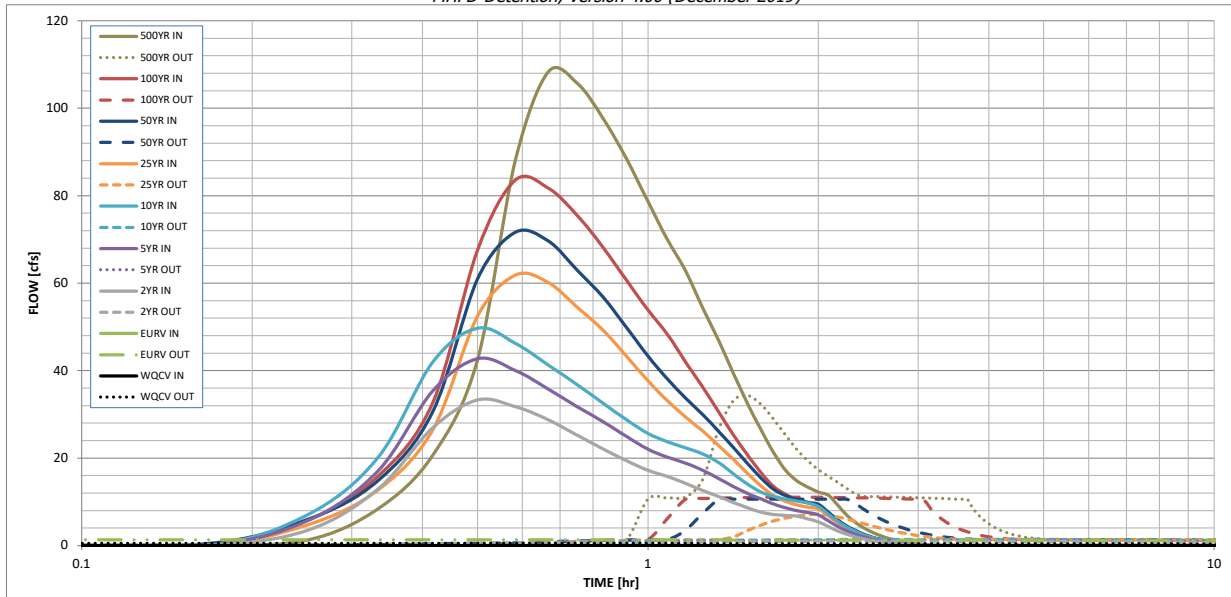
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period =			1.19	1.50	1.75	2.00	2.25	2.52	3.14
One-Hour Rainfall Depth (in) =	N/A	N/A	2.407	3.122	3.696	4.394	5.058	5.833	7.551
CUHP Runoff Volume (acre-ft) =	0.859	3.293	2.407	3.122	3.696	4.394	5.058	5.833	7.551
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	2.407	3.122	3.696	4.394	5.058	5.833	7.551
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.2	0.3	0.5	5.1	9.2	14.8	26.5
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.01	0.01	0.16	0.29	0.46	0.82
Peak Inflow Q (cfs) =	N/A	N/A	33.3	42.7	49.7	61.8	71.7	83.5	108.3
Peak Outflow Q (cfs) =	0.5	1.3	1.0	1.2	1.3	7.1	10.6	11.0	34.3
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	3.6	2.9	1.4	1.2	0.7	1.3
Structure Controlling Flow =	Plate	Plate	Plate	Plate	Plate	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Gate 1 (fps) =	N/A	N/A	N/A	N/A	N/A	0.5	0.8	0.8	0.8
Max Velocity through Gate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	39	69	63	69	73	73	72	71	68
Time to Drain 99% of Inflow Volume (hours) =	41	76	68	75	80	81	80	80	79
Maximum Ponding Depth (ft) =	3.35	6.09	5.03	5.73	6.26	6.64	6.87	7.39	8.01
Area at Maximum Ponding Depth (acres) =	0.69	1.04	0.93	1.00	1.05	1.10	1.12	1.19	1.28
Maximum Volume Stored (acre-ft) =	0.865	3.303	2.251	2.926	3.470	3.878	4.144	4.745	5.495

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.00 (December 2019)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			











