



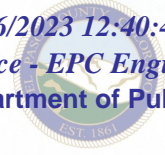
CORE
ENGINEERING GROUP

ACCEPTED for FILE
Engineering Review

06/16/2023 12:40:41 PM

Jeff Rice - EPC Engineering

EPC Department of Public Works



April 27, 2023

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

RE: Lorson Ranch East Filing No. 1 (SF 18-008)
Certification Letter

Dear El Paso County PCD,

Based upon information gathered from as-built surveys and periodic visits to the project, Core Engineering Group is of the opinion that the subdivision improvements have been constructed in general conformance with the approved design plans as filed with El Paso County.

The site and adjacent properties (as affected by work performed under the County permit) appear to be stable with respect to settlement and subsidence, sloughing of cut and fill slopes, revegetation or other ground cover, and the improvements (public improvements, common development improvements, site grading and paving) visually appear to meet or exceed the minimum design requirements.

The sanitary and watermain located in the public ROW has also been completed in accordance with Widefield Water and Sanitation Districts criteria.

In addition, Core Engineering Group has verified that the Extended Detention Basin/WQ Pond C5 and D2 meet the volume and elevation requirements and are constructed in general compliance with the approved construction plans. The pond "as-built" documents are attached to this letter. The tributary area draining to Pond D2 has changed and the updated spreadsheet with the corresponding spreadsheet printouts is attached.

Based on information gathered during construction and post-construction, Core Engineering Group is of the opinion that the public streets, storm sewer, and Detention Pond C5 and D2 have been constructed in general accordance with the approved construction documents.

Sincerely,
Core Engineering Group, LLC



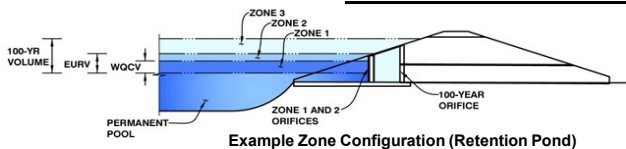
Richard L. Schindler, P.E. 33997

Attachments: Pond As-built elevations

Detention Basin Outlet Structure Design

UD-Detention, Version 3.07 (February 2017)

Project: **Lorson Ranch East MDDP**
 Basin ID: **Pond D2 - As-built**



Example Zone Configuration (Retention Pond)

	Stage (ft)	Zone Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	3.08	1.552	Orifice Plate
Zone 2 (EURV)	4.77	2.878	Rectangular Orifice
Zone 3 (100-year)	6.75	3.737	Weir&Pipe (Restrict)
		8.168	Total

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

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

Calculated Parameters for Underdrain

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

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

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate =	3.08	ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing =	9.00	inches
Orifice Plate: Orifice Area per Row =	4.00	sq. inches (use rectangular openings)

Calculated Parameters for Plate

WQ Orifice Area per Row =	2.778E-02	ft ²
Elliptical Half-Width =	N/A	feet
Elliptical Slot Centroid =	N/A	feet
Elliptical Slot Area =	N/A	ft ²

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

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	0.60	1.20					
Orifice Area (sq. inches)	4.00	4.00	4.00					

	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)

	Zone 2 Rectangular	Not Selected	
Invert of Vertical Orifice =	2.80	N/A	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice =	4.77	N/A	ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Height =	10.00	N/A	inches
Vertical Orifice Width =	2.00		inches

Calculated Parameters for Vertical Orifice

	Zone 2 Rectangular	Not Selected
Vertical Orifice Area =	0.14	N/A
Vertical Orifice Centroid =	0.42	N/A

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

	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, H _o =	4.52	N/A	ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length =	4.00	N/A	feet
Overflow Weir Slope =	13.50	N/A	H:V (enter zero for flat grate)
Horiz. Length of Weir Sides =	20.00	N/A	feet
Overflow Grate Open Area % =	70%	N/A	% , grate open area/total area
Debris Clogging % =	50%	N/A	%

Calculated Parameters for Overflow Weir

	Zone 3 Weir	Not Selected
Height of Grate Upper Edge, H _g =	6.00	N/A
Over Flow Weir Slope Length =	20.05	N/A
Grate Open Area / 100-yr Orifice Area =	5.15	N/A
Overflow Grate Open Area w/o Debris =	56.15	N/A
Overflow Grate Open Area w/ Debris =	28.08	N/A

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 =	0.00	N/A	ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter =	54.00	N/A	inches
Restrictor Plate Height Above Pipe Invert =	35.00		inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

	Zone 3 Restrictor	Not Selected
Outlet Orifice Area =	10.91	N/A
Outlet Orifice Centroid =	1.64	N/A
Half-Central Angle of Restrictor Plate on Pipe =	1.87	N/A

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage =	7.00	ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length =	30.00	feet
Spillway End Slopes =	4.00	H:V
Freeboard above Max Water Surface =	3.00	feet

Calculated Parameters for Spillway

Spillway Design Flow Depth =	1.64	feet
Stage at Top of Freeboard =	11.64	feet
Basin Area at Top of Freeboard =	2.43	acres
bottom orifice-95.00		

Routed Hydrograph Results

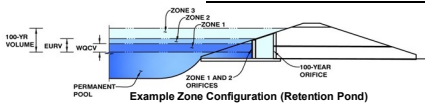
	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Design Storm Return Period =								
One-Hour Rainfall Depth (in)	0.53	1.07	1.19	1.50	1.75	2.00	2.25	2.52
Calculated Runoff Volume (acre-ft)	1.552	4.430	4.191	6.097	7.712	10.275	12.244	14.693
OPTIONAL Override Runoff Volume (acre-ft)								
Inflow Hydrograph Volume (acre-ft)	1.551	4.428	4.189	6.089	7.707	10.263	12.238	14.680
Predevelopment Unit Peak Flow, q (cfs/acre)	0.00	0.00	0.02	0.15	0.42	0.95	1.26	1.63
Predevelopment Peak Q (cfs)	0.0	0.0	1.5	13.0	35.3	80.5	106.2	137.4
Peak Inflow Q (cfs)	30.0	84.3	79.8	115.1	144.8	191.1	226.6	269.8
Peak Outflow Q (cfs)	0.7	2.1	1.6	14.8	36.6	76.7	108.8	119.1
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	1.1	1.0	1.0	1.0	0.9
Structure Controlling Flow	Vertical Orifice 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Outlet Plate 1
Max Velocity through Grate 1 (fps)	N/A	0.01	0.00	0.2	0.6	1.3	1.9	2.1
Max Velocity through Grate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	35	62	60	62	61	59	58	56
Time to Drain 99% of Inflow Volume (hours)	37	65	63	66	66	65	65	64
Maximum Ponding Depth (ft)	3.02	4.64	4.52	5.22	5.61	6.05	6.31	6.78
Area at Maximum Ponding Depth (acres)	1.59	1.78	1.77	1.84	1.88	1.92	1.95	2.00
Maximum Volume Stored (acre-ft)	1.461	4.200	3.988	5.230	5.973	6.809	7.312	8.239

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

UD-Detention, Version 3.07 (February 2017)

Project: LRE Filing No. 1

Basin ID: Pond D2 - As-built



Example Zone Configuration (Retention Pond)

Required Volume Calculation

Selected BMP Type =	EDB
Watershed Area =	84.50 acres
Watershed Length =	2,200 ft
Watershed Slope =	0.025 ft/ft
Watershed Imperviousness =	55.00% percent
Percentage Hydrologic Soil Group A =	0.0% percent
Percentage Hydrologic Soil Group B =	0.0% percent
Percentage Hydrologic Soil Groups C/D =	100.0% percent
Desired WQCV Drain Time =	40.0 hours
Location for 1-hr Rainfall Depths =	User Input
Water Quality Capture Volume (WQCV) =	1,552 acre-feet
Excess Urban Runoff Volume (EURV) =	4,430 acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	4,191 acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	6,097 acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	7,712 acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	10,275 acre-feet
50-yr Runoff Volume (P1 = 2.25 in.) =	12,244 acre-feet
100-yr Runoff Volume (P1 = 2.52 in.) =	14,693 acre-feet
500-yr Runoff Volume (P1 = 0 in.) =	0.000 acre-feet
Approximate 2-yr Detention Volume =	3,931 acre-feet
Approximate 5-yr Detention Volume =	5,745 acre-feet
Approximate 10-yr Detention Volume =	6,551 acre-feet
Approximate 25-yr Detention Volume =	7,048 acre-feet
Approximate 50-yr Detention Volume =	7,284 acre-feet
Approximate 100-yr Detention Volume =	8,168 acre-feet

Optional User Override 1-hr Precipitation

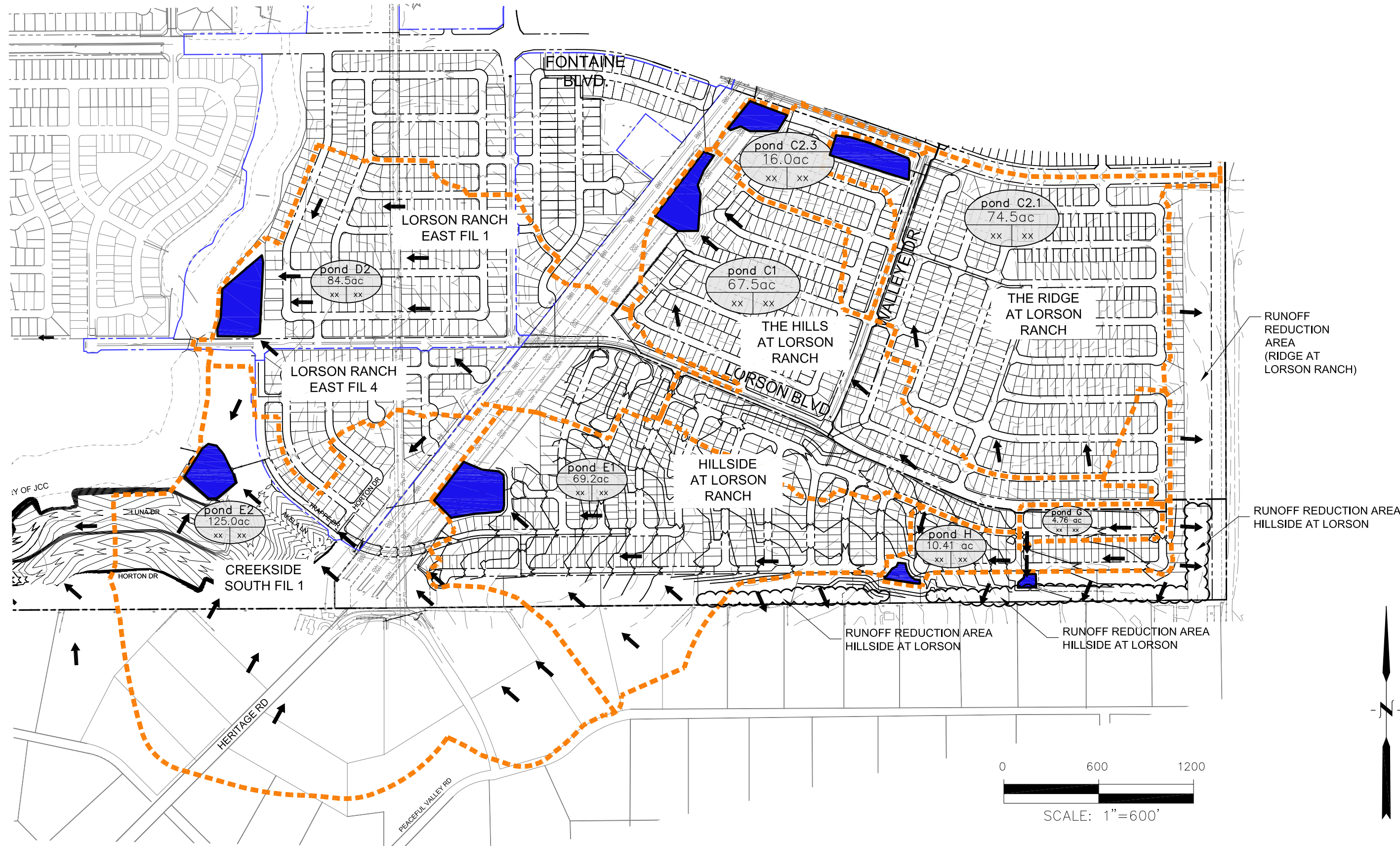
1.19	inches
1.50	inches
1.75	inches
2.00	inches
2.25	inches
2.52	inches

Stage-Storage Calculation

Zone 1 Volume (WQCV) =	1,552	acre-feet
Zone 2 Volume (EURV - Zone 1) =	2,878	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	3,737	acre-feet
Total Detention Basin Volume =	8,168	acre-feet
Initial Surcharge Volume (ISV) =	user	ft ³
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H _{total}) =	user	ft
Depth of Trickle Channel (H _{TC}) =	user	ft
Slope of Trickle Channel (S _{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S _{main}) =	user	H:V
Basin Length-to-Width Ratio (R _{LW}) =	user	
Initial Surcharge Area (A _{sv}) =	user	ft ²
Surcharge Volume Length (L _{sv}) =	user	ft
Surcharge Volume Width (W _{sv}) =	user	ft
Depth of Basin Floor (H _{f,100}) =	user	ft
Length of Basin Floor (L _{f,100}) =	user	ft
Width of Basin Floor (W _{f,100}) =	user	ft
Area of Basin Floor (A _{f,100}) =	user	ft ²
Volume of Basin Floor (V _{f,100}) =	user	ft ³
Depth of Main Basin (H _{main}) =	user	ft
Length of Main Basin (L _{main}) =	user	ft
Width of Main Basin (W _{main}) =	user	ft
Area of Main Basin (A _{main}) =	user	ft ²
Volume of Main Basin (V _{main}) =	user	ft ³
Calculated Total Basin Volume (V _{total}) =	user	acre-feet

bottom orifice - 95.00

Depth Increment =	0.2		ft							
Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft ²)	Optional Override Area (ft ²)	Area (acre)	Volume (ft ³)	Volume (ac-ft)	
Top of Micropool	--	0.00	--	--	--	56	0.001			
5695.33	--	0.33	--	--	--	56	0.001	18	0.000	
5696	--	1.00	--	--	--	1,701	0.039	590	0.014	
5697	--	2.00	--	--	--	26,100	0.599	14,247	0.327	
5698	--	3.00	--	--	--	69,360	1.592	62,237	1.429	
5699	--	4.00	--	--	--	74,702	1.715	134,268	3.082	
5700	--	5.00	--	--	--	79,028	1.814	211,133	4.847	
5701	--	6.00	--	--	--	83,502	1.917	292,398	6.713	
5702	--	7.00	--	--	--	88,029	2.021	378,164	8.681	
5703	--	8.00	--	--	--	92,327	2.120	468,342	10.752	
5704	--	9.00	--	--	--	96,850	2.223	562,930	12.923	
5705	--	10.00	--	--	--	100,980	2.318	661,845	15.194	
5706	--	11.00	--	--	--	105,820	2.429	765,245	17.568	

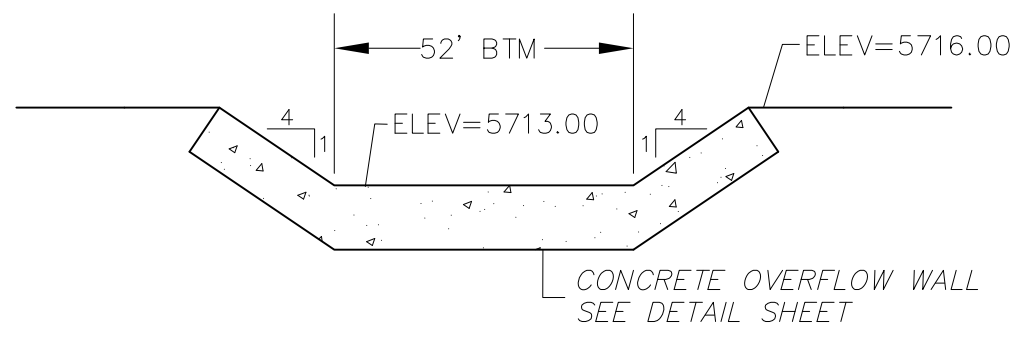


**CORE
ENGINEERING GROUP**

15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

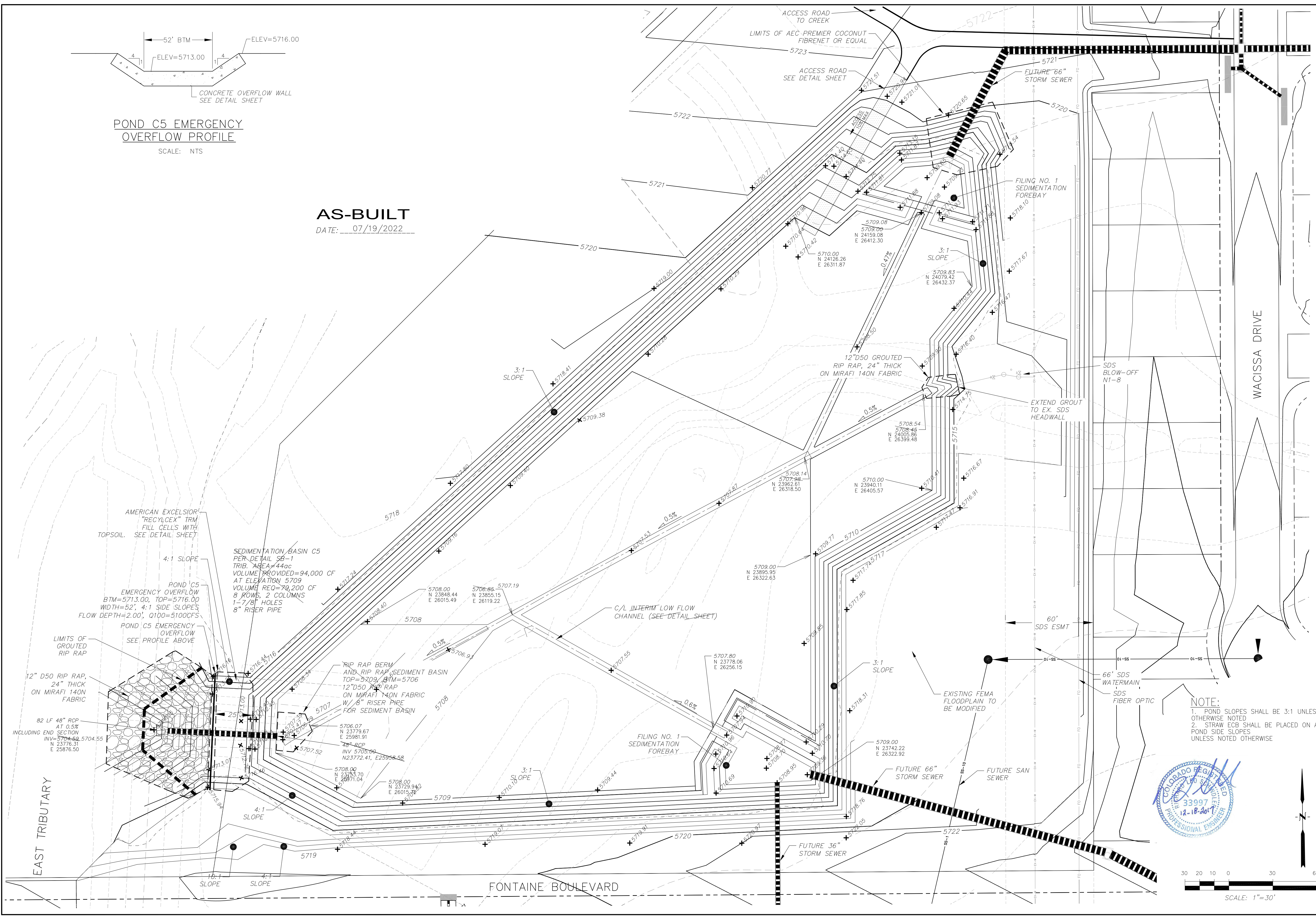
**HILLSIDE AT LORSON RANCH
WATER QUALITY & POND TRIBUTARY AREAS**

SCALE: NTS	DATE: APRIL, 2022	FIGURE NO. 1
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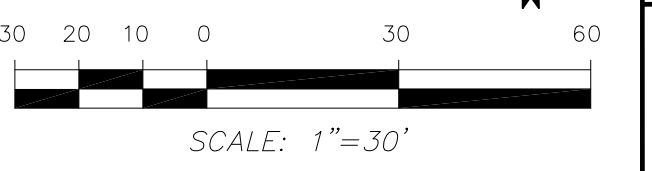
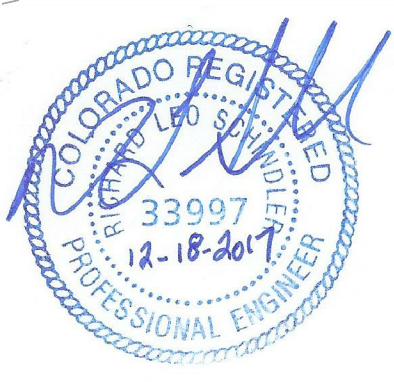


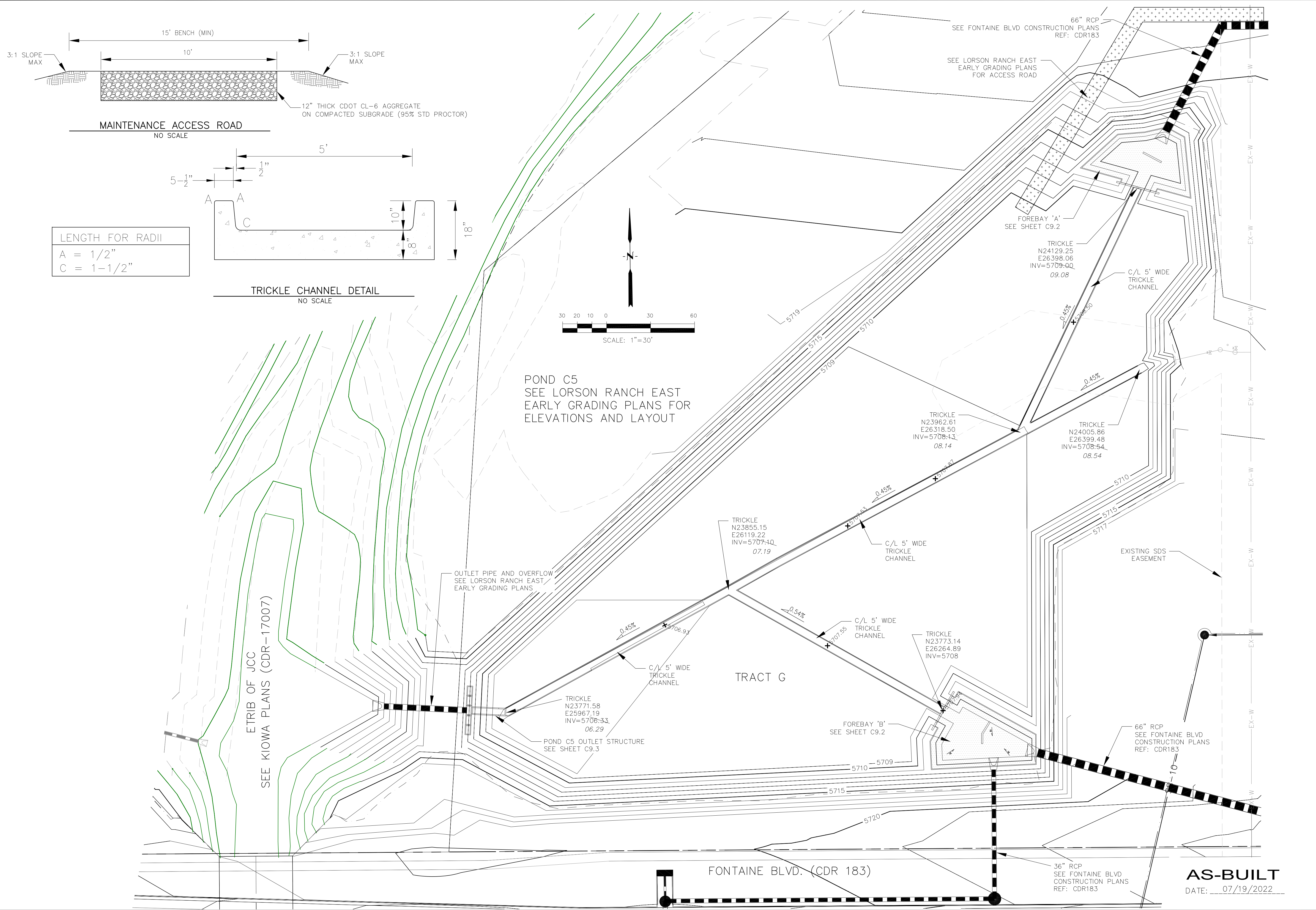
POND C5 EMERGENCY OVERFLOW PROFILE
 SCALE: NTS

AS-BUILT
 DATE: 07/19/2022



NOTE:
 1. POND SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
 2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES UNLESS NOTED OTHERWISE





CORE
ENGINEERING GROUP
15004 1ST AVENUE, S.
DENVER, CO 80202
PHONE: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

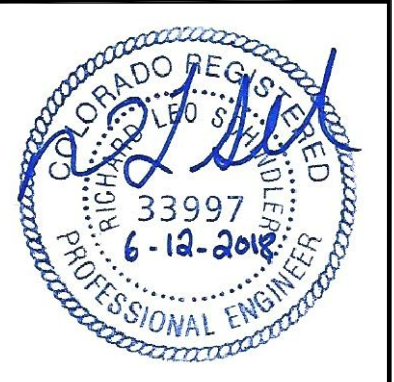
DATE: _____
DESCRIPTION: _____
NO: _____

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 1
FONTAINE BLVD. - OLD GLORY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

POND C5
TRICKLE CHANNEL
LAYOUT AND DETAILS

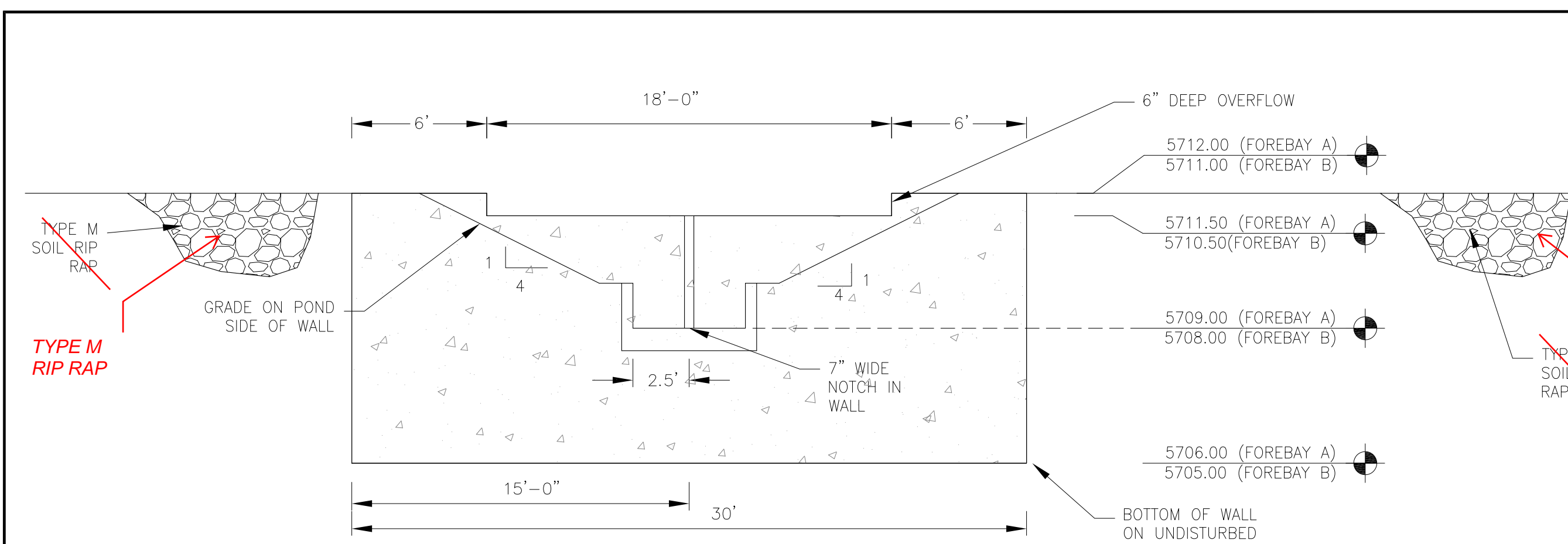


DATE:
JUNE 12, 2018

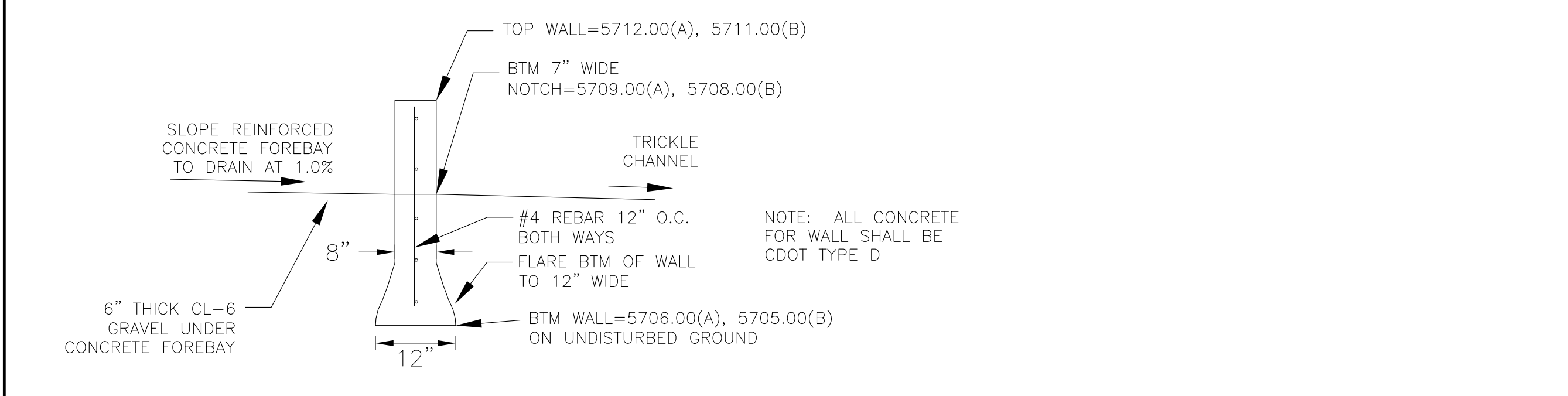
PROJECT NO.
100.042

SHEET NUMBER
C9.1

TOTAL SHEETS: 45



WALL SECTION A-A
1"=10'



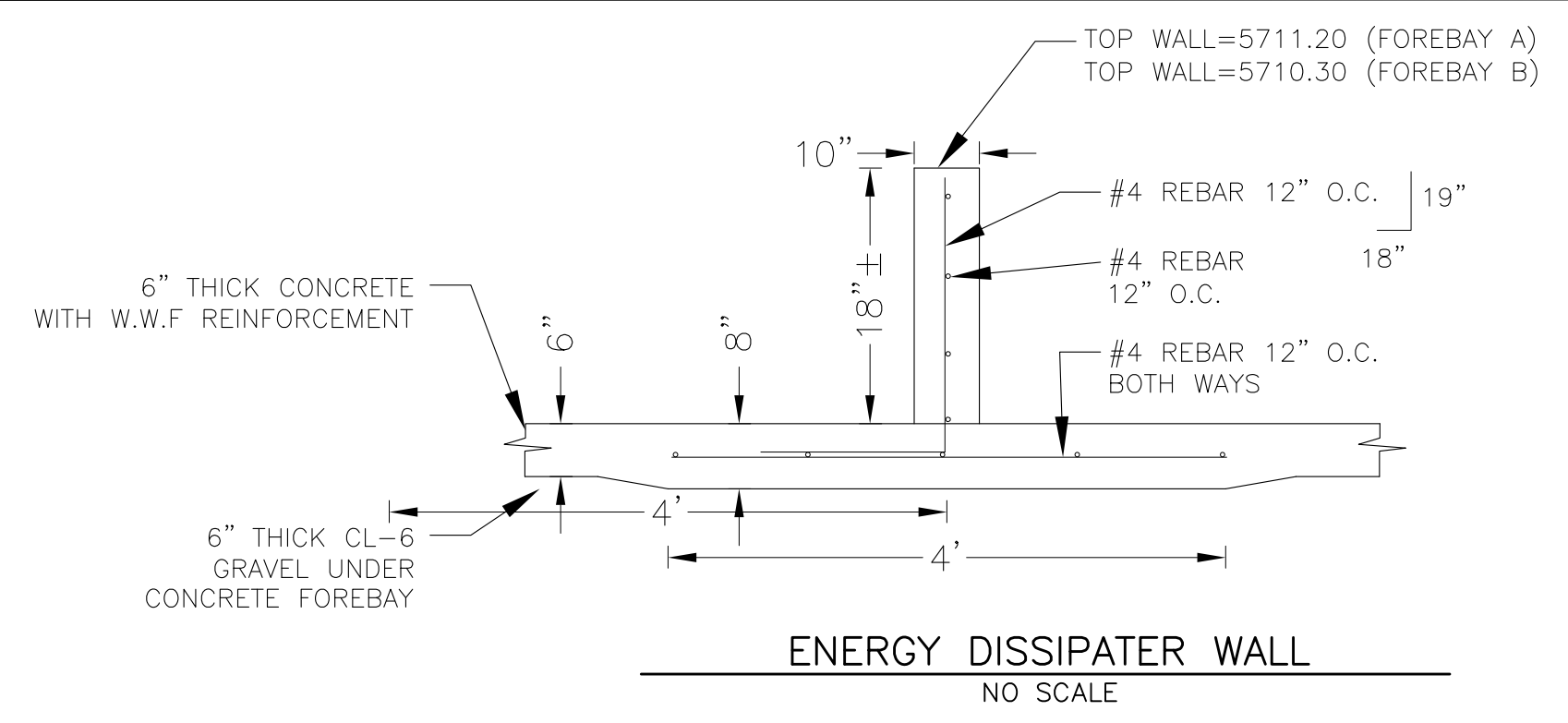
WALL SECTION B-B
NO SCALE

POINT TABLE (FOREBAY A)

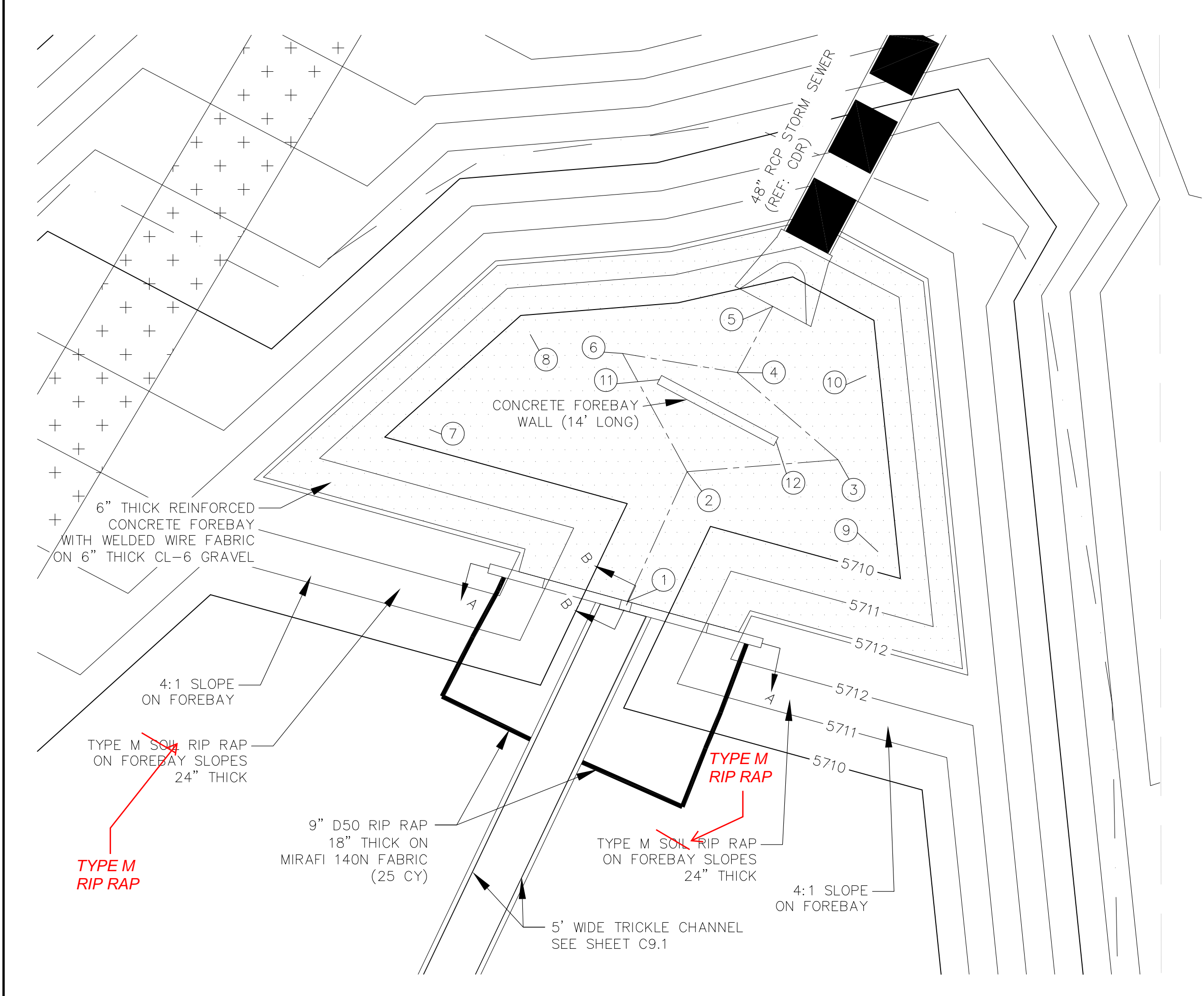
NUMBER	NORTHING	EASTING	ELEVATION	NOTES
1	24130.17	26398.49	5709.10	FOREBAY BOTTOM
2	24143.93	26404.81	5709.25	FOREBAY BOTTOM
3	24145.19	26420.81	5709.41	FOREBAY BOTTOM
4	24154.44	26410.13	5709.55	FOREBAY BOTTOM
5	24161.46	26413.90	5709.70	FOREBAY BOTTOM
6	24156.46	26397.97	5709.41	FOREBAY BOTTOM
7	24148.40	26377.53	5709.60	FOREBAY BOTTOM
8	24158.47	26388.19	5709.55	FOREBAY BOTTOM
9	24135.44	26425.04	5709.60	FOREBAY BOTTOM
10	24154.10	26423.78	5709.70	FOREBAY BOTTOM
11	24153.68	26401.87	5709.70	ENERGY DISSIPATER WALL
12	24147.13	26414.24	5709.70	ENERGY DISSIPATER WALL

POINT TABLE (FOREBAY B)

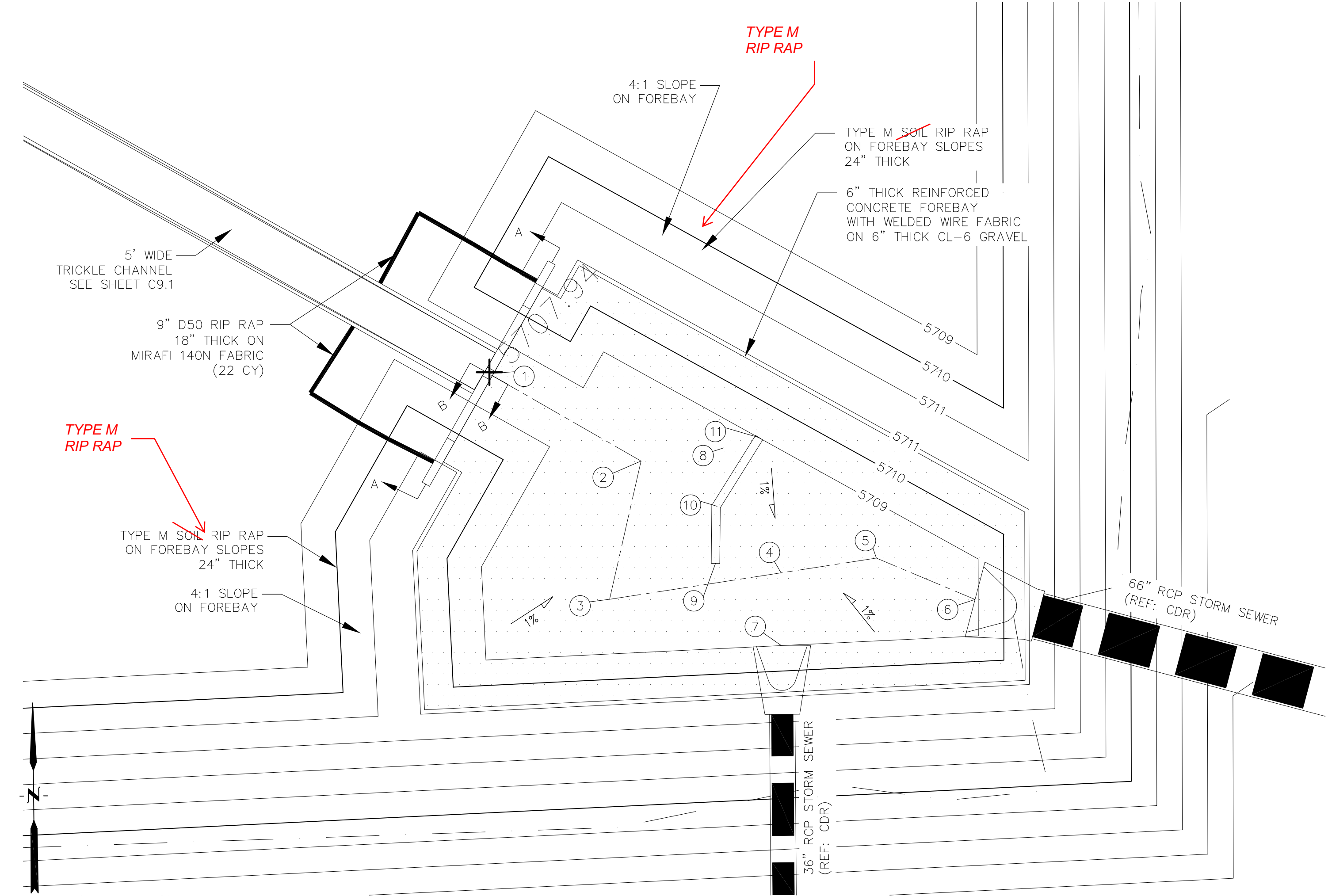
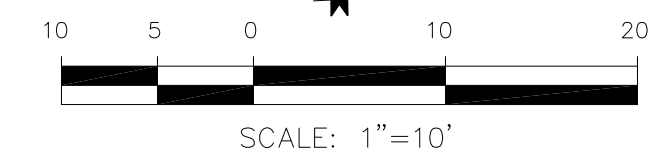
NUMBER	NORTHING	EASTING	ELEVATION	NOTES
1	23772.63	26265.75	5708.10	FOREBAY BOTTOM
2	23762.58	26283.27	5708.30	FOREBAY BOTTOM
3	23746.29	26279.56	5708.50	FOREBAY BOTTOM
4	23749.41	26299.77	5708.70	FOREBAY BOTTOM
5	23751.14	26310.99	5708.70	FOREBAY BOTTOM
6	23746.27	26322.62	5708.95	FOREBAY BOTTOM
7	23740.80	26299.85	5708.80	FOREBAY BOTTOM
8	23765.15	26295.04	5708.40	FOREBAY BOTTOM
9	23750.52	26292.05	5708.80	ENERGY DISSIPATER WALL
10	23757.25	26292.22		ENERGY DISSIPATER WALL
11	23765.34	26297.18		ENERGY DISSIPATER WALL



NOTE: ALL CONCRETE FOR WALL SHALL BE CDOT TYPE D



POND C5 - FOREBAY 'A' LAYOUT
SCALE 1"=10'



POND C5 - FOREBAY 'B' LAYOUT
SCALE 1"=10'

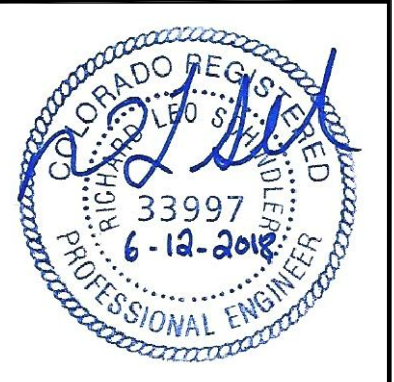
AS-BUILT
DATE: 07/19/2022

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PHOENIX, AZ 85006
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

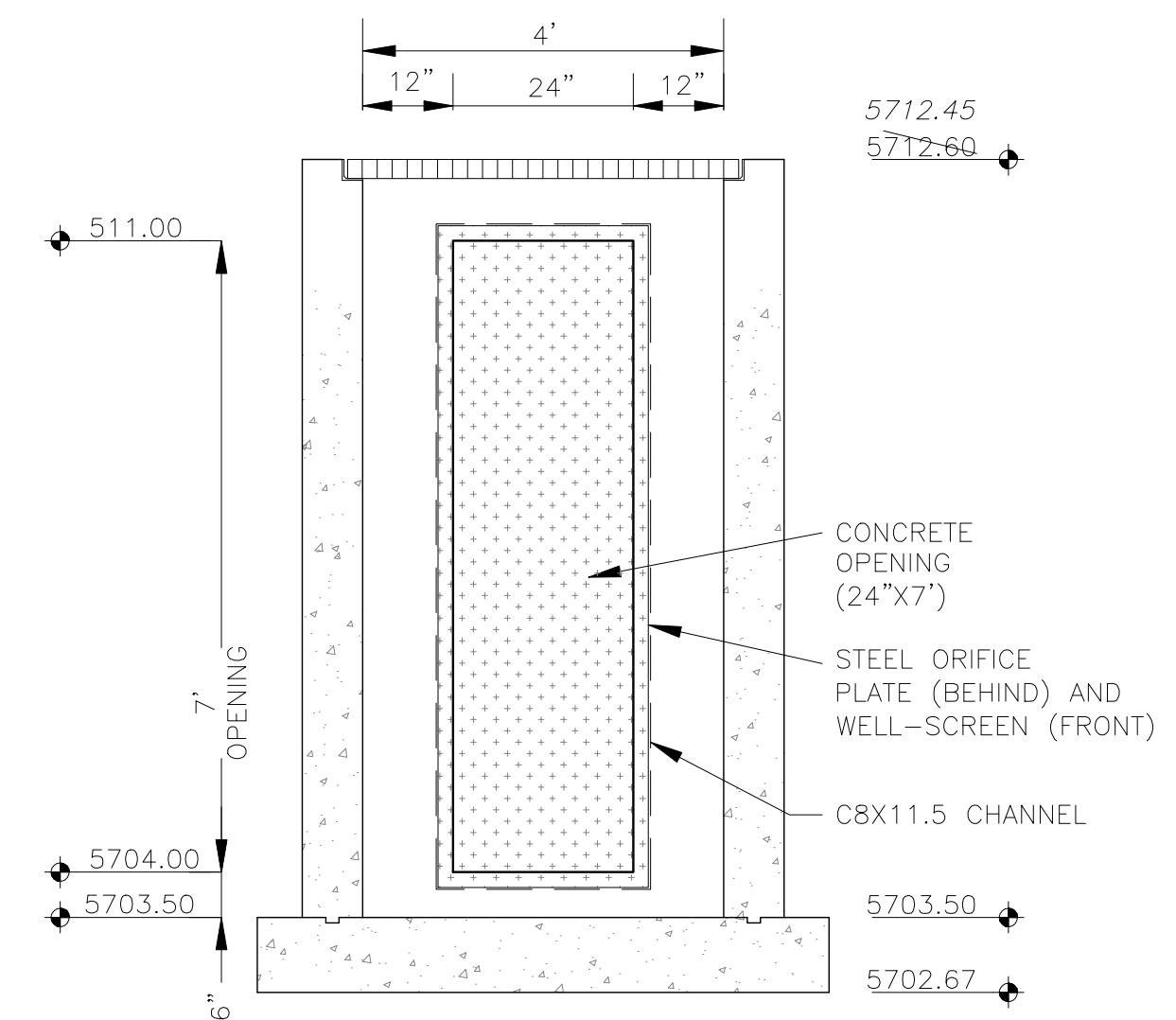
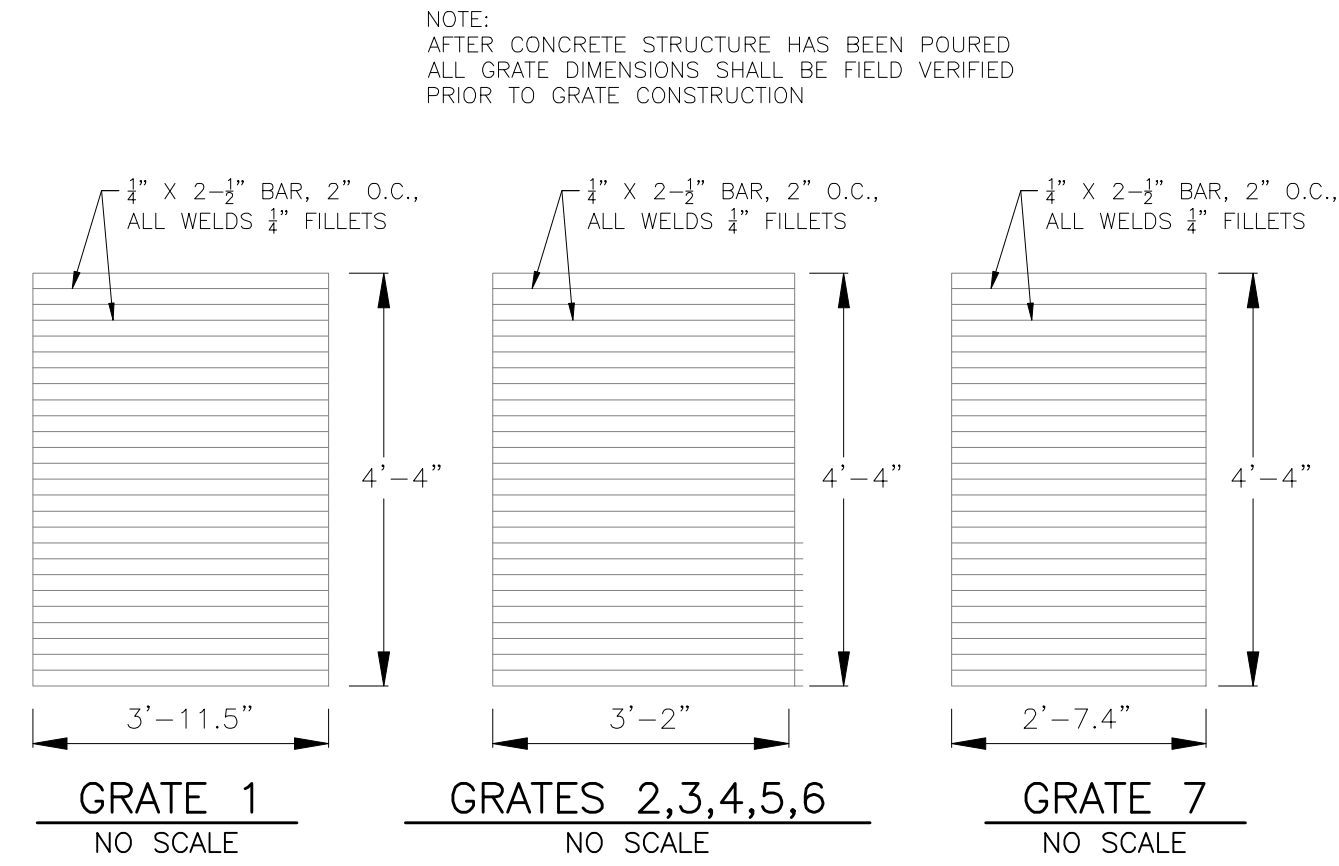
DATE: _____
DESCRIPTION: _____
NO: _____
PROJECT: **LORSON RANCH EAST**
FILING NO. 1
PREPARED FOR: **LORSON, LLC**
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
FONTAINE BLDG.-OLD GLORY DR
COLORADO SPRINGS, COLORADO
CONTACT: JEFF MARK

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

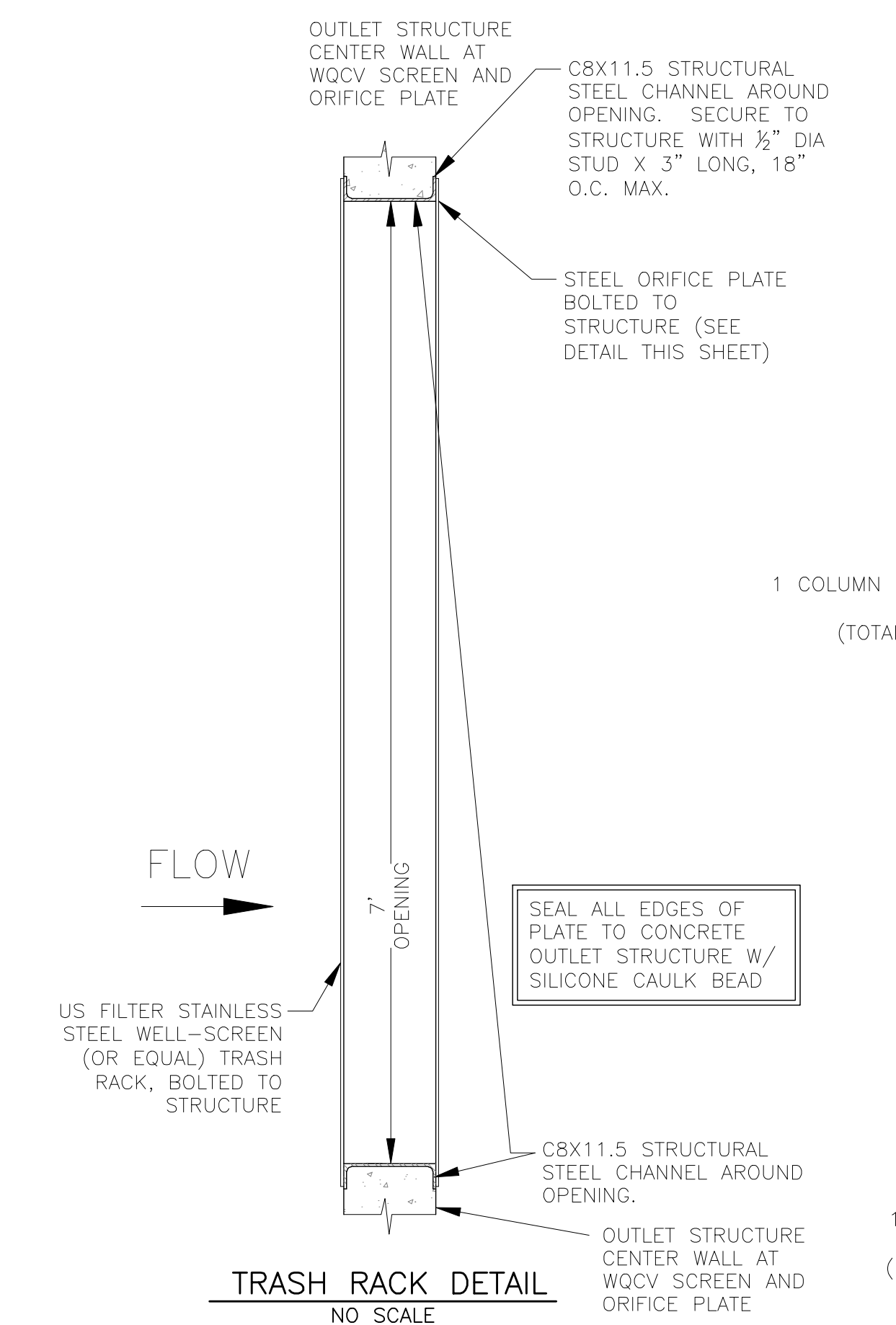
**POND C5
FOREBAY 'A' AND 'B'
LAYOUT AND DETAILS**



DATE: JUNE 12, 2018
PROJECT NO. 100.042
SHEET NUMBER **C9.2**
TOTAL SHEETS: 45

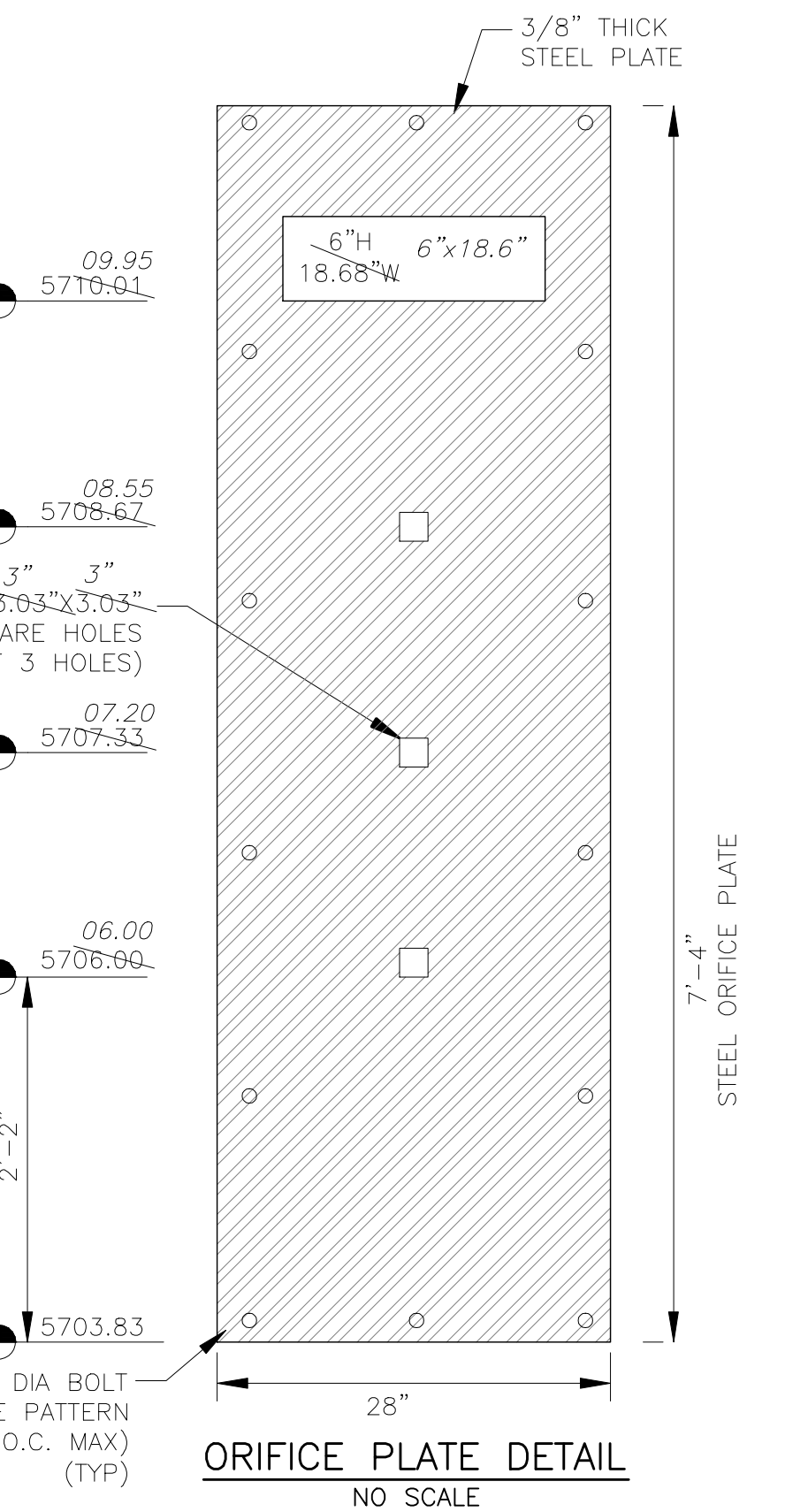


OUTLET STRUCTURE DETAIL - SECTION B-B
NO SCALE

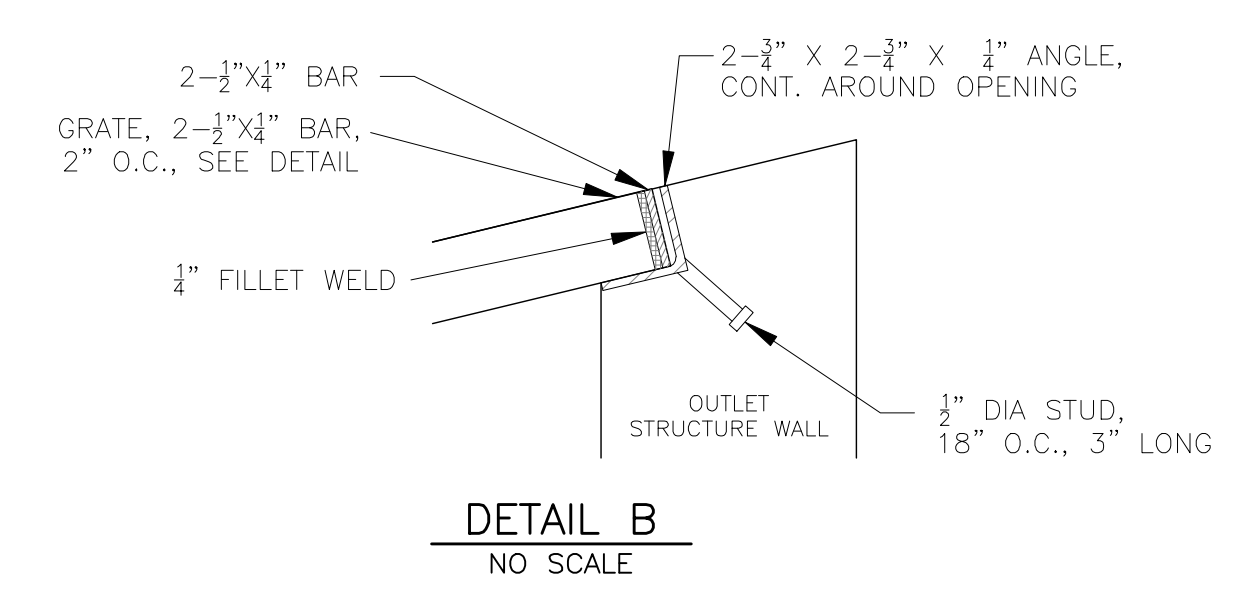


TRASH RACK DETAIL
NO SCALE

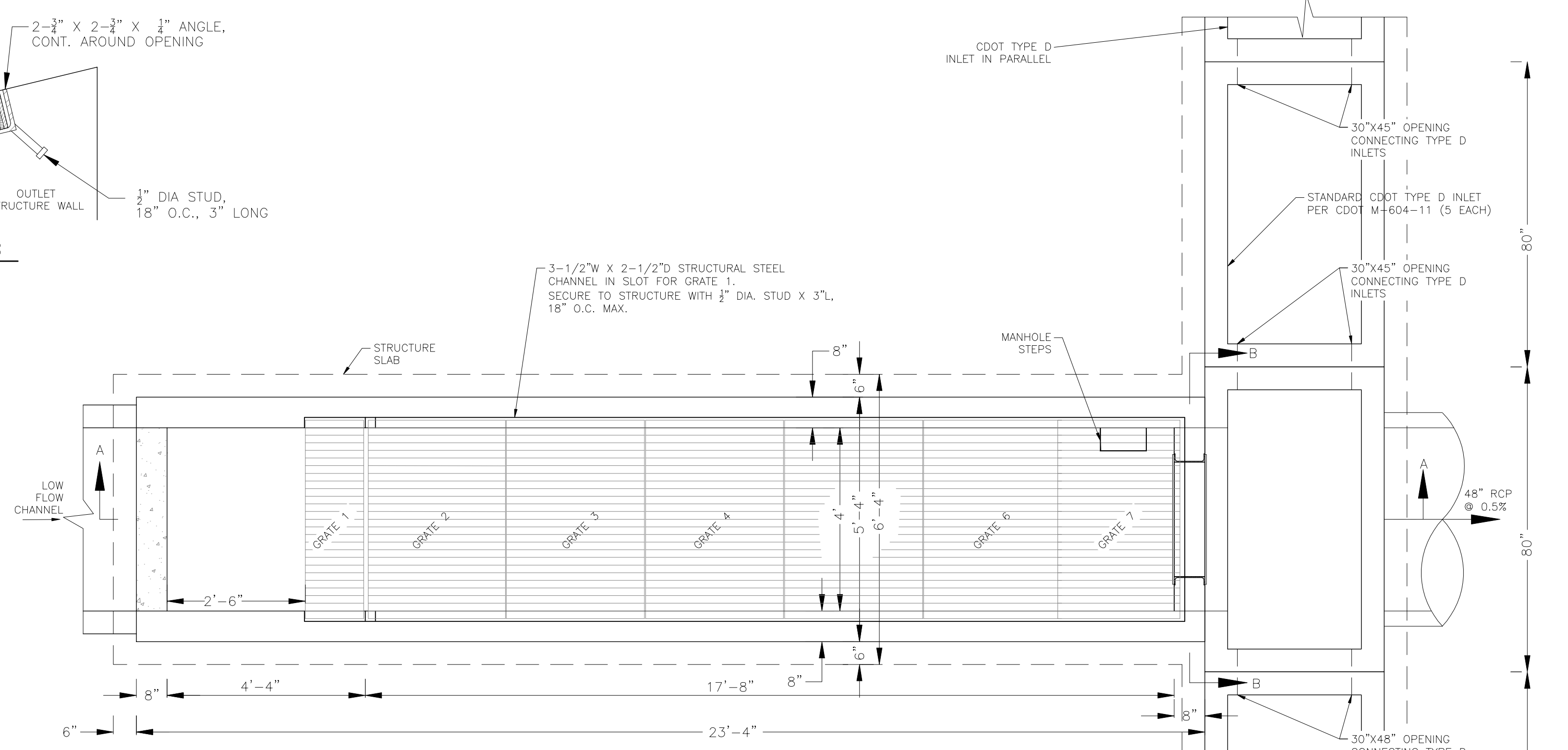
- WQCV WELL-SCREEN NOTES:**
- Well-Screen shall be stainless steel and attached by stainless steel bolts along edge of the mounting frame.
 - WQCV Well Screen
 - Type of Screen: Stainless steel #93 Vee Wire (Johnson Vee Wire (tm) Stainless Steel Screen or equivalent with 60% open area)
 - Screen slot opening dimension: 0.139" (Screen #93 Vee Wire Slot Opening)
 - Type and Size of Support Rod: TE 0.074"X0.50"
 - Spacing of Support Rod (O.C.): 1.0 Inch
 - Total Screen Thickness: 0.655"
 - Carbon Steel Holding Frame Type: 3/4" x 1.0" angle



ORIFICE PLATE DETAIL
NO SCALE

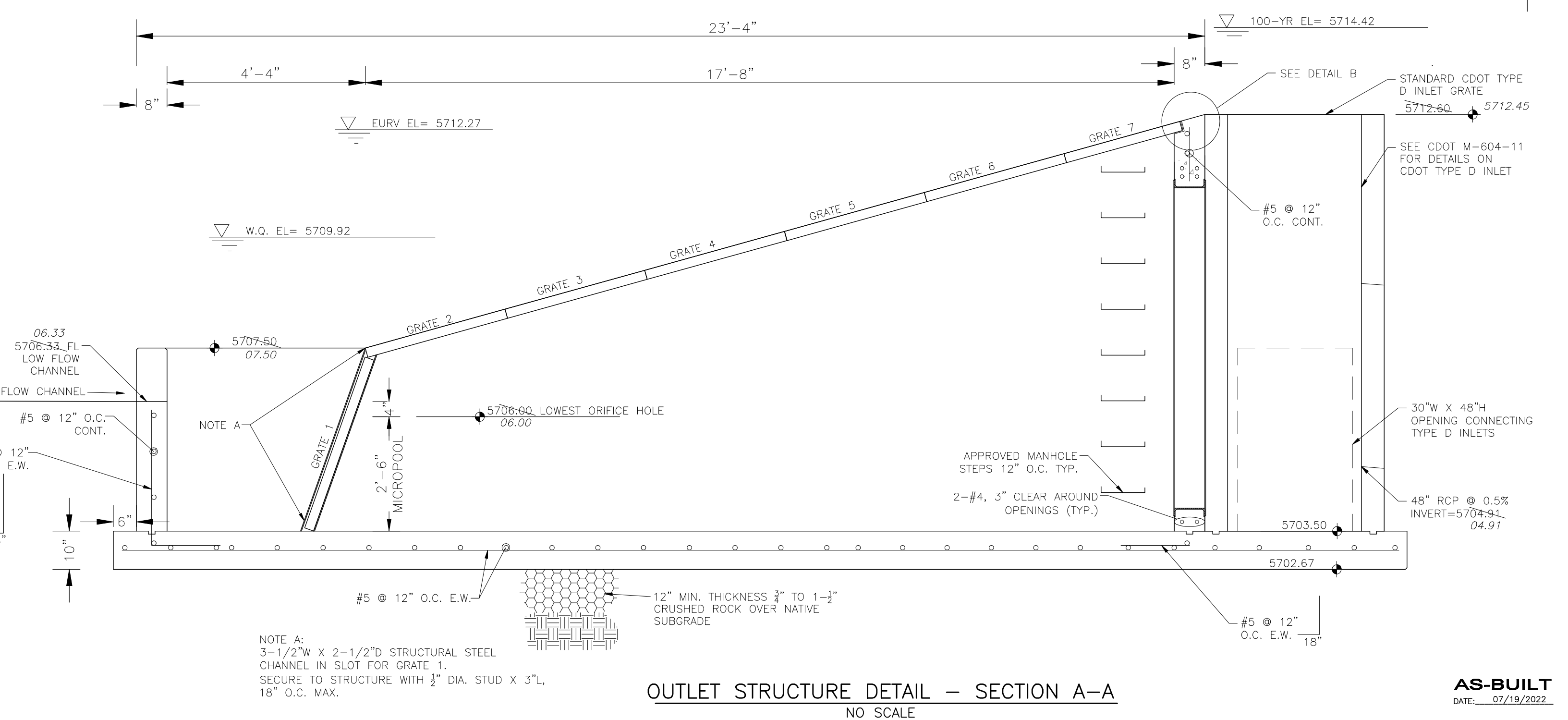


DETAIL B
NO SCALE



OUTLET STRUCTURE DETAIL - PLAN VIEW
NO SCALE

- OUTLET STRUCTURE, FOREBAY, AND DRAIN CHANNEL NOTES:**
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL COMPONENTS OF THE OUTLET STRUCTURE.
 - GRADE 60 REINFORCING STEEL REQUIRED. SEE TABLE FOR THE MINIMUM LAP SPLICE LENGTH FOR REINFORCING BARS. ALL REINFORCING STEEL SHALL HAVE A TWO-INCH MINIMUM CLEARANCE FROM EDGE OF CONCRETE, UNLESS OTHERWISE NOTED.
- | BAR SIZE | #4 | #5 | #6 |
|--------------------|-------|-------|-------|
| MIN. SPLICE LENGTH | 1'-3" | 1'-7" | 2'-0" |
- CONCRETE FOR THE OUTLET STRUCTURE AND FOREBAY SHALL BE CDOT CLASS D CONCRETE.
 - CONCRETE FOR DRAIN CHANNELS SHALL BE CDOT CLASS B CONCRETE.
 - EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213. EXPANSION JOINT MATERIAL SHALL BE 1/2" THICK, SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE AND THE JOINT SHALL BE SEALED, REFER TO DETAILS.
 - ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/8" CHAMFER UNLESS OTHERWISE NOTED.
 - SUBGRADE TO BE 12" THICK CLEAN FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM M698 UNDER STRUCTURE.
 - REFER TO SHEET C9.2 FOR PRESEDIMENTATION/FOREBAY DESIGN.
 - ENGINEER SHALL BE NOTIFIED PRIOR TO BEGINNING CONSTRUCTION OF OUTLET STRUCTURE TO SCHEDULE OBSERVATION VISITS FOR STRUCTURES.



OUTLET STRUCTURE DETAIL - SECTION A-A
NO SCALE

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
19157 O.T. ROAD
CENTURY, CO. L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

DATE: _____
DESCRIPTION: _____
NO. _____

PREPARED FOR: **LORSON, LLC**
212 N. WASHINGTON, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK

DRAWN: **BBB**
DESIGNED: **BBB**
CHECKED: **BBB**

LORSON RANCH EAST FILING NO. 1
FULL SPECTRUM POND C5
OUTLET STRUCTURE

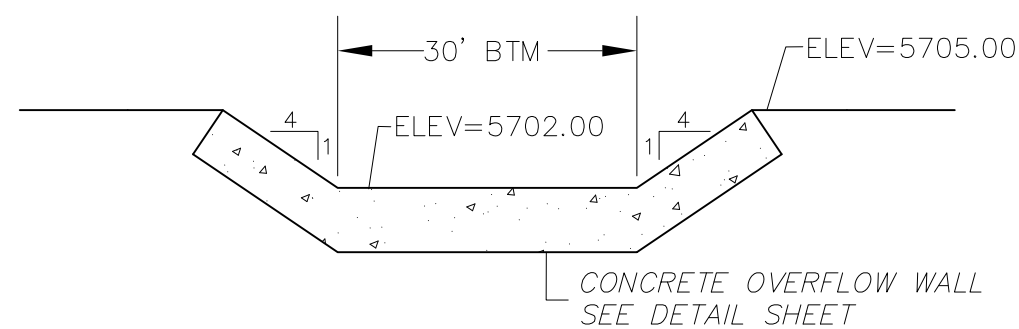
DATE: JUNE 12, 2018
PROJECT NO. 100.042
SHEET NUMBER **C9.3**
TOTAL SHEETS: 45



AS-BUILT
DATE: 07/19/2022

AS-BUILT

DATE: 07/19/2022

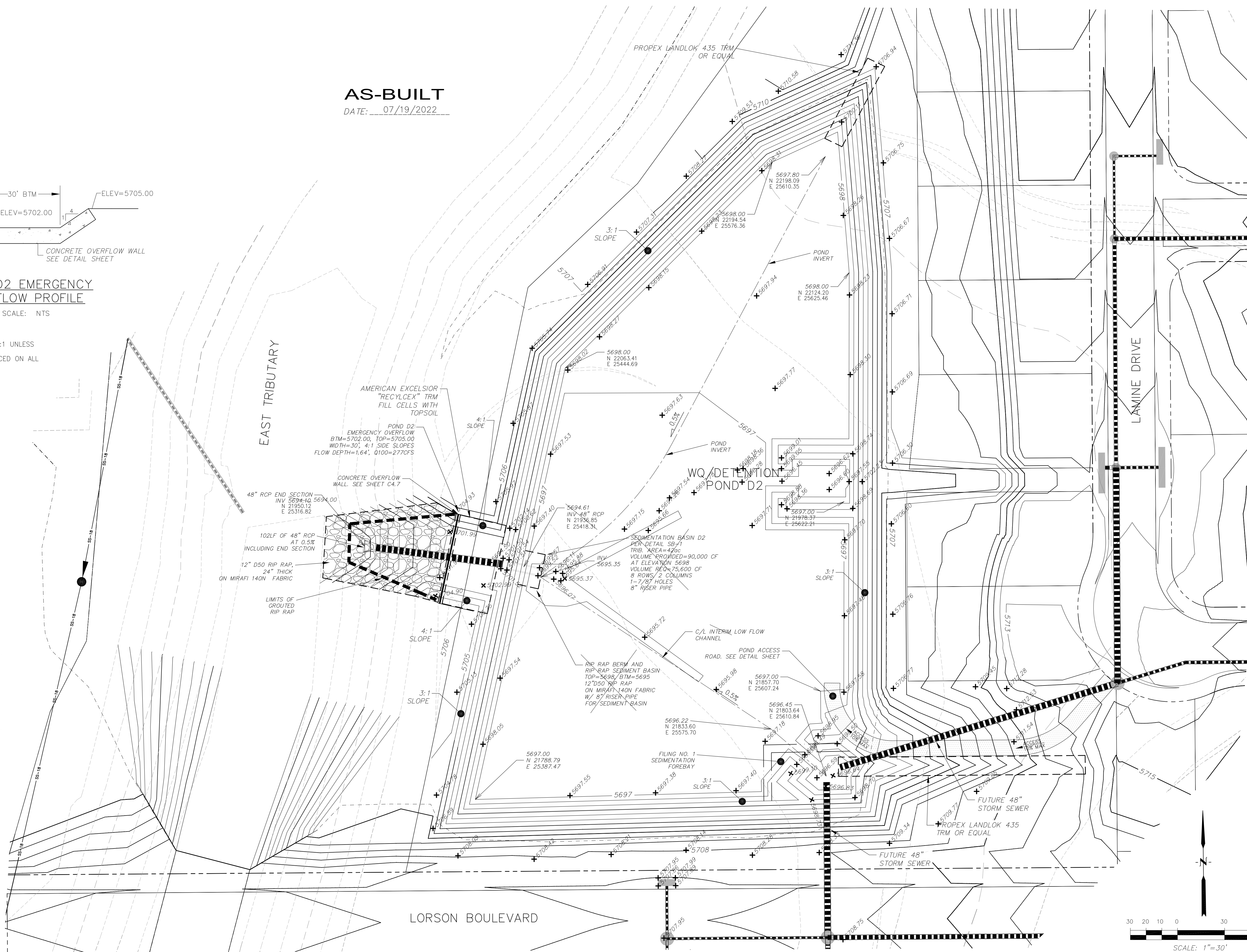


POND D2 EMERGENCY OVERFLOW PROFILE

SCALE: NTS

NOTE:

- 1. POND SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
- 2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES UNLESS NOTED OTHERWISE



CORE ENGINEERING GROUP
 15004 15TH AVE. S. #5506
 BRIGHTON, CO 80601
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@ceg1.com

NO.	DESCRIPTION	DATE

PREPARED FOR: **LORSON, LLC**
 212 N. WAHSATCH AVE., SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 (719) 635-3200
 CONTACT: JEFF MARK

DRAWN:	RLS
DESIGNED:	RLS
CHECKED:	RLS

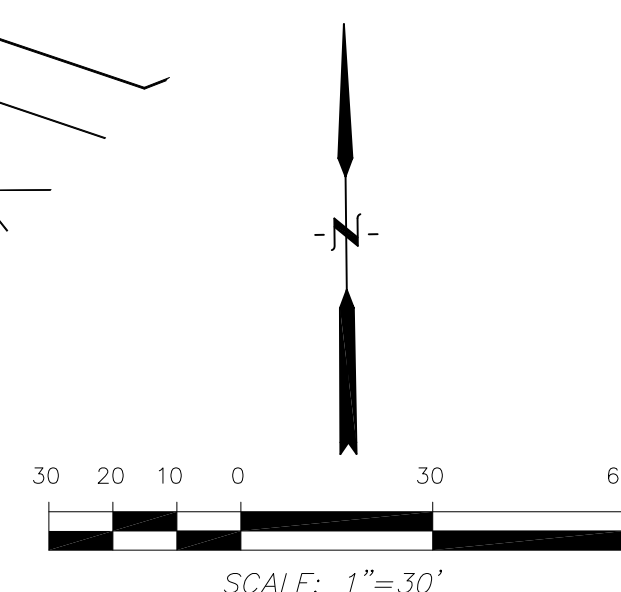
FULL SPECTRUM DETENTION POND D2
LORSON RANCH EAST

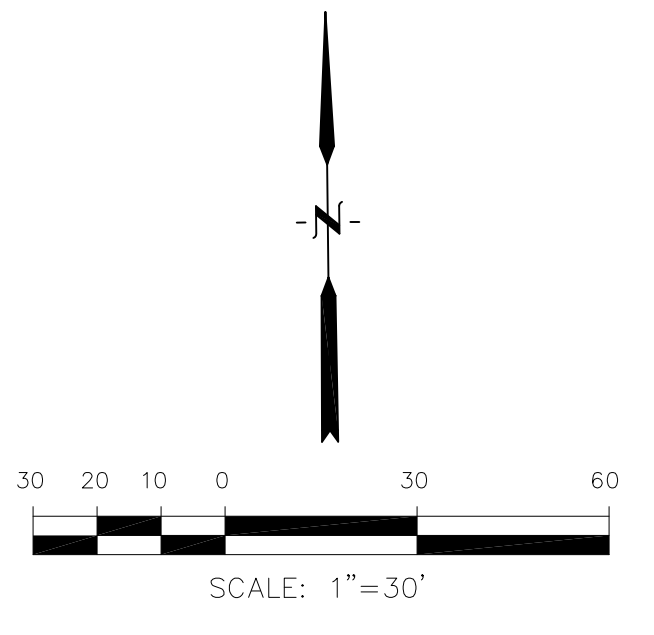
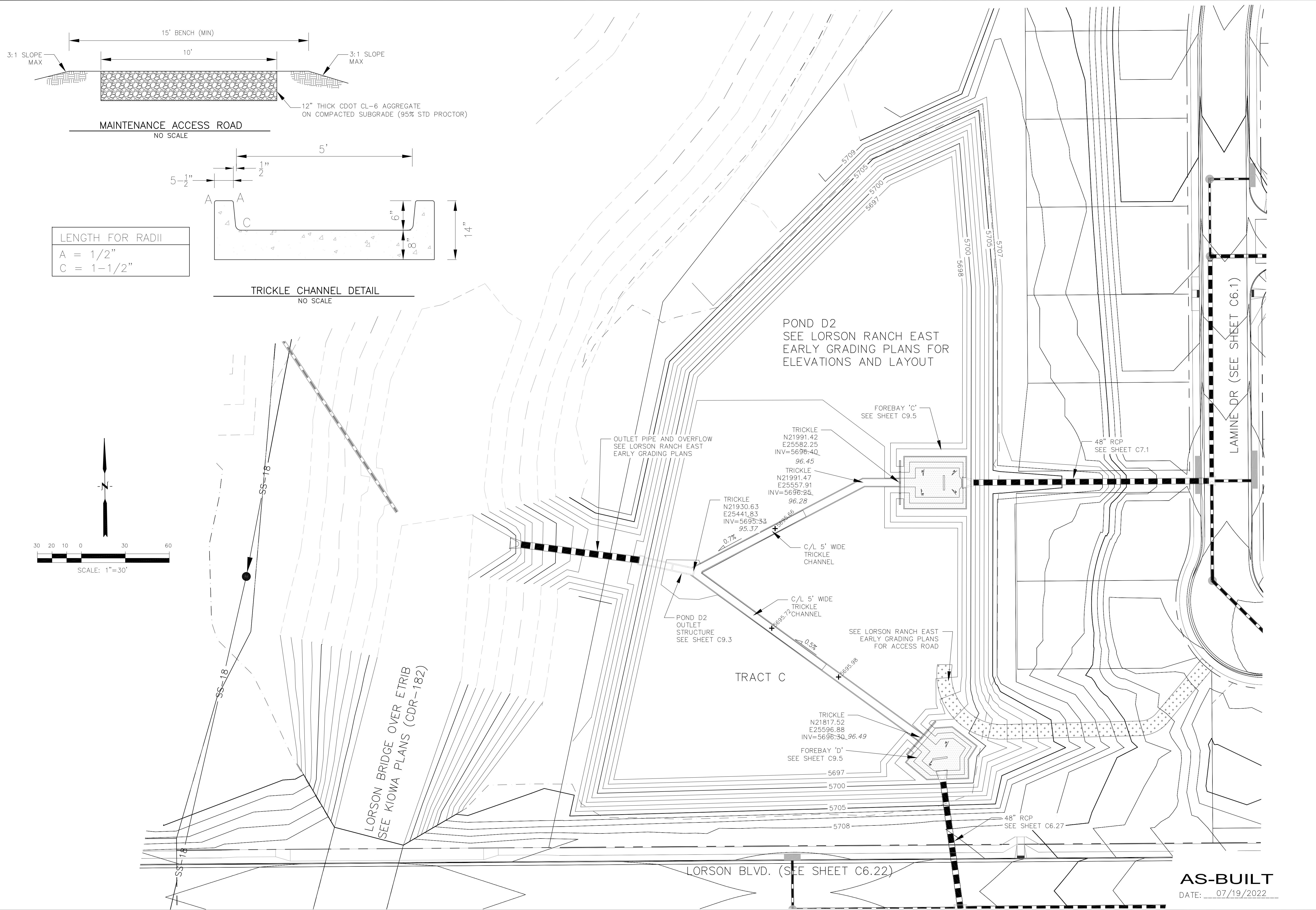
DATE: **DECEMBER 18, 2017**

PROJECT NO.: **100.040**

SHEET NUMBER: **C4.10**

TOTAL SHEETS: **28**





CORE ENGINEERING GROUP
15004 1ST AVENUE S.
DENVER, CO 80202
PH: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

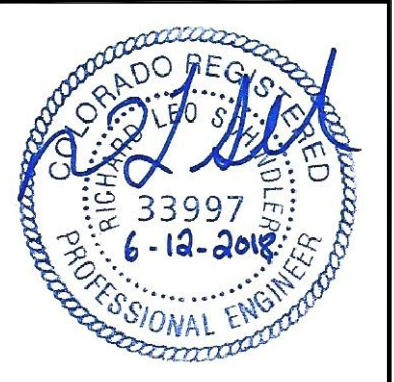
DATE: _____
DESCRIPTION: _____
NO: _____

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 1
FONTAINE BLVD.-OLD GLORY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

POND D2
TRICKLE CHANNEL
LAYOUT AND DETAILS



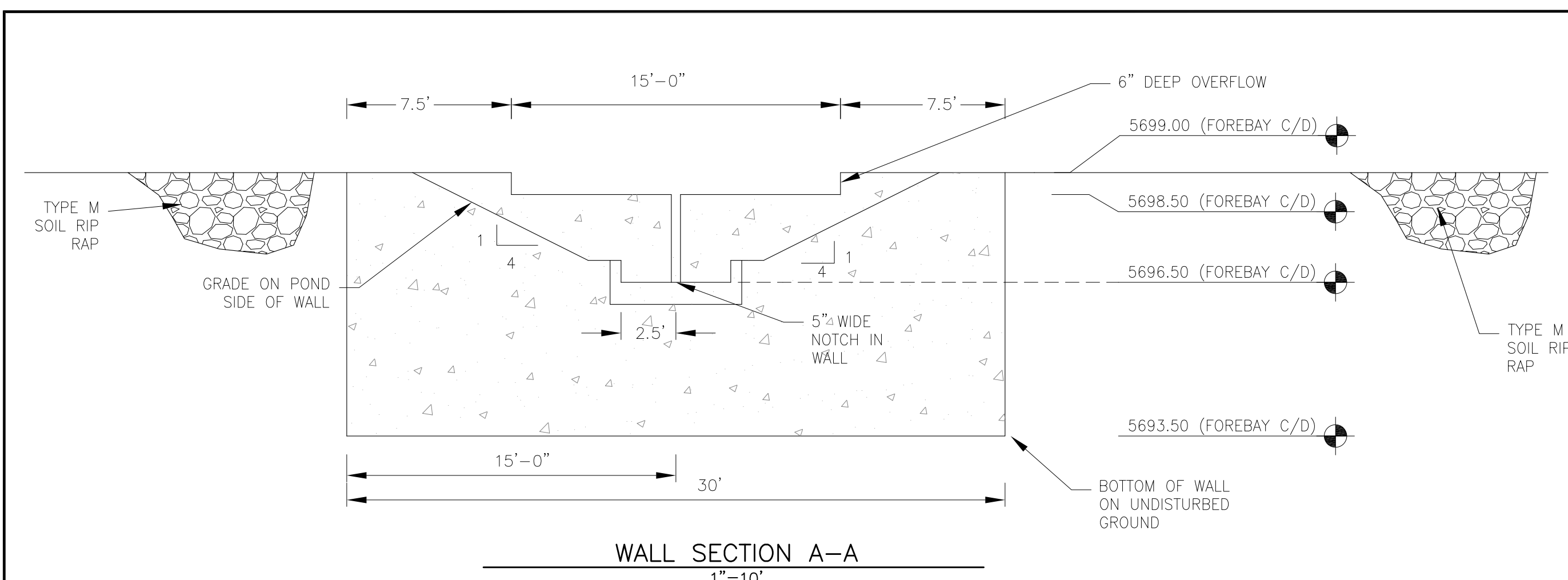
DATE:
JUNE 12, 2018

PROJECT NO.
100.042

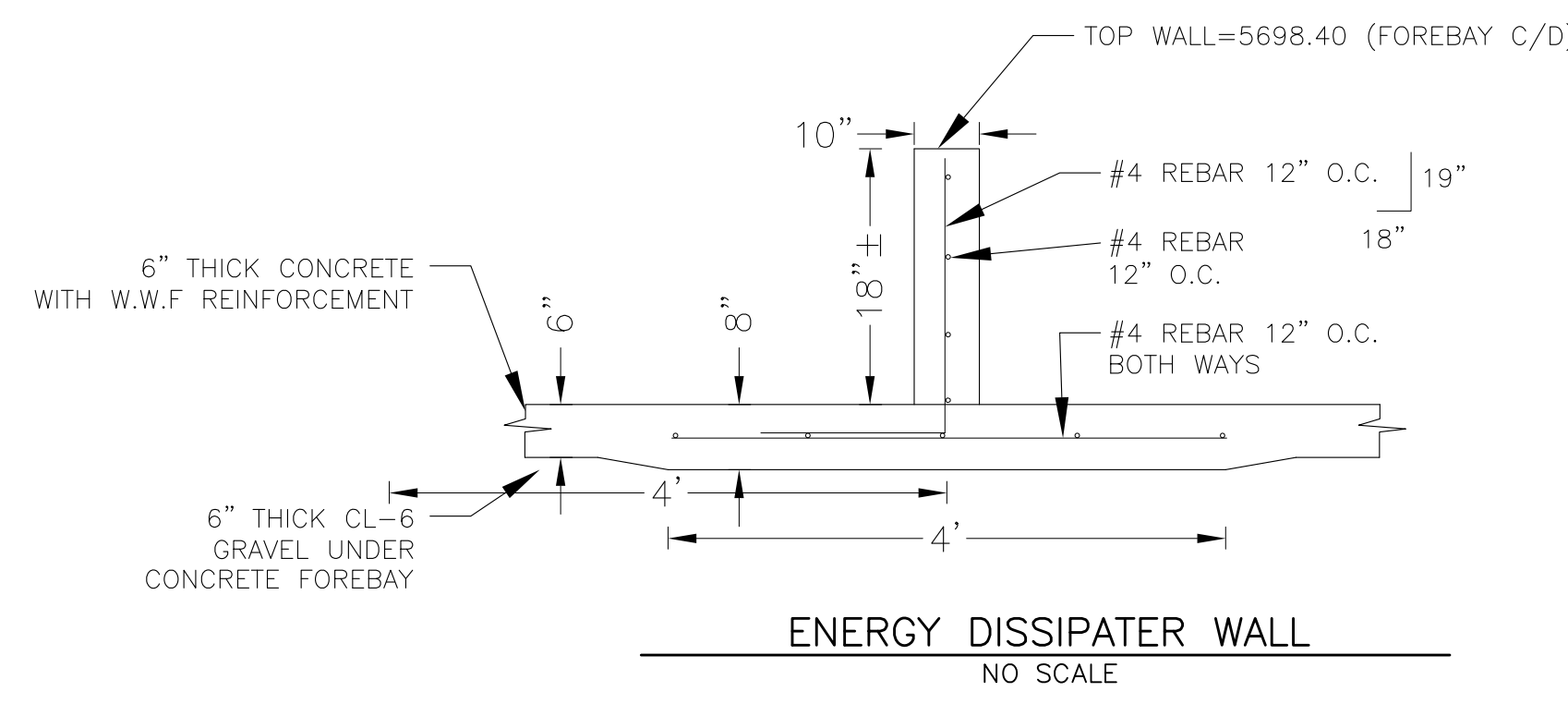
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C9.4

TOTAL SHEETS: 45

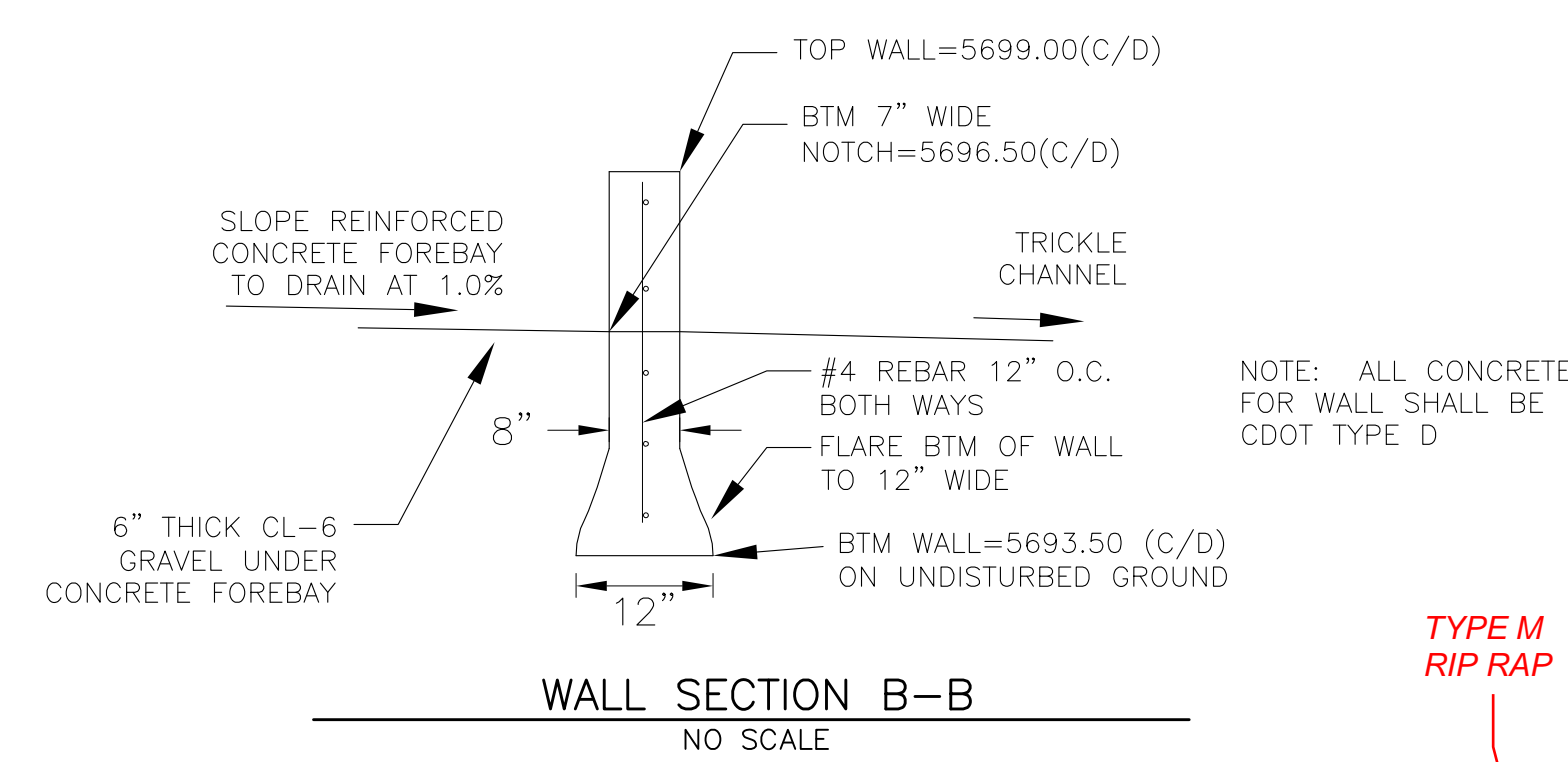
AS-BUILT
DATE: 07/19/2022



WALL SECTION A-A
1"=10'



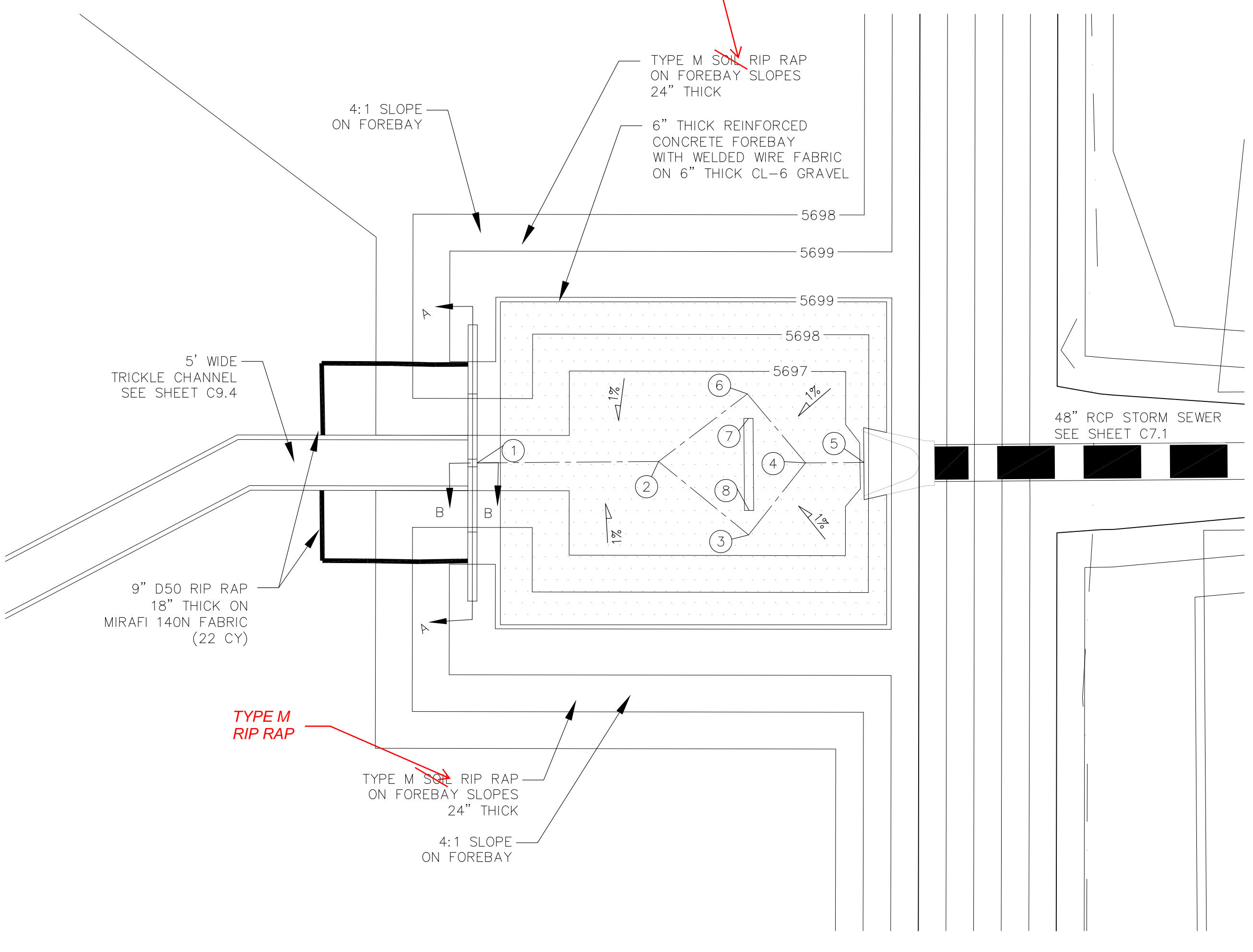
NOTE: ALL CONCRETE FOR WALL SHALL BE CDOT TYPE D



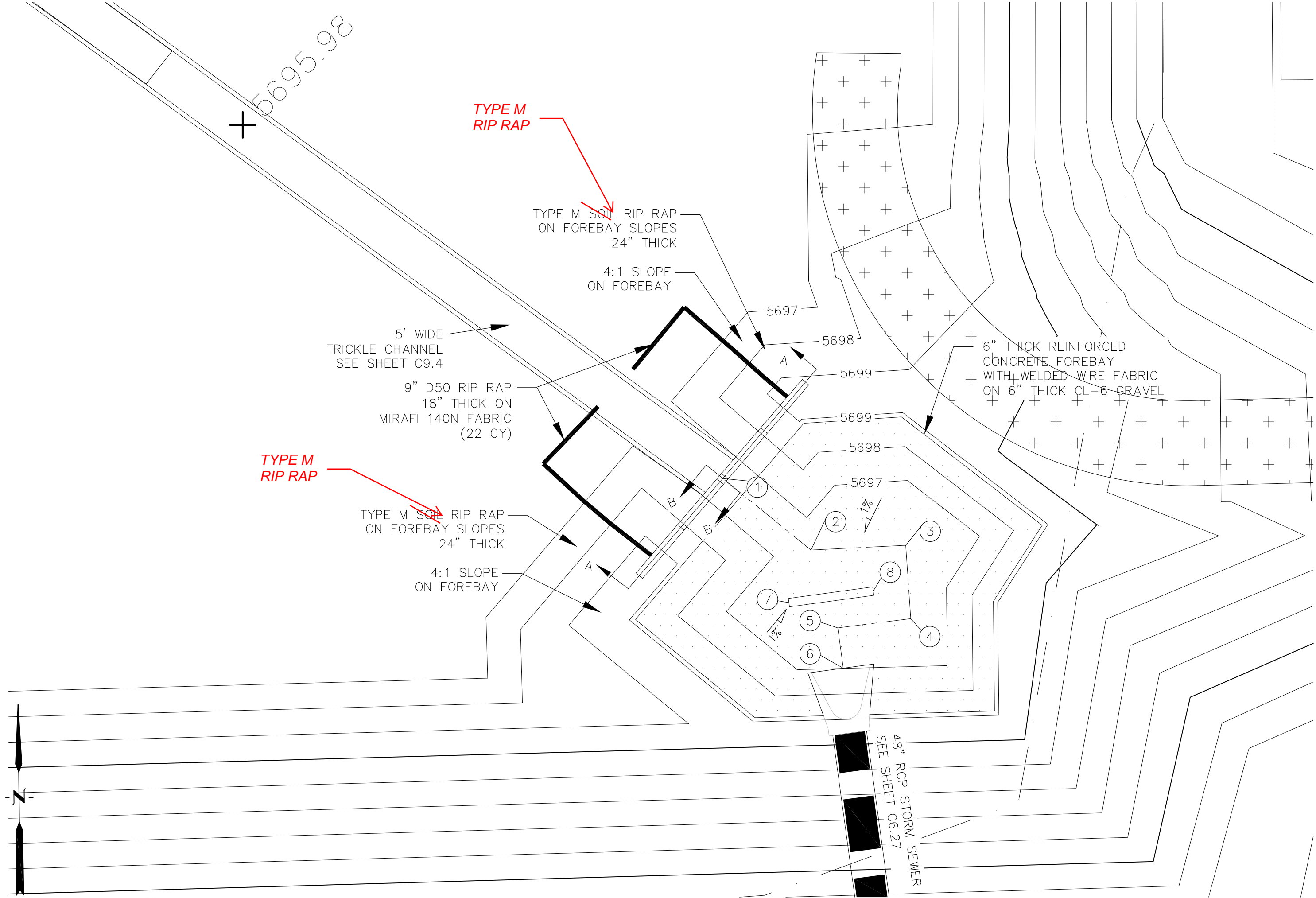
WALL SECTION B-B
NO SCALE

POINT TABLE (FOREBAY C)				
NUMBER	NORTHING	EASTING	ELEVATION	NOTES
1	21991.42	25583.25	5696.50	FOREBAY BOTTOM
2	21991.58	25602.95	5696.70	FOREBAY BOTTOM
3	21983.61	25612.73	5696.80	FOREBAY BOTTOM
4	21991.43	25618.89	5696.90	FOREBAY BOTTOM
5	21991.47	25625.24	5696.99	FOREBAY BOTTOM
6	21998.92	25612.59	5696.80	FOREBAY BOTTOM
7	21996.26	25612.70	5696.90	ENERGY DISSIPATER WALL
8	21986.26	25612.77	5696.90	ENERGY DISSIPATER WALL

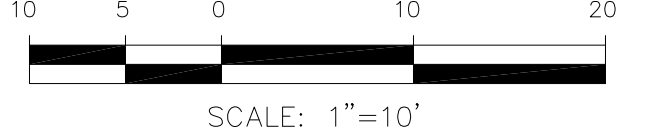
POINT TABLE (FOREBAY D)				
NUMBER	NORTHING	EASTING	ELEVATION	NOTES
1	21816.93	25597.69	5696.50	FOREBAY BOTTOM
2	21808.83	25607.67	5696.60	FOREBAY BOTTOM
3	21809.40	25618.82	5696.70	FOREBAY BOTTOM
4	21800.77	25619.40	5696.80	FOREBAY BOTTOM
5	21799.69	25610.82	5696.90	FOREBAY BOTTOM
6	21794.95	25611.47	5697.00	FOREBAY BOTTOM
7	21802.65	25605.08	5708.80	ENERGY DISSIPATER WALL
8	21804.01	25614.99	5708.40	ENERGY DISSIPATER WALL



POND D2 - FOREBAY 'C' LAYOUT
SCALE 1"=10'



POND D2 - FOREBAY 'D' LAYOUT
SCALE: 1"=10'



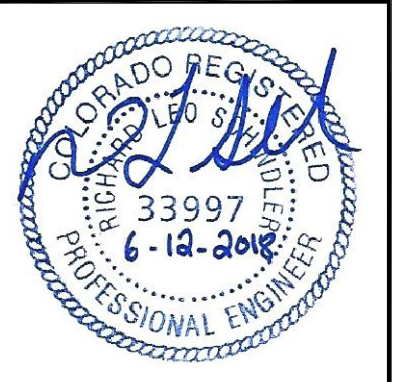
SCALE: 1"=10'

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
DENVER, CO 80202
PHONE: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

DATE: _____
DESCRIPTION: _____
NO: _____
PREPARED FOR: **LORSON, LLC**
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK
PROJECT: **LORSON RANCH EAST**
FILING NO. 1
FONTAINE BLVD. - OLD GLORY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

POND D2
FOREBAY 'C' AND 'D'
LAYOUT AND DETAILS



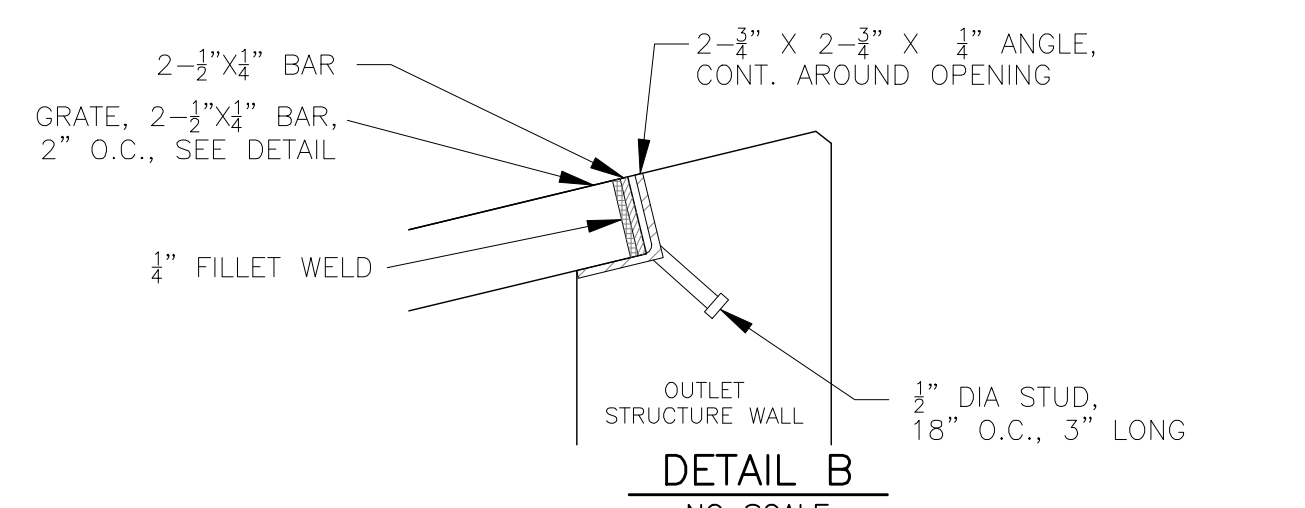
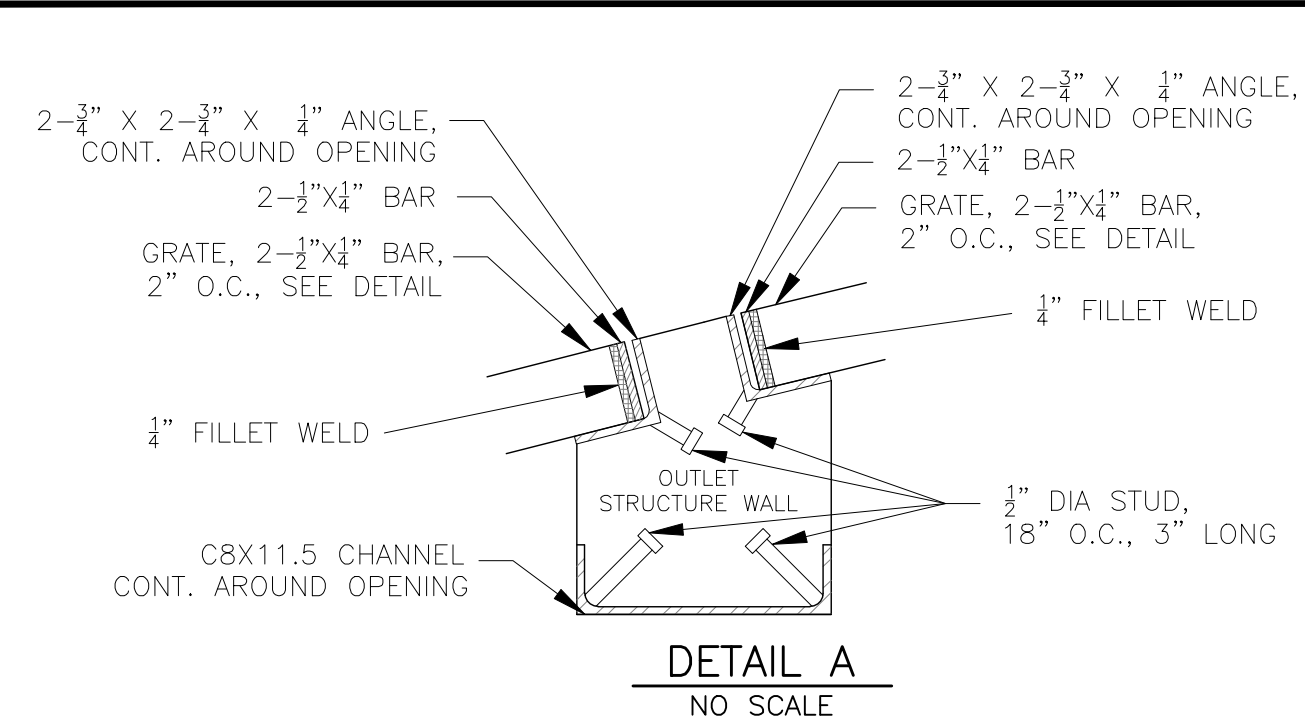
DATE: JUNE 12, 2018

PROJECT NO. 100.042

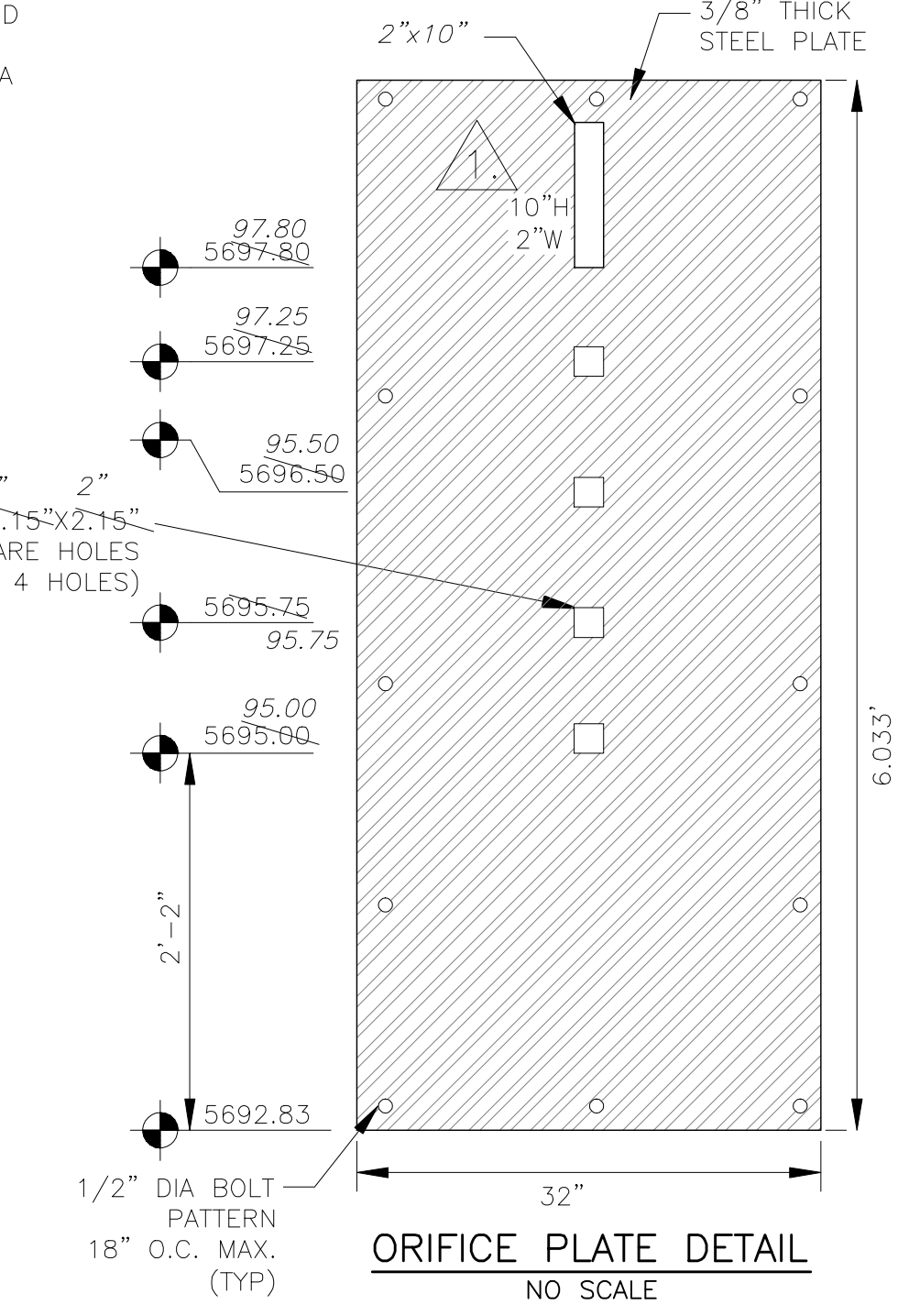
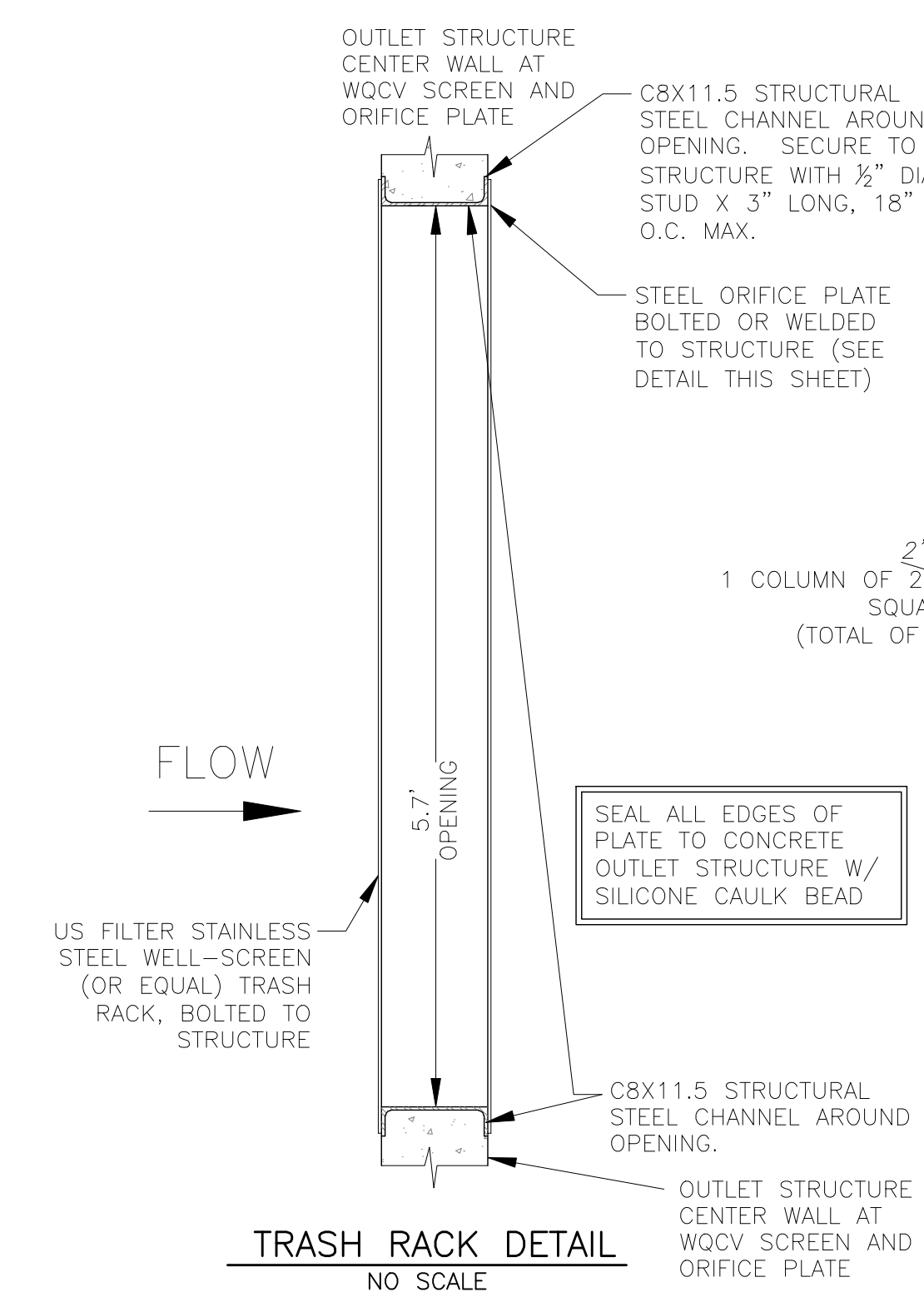
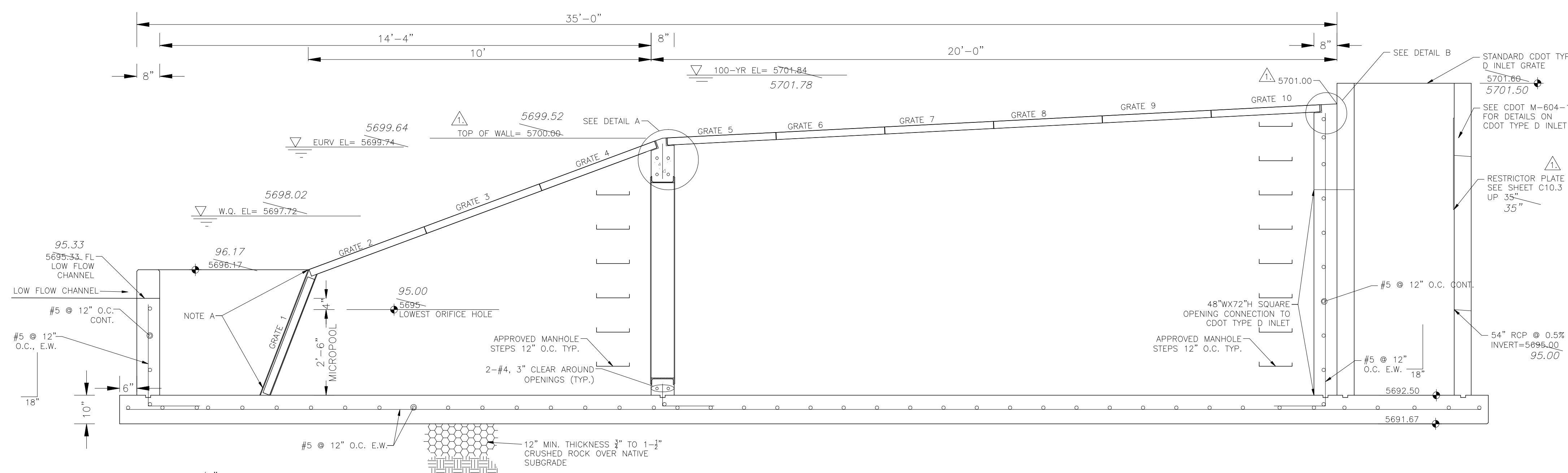
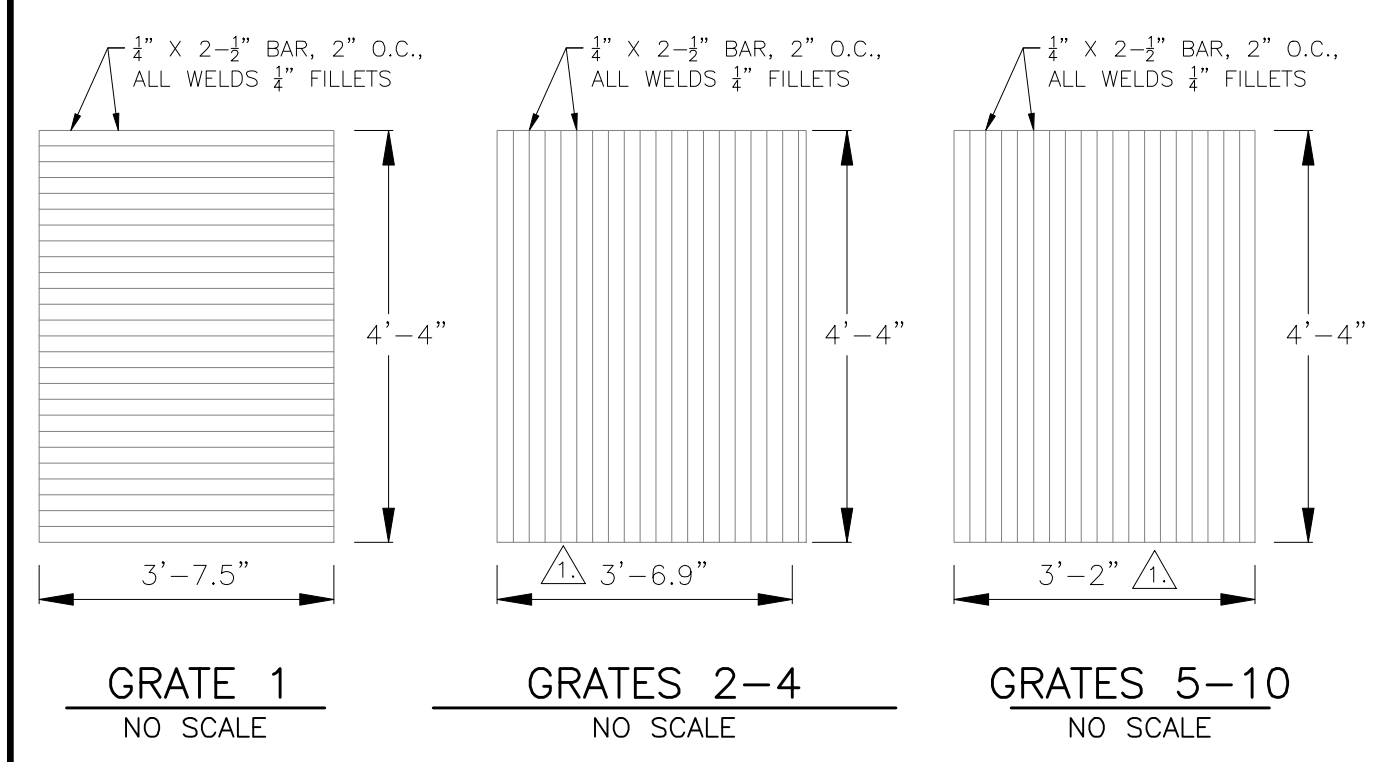
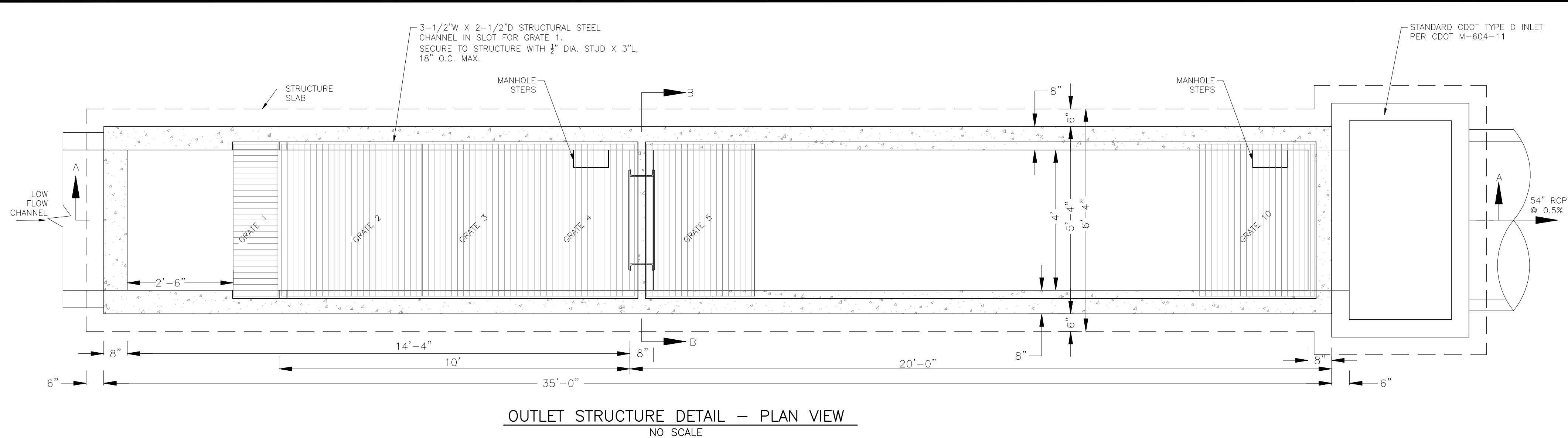
SHEET NUMBER **C9.5**

TOTAL SHEETS: 45

AS-BUILT
DATE: 07/19/2022



NOTE:
AFTER CONCRETE STRUCTURE HAS BEEN POURED
ALL GRATE DIMENSIONS SHALL BE FIELD VERIFIED
PRIOR TO GRATE CONSTRUCTION

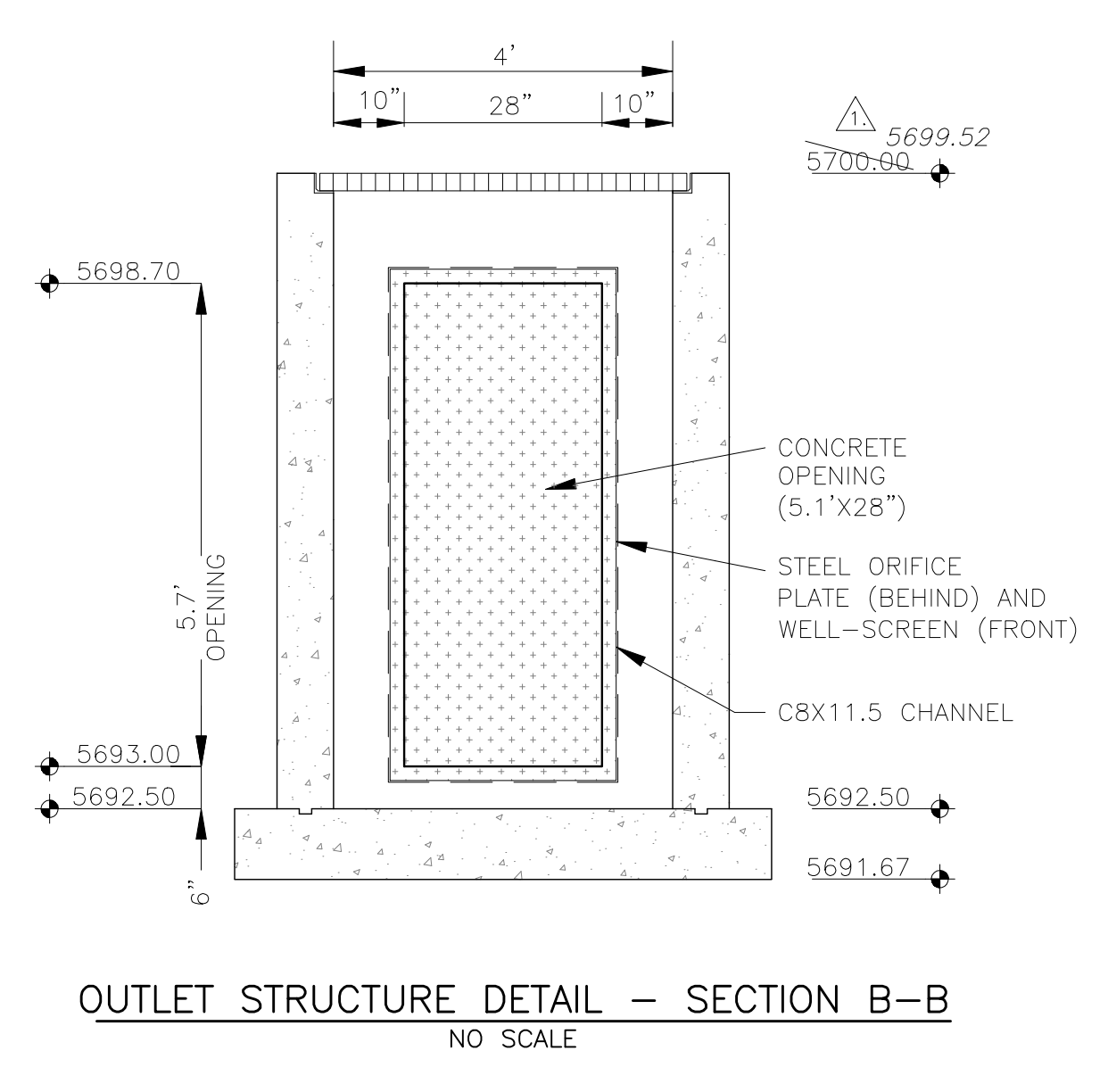


NOTE A:
3-1/2\"/>

OUTLET STRUCTURE, FOREBAY, AND DRAIN CHANNEL NOTES:

- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL COMPONENTS OF THE OUTLET STRUCTURE.
 - GRADE 60 REINFORCING STEEL REQUIRED. SEE TABLE FOR THE MINIMUM LAP SPLICE LENGTH FOR REINFORCING BARS. ALL REINFORCING STEEL SHALL HAVE A TWO-INCH MINIMUM CLEARANCE FROM EDGE OF CONCRETE, UNLESS OTHERWISE NOTED.
 - CONCRETE FOR THE OUTLET STRUCTURE AND FOREBAY SHALL BE CDOT CLASS D CONCRETE.
 - CONCRETE FOR DRAIN CHANNELS SHALL BE CDOT CLASS B CONCRETE
 - EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213. EXPANSION JOINT MATERIAL SHALL BE 1/2\"/>
- | BAR SIZE | #4 | #5 | #6 |
|--------------------|-------|-------|-------|
| MIN. SPLICE LENGTH | 1'-3" | 1'-7" | 2'-0" |
- SUBGRADE TO BE 12\"/>
 - REFER TO SHEET C9.5 FOR PRESEDIMENTATION/FOREBAY DESIGN.
 - ENGINEER SHALL BE NOTIFIED PRIOR TO BEGINNING CONSTRUCTION OF OUTLET STRUCTURE TO SCHEDULE OBSERVATION VISITS FOR STRUCTURES.
 - SEE SHEET C9.3 FOR WELL-SCREEN DESIGN NOTES

AS-BUILT
DATE: 07/19/2022



CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

DATE: 7-2-2018

DESCRIPTION: MODIFY OUTLET, CHANGE GRATE SIZES

NO. 1

PROJECT: **LORSON RANCH EAST FILING NO. 1**
212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, COLORADO 80903
FONTAINE BLVD.-OLD GLORY DR
COLORADO SPRINGS, COLORADO
CONTACT: JEFF MARK

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

LORSON RANCH EAST FILING NO. 1
FULL SPECTRUM POND D2
OUTLET STRUCTURE

DATE: JUNE 12, 2018
PROJECT NO: 100.042
SHEET NUMBER: **C9.6**
TOTAL SHEETS: 45