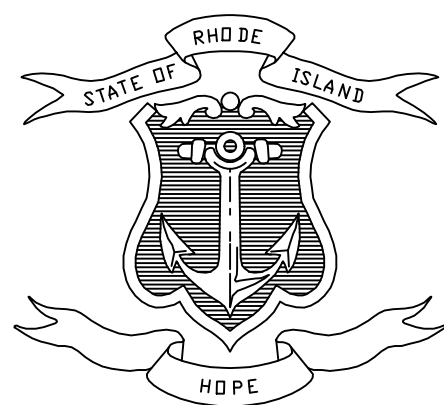


NARRAGANSETT BAY COMMISSION

PHASE III COMBINED SEWER OVERFLOW PROGRAM  
BUCKLIN POINT WWTF - FINAL CLARIFIER, UV DISINFECTION AND  
OTHER MISCELLANEOUS IMPROVEMENTS  
CONTRACT NO. 308.10C

JUNE 2022



STATE OF RHODE ISLAND

DANIEL McKEE \_\_\_\_\_ GOVERNOR



RHODE ISLAND  
INFRASTRUCTURE BANK

MERRILL W. SHERMAN \_\_\_\_\_ CHAIRMAN

JEFFREY R. DIEHL \_\_\_\_\_ EXECUTIVE DIRECTOR  
AND CEO



VINCENT J. MESOLELLA JR. \_\_\_\_\_ CHAIRMAN

LAURIE HORRIDGE \_\_\_\_\_ EXECUTIVE DIRECTOR

RICHARD BERNIER, P.E. \_\_\_\_\_ DIRECTOR OF CONSTRUCTION  
AND ENGINEERING

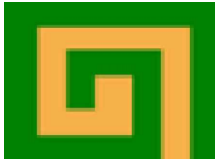
DAVID C. BOWEN, P.E. \_\_\_\_\_ ENGINEERING MANAGER

KATHRYN KELLY, P.E. \_\_\_\_\_ CSO PROGRAM MANAGER

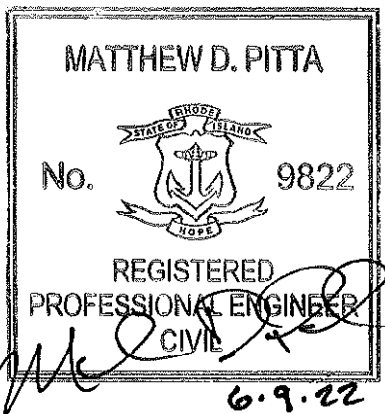
PROGRAM MANAGEMENT TEAM



DESIGN TEAM



GREEN INTERNATIONAL  
AFFILIATES, INC.



FINAL SUBMITTAL - JUNE 2022



GENERAL

1	-	COVER
2	G-1	SHEET INDEX
3	G-2	DESIGN CRITERIA
4	G-3	MAIN LIQUID FLOW PROCESS FLOW DIAGRAM
5	G-4	EXISTING HYDRAULIC PROFILE
6	G-5	HYDRAULIC PROFILE MODIFICATIONS

CIVIL

7	C-1	LEGEND, ABBREVIATIONS, AND GENERAL NOTES
8	C-2	OVERALL SITE ORIENTATION PLAN
9	C-3	TEST BORING PLAN
10	C-4	EXISTING CONDITIONS & REMOVALS PLAN I
11	C-5	EXISTING CONDITIONS & REMOVALS PLAN II
12	C-6	EXISTING CONDITIONS & REMOVALS PLAN III
13	C-7	EXISTING CONDITIONS & REMOVALS PLAN IV
14	C-8	LAYOUT & MATERIALS PLAN
15	C-9	GRADING & DRAINAGE PLAN
16	C-10	CIVIL DETAILS I
17	C-11	CIVIL DETAILS II
18	C-12	CIVIL DETAILS III
19	C-13	CIVIL DETAILS IV
20	C-14	CIVIL DETAILS V
21	YP-1	FINAL CLARIFIERS - YARD PIPING PLAN
22	YP-2	YARD PIPING PROFILES I
23	YP-3	YARD PIPING PROFILES II
24	UV-YP-1	UV DISINFECTION FACILITY - YARD PIPING PLAN
25	UV-YP-2	UV DISINFECTION FACILITY - ENLARGED YARD PIPING PLAN AND SECTION
26	UV-YP-3	UV DISINFECTION FACILITY - YARD PIPING PROFILE AND DETAIL
27	UV-CD-1	UV DISINFECTION FACILITY - CIVIL DETAILS

ARCHITECTURAL

28	GD-A-1	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS
29	GD-A-2	RETURN SLUDGE PUMP STATION NO. 3 - LIFE SAFETY PLAN AND BUILDING CODE SUMMARY
30	RP-A-1	RETURN SLUDGE PUMP STATION NO. 3 - FIRST FLOOR AND LOWER LEVEL FLOOR PLANS
31	RP-A-2	RETURN SLUDGE PUMP STATION NO. 3 - ROOF PLAN AND ENLARGED STAIR PLANS AND SECTION
32	RP-A-3	RETURN SLUDGE PUMP STATION NO. 3 - EXTERIOR ELEVATIONS
33	RP-A-4	RETURN SLUDGE PUMP STATION NO. 3 - BUILDING SECTIONS
34	RP-A-5	RETURN SLUDGE PUMP STATION NO. 3 - WALL SECTIONS
35	UV-A-1	UV DISINFECTION FACILITY - BUILDING CODE SUMMARY
36	UV-A-2	UV DISINFECTION FACILITY - FLOOR AND ROOF PLAN
37	UV-A-3	UV DISINFECTION FACILITY - EXTERIOR ELEVATIONS
38	UV-A-4	UV DISINFECTION FACILITY - BUILDING SECTIONS
39	UV-A-5	UV DISINFECTION FACILITY - WALL SECTIONS
40	SD-A-1	FINISH, DOOR, WINDOW AND LOUVER SCHEDULES AND TYPES
41	SD-A-2	OVERHEAD COILING DOOR AND LOUVER DETAILS
42	SD-A-3	PLAN, ROOF AND WALL DETAILS

STRUCTURAL

43	IP-S-1	INFLUENT PUMP STATION - IMPROVEMENT PLANS, SECTION, AND DETAILS
44	FC-S-1	FINAL CLARIFIER NO. 7 - PILE PLAN
45	FC-S-2	FINAL CLARIFIER NO. 8 - PILE PLAN
46	FC-S-3	FINAL CLARIFIERS NO. 7 AND NO. 8 - PLAN AND DETAIL
47	FC-S-4	FINAL CLARIFIERS NO. 7 AND NO. 8 - SECTIONS
48	RP-S-1	RETURN SLUDGE PUMP STATION NO. 3 - PILE AND LOWER LEVEL PLANS
49	RP-S-2	RETURN SLUDGE PUMP STATION NO. 3 - FLOOR PLAN
50	RP-S-3	RETURN SLUDGE PUMP STATION NO. 3 - SECTIONS AND DETAIL
51	RP-S-4	RETURN SLUDGE PUMP STATION NO. 3 - DETAILS
52	RP-S-5	RETURN SLUDGE PUMP STATION NO. 3 - INTERMEDIATE FRAMING AND ROOF PLANS
53	RP-S-6	RETURN SLUDGE PUMP STATION NO. 3 - STEEL ELEVATIONS, SECTIONS AND DETAILS
54	RP-S-7	RETURN SLUDGE PUMP STATION NO. 3 - STEEL SECTIONS AND DETAIL
55	MS-S-1	JUNCTION BOX NO. 1A - BASE AND TOP PLANS
56	MS-S-2	JUNCTION BOX NO. 1A - SECTIONS AND DETAILS
57	UV-S-1	UV DISINFECTION FACILITY - PILE PLAN
58	UV-S-2	UV DISINFECTION FACILITY - LOWER LEVEL PLAN
59	UV-S-3	UV DISINFECTION FACILITY - FLOOR PLAN
60	UV-S-4	UV DISINFECTION FACILITY - SECTIONS I
61	UV-S-5	UV DISINFECTION FACILITY - SECTIONS II
62	UV-S-6	UV DISINFECTION FACILITY - SECTIONS III
63	UV-S-7	UV DISINFECTION FACILITY - SECTIONS IV
64	UV-S-8	UV DISINFECTION FACILITY - ROOF PLAN EL 31.42
65	UV-S-9	UV DISINFECTION FACILITY - ROOF PLAN EL 39.67
66	UV-S-10	UV DISINFECTION FACILITY - FRAMING ELEVATIONS
67	UV-S-11	UV DISINFECTION FACILITY - STEEL SECTIONS
68	EP-S-1	DRY WEATHER EFFLUENT PUMP STATION - PLANS
69	EP-S-2	DRY WEATHER EFFLUENT PUMP STATION - SECTIONS

STRUCTURAL (CONT)

70	SD-S-1	STANDARD CONCRETE DETAILS I
71	SD-S-2	STANDARD CONCRETE DETAILS II
72	SD-S-3	STANDARD CONCRETE BEAMS AND COLUMNS DETAILS
73	SD-S-4	STANDARD CONCRETE MODIFICATIONS DETAILS
74	SD-S-5	STANDARD MISCELLANEOUS METALS DETAILS I
75	SD-S-6	STANDARD MISCELLANEOUS METALS DETAILS II
76	SD-S-7	STANDARD MISCELLANEOUS METALS DETAILS III
77	SD-S-8	STANDARD STRUCTURAL STEEL DETAILS
78	SD-S-9	STANDARD MASONRY DETAILS I
79	SD-S-10	STANDARD MASONRY DETAILS II
80	SD-S-11	SCHEDULE OF SPECIAL INSPECTIONS I
81	SD-S-12	SCHEDULE OF SPECIAL INSPECTIONS II

MECHANICAL

82	GD-M-1	MECHANICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES
83	IP-M-1	INFLUENT PUMP STATION - DEMOLITION PLAN
84	IP-M-2	INFLUENT PUMP STATION - DEMOLITION SECTIONS AND DETAILS
85	IP-M-3	INFLUENT PUMP STATION - IMPROVEMENT PLAN
86	IP-M-4	INFLUENT PUMP STATION - IMPROVEMENT SECTIONS AND DETAILS
87	FC-M-1	FINAL CLARIFIERS NO. 7 AND NO. 8 AND RETURN SLUDGE PUMP STATION NO. 3 - OVERALL PLAN
88	FC-M-2	FINAL CLARIFIER NO. 8 (NO. 7 SIMILAR) - PLAN
89	FC-M-3	FINAL CLARIFIER NO. 8 (NO. 7 SIMILAR) - SECTIONS
90	FC-M-4	FINAL CLARIFIER NOs. 1 THRU 4 - EFFLUENT LAUNDER COVERS
91	FC-M-5	FINAL CLARIFIER NOs. 5 THRU 8 - EFFLUENT LAUNDER COVERS
92	RP-M-1	RETURN SLUDGE PUMP STATION NO. 3 - LOWER LEVEL LOWER PIPING PLAN
93	RP-M-2	RETURN SLUDGE PUMP STATION NO. 3 - LOWER LEVEL UPPER PIPING PLAN
94	RP-M-3	RETURN SLUDGE PUMP STATION NO. 3 - SECTIONS
95	MS-M-1	WET WEATHER CHLORINE CONTACT TANKS RSL PIPING - PLAN
96	MS-M-2	WET WEATHER CHLORINE CONTACT TANKS RSL PIPING - SECTION
97	MS-M-3	CENTER PIPE GALLERY - PLAN AND SECTION
98	MS-M-4	MIXED LIQUOR METER CHAMBER NO. 1 - PLAN AND SECTIONS
99	MS-M-5	MIXED LIQUOR METER CHAMBER NO. 2 - PLAN AND SECTIONS
100	MS-M-6	SODA ASH FEED SYSTEM AND RETURN SLUDGE PUMP STATION NO. 1 - PLANS AND SECTIONS
101	AT-M-1	AERATION TANK NOs. 1 THRU 4 - RSL AND SODA ASH - PLAN - MODIFICATIONS
102	AT-M-2	AERATION TANK NOs. 1 THRU 4 - RSL AND SODA ASH - SECTIONS - MODIFICATIONS
103	UV-M-1	UV DISINFECTION FACILITY - LOWER LEVEL PLAN
104	UV-M-2	UV DISINFECTION FACILITY - UPPER LEVEL PLAN
105	UV-M-3	UV DISINFECTION FACILITY - SECTIONS I
106	UV-M-4	UV DISINFECTION FACILITY - SECTIONS II
107	UV-M-5	UV DISINFECTION FACILITY - SECTIONS III
108	UV-M-6	UV DISINFECTION FACILITY - SECTIONS IV
109	EP-M-1	DRY WEATHER EFFLUENT PUMP STATION - DEMOLITION - PLANS
110	EP-M-2	DRY WEATHER EFFLUENT PUMP STATION - DEMOLITION - SECTIONS
111	EP-M-3	DRY WEATHER EFFLUENT PUMP STATION - MODIFICATION - PLANS
112	SD-M-1	MISCELLANEOUS MECHANICAL DETAILS I
113	SD-M-2	MISCELLANEOUS MECHANICAL DETAILS II
114	SD-M-3	MISCELLANEOUS MECHANICAL DETAILS III

HVAC

115	GD-H-1	HVAC LEGEND, SYMBOLS, ABBREVIATIONS, AND NOTES
116	RP-H-1	RETURN SLUDGE PUMP STATION NO. 3 - FLOOR PLANS
117	RP-H-2	RETURN SLUDGE PUMP STATION NO. 3 - SECTIONS
118	RP-H-3	RETURN SLUDGE PUMP STATION NO. 3 - HVAC SCHEDULES AND NETWORK DIAGRAM
119	RP-H-4	RETURN SLUDGE PUMP STATION NO. 3 - AUTOMATIC TEMPERATURE CONTROL DIAGRAM
120	UV-H-1	UV DISINFECTION FACILITY - HVAC FLOOR PLAN
121	UV-H-2	UV DISINFECTION FACILITY - HVAC SCHEDULES
122	UV-H-3	UV DISINFECTION FACILITY - AUTOMATIC TEMPERATURE CONTROL DIAGRAMS I
123	UV-H-4	UV DISINFECTION FACILITY - AUTOMATIC TEMPERATURE CONTROL DIAGRAMS II
124	SD-H-1	HVAC DETAILS I
125	SD-H-2	HVAC DETAILS II

PLUMBING

126	GD-P-1	PLUMBING LEGEND, SYMBOLS, ABBREVIATIONS, AND NOTES
127	RP-P-1	RETURN SLUDGE PUMP STATION NO. 3 - BURIED PIPING AND LOWER LEVEL PLANS
128	RP-P-2	RETURN SLUDGE PUMP STATION NO. 3 - FIRST FLOOR PLAN
129	RP-P-3	RETURN SLUDGE PUMP STATION NO. 3 - WATER AND GAS PIPING DIAGRAMS
130	UV-P-1	UV DISINFECTION FACILITY - PLUMBING FLOOR PLAN
131	UV-P-2	UV DISINFECTION FACILITY AND DRY WEATHER EFFLUENT PUMP STATION W/ UV - DETAILS AND GAS PIPING DIAGRAM
132	SD-P-1	PLUMBING DETAILS

FIRE PROTECTION

133	GD-FP-1	FIRE PROTECTION LEGEND, ABBREVIATIONS, RISER DIAGRAM, SCHEDULE, AND NOTES
134	RP-FP-1	RETURN SLUDGE PUMP STATION NO. 3 - FLOOR PLANS

INSTRUMENTATION

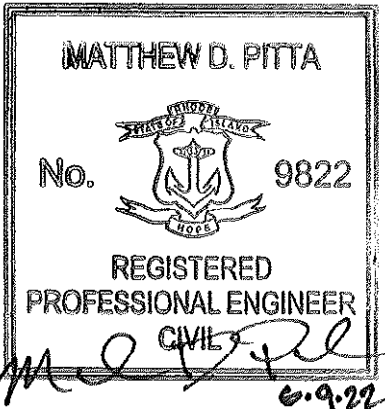
135	I-1	LEGEND I
136	I-2	LEGEND II
137	I-3	CONTROL SYSTEM ARCHITECTURE
138	I-4	INFLUENT PUMP STATION P&ID
139	I-5	EXISTING FINAL CLARIFIERS NO. 1-4 P&ID
140	I-6	EXISTING FINAL CLARIFIERS NO. 5 & 6 P&ID
141	I-7	FINAL CLARIFIERS NO. 7 & 8 P&ID
142	I-8	EXISTING RETURN SLUDGE PUMP STATIONS NO. 1 AND 2 P&ID
143	I-9	RETURN SLUDGE PUMP STATION NO. 3 P&ID
144	I-10	CENTER PIPE GALLERY P&ID
145	I-11	AERATION TANKS P&ID
146	I-12	MISCELLANEOUS P&ID
147	I-13	MCC-RSL POWER MONITORING P&ID
148	I-14	INSTALLATION DETAILS
149	UV-I-1	UV DISINFECTION FACILITY - UV SYSTEM P&ID
150	UV-I-2	UV DISINFECTION FACILITY - FLOOD PUMP STATION P&ID
151	UV-I-3	UV DISINFECTION FACILITY - MISCELLANEOUS IO P&ID
152	UV-I-4	UV DISINFECTION FACILITY - MCC-UV POWER MONITORING P&ID
153	UV-I-5	INSTALLATION DETAILS
154	EP-I-1	DRY WEATHER EFFLUENT PUMP STATION P&ID

ELECTRICAL

155	GD-E-1	GENERAL NOTES
156	GD-E-2	LEGEND I
157	GD-E-3	LEGEND II
158	GD-E-4	AREA CLASSIFICATION PLAN I
159	GD-E-5	AREA CLASSIFICATION PLAN II
160	GD-E-6	OVERALL SITE PLAN
161	GD-E-7	ENLARGED SITE PLANS
162	GD-E-8	UNDERGROUND DUCT BANK SECTIONS
163	GD-E-9	UNDERGROUND RACEWAY SCHEDULE
164	GD-E-10	OVERALL ONE LINE DIAGRAM
165	GD-E-11	EXISTING 480V SWITCHGEAR NO. 2 ONE LINE DIAGRAM MODIFICATIONS
166	GD-E-12	EXISTING 480V MCC-SG ONE LINE DIAGRAM MODIFICATIONS
167	GD-E-13	NEW MCC-RSL ONE LINE DIAGRAM
168	GD-E-14	EXISTING 480V SWITCHGEAR EP ONE LINE DIAGRAM MODIFICATIONS
169	GD-E-15	NEW MCC-UV ONE LINE DIAGRAM
170	GD-E-16	CONTROL WIRING DIAGRAMS I
171	GD-E-17	CONTROL WIRING DIAGRAMS II
172	GD-E-18	CONTROL WIRING DIAGRAMS III
173	GD-E-19	CONTROL WIRING DIAGRAMS IV
174	GD-E-20	INSTRUMENTATION RISER DIAGRAMS
175	GD-E-21	FIRE ALARM RISER DIAGRAMS AND MATRICIES
176	GD-E-22	UV INTERCONNECTION AND INSTRUMENTATION RISER DIAGRAMS
177	GD-E-23	OVERALL SITE FIRE ALARM NETWORK MODIFICATIONS
178	GD-E-24	OVERALL POWER MONITORING RISER DIAGRAM MODIFICATIONS
179	GD-E-25	OVERALL TELEPHONE RISER DIAGRAM MODIFICATIONS
180	IP-E-1	INFLUENT PUMP STATION & SCREENINGS AND GRIT BUILDING - DEMOLITION PLAN
181	IP-E-2	INFLUENT PUMP STATION & SCREENINGS AND GRIT BUILDING - POWER PLAN
182	FC-E-1	FINAL CLARIFIERS NO. 7 AND 8 - POWER PLANS
183	FC-E-2	FINAL CLARIFIERS NO. 7 AND 8 - HEAT TRACING PLANS
184	RP-E-1	RETURN SLUDGE PUMP STATION NO. 3 - POWER PLANS
185	RP-E-2	RETURN SLUDGE PUMP STATION NO. 3 - LIGHTING, SYSTEMS, AND SMALL POWER PLANS
186	RP-E-3	RETURN SLUDGE PUMP STATION NO. 3 - LIGHTNING PROTECTION AND GROUNDING PLAN
187	RP-E-4	RETURN SLUDGE PUMP STATION NO. 3 - PANELBOARD AND LIGHTING FIXTURE SCHEDULES
188	AT-E-1	AERATION TANKS NOs. 1 THROUGH 4 - POWER PLAN
189	MS-E-1	SODA ASH FEED SYSTEM - PLANS AND SECTION
190	UV-E-1	EXISTING DWEPS - DEMOLITION AND NEW POWER PLANS
191	UV-E-2	UV DISINFECTION FACILITY - POWER PLAN
192	UV-E-3	UV DISINFECTION FACILITY - CONDUIT AND CABLE TRAY PLANS AND SECTIONS
193	UV-E-4	UV DISINFECTION FACILITY - LIGHTING AND SMALL POWER PLAN
194	UV-E-5	UV DISINFECTION FACILITY - FIRE ALARM PLAN
195	UV-E-6	UV DISINFECTION FACILITY - LIGHTNING PROTECTION AND GROUNDING PLAN
196	UV-E-7	UV DISINFECTION FACILITY - PANELBOARD AND LIGHTING FIXTURE SCHEDULES
197	SD-E-1	GROUNDING AND LIGHTNING PROTECTION DETAILS
198	SD-E-2	ELECTRICAL DETAILS I
199	SD-E-3	ELECTRICAL DETAILS II
200	SD-E-4	ELECTRICAL DETAILS III
201	SD-E-5	ELECTRICAL DETAILS IV

CDM Smith ProjectWise Project No: 93019--234214, NARRAGANSETT BAY COMMISSION, PHASE III COMBINED SEWER OVERFLOW PROGRAM  
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				SCALE	<div>WARNING</div> <div><div>01/21</div></div> <div>DESIGNED <u>D.BORGES</u></div>	FINAL DESIGN - JUNE 2022	<div>CDM Smith</div> <div>260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</div>	<div></div> <div>NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM</div> <div><div> Stantec</div><div> PARE</div></div>	<div>NBC CONTRACT NO 308.10C GENERAL</div> <div>SHEET INDEX</div>	SHEET
			NONE	<div>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</div> <div>DRAWN <u>A.WELDON</u></div>		G-1				
				CHECKED <u>M.PITTA</u>						
REV	DATE	BY	DESCRIPTION							





CDM Smith ProjectWise Project No: 93019--234214, NARRAGANSETT BAY COMMISSION, PHASE III COMBINED SEWER OVERFLOW PROGRAM  
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DESIGN FLOWS (DAILY):	INFLUENT	PRIMARY EFFLUENT
Minimum Dry Weather, mgd	14.4	10
Average Dry Weather, mgd	24.1	24.0
Maximum Month, mgd	39.3	37.4
Maximum/Peak Dry Weather, mgd	46	46
Peak Wet Weather, mgd	70	--
Peak Dry/Wet Weather, mgd	116	--

DESIGN LOADS (DAILY):

INFLUENT	
Average BOD5, lbs/day	45,710
Average TSS, lbs/day	44,950
Average TKN, lbs/day	6,200
Maximum BOD5, lbs/day	77,710
Maximum TSS, lbs/day	98,890
Maximum Month, BOD5, lbs/day	59,420
Maximum Month TSS, lbs/day	58,435
Maximum Month TKN, lbs/day	7,440

DRY WEATHER PRIMARY INFLUENT (W/SIDESTREAMS)	
Average BOD5, lbs/day	47,790
Average TSS, lbs/day	47,030
Average TKN, lbs/day	6,500
Maximum BOD5, lbs/day	80,830
Maximum TSS, lbs/day	102,010
Maximum Month BOD5, lbs/day	62,130
Maximum Month TSS, lbs/day	61,140
Maximum Month TKN, lbs/day	7,800

PRIMARY EFFLUENT (TO BIOLOGICAL TREATMENT)	
Average BOD5, lbs/day	29,712
Average TSS, lbs/day	17,980
Average TKN, lbs/day	6,219
Maximum BOD5, lbs/day	43,320
Maximum TSS, lbs/day	44,350
Maximum TKN, lbs/day	9,500
Maximum Month BOD5, lbs/day	38,623
Maximum Month TSS, lbs/day	23,376
Maximum Month TKN, lbs/day	7,463

PRIMARY SLUDGE	
Average, lbs/day	28,903
Maximum, lbs/day	54,540

SECONDARY SLUDGE	
Average, lbs/day	21,433
Maximum, lbs/day	32,150

PRETREATMENT:

BLACKSTONE VALLEY INTERCEPTOR	
Type	Parshall Flume
Throat Width, ft	6
Capacity range, mgd	1.7 – 128

EAST PROVIDENCE INTERCEPTOR	
Type	Parshall Flume
Throat Width, ft	1.0
Capacity range, mgd	0.1 – 10.4

INFLUENT PUMP STATION (MODIFICATIONS)	
Number	2
Type	96" Screw Pumps
Unit Capacity, mgd	102" Screw Pumps
TDH, ft.	52.6
Unit Horsepower, hp	9.7
Speed, rpm	125
	Variable

SCREENING EQUIPMENT	
Type	Mechanical Catenary
Number of Units	4
Unit Capacity, mgd	38.7
Clear Spacing of Bars, in.	0.75
Channel width, ft.	6

VORTEX GRIT CHAMBERS	
Number	4
Unit Maximum Capacity, mgd	38.7
Unit Diameter, ft.	19

GRIT PUMPS	
Number of Pumps	6
Type	Torque Flow/Recessed Impeller
Unit Capacity, gpm	225 at max speed
TDH, ft	43
Unit Horsepower, hp	15
Speed, rpm	1160 max w/variable pitch v--belt

WET WEATHER TREATMENT:

PRIMARY INFLUENT CONDUIT DEWATERING SYSTEM	
Dewatering Time, hours	4
Number of Pumps	1
Type	Submersible
Unit Capacity, gpm	300--500
Unit Horsepower, hp	5
Speed, rpm	1750

WET WEATHER PRIMARY SETTLING TANKS	
Number	2
Length, ft.	230
Width, ft.	68
Average side water depth, ft.	10.9
Volume per tank, mg	1.25
Detention Time at 70 mgd w/two tanks, min.	50

WET WEATHER DEWATERING PUMPS	
Dewatering/Flushing Time, days	1
Number of Pumps	3
Type	Screw--centrifugal
Unit Capacity, gpm	900
Unit Horsepower, hp	20
Speed, rpm	1750

DEWATERING/FLUSHING TIME, 8 HRS	
Number of Pumps	2
Type	SUBMERSIBLE
Unit Capacity, gpm	2300 GPM
Unit Horsepower, hp	30

WET WEATHER PRIMARY SETTLING TANK FLUSHING SYSTEM	
Number of Flushways/gates	8
Volume of water per flush, cf	800
Flushway length (nominal), ft	200
Time to flush tanks, min	60
Hydraulic system Horsepower, hp	0.75

WET WEATHER CHLORINE CONTACT TANK CHLORINATION CHANNEL	
Number of Channels	1
Channel Length, ft.	115
Channel Width, ft.	8
Channel Depth, ft.	8.5
Channel Volume, ft3	7,200
Channel Volume, mg	0.05

Note: Channel volume adjusted for fill concrete to facilitate drainage

WET WEATHER CHLORINE CONTACT TANK	
Number of Channels	1
Effective Channel Length, ft.	410
Channel Width, ft.	10.5
Channel Depth, ft.	10.75
Total Channel Volume, ft3	45,560
Total Channel Volume, mg	0.34
Total Chlorine Contact Volume, mg	0.4
Detention Time, min.	
--16.5 mgd	30
--33 mgd	15
--70 mgd	8
--70 mgd (with 2 chlorinated primary settling tanks)	60

Note: Above 16.5 mgd wet weather flow, chlorine addition will occur prior to the primary settling tanks and in the chlorine contact tank.

SODIUM HYPOCHLORITE FEED SYSTEM	
Number of Storage Tanks	3
Type	FRP
Unit volume, gals.	8,000
Number of Feed Pumps	4
Unit Capacity, gph	1 hp 2--77 @ 130 psi
	1 hp 1--46 @ 150 psi
	0.5 hp 1--24 @ 175 psi
Unit Horsepower, hp	1

WET WEATHER EFFLUENT PUMPING	
Number of Pumps	4
Type	Vertical Turbine
Unit Capacity, gpm	16,180
TDH, ft.	14
Unit Horsepower, hp	75

DECHLORINATION: SODIUM BISULFITE FEED SYSTEM	
Number of Storage Tanks	2
Type	FRP
Volume per tank, gals.	4,100
Number of Feed Pumps	2
Unit Capacity, gph	46 @ 150 psi
Unit Horsepower, hp	1

DRY WEATHER PRIMARY TREATMENT:

DRY WEATHER PRIMARY CLARIFIERS	
Number	3
Type	Circular
Tank Diameter, ft.	102
Tank Sidewater Depth, ft.	14
Tank Surface Area, sq.ft.	8170
Average Overflow Rate, gpd/sf	967
Peak Overflow Rate, gpd/sf	1877

PRIMARY SLUDGE PUMPS	
Number	4
Type	Progressing Cavity
Unit Capacity, gpm	200
Unit Horsepower, hp	30

PRIMARY SCUM PUMPS	
Number	2
Type	Progressing Cavity
Unit Capacity, gpm	100
Unit Horsepower, hp	15

PRIMARY TANK DRAIN PUMP	
Number	1
Type	Screw--Centrifugal
Unit Capacity, gpm	655
Unit Horsepower, hp	10

DRY WEATHER SECONDARY TREATMENT:

AERATION TANKS - PRE-ANOXIC ZONES	
Anoxic Volume per Tank, mil gal	0.59
Total Anoxic Volume, mil gal	2.4
Anoxic Stages per Tank	3

-- Areas	
Zone 1 + 2 (ft x ft)	31.5 x 20.5
Zone 3 (ft x ft)	64 x 42.5
-- Depth, ft	19.8
Design FM each Anoxic Zone (BOD basis)	
--Stage 1	3
--Stage 2	1.5
--Stage 3	0.5

AERATION TANKS - AEROBIC ZONES AS MLE (4 CELLS PER TANK)

Aerobic Volume per Tank, mil gal	2.4
Total Aerobic Volume, mil gal	9.7
Total Aerobic Cells per Tank	4
-- Length, ft	64
-- Width, ft	64
-- Depth, ft	19.2
Design MLSS, mg/L	3,200
Design SRT, days	10.65
Minimum Month Wastewater Temperature, oC	11
Design Yield, lbs TSS per lbs BODr	0.8
Tank Width, ft.	64

AERATION TANKS - AS 4-STAGE BARDENPHO

Aerobic Volume per Tank, mil gal	1.34
Total Aerobic Volume, mil gal	5.35
Cell A, ft x ft	64 x 64
Cell B, ft x ft	55 x 64
Cell C--1, ft x ft	55 x 31
Depth, ft	19.2
Post--Anoxic per Tank, mil gal	0.625
Total Post--Anoxic Volume, mil gal	2.5
Cell C--2, ft x ft	55 x 33
Cell D--1, ft x ft	55 x 46
Depth, ft	19.2
Reaeration Volume per Tank, mil gal	0.14
Total Reaeration Volume, mil gal	0.57
Cell D--2, ft x ft	55 x 18
Depth, ft	19.2

AERATION EQUIPMENT	
Type	Fine Bubble Diffused Air
Number of Diffusers, total	11,088
Number of Blowers	4
Unit Horsepower	2 at 600, 2 at 300
Unit Capacity, acfm	12,100, 6,000
Air Requirements	
--Average, scfm	12,532
--Peak, scfm	21,304

SODA ASH SYSTEM (NO CHANGE TO SYSTEM CAPACITY)

Average Dose, lb/day	10,160
Average Dose, mg/L	53
Maximum Feed Concentration, %	7
Number of Silos	2
Total Storage Capacity, days	16
Truck Deliveries per Month	8 to 10

SUPPLEMENTAL CARBON FEED SYSTEM

Number of Tanks	3
Type	HDPE
Tank Volume, gal	1950
Number of Pumps	6
Unit Capacity, gpd	270

AERATION BASIN INTERNAL RECIRCULATION PUMPS

Number of Pumps per Basin	1
Total Number of Pumps	4
Type	Horizontal Propeller
Unit Capacity, gpm	11,000
Unit Horsepower, hp	15

FINAL CLARIFIERS (MODIFICATIONS)	
Number of Tanks	8
Tank Nos.	1 -- 4      5 -- 6      NEW THIS CONTRACT      7 -- 8
Diameter, ft.	111      110      110
Sidewater depth, ft.	10      12      16

RETURN SLUDGE PUMPS (MODIFICATIONS)	
Total Maximum Pumping Rate	34 mgd
Return Ratio	50% to 75%
NEW THIS CONTRACT	
Number of Pumps	5
Type	Centrifugal
Unit Capacity, gpm	4 at 3530, 3 at 2650
TDH, ft.	27, 24
Unit Horsepower, hp (new motors)	47
Speed, rpm	40, 25
	60
	Variable
	Variable

WASTE SLUDGE PUMPS (MODIFICATIONS)	
Number of Pumps	2
Type	Centrifugal
Unit Capacity, gpm	650
TDH, ft.	35
Unit Horsepower, hp	650
Speed, rpm	35
	15
	Variable
	Variable

DRY WEATHER EFFLUENT PUMPS

Number of Pumps	3
Type	Vertical Propeller
Unit Capacity, gpm	16,000
TDH, ft.	20
Horsepower, hp	125

DRY WEATHER UV SYSTEM

Type	Low Pressure, High--output (LPHO)
Channel Dimensions	
--Length, ft	35'--0"
--Width, ft	4'--0 1/4"
-- Depth, ft	8'--2"
Number of Channels	3
Number of Banks per Channel	4
Racks/Modules Per Bank	1
Lamps per Module	16
Total Number of Lamps	192

EFFLUENT FLOOD PUMP STATION

Number of Pumps	4
Type	Axial Flow, Submersible
Unit Capacity, gpm	10,600
TDH, ft.	7.5 (10.5 future)
Unit Horsepower, hp	70
Speed, rpm	Variable

SLUDGE PROCESSING:

GRAVITY BELT THICKENERS

Number of Units	2
Effective Belt Width	2.0
Capacity, Each	700--1400 lb/hr
	200--385 gpm

GBT FEED PUMPS

Number of Pumps	2
Type	Screw--Centrifugal
Unit Capacity, gpm	240 gpm @ 22 TDH
Unit Horsepower, hp	5

THICKENED WASTE ACTIVATED SLUDGE PUMPS

Number of Pumps	3
Type	duplex piston pumps
Unit Horsepower, hp	15
Speed, rpm	variable

PRIMARY SLUDGE DIGESTION TANKS

Number	3
Diameter, ft.	75
Sidewall depth, ft.	26
Bottom slope, in./ft.	3
Volume per unit, cubic feet	114,900

SECONDARY SLUDGE DIGESTION TANK

Number	1
Diameter, ft.	70
Sidewall depth, ft.	13.75
Bottom slope, in./ft.	3
Cover Skirt Height, ft	9

DIGESTED SLUDGE RECIRCULATION PUMPS

Number of Pumps	3
Type	centrifugal (chopper)
Unit Capacity, gpm	360
Unit Horsepower, hp	15
Speed, rpm	constant

DIGESTED SLUDGE TRANSFER PUMPS

Number of Pumps	3
Type	progressing cavity
Unit Horsepower, hp	30
Speed, rpm	variable

DIGESTED SLUDGE HEAT EXCHANGERS

Number	3
Type	Tube in Tube
Sludge Recirculation Rate, gpm	360
Hot Water Recirculation Rate, gpm	300
Heating Capacity, MBTU/hr	1.5
Sludge Tube Size, in	6
Hot Water Tube Size, in	8

CENTRATE PUMP STATION

Number of Pumps	2
Type	Submersible
Unit Capacity, gpm	400
Unit Horsepower, hp	5
Speed, rpm	Variable

DIGESTER OVERFLOW PUMP STATION

Number of Pumps	2
Type	Submersible
Unit Capacity, gpm	400
Unit Horsepower, hp	5
Speed, rpm	Variable

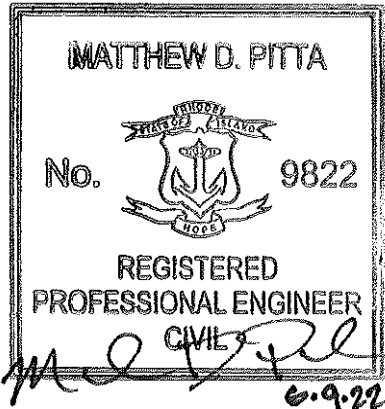
SIDESTREAM EQUALIZATION PUMP STATION

Number of Pumps	2
Type	Rotary Lobe
Unit Capacity, gpm	350
Unit Horsepower, hp	15
Speed, rpm	Variable

SIDESTREAM EQUALIZATION TANKS (FORMERLY GRAVITY THICKENERS)

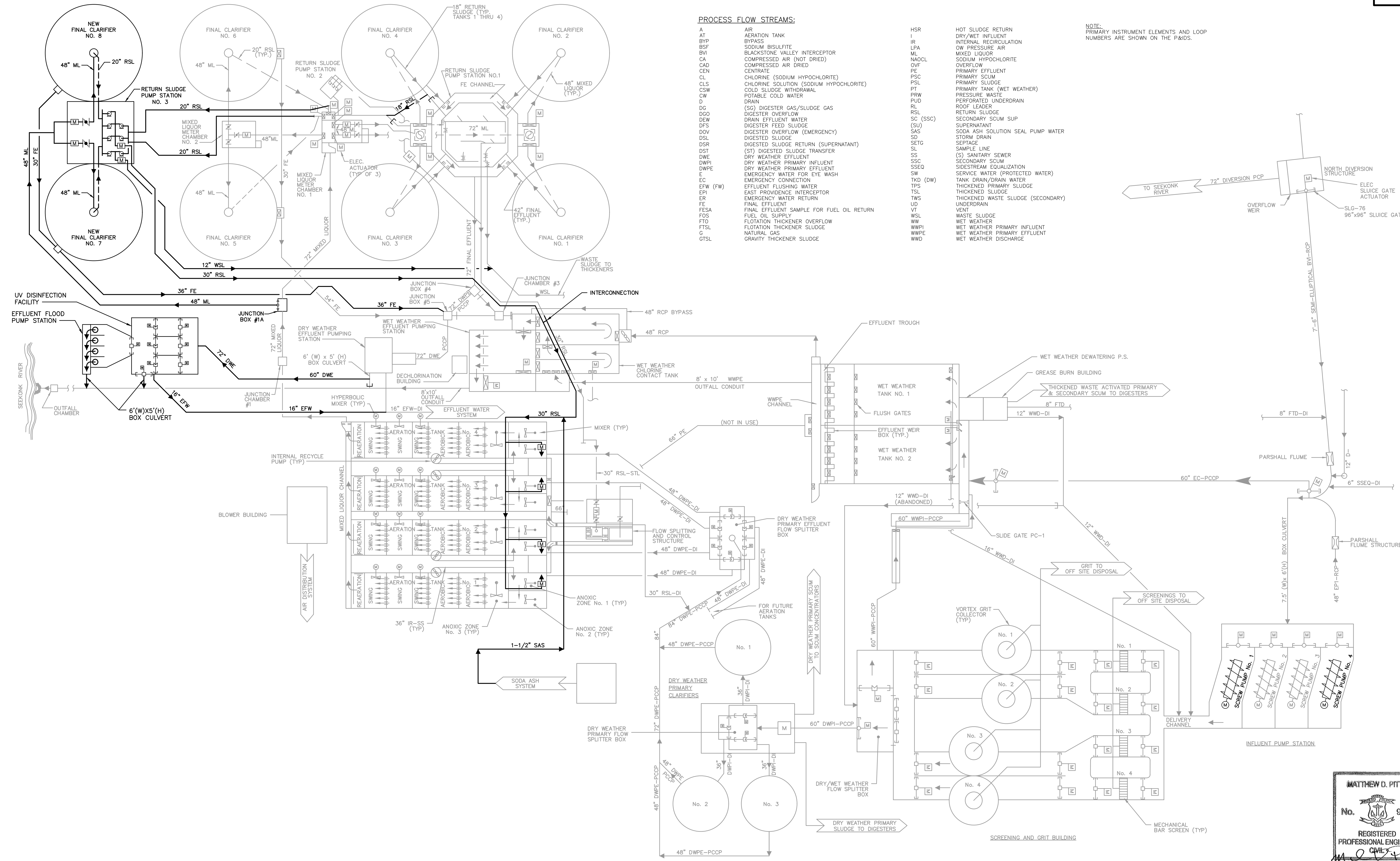
Number	2
Diameter, ft	46
High Water Depth, ft	10
Storage Volume per Unit, gallons	124,000

NEW OR MODIFIED BY THIS CONTRACT.



				SCALE	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED <u>M. PITTA</u>	FINAL DESIGN - JUNE 2022	CDM Smith 260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	Stantec	PARE	NBC CONTRACT NO 308.10C GENERAL DESIGN CRITERIA	SHEET G-2
REV	DATE	BY	DESCRIPTION	NONE		DRAWN <u>A. WELDON</u>							
						CHECKED <u>M. PITTA</u>							





PROCESS FLOW STREAMS:

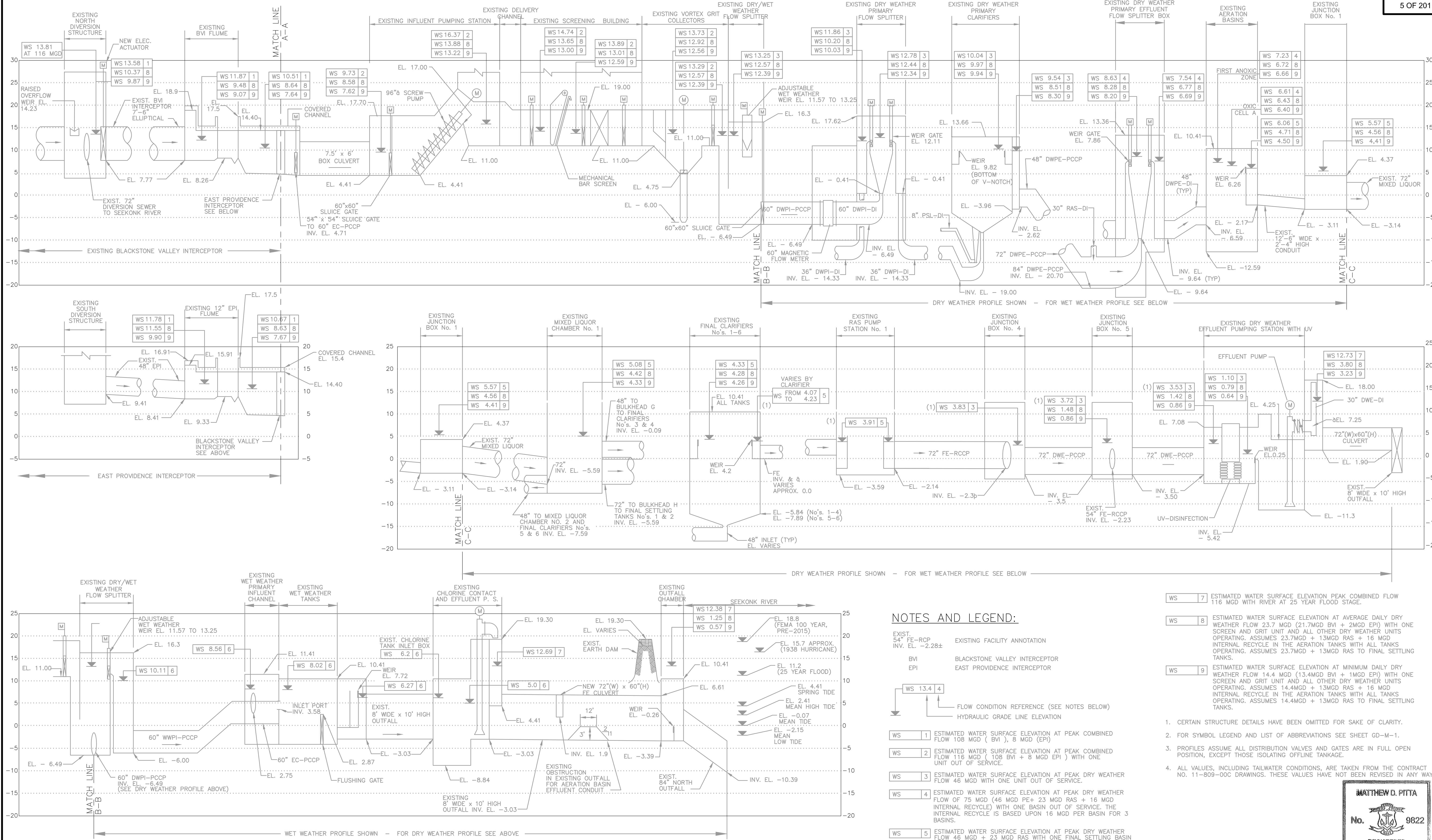
- |          |   |          |                                    |
|----------|---|----------|------------------------------------|
| AT       | AIR                                       | HSR      | HOT SLUDGE RETURN                  |
| BYP      | BYPASS                                    | I        | DRY/WET INFLUENT                   |
| BSF      | SODIUM BISULFITE                          | LPA      | INTERNAL RECIRCULATION             |
| BVI      | BLACKSTONE VALLEY INTERCEPTOR             | ML       | MIXED LIQUOR                       |
| CA       | COMPRESSED AIR (NOT DRIED)                | NAOCL    | SODIUM HYPOCHLORITE                |
| CAD      | COMPRESSED AIR DRIED                      | OVL      | OVERFLOW                           |
| CEN      | CENTRATE                                  | PE       | PRIMARY EFFLUENT                   |
| CL       | CHLORINE (SODIUM HYPOCHLORITE)            | PSC      | PRIMARY SCUM                       |
| CLS      | CHLORINE SOLUTION (SODIUM HYPOCHLORITE)   | PSL      | PRIMARY SLUDGE                     |
| CSD      | COLD SLUDGE WITHDRAWAL                    | PT       | PRIMARY TANK (WET WEATHER)         |
| CW       | POTABLE COLD WATER                        | PRW      | PRESSURE WASTE                     |
| D        | DRAIN                                     | PUD      | PERFORATED UNDERDRAIN              |
| DC       | (SC) DICESTER GAS/SLUDGE GAS              | RL       | ROOF LEADER                        |
| DO       | DIGESTER OVERFLOW                         | RSL      | RETURN SLUDGE                      |
| DEW      | DRAIN EFFLUENT WATER                      | SC (SSC) | SECONDARY SCUM SUP                 |
| DFS      | DIGESTER FEED SLUDGE                      | (SU)     | SUPERNATANT                        |
| DV       | DIGESTER OVERFLOW (EMERGENCY)             | SAS      | SODA ASH SOLUTION SEAL PUMP WATER  |
| DSL      | DIGESTED SLUDGE                           | SD       | STORM DRAIN                        |
| DSR      | DIGESTED SLUDGE RETURN (SUPERNATANT)      | SETG     | SEPTAGE                            |
| DST      | (ST) DIGESTED SLUDGE TRANSFER             | SL       | SAMPLE LINE                        |
| DWE      | DRY WEATHER EFFLUENT                      | SS       | (S) SANITARY SEWER                 |
| DWPI     | DRY WEATHER PRIMARY INFLUENT              | SSC      | SECONDARY SCUM                     |
| DWPE     | DRY WEATHER PRIMARY EFFLUENT              | SSEQ     | SIDESTREAM EQUALIZATION            |
| E        | EMERGENCY WATER FOR EYE WASH              | SW       | SERVICE WATER (PROTECTED WATER)    |
| EC       | EMERGENCY CONNECTION                      | TKD (DW) | TANK DRAIN/RAIN WATER              |
| EPW (FW) | EFFLUENT FLUSHING WATER                   | TPS      | THICKENED PRIMARY SLUDGE           |
| EPI      | EAST PROVIDENCE INTERCEPTOR               | TSL      | THICKENED SLUDGE                   |
| ER       | EMERGENCY WATER RETURN                    | TWS      | THICKENED WASTE SLUDGE (SECONDARY) |
| FE       | FINAL EFFLUENT                            | UD       | UNDERDRAIN                         |
| FESA     | FINAL EFFLUENT SAMPLE FOR FUEL OIL RETURN | VT       | VENT                               |
| FOS      | FUEL OIL SUPPLY                           | WSL      | WASTE SLUDGE                       |
| FTO      | FLOTATION THICKENER OVERFLOW              | WW       | WET WEATHER                        |
| FTSL     | FLOTATION THICKENER SLUDGE                | WWPI     | WET WEATHER PRIMARY INFLUENT       |
| G        | NATURAL GAS                               | WWPE     | WET WEATHER PRIMARY EFFLUENT       |
| GTSL     | GRAVITY THICKENER SLUDGE                  | WWD      | WET WEATHER DISCHARGE              |

NOTE:  
PRIMARY INSTRUMENT ELEMENTS AND LOOP  
NUMBERS ARE SHOWN ON THE P&IDs.

CDM Smith Project No: 93019-234214, NARRAGANSETT BAY COMMISSION, PHASE III COMBINED SEWER OVERFLOW PROGRAM  
File: G003PFDG.DWG; Saved by: WELDONAJ, 5/2/2022 4:37 PM

<div>SCALE</div> <div>AS NOTED</div>				<div>WARNING</div> <div>0 1/2 1</div> <div>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</div>	<div>DESIGNED R.MINER</div> <div>DRAWN A.WELDON</div> <div>CHECKED M.PITTA</div>	<div>FINAL DESIGN - JUNE 2022</div>	<div>CDM Smith</div> <div>260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</div>	<div>NARRAGANSETT BAY COMMISSION</div> <div>PHASE III COMBINED SEWER OVERFLOW PROGRAM</div>	<div>NBC CONTRACT NO 308.10C</div> <div>GENERAL</div> <div>MAIN LIQUID FLOW PROCESS FLOW DIAGRAM</div>	<div>SHEET</div> <div>G-3</div>
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HYDRAULIC PROFILES

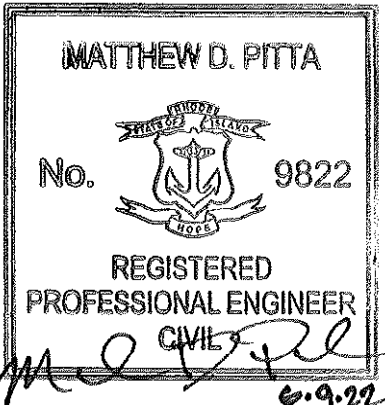
SCALES  
VERTICAL: 1" = 10'  
HORIZONTAL: NONE

NOTES AND LEGEND:

- EXIST. 54" FE-RCP INV. EL. -2.28±
- EXISTING FACILITY ANNOTATION
- BVI
- EPI
- BLACKSTONE VALLEY INTERCEPTOR
- EAST PROVIDENCE INTERCEPTOR
- WS 13.4 4
- FLOW CONDITION REFERENCE (SEE NOTES BELOW)
- HYDRAULIC GRADE LINE ELEVATION
- WS 1 1 ESTIMATED WATER SURFACE ELEVATION AT PEAK COMBINED FLOW 108 MGD ( BVI ), 8 MGD (EPI)
- WS 2 2 ESTIMATED WATER SURFACE ELEVATION AT PEAK COMBINED FLOW 116 MGD ( 108 BVI + 8 MGD EPI ) WITH ONE UNIT OUT OF SERVICE.
- WS 3 3 ESTIMATED WATER SURFACE ELEVATION AT PEAK DRY WEATHER FLOW 46 MGD WITH ONE UNIT OUT OF SERVICE.
- WS 4 4 ESTIMATED WATER SURFACE ELEVATION AT PEAK DRY WEATHER FLOW OF 75 MGD (46 MGD PE+ 23 MGD RAS + 16 MGD INTERNAL RECYCLE) WITH ONE BASIN OUT OF SERVICE. THE INTERNAL RECYCLE IS BASED UPON 16 MGD PER BASIN FOR 3 BASINS.
- WS 5 5 ESTIMATED WATER SURFACE ELEVATION AT PEAK DRY WEATHER FLOW 48 MGD + 23 MGD RAS WITH ONE FINAL SETTLING BASIN OUT OF SERVICE.
- WS 6 6 ESTIMATED WATER SURFACE ELEVATION AT PEAK WET WEATHER FLOW 70 MGD. ALL UNITS OPERATING.

- WS 7 7 ESTIMATED WATER SURFACE ELEVATION PEAK COMBINED FLOW 116 MGD WITH RIVER AT 25 YEAR FLOOD STAGE.
- WS 8 8 ESTIMATED WATER SURFACE ELEVATION AT AVERAGE DAILY DRY WEATHER FLOW 23.7 MGD (21.7MGD BVI + 2MGD EPI) WITH ONE SCREEN AND GRIT UNIT AND ALL OTHER DRY WEATHER UNITS OPERATING. ASSUMES 23.7MGD + 13MGD RAS + 16 MGD INTERNAL RECYCLE IN THE AERATION TANKS WITH ALL TANKS OPERATING. ASSUMES 23.7MGD + 13MGD RAS TO FINAL SETTLING TANKS.
- WS 9 9 ESTIMATED WATER SURFACE ELEVATION AT MINIMUM DAILY DRY WEATHER FLOW 14.4 MGD (13.4MGD BVI + 1MGD EPI) WITH ONE SCREEN AND GRIT UNIT AND ALL OTHER DRY WEATHER UNITS OPERATING. ASSUMES 14.4MGD + 13MGD RAS + 16 MGD INTERNAL RECYCLE IN THE AERATION TANKS WITH ALL TANKS OPERATING. ASSUMES 14.4MGD + 13MGD RAS TO FINAL SETTLING TANKS.

1. CERTAIN STRUCTURE DETAILS HAVE BEEN OMITTED FOR SAKE OF CLARITY.
2. FOR SYMBOL LEGEND AND LIST OF ABBREVIATIONS SEE SHEET GD-M-1.
3. PROFILES ASSUME ALL DISTRIBUTION VALVES AND GATES ARE IN FULL OPEN POSITION, EXCEPT THOSE ISOLATING OFFLINE TANKAGE.
4. ALL VALUES, INCLUDING TAILWATER CONDITIONS, ARE TAKEN FROM THE CONTRACT NO. 11-809-00C DRAWINGS. THESE VALUES HAVE NOT BEEN REVISED IN ANY WAY.



REV	DATE	BY	DESCRIPTION

SCALE	AS NOTED	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED <u>R.MINER</u> DRAWN <u>A.WELDON</u> CHECKED <u>M.PITTA</u>
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FINAL DESIGN - JUNE 2022



NARAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM



NBC CONTRACT NO 308.10C  
GENERAL


EXISTING HYDRAULIC PROFILE

SHEET

G-4





				SCALE	WARNING	DESIGNED_R MINER
					0 1/2 1	
						
				AS NOTED	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN __A WELDON
REV	DATE	BY	DESCRIPTION			CHECKED __M PITTA/M MOODY

SCALES  
VERTICAL: 1" = 10'  
HORIZONTAL: NONE

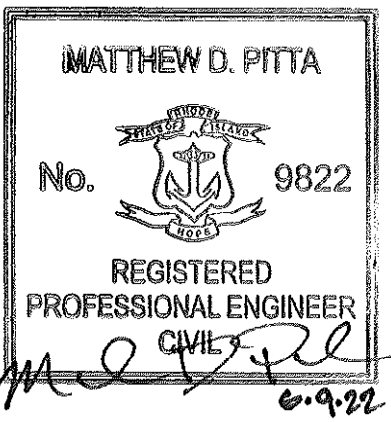


**Stantec** **PARE**

HYDRAULIC PROFILE MODIFICATIONS

SHEET

G-5





CIVIL/SITE LEGEND – EXISTING FEATURES

SYMBOL	DESCRIPTION
	CORRUGATED METAL PIPE
	FORCE MAIN
	GROUND ELEVATION
	INVERT ELEVATION
	NO PIPE VISIBLE
	PLANT WATER
	POLYVINYL CHLORIDE PIPE
	RIM ELEVATION
	POTABLE WATER
	CATCH BASIN
	DRAIN MANHOLE
	SEWER MANHOLE
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	MISCELLANEOUS MANHOLE
	UTILITY POLE
	OVERHEAD WIRE
	UNKNOWN PIPE OR DUCT DESTINATION
	WATER GATE
	YARD HYDRANT
	LIGHT POLE
	ELECTRIC EQUIPMENT
	GUY WIRE
	CHAIN LINK FENCE
	BUILDING
	TREELINE
	EDGE OF WATER
	INDEX CONTOUR
	INTERMEDIATE CONTOUR
	CONTROL POINTS
	SPOT ELEVATION
	RAILROAD TRACKS
	BOLLARD
	STABILIZED CONSTRUCTION ENTRANCE
	REMOVE AND DISPOSE OF EXISTING BITUMINOUS CONCRETE PAVEMENT AND REPLACED WITH FULL DEPTH BITUMINOUS CONCRETE PAVEMENT

PIPE MATERIALS:

CI	CAST IRON
DI	DUCTILE IRON
CU	COPPER
CPVC	CHLORINATED POLYVINYLCHLORIDE
FRP	FIBERGLASS REINFORCED PLASTIC PIPE
GALVS	GALVANIZED STEEL PIPE
HDPE	HIGH DENSITY POLYETHYLENE
PVCS	POLYVINYL CHLORIDE SEWER PIPE
PVC	POLYVINYL CHLORIDE PRESSURE PIPE
PVCP	PERFORATED POLYVINYL CHLORIDE PIPE
POLYP	POLYPROPYLENE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
RCP	REINFORCED CONCRETE PIPE
SS	STAINLESS STEEL
STL	BLACK STEEL PIPE OR CARBON STEEL PIPE

SYMBOL DESCRIPTION

	TOP CURB ELEVATION
	BOTTOM CURB ELEVATION
	EVERGREEN TREE
	DECIDUOUS TREE
	WETLAND FLAG
	LIMIT OF 50 FT. BUFFER
	TOWN LINE
	EASEMENT LINE
	PROPERTY LINE
	TEST PIT

CIVIL/SITE LEGEND – NEW FEATURES

SYMBOL	DESCRIPTION
	SECTION SYMBOLS
	PIPELINE, GREATER THAN 16" DIA
	PIPELINE, 16" DIA OR LESS
	SPOT ELEVATION
	INDEX CONTOUR
	INTERMEDIATE CONTOUR
	PIPELINE STATIONING
	STEEL BEAM GUARDRAIL
	BITUMINOUS CONCRETE PAVEMENT
	CONCRETE PAVEMENT
	RIP RAP
	LOAM AND SEED
	STRAW WATTLE
	GATE VALVE
	YARD HYDRANT
	TEST PIT LOCATION

EROSION AND SEDIMENTATION CONTROL NOTES:

- ALL WORK SHALL CONFORM TO RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT GUIDELINES FOR EROSION AND SEDIMENTATION CONTROL, LATEST VERSION.
- THE CONTRACTOR SHALL PREPARE AN EROSION CONTROL PLAN FOR APPROVAL BY THE ENGINEER TO PROTECT THE SITE FROM EROSION AND PREVENT THE MOVEMENT OF SEDIMENT AND DEBRIS INTO THE DRAINAGE HOLDING BASINS AND SEEKONK RIVER.
- INSPECT SEDIMENT AND EROSION CONTROL MEASURES AFTER EACH STORM EVENT AND REPAIR EROSION DAMAGE AS NECESSARY. MAINTENANCE INCLUDES CLEANING AND/OR REPLACEMENT OF SYSTEMS THAT ARE NO LONGER FUNCTIONAL AS DETERMINED BY THE ENGINEER.
- SCHEDULES FOR GRADING AND TOPSOILING AND SEEDING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO START OF WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVE AND DISPOSE OF ALL EROSION CONTROL STRUCTURES UPON COMPLETION OF ALL WORK AND SOIL STABILIZATION AS DIRECTED BY THE ENGINEER AND IN ACCORDANCE WITH THE ORDER OF CONDITIONS.

PROCESS FLOW STREAMS:

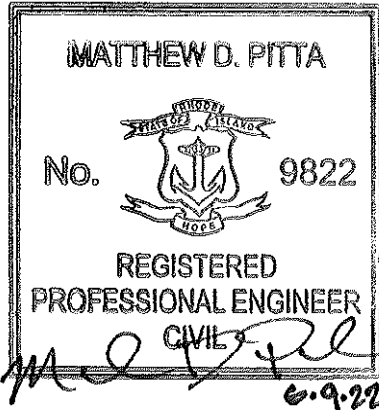
A	AIR
AT	AERATION TANK
BYP	BYPASS
BSF	SODIUM BISULFITE
BVI	BLACKSTONE VALLEY INTERCEPTOR
CA	COMPRESSED AIR (NOT DRIED)
CAD	COMPRESSED AIR DRIED
CEN	CENTRATE
CL	CHLORINE (SODIUM HYPOCHLORITE)
CLS	CHLORINE SOLUTION (SODIUM HYPOCHLORITE)
CSW	COLD SLUDGE WITHDRAWAL
CW	POTABLE COLD WATER
DR	DRAIN
DG	(SG) DIGESTER GAS/SLUDGE GAS
DGO	DIGESTER OVERFLOW
DEW	DRAIN EFFLUENT WATER
DFS	DIGESTER FEED SLUDGE
DOV	DIGESTER OVERFLOW (EMERGENCY)
DSL	DIGESTED SLUDGE
DSR	DIGESTED SLUDGE RETURN (SUPERNATANT)
DST	(ST) DIGESTED SLUDGE TRANSFER
DWE	DRY WEATHER EFFLUENT
DWPI	DRY WEATHER PRIMARY INFLUENT
DWPE	DRY WEATHER PRIMARY EFFLUENT
E	EMERGENCY WATER FOR EYE WASH
EC	EMERGENCY CONNECTION
EFW (FW)	EFFLUENT FLUSHING WATER
EPI	EAST PROVIDENCE INTERCEPTOR
ER	EMERGENCY WATER RETURN
FE	FINAL EFFLUENT
FESA	FINAL EFFLUENT SAMPLE FOR FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FTO	FLOTATION THICKENER OVERFLOW
FTSL	FLOTATION THICKENER SLUDGE
G	NATURAL GAS
GTSL	GRAVITY THICKENER SLUDGE
HSR	HOT SLUDGE RETURN
I	DRY/WET INFLUENT
IR	INTERNAL RECIRCULATION
LPA	OW PRESSURE AIR
ML	MIXED LIQUOR
NAOCL	SODIUM HYPOCHLORITE
OVF	OVERFLOW
PE	PRIMARY EFFLUENT
PSC	PRIMARY SCUM
PSL	PRIMARY SLUDGE
PT	PRIMARY TANK (WET WEATHER)
PRW	PRESSURE WASTE
PUD	PERFORATED UNDERDRAIN
RL	ROOF LEADER
RSL	RETURN SLUDGE
SC (SSC)	SECONDARY SCUM
(SU)	SUPERNATANT
SAS	SODA ASH SOLUTION
SD	STORM DRAIN
SETG	SEPTAGE
SL	SAMPLE LINE
SS	(S) SANITARY SEWER
SSC	SECONDARY SCUM
SSEQ	SIDESTREAM EQUALIZATION
SW	SERVICE WATER (PROTECTED WATER)
TKD (DW)	TANK DRAIN/DRAIN WATER
TPS	THICKENED PRIMARY SLUDGE
TSL	THICKENED SLUDGE
TWS	THICKENED WASTE SLUDGE (SECONDARY)
UD	UNDERDRAIN
VT	VENT
WSL	WASTE SLUDGE
WW	WET WEATHER
WWPI	WET WEATHER PRIMARY INFLUENT
WWPE	WET WEATHER PRIMARY EFFLUENT
WWD	WET WEATHER DISCHARGE

GENERAL NOTES

- THE EXISTING SITE CONDITIONS SHOWN ARE BASED ON THE FOLLOWING:  
–SURVEY BY GREEN INTERNATIONAL AFFILIATES, INC. DATED NOVEMBER 2019, WITHIN LIMITS INDICATED. ACTUAL FACILITIES, PHYSICAL FEATURES, AND TOPOGRAPHY OUTSIDE OF THE LIMITS OF THIS SURVEY MAY BE DIFFERENT THAN SHOWN BASED ON IMPROVEMENTS UNDERTAKEN AFTER MARCH 2010.  
–SURVEY BY AERO TECH CORPORATION DATED MARCH 2010.  
–HISTORICAL DESIGN AND RECORD DRAWINGS PROVIDED BY THE NARRAGANSETT BAY COMMISSION IN 2019 AND 2020.
- COORDINATE SYSTEM IS BASED ON A HORIZONTAL DATUM, RISPCS (RHODE ISLAND STATE PLANE COORDINATE SYSTEM), NAD, 1983.
- ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929. PLEASE NOTE THAT CITY OF PAWTUCKET DATUM IS 97.59 FEET LOWER THAN NGVD. ELEVATIONS FOR THE TWO DATUMS ARE RELATED AS FOLLOWS: EL NGVD DATUM = EL CITY OF PAWTUCKET DATUM MINUS 97.59. EL CITY OF PAWTUCKET DATUM = EL NGVD DATUM PLUS 97.59.
- 100–YEAR BASE FLOOD ELEVATION AT EL. 14.0 (NAVD88) = 14.81 NGVD29 AS SHOWN ON PROVIDENCE COUNTY, RHODE ISLAND, 44007C0326J, EFFECTIVE OCTOBER 2, 2015.
- TEST BORINGS AND TEST PITS WERE DRILLED BETWEEN 1948 AND 2019. TEST BORING LOGS ARE INCLUDED IN APPENDIX B OF THE SPECIFICATIONS. BORING LOCATIONS ARE SHOWN ON DRAWING C–3.
- RECORD DRAWINGS OF PRIOR CONSTRUCTION CONTRACTS ARE AVAILABLE FOR REVIEW AT THE BUCKLIN POINT WWTF ADMINISTRATION BUILDING.
- EXISTING YARD PIPING SHOWN IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL UNDERGROUND UTILITIES IMPACTING WORK.
- ALL AREAS OUTSIDE THE LIMIT OF DISTURBANCE SHALL BE PROTECTED AT ALL TIMES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL MATERIALS TO BE REMOVED WITHIN THE LIMIT OF DISTURBANCE SHALL BE REMOVED TO A LOCATION ARRANGED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE LOCATION OF STOCKPILED TOPSOIL SHALL BE IN AREAS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL COORDINATE WORK TO ENSURE CONTINUED ACCESS TO ALL EXISTING FACILITY STRUCTURES. SEE SPECIFICATION SECTION 01810 FOR ADDITIONAL INFORMATION.
- RECYCLE OR REMOVE AND DISPOSE OF EXISTING PAVEMENT WITHIN LIMITS SHOWN ON DRAWINGS TAKING CARE NOT TO DAMAGE EXISTING WALLS, BUILDINGS OR UTILITY STRUCTURES.
- PROTECT EXISTING LARGE SHADE TREES LOCATED ALONG THE ACCESS DRIVE TO THE PRIMARY DIGESTERS FROM CONSTRUCTION ACTIVITIES. IF TREES IMPEDE CONSTRUCTION IN ANY MANNER INFORM THE ENGINEER IMMEDIATELY.
- STRIP EXISTING VEGETATION UNLESS OTHERWISE SHOWN TO BE PROTECTED AND REMOVE AND STOCKPILE TOP 6" SOIL SURFACE WITHIN LIMIT OF DISTURBANCE. REMOVE STUMPS AND BACKFILL IN COMPACTED LAYERS AS SHOWN IN THE DRAWINGS AND AS SPECIFIED.
- CONTRACTOR SHALL STOCKPILE STRIPPED TOPSOIL IN A MANNER APPROVED BY THE ENGINEER.
- STAGING AREAS SHOWN ARE A GUIDE ONLY. FINAL STAGING AREAS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER. ALL AREAS USED FOR STORAGE SHALL BE RETURNED TO PREVIOUS CONDITION OR BETTER UPON PROJECT COMPLETION.

LAYOUT GENERAL NOTES:

- CONTRACTOR SHALL VERIFY ALL PROPERTY AND SURVEY INFORMATION.
- CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY AND PROTECT ALL ON–SITE STRUCTURES IDENTIFIED ON THE PLANS TO BE RETAINED ON THE SITE THROUGHOUT THE CONSTRUCTION PROJECT.
- EXISTING MONUMENTS SHALL BE FLAGGED AND PROTECTED THROUGHOUT THE CONSTRUCTION CONTRACT UNLESS OTHERWISE APPROVED BY THE ENGINEER. DAMAGED OR MISSING MONUMENTS SHALL BE REPLACED AT THE CONTRACTOR’S EXPENSE.
- IF REQUIRED CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION FENCE AT THE DIRECTION OF THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY THROUGHOUT THE DURATION OF THE CONTRACT.
- CONTRACTOR SHALL MAINTAIN OPERATIONS AND ACCESS TO THE TREATMENT PLANT IN ACCORDANCE WITH SPECIFICATION SECTION 01810.
- WHERE COORDINATES ARE NOT PROVIDED FOR ROADWAY CONSTRUCTION, NEW ROAD CENTERLINES ALIGNMENT SHALL FOLLOW CENTERLINE OF EXISTING ROADWAY.
- LOCATIONS OF VAULTS AND CONCRETE PADS ARE APPROXIMATE ONLY. FINAL LOCATIONS SHALL BE DETERMINED IN THE FIELD AFTER STAKING BY THE CONTRACTOR BASED ON ACTUAL SITE CONDITIONS AS APPROVED BY THE ENGINEER.
- ALL DISTURBED AREAS NOT COVERED WITH PAVEMENT OR STRUCTURES SHALL RECEIVE 6" LOAM AND SEED AS SPECIFIED.
- ALL BUILDING DIMENSIONS ARE TO CENTER OF COLUMN. IN THE CASE OF STRUCTURES WITHOUT COLUMNS, DIMENSIONS ARE TO FACE OF WALL. ALL DIMENSIONS FOR TANKS ARE TO CENTER OF TANK. ALL DIMENSIONS TO CONCRETE PADS ARE TO EDGE OF PAD.
- ALL ITEMS TO BE REMOVED SHALL BE DISPOSED OFF SITE IN A LEGAL MANNER.
- ITEMS SLATED FOR RE–USE SHALL BE STORED IN A CLEAN, DRY PLACE, PRIOR TO RELOCATION ON SITE.



				SCALE	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED <u>S.FUSCO</u>	FINAL DESIGN - JUNE 2022	 260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360		NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM			NBC CONTRACT NO 308.10C CIVIL	SHEET  C-1
REV	DATE	BY	DESCRIPTION			CHECKED <u>M.PITTA</u>								



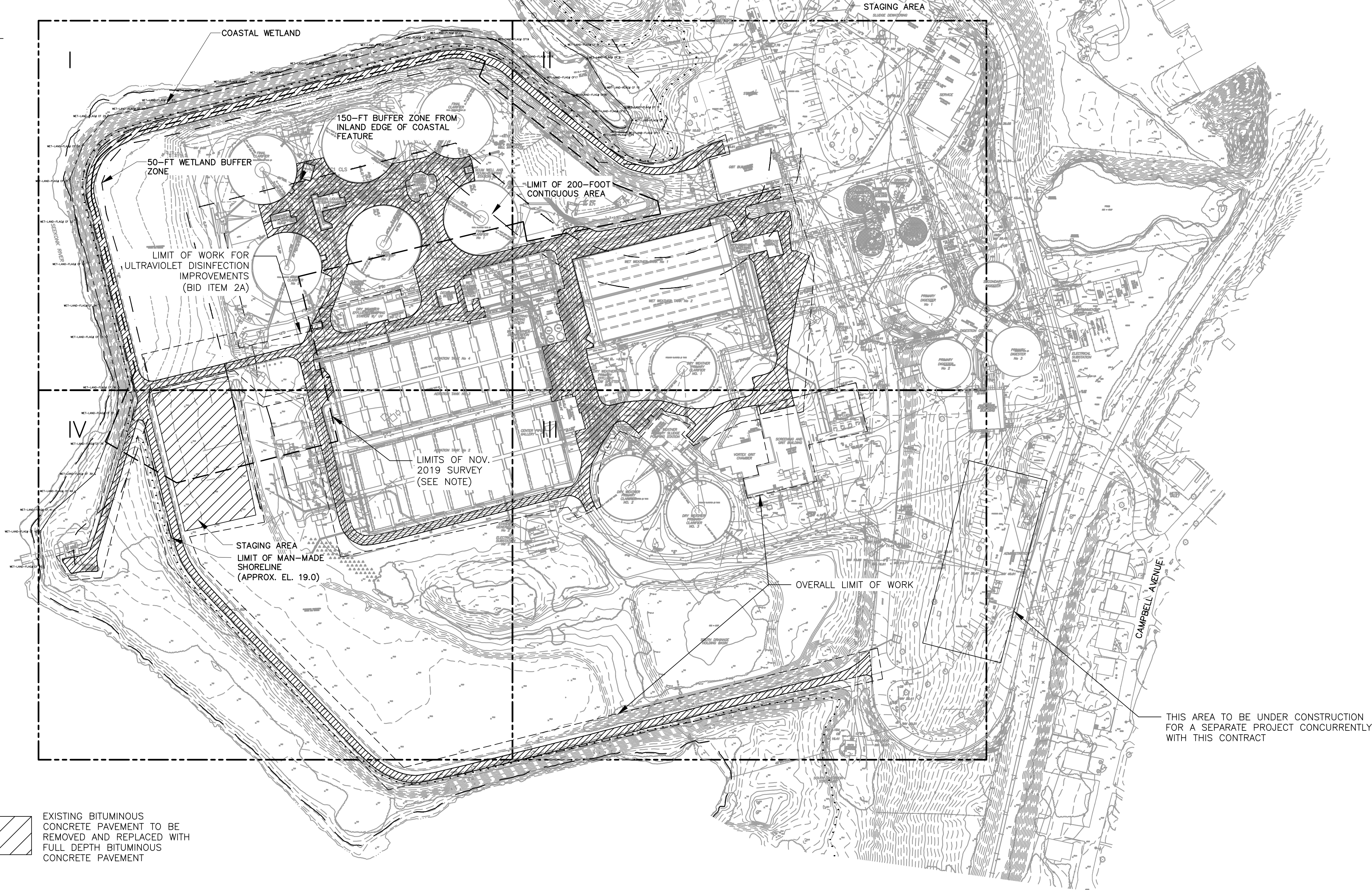
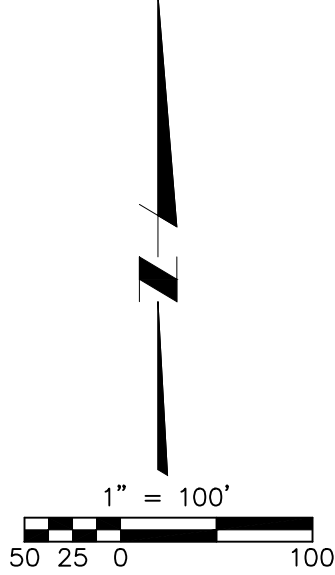
BENCHMARKS

BENCHMARK	LOCATION	ELEVATION	NORTHING	EASTING
N.B.C.027	OUTSIDE PLANT ON VAULT	62.09	279676.84	364876.45
N.B.C.044	SE CORNER AERATION TANKS	10.32	279707.26	363931.76
N.B.C.045	SW CORNER MLMC NO. 2	10.06	280112.57	363453.27

NOTE:

THE EXISTING CONDITIONS SHOWN ARE BASED ON THE FOLLOWING:

1. SURVEY BY GREEN INTERNATIONAL AFFILIATES, INC. DATED NOVEMBER 2019, WITHIN LIMITS INDICATED. ACTUAL FACILITIES, PHYSICAL FEATURES, AND TOPOGRAPHY OUTSIDE OF THE LIMITS OF THIS SURVEY MAY BE DIFFERENT THAN SHOWN BASED ON IMPROVEMENTS UNDERTAKEN AFTER MARCH 2010.
2. SURVEY BY AERO TECH CORPORATION DATED MARCH 2010.
3. HISTORICAL DESIGN AND RECORD DRAWINGS PROVIDED BY THE NARRAGANSETT BAY COMMISSION IN 2019 AND 2020.



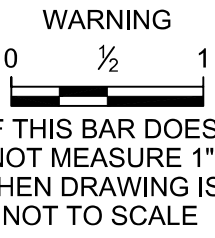
EXISTING BITUMINOUS  
CONCRETE PAVEMENT TO BE  
REMOVED AND REPLACED WITH  
FULL DEPTH BITUMINOUS  
CONCRETE PAVEMENT

ELEVATIONS ARE IN FEET AND ARE  
REFERENCED TO NGVD 1929

REV	DATE	BY	DESCRIPTION

SCALE

1" = 100'



DESIGNED S.FUSCO  
DRAWN S.FUSCO  
CHECKED M.PITTA

FINAL DESIGN - JUNE 2022

**CDM  
Smith**  
260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM

NBC CONTRACT NO 308.10C  
CIVIL  
OVERALL SITE ORIENTATION PLAN

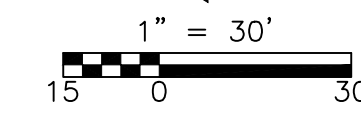
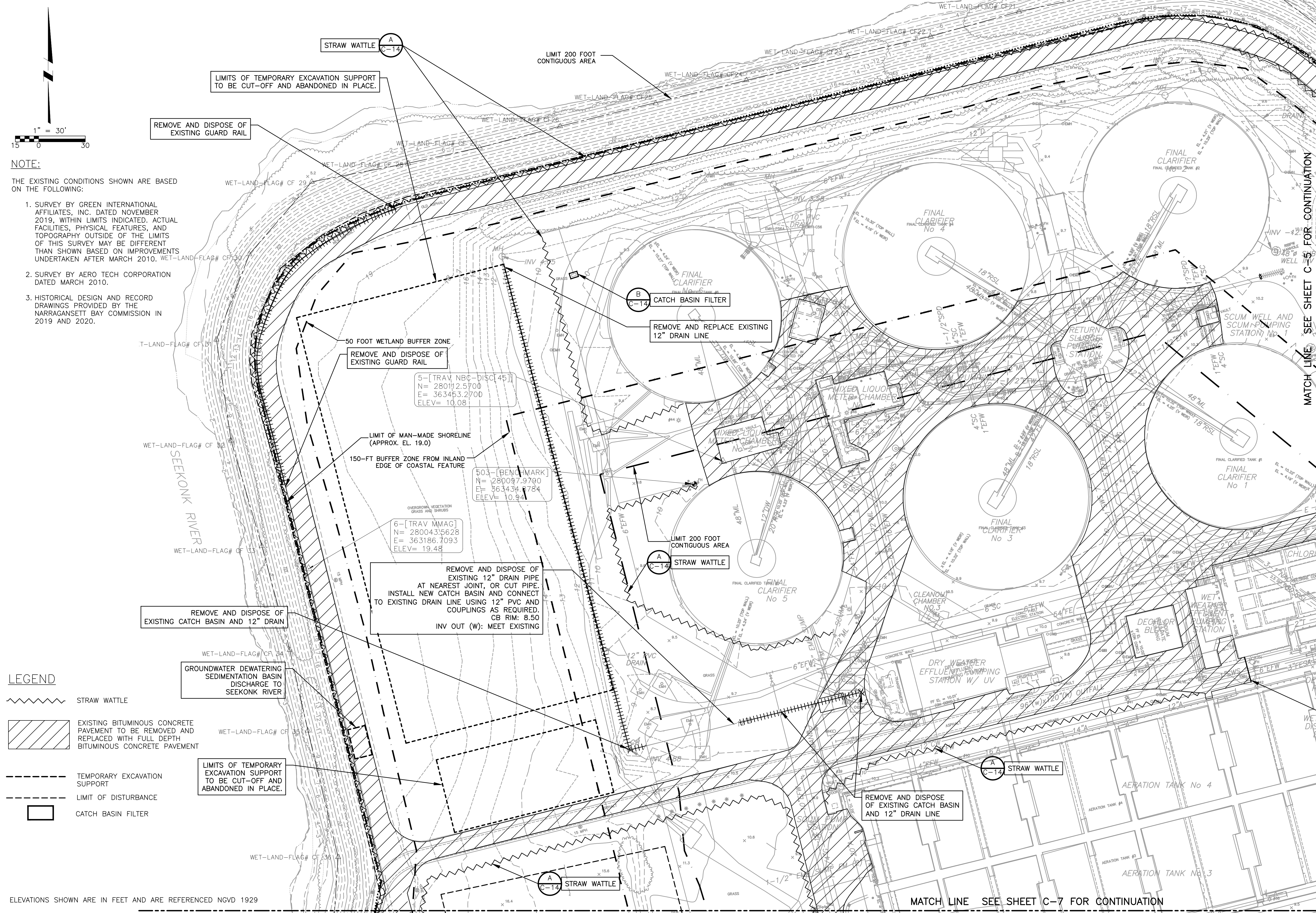
MATTHEW D. PITTA  
No. 9822  
REGISTERED  
PROFESSIONAL ENGINEER  
CIVIL  
*M. D. Pitta*  
6.9.22

SHEET  
C-2









- NOTE:
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1. SURVEY BY GREEN INTERNATIONAL AFFILIATES, INC. DATED NOVEMBER 2019, WITHIN LIMITS INDICATED. ACTUAL FACILITIES, PHYSICAL FEATURES, AND TOPOGRAPHY OUTSIDE OF THE LIMITS OF THIS SURVEY MAY BE DIFFERENT THAN SHOWN BASED ON IMPROVEMENTS UNDERTAKEN AFTER MARCH 2010. WET-LAND-FLAG# CF 29
  2. SURVEY BY AERO TECH CORPORATION DATED MARCH 2010.
  3. HISTORICAL DESIGN AND RECORD DRAWINGS PROVIDED BY THE NARRAGANSETT BAY COMMISSION IN 2019 AND 2020.

- LEGEND
- STRAW WATTLE
  - EXISTING BITUMINOUS CONCRETE PAVEMENT TO BE REMOVED AND REPLACED WITH FULL DEPTH BITUMINOUS CONCRETE PAVEMENT
  - TEMPORARY EXCAVATION SUPPORT
  - LIMIT OF DISTURBANCE
  - CATCH BASIN FILTER

ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED NGVD 1929

REV	DATE	BY	DESCRIPTION

SCALE	WARNING
1" = 30'	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
DESIGNED <u>S.FUSCO</u>	DRAWN <u>S.FUSCO</u>
CHECKED <u>M.PITTA</u>	

FINAL DESIGN - JUNE 2022

**CDM Smith**

260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER OVERFLOW PROGRAM

**Stantec**

**PARE**

NBC CONTRACT NO 308.10C  
CIVIL

EXISTING CONDITIONS & REMOVALS PLAN I

SHEET

C-4

MATTHEW D. PITTA

No. 9822

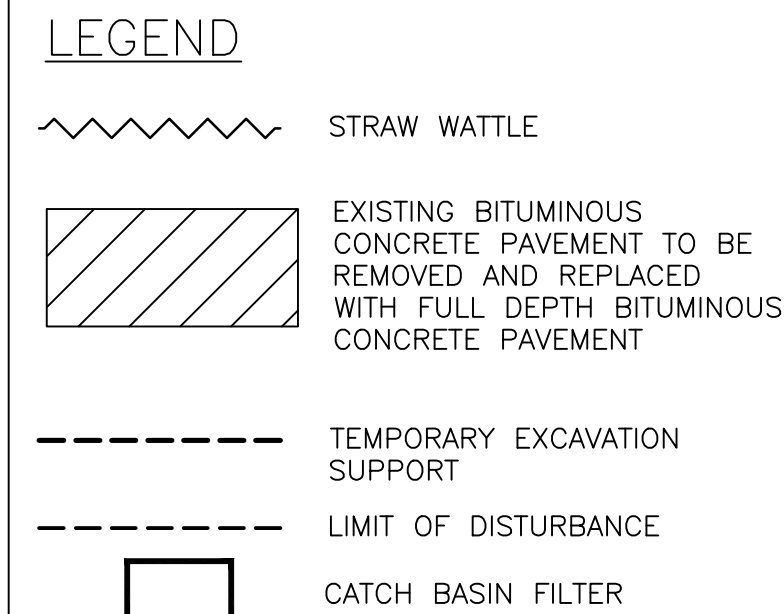
REGISTERED PROFESSIONAL ENGINEER

CIVIL

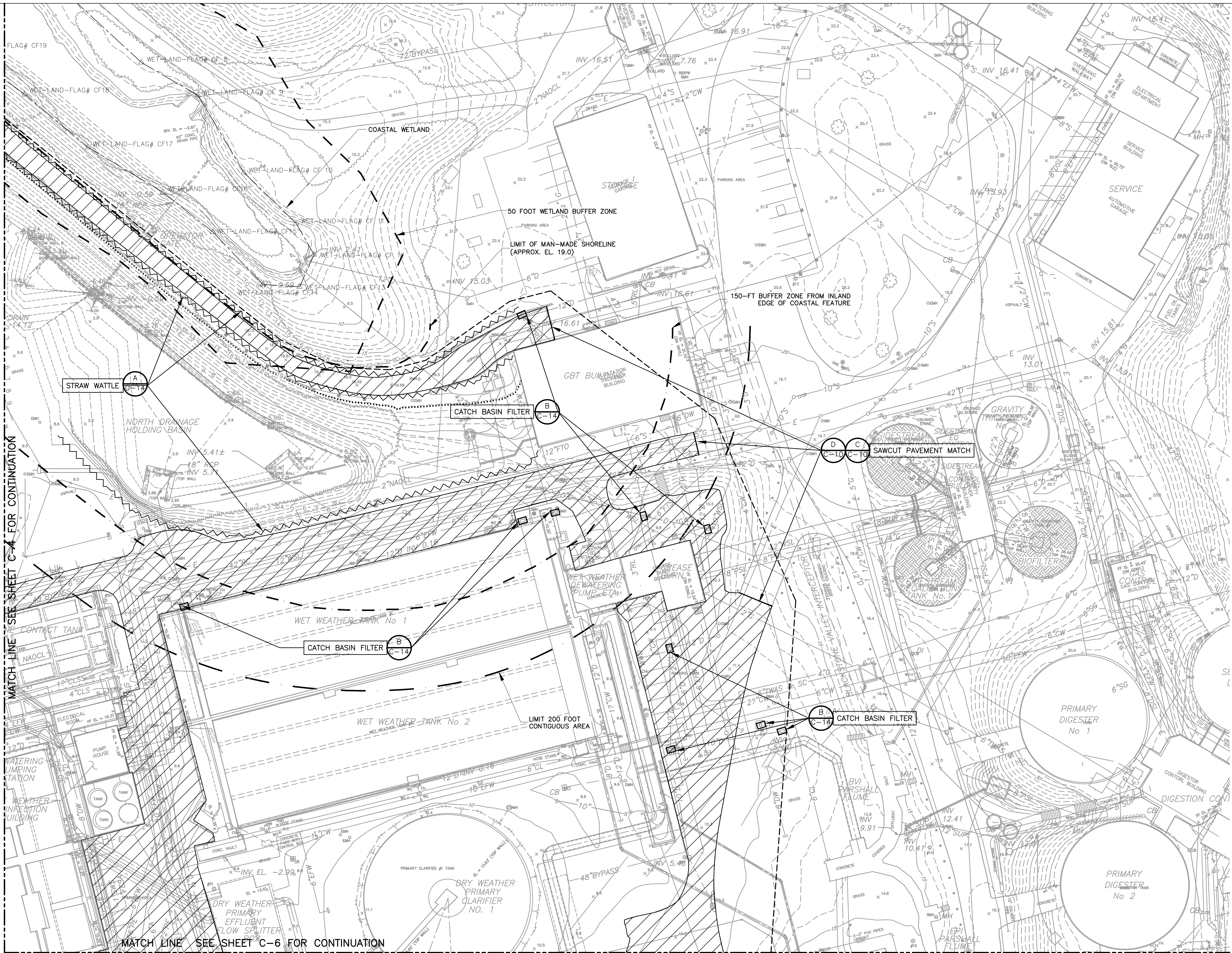
6.9.22




1. SURVEY BY GREEN INTERNATIONAL AFFILIATES, INC. DATED NOVEMBER 2019, WITHIN LIMITS INDICATED. ACTUAL FACILITIES, PHYSICAL FEATURES, AND TOPOGRAPHY OUTSIDE OF THE LIMITS OF THIS SURVEY MAY BE DIFFERENT THAN SHOWN BASED ON IMPROVEMENTS UNDERTAKEN AFTER MARCH 2010.
2. SURVEY BY AERO TECH CORPORATION DATED MARCH 2010.
3. HISTORICAL DESIGN AND RECORD DRAWINGS PROVIDED BY THE NARRAGANSETT BAY COMMISSION IN 2019 AND 2020.



ELEVATIONS SHOWN ARE IN FEET  
AND ARE REFERENCED NGVD 1929



MATTHEW D. PITTA

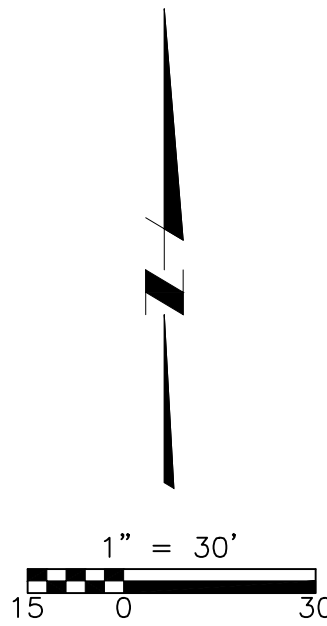
No.  9822

REGISTERED  
PROFESSIONAL ENGINEER  
CIVIL

*MADEIRA* *6-9-22*

				SCALE	<div>WARNING</div> <div><div>01/21</div></div> <div>DESIGNED <u>S.FUSCO</u></div>	FINAL DESIGN - JUNE 2022		<div>CDMSmith</div> <div>260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</div>	<div><div></div><div>NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM</div><div><div></div><div></div></div></div>	<div>NBC CONTRACT NO 308.10C CIVIL</div> <div>EXISTING CONDITIONS &amp; REMOVALS PLAN II</div>	SHEET
				1" = 30'	<div>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</div> <div>DRAWN <u>S.FUSCO</u></div>	C-5					
					<div>CHECKED <u>M.PITTA</u></div>						
REV	DATE	BY	DESCRIPTION								





- NOTE:
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  2. SURVEY BY AERO TECH CORPORATION DATED MARCH 2010.
  3. HISTORICAL DESIGN AND RECORD DRAWINGS PROVIDED BY THE NARRAGANSETT BAY COMMISSION IN 2019 AND 2020.

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- STRAW WATTLE
  - EXISTING BITUMINOUS CONCRETE PAVEMENT TO BE REMOVED AND REPLACED WITH FULL DEPTH BITUMINOUS CONCRETE PAVEMENT
  - TEMPORARY EXCAVATION SUPPORT
  - LIMIT OF DISTURBANCE
  - CATCH BASIN FILTER

ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED NGVD 1929

REV	DATE	BY	DESCRIPTION

SCALE  
1" = 30'

WARNING  
0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S.FUSCO  
DRAWN S.FUSCO  
CHECKED M.PITTA

FINAL DESIGN - JUNE 2022

**CDM Smith**  
260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM



NBC CONTRACT NO 308.10C  
CIVIL

EXISTING CONDITIONS & REMOVALS PLAN III

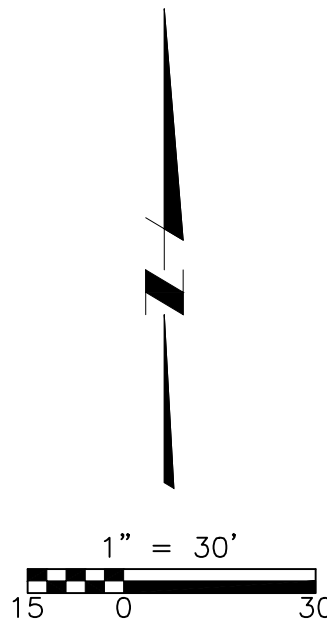
SHEET  
C-6

MATTHEW D. PITTA  
No. 9822  
REGISTERED  
PROFESSIONAL ENGINEER  
CIVIL  
6.9.22





CDM Smith ProjectWise Project No: 93019-234214, NARRAGANSETT BAY COMMISSION, PHASE III COMBINED SEWER OVERFLOW PROGRAM  
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NOTE:

THE EXISTING CONDITIONS SHOWN ARE BASED ON THE FOLLOWING:

1. SURVEY BY GREEN INTERNATIONAL AFFILIATES, INC. DATED NOVEMBER 2019, WITHIN LIMITS INDICATED. ACTUAL FACILITIES, PHYSICAL FEATURES, AND TOPOGRAPHY OUTSIDE OF THE LIMITS OF THIS SURVEY MAY BE DIFFERENT THAN SHOWN BASED ON IMPROVEMENTS UNDERTAKEN AFTER MARCH 2010.
2. SURVEY BY AERO TECH CORPORATION DATED MARCH 2010.
3. HISTORICAL DESIGN AND RECORD DRAWINGS PROVIDED BY THE NARRAGANSETT BAY COMMISSION IN 2019 AND 2020.

LEGEND

- STRAW WATTLE
- EXISTING BITUMINOUS CONCRETE PAVEMENT TO BE REMOVED AND REPLACED WITH FULL DEPTH BITUMINOUS CONCRETE PAVEMENT
- TEMPORARY EXCAVATION SUPPORT
- LIMIT OF DISTURBANCE
- CATCH BASIN FILTER

ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED NGVD 1929

REV	DATE	BY	DESCRIPTION

SCALE  
  
1" = 30'

WARNING  
  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED S.FUSCO  
DRAWN S.FUSCO  
CHECKED M.PITTA

FINAL DESIGN - JUNE 2022

**CDM Smith**  
260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360

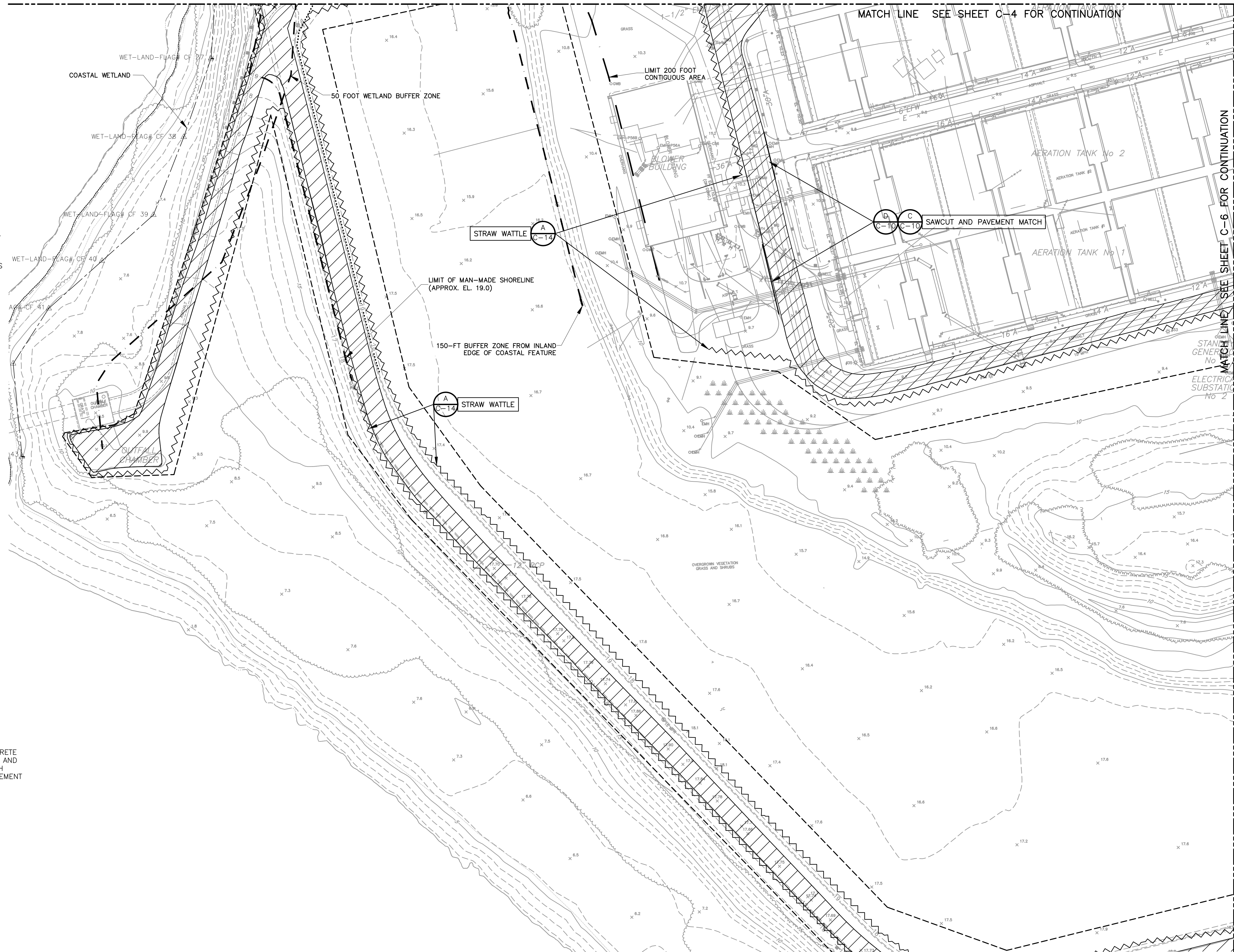
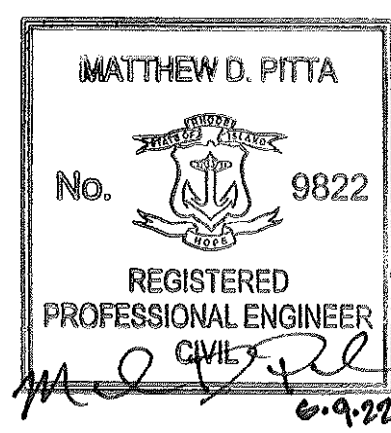


NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM

NBC CONTRACT NO 308.10C  
CIVIL

EXISTING CONDITIONS & REMOVALS PLAN IV

SHEET  
  
C-7

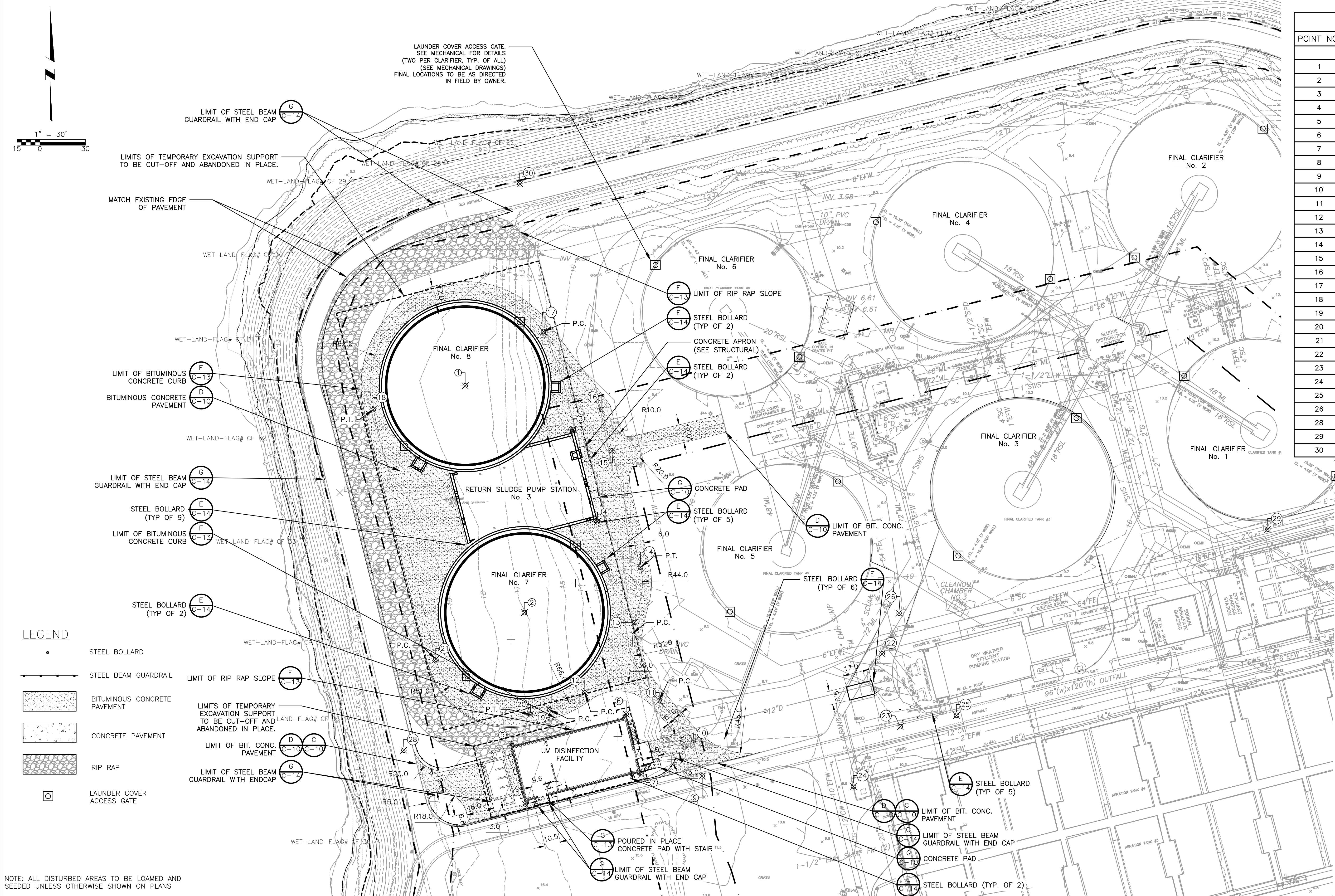


MATCH LINE SEE SHEET C-4 FOR CONTINUATION

MATCH LINE SEE SHEET C-6 FOR CONTINUATION



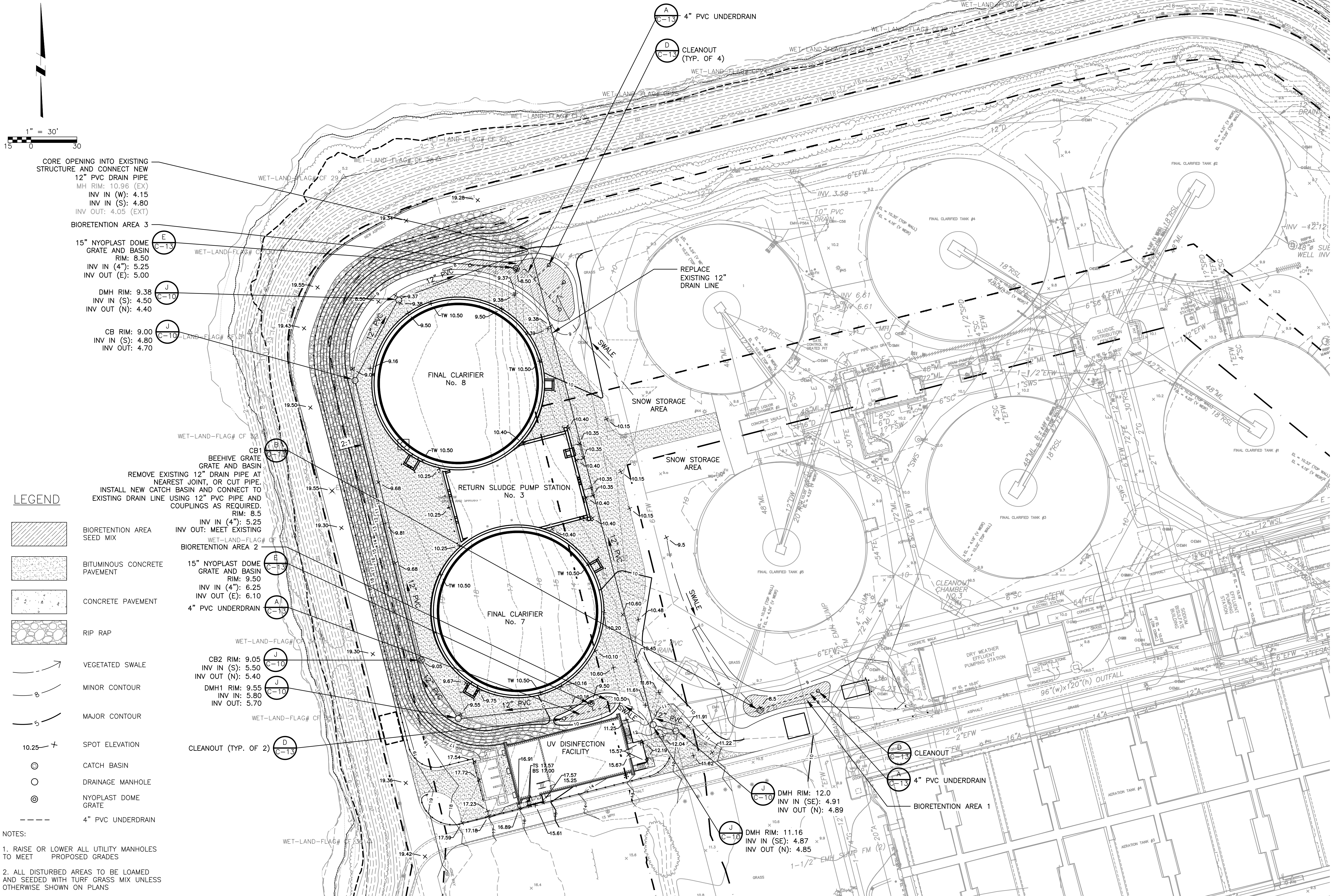
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POINT NO.	NORTHING	EASTING
1	280157.43	363263.51
2	280008.41	363302.36
3	280128.72	363334.54
4	280068.14	363350.33
5	279922.33	363292.98
6	279941.73	363369.28
7	279901.81	363379.34
8	279882.58	363302.99
9	279901.04	363419.28
10	279924.66	363413.49
11	279950.59	363390.93
12	279955.71	363342.09
13	280001.99	363374.94
14	280038.24	363378.71
15	280114.75	363359.95
16	280141.85	363353.30
17	280193.09	363314.82
18	280141.69	363203.02
19	279944.55	363319.01
20	279941.27	363306.43
21	279977.78	363244.21
22	279981.33	363537.47
23	279933.45	363549.40
24	279894.29	363518.68
25	279940.91	363586.40
26	280007.99	363548.63
28	279917.96	363223.18
29	280063.12	363790.98
30	280290.10	363299.40



NOTE: ALL DISTURBED AREAS TO BE LOAMED AND SEEDED UNLESS OTHERWISE SHOWN ON PLANS

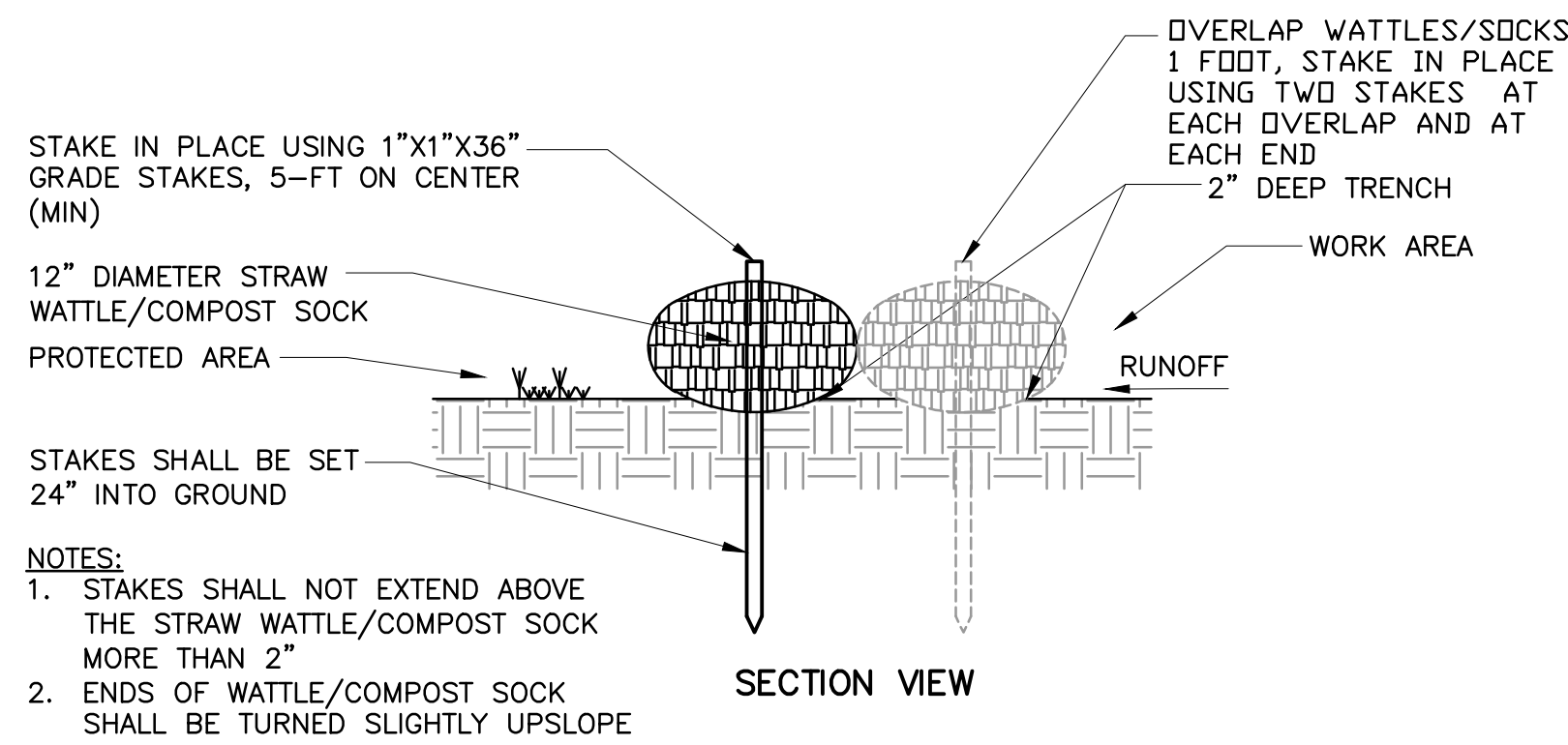


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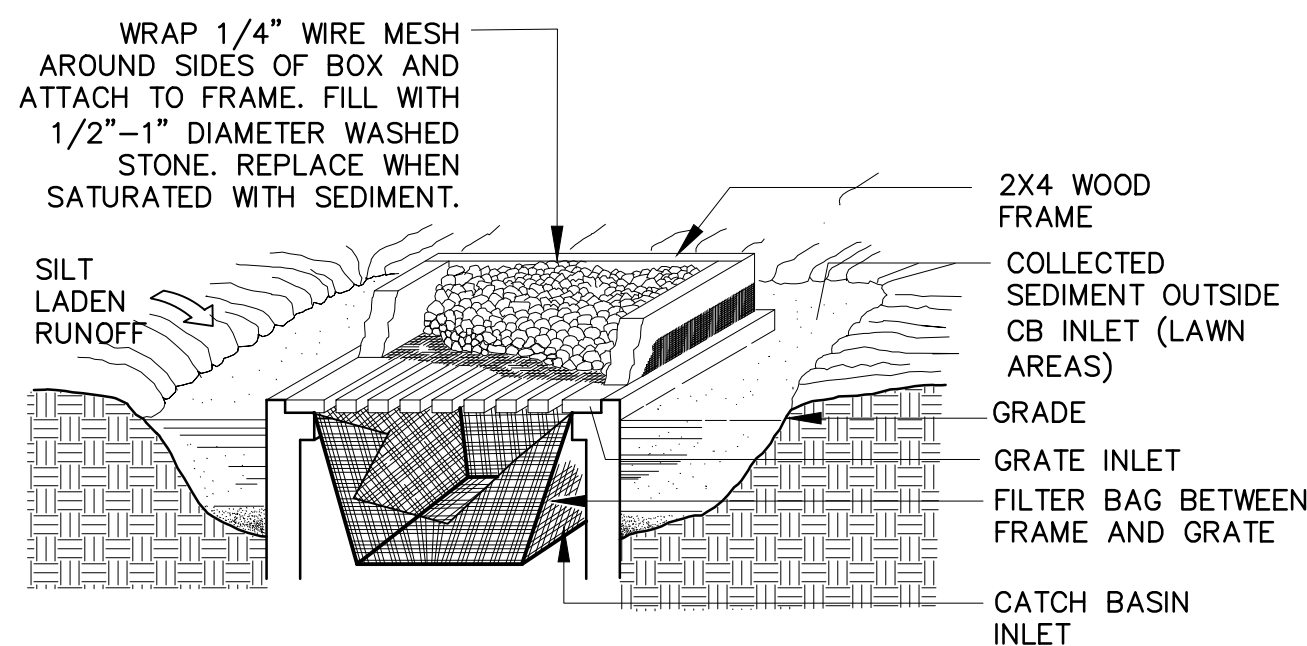


				SCALE	WARNING	DESIGNED <u>S.FUSCO</u>	FINAL DESIGN - JUNE 2022	 260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	 	NBC CONTRACT NO 308.10C CIVIL	GRADING & DRAINAGE PLAN	SHEET  C-9
			1" = 30'	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN <u>S.FUSCO</u>								
REV	DATE	BY	DESCRIPTION		CHECKED <u>M.PITTA</u>								

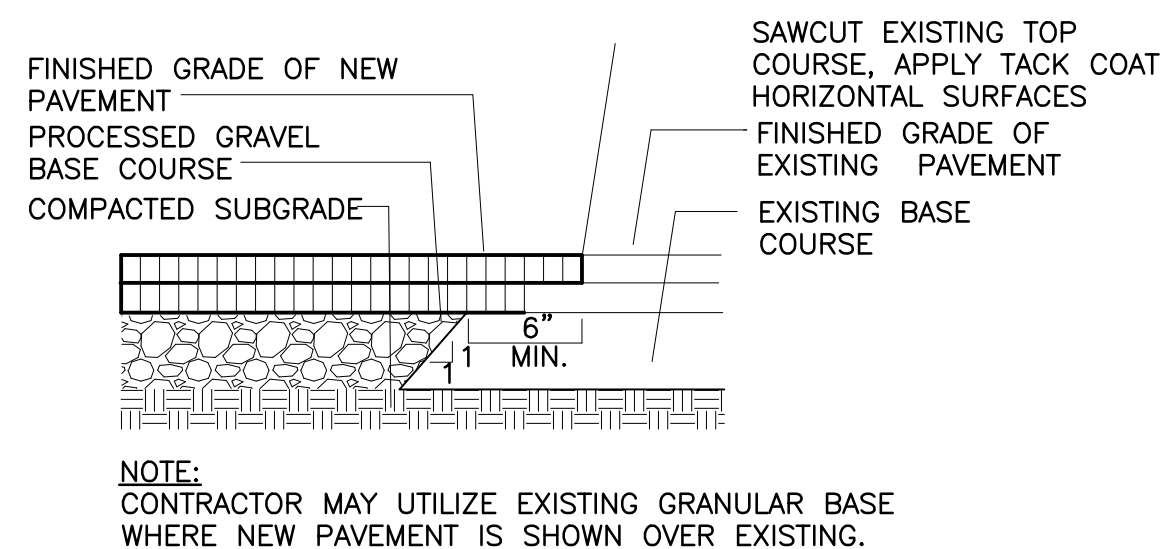




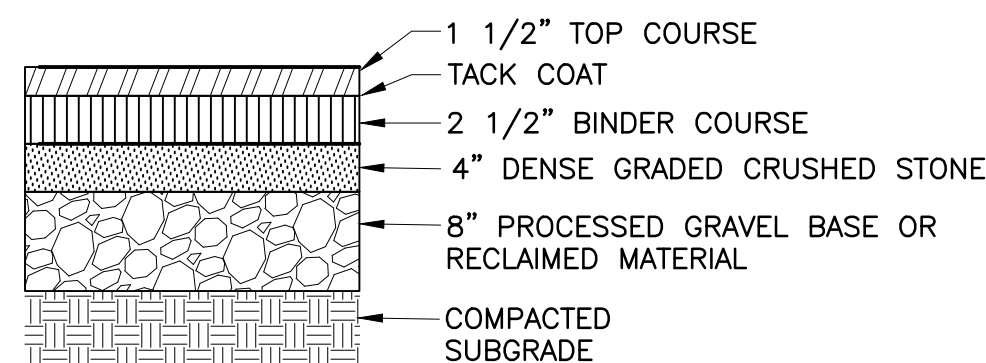
STRAW WATTLE/COMPOST SOCK  
DETAIL A  
NTS C-10



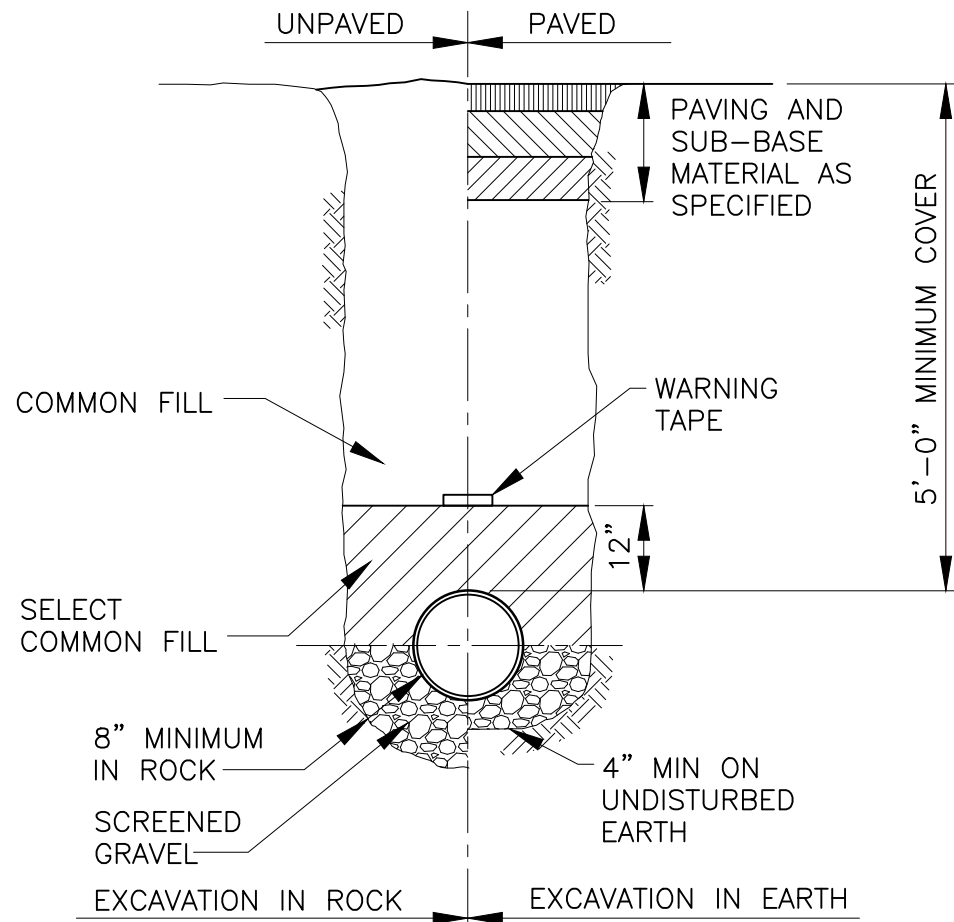
CATCH BASIN FILTER  
DETAIL B  
NTS C-10



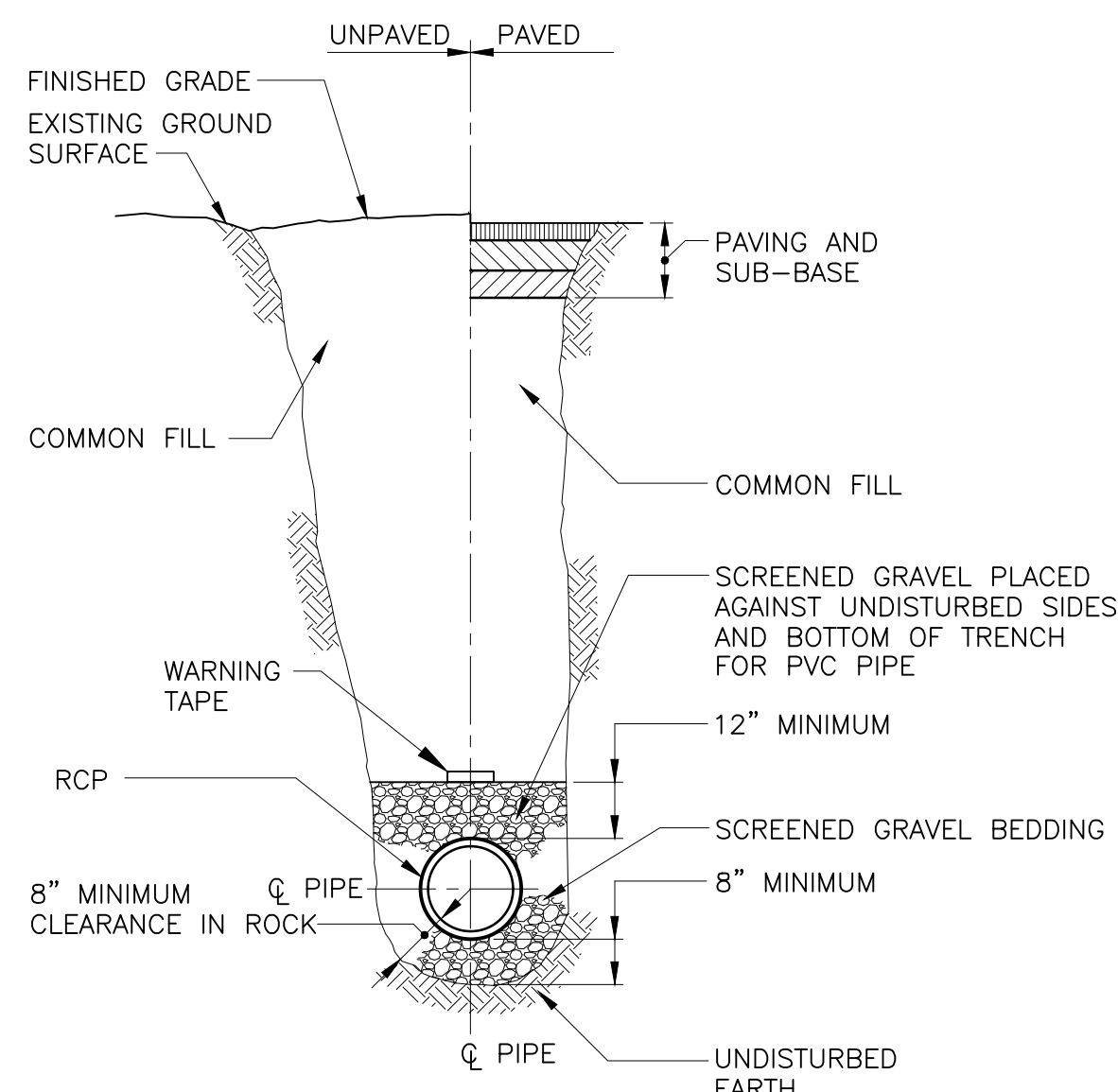
PAVEMENT MATCH  
DETAIL C  
NTS C-10



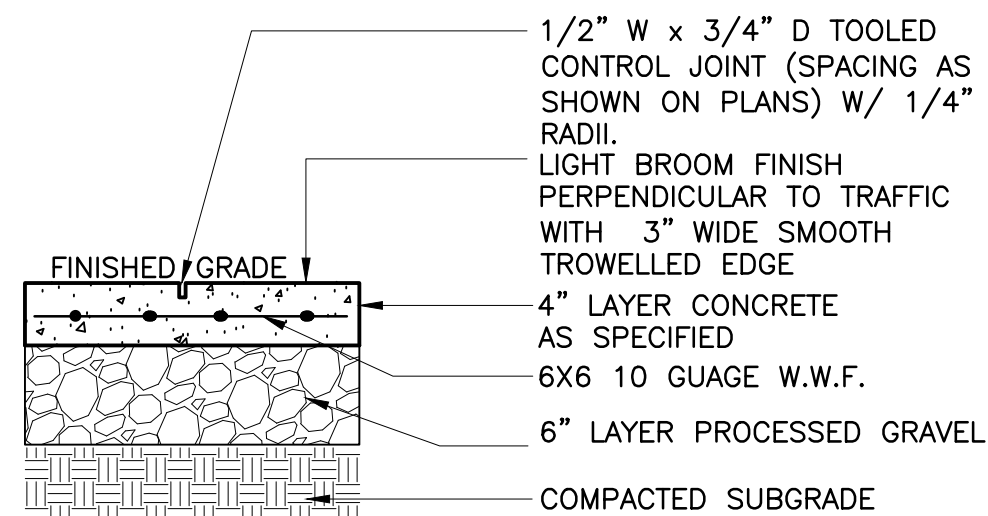
BITUMINOUS CONCRETE PAVEMENT  
DETAIL D  
NTS C-10



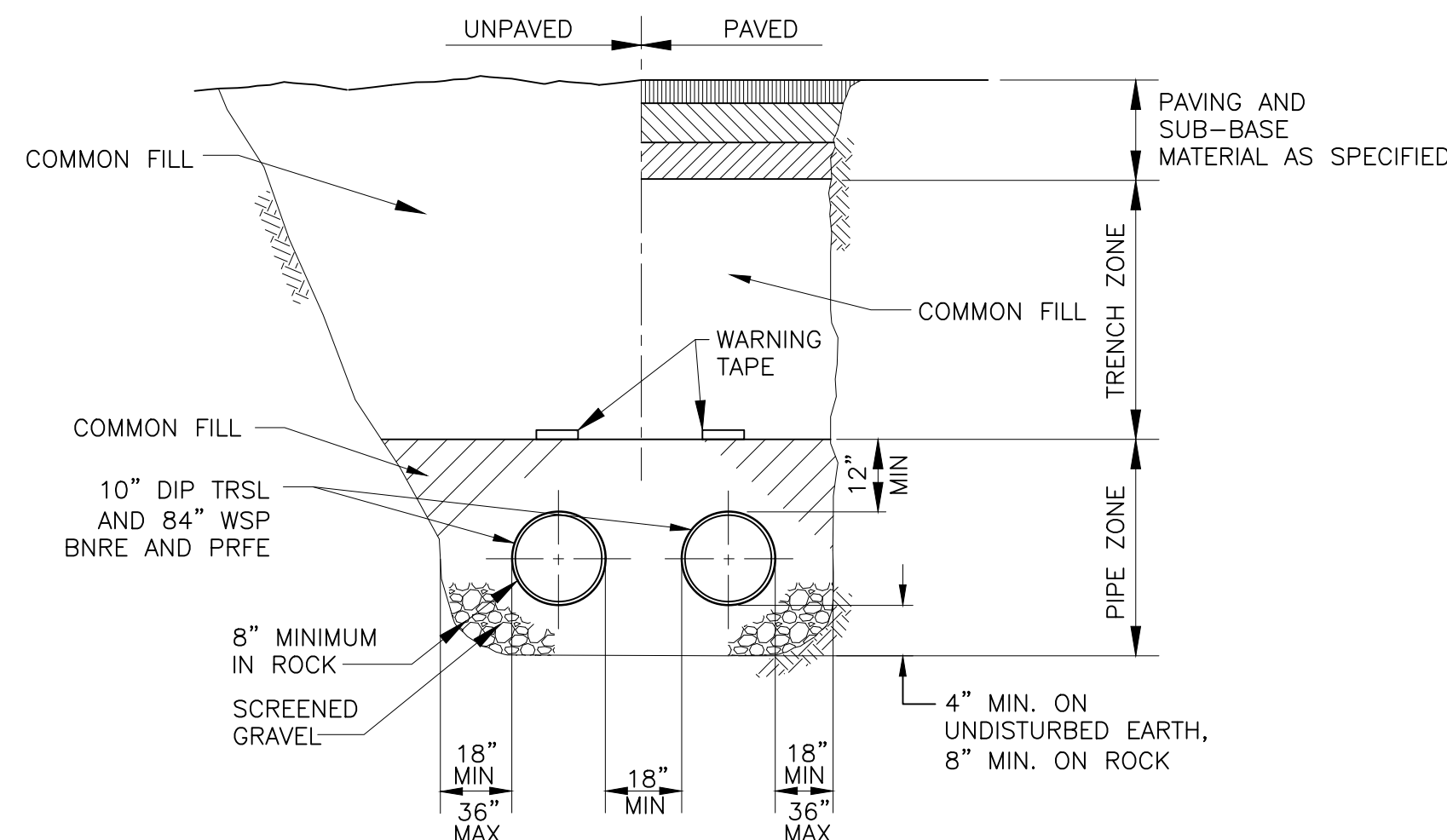
TYPICAL PIPE TRENCH (DI, STEEL)  
DETAIL E  
NTS C-10



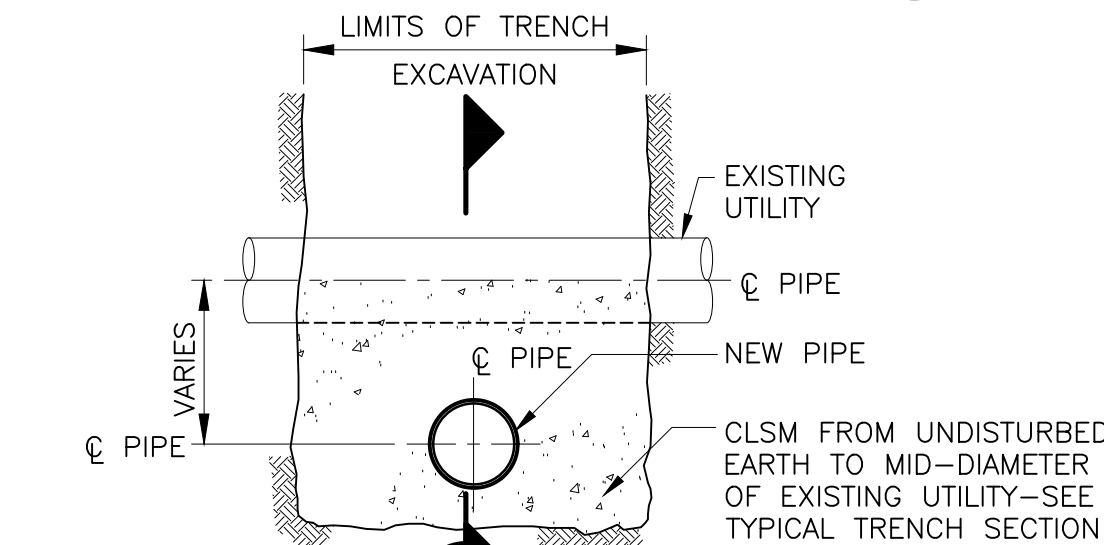
TYPICAL PIPE TRENCH (RCP, PVC)  
DETAIL F  
NTS C-10



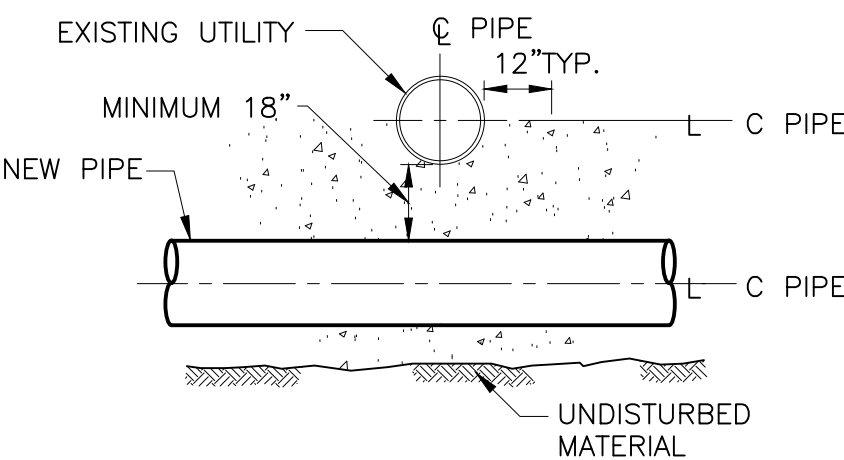
CONCRETE PAD  
DETAIL G  
NOT TO SCALE C-10



DUAL PIPE TRENCH  
DETAIL H  
NTS C-10

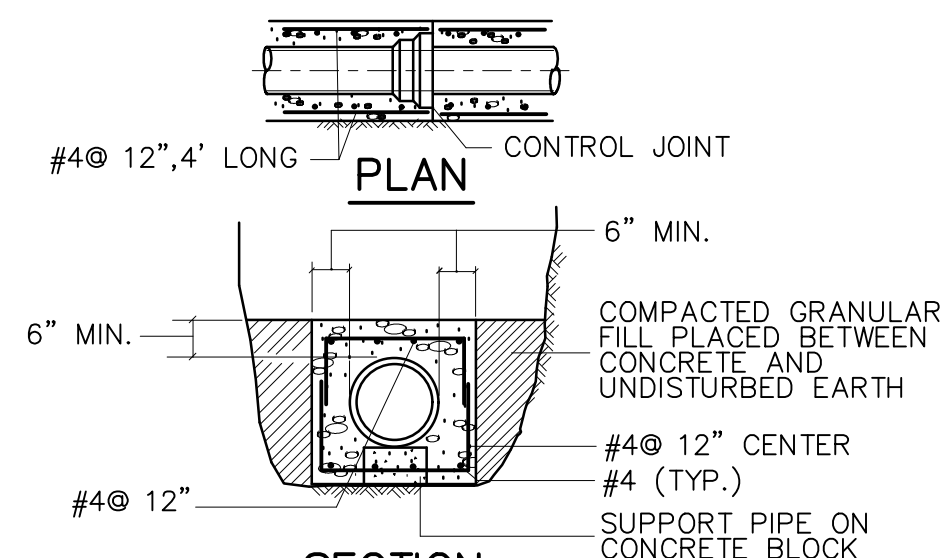


TYPICAL SECTION  
SECTION A-A

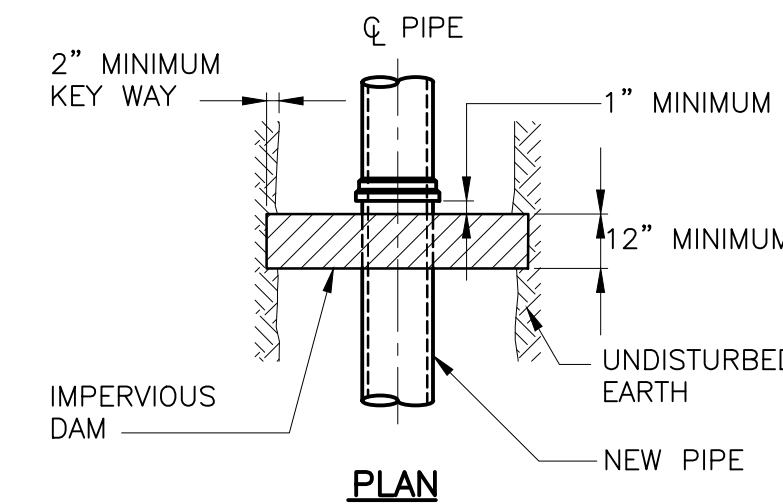


NOTES:  
1. FOR CROSSING OF POTABLE WATER WITH SEWER OR NON-POTABLE WATER SEE DETAIL G ON C-12.

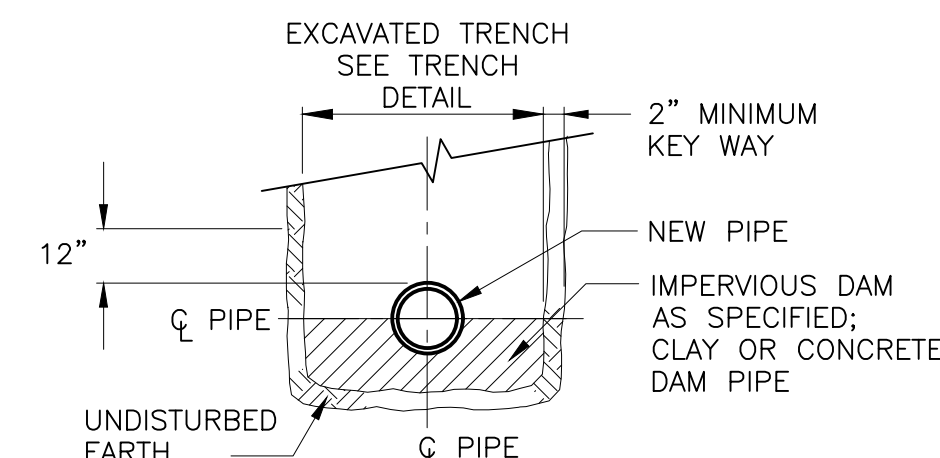
EXISTING UTILITY CROSSING  
DETAIL I  
NTS C-10



PIPE CONCRETE ENCASEMENT  
DETAIL L  
NTS C-10



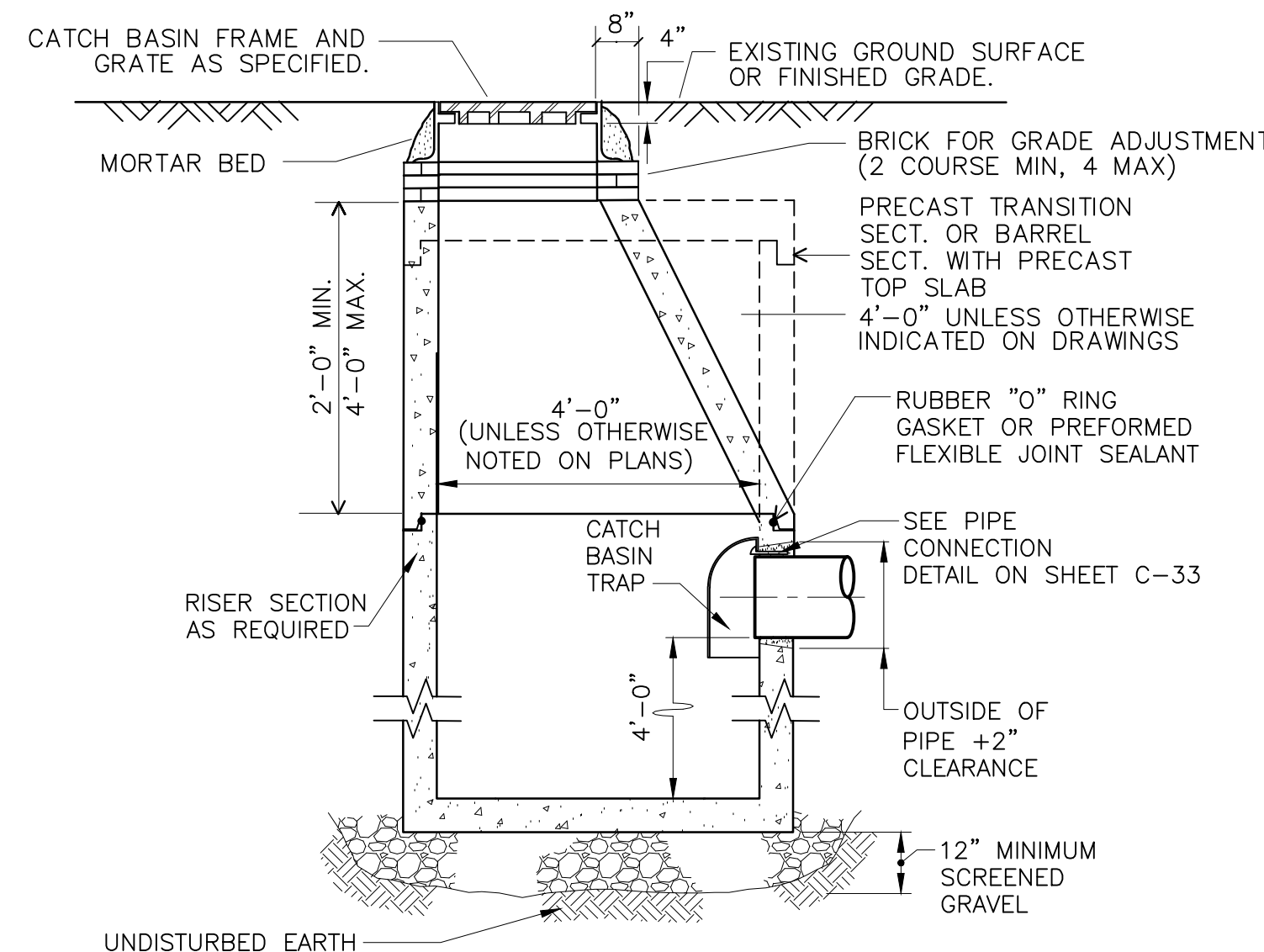
PLAN



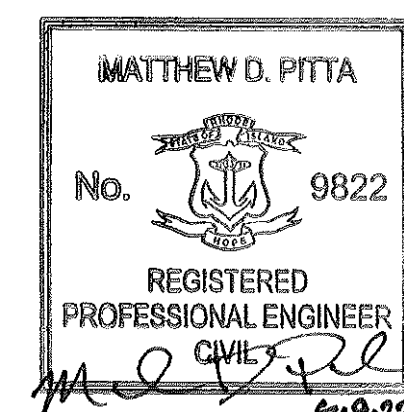
SECTION

NOTES:  
1. TOP OF DAM TO BE AT MID-DIAMETER OF PIPE.  
2. INSTALL PER SPECIFICATION SECTION 02333.

PIPE TRENCH DAM  
DETAIL J  
NTS C-10



PRECAST DEEP SUMP CATCH BASIN  
DETAIL K  
NTS C-10



REV	DATE	BY	DESCRIPTION

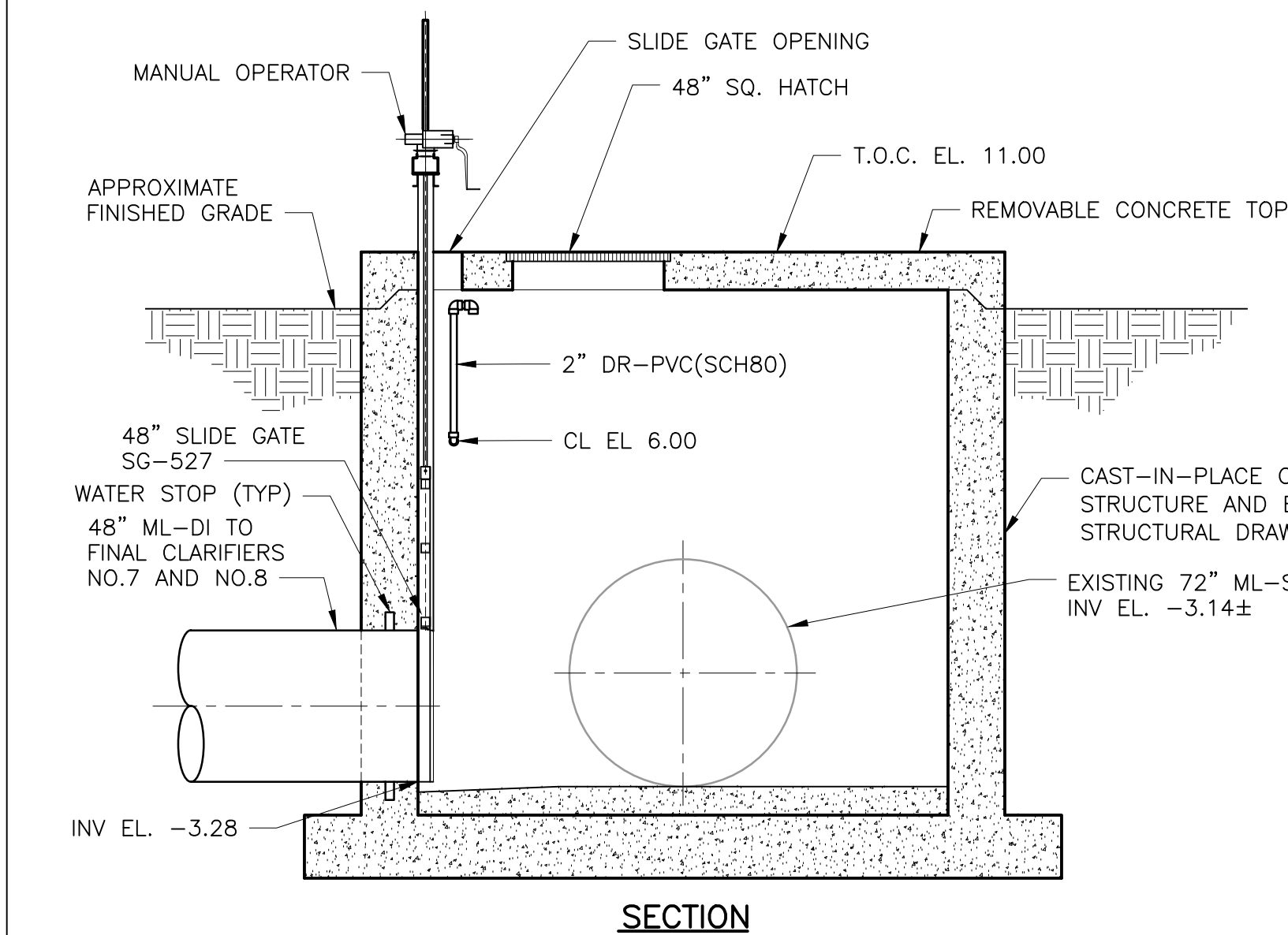
SCALE	WARNING
AS NOTED	0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED <u>D. BORGES</u>	FINAL DESIGN - JUNE 2022
DRAWN <u>A. WELDON</u>	
CHECKED <u>M. PITTA</u>	



NBC CONTRACT NO 308.10C CIVIL CIVIL DETAILS I	SHEET C-10
---	---------------






- JUNCTION BOX NO. 1A  
DETAIL  
 $\frac{1}{4}" = 1'-0"$
- 
- A  
C-11

Diagram illustrating the cross-section of a trench or excavation, showing various layers and materials:

- FINISHED GRADE**: The top surface of the excavation.
- SUPPORT, STATION, AND ANCHORS**: A vertical structure on the left side of the trench.
- SELECT COMMON FILL OR 3/4-INCH CRUSHED STONE**: The material filling the trench.
- 12-INCHES COMPACTED STRUCTURAL FILL OR 3/4 CRUSHED STONE BEDDING**: The bottom layer of the trench.
- UNDISTURBED EARTH**: The ground level on the right side of the trench.
- STABLE SLOPE PER OSHA REQUIREMENTS**: The sloped side of the trench.
- 12" (MIN)**: The minimum depth of the trench.

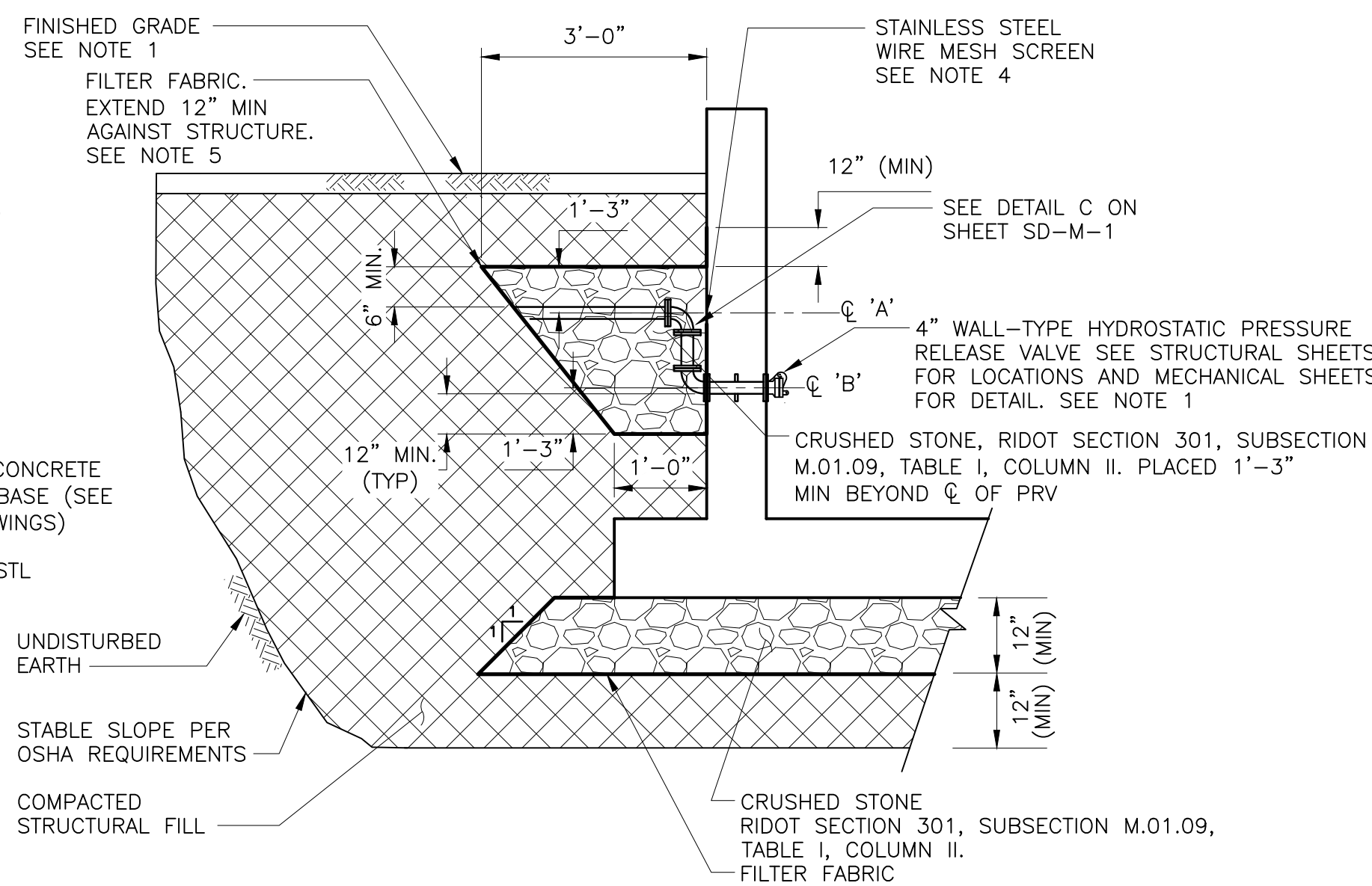
BACKFILL AT STRUCTURES

DETAIL

NTS

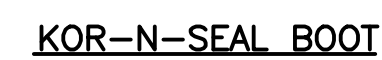
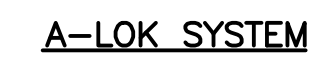
B

C-11



	FINISHED GRADE	℄ EL. 'A'	℄ EL. 'B'	BOTTOM OF SLAB ELEVATION
FINAL CLARIFIERS	9.77 +/-	3.50	-2.00	-14.03

- DETAIL
- 
- NTS
- C
- C-11



DETAIL D  
NTS C-11

INSIDE FACE OF MANHOLE OR PRECAST CONC CATCH BASIN

2" MAX

POURED OR HAND PACKED NON-SHRINK GROUT HALLEMIT, WATERPLUG EMBECO OR APPROVED EQUAL

PROPOSED PIPE

FORMED OPENING

DRAIN

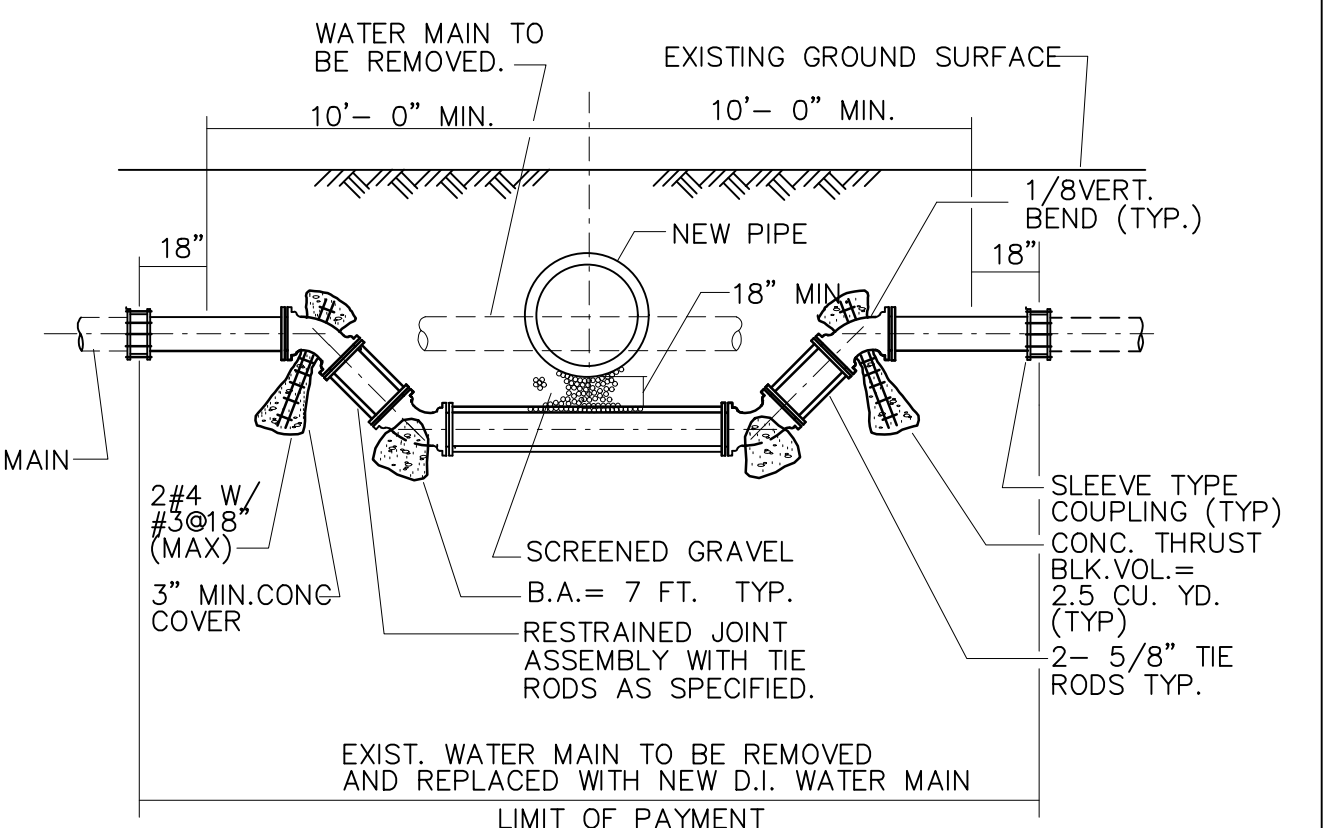
EXISTING PIPE

RUBBER SLEEVE COUPLING WHEN CONNECTING TO EXISTING DRAIN

17 OF

DRAIN MANHOLE/CATCH BASIN PIPE CONNECTION

DETAIL E  
NTS C-15



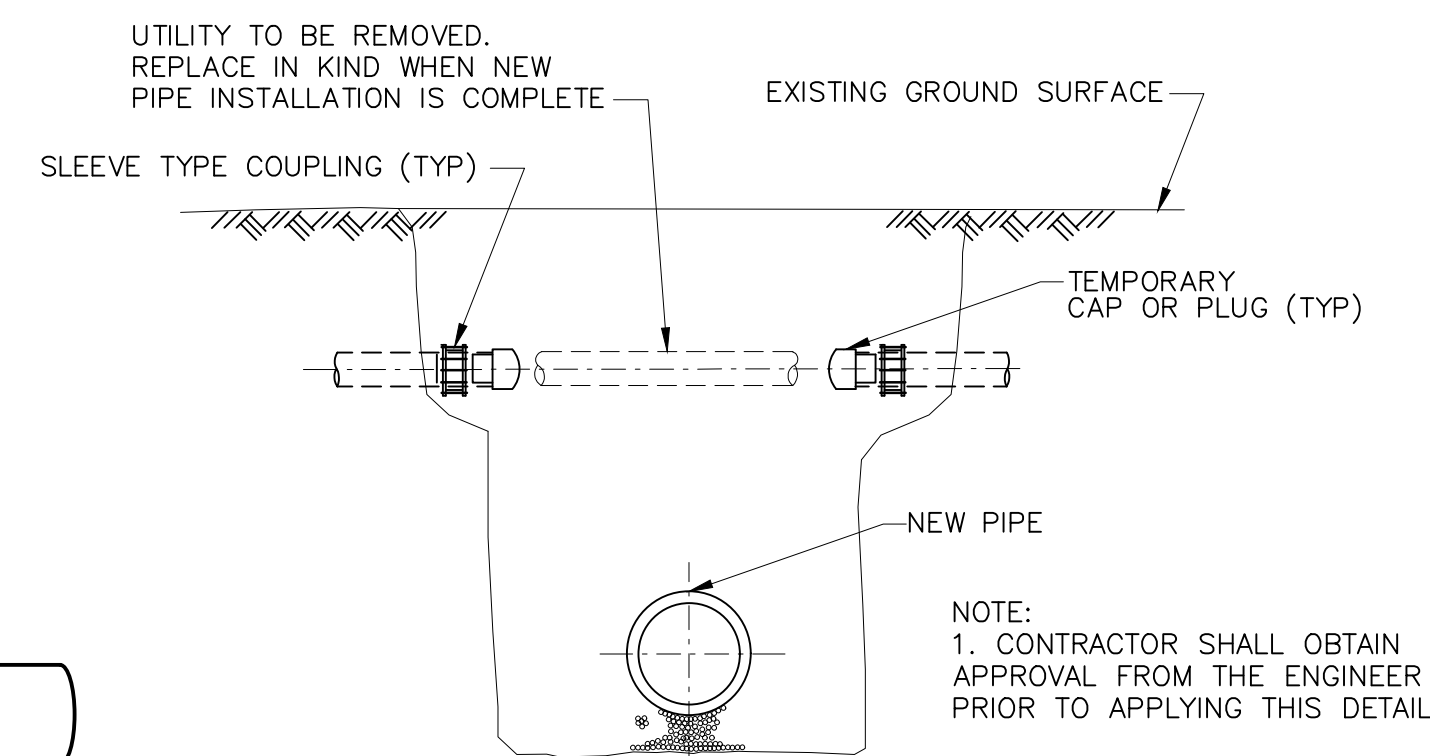
DETAIL

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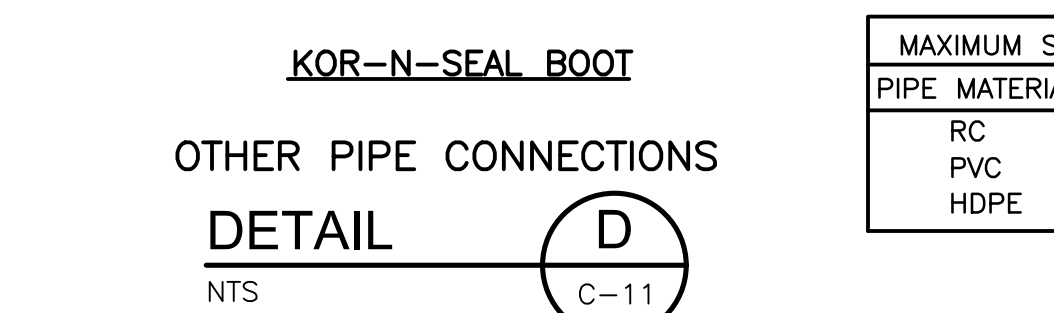
NTS

F

C-11



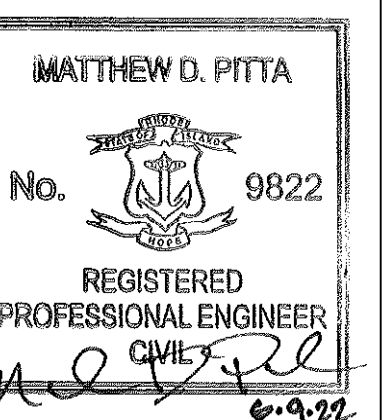
DETAIL G  
NTS C-11



MAXIMUM STUB LENGTH	
PIPE MATERIAL	"A" (MAX.)
RC	4'-0"
PVC	3'-3"
HDPE	3'-3"

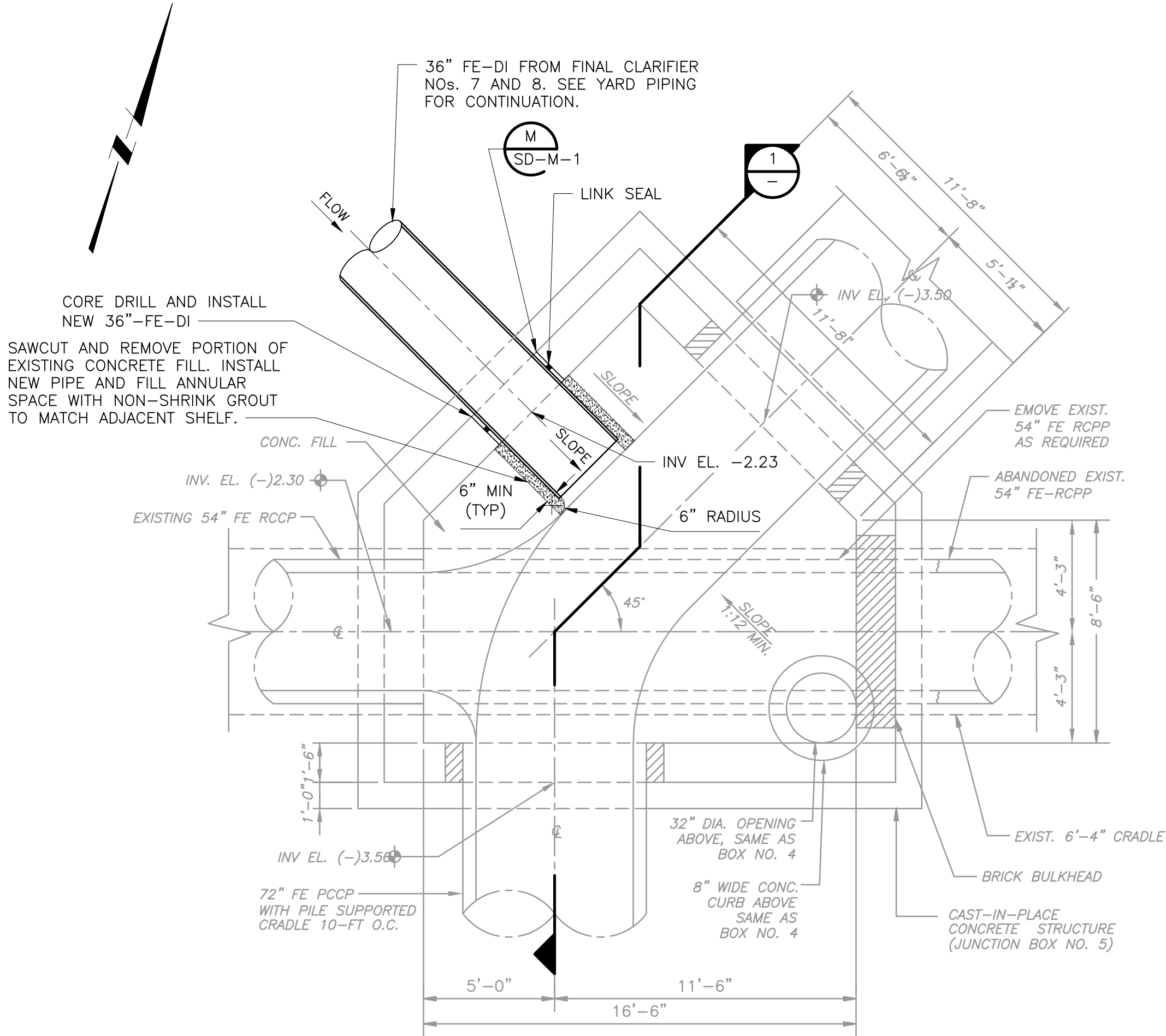
NOTE:  
1. CONTRACTOR SHALL OBTAIN  
APPROVAL FROM THE ENGINEER  
PRIOR TO APPLYING THIS DETAIL.

DETAIL G  
NTS C-11

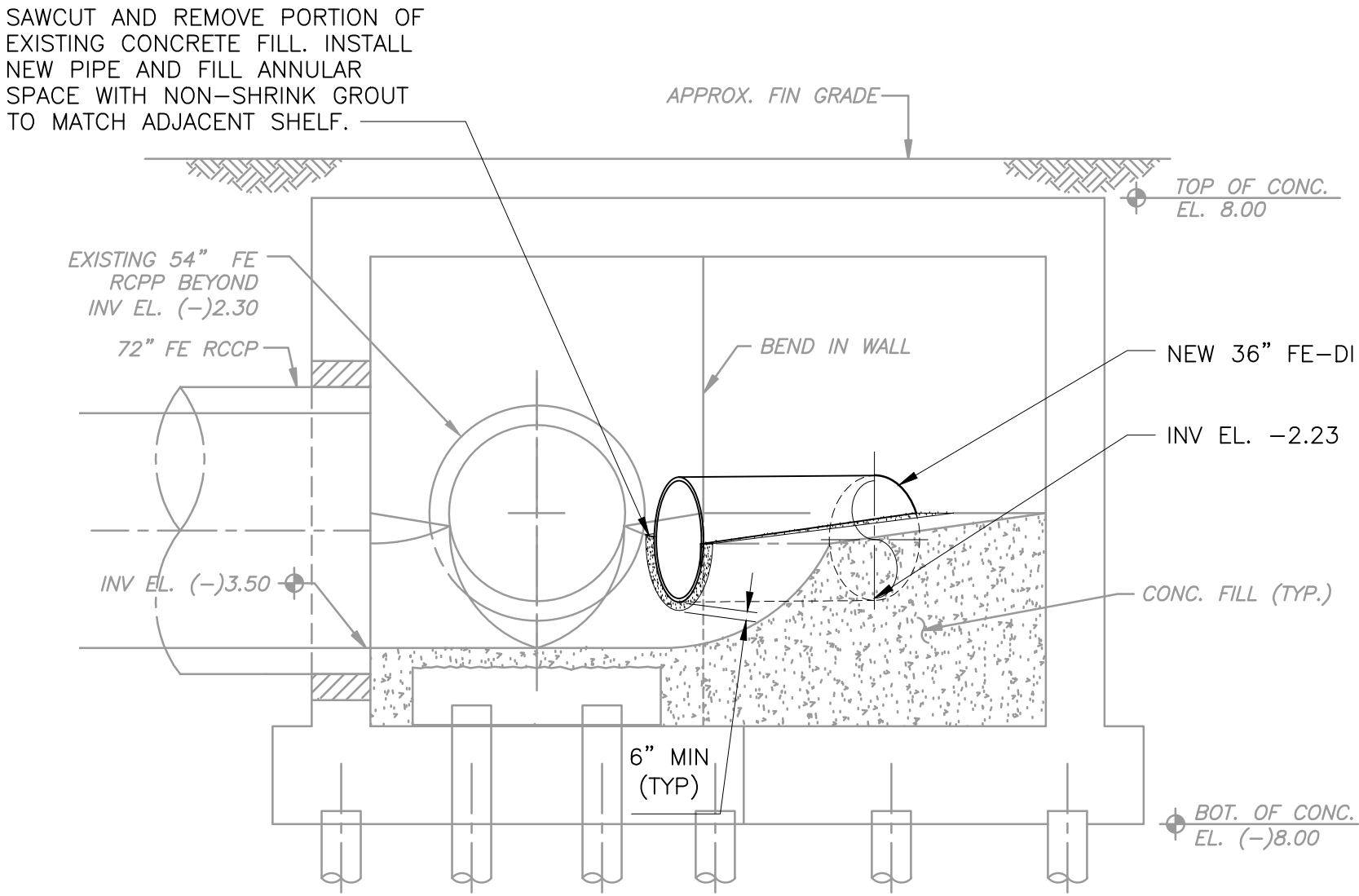


				SCALE	<div>WARNING</div> <div><div>01/21</div></div>	DESIGNED <u>D. BORGES</u>	<div>FINAL DESIGN - JUNE 2022</div>	<div>CDM Smith</div> <div>260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</div>	<div><div><div></div></div><div>Narragansett Bay Commission</div></div> <div>NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM</div>	<div><div><div></div></div><div>Stantec</div></div> <div><div><div></div></div><div>PARE</div></div>	<div>NBC CONTRACT NO 308.10C CIVIL</div> <div>CIVIL DETAILS II</div>	<div>SHEET</div> <div>C-11</div>
				AS NOTED	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN <u>A. WELDON</u>						
					CHECKED <u>M. PITTA</u>							
REV	DATE	BY	DESCRIPTION									

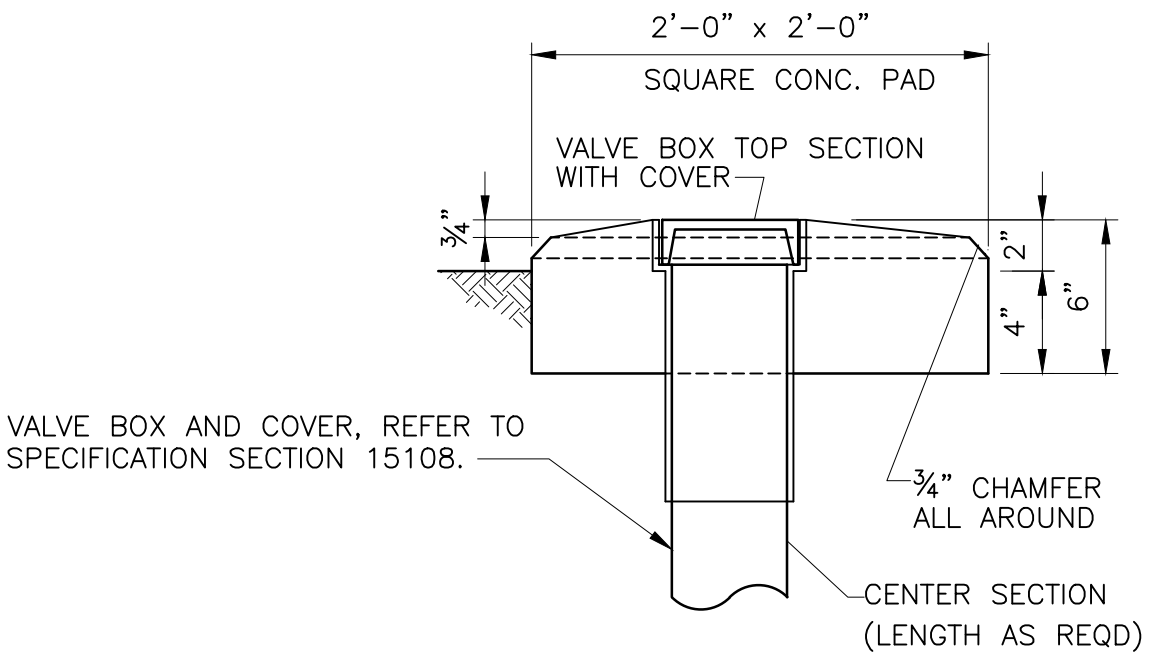




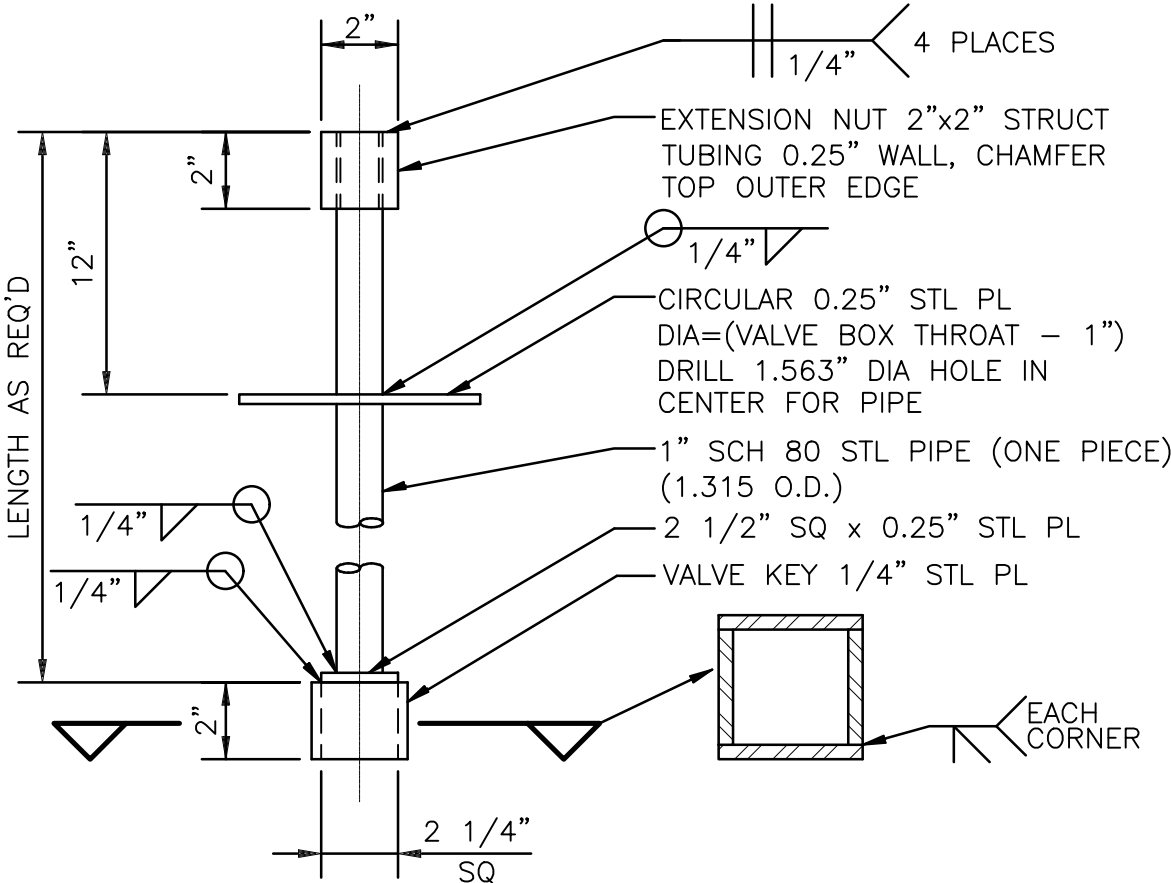
JUNCTION BOX NO. 5  
PLAN  
1/4" = 1'-0"



SECTION 1  
1/4" = 1'-0"



VALVE BOX PAD  
DETAIL A  
NTS



- NOTES:
1. A VALVE OPERATING NUT EXTENSION IS REQUIRED WHEN THE VALVE OPERATING NUT IS NOT WITHIN 24" OF THE VALVE BOX LID.
  2. LENGTH OF EXTENSION IN INCHES SHALL BE INSCRIBED W/AN ARC WELD BEAD (2" MIN HEIGHT) ON TOP FACE OF CIRCULAR PLATE.
  3. VALVE KEY SHALL FIT OVER STD AWWA VALVE OPERATING NUT.
  4. EXTENSION NUT AND VALVE KEY TO BE IN LINE W/EACH OTHER.
  5. EXTENSION SHALL EXTEND TO WITHIN 6" OF SURFACE.
  6. HOT DIP GALVANIZE AFTER FABRICATION.

TYPICAL VALVE NUT EXTENSION  
DETAIL B  
NTS

CDM Smith ProjectWise Project No: 93019-234214, NARRAGANSETT BAY COMMISSION, PHASE III COMBINED SEWER OVERFLOW PROGRAM  
File: C017CVDI.DWG; Saved by: WELDONAJ, 5/5/2022 2:04 PM; Plotted on: 6/10/2022 11:55 AM

REV	DATE	BY	DESCRIPTION

SCALE  
AS NOTED

WARNING  
0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED D. BORGES  
DRAWN A. WELDON  
CHECKED M. PITTA

FINAL DESIGN - JUNE 2022

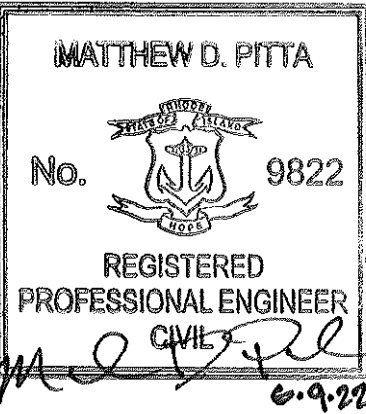
**CDM Smith**  
260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM

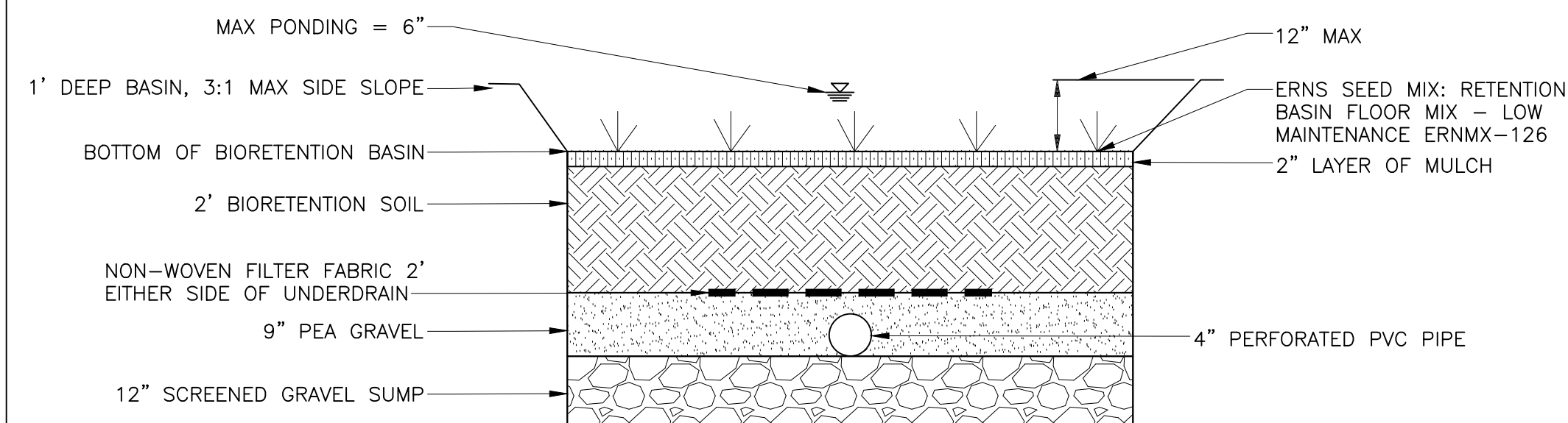
**Stantec** **PARE**

NBC CONTRACT NO 308.10C  
CIVIL  
CIVIL DETAILS III



SHEET  
C-12

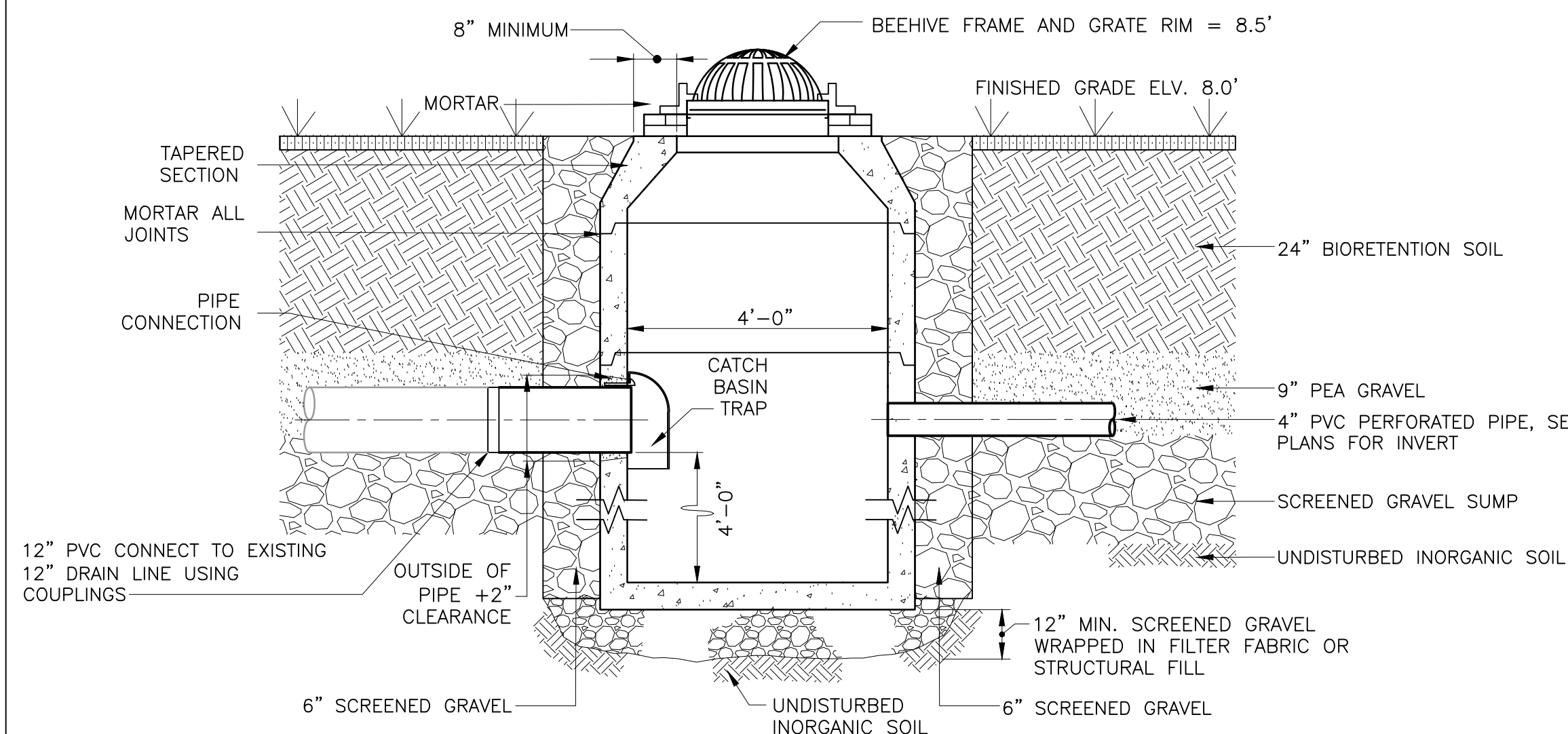




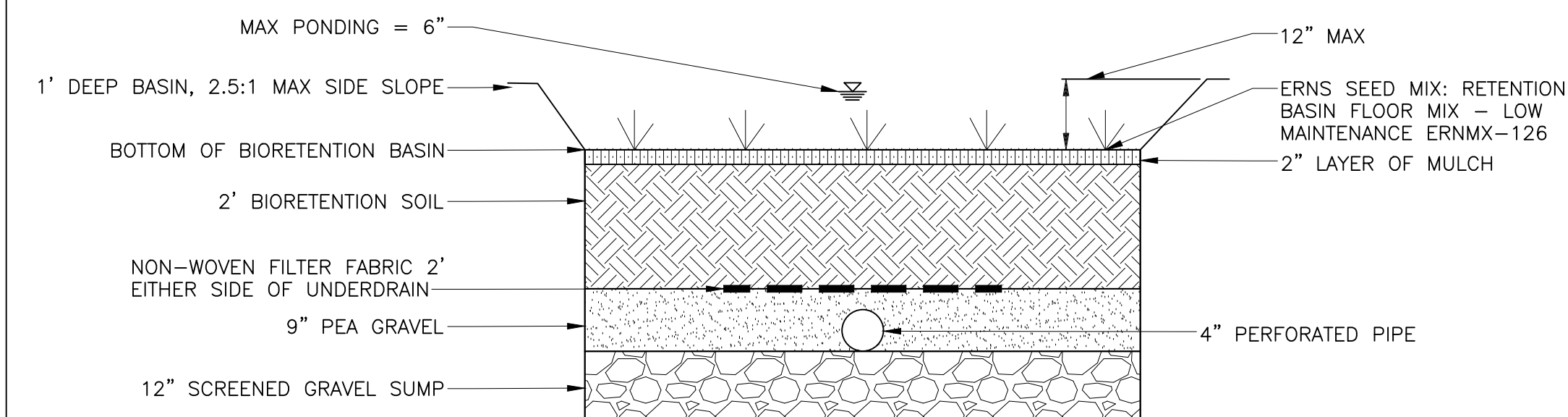
NOTES:

1. SOILS SHALL CONSIST OF USDA LOAMY SAND TO SANDY LOAM CLASSIFICATION AND MEET THE FOLLOWING GRADUATION: SAND 85-88%, SILT 8-12%, CLAY 0-2%, AND ORGANIC MATTER (IN THE FORM OF LEAF COMPOST) 3-5%.

BIORETENTION BASIN 1  
DETAIL  
NTS




BIORETENTION BASIN 1  
DETAIL  
NTS




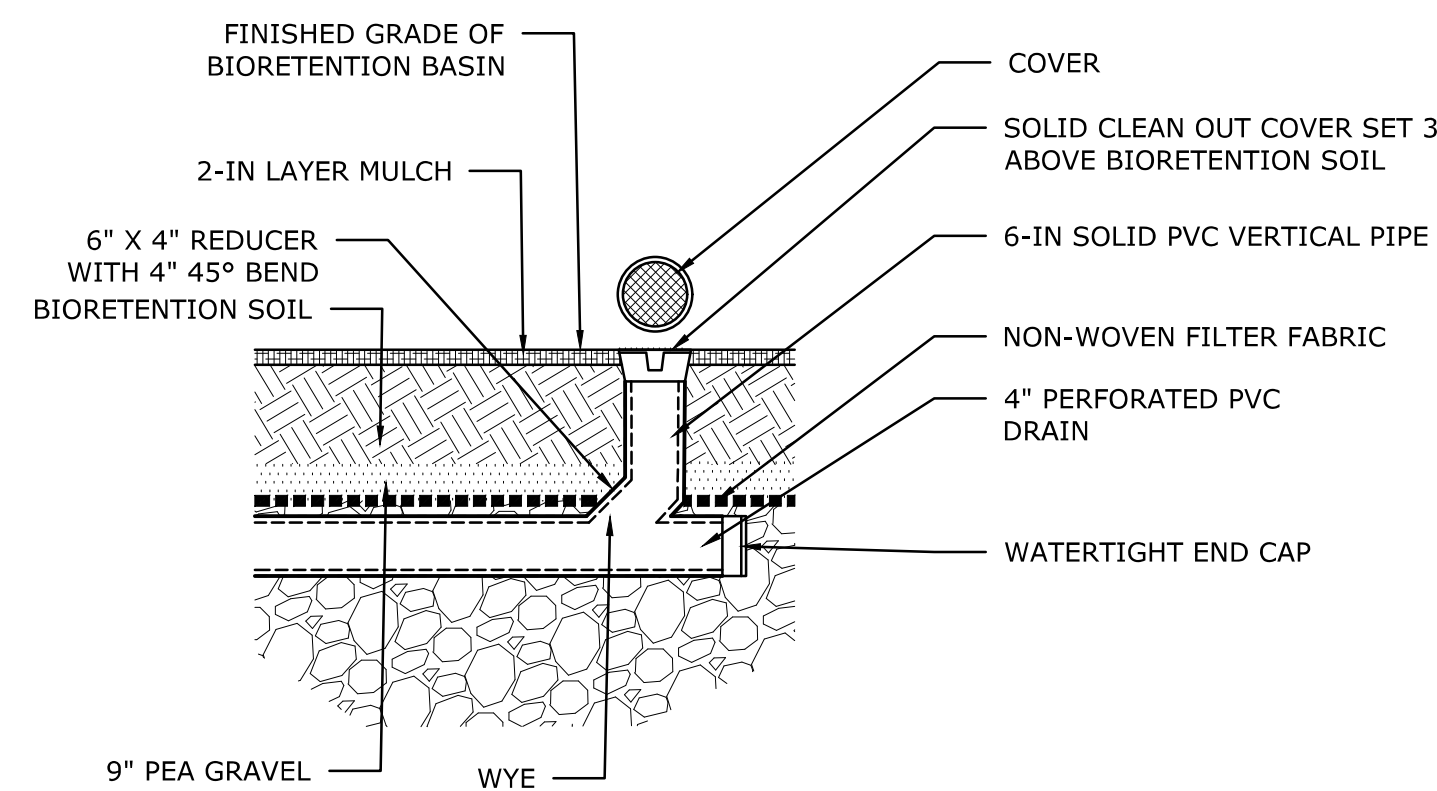
NOTES:

1. SOILS SHALL CONSIST OF USDA LOAMY SAND TO SANDY LOAM CLASSIFICATION AND MEET THE FOLLOWING GRADUATION: SAND 85-88%, SILT 8-12%, CLAY 0-2%, AND ORGANIC MATTER (IN THE FORM OF LEAF COMPOST) 3-5%.

BIORETENTION BASIN 2 AND 3

DETAIL 

NTS 



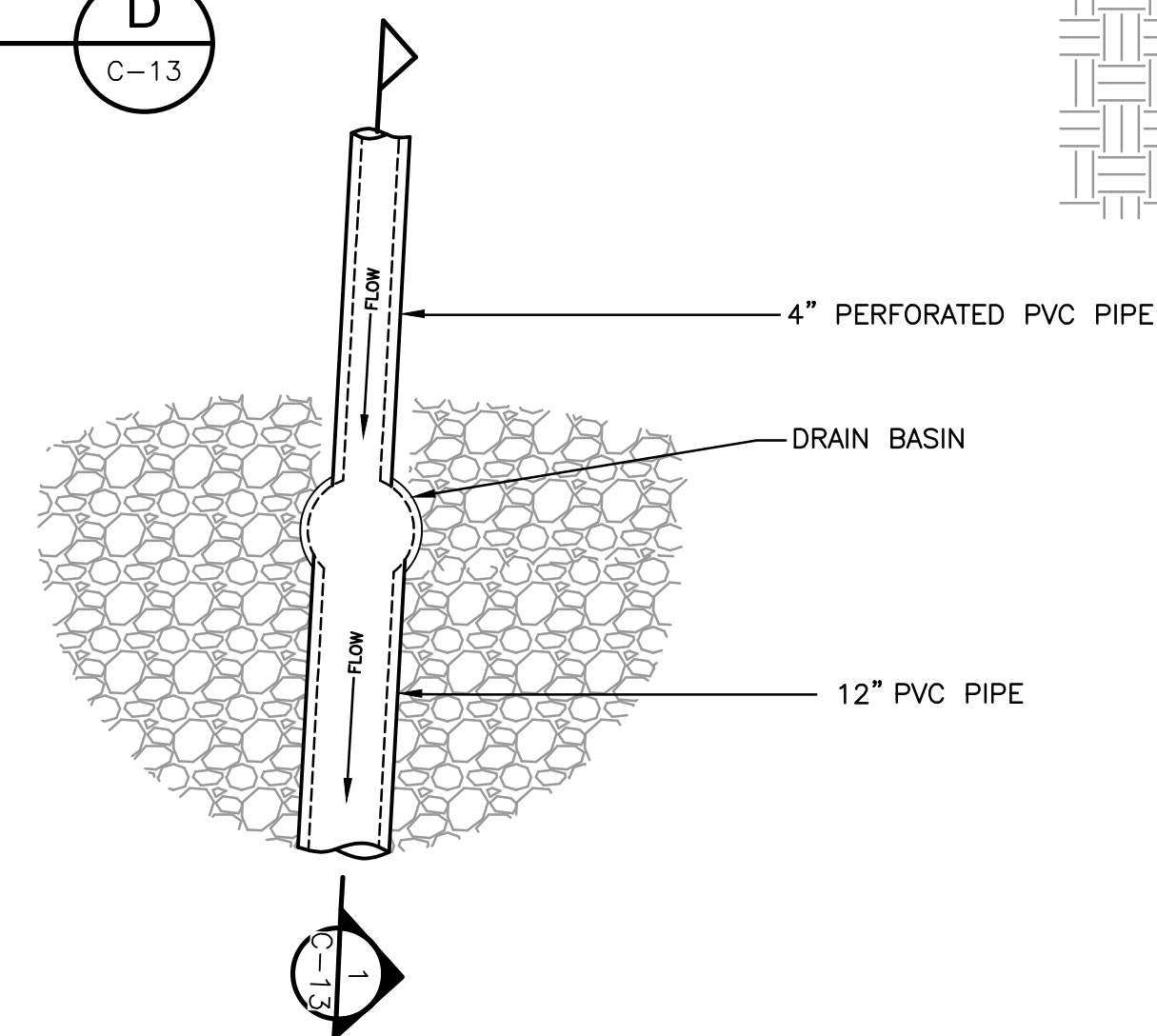
PVC PIPE CLEANOUT  
DETAIL

---

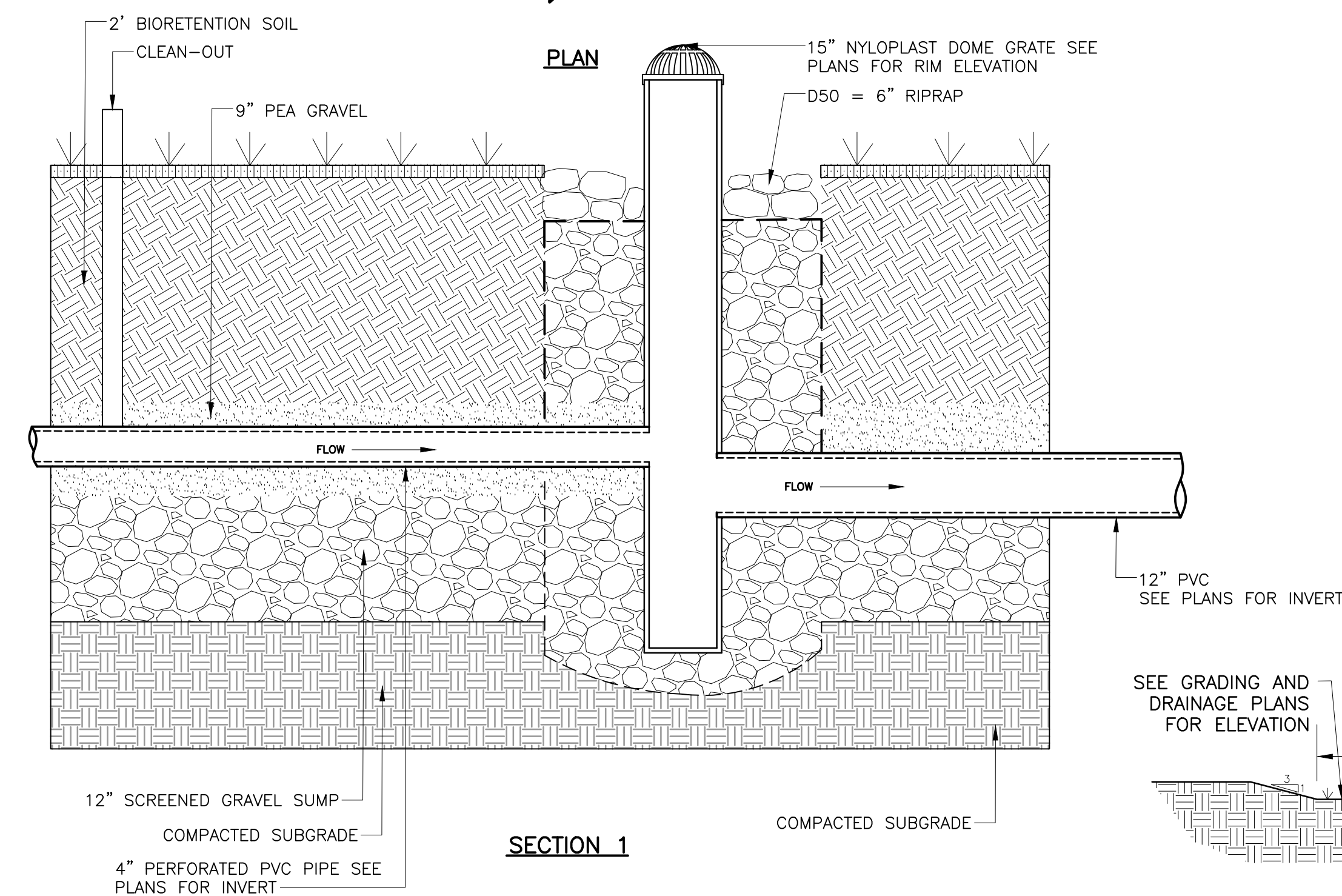
NTS

(D)

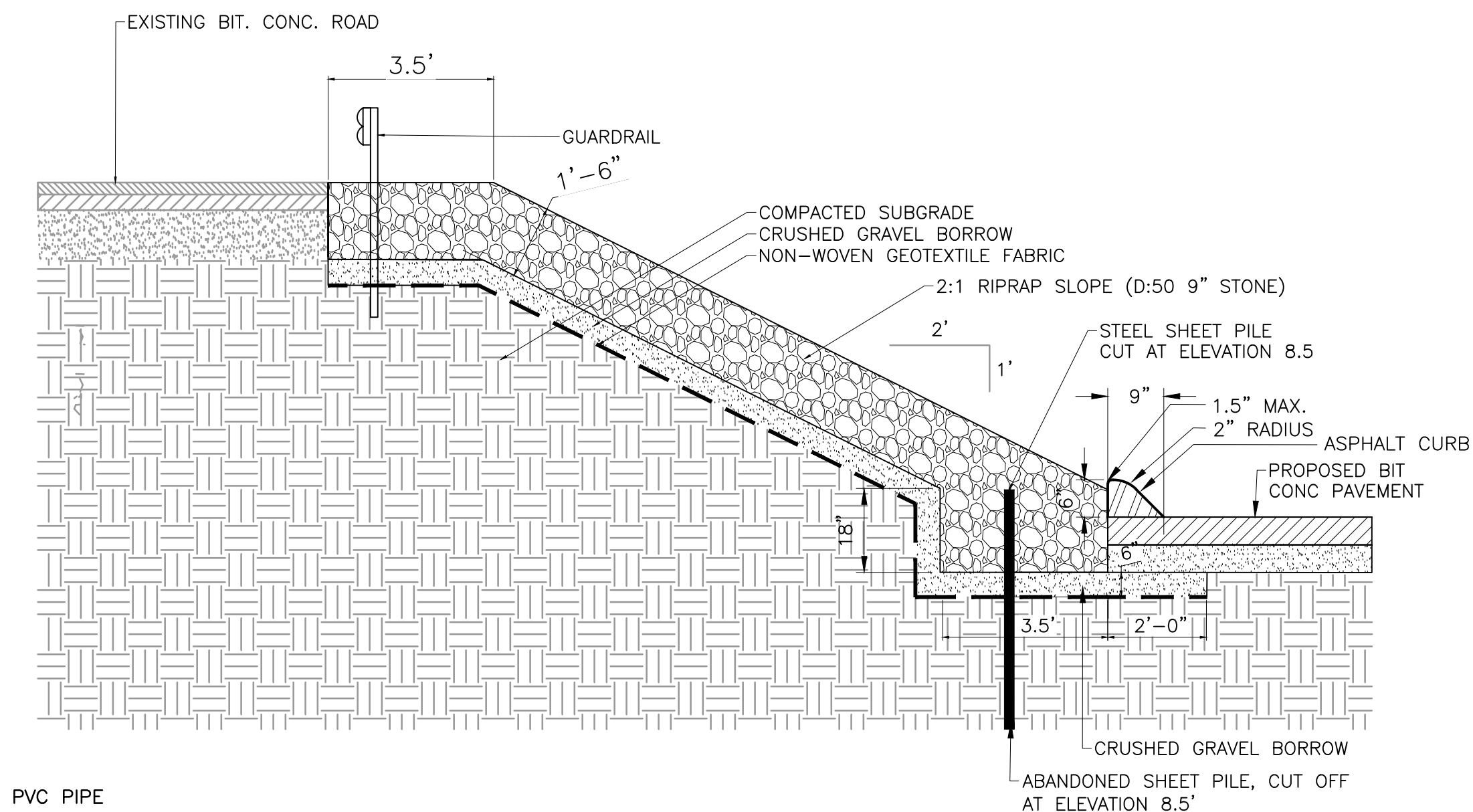
C-13



PLAN



DETAIL E  
NTS C-13



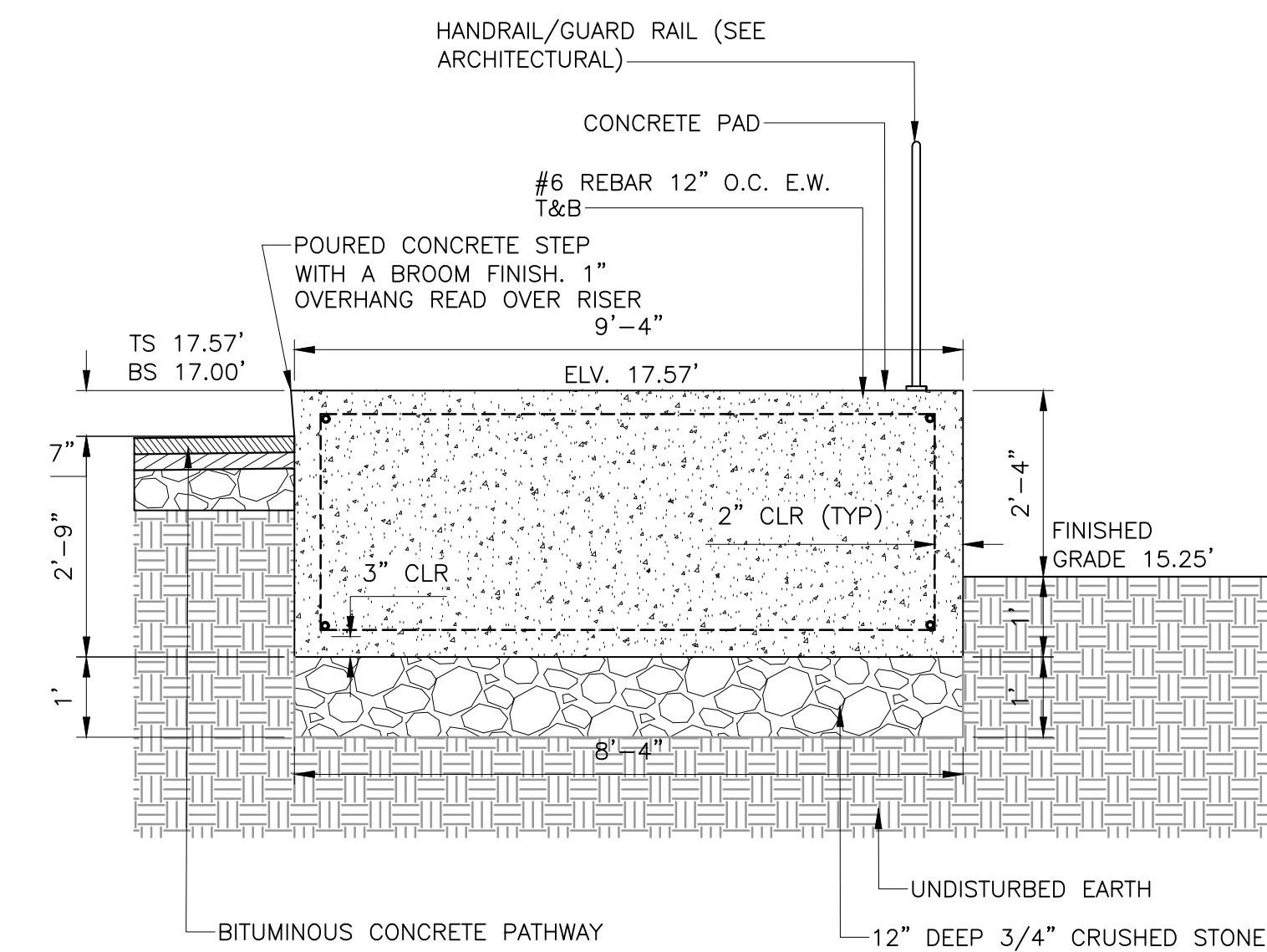
RIPRAP STABILIZED SLOPE WITH ASPALT CURB

DETAIL

NTS

F

C-13



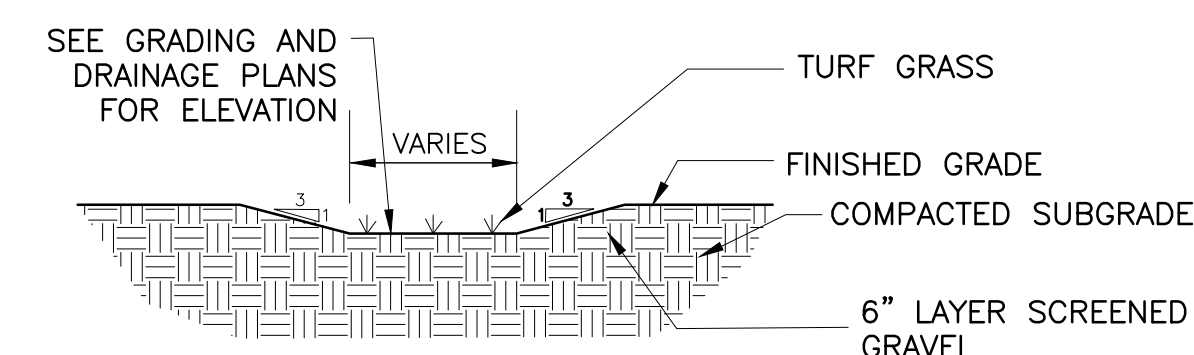
POURED IN PLACE CONCRETE PAD WITH STAIR

**DETAIL**

NTS

**G**

C-13

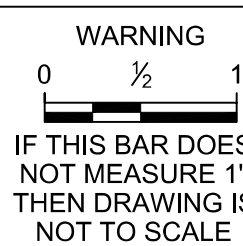


GRASSED SWALE  
DETAIL  
NTS

				SCALE	WARNING	
					0      1/2      1	DESIGNED <u>S. FUSCO</u>
				AS NOTED	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN <u>J. BRONENKANT</u>
REV	DATE	BY	DESCRIPTION			CHECKED <u>M. PITTA</u>

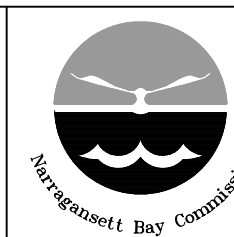
SCALE

AS NOTED

DESIGNED S. FUSCODRAWN J. BRONENKANT

CHECKED M. PITTA

FINAL DESIGN - JUNE 2022



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM



NBC CONTRACT NO 308.10C

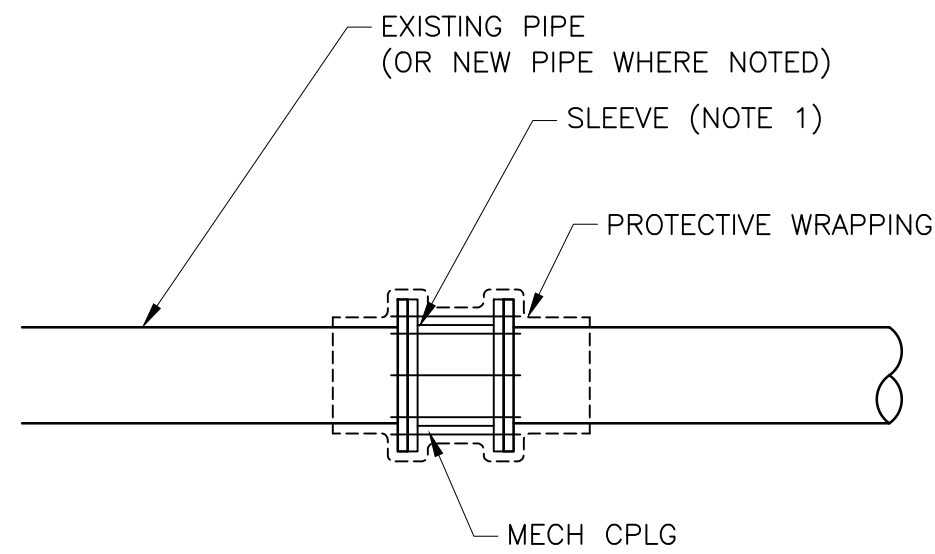
CIVIL

CIVIL DETAILS IV

SHEET

C-13



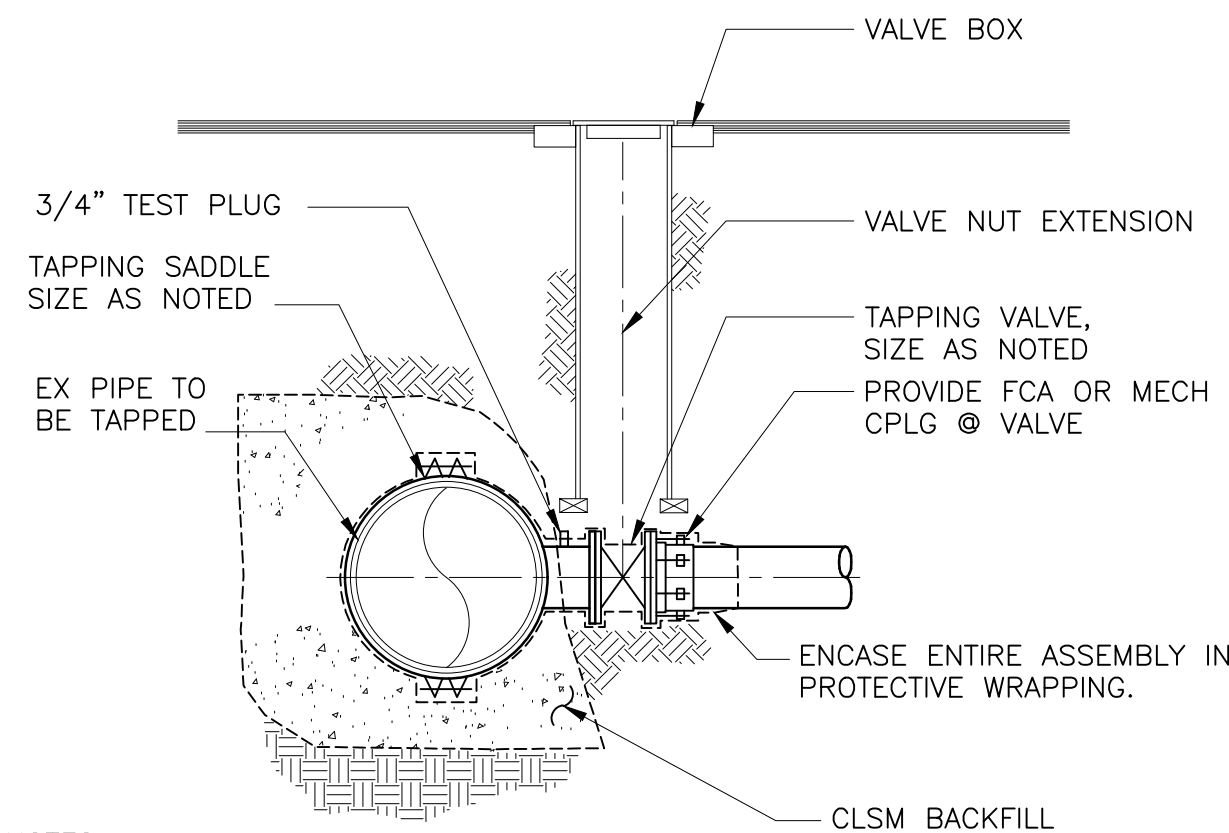


NOTES:

1. PROVIDE ISOLATION BOOT/BONDING WHERE NOTED.
2. PROVIDE TRANSITION COUPLING WHERE CONNECTING PIPE W/ DIFFERENT OUTSIDE DIMENSIONS.

TYPICAL MECHANICAL COUPLING

DETAIL A  
NTS C-14

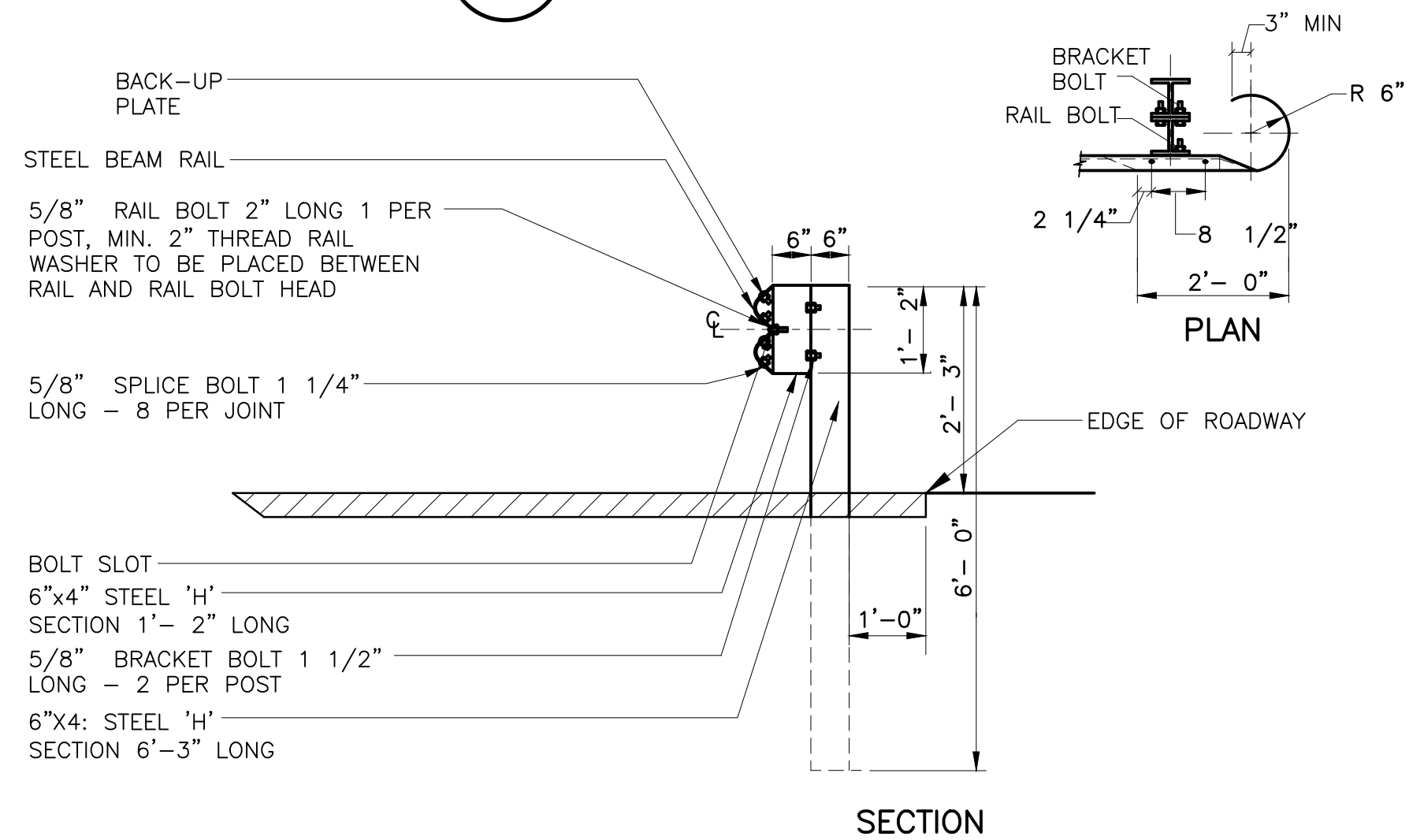


NOTES:

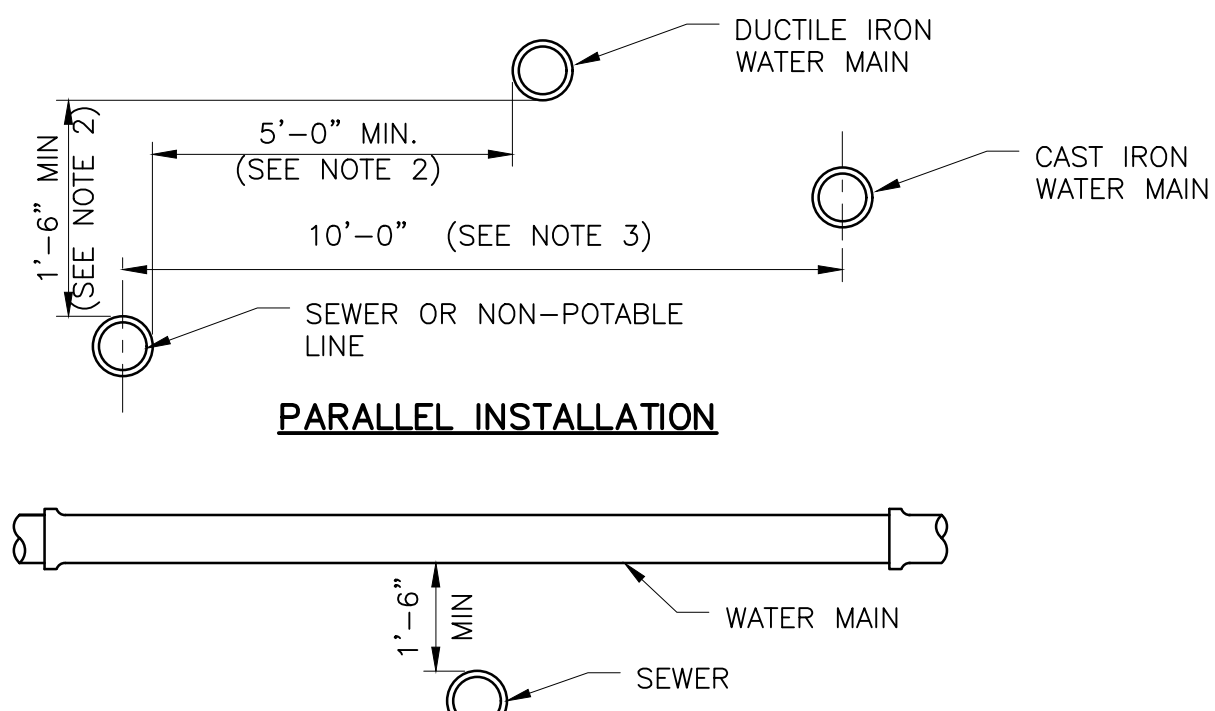
1. ALL TAPPING TEE HARDWARE SHALL BE STAINLESS STEEL.

TYPICAL WET TAP WITH STRAP-ON SADDLE

DETAIL B  
NTS C-14

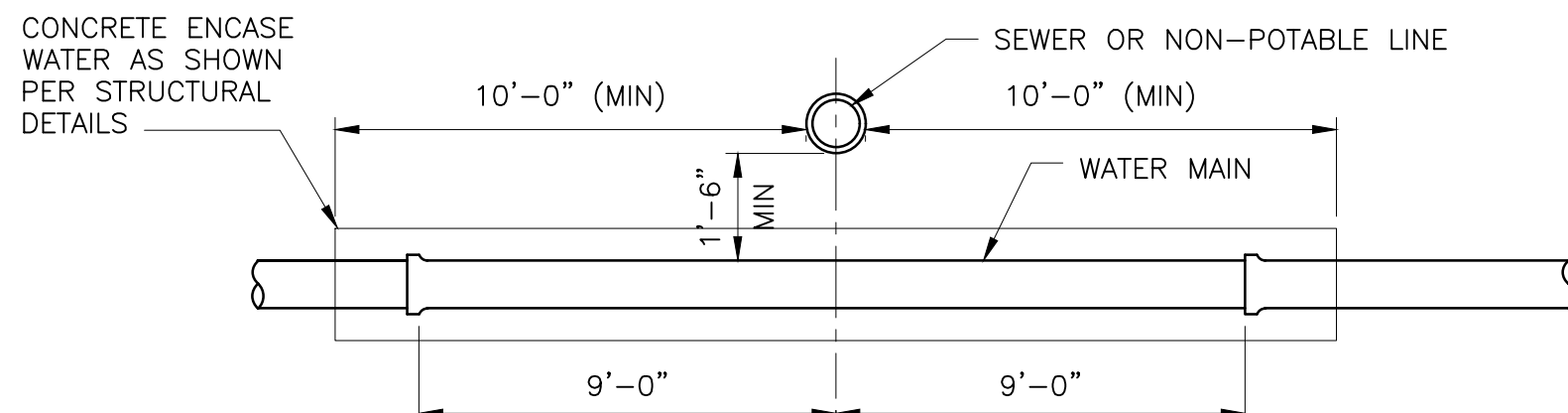


STEEL BEAM GUARDRAIL  
DETAIL G  
NOT TO SCALE C-14



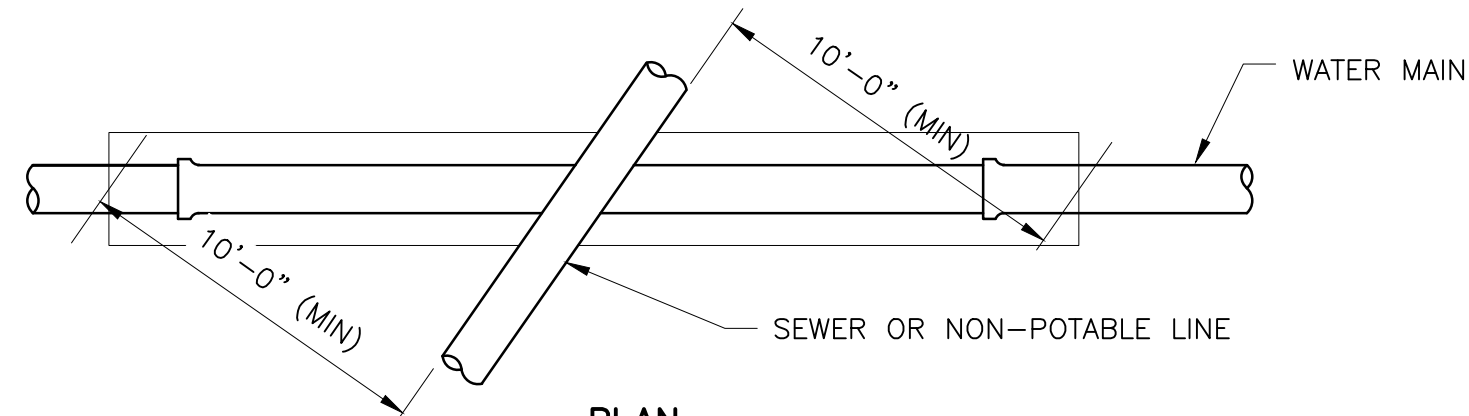
PARALLEL INSTALLATION

CROSSING WATER OVER SEWER



STANDARD SINGLE 18'-0" NOMINAL LENGTH DUCTILE IRON WATER MAIN SECTION CENTERED AT THE POINT OF CROSSING. WATER MAIN JOINTS WITHIN THIS DISTANCE MUST BE FULLY CONCRETE ENCASED.

SECTION



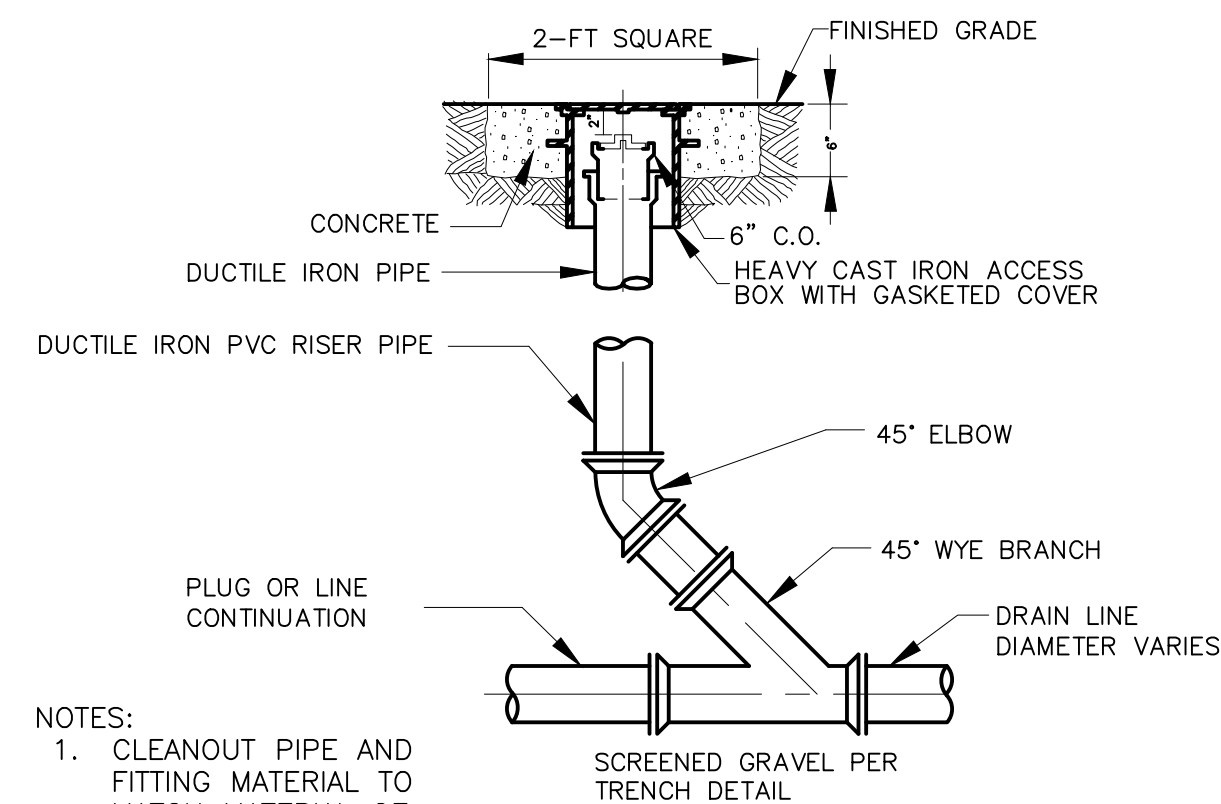
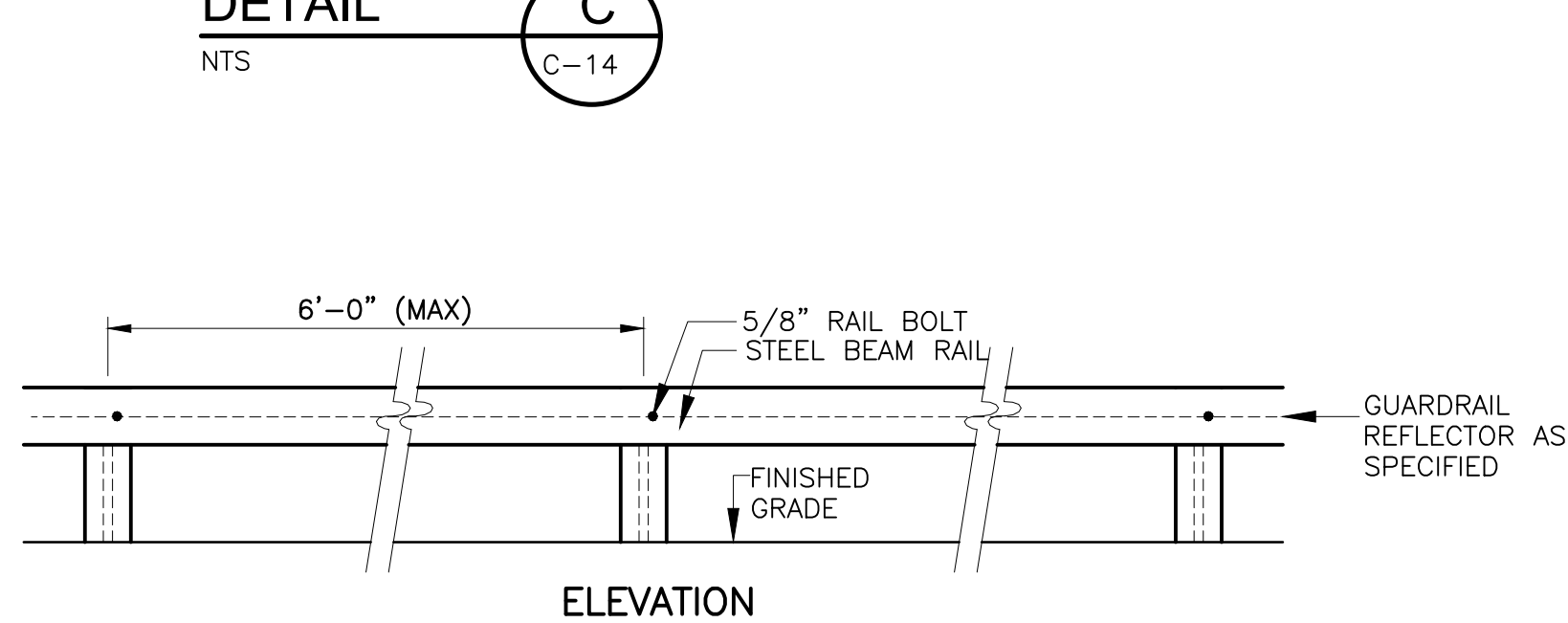
CROSSING UNDER OVER SEWER (NOTE 4)

NOTES:

1. EXCEPTIONS TO DETAIL MUST BE APPROVED BY ENGINEER.
2. WHERE MINIMUM CLEARANCES CANNOT BE MET, SEWER MUST BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS INCLUDING WATER MAIN PRESSURE TESTING REQUIREMENTS.
3. NO VERTICAL CLEARANCE REQUIRED WHEN CONCRETE ENCASED AS SHOWN.
4. CONCRETE ENCASEMENT FOR CROSSING PERPENDICULAR SHALL BE NO LESS THAT 10- FEET FROM EDGE OF SEWER PIPE ON EACH SIDE. FOR PIPE CROSSING OVER THE WATER LINE AT AN ANGLE, SHALL BE AS SHOWN ON THE PLAN.
5. SEWER MUST HAVE ADEQUATE FOUNDATION SUPPORT TO PREVENT SETTLEMENT ON THE WATER MAIN AND TO PREVENT DEFLECTION OF WATER MAIN JOINTS.
6. SEE SIMILAR DETAIL C/C-34 FOR WATER MAIN RELOCATION.

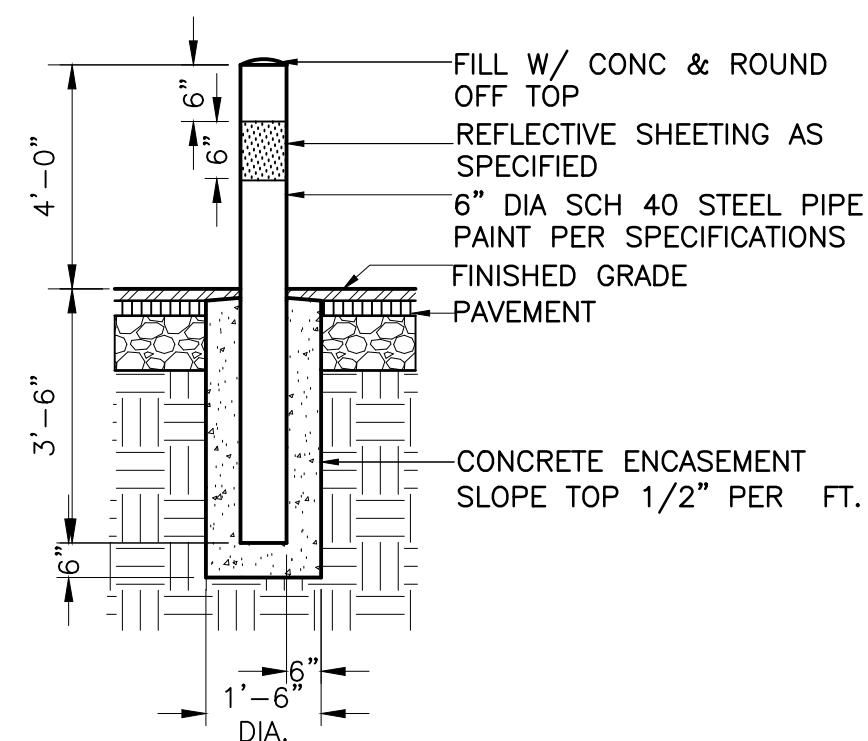
WATER MAIN (POTABLE) CLEARANCE REQUIREMENTS

DETAIL C  
NTS C-14



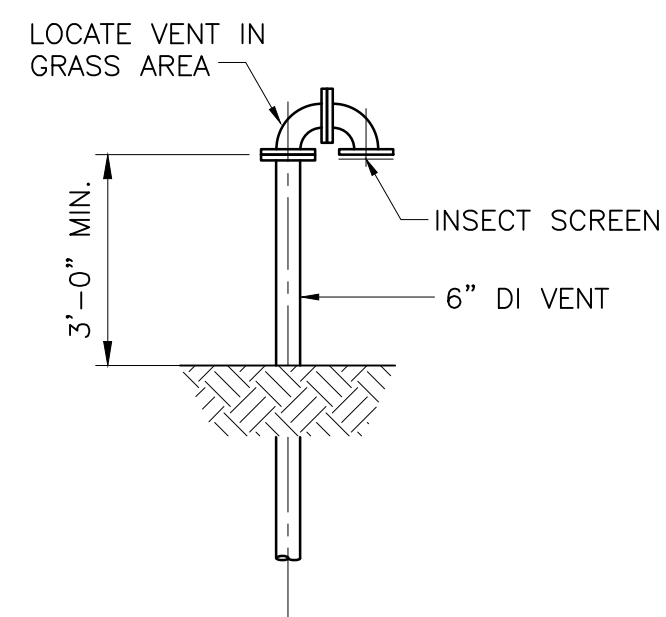
PIPR CLEANOUT DETAIL

DETAIL D  
NTS C-14



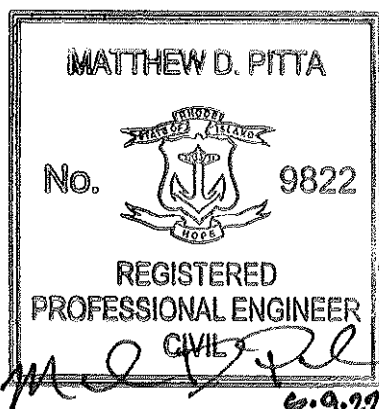
STEEL BOLLARD

DETAIL E  
NTS C-14



6" DI VENT DETAIL

DETAIL F  
NTS C-14



REV	DATE	BY	DESCRIPTION

SCALE  
AS NOTED

WARNING  
0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED D. BORGES  
DRAWN A. WELDON  
CHECKED X

FINAL DESIGN - JUNE 2022



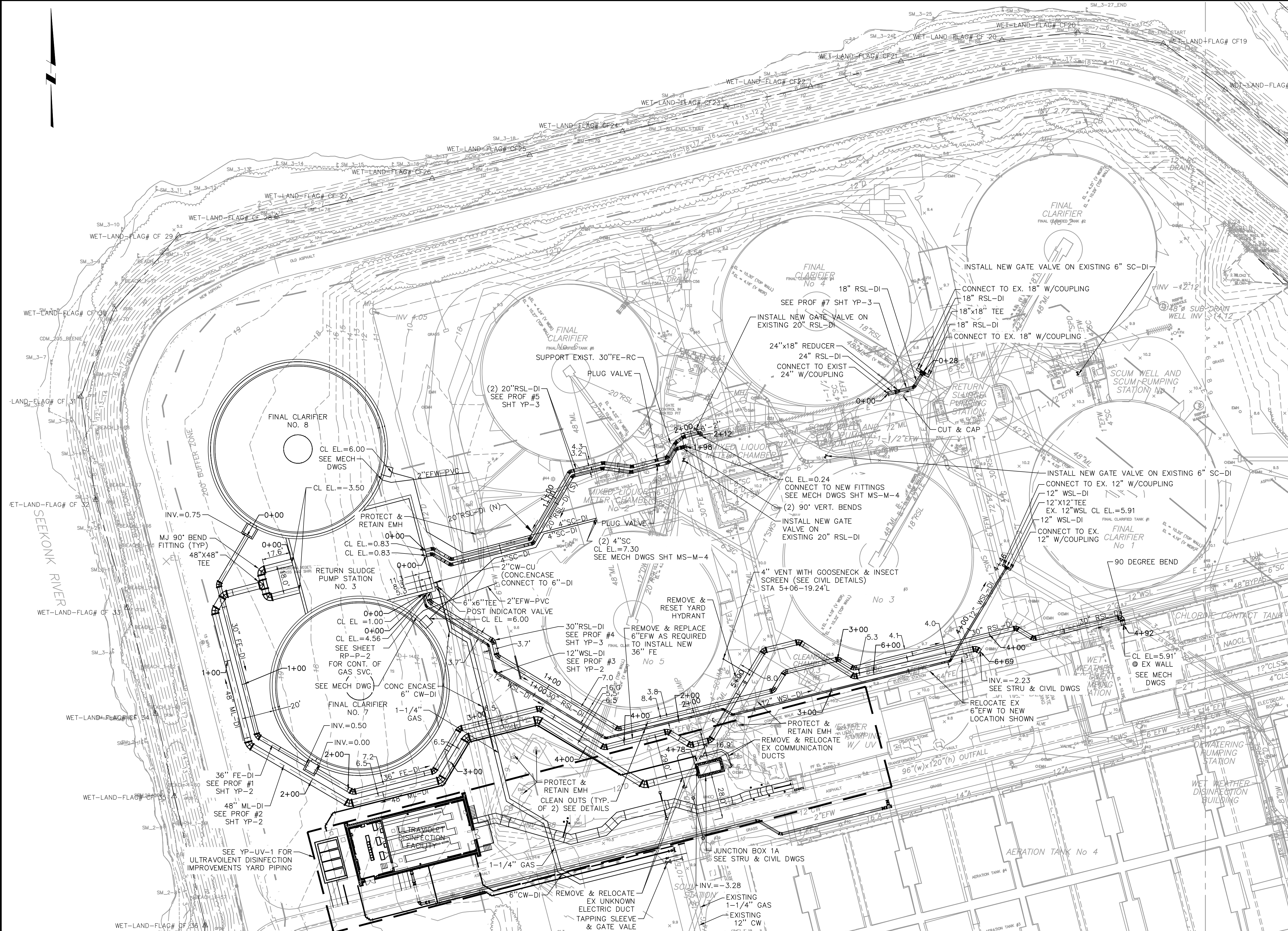
NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM



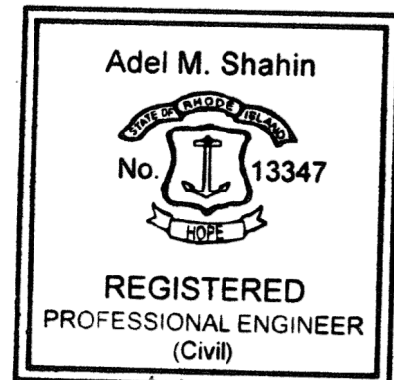
NBC CONTRACT NO 308.10C  
CIVIL  
CIVIL DETAILS V

SHEET  
C-14

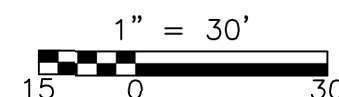




- NOTES:**
1. ALL BENDS SHOWN ARE 45° UNLESS OTHERWISE NOTED.
  2. REFER TO SHEET YP-2 & YP-3 FOR PROFILES.
  3. FITTINGS/BENDS SHOWN ARE A SYMBOLIC REPRESENTATION ONLY.
  4. THE DEPTH OF EXISTING UTILITIES SHOWN ON PROFILE ARE UNKNOWN UNLESS OTHERWISE NOTED.
  5. ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCE TO NGVD 1929.



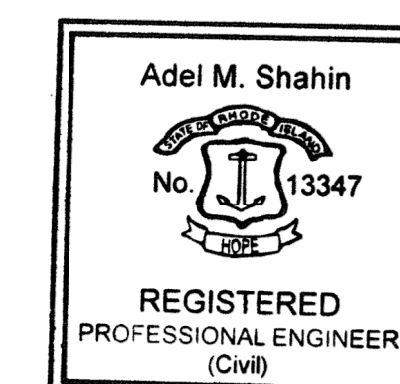
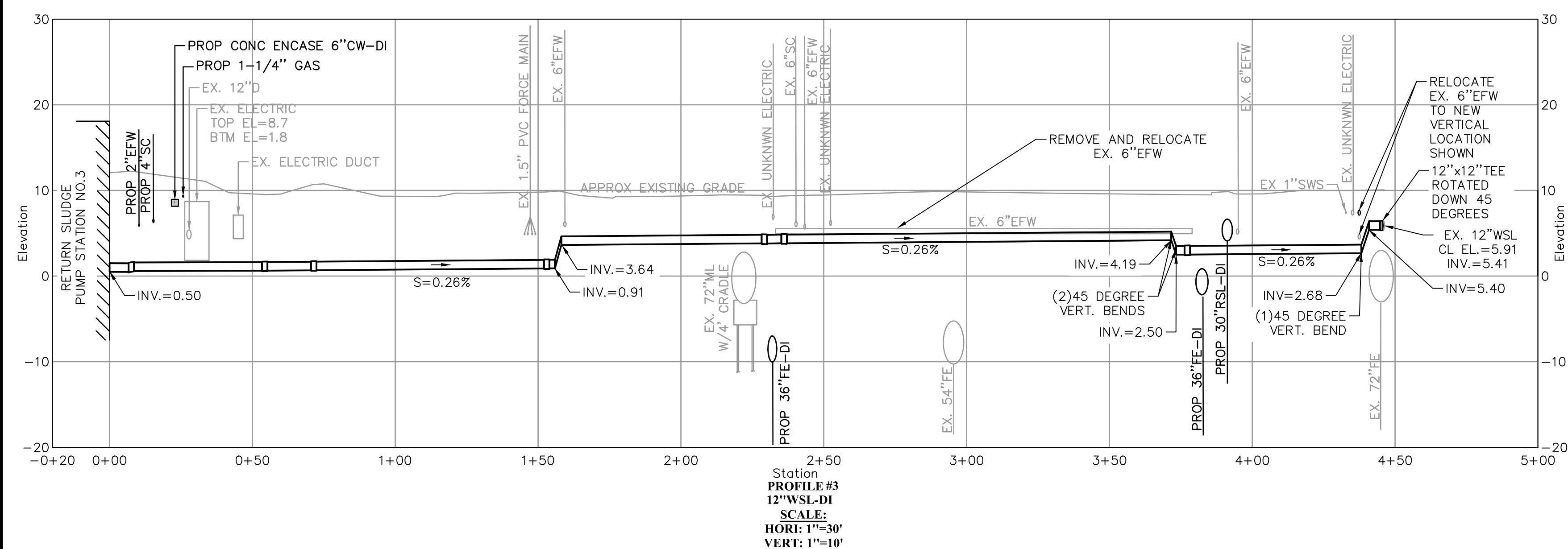
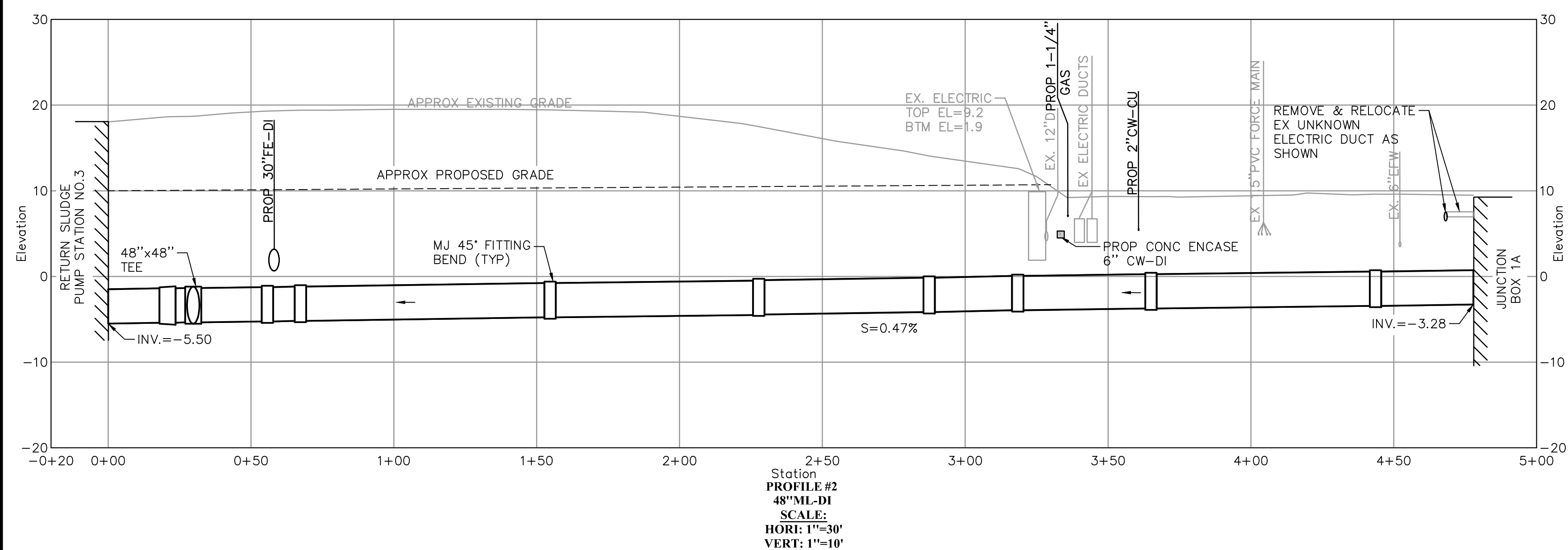
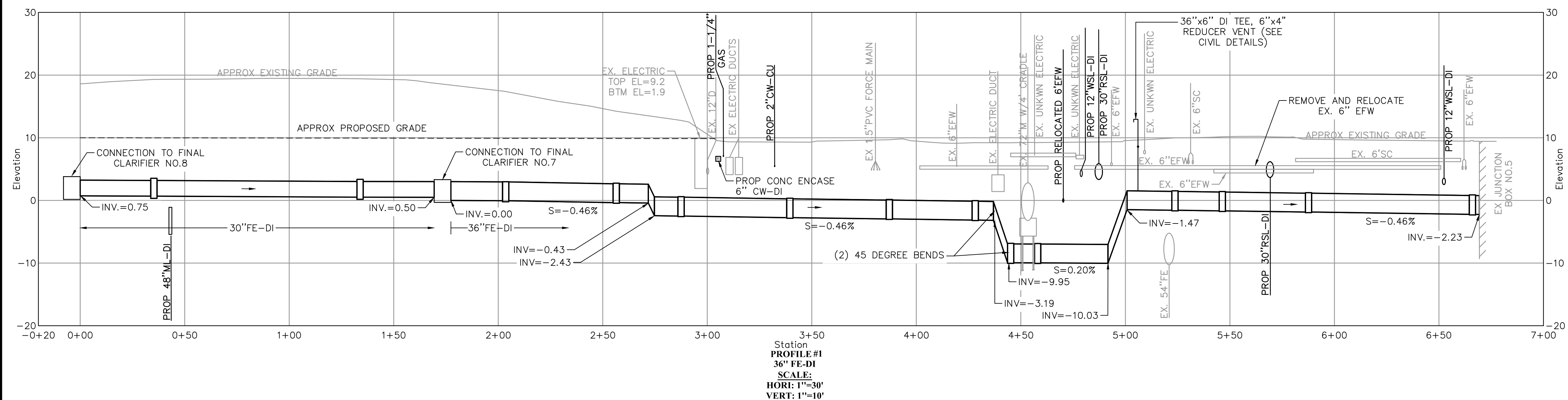
Adel Shih  
3/23/22



				SCALE 1" = 30'	WARNING  IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED <u>AM/SK</u> DRAWN <u>SK</u> CHECKED <u>AS</u>	FINAL DESIGN - MARCH 2022	 260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 GREEN INTERNATIONAL AFFILIATES, INC.	 NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	 	NBC CONTRACT NO 308.10C CIVIL FINAL CLARIFIERS YARD PIPING PLAN	SHEET  YP-1
REV	DATE	BY	DESCRIPTION										



NOTE:  
ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

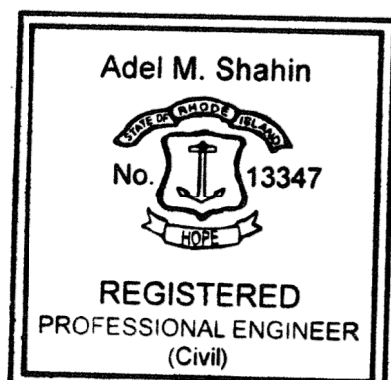
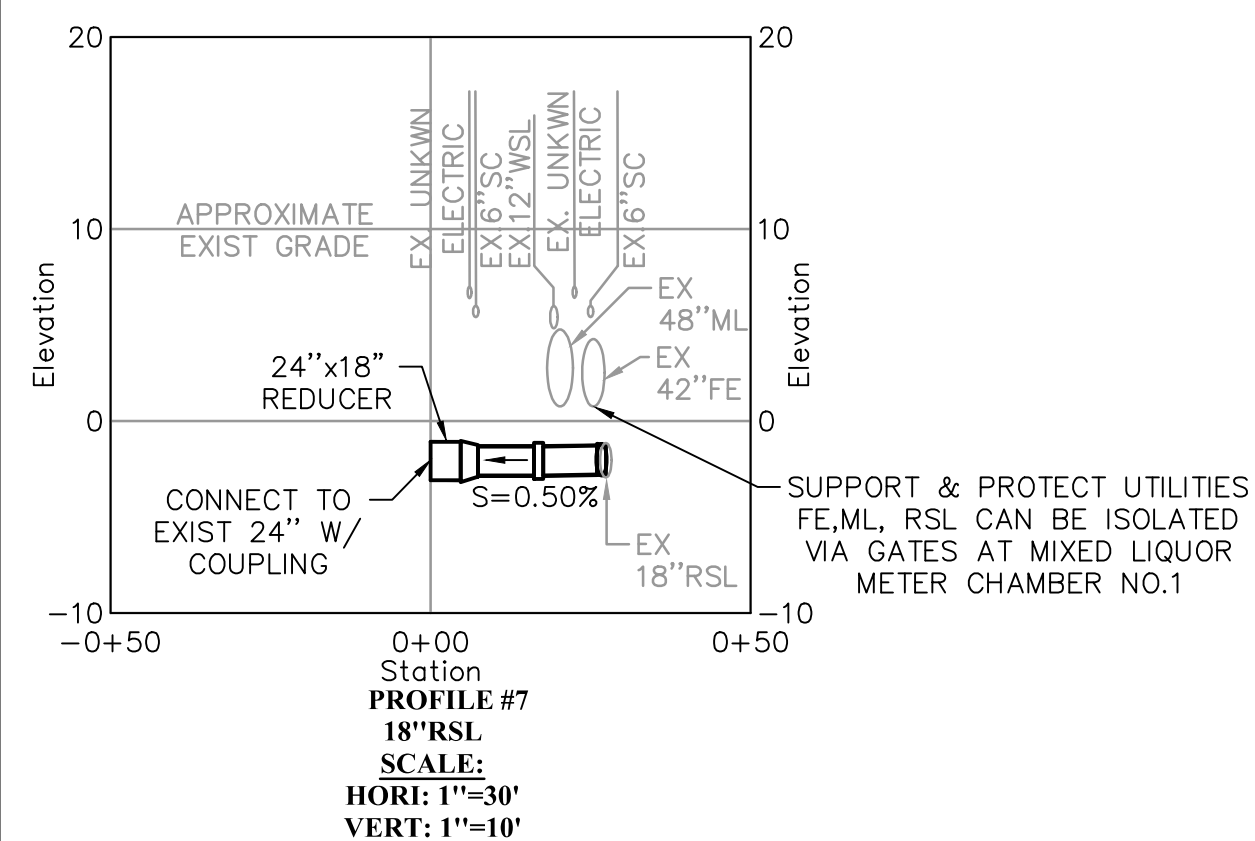
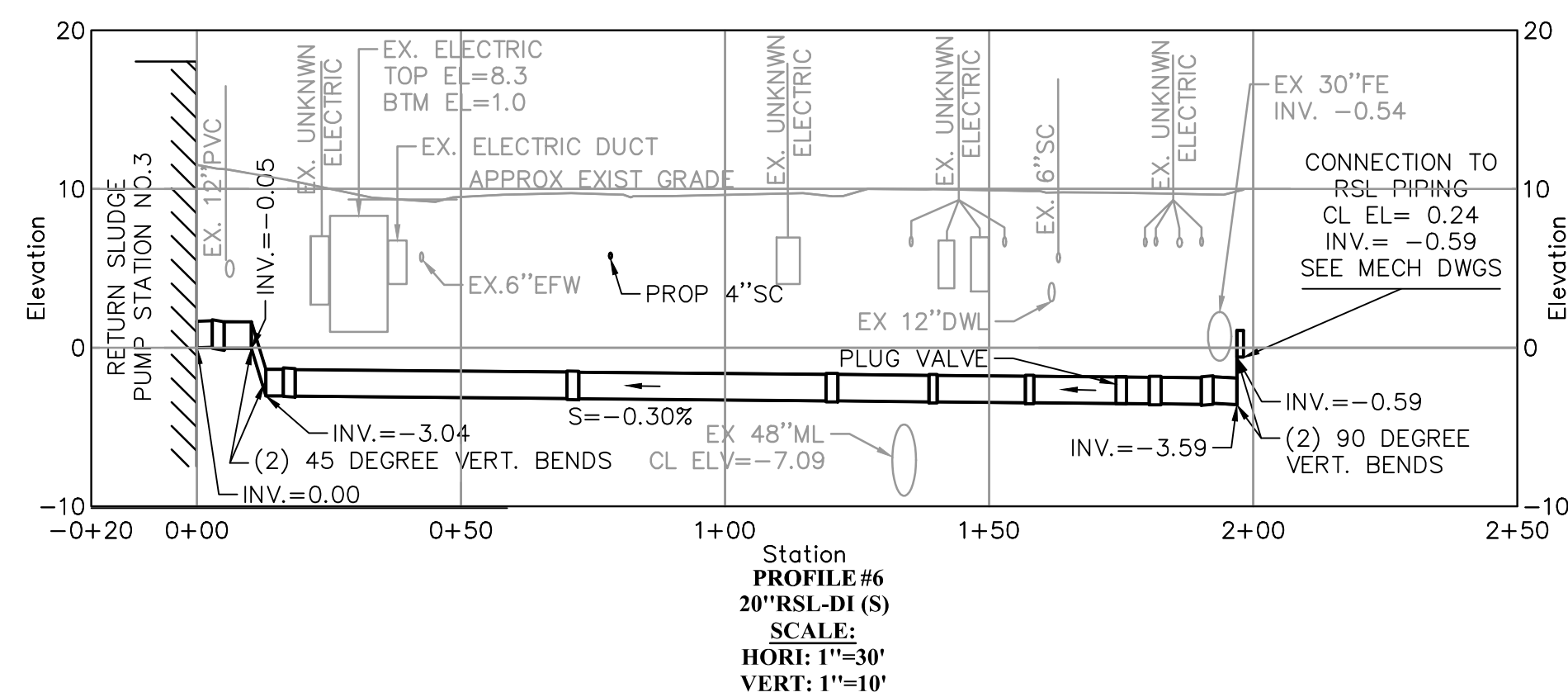
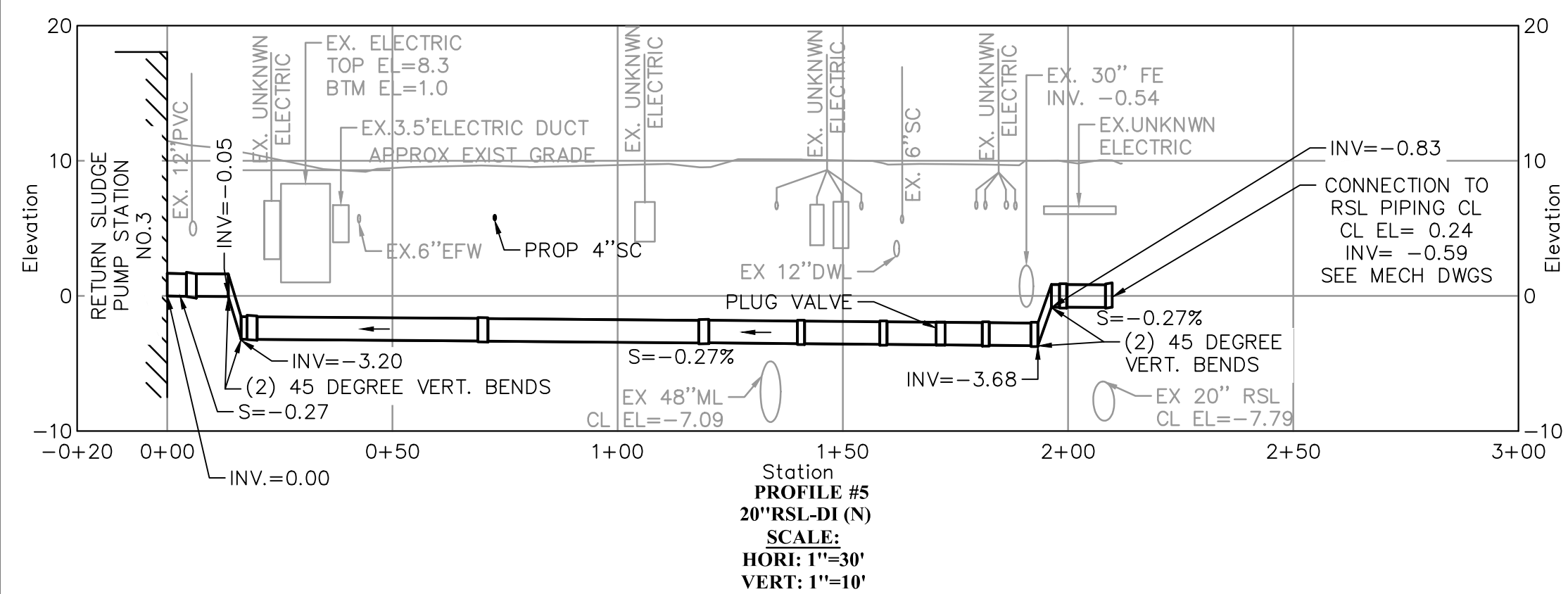
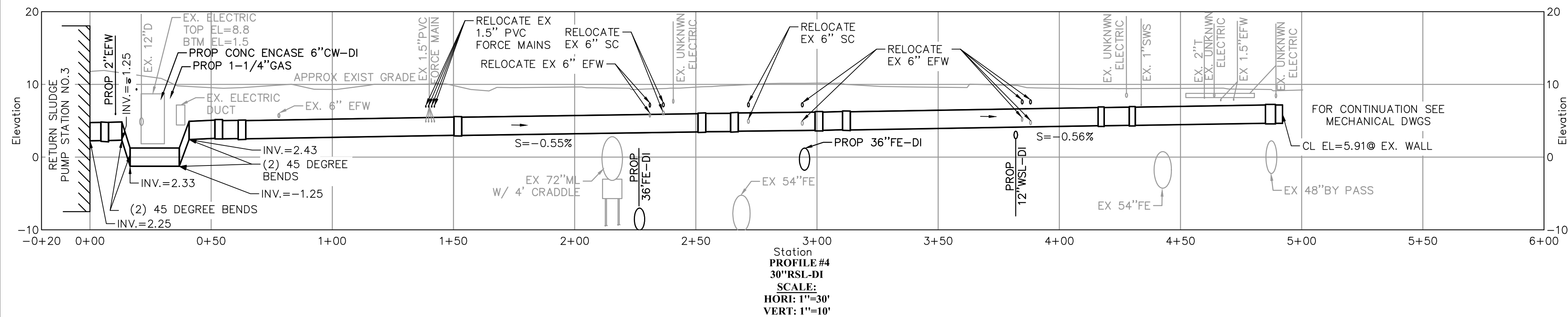


Adul Shari  
3/23/22

				SCALE HORI: 1"=30' VERT: 1"=10'	WARNING <div><div>01/21</div></div> IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED <u>AM/SK</u>	FINAL DESIGN - MARCH 2022	<div><div><div>CDM Smith</div><div>280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</div></div><div><div>GREEN INTERNATIONAL AFFILIATES, INC.</div><div></div></div><div><div><div>NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM</div></div><div><div></div></div></div></div>	NBC CONTRACT NO 308.10C CIVIL  YARD PIPING PROFILE I	SHEET  YP-2
				DRAWN <u>SK</u>						
				CHECKED <u>AS</u>						
REV	DATE	BY	DESCRIPTION							



NOTE:  
ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

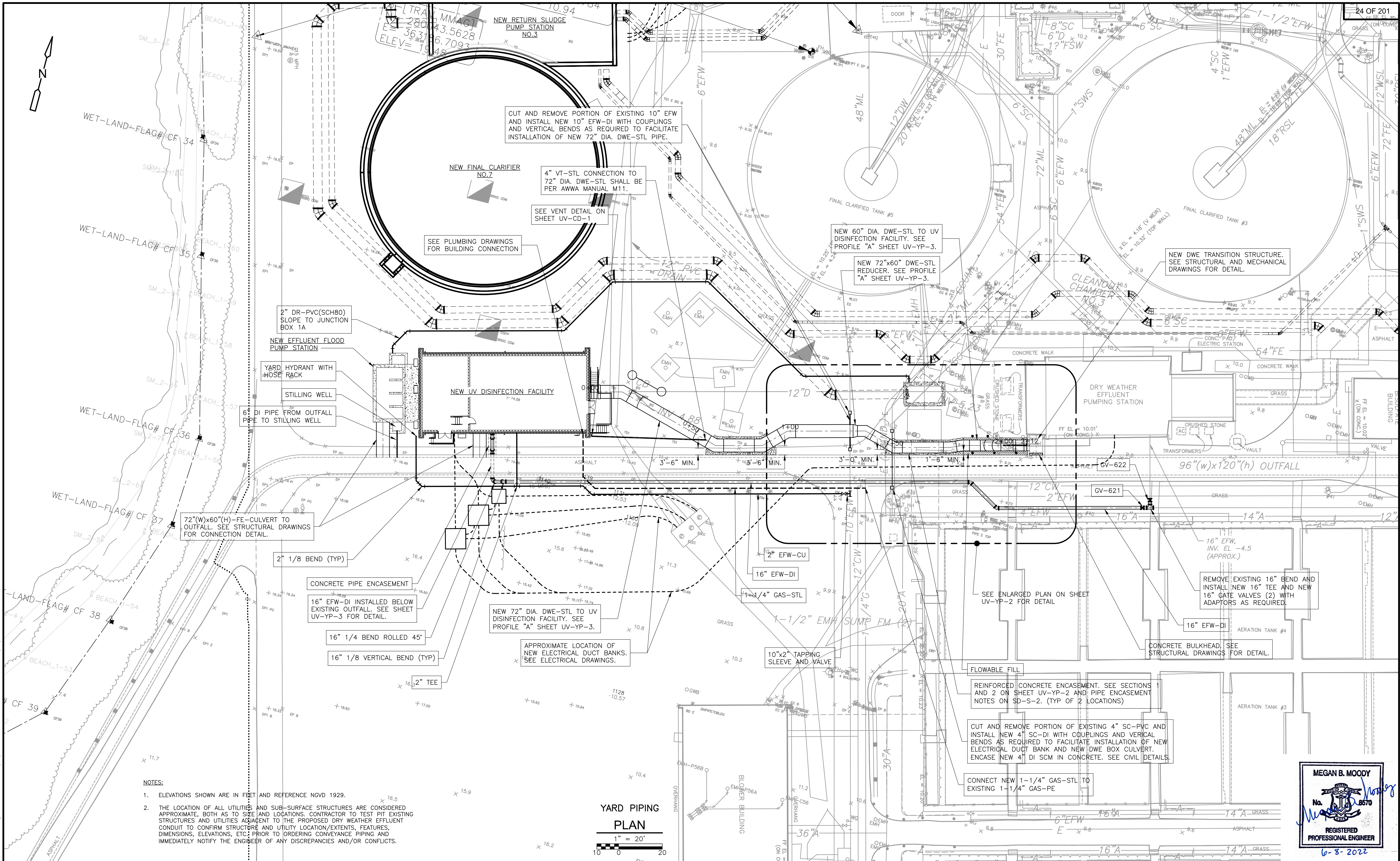


Adel M. Shahin  
3/23/22

				SCALE HORI: 1"=30' VERT: 1"=10'	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED <u>AM/SK</u>	FINAL DESIGN - MARCH 2022	<div>CDM Smith</div> <div>260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</div> <div>GREEN INTERNATIONAL AFFILIATES, INC.</div>	<div><div>NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM</div><div> </div></div>	NBC CONTRACT NO 308.10C CIVIL  YARD PIPING PROFILE II	SHEET YP-3
				DRAWN <u>SK</u>							
REV	DATE	BY	DESCRIPTION	CHECKED <u>AS</u>							



CDM Smith ProjectWise Project No: 1469-230770, NARRAGANSETT BAY COMMISSION, BUCKLIN POINT WASTEWATER TREATMENT FACILITY  
File: C001YPLDWG; Saved by: WELDONA, 5/3/2022 2:01 PM; Plotted on: 5/3/2022 2:01 PM



REV	DATE	BY	DESCRIPTION

SCALE
AS NOTED

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED BY:	K. SCHOTT
DRAWN BY:	A. WELDON
SHEET CHK'D BY:	K. SCHOTT
CROSS CHK'D BY:	W. McCONNELL
APPROVED BY:	M. MOODY
DATE:	MAY 2022

FINAL DESIGN - JUNE 2022
--------------------------



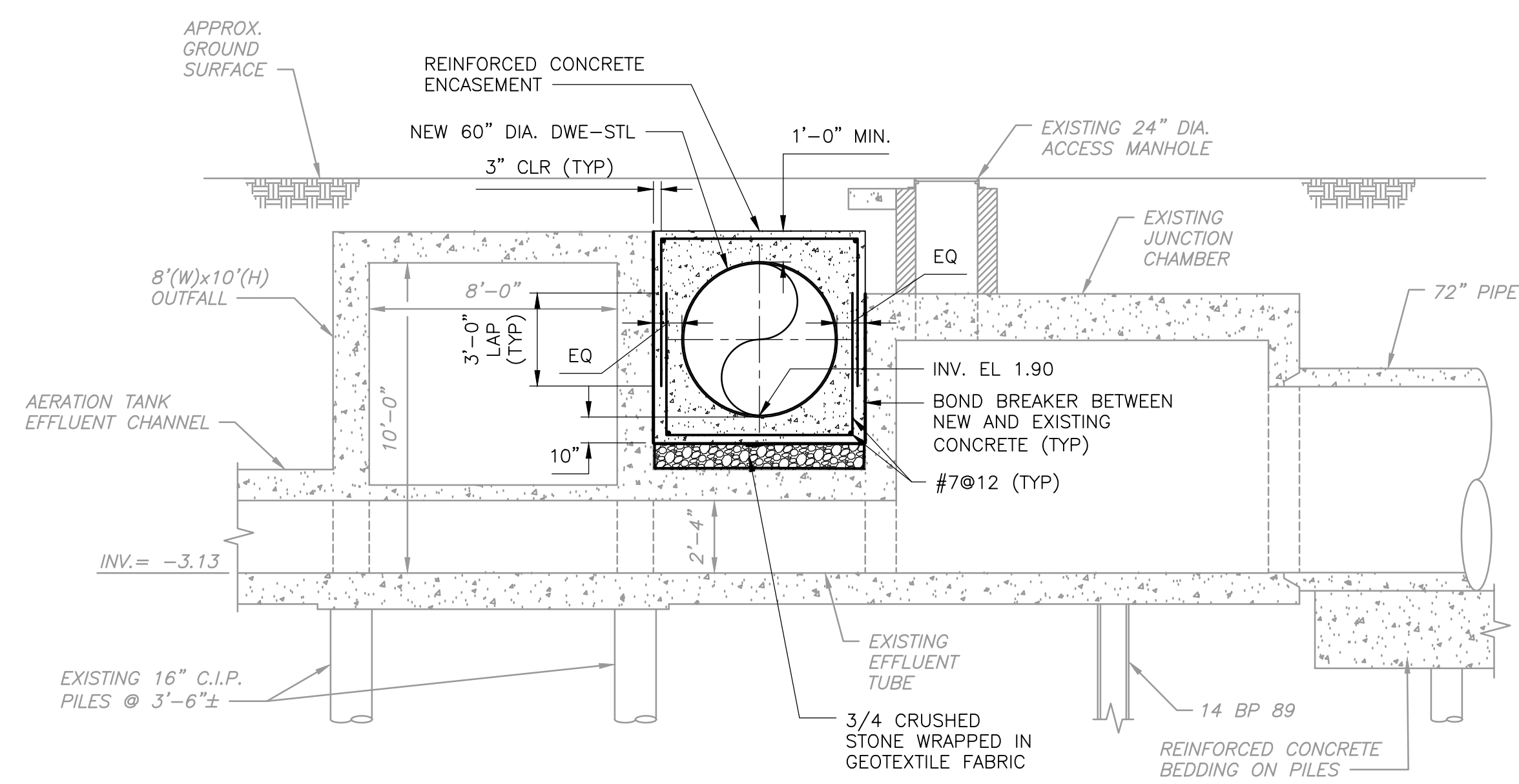
NARRAGANSETT BAY COMMISSION BUCKLIN POINT WASTEWATER TREATMENT FACILITY ULTRAVIOLET DISINFECTION FACILITY
--

NBC CONTRACT NO. 308.10C ULTRAVIOLET DISINFECTION FACILITY YARD PIPING PLAN
---

SHEET UV-YP-1
------------------








1/4" = 1'-0"



- 1/4" = 1'-0"
- 
- 2 1 0 2 4

1" = 10'

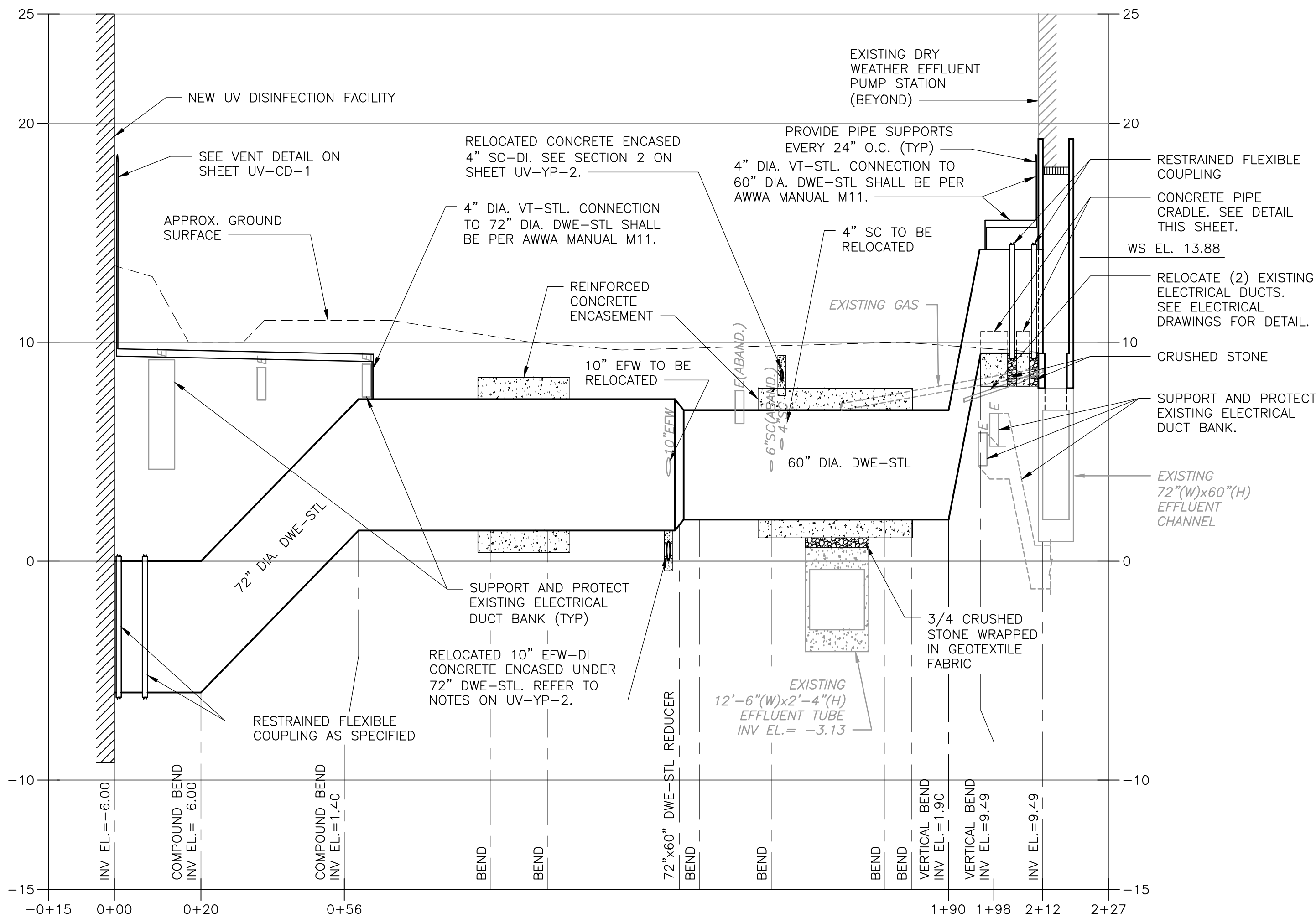
A horizontal scale bar with a black and white checkered pattern from 0 to 5 feet, and a solid black pattern from 5 to 10 feet. The numbers 5, 0, and 10 are placed below the bar.

SHEET

UV-YP-2

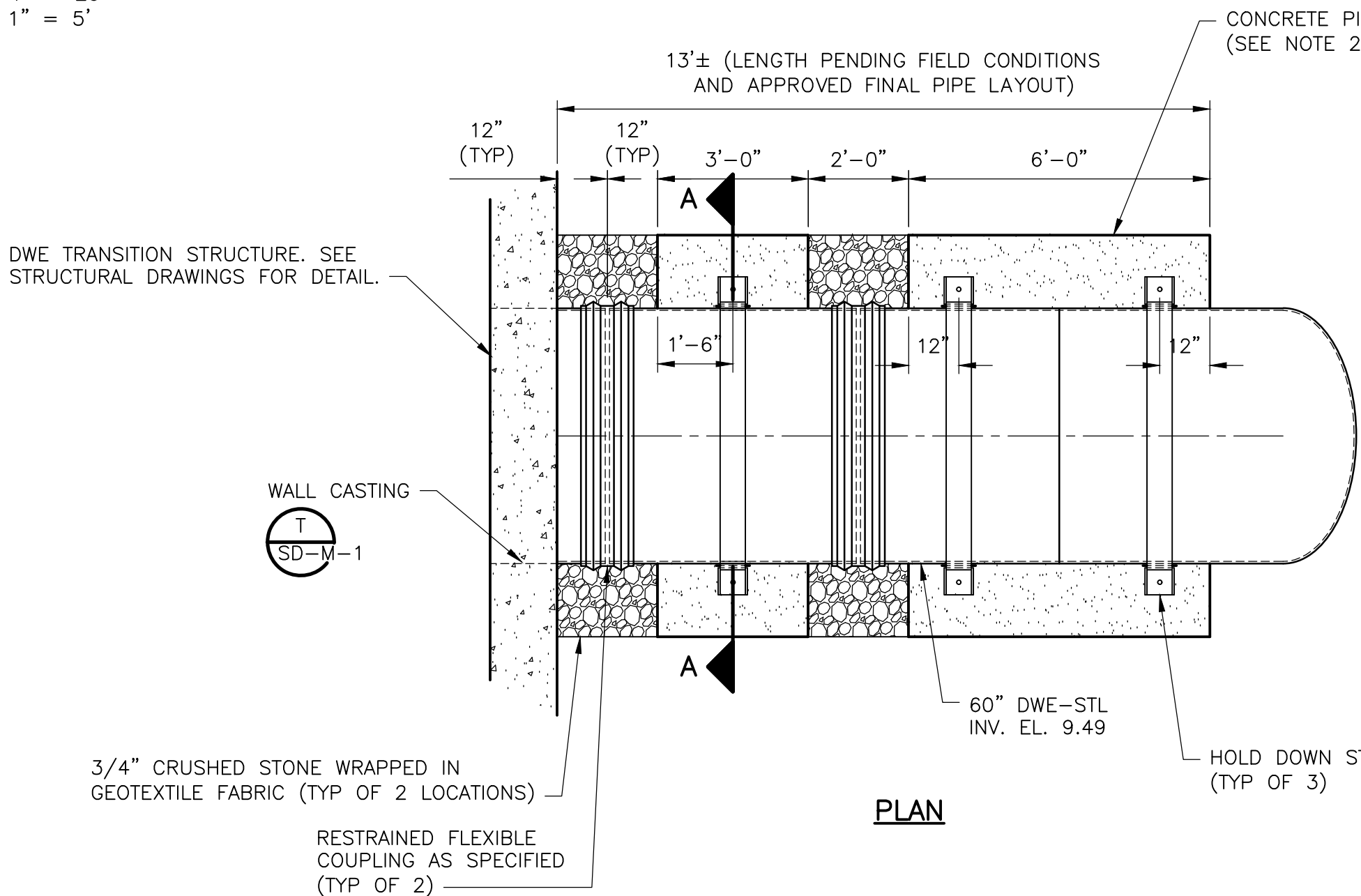




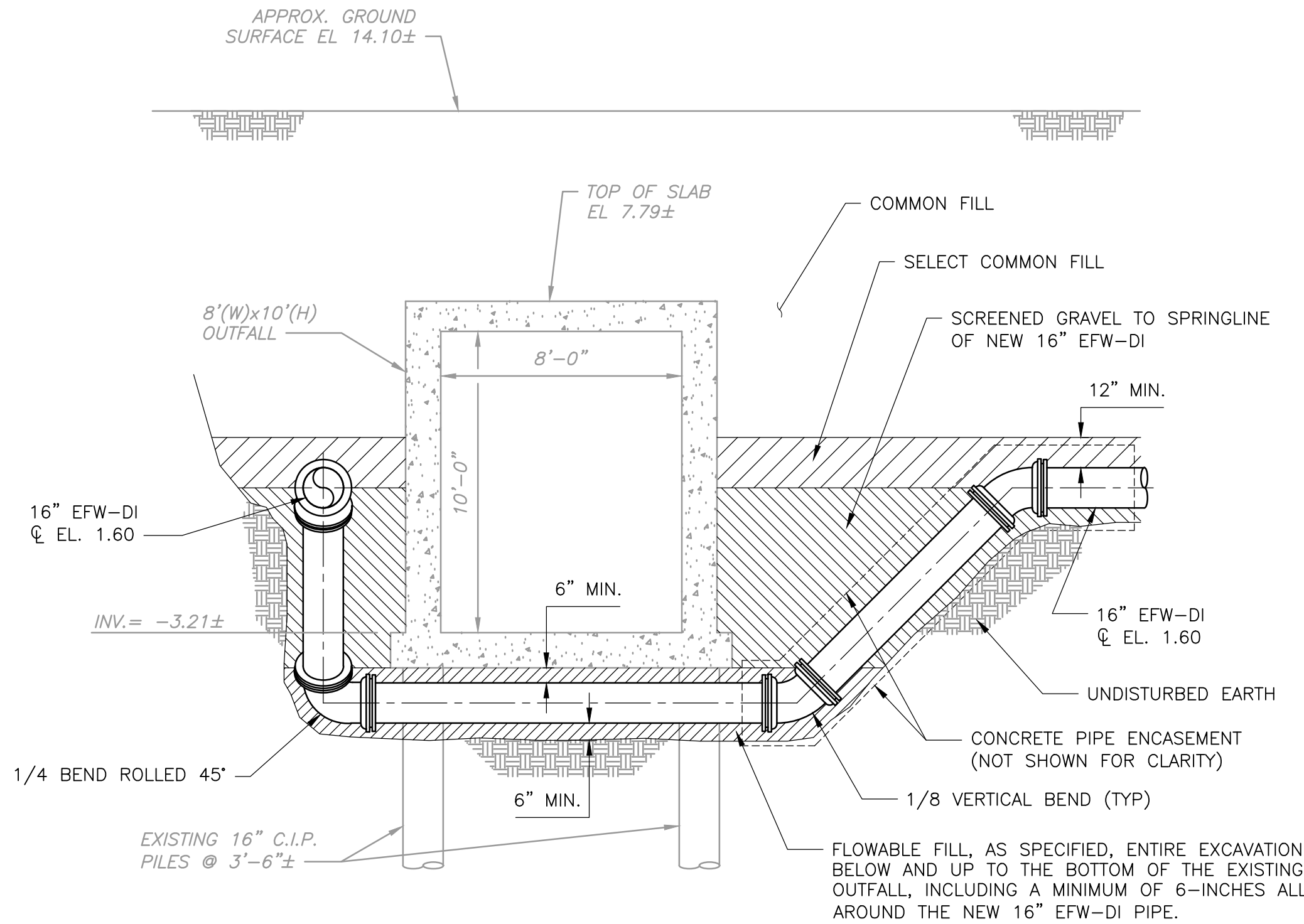


PROFILE "A"  
HOR: 1" = 20'  
VER: 1" = 5'

- NOTES:
- ELEVATIONS SHOWN ARE IN FEET AND REFERENCE NGVD 1929.
  - THE LOCATION OF ALL UTILITIES AND SUB-SURFACE STRUCTURES ARE CONSIDERED APPROXIMATE, BOTH AS TO SIZE AND LOCATIONS. CONTRACTOR TO TEST PIT EXISTING STRUCTURES AND UTILITIES ADJACENT TO THE PROPOSED DRY WEATHER EFFLUENT CONDUIT TO CONFIRM STRUCTURE AND UTILITY LOCATION/EXTENTS, FEATURES, DIMENSIONS, ELEVATIONS, ETC. PRIOR TO ORDERING CONVEYANCE PIPING AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES AND/OR CONFLICTS.



PLAN

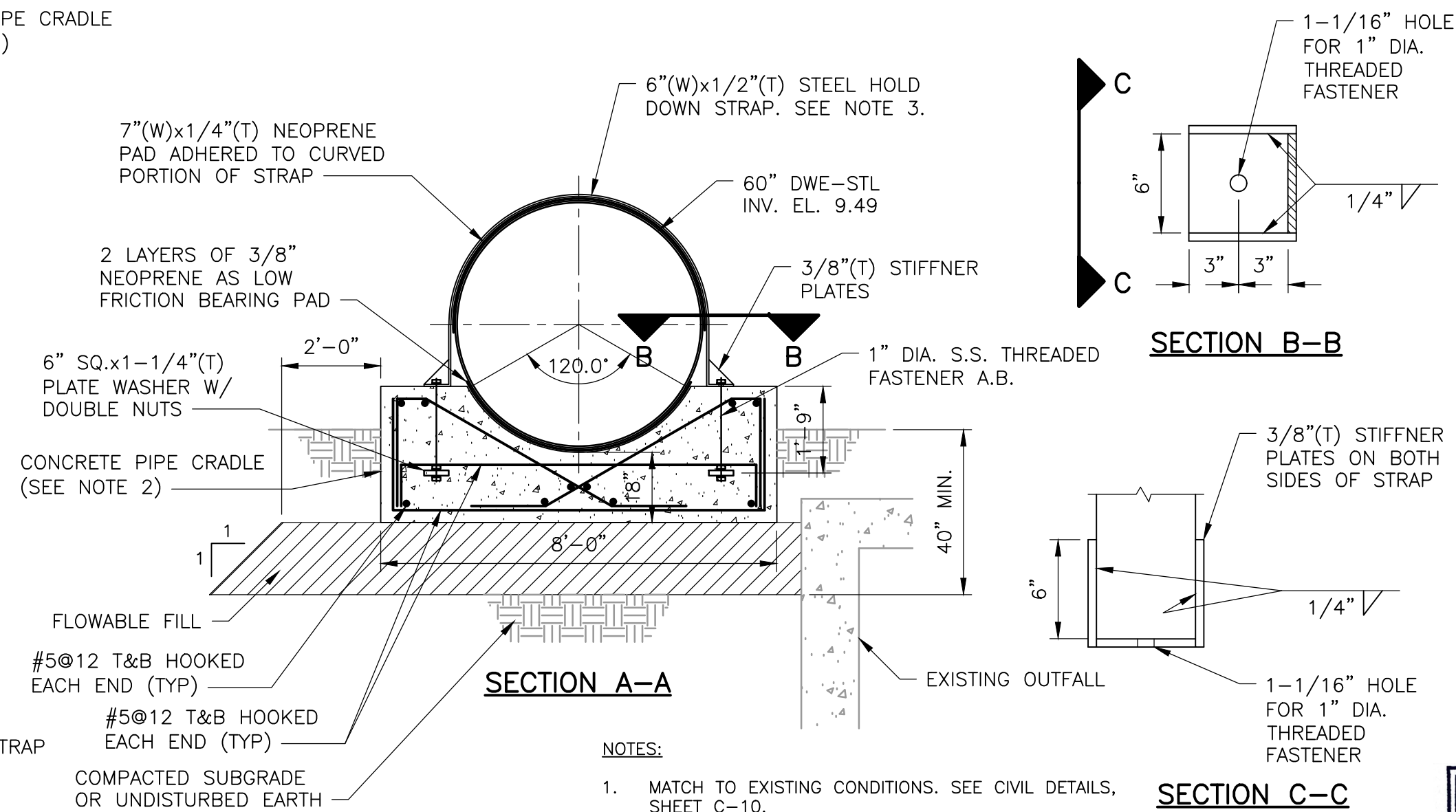
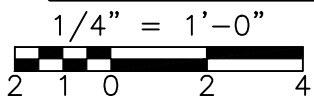
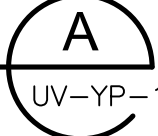


NOTES:

- HAND EXCAVATE UNDER EXISTING OUTFALL FOR INSTALLATION OF NEW 16" EFW-DI PIPE.
- LOCATE EXCAVATION AND 16" EFW-DI INSTALLATION TO AVOID CONFLICT WITH EXISTING OUTFALL PILES.
- PROVIDE 6" MIN. CLEARANCE ALL AROUND 16" EFW-DI PRIOR TO BACKFILLING WITH FLOWABLE FILL.
- FLOWABLE FILL IN ACCORDANCE WITH SPECIFICATION SECTION 02318.
- BEDDING AND BACKFILL MATERIALS SHALL BE AS SPECIFIED AND PLACED IN MAX. 8-INCH LIFTS COMPACTED AS SPECIFIED IN SECTION 02300.

16-INCH EFFLUENT WATER OUTFALL CROSSING

DETAIL

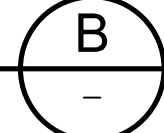


NOTES:

- MATCH TO EXISTING CONDITIONS. SEE CIVIL DETAILS, SHEET C-10.
- STEEL PIPE SHALL HAVE PROTECTIVE COATING AS SPECIFIED.
- OVERSIZE STRAP RADIUS 1/4" MORE THAN THE OUTSIDE RADIUS OF PIPE.

CONCRETE PIPE CRADLE WITH HOLD DOWN STRAPS

DETAIL



NTS

REV	DATE	BY	DESCRIPTION

SCALE  
AS NOTED

WARNING  
0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED BY: K. SCHOTT  
DRAWN BY: A. WELDON  
SHEET CHK'D BY: K. SCHOTT  
CROSS CHK'D BY: W. McCONNELL  
APPROVED BY: M. MOODY  
DATE: MAY 2022

FINAL DESIGN - JUNE 2022

CDM Smith  
260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
BUCKLIN POINT  
WASEWATER TREATMENT FACILITY  
ULTRAVIOLET DISINFECTION FACILITY

ULTRAVIOLET DISINFECTION FACILITY  
YARD PIPING PROFILE AND DETAIL

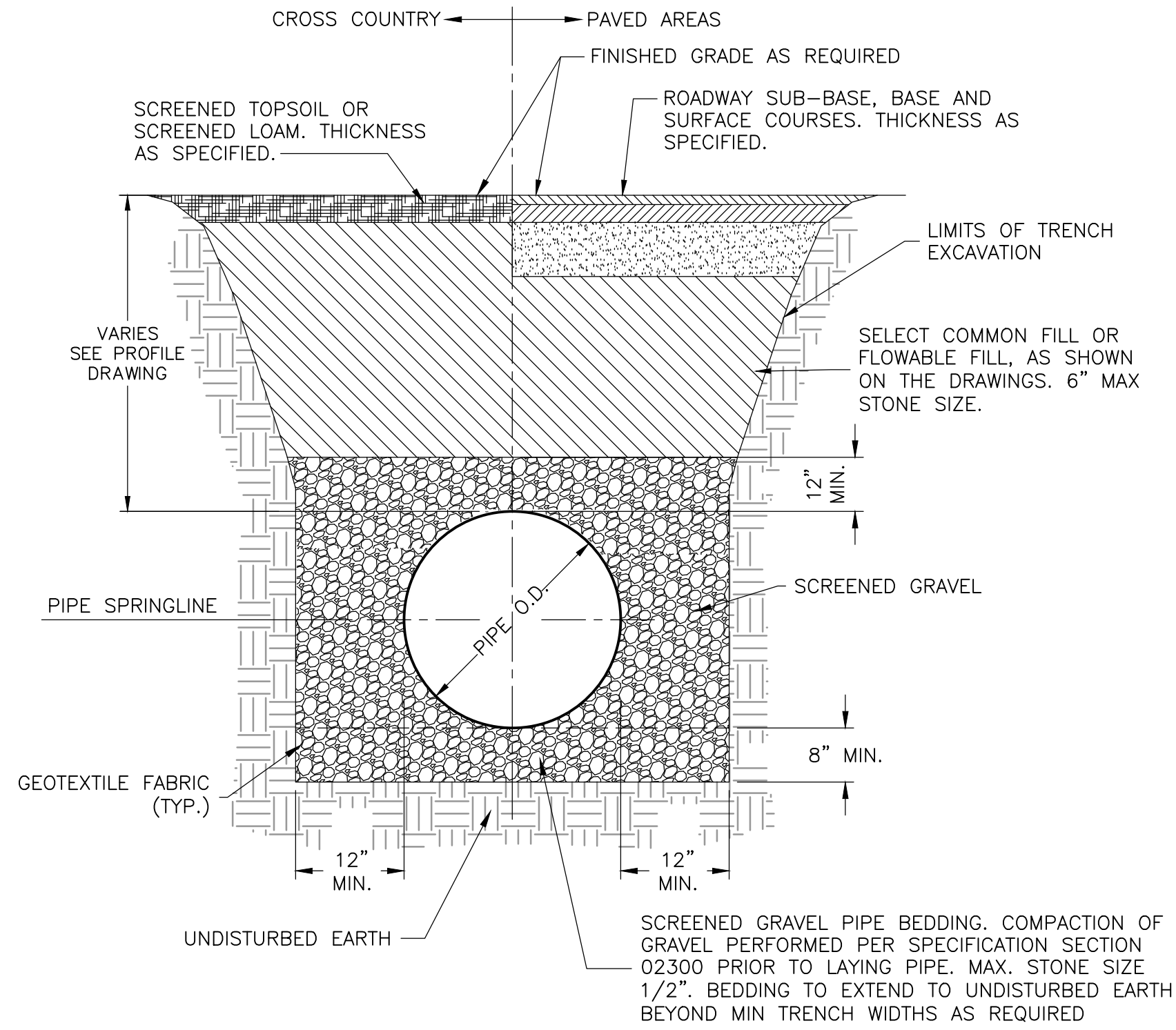
NBC CONTRACT NO. 308.10C

SHEET

UV-YP-3

MEGAN B. MOODY  
No. 06570  
REGISTERED PROFESSIONAL ENGINEER  
6-8-2022





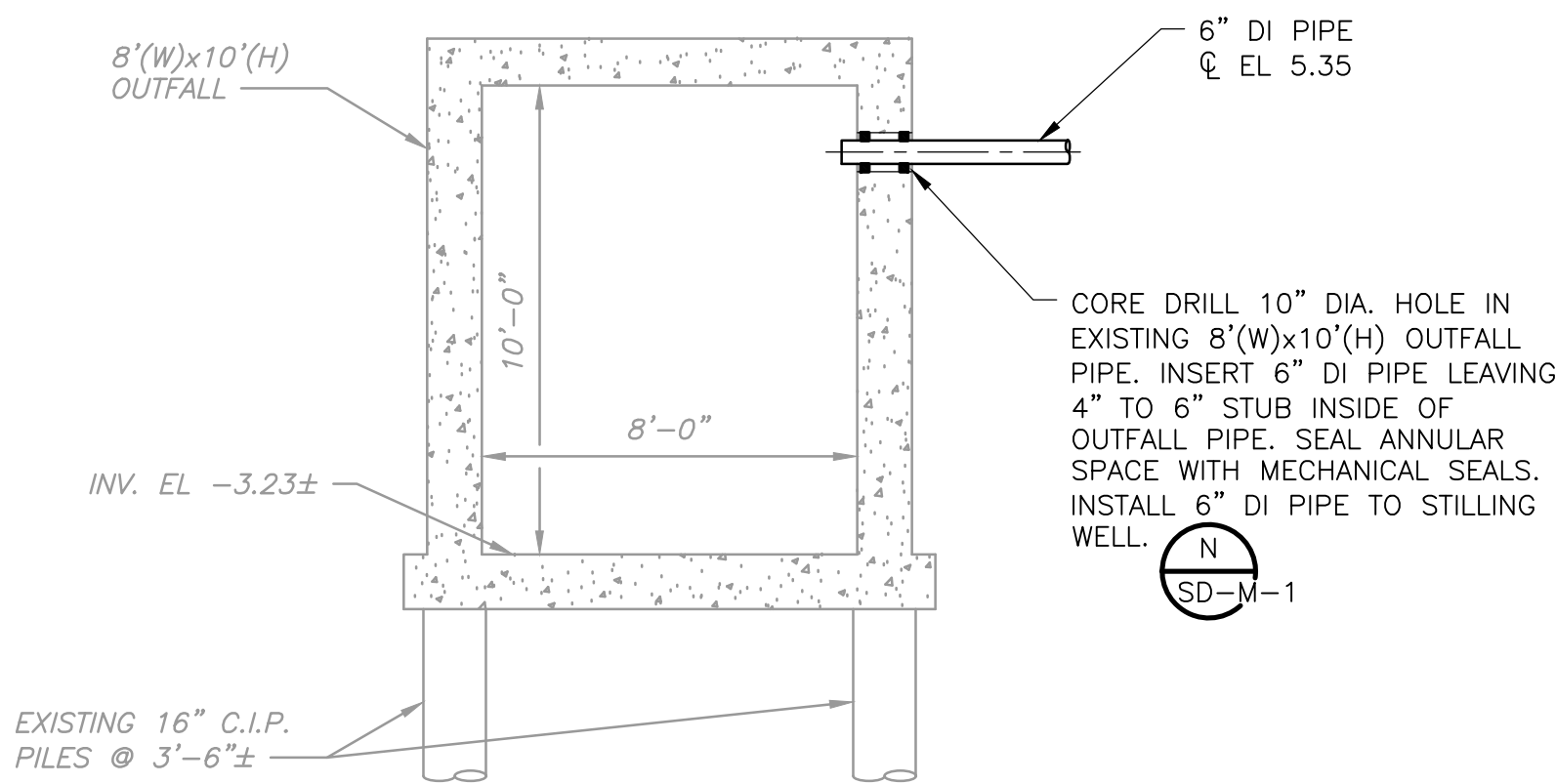
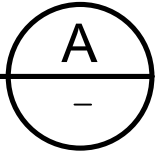
NOTES:

- SCREENED GRAVEL BEDDING AND BACKFILL MATERIALS SHALL BE AS SPECIFIED AND PLACED IN MAX. 8" LIFTS AND COMPACTED AS SPECIFIED.
- COMMON FILL SHALL BE AS SPECIFIED AND PLACED IN 12" MAXIMUM LIFTS AND COMPACTED. REFER TO SPECIFICATION 02300 FOR COMPACTION REQUIREMENTS.
- PIPESTULLS TO REMAIN IN PLACE UNTIL AFTER BACKFILLING IS COMPLETE.
- INITIAL BACKFILL ABOVE THE SCREENED GRAVEL PIPE BEDDING LIMITS SHALL BE WITH ADDITIONAL SCREENED GRAVEL OR SELECT COMMON FILL NOT CONTAINING STONES LARGER THAN 1/2 INCH TO 12 INCHES ABOVE THE TOP OF THE PIPE ONLY BY HAND PLACEMENT IN 6 INCH MAXIMUM LIFTS. EACH LIFT SHALL BE COMPACTED PER THE SPECIFICATIONS.

TYPICAL TRENCH FOR WELDED STEEL PIPE

DETAIL

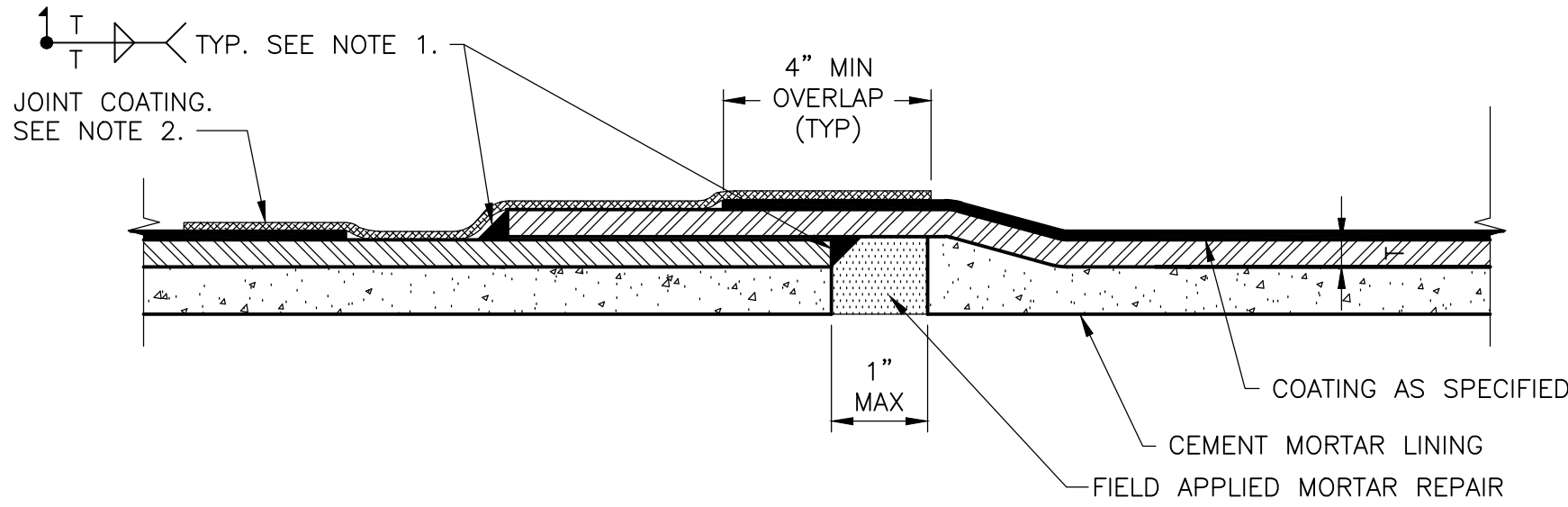
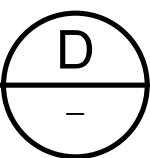
NTS



STILLING WELL OUTFALL CONNECTION

DETAIL

1/4" = 1'-0"



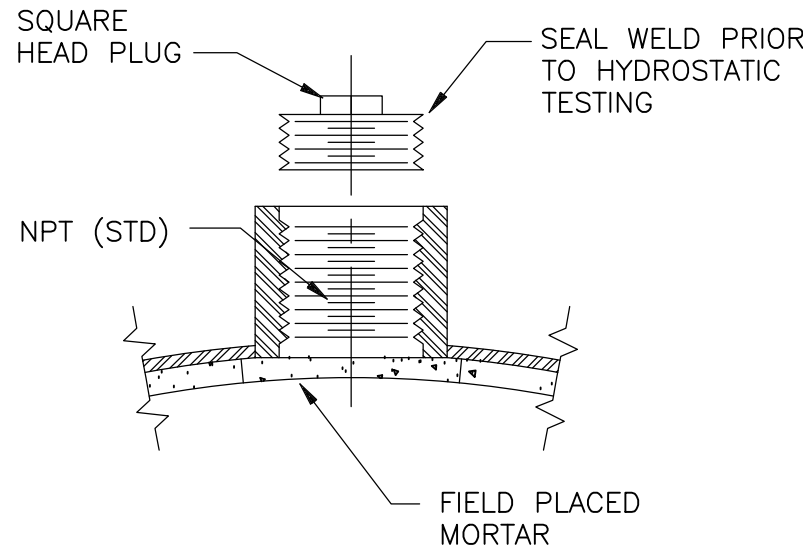
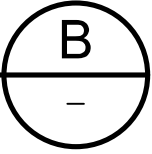
NOTES:

- CONTRACTOR SHALL PROVIDE A SINGLE WELD EITHER INTERNAL OR EXTERNAL TO THE PIPE JOINT AS SPECIFIED BY ENGINEER
- BURIED PIPING SHALL UTILIZE FIELD APPLIED HEAT SHRINK AND EXPOSED PIPING SHALL UTILIZE PAINT COATING. REFER TO SPECIFICATIONS.

SINGLE LAP-WELDED JOINT  
FOR CEMENT-MORTAR LINED WELDED STEEL PIPE

DETAIL

NTS



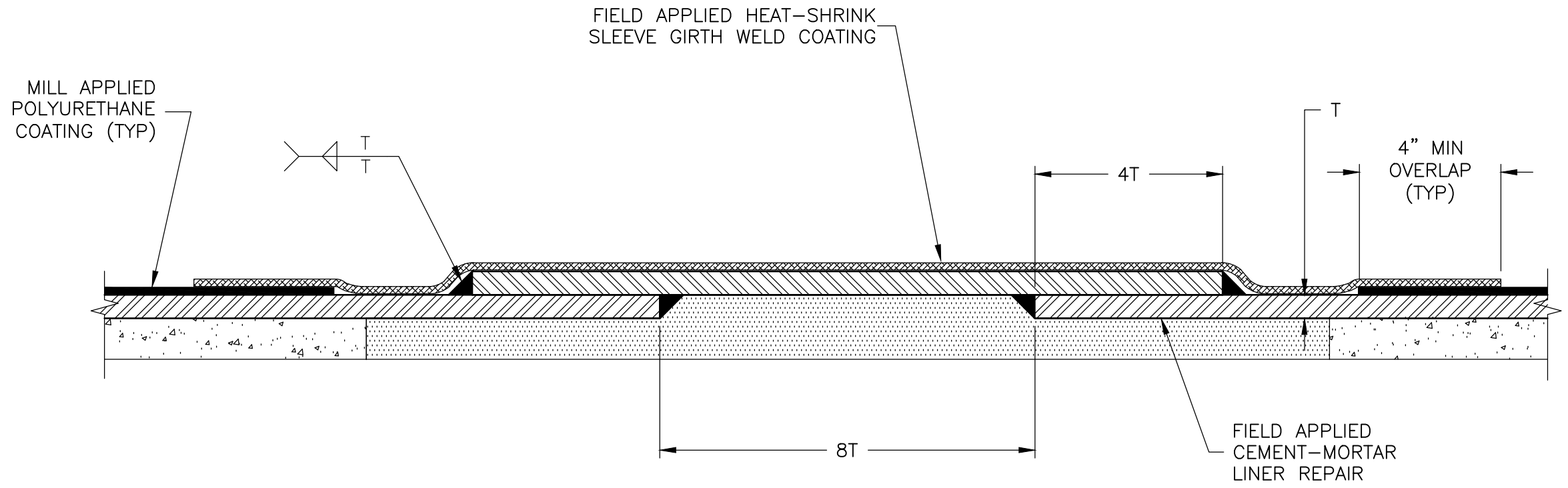
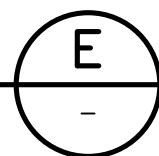
NOTES:

- PASS HOLE EVERY 300- FEET ON CONTINUOUS WELDED SECTIONS, UNLESS ACCESS THROUGH MANWAY IS AVAILABLE.
- SIZE AS RECOMMENDED BY THE PIPING MANUFACTURER.

PASS HOLE DETAIL

DETAIL

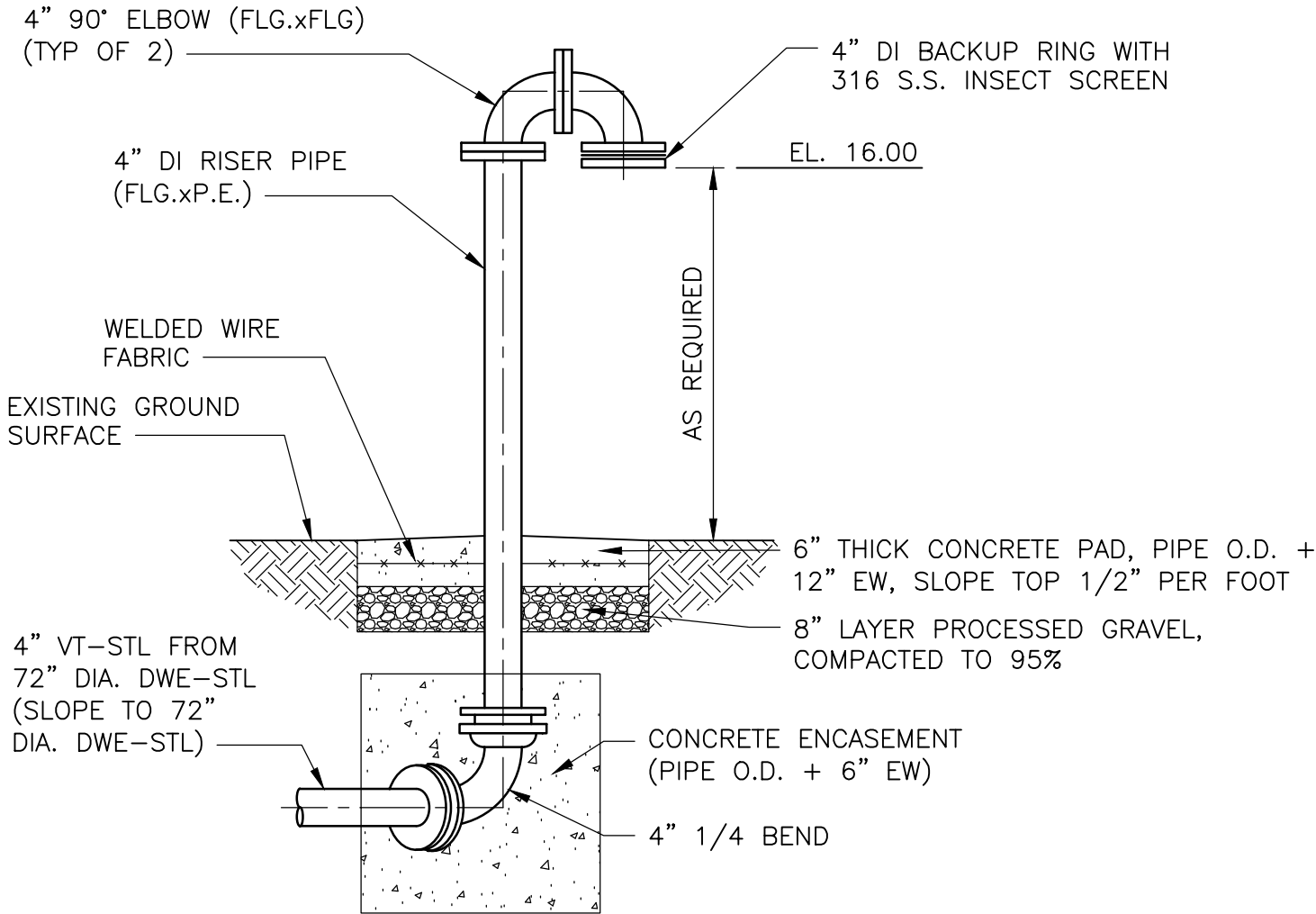
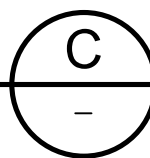
NTS



DOUBLE LAP-WELDED BUTT-STRAP JOINT  
FOR CEMENT-MORTAR LINED WELDED STEEL PIPE

DETAIL

NTS



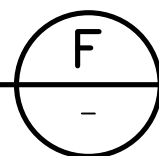
NOTES:

- ALL FITTINGS SHALL BE RESTRAINED.

AIR VENT

DETAIL

NTS



REV	DATE	BY	DESCRIPTION

SCALE	WARNING	DESIGNED BY: K. SCHOTT
AS NOTED	0 1/2 1	DRAWN BY: A. WELDON
	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	SHEET CHK'D BY: K. SCHOTT
		CROSS CHK'D BY: W. McCONNELL
		APPROVED BY: M. MOODY
		DATE: MAY 2022

FINAL DESIGN - JUNE 2022



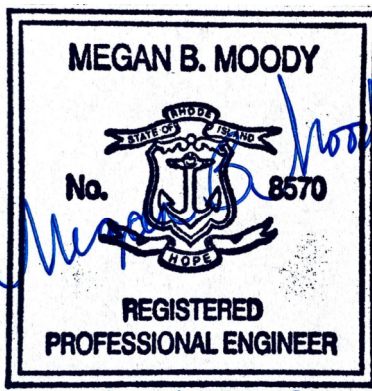
NARRAGANSETT BAY COMMISSION  
BUCKLIN POINT  
WASTEWATER TREATMENT FACILITY  
ULTRAVIOLET DISINFECTION  
FACILITY

ULTRAVIOLET DISINFECTION FACILITY  
CIVIL DETAILS

NBC CONTRACT NO. 308.10C

SHEET

UV-CD-1





ABBREVIATIONS

&	AND	GB	GLASS BLOCK	REF	ROOF EXHAUST FAN
<	ANGLE	GRT	GRATING	REINF	REINFORCE (D, ING)
@	AT	GYP	GYPSUM	REQ'D	REQUIRED
AB	ANCHOR BOLT	GWB	GYPSUM WALL BOARD	REV	REVISED
ABV	ABOVE	HARD	HARDENER	RF	ROOF FAN
ACMU	ACOUSTICAL CONCRETE MASONRY UNIT	HD	HEAVY DUTY	RFG	ROOFING
AFF	ABOVE FINISHED FLOOR	HDWD	HARDWOOD	RGH	ROUGH
AFG	ABOVE FINISHED GRADE	HDWR	HARDWARE	RJ	REVEAL/JUSTICATION JOINT
AL, ALUM	ALUMINUM	HGR	HANGER	RL	RAIN LEADER
AMP	ACOUSTICAL METAL PANELS	HGT	HEIGHT	RLG	RAILING
ANOD	ANODIZE(D)	HM	HOLLOW METAL	RM	ROOM
ASSY	ASSEMBLY	HOR	HORIZONTAL	RO	ROUGH OPENING
BBT	BIOBASED TILE	HP	HIGH POINT	RT	RUBBER TILE
BD	BOARD	HR	HANDRAIL	RWL	RAIN WATER LEADER
BEV	BEVEL(ED)	IN	INCH	S	STEEL S-SHAPED DESIGNATION
BLDG	BUILDING	INST	INSTRUMENTATION	SAT	SUSPENDED ACOUSTICAL TILE
BLK	BLOCK	INSUL	ISULATION	SB	SEAMLESS BASE
BLKG	BLOCKING	JC	JANITOR'S CLOSET	SCHD	SCHEDULE
BRG	BEARING	JT	JOINT	SCRN	SCREEN(ED, ING)
BRK	BRICK	JT FLR	JOINT FILLER	SECT	SECTION
BRS	BRASS	L	LINE OF STRUCTURAL ANGLE DESIGNATION	SF	SEAMLESS FLOORING
BRZ	BRONZE	LAB	LABORATORY	SGFT	STRUCTURAL GLAZED FACING TILE
BTM	BOTTOM	LAD	LADDER	SHIT	SHEET
C TO C	CENTER TO CENTER	LAM	LAMINATED	SIM	SIMILAR
CAB	CABINET	LAV	LAVATORY	SK	SINK
CEM	CEMENT	LG	LAMINATED GLASS	SL	SLOPE
CF	COMPRESSIBLE FILLER	LINO	LINOLEUM	SLNT	SEALANT
CGFB	CEMENTITIOUS GLASS FIBER BOARD	LKR	LOCKER	SPEC	SPECIFICATION, SPECIFIED
CH	CONCRETE HARDENER	LNTL	LINTEL	SST	STAINLESS STEEL
CHAM	CHAMFER	LP	LOW POINT	STD	STANDARD
CHAN	CHANNEL	LT	LIGHT(S)	STL	STORAGE
CIP	CAST IN PLACE	MAS	MASONRY	STRU	STRUCTURE(S, URAL)
CJ	CONTROL JOINT	MATL	MATERIAL	STWY	STAIRWAY
CL OR	CENTERLINE	MAX	MAXIMUM	SUPT	SUPERINTENDENT
CLG	CEILING	MEMB	MEMBRANE	SUSP	SUSPENDED
CLKG	CAULKING	MFR	MANUFACTURER	T	TREAD(S)
CMU	CONCRETE MASONRY UNIT	MIN	MINIMUM	TBM	TONGUE BEARING MEMBRANE
COL	COLUMN	MISC	MISCELLANEOUS	T&G	TONGUE AND GROOVE
COMP	COMPRESSIBLE	MO	MASONRY OPENING	TEMP	TEMPERATURE
CONC	CONCRETE	MR	MOISTURE RESISTANT	TEMP	TEMPERED
CONT	CONTINUOUS	MRAT	MOISTURE RESISTANT ACOUSTICAL TILE	TEMP	TEMPORARY
CRPT	CARPET, CARPET TILE	MTD	MOUNTED	TER	TERRAZZO
CRS	COURSE(S)	MTG	MOUNTING	TERB	TERRAZZO BASE
CT	CERAMIC TILE	MTL	METAL	THK	THICK(NESS)
CET	DETAIL	NIC	NOT IN CONTRACT	THR	THRESHOLD
DF	DRINKING FOUNTAIN	NOM	MONINAL	TKBD	TACKBOARD
DIA	DIAMETER	NTS	NOT TO SCALE	TOB	TOP OF BRICK
DIAG	DIAGONAL	OC	ON CENTER	TOC	TOP OF CONCRETE
DIM	DIMENSION	OH	OVERHANG	TOIL	TOILET
DISP	DISPENSER	OPNG	OPENING	TOM	TOP OF MASONRY
DN	DOWN	OPP HD	OPPOSITE HAND	TOPG	TOPPING
DP	DAMPPOOFING	ORD	OVERFLOW ROOF DRAIN	TOS	TOP OF STEEL
DR	DRAIN	OSB	ORIENTED STRAND BOARD	TS	STRUCTURAL TUBING (STEEL UNLESS NOTED)
DWG(S)	DRAWING(S)	OV	OVER	TSL	TOP OF SLAB
ELEC	ELECTRICAL	OVHD	OVERHEAD	TWF	THROUGH WALL FLASHING
ELEV	ELEVATION	PERIM	PERIMETER	TYP	TYPICAL
EQ	EQUAL(LY)	PL	PLATE	UC	UNDERCUT
EQPT	EQUIPMENT	PLAS	PLASTER	UON	UNLESS OTHERWISE NOTED
EWV	ELECTRICAL WATER COOLER	PLK	PLANK	UR	URINAL
EXP	EXPOSED	PLYWD	PLYWOOD	VB	VAPOR BARRIER
EJ	EXPANSION JOINT	PM	PRESSED METAL	VCT	VINYL COMPOSITE TILE
EXIST, (E)	EXISTING	PR	PAIR	VERT	VERTICAL
FD	FLOOR DRAIN	PRD	PROMENADE ROOF DRAIN	VEST	VESTIBULE
FE	FIRE EXTINGUISHER	PRCST	PRECAST	VTR	VENT THRU ROOF
FF	FACTORY FINISH	PRFAB	PRE-FABRICATED	W	WITH
FGL	FIBERGLASS	PT	PREASSURE TREATED	W/	WITH
FIN	FINISH(ED)	PRMLD	PREMOLDED	W/A	WHERE APPLICABLE
FLG	FLASHING	PSF	POUNDS PER SQUARE FOOT	W/O	WITHOUT
FL	FLOORING(S)	PTD	PAINTED	WC	WATER CLOSET
FLR	FILLER	QT	QUARRY TILE	WD	WOOD
FR	FRAME	QTB	QUARRY TILE BASE	WDW	WINDOW
FRP	FIBERGLASS REINFORCED PLASTIC	R	RISER(S)	WF	WIDE FLANGE
FO	FRAME OPENING	R+S	BACKER ROD & SEALANT	WPG	WATERPROOFING
FV	FIELD VERIFY	RD	RUBBER BASE	WT	STEEL TEE-SHAPE DESIGNATION
FXD	FIXED	RECT	RECEPTACLE	WWF	WELDED WIRE FABRIC
GA	GAGE, GAUGE				
GALV	GALVANIZED				
GL	GLASS				

GENERAL NOTES

1. HEIGHT OF INTERIOR STUD AND CMU PARTITIONS ARE FROM FLOOR TO THE UNDERSIDE OF ROOF DECK UNLESS OTHERWISE NOTED. PROVIDE DEFLECTION HEADS AT TOP OF WALL (TYPICAL).
2. NOT ALL EQUIPMENT IS SHOWN FOR CLARITY. REFER TO THE APPROPRIATE DISCIPLINE SHEETS FOR SPECIFIC EQUIPMENT LAYOUT AND OTHER REQUIREMENTS
3. SEE CIVIL SHEETS FOR SIDEWALK, ROAD PAVING AND FINISH GRADE ELEVATIONS.
4. SEE STRUCTURAL SHEETS FOR SIZE AND LOCATION OF CONCRETE PADS, TRENCHES, VAULTS, SUMPS, ETC
5. SEE STRUCTURAL SHEETS FOR CONCRETE AND MASONRY REINFORCEMENT
6. PATCH AND REPAIR ANY MATERIALS OR SURFACES DAMAGED DURING THE CONSTRUCTION PROCESS TO MATCH THE EXISTING ADJACENT SURFACES.
7. ALL ITEMS TO BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
8. ALL JOINTS, VOIDS AND PENETRATIONS THROUGH FIRE-RATED WALL SYSTEMS ARE TO BE FILLED/SEALED WITH UL APPROVED FIRESAFING/FIRESTOPPING MATERIALS TO ACHIEVE THE REQUIRED FIRE-RATING (REFER TO CODE DRAWINGS FOR LOCATIONS).
9. DO NOT SCALE FROM THE DRAWINGS
10. NOTIFY ARCHITECT IF CONSTRUCTION DOCUMENTS DIFFER FROM ACTUAL FIELD CONDITIONS PRIOR TO FABRICATION OR NEW CONSTRUCTION
11. THIS DRAWING CONTAINS A GENERAL LIST OF ARCHITECTURAL SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DRAWINGS.

LINE TYPES

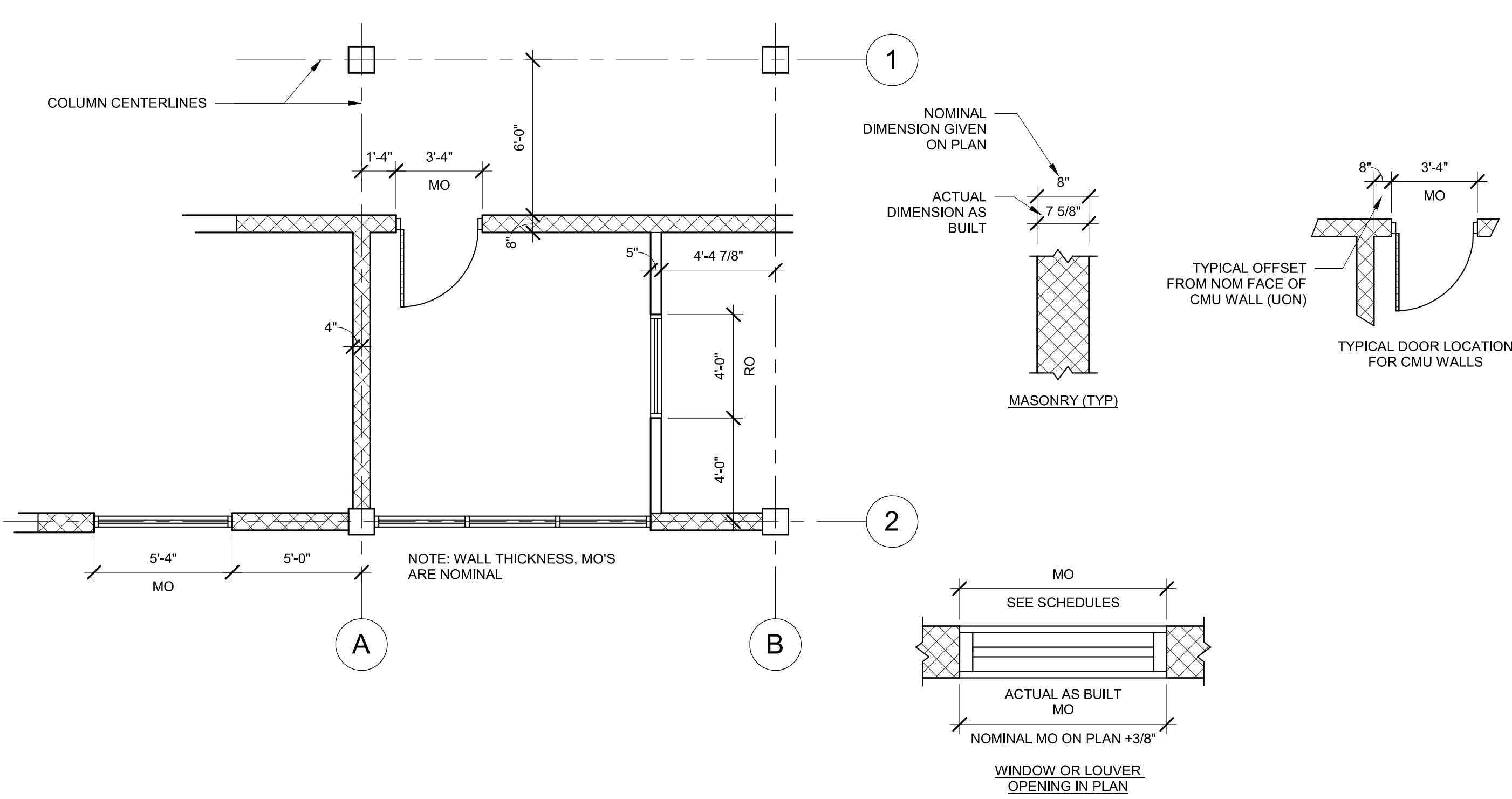
(UNLESS OTHERWISE NOTED)

- CONTINUOUS - NEW CONSTRUCTION
- - - - - DASHED ON CONSTRUCTION PLAN/SHEETS - HIDDEN ELEMENTS BEYOND, ABOVE OR BELOW

MATERIAL SYMBOLS

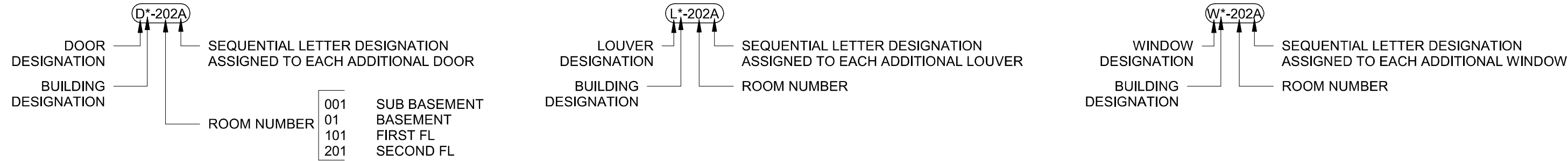
	EARTH
	GRAVEL
	BRICK
	CONCRETE MASONRY UNIT (CMU)
	PRECAST CONCRETE
	CAST-IN-PLACE CONCRETE
	WOOD BLOCKING
	WOOD FINISH
	PLYWOOD
	RIGID INSULATION
	BLANKET INSULATION
	STEEL
	ALUMINUM
	STUCCO / GROUT
	CAULK

DIMENSIONING SYSTEM

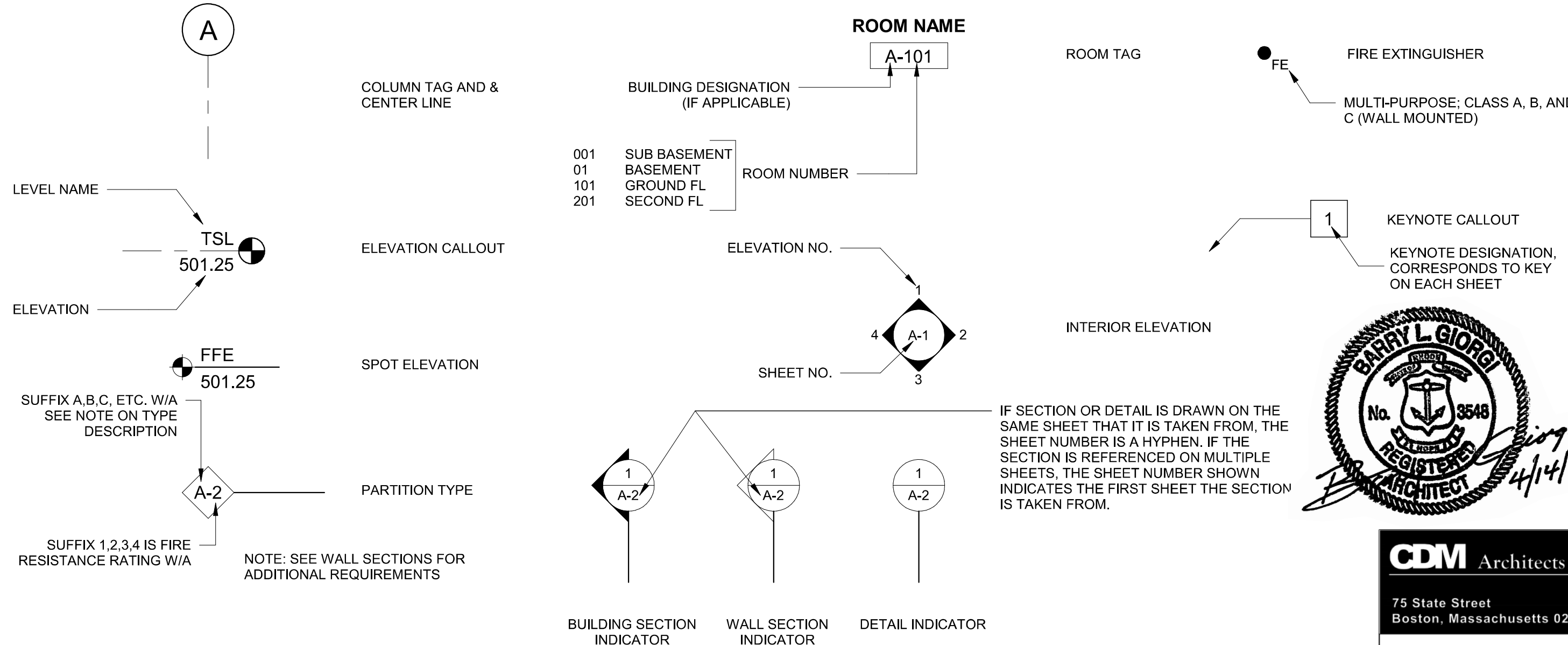


OPENINGS

USUALLY LABELED IN PLAN VIEW; HOWEVER, OPENINGS NOT SHOWN IN PLAN ARE LABELED ON ELEVATIONS



SYMBOLS

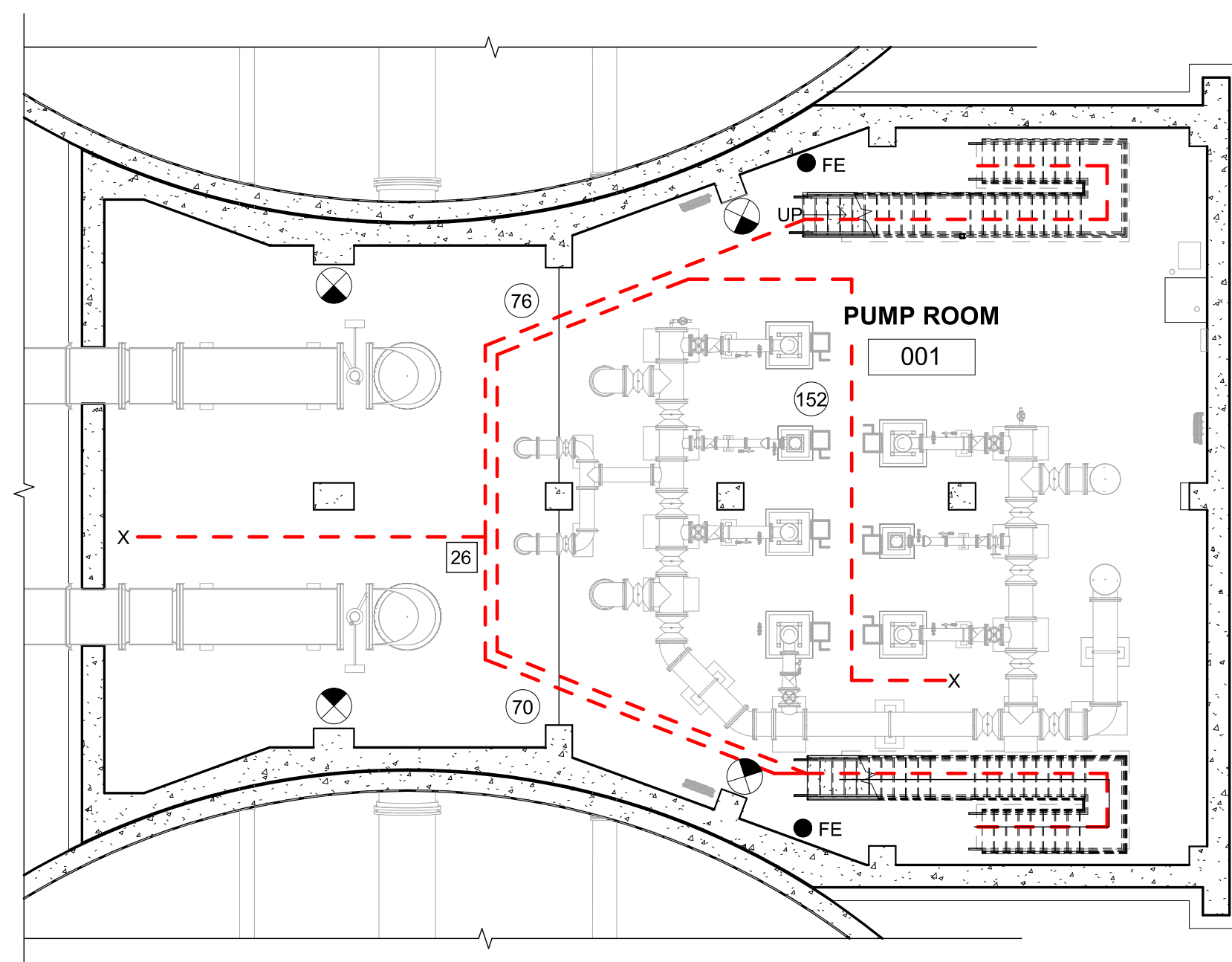








**CDM Architects Inc.**  
75 State Street  
Boston, Massachusetts 02109  
RI Certificate of Authorization No. A-14298 Expires: December 31, 2022

SCALE	As indicated	DESIGNED <u>C. SOLLOG</u>	FINAL DESIGN - MARCH 2021	<b>CDM Smith</b> 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	NBC CONTRACT NO 308.10C ARCHITECTURAL	SHEET GD-A-1
REV	DATE	BY	DESCRIPTION	DRAWN <u>C. SOLLOG</u>	 Stantec	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS	
				CHECKED <u>B. GIORGI</u>	 PARE		

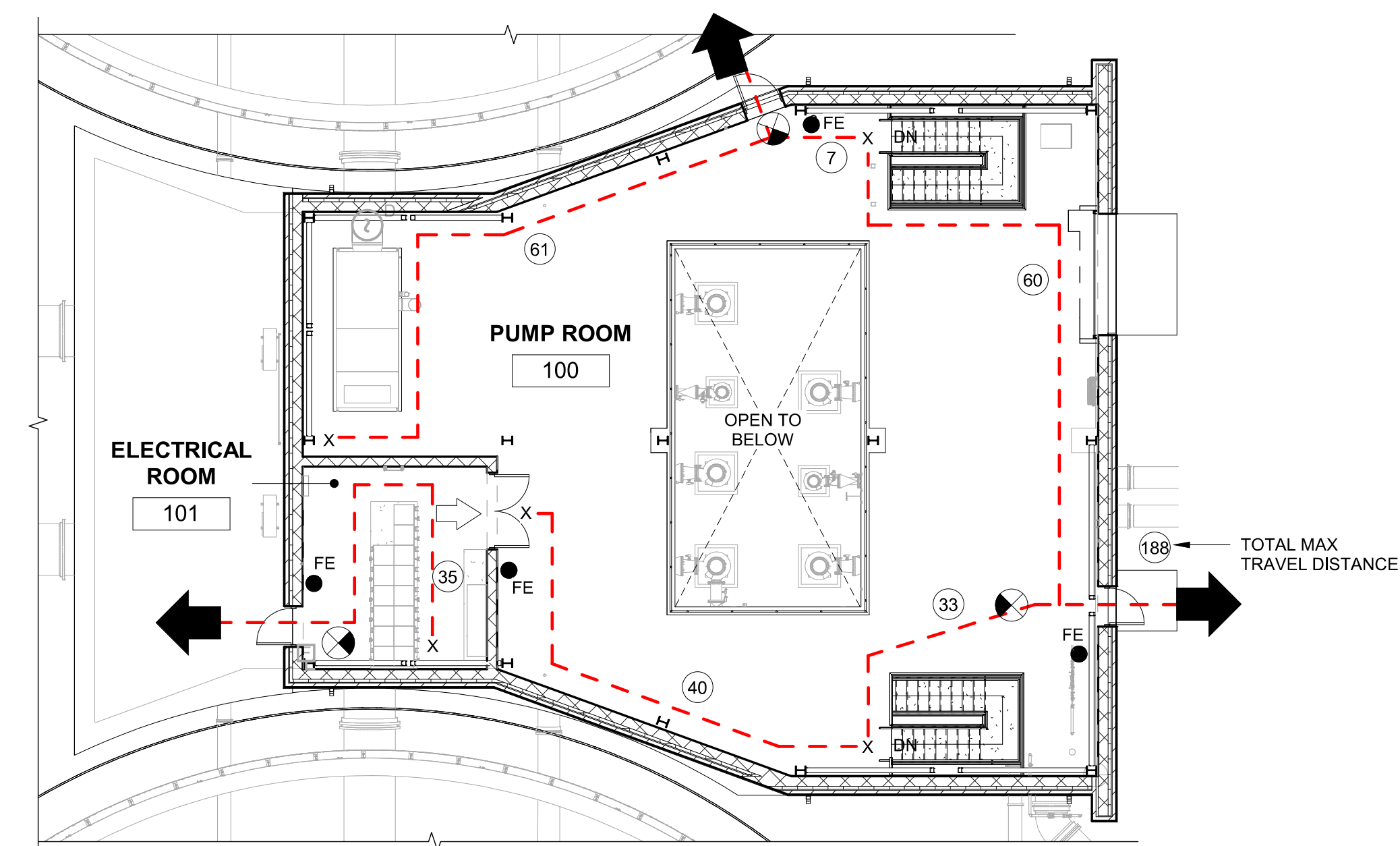
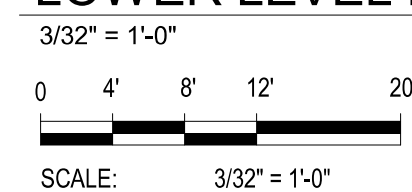


## LIFE SAFETY PLAN LEGEND

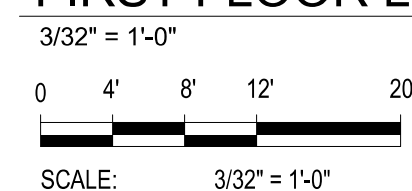


- |  |                                    |
|--|------------------------------------|
|     | EXIT DISCHARGE                     |
|     | AREA OR SPACE EXIT                 |
|     | EXIT SIGN; SEE ELECTRICAL DRAWINGS |
|  FE | FIRE EXTINGUISHER                  |
|     | EGRESS PATH                        |
|     | TRAVEL DISTANCE (FEET)             |
|     | COMMON PATH OF TRAVEL (FEET)       |

## LOWER LEVEL LIFE SAFETY PLAN



## FIRST FLOOR LIFE SAFETY PLAN



Building Code Summary					
Owner:	Narragansett Bay Commission			Date:	April, 2021
Project Name:	Phase III Combined Sewer Overflow Program Bucklin Point WWTF - Final Clarifier, UV Disinfection and Other Miscellaneous Improvements			Location:	Providence, Rhode Island
Project No:	93019-234214			Architect of Record:	CDM Architects, Inc.
Building Name:	Return Sludge Pump Station No. 3 (RSPS)				
Applicable Ordinances, Codes, and Standards					
Abbreviations	ICC - International Code Council;IBC - International Building Code; IPC - International Plumbing Code;IMC - International Mechanical Code;IECC - International Energy Conservation Code;IFC - International Fire Code;NEC - National Electrical Code				
Building Code	SBC-1 Rhode Island State Building Code - IBC, 2015				
Plumbing Code	SBC-3 Rhode Island State Plumbing Code - IPC, 2015				
Mechanical Code	SBC-4 Rhode Island State Mechanical Code - IMC, 2015				
Electrical Code	SBC-5 Rhode Island State Electrical Code - NEC 2017				
Energy Code	SBC-8 Rhode Island State Energy Conservation Code - IECC, 2015				
Fire / Life Safety Code	RI Fire Safety Code - RI Fire Code (NFPA 1 - 2015 edition), RI Life Safety Code (NFPA 101 - 2015 edition) and RI Fire Alarm Code (NFPA 72 -2013 edition)				
Accessibility Code	SBC-1 Rhode Island State Building Code - IBC, 2015, Chapter 11				
Chapter 3	Use and Occupancy Classification				
	Section 302 - Classification			Section 312 - Utility and Miscellaneous, Group U	
Chapter 4	Special Detailed Requirements Based on Use and Occupancy				Not Applicable
General Building Heights and Areas					
	Table 504.3 - Allowable Building Height Table 504.4 - Allowable Number of Stories Table 506.2 - Allowable Area		Allowable no. of stories above grade/Allowable sq. ft. area per story	Proposed	
	Use Group U- Type II-B Construction		2 Stories/8,500 SF (Gross)	1 Story/7,851 SF (Gross)	
				Upper Level = 3,529 SF Lower Level = 4,322 SF	
			Maximum allowable height	Proposed	
			55'	33'-2"	
Chapter 6	Types of Construction				
	Paragraph 602.2 - Types I and II		Type II B		
	Fire-Resistance Rating Requirements (hours) for Building Elements				
	Building Element		Req'd Rating for Construction Type		Rating Provided
Table 601	Primary Structural Frame		0 HR		In compliance with required ratings
	Non Bearing Walls and Partitions (Exterior)		See Table 602 requirements below		
	Bearing Walls and Partitions (Interior)		0 HR but not less than the fire-resistance rating required by other sections of this code.		In compliance with required ratings
	Floor Construction including supporting structure		0 HR		In compliance with required ratings
Table 602	Roof Construction including supporting structure		0 HR		In compliance with required ratings
	Fire-Resistance Rating Requirements (hours) for Exterior Walls based on Fire Separation Distance (feet)				
	Fire Separation Distance in feet		Req'd Rating for Occupancy		Rating Provided
	X ≥ 30		0		In compliance with required ratings
Chapter 7	Fire and Smoke Protection Features				
Section 705	Exterior Walls		Paragraph 705.2 Projections of eave overhangs = 40 inches with fire separation distance from other buildings of 5 ft or greater (Table 705.2)		In compliance with less than 36" of overhang
Table 705.8	Maximum percentage Area of Exterior Wall Openings based on Fire Separation Distance in feet				
	Unprotected openings in walls of non-sprinklered buildings with fire separation distance ≥ 30		No limit		In compliance
Section 714	Penetrations				
Section 715	Fire-Resistant Joint System				
Chapter 8	Interior Finishes				
	Not Applicable				
Chapter 9	Fire Protection Systems				
Section 903	Automatic Sprinkler Systems		Paragraph 903.2.11.1 - Sprinkler System shall be installed in stories without openings greater than 1,500 SF		Sprinkler Required in Lower Level (story without openings)
Section 906	Portable Fire Extinguishers		Paragraph 906.1 - Provided per Rhode Island Uniform Fire Code, NFPA 126.1.2		6 Provided
Section 907	NFPA 1 13.6		Pump Room - Class A fire hazard/Electrical Room - Class C fire hazard		5 - Class A Extinguishers and 1- Class C Extinguisher provided
	Fire Alarm and Detection Systems		Provided per Rhode Island Uniform Code, NFPA 13.7.2.27 (NFPA 1 list not requirements for utility classification, Industrial used as closest equivalent)		Provided
Chapter 10	Means of Egress				
Section 1004	Occupant Load		Required/Allowed		Proposed
	Table 1004.1.2 - Maximum Floor Area Allowances per Occupant		U - 300 sq.ft. gross per occupant		
			Lower Level - 4314 sq. ft. / 300 sq. ft. = 44 occupants		
			Ground Level - 3485 sq. ft. / 300 sq. ft. = 35 occupants		
			Total = 79 occupants		
Section 1005	Means of Egress Sizing				
	Paragraph 1005.3.1 Stairways width		0.3 inches x occupant load = 0.3 x 79 = 23.7 in.		36 inches
	Paragraph 1005.3.2 Other egress components = Doors width		0.2 inches x occupant load = 0.2 x 79 = 15.8 in.		34 inches
Section 1006	Number of Exits		2		2
Section 1008	Means of Egress Illumination		Paragraph 1008.2 Illumination level		In compliance
Section 1009	Accessible Means of Egress		Not required - See Chapter 11 below		
Section 1010	Doors, Gates and Turnstiles				
	Parag. 1010.1.1 - Size of Doors		Minimum Width = 32 inches		36 inches
	Parag. 1010.1.2 - Door Swing		Pivoted or side-hinged swinging type		In compliance
Section 1011	Stairways				
	Paragraph 1011.2 Width		36 inches minimum required		36 inches
	Paragraph 1011.7.2 Riser height and tread depth		7 inches max. and 11 inches min.		In compliance
	Paragraph 1011.10 Vertical rise		144 inches max. vertical rise for one flight		142 inches
Section 1013	Exit Signs		Required throughout		In compliance
Section 1014	Handrails		Required at stairs		In compliance
Section 1015	Guards		Required at stairs and at floor opening		In compliance
Section 1017	Exit Access Travel Distance		Table 1017.2 - 300 feet maximum		188 feet maximum
Chapter 11	Accessibility				
	Paragraph 1103.2.4 Utility Buildings				According to this paragraph the building is not required to be accessible.
Chapter 12	Interior Environment				
Section 1203	Ventilation		Paragraph 1203.1 General		In compliance
Section 1204	Temperature Control		Paragraph 1204.1 Equipment and systems		In compliance
Section 1205	Lighting		Paragraph 1205.3 Artificial light		In compliance
Chapter 29	Plumbing Systems				
Section 2902	Toilet and Bathroom Requirements		Lavatories and Water Closets 1 per 100		2902.3.2 Exception

NOTES:

1. SEE SHEET GD-A-1 FOR GENERAL NOTES.
2. TSL ELEVATIONS DEPICT HIGH POINT, REFER TO "S" DRAWINGS FOR FLOOR SCOPE


**CDM** Architects Inc.

75 State Street  
Boston, Massachusetts 02109

RI Certificate of Authorization	Expires
No. A-14298	December 31, 2022

SHEET

GD-A-2

				SCALE	WARNING	DESIGNED <u>C. SOLLOG</u>
						
				As indicated	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN <u>  C. SOLLOG  </u>
REV	DATE	BY	DESCRIPTION			CHECKED <u>B. GIORGI</u>

FINAL DESIGN - MARCH 2021



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM



NBC CONTRACT NO 308.10C

ARCHITECTURAL  
RETURN SLUDGE PUMP STATION NO. 3  
LIFE SAFETY PLAN AND BUILDING CODE SUMMARY

	SHEET
--	-------

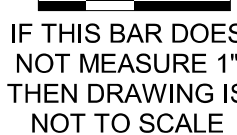
GD-A-2



- | KEYNOTES |   |
|----------|---|
| NUMBER   | KEYNOTE DESCRIPTION                                 |
| 3        | CONCRETE COLUMN; SEE "S" DWGS                       |
| 31       | ALUMINUM GUARD RAIL; SEE "S" DWGS                   |
| 34       | ELECTRICAL EQUIPMENT; SEE "E" DWGS                  |
| 38       | CMU CONTROL JOINT                                   |
| 40       | STEEL COLUMN; SEE "S" DWGS                          |
| 41       | HVAC EQUIPMENT; SEE "H" DWGS                        |
| 42       | METAL PAN STAIRS                                    |
| 43       | PROCESS EQUIPMENT; SEE "M" DWGS                     |
| 51       | JOINT REINFORCING AND MASONRY TIES @<br>16" OC, TYP |
| 52       | JOINT REINFORCING @ 16" OC                          |
| 55       | FLOOR DRAIN; SEE "P" DWGS                           |



As indicated



CHECKED B. GIORGI

260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



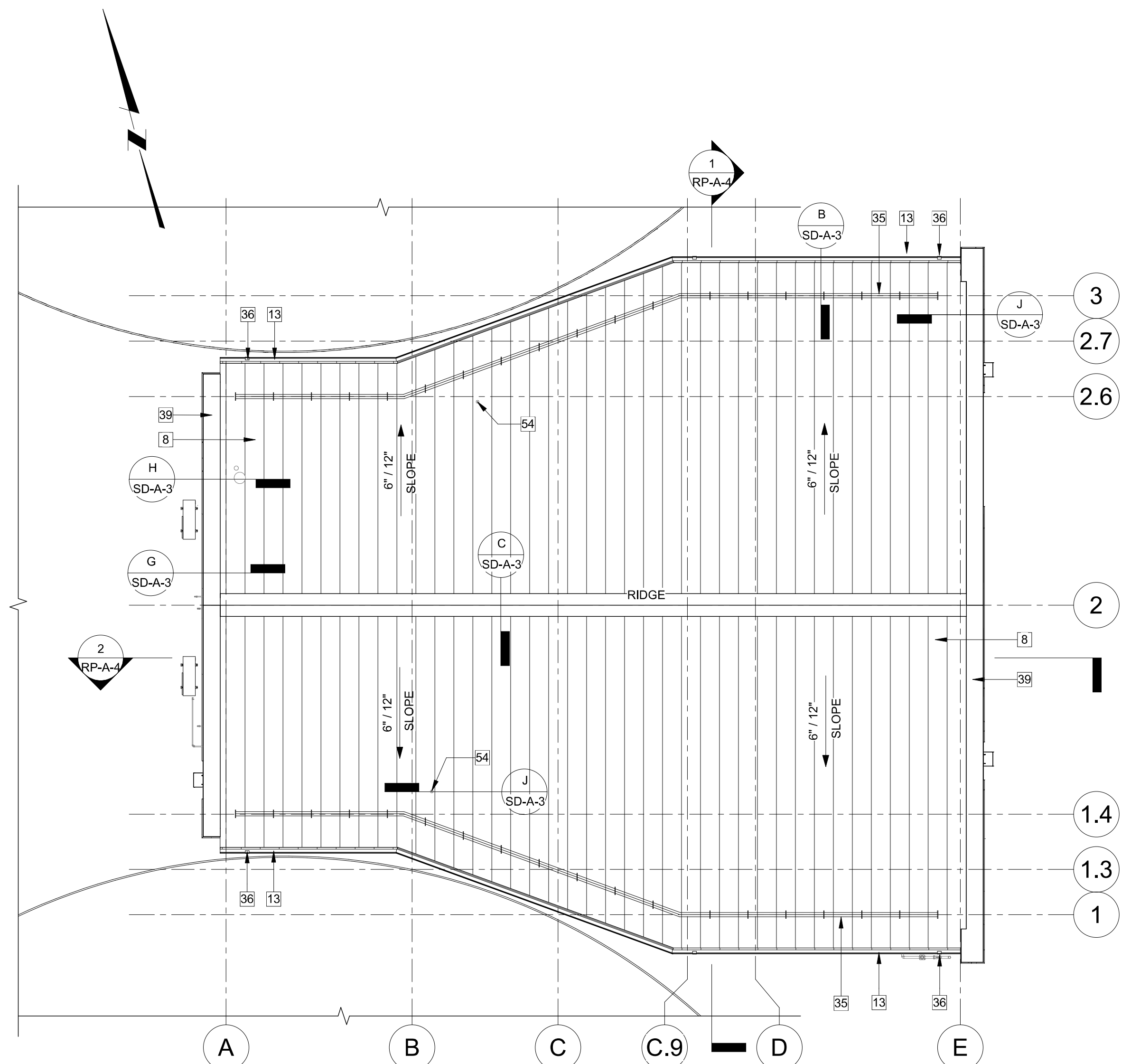
ARCHITECTURAL  
RETURN SLUDGE PUMP STATION NO. 3  
FIRST FLOOR AND LOWER LEVEL FLOOR PLANS

RP-A-1

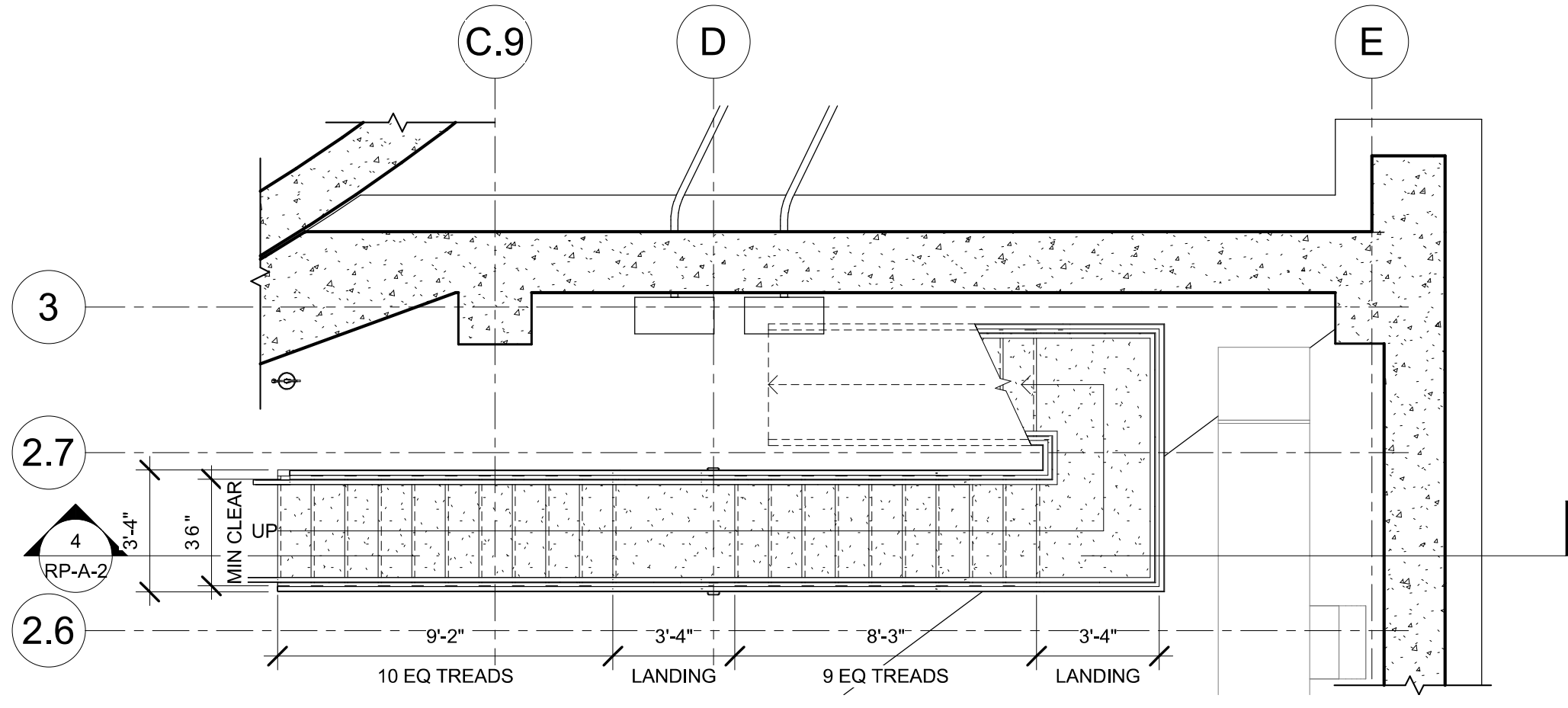


- NOTES:
1. SEE SHEET GD-A-1 FOR GENERAL NOTES.
  2. SEE SHEET GD-A-2 FOR LIFE SAFETY PLANS AND BUILDING CODE KEY DETERMINATIONS.
  3. TSL ELEVATIONS DEPICT HIGH POINT, REFER TO "S" DRAWINGS FOR FLOOR SLOPE.
  4. SEE "S" DWGS FOR EXTENTS OF MONORAIL.

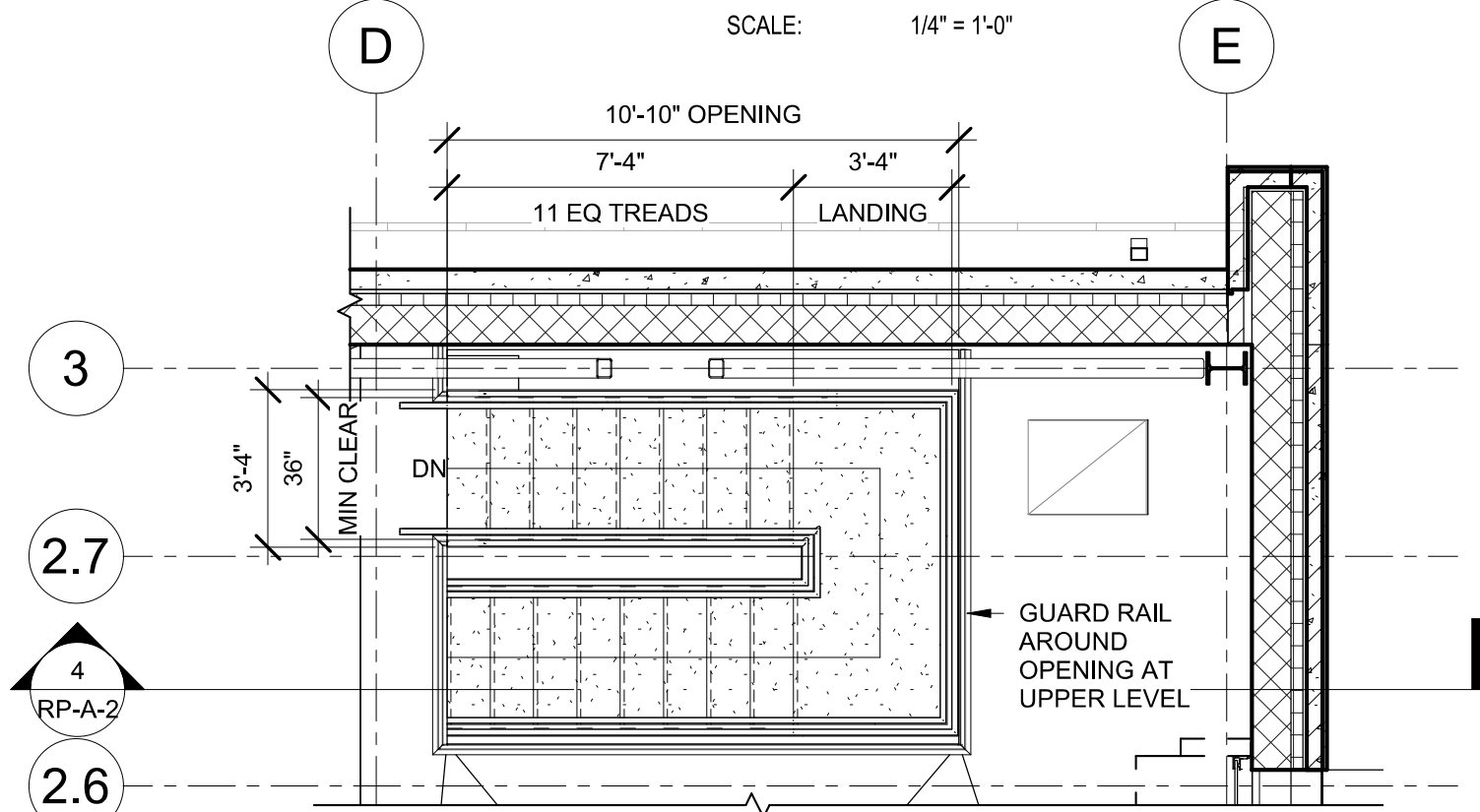
KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
8	STANDING SEAM METAL ROOF
31	ALUMINUM GUARD RAIL; SEE "S" DWGS
35	3-PIPE TYPE ALUMINUM SNOW-GUARD WITH SST BASE PLATES
39	ALUMINUM PARAPET COPING
54	GAS UNIT HEATER VENT; SEE "H" DWGS



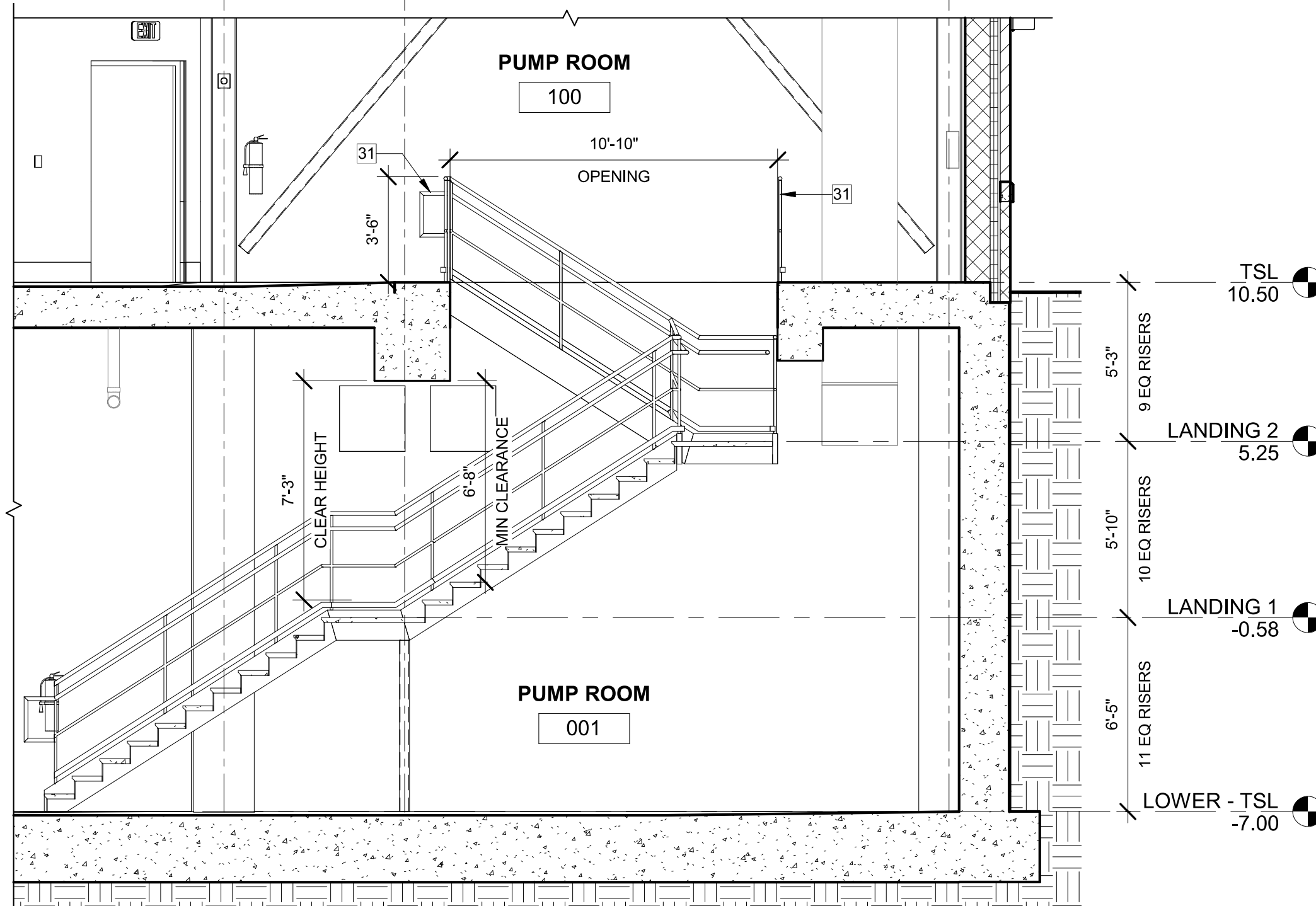
**ROOF PLAN**  
1/8" = 1'-0"  
0 4' 8' 16'  
SCALE: 1/8" = 1'-0"



**ENLARGED STAIR PLAN - LOWER**  
1/4" = 1'-0"



**ENLARGED STAIR PLAN - UPPER**  
1/4" = 1'-0"



**4 STAIR SECTION**  
1/4" = 1'-0"

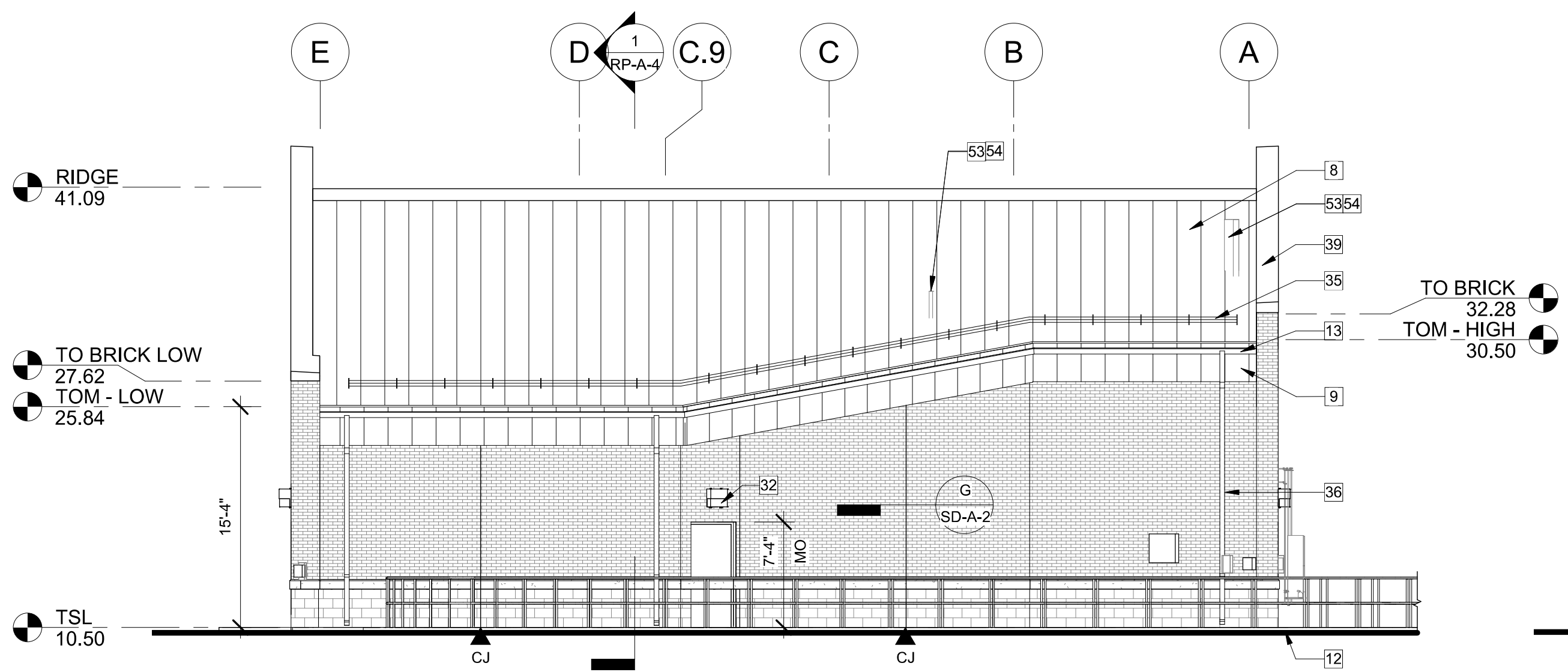
ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

<table><tr><th>REV</th><th>DATE</th><th>BY</th><th>DESCRIPTION</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>	REV	DATE	BY	DESCRIPTION													<table><tr><td>SCALE</td><td>WARNING</td><td>DESIGNED C. SOLLOG</td><td rowspan="4">FINAL DESIGN - MARCH 2021</td><td rowspan="4"> 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360</td><td rowspan="4"> NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM</td><td rowspan="4"> NBC CONTRACT NO 308.10C ARCHITECTURAL RETURN SLUDGE PUMP STATION NO. 3 ROOF PLAN AND ENLARGED STAIR PLANS AND SECTION</td><td rowspan="4">SHEET RP-A-2</td></tr><tr><td>As indicated</td><td>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</td><td>DRAWN C. SOLLOG</td></tr><tr><td> </td><td> </td><td>CHECKED B. GIORGI</td></tr><tr><td> </td><td> </td><td> </td></tr></table>	SCALE	WARNING	DESIGNED C. SOLLOG	FINAL DESIGN - MARCH 2021	 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	 NBC CONTRACT NO 308.10C ARCHITECTURAL RETURN SLUDGE PUMP STATION NO. 3 ROOF PLAN AND ENLARGED STAIR PLANS AND SECTION	SHEET RP-A-2	As indicated	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN C. SOLLOG			CHECKED B. GIORGI				 Barry L. Giorgi ARCHITECT 4/14/21		 CDM Architects Inc. 75 State Street Boston, Massachusetts 02109 RI Certificate of Authorization No. A-14298 Expires: December 31, 2022	
REV	DATE	BY	DESCRIPTION																																			
SCALE	WARNING	DESIGNED C. SOLLOG	FINAL DESIGN - MARCH 2021	 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	 NBC CONTRACT NO 308.10C ARCHITECTURAL RETURN SLUDGE PUMP STATION NO. 3 ROOF PLAN AND ENLARGED STAIR PLANS AND SECTION	SHEET RP-A-2																															
As indicated	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN C. SOLLOG																																				
		CHECKED B. GIORGI																																				

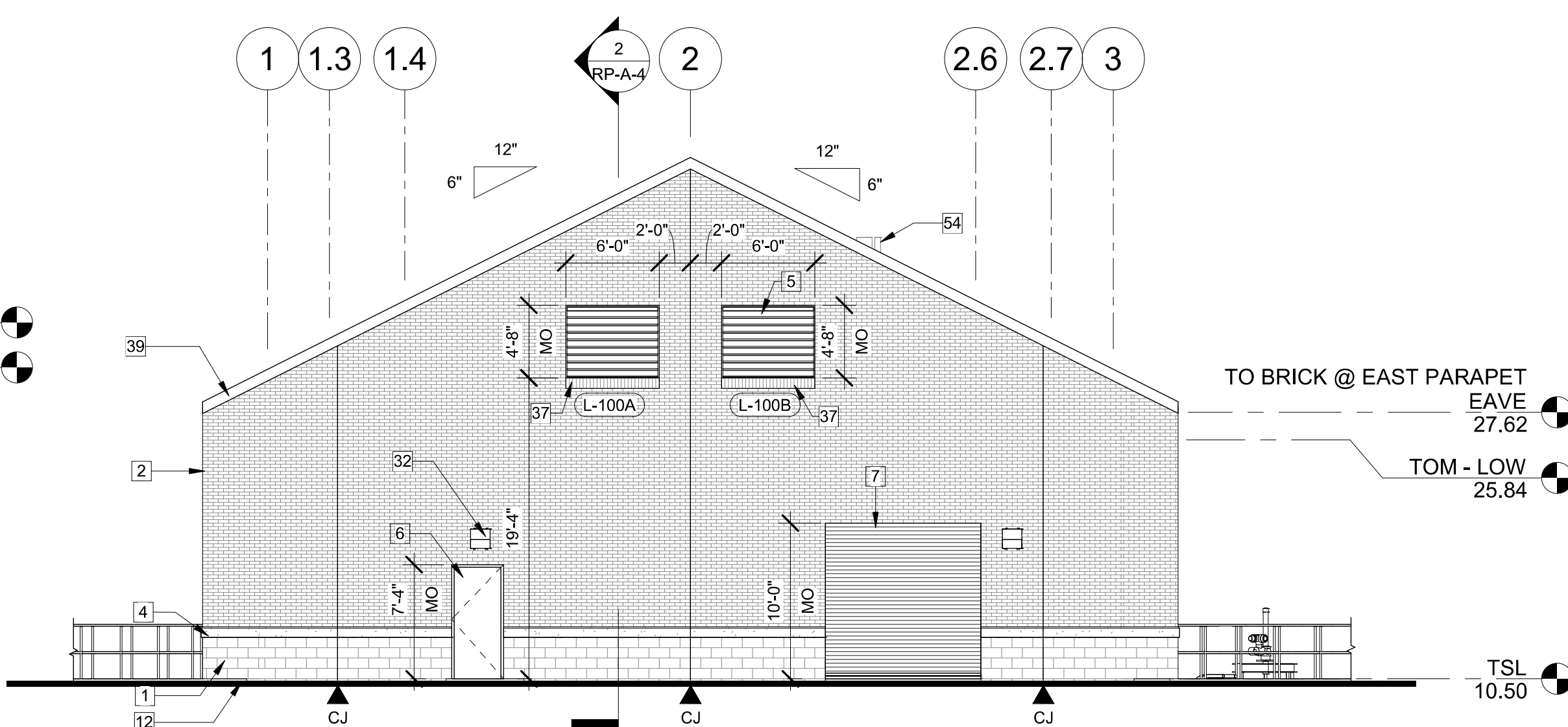
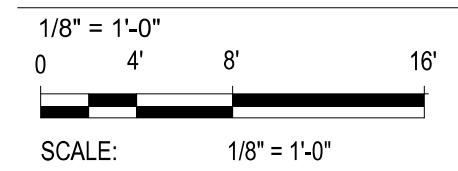


- NOTES:
1. SEE SHEET GD-A-1 FOR GENERAL NOTES.
  2. TSL ELEVATIONS DEPICT HIGH POINT, REFER TO "S" DRAWINGS FOR FLOOR SCOPE

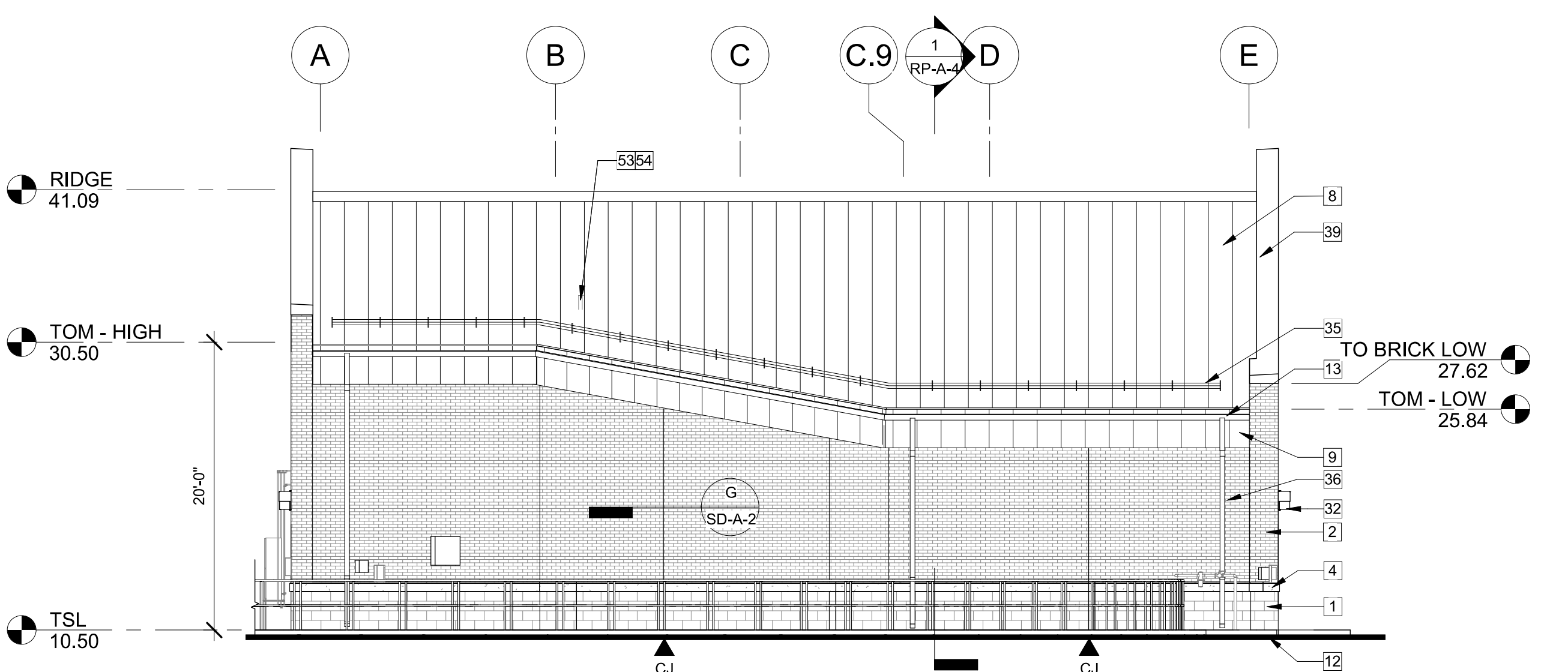
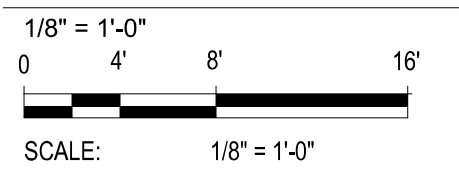
KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
1	SPLIT FACE CMU VENEER
2	4" FACE BRICK
4	CAST STONE MASONRY
5	ALUMINUM LOUVER; SEE SCHD
6	DOOR AND FRAME; SEE SCHD
7	OVERHEAD COILING DOOR; SEE SCHD
8	STANDING SEAM METAL ROOF
9	STANDING SEAM METAL FASCIA
12	FINISH GRADE, SEE "C" DWGS
13	ALUMINUM GUTTER
31	ALUMINUM GUARD RAIL; SEE "S" DWGS
32	LIGHT FIXTURES, SEE "E" DWGS, TYP
35	3-PIPE TYPE ALUMINUM SNOW-GUARD WITH SST BASE PLATES
36	ALUMINUM DOWNSPOUT
37	BRICK SOLDIER COURSE
39	ALUMINUM PARAPET COPING
41	HVAC EQUIPMENT; SEE "H" DWGS
53	VTR; SEE "P" DWGS
54	GAS UNIT HEATER VENT; SEE "H" DWGS



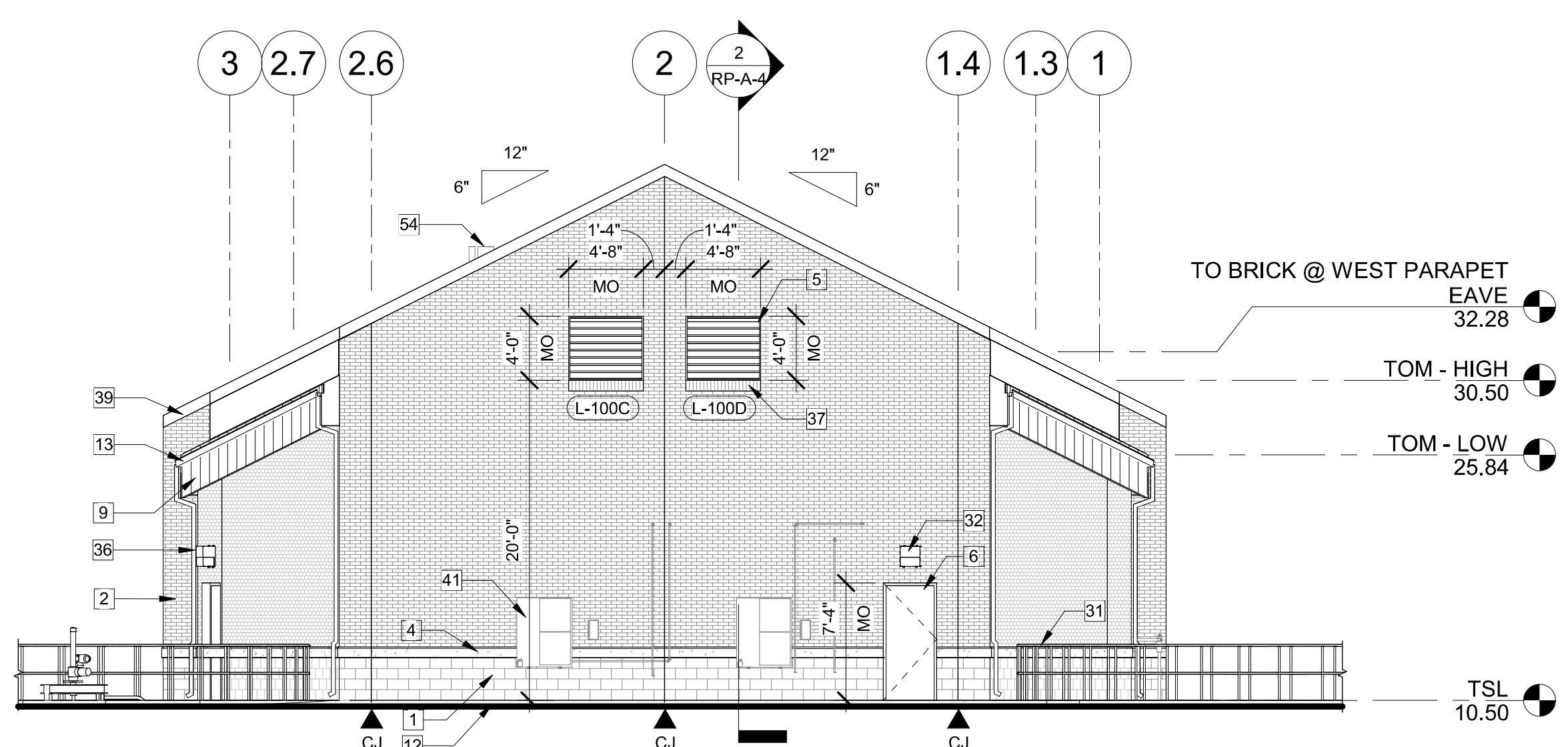
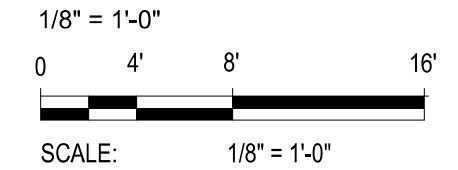
NORTH ELEVATION



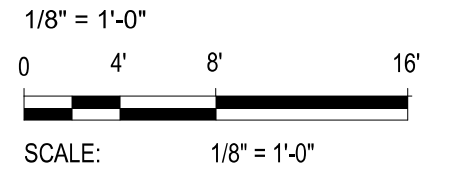
EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

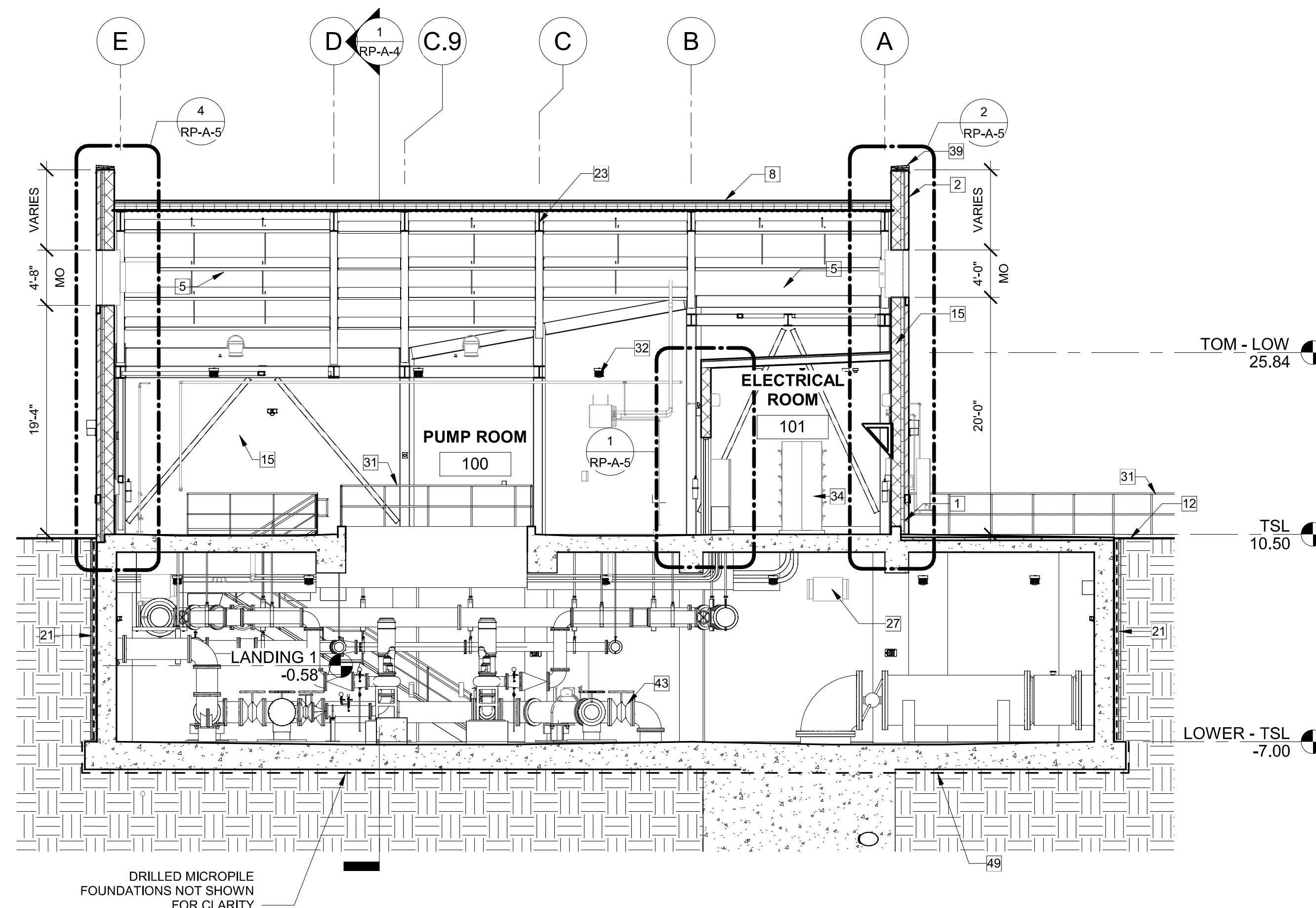
REV	DATE	BY	DESCRIPTION	SCALE As indicated	WARNING IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED C. SOLLOG DRAWN C. SOLLOG CHECKED B. GIORGI	FINAL DESIGN - MARCH 2021	CDM Smith 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	NARRAGANSETT BAY COMMISSION PHASE III COMBINED SEWER OVERFLOW PROGRAM	NBC CONTRACT NO 308.10C ARCHITECTURAL RETURN SLUDGE PUMP STATION NO. 3 EXTERIOR ELEVATIONS	SHEET RP-A-3
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CDM Architects Inc.  
75 State Street  
Boston, Massachusetts 02109  
RI Certificate of Authorization No. A-14298 Expires: December 31, 2022



SCALE: 1/8" = 1'-0"



SCALE: 1/8" = 1'-0"

REV	DATE	BY	DESCRIPTION

**WARNING**

0  $\frac{1}{2}$  1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED C. SOLLOG  
DRAWN C. SOLLOG  
CHECKED B. GIORGI

FINAL DESIGN - MARCH 2021



 **Stantec**  **PARETO**

NBC CONTRACT NO 308.10C  
ARCHITECTURAL  
RETURN SLUDGE PUMP STATION NO. 3  
BUILDING SECTIONS

SHEET

RP-A-4

**CDM** Architects Inc.

75 State Street  
Boston, Massachusetts 02109

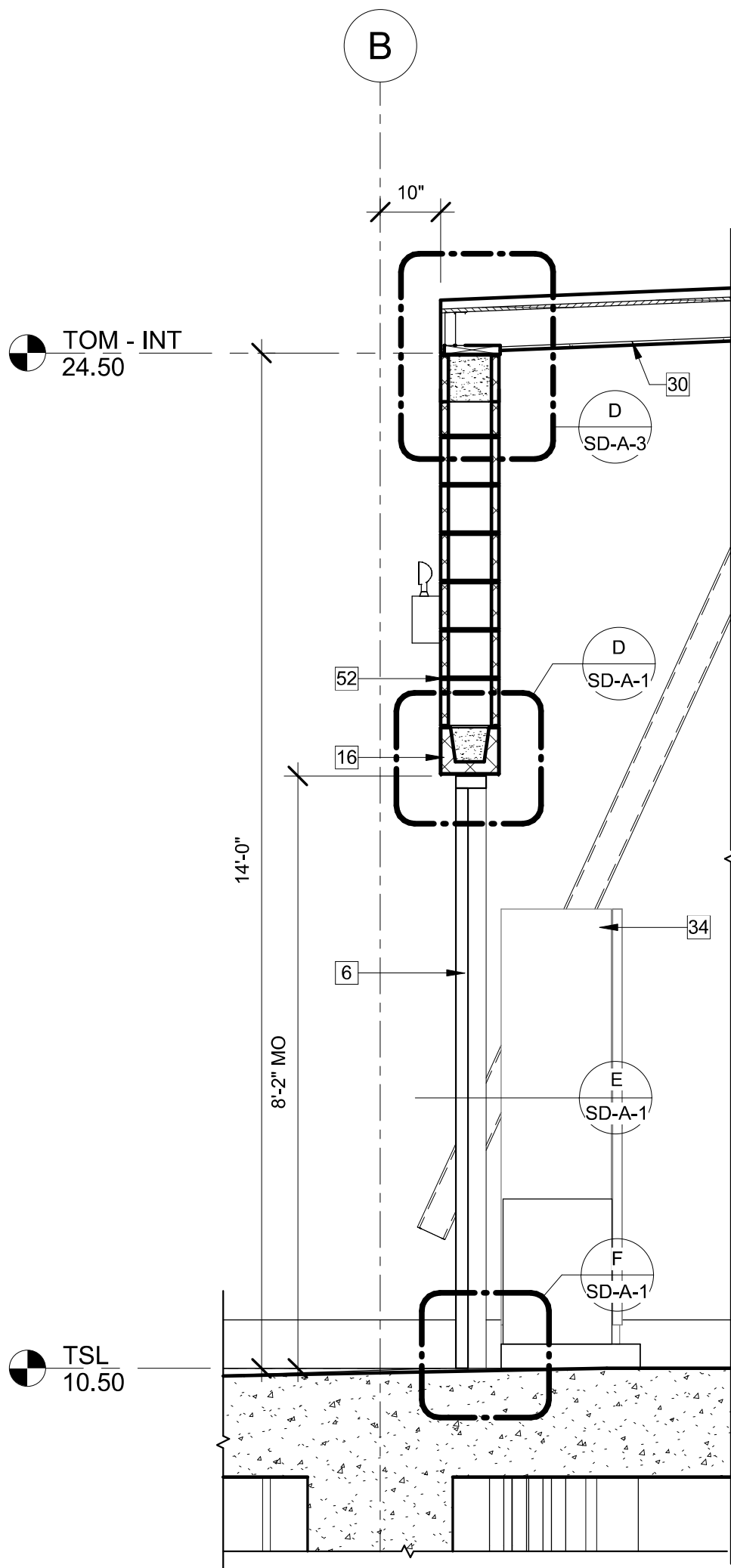
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No. A-14298 December 31, 2022



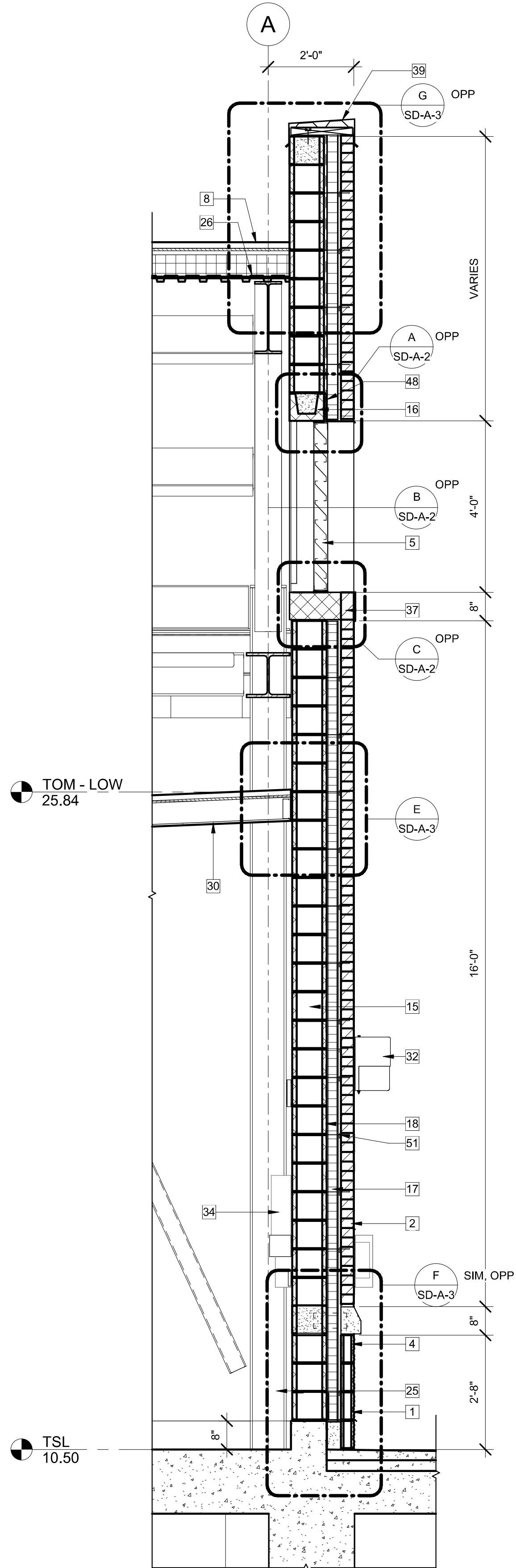
NOTES:

1. SEE SHEET GD-A-1 FOR GENERAL NOTES.
2. STRUCTURAL ITEMS SHOWN ON THIS SHEET ARE FOR GRAPHICAL PURPOSES ONLY. REFER TO THE STRUCTURAL DRAWINGS FOR SPECIFIC LOCATIONS AND DETAILED REQUIREMENTS.
3. TSL ELEVATIONS DEPICT HIGH POINT, REFER TO "S" DRAWINGS FOR FLOOR SLOPE.

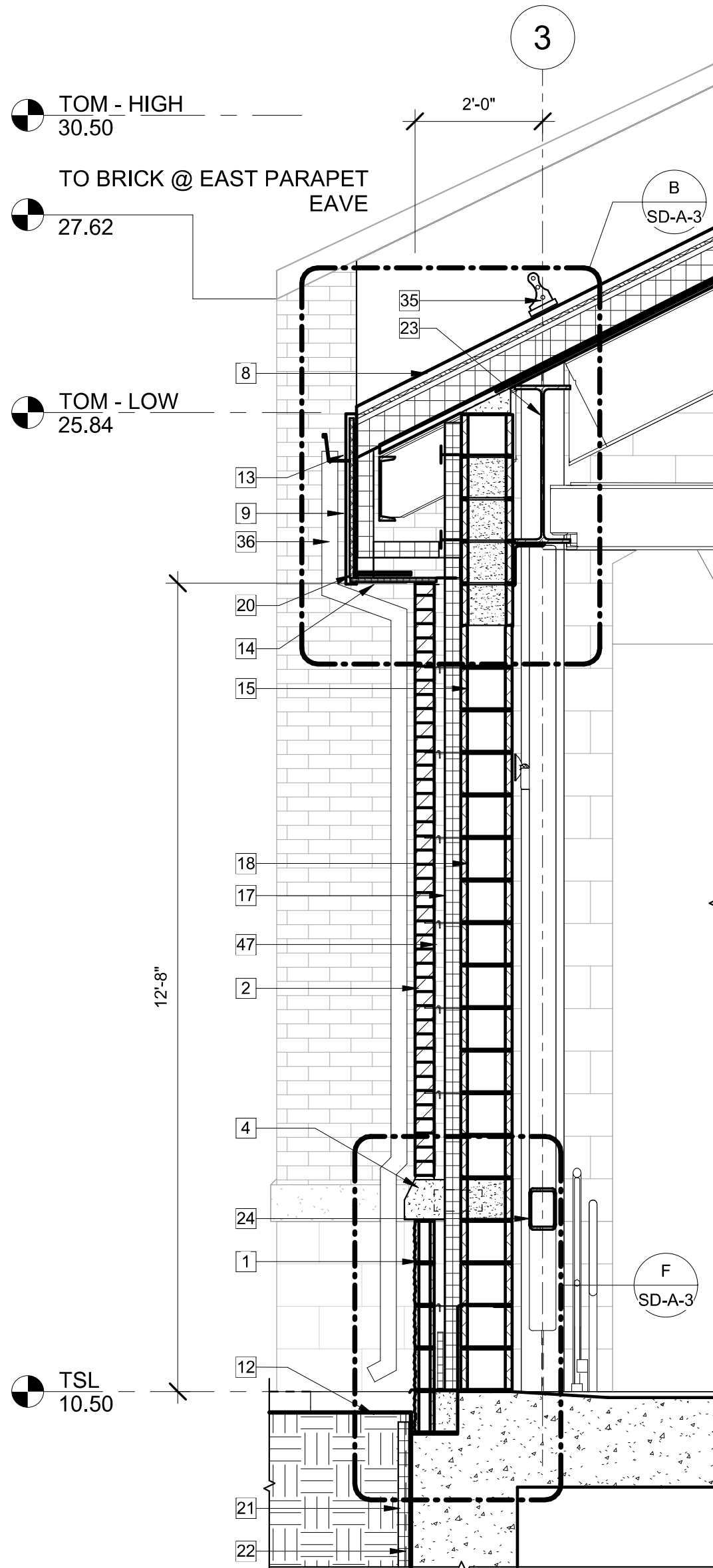
KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
1	SPLIT FACE CMU VENEER
2	4" FACE BRICK
4	CAST STONE MASONRY
5	ALUMINUM LOUVER; SEE SCHD
6	DOOR AND FRAME; SEE SCHD
8	STANDING SEAM METAL ROOF
9	STANDING SEAM METAL FASCIA
12	FINISH GRADE; SEE "C" DWGS
13	ALUMINUM GUTTER
14	PERFORATED METAL SOFFIT
15	10" CMU WALL
16	10" CMU LINTEL; SEE "S" DWGS
17	3" RIGID INSULATION
18	MODIFIED BITUMINOUS SHEET AIR BARRIER
20	PT PLYWD SHEATHING ON COLD FORMED METAL FRAMING
21	2" PERIMETER INSULATION
22	DAMPPROOFING
23	STEEL BEAM; SEE "S" DWGS
24	STEEL BRACING; SEE "S" DWGS
25	STEEL COLUMN BEYOND; SEE "S" DWGS
26	METAL DECKING; SEE "S" DWGS
30	5/8" FIRE RATED GYPSUM WALL BOARD ON 6" COLD FORMED METAL STUDS @ 12" OC
32	LIGHT FIXTURES; SEE "E" DWGS, TYP
34	ELECTRICAL EQUIPMENT; SEE "E" DWGS
35	3-PIPE TYPE ALUMINUM SNOW-GUARD WITH SST BASE PLATES
36	ALUMINUM DOWNSPOUT
37	BRICK SOLDIER COURSE
39	ALUMINUM PARAPET COPING
47	CAVITY DRAINAGE MATERIAL
48	THRU WALL FLASHING, PROVIDE WEEP VENTS AT MAX 24" OC (MIN 2 AT OPENINGS), TYP
51	JOINT REINFORCING AND MASONRY TIES @ 16" OC, TYP
52	JOINT REINFORCING @ 16" OC



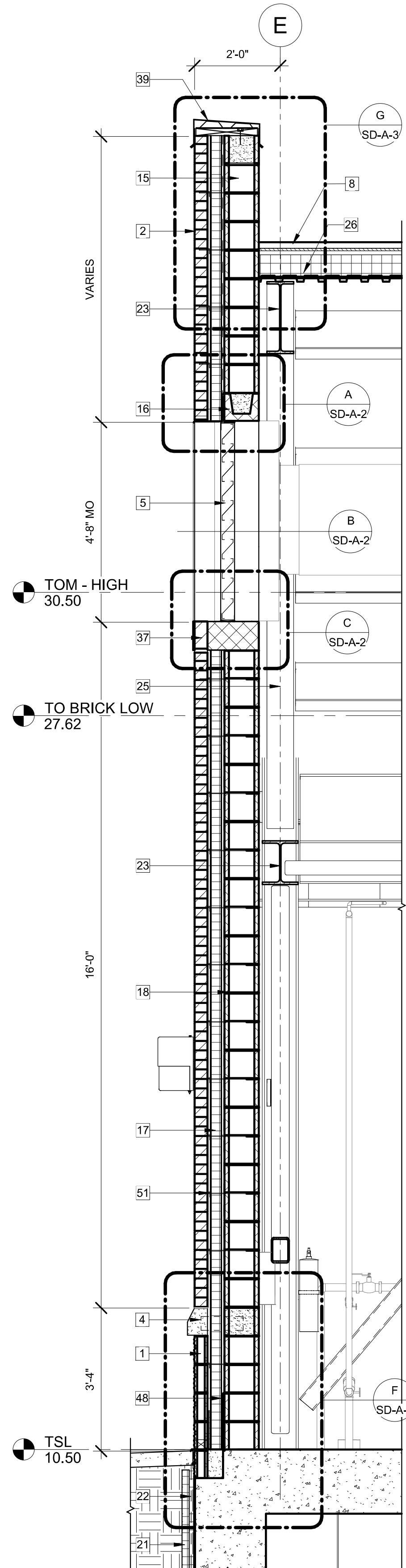
**1 WALL SECTION**  
RP-A-4 1/2" = 1'-0"  
SCALE: 1/2" = 1'-0"



**2 WALL SECTION**  
RP-A-4 1/2" = 1'-0"  
SCALE: 1/2" = 1'-0"



**3 WALL SECTION**  
RP-A-4 1/2" = 1'-0"  
SCALE: 1/2" = 1'-0"



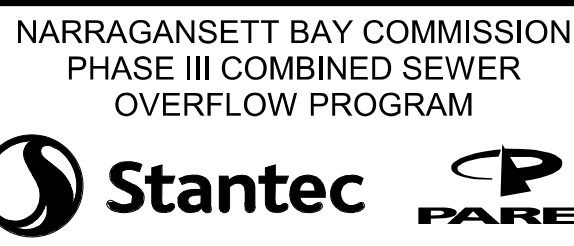
**4 WALL SECTION**  
RP-A-4 1/2" = 1'-0"  
SCALE: 1/2" = 1'-0"

REV	DATE	BY	DESCRIPTION

SCALE
As indicated
WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED <u>C. SOLLOG</u>
DRAWN <u>H. AL-RAWI</u>
CHECKED <u>B. GIORGI</u>

FINAL DESIGN - MARCH 2021



NBC CONTRACT NO 308.10C  
ARCHITECTURAL  
RETURN SLUDGE PUMP STATION NO. 3  
WALL SECTIONS

SHEET  
RP-A-5



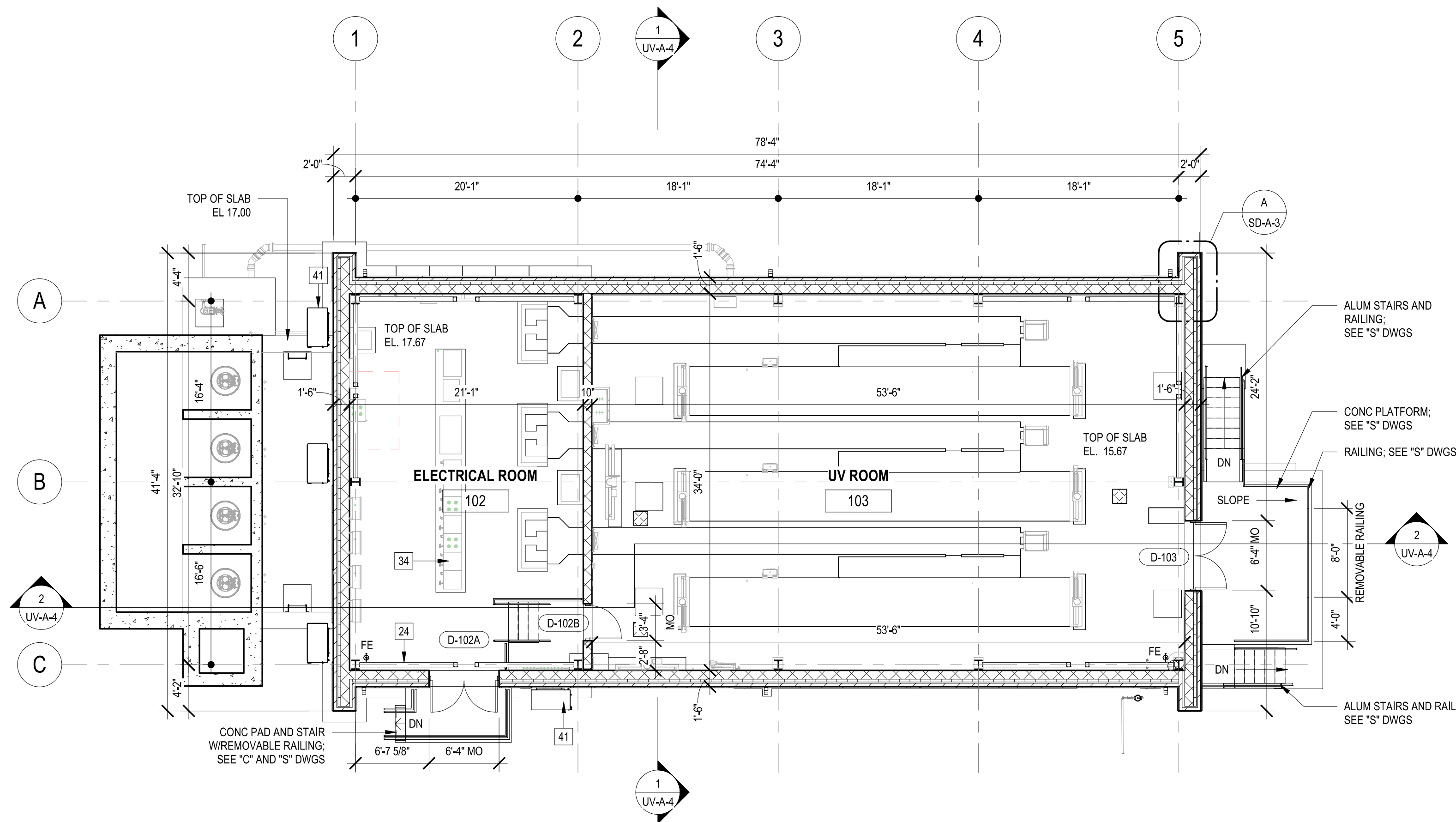
**CDM Architects Inc.**  
75 State Street  
Boston, Massachusetts 02109  
RI Certificate of Authorization No. A-14298 Expires: December 31, 2022





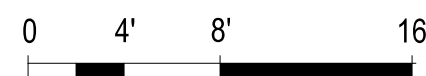


KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
1	SPLIT FACE CMU VENEER
2	4" FACE BRICK
4	CAST STONE MASONRY
5	ALUMINUM LOUVER; SEE SCHD
6	DOOR AND FRAME; SEE SCHD
8	STANDING SEAM METAL ROOF
9	STANDING SEAM METAL FASCIA
12	FINISH GRADE; SEE "C" DWGS
13	ALUMINUM GUTTER
14	PERFORATED METAL SOFFIT
15	10" CMU WALL
16	10" CMU LINTEL; SEE "S" DWGS
17	3" RIGID INSULATION
18	MODIFIED BITUMINOUS SHEET AIR BARRIER
21	2" PERIMETER INSULATION
22	DAMP-PROOFING
23	STEEL BEAM; SEE "S" DWGS
24	STEEL BRACING; SEE "S" DWGS
25	STEEL COLUMN BEYOND; SEE "S" DWGS
26	METAL DECKING; SEE "S" DWGS
32	LIGHT FIXTURES; SEE "E" DWGS, TYP
33	CONCRETE PAD; SEE "S" DWGS
34	ELECTRICAL EQUIPMENT; SEE "E" DWGS
35	3-PIPE TYPE ALUMINUM SNOW-GUARD WITH SST BASE PLATES
36	ALUMINUM DOWNSPOUT
37	BRICK SOLDIER COURSE
39	ALUMINUM PARAPET COPING
41	HVAC EQUIPMENT; SEE "H" DWGS
43	PROCESS EQUIPMENT; SEE "M" DWGS
47	CAVITY DRAINAGE MATERIAL
49	VAPOR RETARDER
51	JOINT REINFORCING AND MASONRY TIES @ 16" OC, TYP
52	JOINT REINFORCING @ 16" OC
54	GAS UNIT HEATER VENT; SEE "H" DWGS

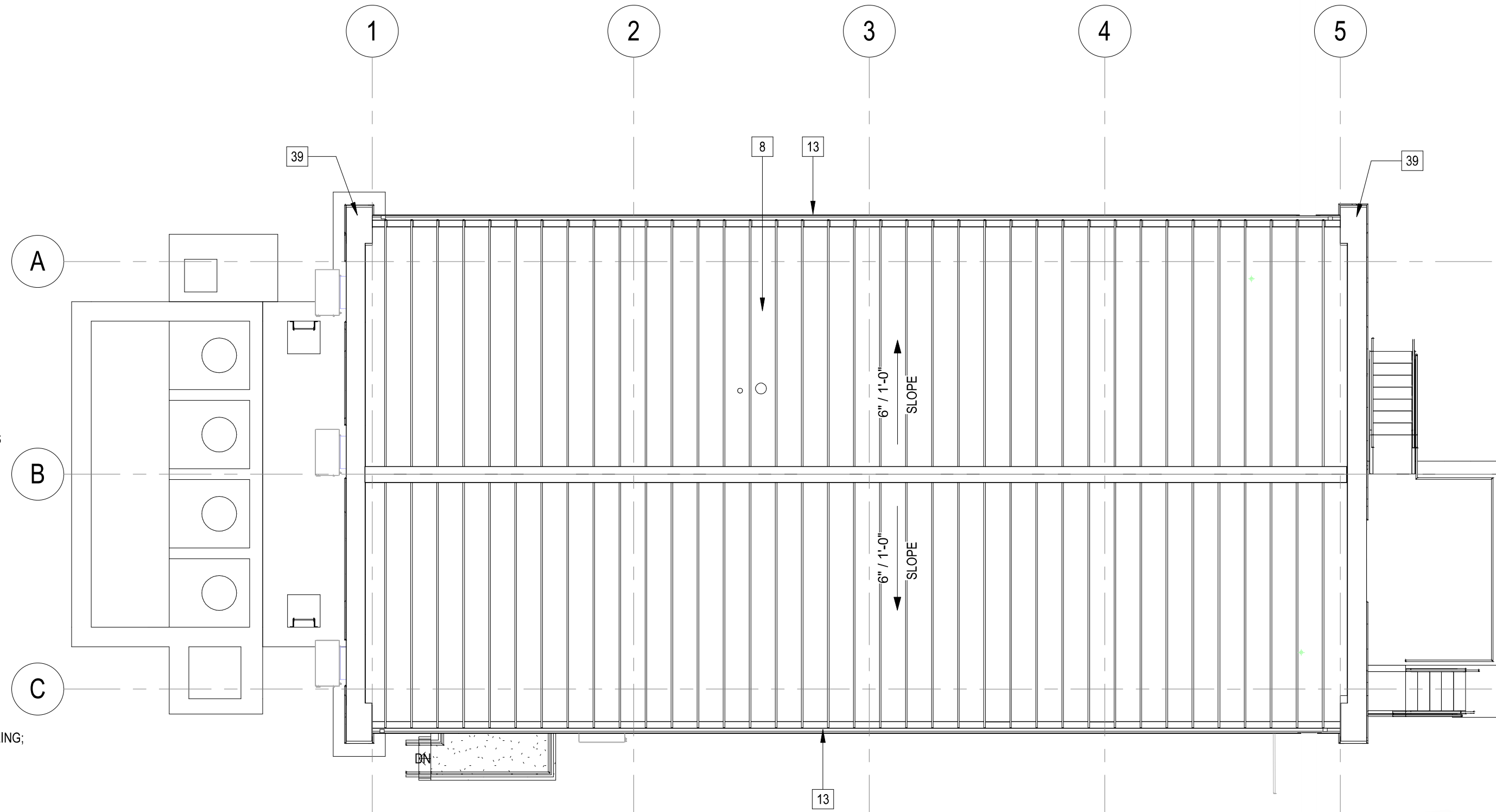


FLOOR PLAN

1/8" = 1'-0"

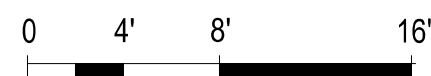


SCALE: 1/8" = 1'-0"



ROOF PLAN

1/8" = 1'-0"



SCALE: 1/8" = 1'-0"

ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

REV	DATE	BY	DESCRIPTION

SCALE  
As indicated

WARNING  
0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED BY: B. GIORGI  
DRAWN BY: A. MICHAEL  
SHEET CHK'D BY: R. MARSHALL  
CROSS CHK'D BY: W. MCCONNELL  
APPROVED BY: B. GIORGI  
DATE: APRIL 2021

FINAL DESIGN - MARCH 2021

**CDM Smith**  
280 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
BUCKLIN POINT  
WASTEWATER TREATMENT FACILITY  
ULTRAVIOLET DISINFECTION FACILITY

NBC CONTRACT NO 308.10C  
UV DISINFECTION FACILITY  
FLOOR AND ROOF PLAN

SHEET  
UV-A-2

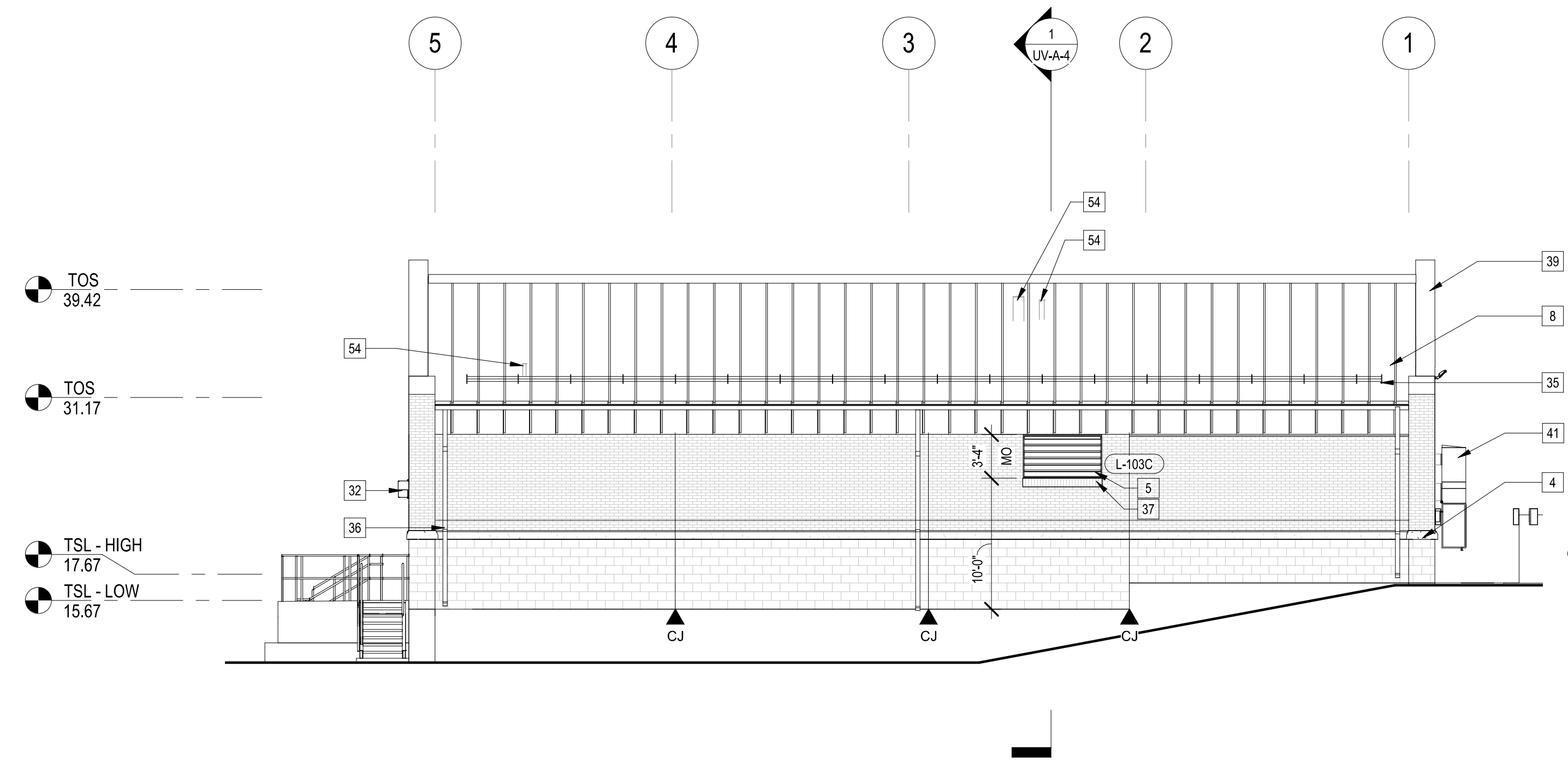


**CDM Architects Inc.**

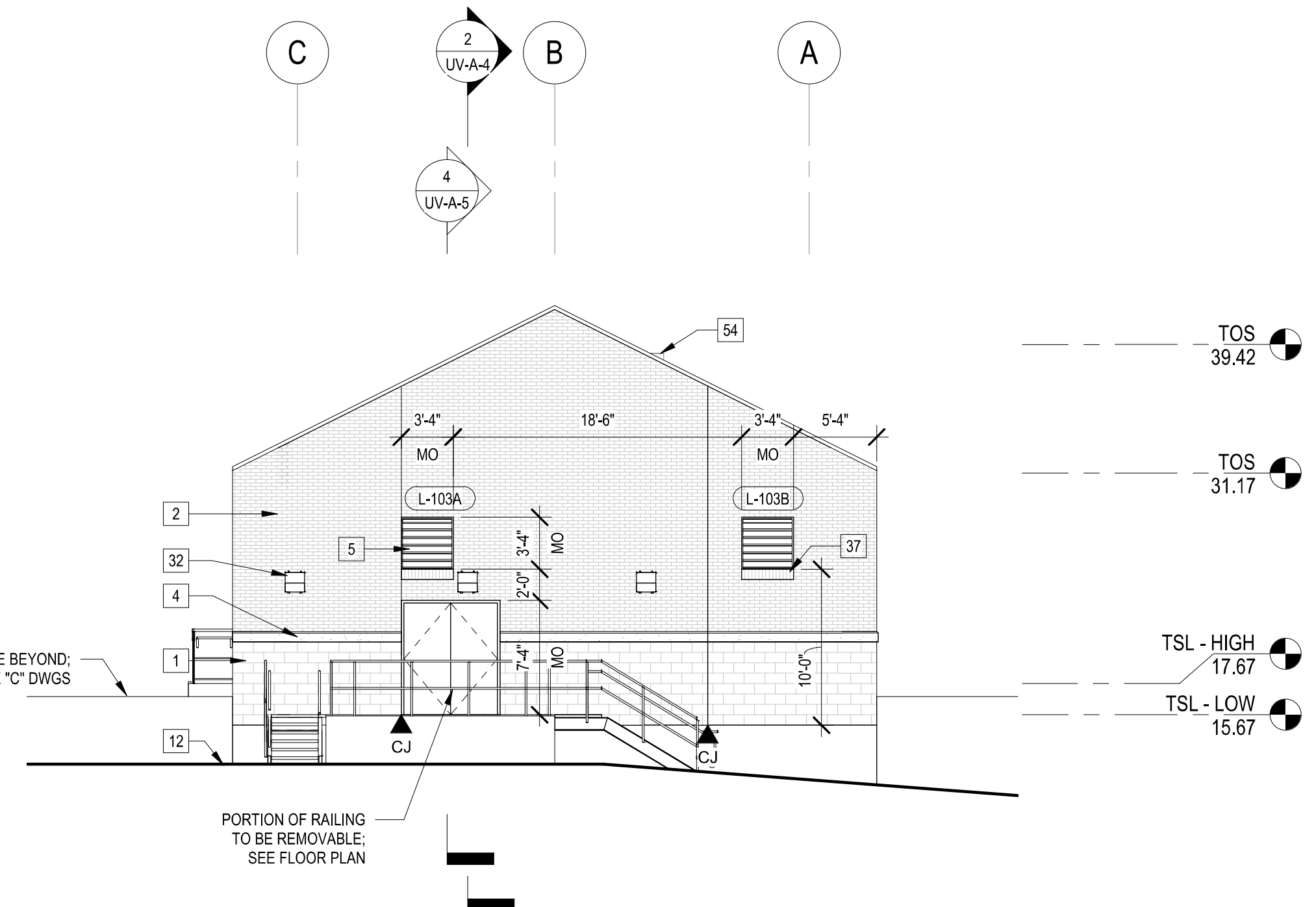
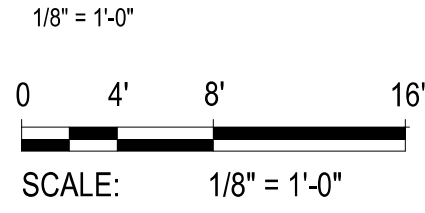
75 State Street  
Boston, Massachusetts 02109

RI Certificate of Authorization No. A-14298 Expires: December 31, 2022

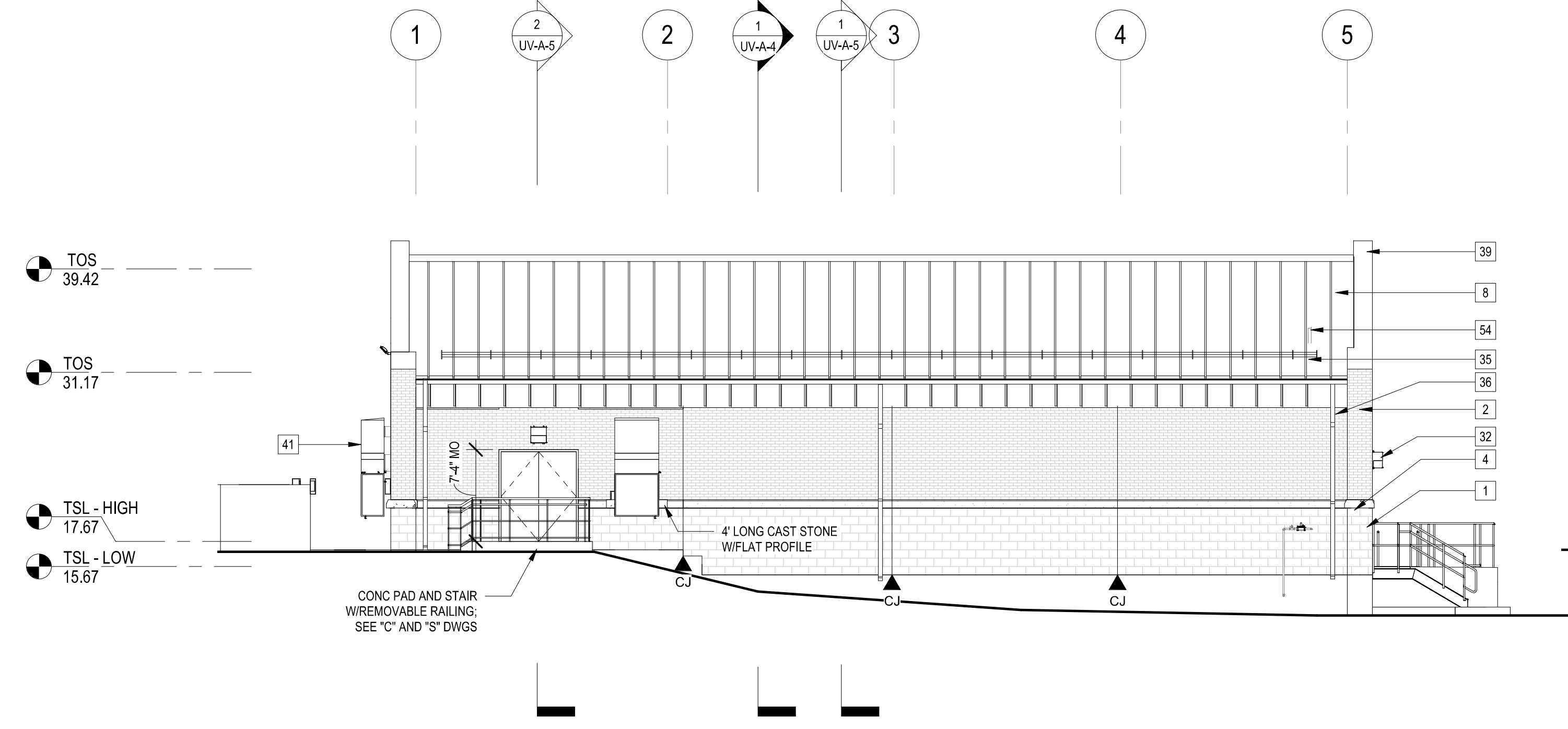
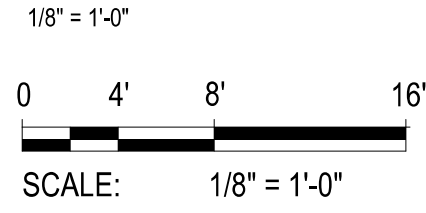




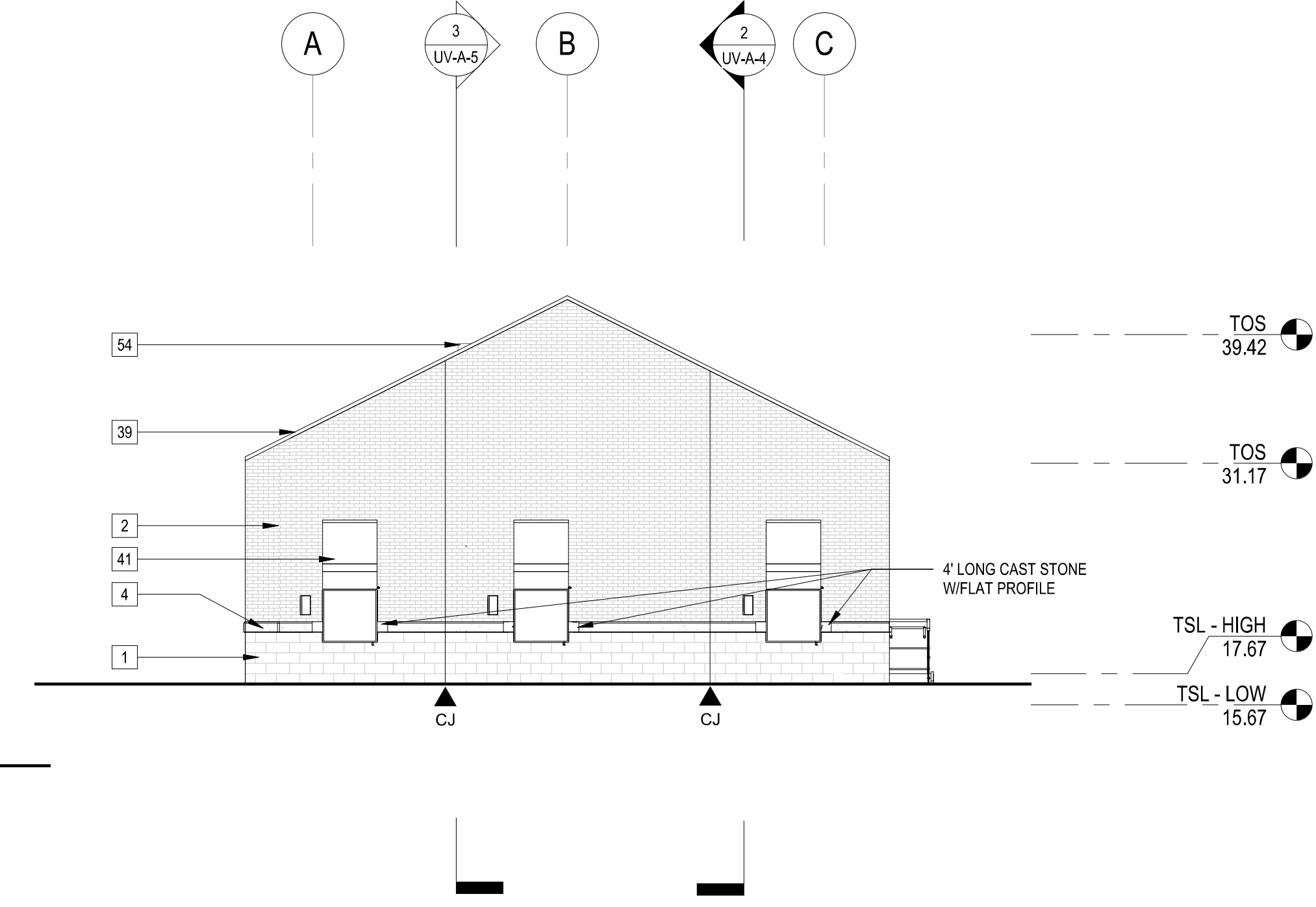
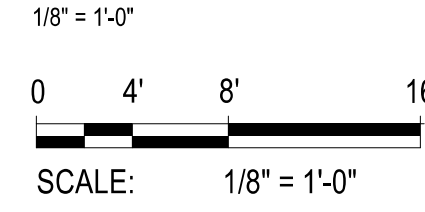
NORTH ELEVATION



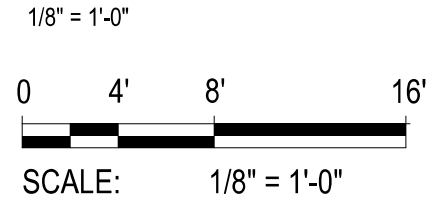
EAST ELEVATION



SOUTH ELEVATION



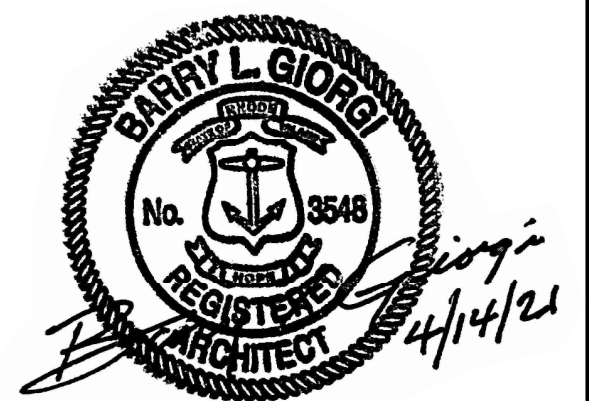
WEST ELEVATION



KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
1	SPLIT FACE CMU VENEER
2	4" FACE BRICK
4	CAST STONE MASONRY
5	ALUMINUM LOUVER; SEE SCHD
6	DOOR AND FRAME; SEE SCHD
8	STANDING SEAM METAL ROOF
9	STANDING SEAM METAL FASCIA
12	FINISH GRADE; SEE "C" DWGS
13	ALUMINUM GUTTER
14	PERFORATED METAL SOFFIT
15	10" CMU WALL
16	10" CMU LINTEL; SEE "S" DWGS
17	3" RIGID INSULATION
18	MODIFIED BITUMINOUS SHEET AIR BARRIER
21	2" PERIMETER INSULATION
22	DAMP-PROOFING
23	STEEL BEAM; SEE "S" DWGS
24	STEEL BRACING; SEE "S" DWGS
25	STEEL COLUMN BEYOND; SEE "S" DWGS
26	METAL DECKING; SEE "S" DWGS
32	LIGHT FIXTURES; SEE "E" DWGS, TYP
33	CONCRETE PAD; SEE "S" DWGS
34	ELECTRICAL EQUIPMENT; SEE "E" DWGS
35	3-PIPE TYPE ALUMINUM SNOW-GUARD WITH SST BASE PLATES
36	ALUMINUM DOWNSPOUT
37	BRICK SOLDIER COURSE
39	ALUMINUM PARAPET COPING
41	HVAC EQUIPMENT; SEE "H" DWGS
43	PROCESS EQUIPMENT; SEE "M" DWGS
47	CAVITY DRAINAGE MATERIAL
49	VAPOR RETARDER
51	JOINT REINFORCING AND MASONRY TIES @ 16" OC, TYP
52	JOINT REINFORCING @ 16" OC
54	GAS UNIT HEATER VENT; SEE "H" DWGS

ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

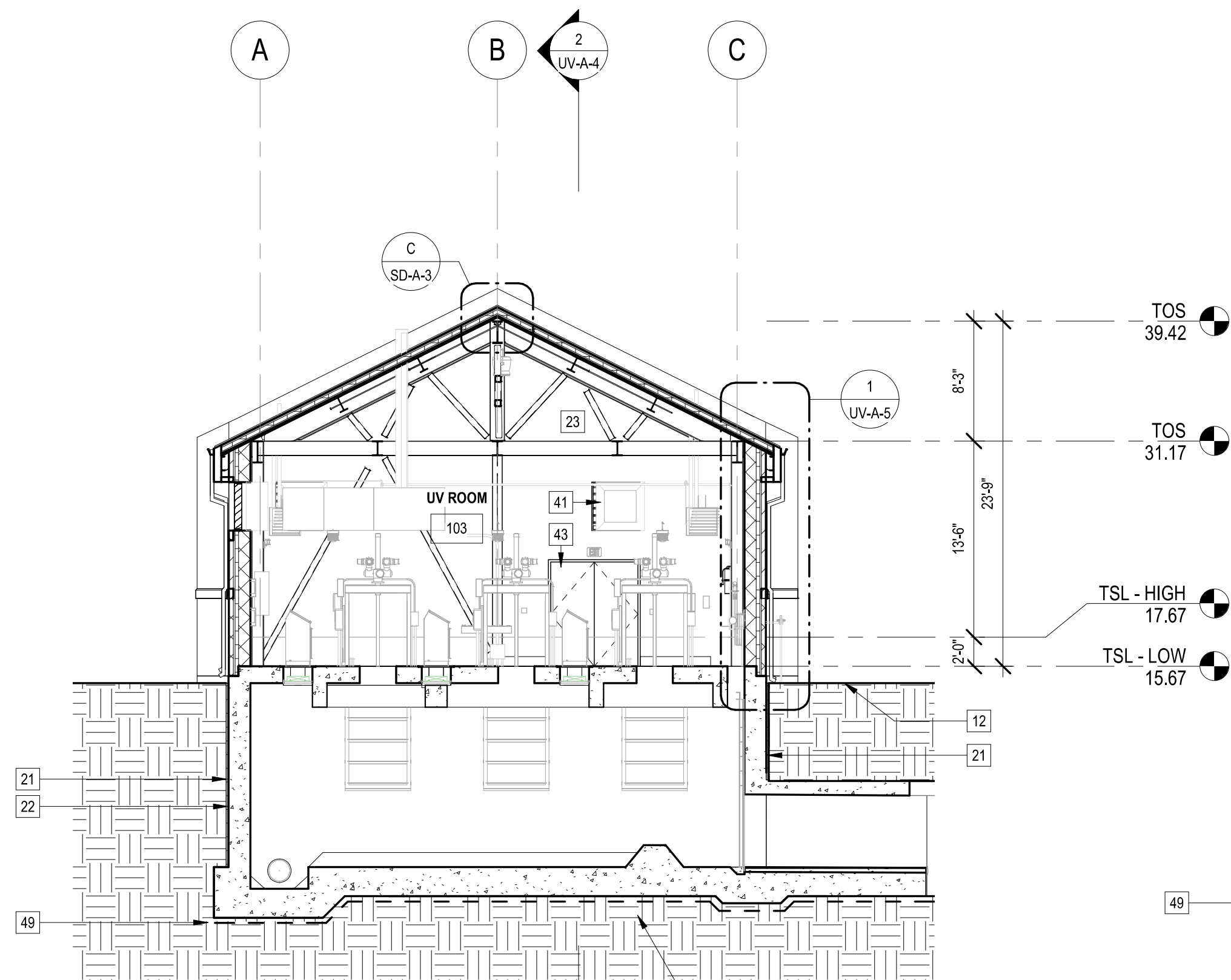
REV	DATE	BY	DESCRIPTION	SCALE As indicated	WARNING IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED BY: <u>B. GIORGI</u> DRAWN BY: <u>A. MICHAEL</u> SHEET CHK'D BY: <u>R. MARSHALL</u> CROSS CHK'D BY: <u>W. MCCONNELL</u> APPROVED BY: <u>B. GIORGI</u> DATE: <u>APRIL 2021</u>	FINAL DESIGN - MARCH 2021	 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 NARRAGANSETT BAY COMMISSION BUCKLIN POINT WASTEWATER TREATMENT FACILITY ULTRAVIOLET DISINFECTION FACILITY	NBC CONTRACT NO 308.10C UV DISINFECTION FACILITY EXTERIOR ELEVATIONS	SHEET UV-A-3



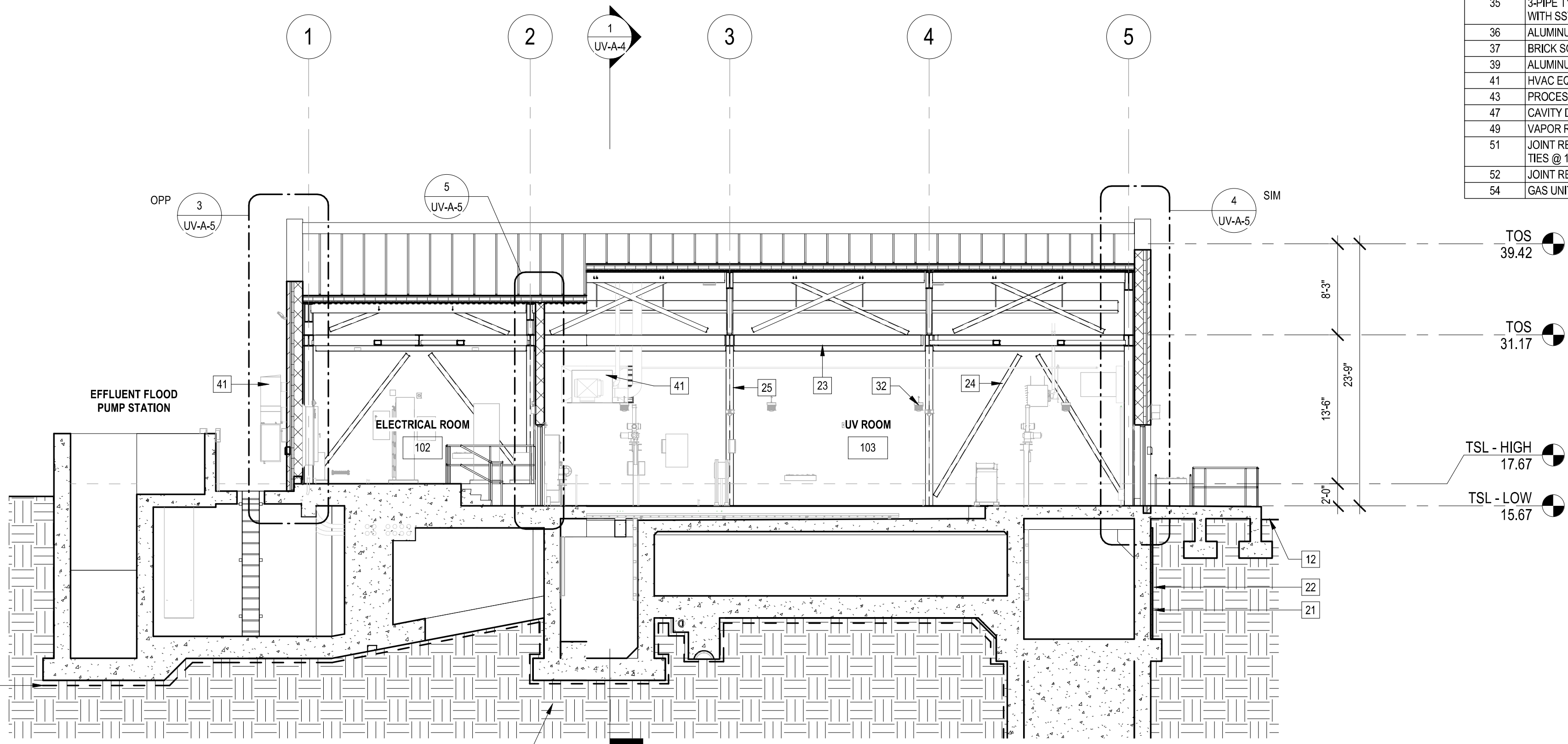
**CDM** Architects Inc.  
75 State Street  
Boston, Massachusetts 02109  
RI Certificate of Authorization No. A-14298 Expires: December 31, 2022



KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
1	SPLIT FACE CMU VENEER
2	4" FACE BRICK
4	CAST STONE MASONRY
5	ALUMINUM LOUVER; SEE SCHD
6	DOOR AND FRAME; SEE SCHD
8	STANDING SEAM METAL ROOF
9	STANDING SEAM METAL FASCIA
12	FINISH GRADE; SEE "C" DWGS
13	ALUMINUM GUTTER
14	PERFORATED METAL SOFFIT
15	10" CMU WALL
16	10" CMU LINTEL; SEE "S" DWGS
17	3" RIGID INSULATION
18	MODIFIED BITUMINOUS SHEET AIR BARRIER
21	2" PERIMETER INSULATION
22	DAMP-PROOFING
23	STEEL BEAM; SEE "S" DWGS
24	STEEL BRACING; SEE "S" DWGS
25	STEEL COLUMN BEYOND; SEE "S" DWGS
26	METAL DECKING; SEE "S" DWGS
32	LIGHT FIXTURES; SEE "E" DWGS, TYP
33	CONCRETE PAD; SEE "S" DWGS
34	ELECTRICAL EQUIPMENT; SEE "E" DWGS
35	3-PIPE TYPE ALUMINUM SNOW-GUARD WITH SST BASE PLATES
36	ALUMINUM DOWNSPOUT
37	BRICK SOLDIER COURSE
39	ALUMINUM PARAPET COPING
41	HVAC EQUIPMENT; SEE "H" DWGS
43	PROCESS EQUIPMENT; SEE "M" DWGS
47	CAVITY DRAINAGE MATERIAL
49	VAPOR RETARDER
51	JOINT REINFORCING AND MASONRY TIES @ 16" OC, TYP
52	JOINT REINFORCING @ 16" OC
54	GAS UNIT HEATER VENT; SEE "H" DWGS



**1 BUILDING SECTION 1**  
UV-A-2 1/8" = 1'-0"  
0 4' 8' 16'  
SCALE: 1/8" = 1'-0"



**2 BUILDING SECTION 2**  
UV-A-2 1/8" = 1'-0"  
0 4' 8' 16'  
SCALE: 1/8" = 1'-0"

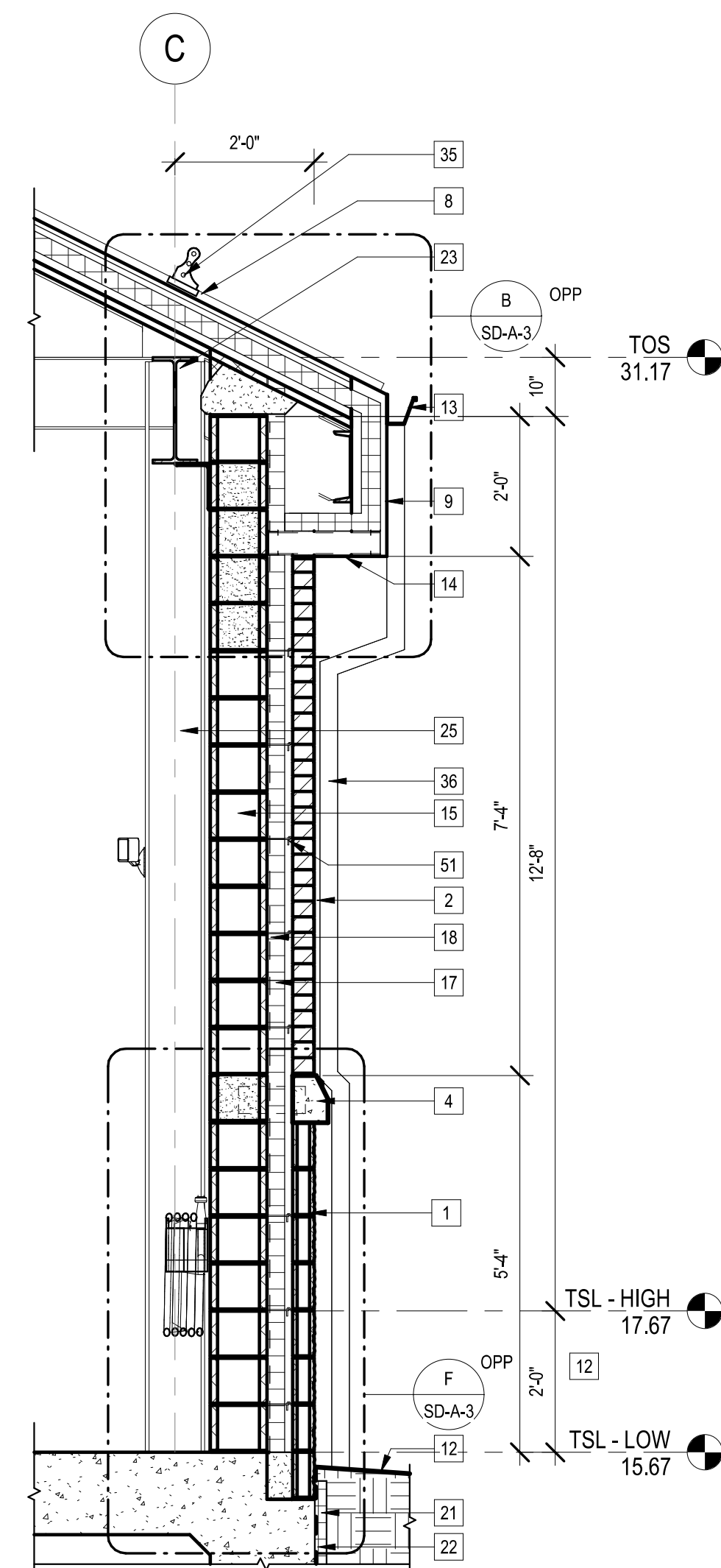
ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

				SCALE As indicated	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DESIGNED BY: <u>B. GIORGI</u> DRAWN BY: <u>A. MICHAEL</u> SHEET CHK'D BY: <u>R. MARSHALL</u> CROSS CHK'D BY: <u>W. MCCONNELL</u> APPROVED BY: <u>B. GIORGI</u> DATE: <u>APRIL 2021</u>	FINAL DESIGN - MARCH 2021	<b>CDM Smith</b> 280 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	 NARRAGANSETT BAY COMMISSION BUCKLIN POINT WASTEWATER TREATMENT FACILITY ULTRAVIOLET DISINFECTION FACILITY	NBC CONTRACT NO 308.10C UV DISINFECTION FACILITY BUILDING SECTIONS	SHEET UV-A-4
REV	DATE	BY	DESCRIPTION								



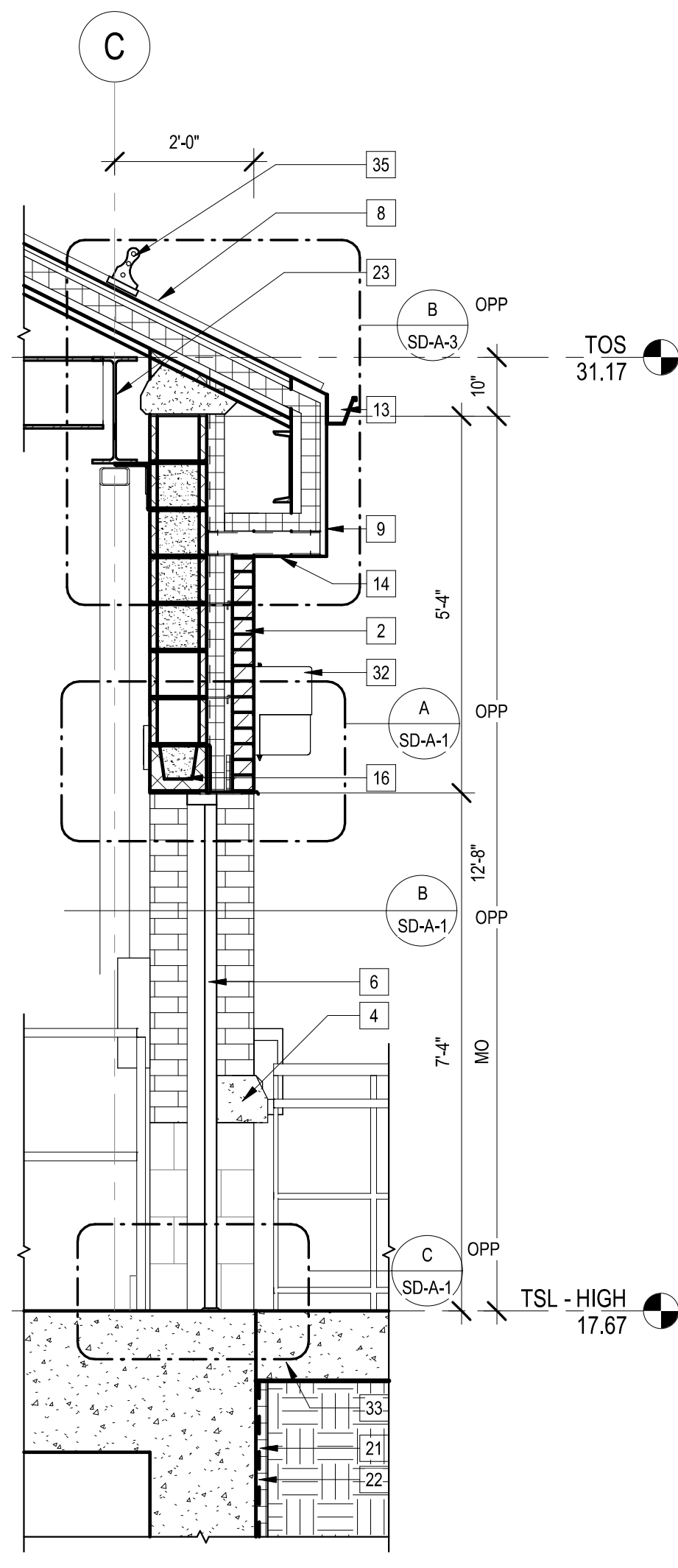
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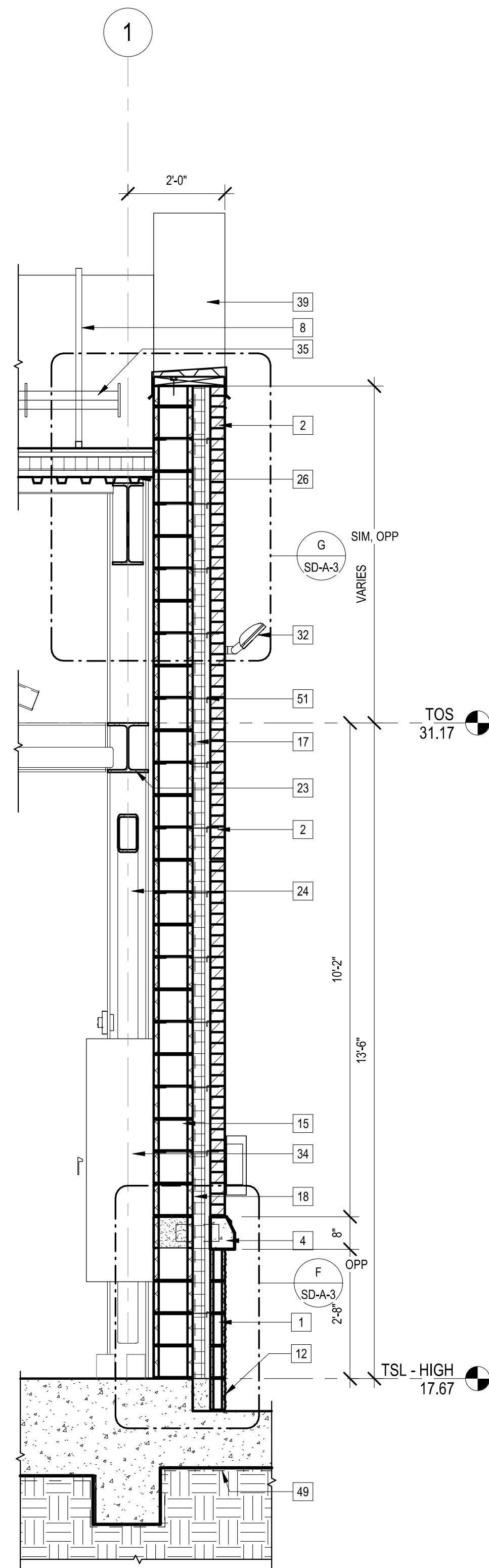
**1 WALL SECTION**  
UV-A-3 1/2" = 1'-0"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"



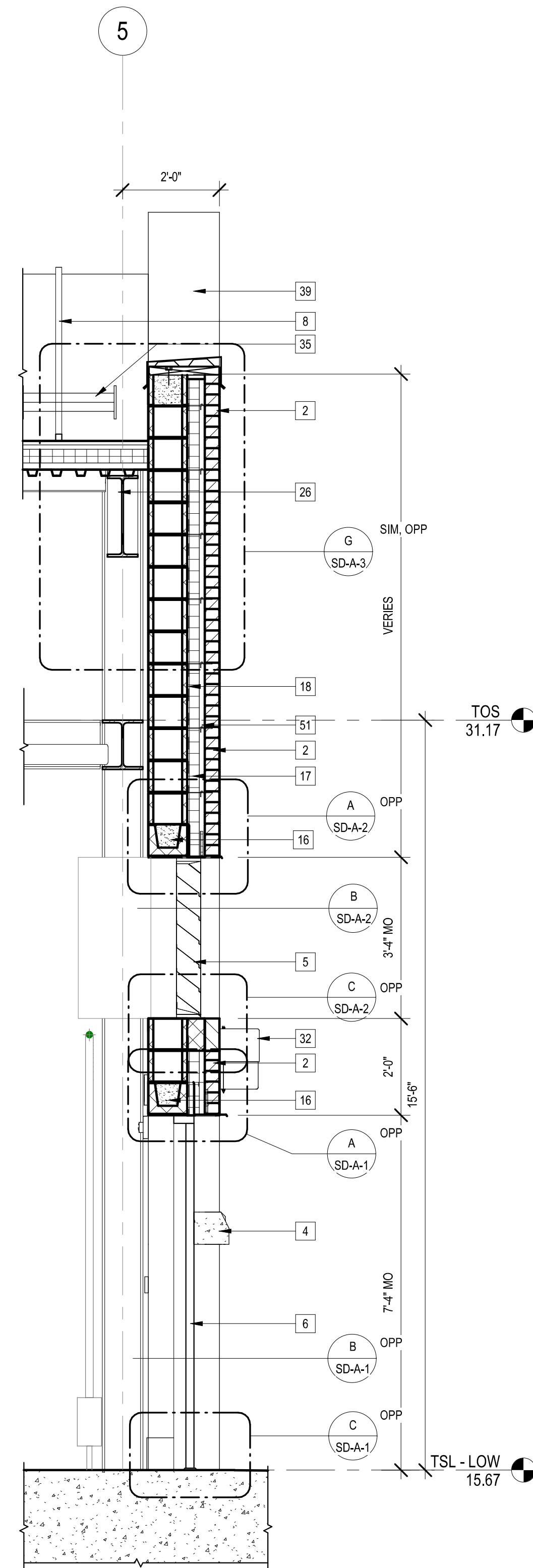
**2 WALL SECTION**  
UV-A-3 1/2" = 1'-0"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"



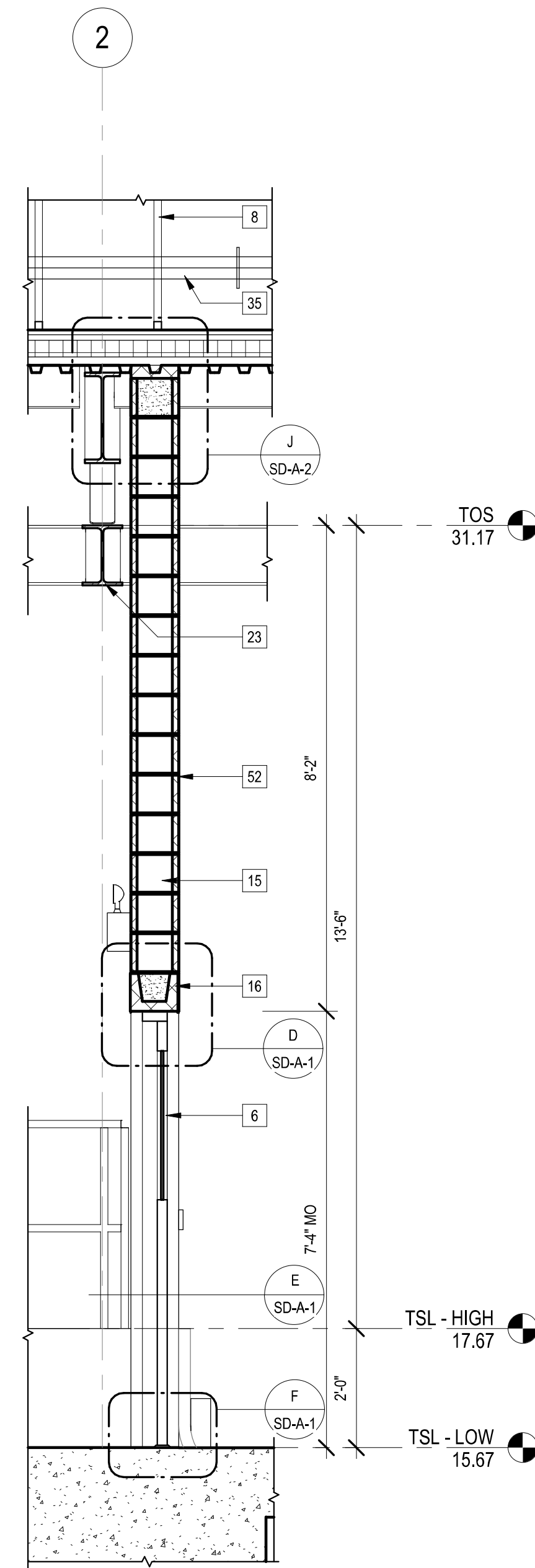
**3 WALL SECTION**  
UV-A-3 1/2" = 1'-0"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"



**4 WALL SECTION**  
UV-A-3 1/2" = 1'-0"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"



**5 WALL SECTION**  
UV-A-4 1/2" = 1'-0"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"

KEYNOTES	
NUMBER	KEYNOTE DESCRIPTION
1	SPLIT FACE CMU VENEER
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4	CAST STONE MASONRY
5	ALUMINUM LOUVER; SEE SCHD
6	DOOR AND FRAME; SEE SCHD
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25	STEEL COLUMN BEYOND; SEE "S" DWGS
26	METAL DECKING; SEE "S" DWGS
32	LIGHT FIXTURES; SEE "E" DWGS, TYP
33	CONCRETE PAD; SEE "S" DWGS
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36	ALUMINUM DOWNSPOUT
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ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

REV	DATE	BY	DESCRIPTION

SCALE  
As indicated

WARNING  
0 1/2 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED BY: B. GIORGI  
DRAWN BY: A. MICHAEL  
SHEET CHK'D BY: R. MARSHALL  
CROSS CHK'D BY: W. MCCONNELL  
APPROVED BY: B. GIORGI  
DATE: APRIL 2021

FINAL DESIGN - MARCH 2021

**CDM Smith**

260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
BUCKLIN POINT  
WASTEWATER TREATMENT FACILITY  
ULTRAVIOLET DISINFECTION  
FACILITY

NBC CONTRACT NO 308.10C  
UV DISINFECTION FACILITY  
WALL SECTIONS

SHEET  
UV-A-5



**CDM Architects Inc.**

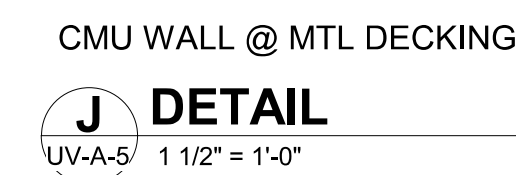
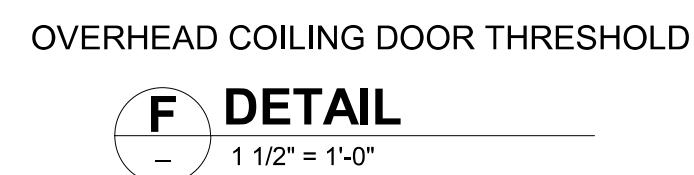
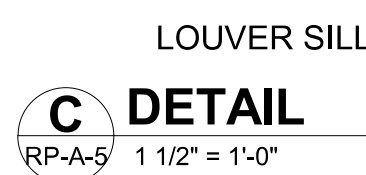
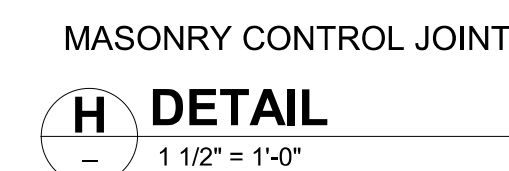
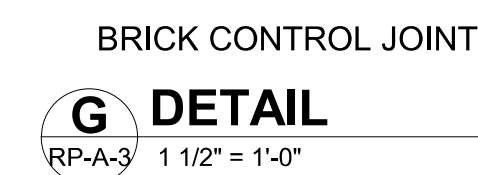
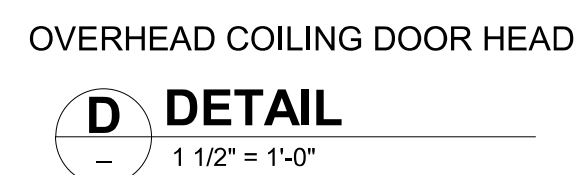
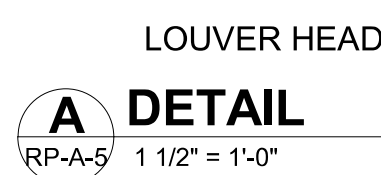
75 State Street  
Boston, Massachusetts 02109

RI Certificate of Authorization No. A-14298 Expires: December 31, 2022



1. SEE SHEET GD-A-1 FOR GENERAL NOTES.

2. STRUCTURAL ITEMS SHOWN ON THIS SHEET ARE FOR GRAPHICAL PURPOSES ONLY. REFER TO THE STRUCTURAL DRAWINGS FOR SPECIFIC LOCATIONS AND DETAILED REQUIREMENTS.



NOTE: DETAIL CUT AT ANGLED VIEW

— ROOF ASSEMBLY; SEE SD-A-3 FOR DETAILS

— METAL DECKING; SEE "S" DWGS

— CONT STL PLATE

SEE "S" DWGS

10" CMU BOND BEAM:

SEE 3 DWGS

CUT CMU TO MATCH PITCH  
OF ROOF AS REQ'D

—— 10" CMU WALL

— STL BEAM; SEE "S" DWGS

0      3"      6"      1'

SCALE: 1 1/2" = 1'-0"



**CDM** Architects Inc.

75 State Street  
Boston, Massachusetts 02109

RI Certificate of Authorization Expires:  
No. A-14298 December 31, 2022

REV	DATE	BY	DESCRIPTION

SCALE

As indicated

**WARNING**

0  $\frac{1}{2}$  1

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

DESIGNED C. SOLLOG

DRAWN H. AL-RAWI

CHECKED: B. GIORGI

FINAL DESIGN - MARCH 2021

**CDM  
Smith**

260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



NARRAGANSETT BAY COMMISSION  
PHASE III COMBINED SEWER  
OVERFLOW PROGRAM



NBC CONTRACT NO 308.10C  
ARCHITECTURAL

## OVERHEAD COILING DOOR AND LOUVER DETAILS

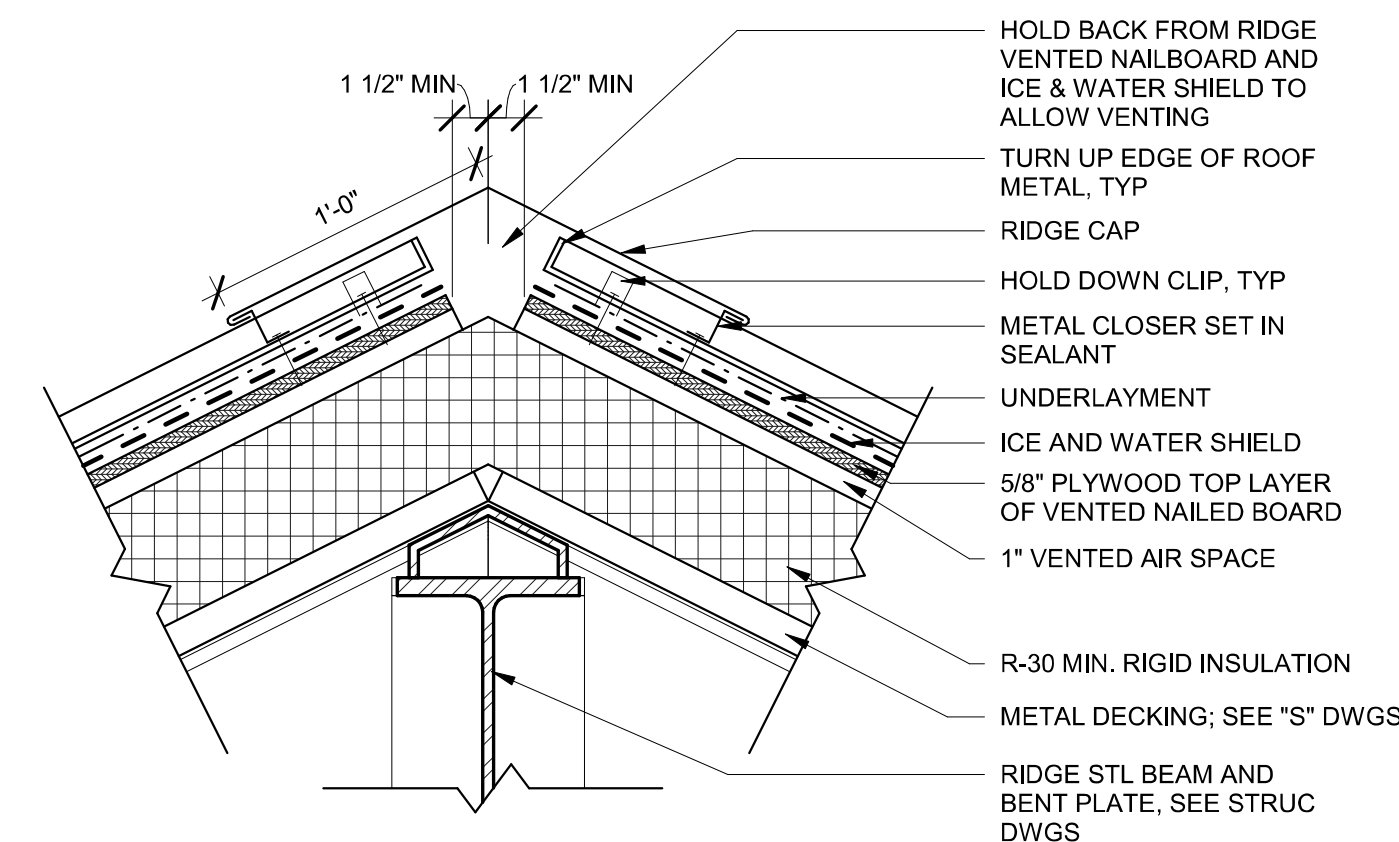
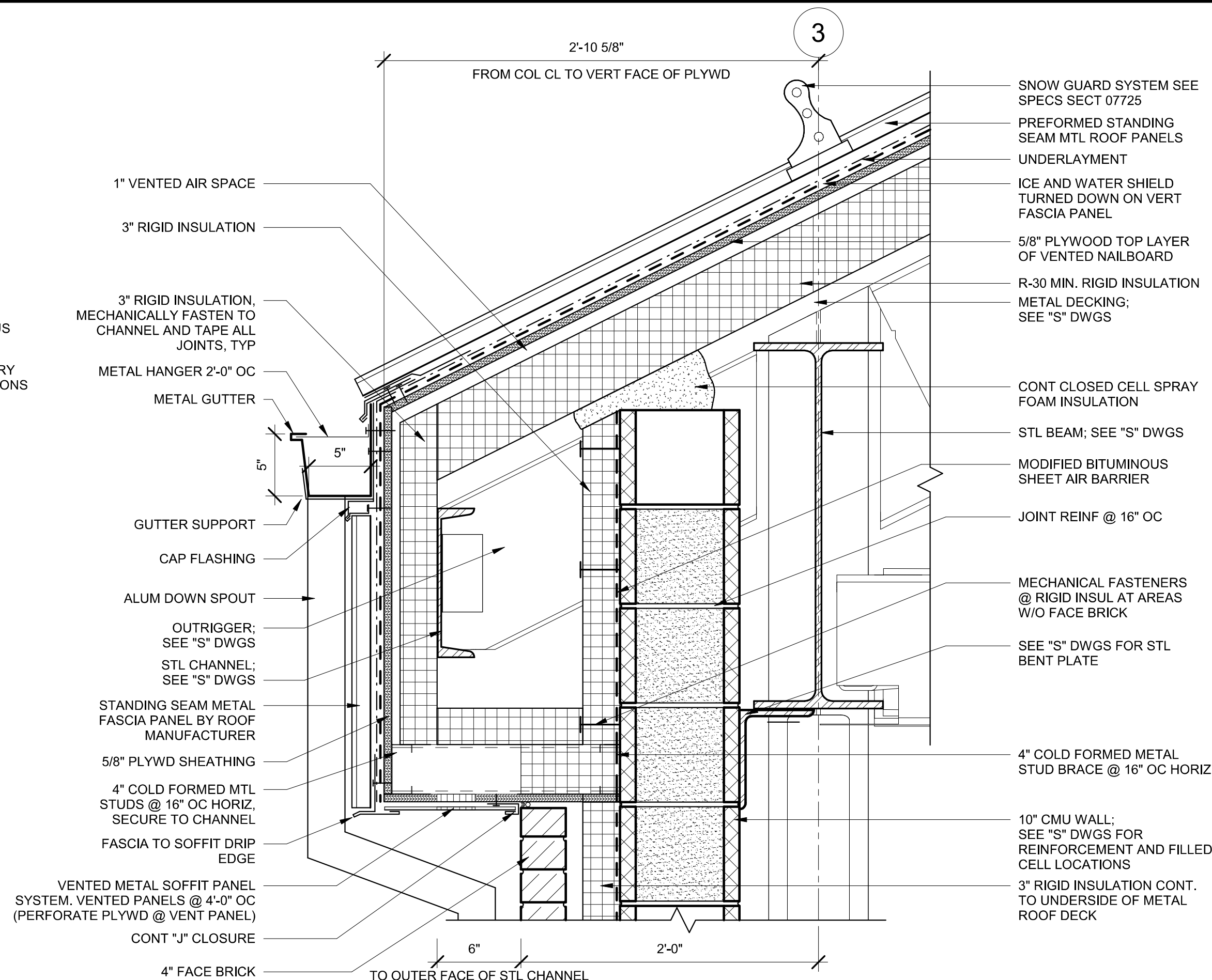
SHEET

SD-A-2

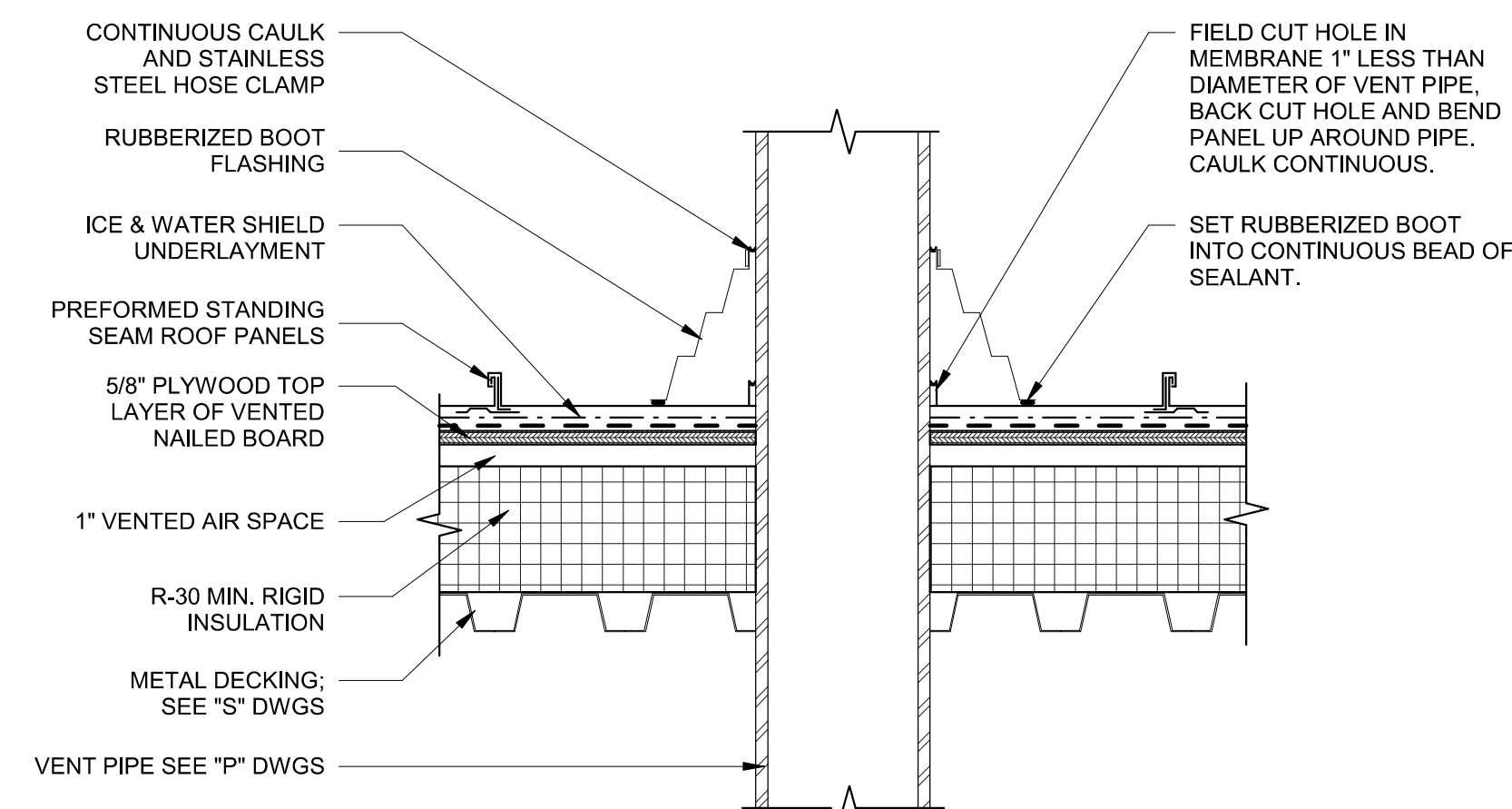


1. SEE SHEET GD-A-1 FOR GENERAL NOTES.

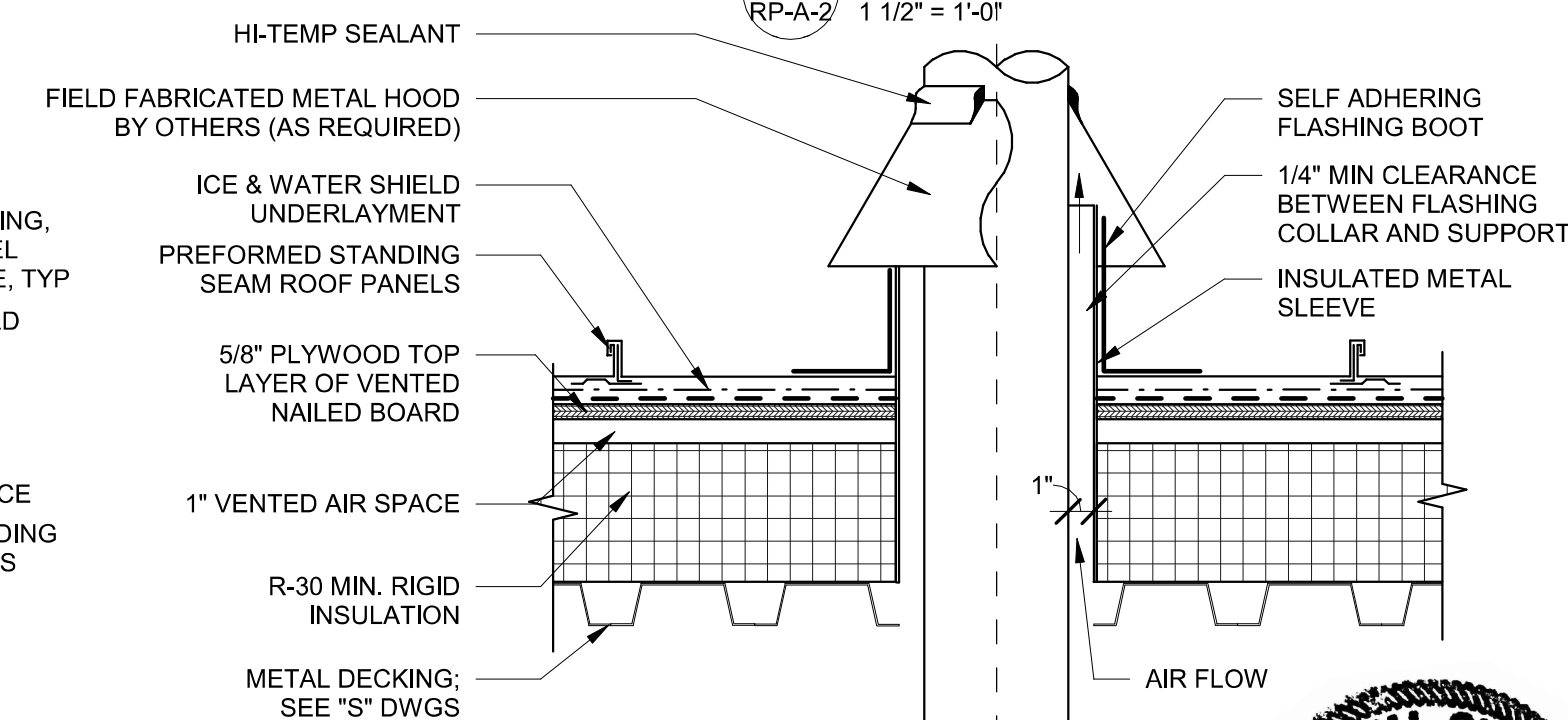
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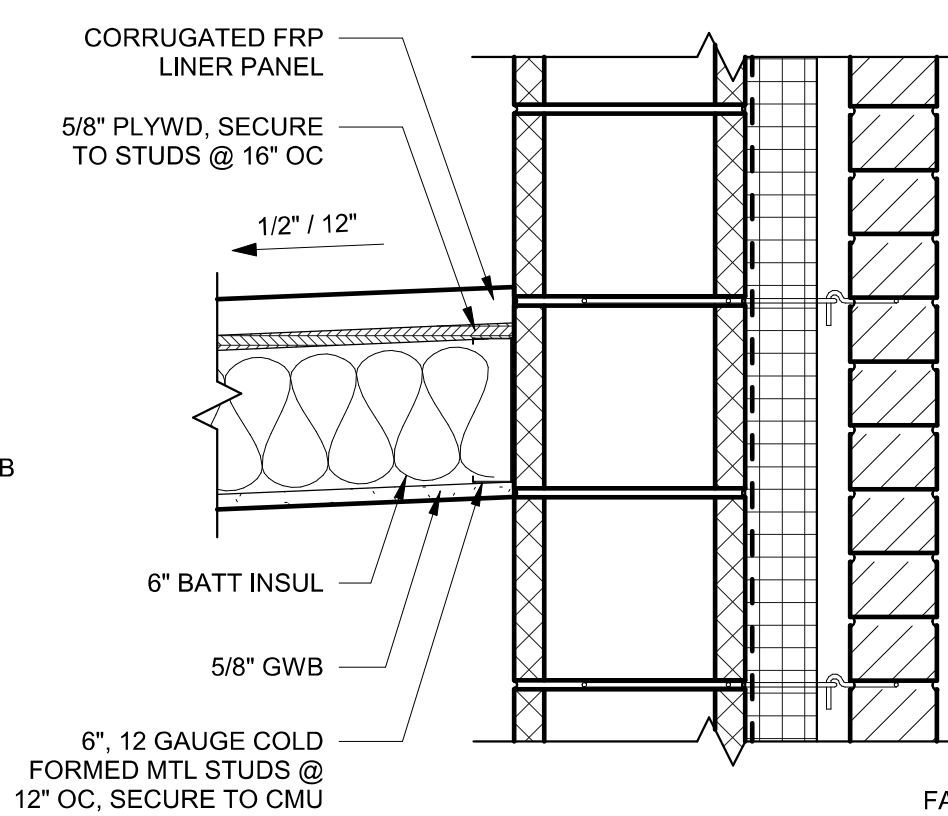
**C** **DETAIL**  
RP-A-2 1 1/2" = 1'-0"



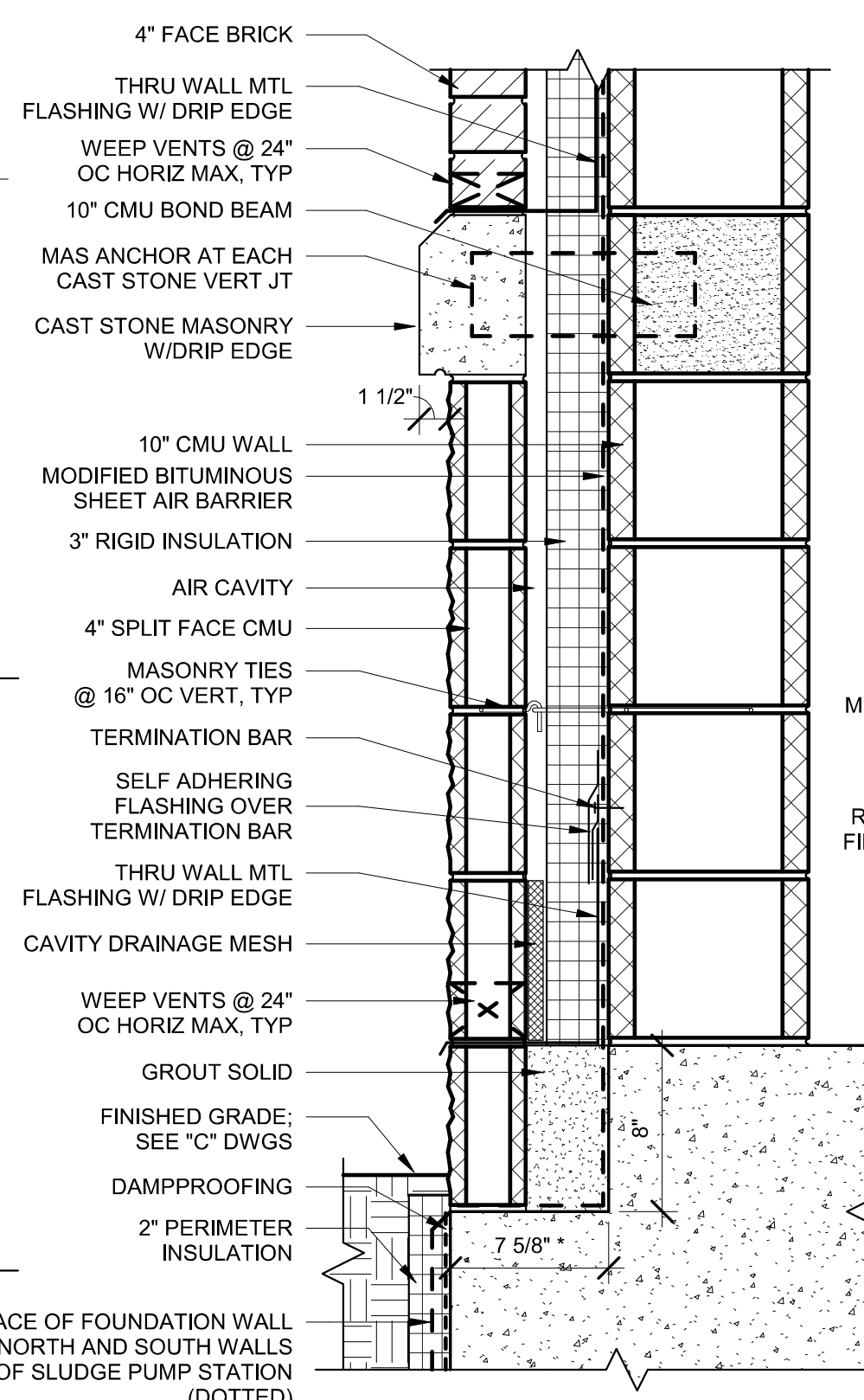
**J** **DETAIL**  
RP-A-2 1 1/2" = 1'-0"



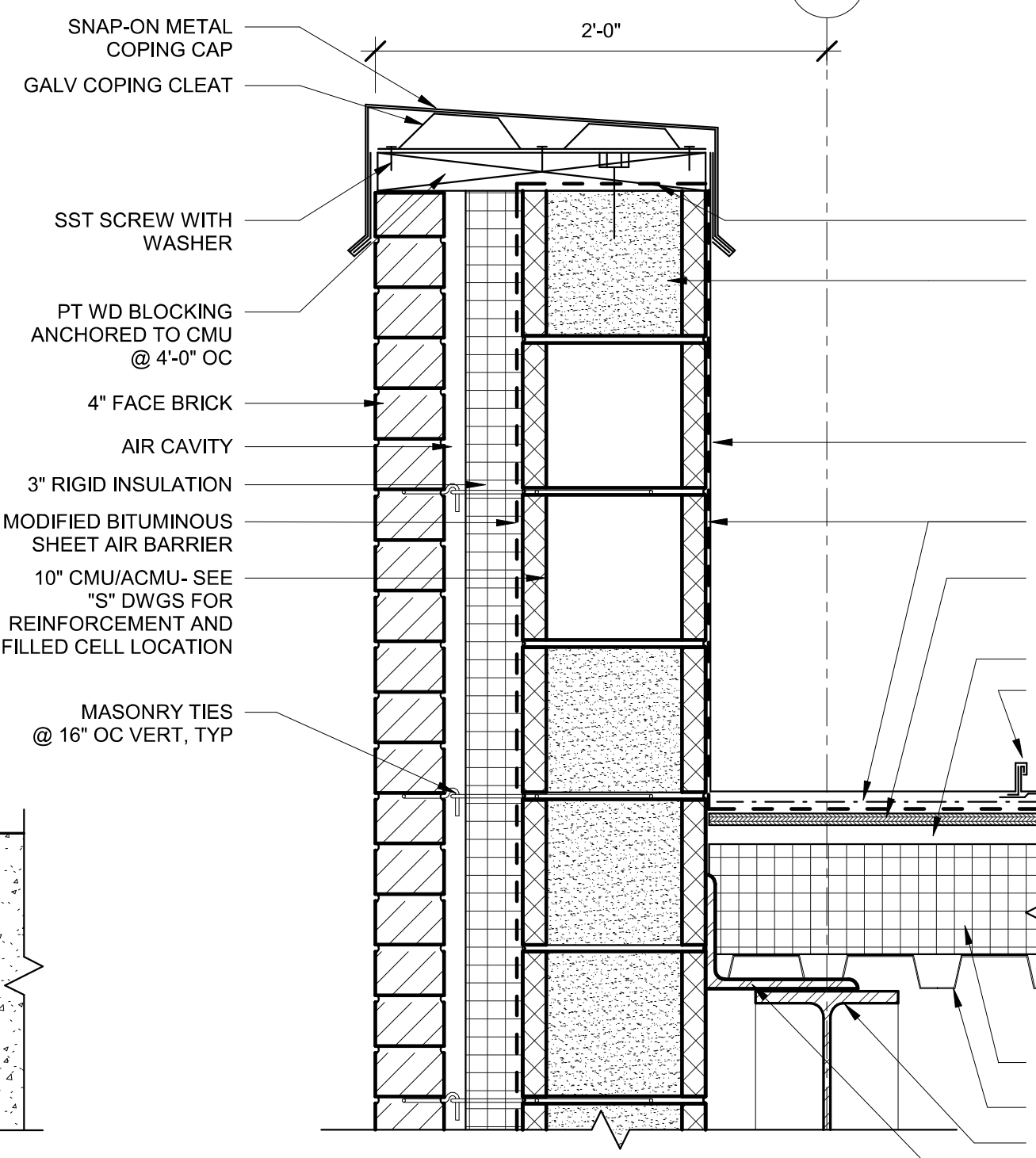
**H** **DETAIL**  
RP-A-2 1 1/2" = 1'-0"



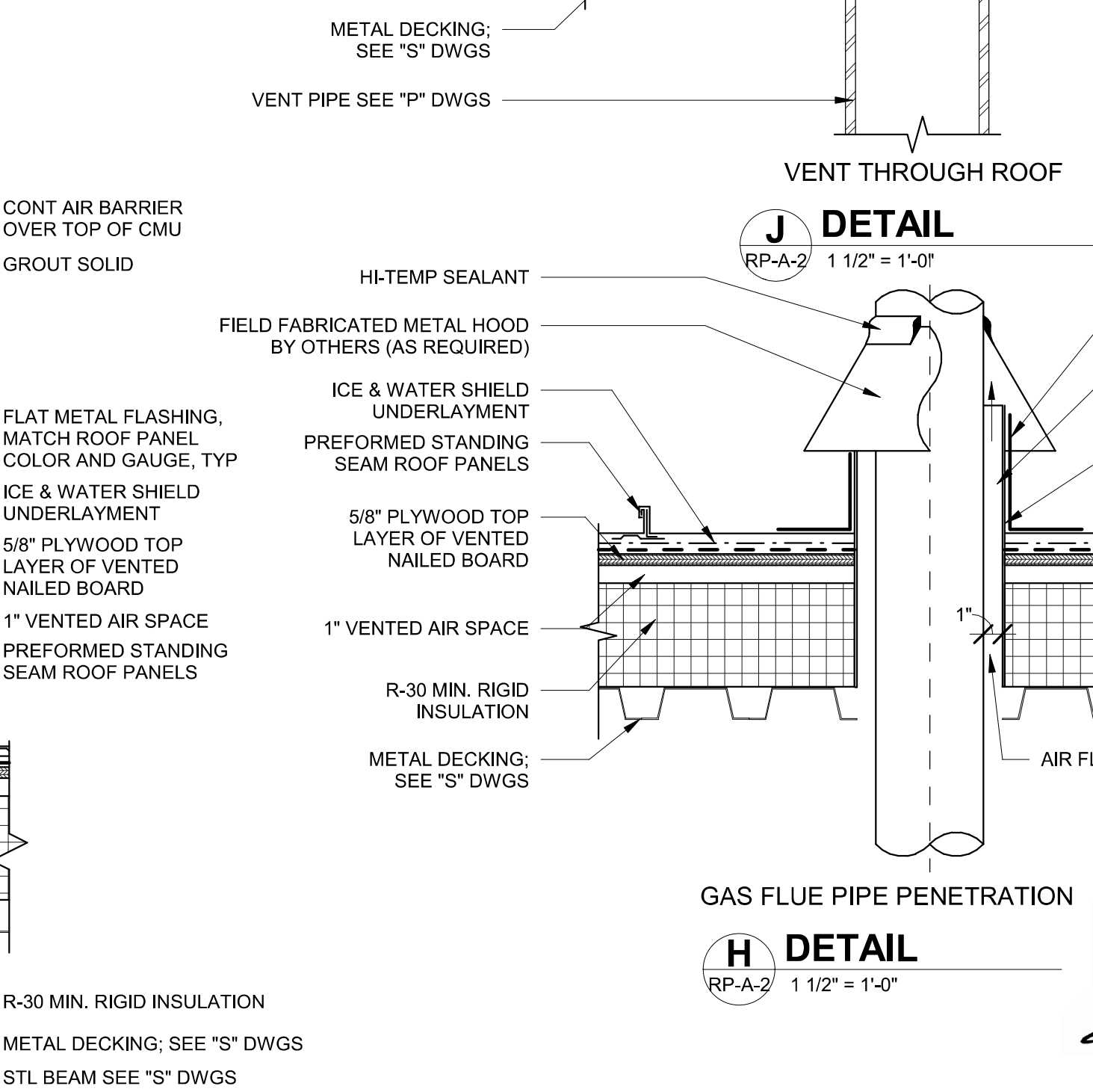
**D** **DETAIL**  
RP-A-5 1 1/2" = 1'-0"



**F** **DETAIL**  
RP-A-5 1 1/2" = 1'-0"



**G** **DETAIL**  
RP-A-2 1 1/2" = 1'-0"



RP-A-2 1 1/2" = 1'-0"



75 State Street  
Boston, Massachusetts 02109


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No. A-14298 December 31, 2022

0 3" 6" 1'

SCALE: 1 1/2" = 1'-0"

SHEET

SD-A-3

				SCALE	WARNING 0 1/2 1 	DESIGNED _C. SOLLOG_
				As indicated	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN _H. AL-RAWI_
REV	DATE	BY	DESCRIPTION			CHECKED _B. GIORGI_

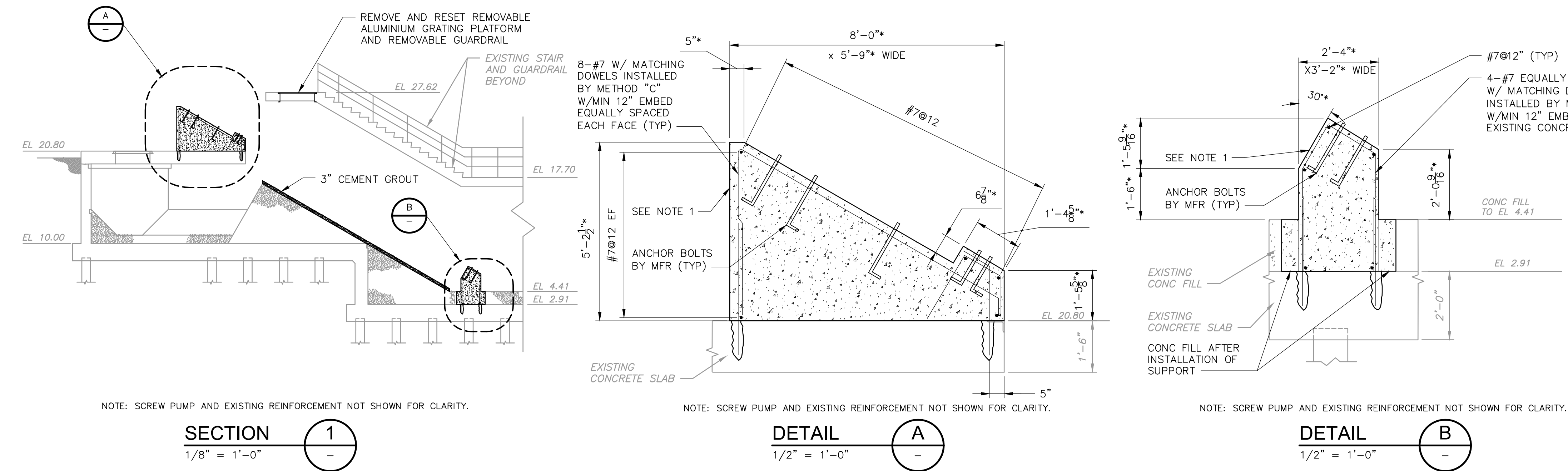
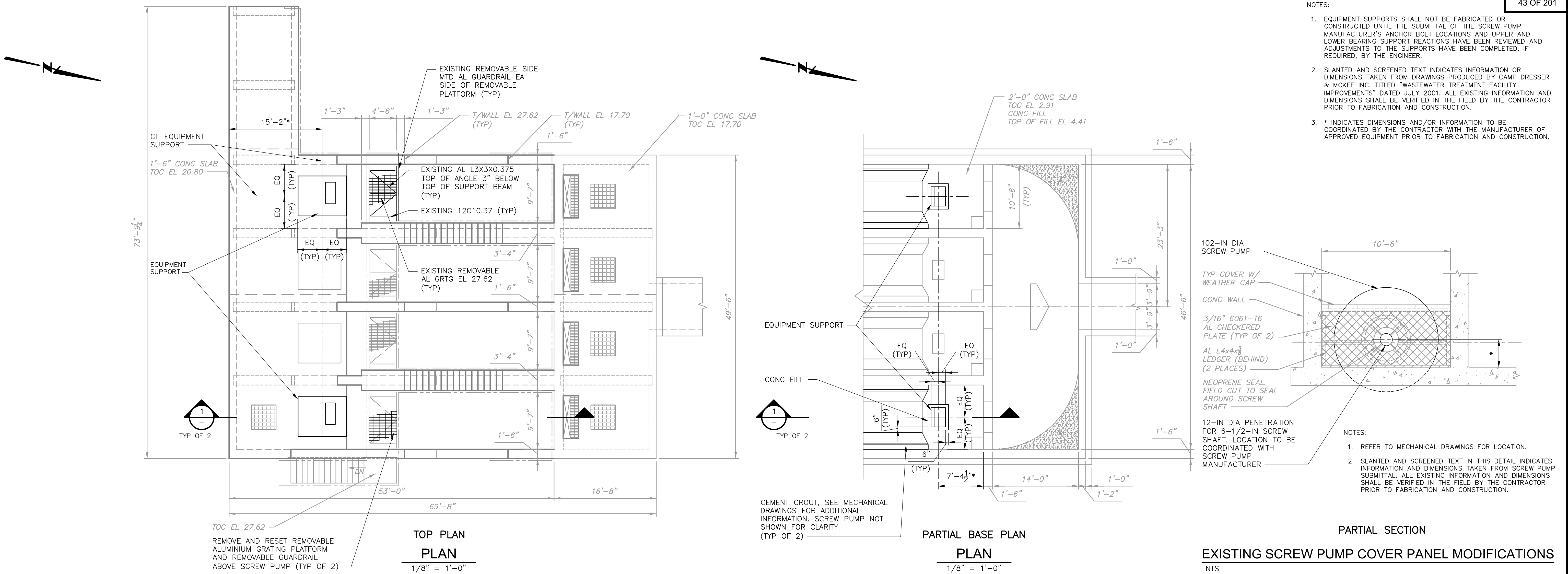
**CDM  
Smith**  
260 West Exchange Street, Suite 300  
Providence, RI 02903  
Tel: (401) 751-5360



## PLAN, ROOF AND WALL DETAILS



CDM Smith ProjectWise Project No: 93019-234214, NARRAGANSETT BAY COMMISSION, PHASE III COMBINED SEWER OVERFLOW PROGRAM  
File: S002INPL.DWG; Saved by: NK, 4/8/2021 6:06 PM; Plotted on: 4/14/2021 3:37 PM



ELEVATION SHOWN ARE IN FEET AND ARE REFERENCED TO NGVD 1929.

SCALE	WARNING	DESIGNED J. MITCHELL	FINAL DESIGN - MARCH 2021	CDM Smith	NARRAGANSETT BAY COMMISSION	NBC CONTRACT NO 308.10C	SHEET
As indicated	0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	DRAWN G. GANESH		260 West Exchange Street, Suite 300 Providence, RI 02903 Tel: (401) 751-5360	PHASE III COMBINED SEWER OVERFLOW PROGRAM	STRUCTURAL	IP-S-1
REV	DATE	BY	DESCRIPTION	CHECKED J. MITCHELL	Stantec	INFLUENT PUMP STATION IMPROVEMENT PLANS, SECTION AND DETAILS	