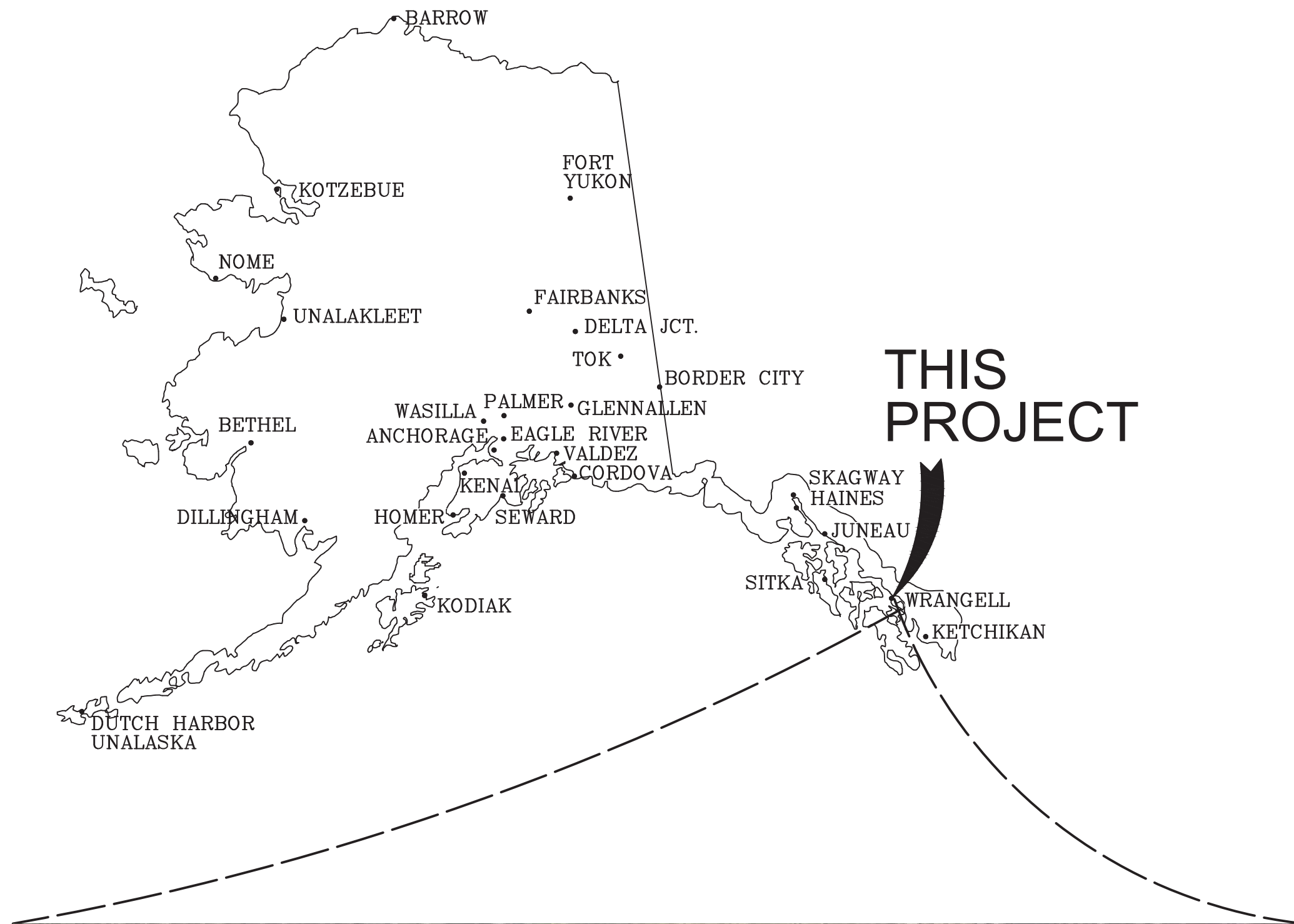


LOCATION MAP



PROJECT LOCATION

SECTION 31, TOWNSHIP 62S, RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

**WRANGELL WATER TREATMENT
PLANT DESIGN**

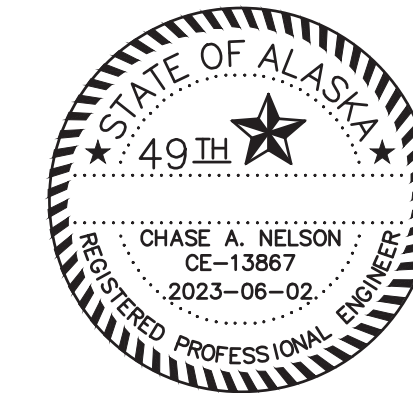
EDA AWARD #07 01 07472

PREPARED FOR:



CITY AND BOROUGH OF WRANGELL
205 BRUEGER STREET
WRANGELL, ALASKA 99929

PREPARED BY:



Chase Nelson

CHASE NELSON, PE
PROJECT MANAGER
SR. WATER RESOURCES ENGINEER

PREPARED BY:



David S. Prinzhorn

DAVID PRINZHORN, PE
NEW WTP BUILDING QUALITY LEAD

PREPARED BY:



Vince McElmurry

VINCE McELMURRY, PE
CONTROLS ENGINEER

PROJECT	1528.50206.01
DATE	06/02/23
SHEET	
G-00	

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GENERAL SHEETS

SHEET NO.	SHEET TITLE
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G-02	GENERAL LEGEND, ABBREVIATIONS, AND NOTES
G-03	SURVEY CONTROL PLAN
G-04	HYDRAULIC PROFILE
G-05	HYDRAULIC PROFILE (CONTINUED)
G-06	PROCESS FLOW DIAGRAM
G-07	PROCESS AREA KEY

DEMOLITION SHEETS

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X-102	ROUGHING FILTER DEMO - PLAN
X-103	ROUGHING FILTER DEMO - SECTIONS
X-104	ROUGHING FILTER DEMO - ISO VIEW
X-105	EXIST SLOW SAND FILTER DEMO - PLAN
X-106	TYPICAL SSF BAY DEMO - PLAN
X-107	TYPICAL SSF BAY DEMO - SECTIONS
X-108	TYPICAL SSF BAY DEMO - SECTIONS
X-109	TYPICAL SSF BAY DEMO - ISO VIEW
X-110	PIPE GALLERY DEMO - PLAN
X-111	PIPE GALLERY DEMO - SECTIONS
X-112	PIPE GALLERY DEMO - ISO VIEW
X-201	PIPE GALLERY DEMO -SELECTIVE DEMO
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C-102	EXISTING YARD PIPING PLAN
C-103	YARD PIPING DEMO PLAN
C-104	PROPOSED SITE PLAN
C-105	STORM PLAN & PROFILE
C-106	KEYMAP
C-107	YARD PIPING PLAN & PROFILE
C-108	YARD PIPING PLAN & PROFILE
C-109	FILTER BACKWASH PIPELINE PLAN & PROFILE
C-110	FILTER BACKWASH PIPELINE PLAN & PROFILE
C-111	FILTER BACKWASH TIE-IN PLAN
C-300	SITE SURFACE AND FENCING PLAN
C-301	SITE PAVING, GRADING, & DRAINAGE
C-302	PROPOSED SITE GRADING PLAN
C-501	GENERAL CIVIL & YARD PIPING DETAILS
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SF-002	STANDARD CONCRETE DETAILS
SF-003	BUILDING FOUNDATION PLAN
SF-004	BUILDING FLOOR, TRENCH, & SLAB PLAN
SF-005	FLOOR TRENCH GATING PLAN
SF-006	FOUNDATION DETAILS
SF-007	FOUNDATION DETAILS
SF-008	FOUNDATION DETAILS
SF-009	FLOOR TRENCH DETAILS
SF-010	PIPE GALLERY BUILDING ADDITION FOUNDATION & FRAMING PLANS
SF-011	PIPE GALLERY BUILDING ADDITION STRUCTURAL DETAILS
SF-012	BACK-UP GENERATOR FOUNDATION
SF-013	HVAC UNIT FOUNDATION - ACCU-1
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S-101	MEZZANINE - STRUCTURAL PLAN AND CMU WALL ELEVATIONS
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S-502	STRUCTURAL STAIR DETAILS - SHEET 2
S-503	STRUCTURAL LADDER DETAILS
S-504	CMU WALL DETAILS - SHEET 1
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ARCHITECTURAL SHEETS

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A-101	GROUND FLOOR PLAN
A-102	PLATFORM PLAN
A-111	REFLECTED CEILING PLAN
A-121	ROOF PLAN
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A-301	BUILDING SECTIONS
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A-401	ENLARGED STAIR PLANS
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A-601	ROOM FINISH AND OPENING SCHEDULES
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PI-05	RECYCLE AND SATURATION - SYSTEM 1
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PI-14	WTP FILTER #5
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PI-16	PIPING HEADERS AND MANIFOLDS
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PI-18	CLEARWELL AND HIGH SERVICE PUMPS
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PI-20	FILTER BACKWASH HANDLING
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M-401	FILTERED WATER PIPING - AT CLEARWELL
M-402	CLEARWELL FILTERED WATER PIPING - 3D ISOMETRIC
M-403	TYPICAL CONTACT BASIN INFLUENT CELL
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M-406	HIGH SERVICE PUMPS - SECTIONS
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M-502	ACID ROOM - SECTIONS
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M-700	CONTROL ROOM - PLAN
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M-902	PROCESS MECHANICAL DETAILS
M-903	PROCESS MECHANICAL DETAILS
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M-905	PROCESS MECHANICAL DETAILS
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M-907	PROCESS MECHANICAL DETAILS

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PL-101	GROUND FLOOR PLUMBING PLAN
PL-102	PLATFORM PLUMBING PLAN
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PL-600	PLUMBING SCHEDULES

BUILDING MECHANICAL SHEETS

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AM-102	PLATFORM HVAC PLAN
AM-103	ROOF HVAC PLAN
AM-201	GROUND FLOOR PIPING PLAN
AM-202	PLATFORM PIPING PLAN
AM-203	FIRE SUPPRESSION PLAN
AM-300	MECHANICAL SECTIONS
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AM-501	MECHANICAL DETAILS
AM-600	MECHANICAL SCHEDULES
AM-700	HVAC SCHEMATICS
ADM-101	HVAC PLAN
ADM-600	MECHANICAL SCHEDULES

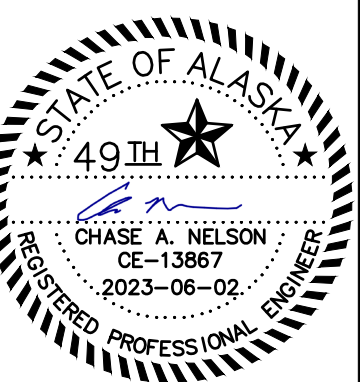
INSTRUMENTATION AND CONTROLS SHEETS

SHEET NO.	SHEET TITLE
IC-00	GENERAL NOTES & SYMBOLS
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IC-03	10-CP-01 GENERAL CONTROL
IC-04	10-NP-01 PANEL LAYOUT
IC-05	10-NP-02 GENERAL CONTROL
IC-06	10-NP-01 PANEL LAYOUT
IC-07	10-NP-02 GENERAL CONTROL
IC-08	10-CP-02 PANEL LAYOUT
IC-09	10-CP-02 GENERAL CONTROL
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IC-11	10-CP-03 GENERAL CONTROL
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E-10	PANEL SCHEDULES
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E-30	EQ BASIN / BACKWASH VAULT
E-31	PIPE GALLERY / CLEARWELL POWER AND INSTRUMENT PLAN
E-32	TRENCH DETAIL

REV	DATE	DESCRIPTION	BY



DOWL
AECL848

WWW.DOWL.COM

3535 College Road, #100
Fairbanks, Alaska 99709
907-374-0275

WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

SHEET INDEX

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	1528.50206.01
DATE	06/02/2023

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SHEET

G-01

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AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

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GENERAL NOTES:

1. THE LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE AND THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEANS TO PROTECT EXISTING UTILITIES AND COORDINATE WITH THE OWNER FOR UTILITY LOCATIONS.
2. WHERE CONDITIONS ARE ENCOUNTERED WHICH APPEAR DIFFERENT FROM THOSE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER PRIOR TO THE PERFORMANCE OF WORK.
3. THE CONTRACTOR SHALL FOLLOW ALL RULES AND REGULATION REQUIRED BY THE OWNER, THE CITY AND BOROUGH OF WRANGELL, AND COMPLY WITH ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS.
4. CONSTRUCTION SAFETY AND SANITATION FACILITIES SHALL BE PROVIDED BY THE CONTRACTOR AND MAINTAINED PER THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
5. THE CONTRACTOR SHALL PROTECT ADJACENT PRIVATE AND PUBLIC PROPERTY FROM DAMAGE DURING CONSTRUCTION. ANY DISTURBED PROPERTY OR SECTION CORNERS ARE TO BE RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF ALASKA AT THE CONTRACTORS EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND LOCATING ANY AND ALL UTILITIES IN THE AREA PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.
7. THE CONTRACTOR SHALL REPLACE EXISTING FENCING AND ROADSIDE APPURTENANCES DISPLACED OR DAMAGED BY CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNER AND OWNER'S OPERATIONS TO MINIMIZE IMPACTS TO EXISTING UTILITIES AND OPERATIONS. TEMPORARY PIPING AND ROUTING OF EXISTING UTILITIES MAY BE NECESSARY TO COMPLETE PROJECT. TEMPORARY PIPING, ROUTING, AND CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
9. ALL AREAS OF DISTURBANCE SHALL BE RECLAIMED TO A CONDITION THAT IS EQUAL TO OR BETTER THAN THE ORIGINAL. TOPSOIL IS TO BE SALVAGED AND REPLACED.
10. THE CONTRACTOR SHALL COMPLY WITH THE OWNER OBTAINED PERMITS, RULES, AND REGULATIONS. ADDITIONAL PERMITTING RELATED TO CONSTRUCTION WATER DISCHARGE, STORMWATER CONTROL, ETC SHALL BE PROCURED AS NECESSARY BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH AN ADEC CONSTRUCTION GENERAL PERMIT.
11. ANY REMOVED STRUCTURES SHALL BE SALVAGED TO THE OWNER AS REQUESTED OR DISPOSED OF OFF THE SITE IN A LAWFUL MANNER.
12. CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS PRIOR TO THE FINAL ACCEPTANCE AND FINAL PAYMENT.
13. ALL ABANDONED PIPES AND VALVES SHALL BE EITHER REMOVED COMPLETELY, OR PLUGGED WITH CONCRETE AND ALL VALVE BOXES SHALL BE REMOVED.
14. IF ADDITIONAL STAGING AREA IS NEEDED OUTSIDE OF PROJECT AREA, THE BOROUGH WILL MAKE ADDITIONAL SPACE AT THE PUBLIC WORKS YARD AVAILABLE.
15. CONTRACTOR SHALL NOT CLEAR VEGETATION FROM APRIL 15-JULY 15 IN ACCORDANCE WITH MIGRATORY BIRD PROTECTION MEASURES.

GENERAL PROJECT LEGEND

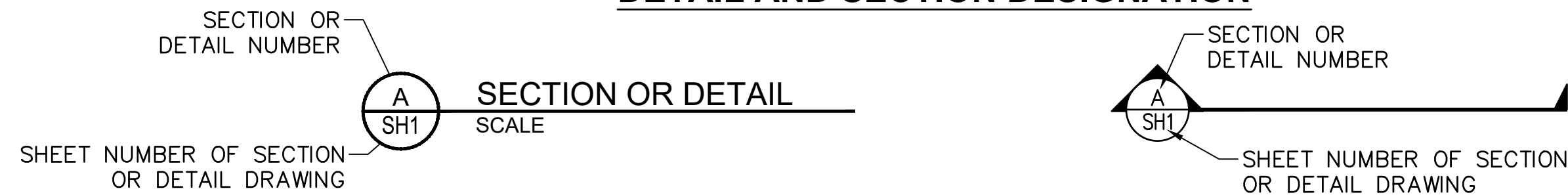
EXISTING ITEMS

<p>— EX. MAJOR CONTOUR (5.00')</p> <p>— EX. MINOR CONTOUR (1.00')</p> <p>— EXISTING EDGE OF ASPHALT</p> <p>— EXISTING BUILDING OUTLINE</p> <p>— EXISTING CONTROL POINT</p> <p>— EXISTING FENCE</p> <p>— EXISTING EDGE OF GRAVEL</p> <p>— EXISTING SIGN</p> <p>— EXISTING COMMUNICATION LINE</p> <p>— EXISTING GAS LINE</p> <p>— EXISTING COMMUNICATION BOX</p> <p>— EXISTING ELECTRIC LINE</p> <p>— EXISTING TRANSFORMER</p>	<p>— OE — EXISTING OVERHEAD ELECTRIC LINE</p> <p>— EXISTING UTILITY POLE</p> <p>— EXISTING UTILITY ANCHOR</p> <p>— EXISTING LIGHT</p> <p>— EXISTING ELECTRIC METER</p> <p>— EXISTING SANITARY SEWER LINE</p> <p>— EXISTING SANITARY SEWER MANHOLE</p> <p>— EXISTING STORM DRAIN LINE</p> <p>— EXISTING STORM DRAIN CULVERT</p> <p>— EXISTING STORM CATCH BASIN</p> <p>— EXISTING TELEPHONE LINE</p> <p>— EXISTING TELEPHONE PULL BOX</p>	<p>— W — EXISTING WATER LINE</p> <p>— EXISTING VALVE</p> <p>— EXISTING FIRE HYDRANT</p> <p>— FW — EXISTING WATER FIRE</p> <p>— EXISTING WATER SERVICE</p>
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PROPOSED ITEMS

<p>— PROPOSED MAJOR CONTOUR (5.00')</p> <p>— PROPOSED MINOR CONTOUR (1.00')</p> <p>— PROPOSED SANITARY SEWER LINE</p> <p>— PROPOSED SANITARY SEWER MANHOLE</p> <p>— PROPOSED STORM DRAIN LINE</p> <p>— PROPOSED TELEPHONE LINE</p> <p>— PROPOSED TELEPHONE PULL BOX</p> <p>— PROPOSED WATER LINE</p> <p>— PROPOSED RAW WATER</p> <p>— PROPOSED FILTERED WATER</p> <p>— PROPOSED POTABLE WATER</p> <p>— PROPOSED FILTER BACKWASH</p>	<p>— PROPOSED VALVE</p> <p>— PROPOSED YARD PIPING TIE POINT</p> <p>— PROPOSED GRADE BREAK</p>
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DETAIL AND SECTION DESIGNATION



FACILITY DESIGN CRITERIA:

FINISHED WATER FLOWRATES FROM THE WTP	
PEAK DAILY FLOW	2.26 MGD (1580 GPM)
AVERAGE DAILY FLOW	1.3 MGD (908 GPM)
START UP CONDITIONS AVERAGE FLOW	0.71 MGD (500 GPM)
FIRM CAPACITY (ONE TRAIN OUT OF SERVICE)	2.26 MGD (1580 GPM)
MINIMUM FLOW	0.5 MGD (350 GPM)
DAF	
MAXIMUM DESIGN FLOW PER DAF TRAIN	800 GPM
MINIMUM DESIGN FLOW PER DAF TRAIN	500 GPM
NUMBER OF DAF TRAINS	3
NUMBER OF FLOCCULATORS PER TRAIN	2
STAGE 1 FLOCCULATORS G VALUE	100 TO 10 S ⁻¹
STAGE 2 FLOCCULATORS G VALUE	65 TO 10 S ⁻¹
CLARIFIER HYDRAULIC LOADING	4.71 GPM/FT ²
CLARIFIER DETENTION TIME	17.48 MIN
RECYCLE/SATURATOR SYSTEM	
RECYCLE FLOW RATE	80 GPM
RECYCLE RATE	10%
RECYCLE PUMP HEAD	80 PSIG
SATURATOR LOADING	25.46 GPM/FT2
AIR COMPRESSOR SYSTEM DESIGN CRITERIA	
REQUIRED AIR PER SATURATOR	12 MG/L
COMPRESSOR AIR CAPACITY	16.8 SCFM @ 175 PSIG
DUAL MEDIA GRAVITY FILTERS	
MAXIMUM FLOW RATE PER FILTER TRAIN	942 GPM
MAXIMUM FLOW RATE PER FILTER CHAMBER	315 GPM
NUMBER OF FILTER TRAINS	2
NUMBER OF FILTER CHAMBER PER TRAIN	3
FILTER HYDRAULIC LOADING	2.62 GPM/FT ²
FILTER DETENTION TIME	13.82 MIN
FILTER MEDIA ANTHRACITE DEPTH	18"
FILTER MEDIA SAND DEPTH	24"
BACKWASH HIGH-RATE FLOW	1920 GPM
BACKWASH HIGH-RATE LOADING	16 GPM/FT ²
BACKWASH LOW-RATE FLOW	960 GPM
BACKWASH LOW-RATE LOADING	8 GPM/FT ²
BACKWASH WATER MAXIMUM PRESSURE	10 PSIG
BACKWASH VOLUME PER FILTER CHANGER	23,929 GAL
AIR SCOUR DESIGN FLOW	360 SCFM
AIR SCOUR DESIGN LOADING	3 SCFM
AIR SCOUR PRESSURE (AT FILTER INLET)	4.5 PSIG

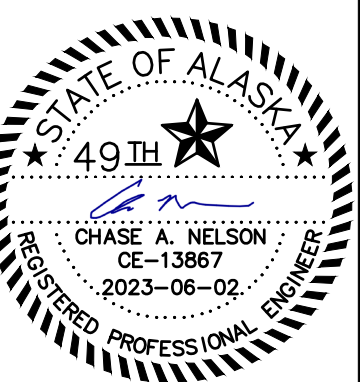
CHLORINE CONTACT		
CONTACT BASIN VOLUME (PER TRAIN)	249,000 GAL	
NUMBER OF TRAINS	2	
NUMBER OF BASINS PER TRAIN	2	
BAFFLING FACTOR	0.7	
CLEARWELL VOLUME	10,200 GAL	
CONTACT TIME REQUIRED (0.5 LOG INACTIVATION)	25 MIN-mg/L	
CONTACT TIME (PEAK FLOW)	64.1 MIN-mg/L	
DESIGN pH FOR CT	7.0	
DESIGN TEMPERATURE FOR CT	40°F (4.4°C)	
DESIGN RESIDUAL FOR CT	0.2 mg/L CL ₂ (FREE)	
MAXIMUM FLOW ALLOWABLE TO BYPASS CONTACT BASINS	975 GPM	
HIGH SERVICE PUMPS		
NUMBER OF PUMPS	3	
PUMP OPERATION	LEAD/LAG/STAND-BY	
DESIGN FLOW	790 GPM	
DESIGN HEAD	111 FT TDH	
CHEMICAL FEED		
CHEMICAL	JUSTIFICATION	DOSE
PAX-XL19	COAGULANT	20-40 mg/L
SODIUM HYDROXIDE (30%)	RAW WATER pH ADJUSTMENT	3-6 mg/L
SODIUM HYDROXIDE (30%)	FINISHED WATER pH ADJUSTMENT	3-6 mg/L
ZINC ORTHOPHOSPHATE	CORROSION INHIBITION	1-3 mg/L
DISINFECTION - ON-SITE GENERATION		
CAPACITY	40 LB FAC/DAY	
NUMBER OF TRAINS	2	
CAPACITY PER TRAIN	2	
PRODUCT	0.8% SODIUM HYPOCHLORITE	
PRODUCT STORAGE (PER TRAIN)	510 GAL	
BRINE STORAGE	150 GAL	
WATER CONSUMPTION	14.0-17.0 GAL/LB FAC	
SALT CONSUMPTION	2.5-3.5 LB/LB FAC	
ELECTRICITY CONSUMPTION	1.8-2.4 LB/LB FAC	
HYDROGEN MANGEMENT	DILUTION BLOWERS	
DESIGN DISINFECTION DOSE	1-2 mg/L	
DESIGN DISINFECTION DOSE RATE	12-24 GPH	

COMMON ABBREVIATIONS

ADEC ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ELEC./E ELECTRICAL	NW NORTHWEST	TOC TOP OF CONCRETE
ABAND. ABANDON IN-PLACE	ELEV. ELEVATION	O.D. OUTSIDE DIAMETER	TEL UNDERGROUND TELE.
BH BOREHOLES	EOP EDGE OF PAVEMENT	OE OVERHEAD ELECTRIC	(TYP.) TYPICAL
C COMMUNICATION	EX. EXISTING	OHP OVERHEAD POWER	UGP UNDERGROUND POWER
C.B. CATCH BASIN	FFE FINISHED FLOOR ELEVATION	PP POWER POLE	W WEST OR WATER
CL CENTERLINE	FG FINISHED GRADE	PROP PROPERTY	WSE WATER SURFACE ELEV
CL CLASS	FL FLOWLINE	RCP REINFORCED CONCRETE PIPE	@ AT
CONC CONCRETE	FT FEET	S SOUTH OR SEWER	
CP CONTROL POINT	HDPE HIGH DENSITY POLYTHENE	S= SLOPE	
CSP CORRUGATED STEEL PIPE	I.E. INVERT ELEVATION	SD STORM DRAIN	
CY CUBIC YARDS	INV. INVERT	SE SOUTHEAST	
DEMO DEMOLITION	INV. EL. INVERT ELEVATION	SF SQUARE FEET	
DH DRILL HOLE	LF LINEAL FEET	SSF SLOW SAND FILTER	
DIA. DIAMETER	MH MANHOLE	S.S. STAINLESS STEEL	
D.I. DUCTILE IRON PIPE	MIN. MINIMUM	STA. STATION	
E EAST / EASTING	N NORTH / NORTHING	STL STEEL	
EG EXISTING GRADE	NE NORTHEAST		
EL. ELEVATION			

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AECL&H

3535 College Road, #100
Fairbanks, Alaska 99709
907-374-0275

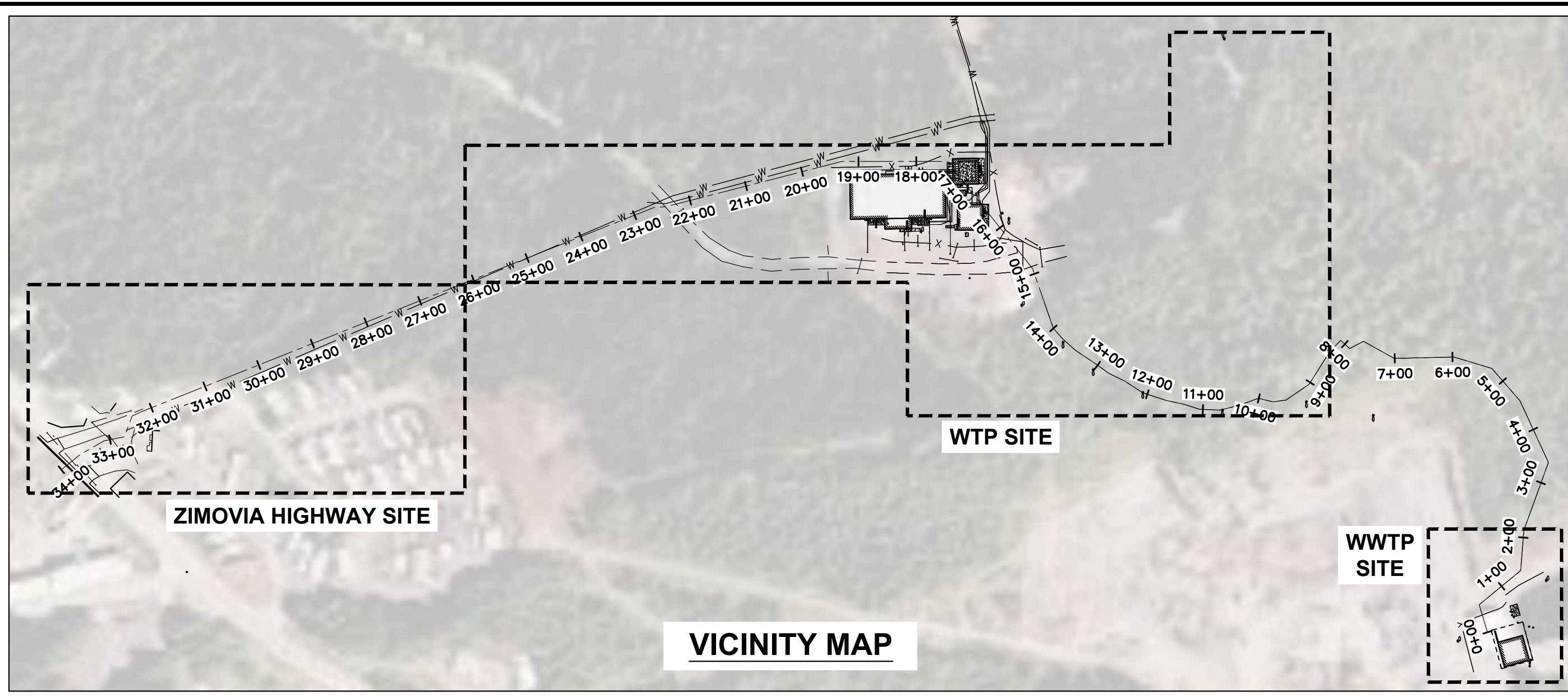
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**GENERAL LEGEND, ABBREVIATIONS,
AND NOTES**

PROJECT 1528.50206.01
DATE 06/02/2023

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G-02

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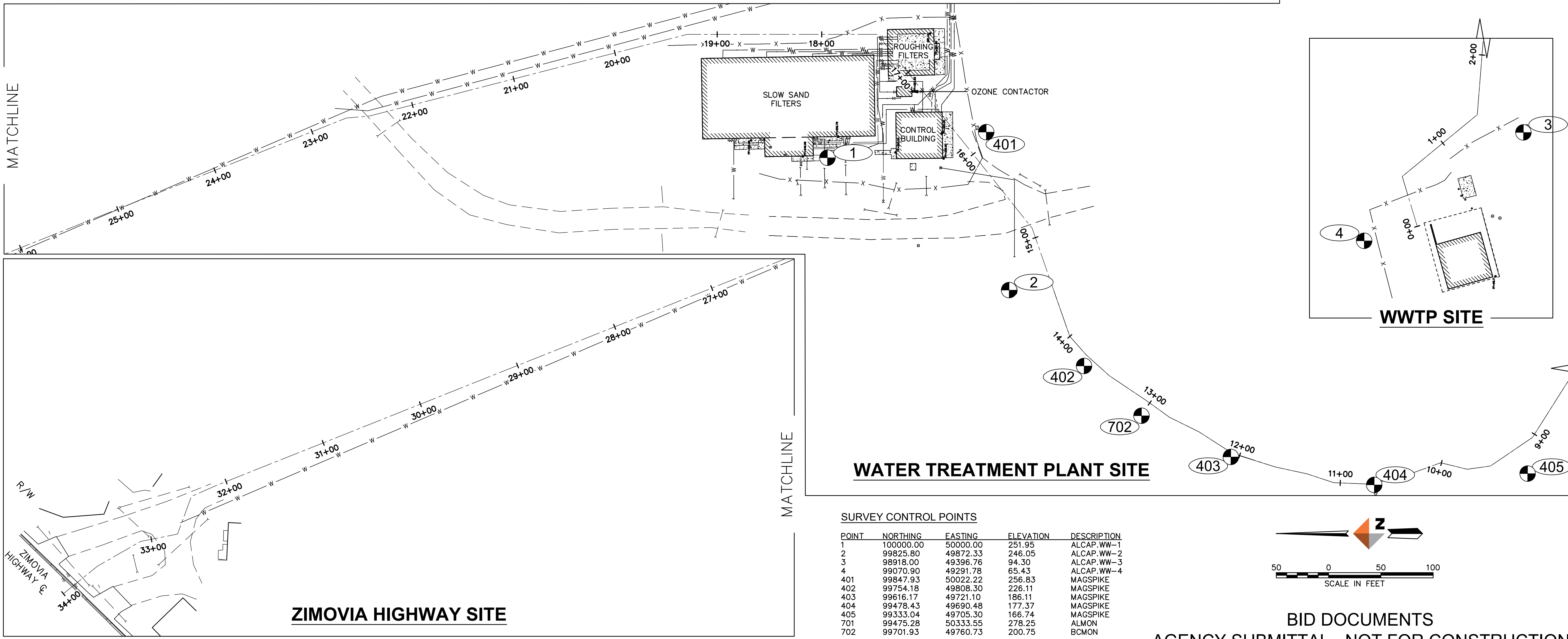


LEGEND

- SURVEY MONUMENT
- BOLLARD
- ⊙ FF=12.34 FINISHED FLOOR ELEVATION
- ⊙ WATER SERVICE
- ⊗ VALVE BOX
- ⊙ FLOOR DRAIN
- ⊙ POWER POLE
- ⊙ LIGHT POLE
- ⊙ ELECTRIC VAULT
- ⊙ TRANSFORMER
- ⊙ ELECTRIC METER
- ⊙ COM PEDESTAL
- ⊙ SEWER CLEANOUT
- ⊙ SEWER MANHOLE
- ⊙ CULVERT
- X — X — EDGE OF GRAVEL
- X — X — FENCE LINE
- W — W — OVERHEAD ELECTRIC
- W — W — UNDERGROUND ELECTRIC
- W — W — PROPOSED WATER LINE ROUTE
- ▭ BUILDING OUTLINE
- ▭ BUILDING OVERHANG
- ▭ CONCRETE

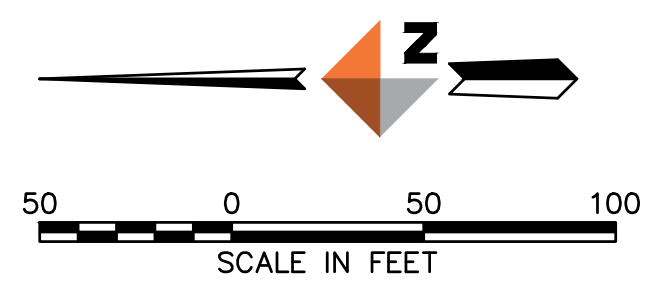
HORIZONTAL CONTROL
 COORDINATES ARE BASED ON AN ASSUMED DATUM IN US FEET. TO CONVERT LOCAL COORDINATES TO NAD83 ALASKA STATE PLANE ZONE 1 US SURVEY FEET ADD +1,5950,847.5782 N, 2,897,111.9298 E AND SCALE USING 0.99989797.

VERTICAL CONTROL
 ELEVATIONS ARE BASED ON THE RECORD DRAWINGS FOR PHASE 2 WATER SYSTEM IMPROVEMENTS; WRANGELL, ALASKA DATED MARCH 11, 1998. THE FINISH FLOOR ELEVATIONS FOR BOTH THE "ROUGHING FILTERS" (FF=261.0') AND "CONTROL BUILDING" (FF=260.0') WERE HELD FROM FIELD OBSERVATIONS. TO CONVERT NAVD88 OPUS DERIVED ELEVATIONS TO THE MLLW ELEVATIONS AS LISTED RECORD DRAWINGS, ADD 2.27' TO THE NAVD88 ELEVATIONS.



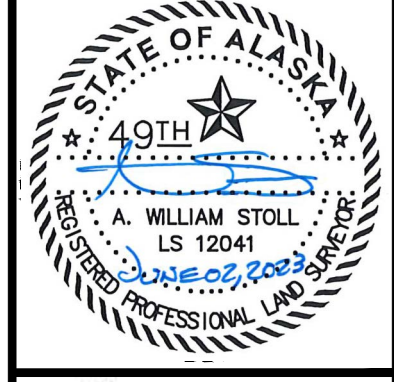
SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	100000.00	50000.00	251.95	ALCAP.WW-1
2	99825.80	49872.33	246.05	ALCAP.WW-2
3	98918.00	49396.76	94.30	ALCAP.WW-3
4	99070.90	49291.78	65.43	ALCAP.WW-4
401	99847.93	50022.22	256.83	MAGSPIKE
402	99754.18	49808.30	226.11	MAGSPIKE
403	99616.17	49721.10	186.11	MAGSPIKE
404	99478.43	49690.48	177.37	MAGSPIKE
405	99333.04	49705.30	166.74	MAGSPIKE
701	99475.28	50333.55	278.25	ALMON
702	99701.93	49760.73	200.75	BCMON



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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
SURVEY CONTROL PLAN
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
 DATE 06/02/2023

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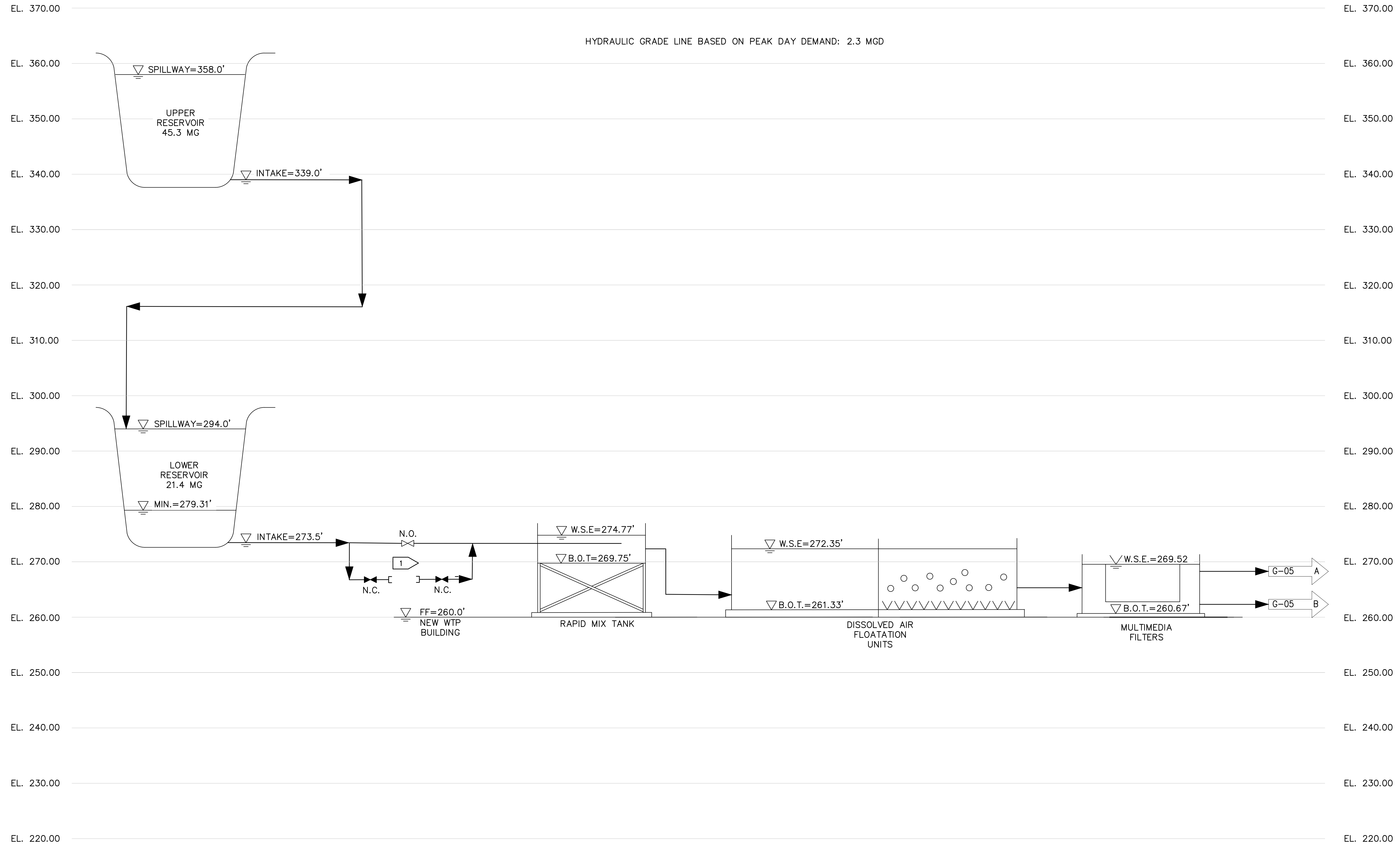
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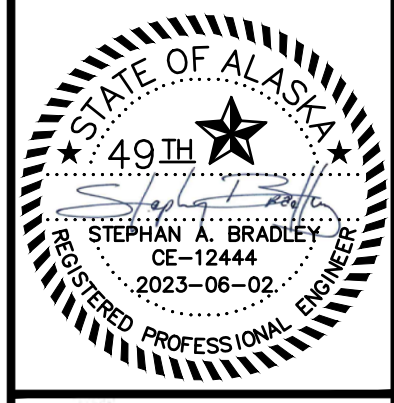
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ABBREVIATIONS	
B.O.T.	BOTTOM OF TANK
B.O.S.	BOTTOM OF SUMP
F.F.	FINISHED FLOOR
O.F.E.	OVERFLOW ELEVATION
W.S.E.	WATER SURFACE ELEVATION

GENERAL NOTES:
 1 PORTABLE BOOSTER PUMP CONNECTIONS.



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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
HYDRAULIC PROFILE
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

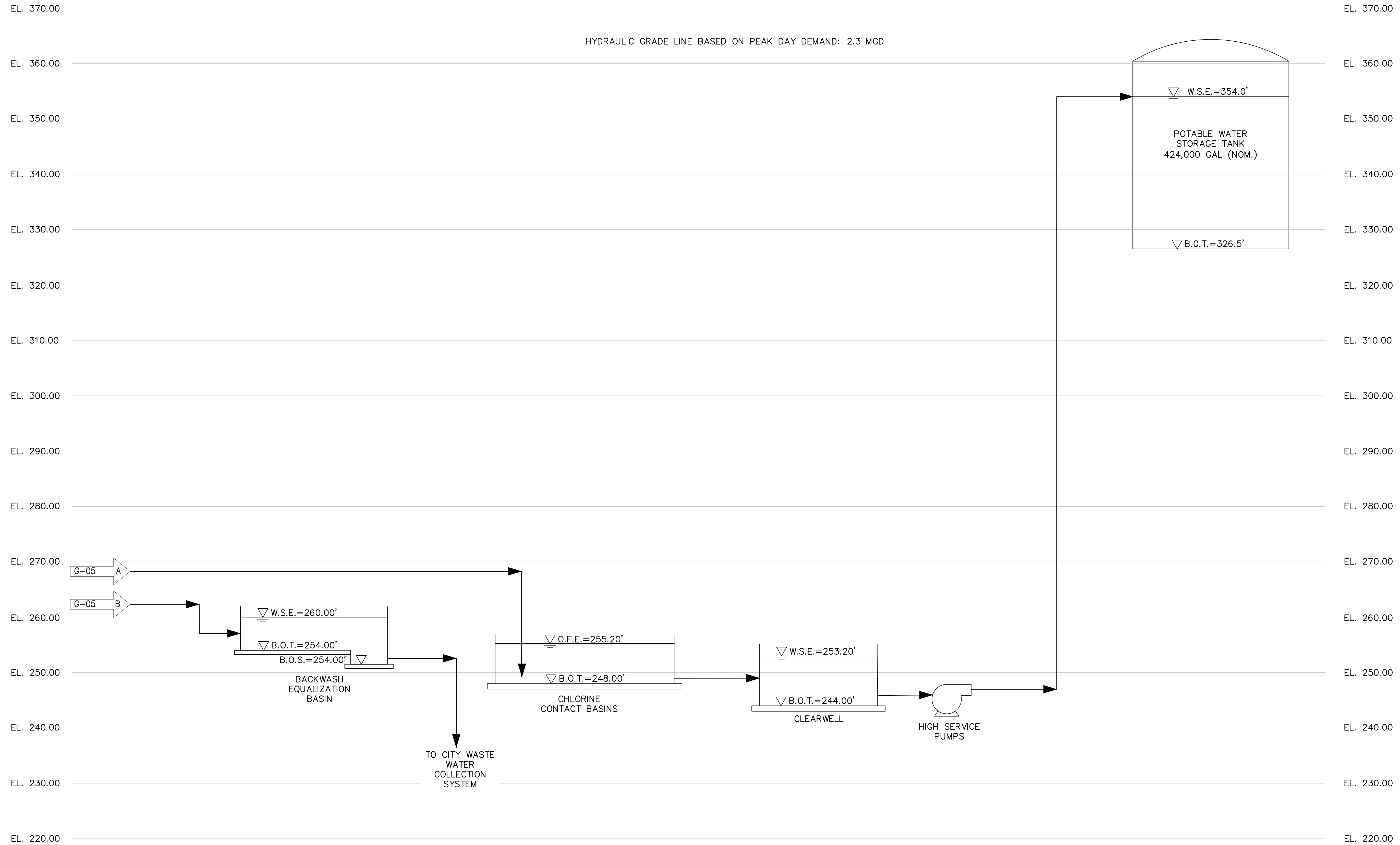
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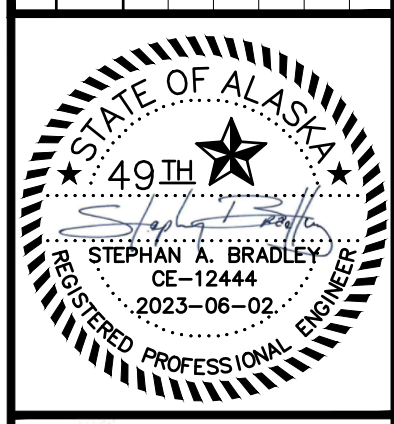
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ABBREVIATIONS	
B.O.T.	BOTTOM OF TANK
B.O.S.	BOTTOM OF SUMP
F.F.	FINISHED FLOOR
O.F.E.	OVERFLOW ELEVATION
W.S.E.	WATER SURFACE ELEVATION



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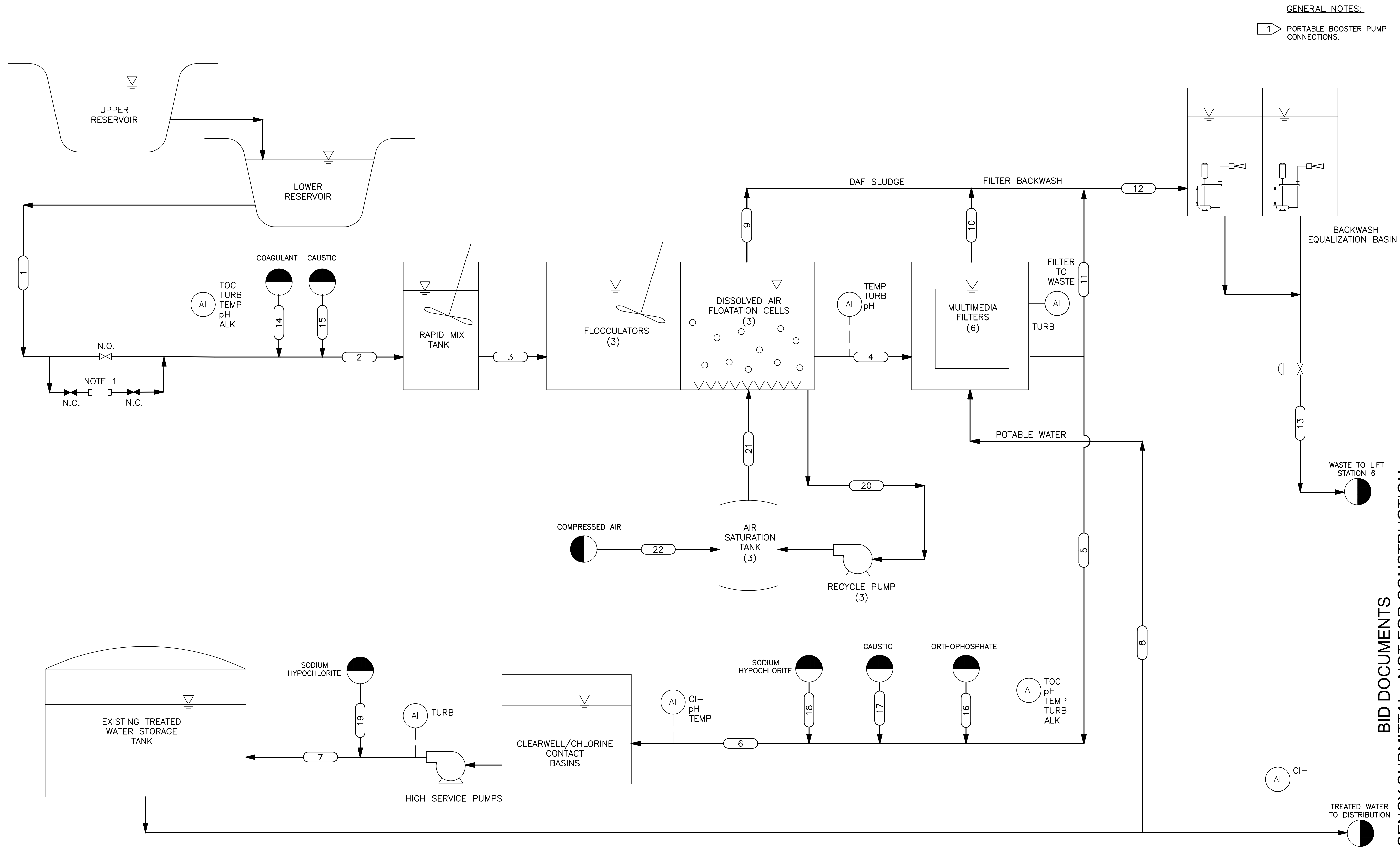
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
HYDRAULIC PROFILE (CONTINUED)
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

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DATE 06/02/23

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GENERAL NOTES:
 1 PORTABLE BOOSTER PUMP CONNECTIONS.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
PROCESS FLOW DIAGRAM

SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

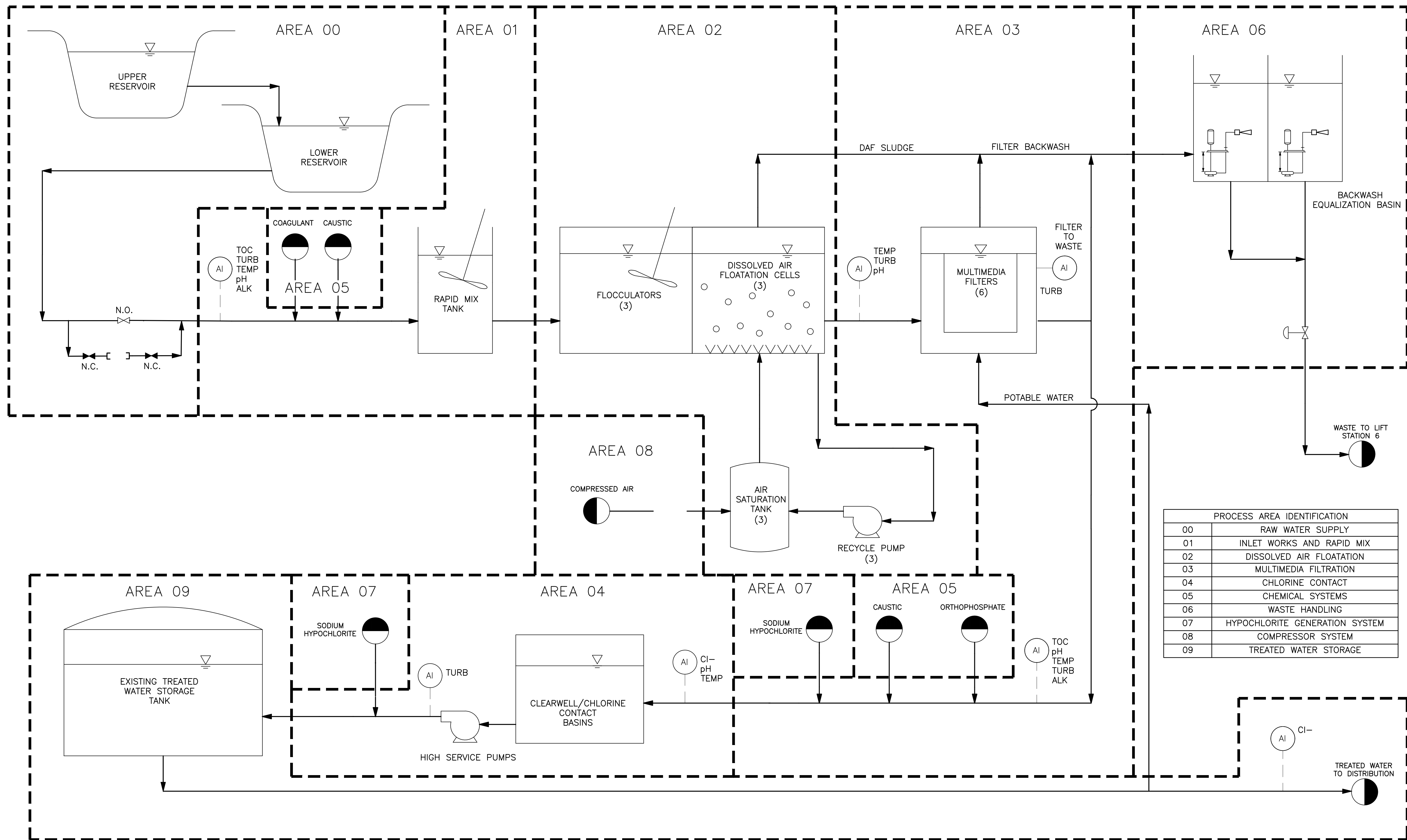
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 DATE 06/02/23

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G-06

PROCESS FLOW DIAGRAM STREAM TABLE

STREAM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
SERVICE	RW	RW	RW	CW	FW	FW	PW	PW	DW	FBW	FTW	WW	WW	CG	NA	OP	NA	HS	HS	CW	CW (SAT.)	CA
FLOW (GPM)	1600	1600	1600	1600	1570	1570	1570	VARIES	1	32	VARIES	33	33	1.4-2.9 GPH	0.6-1.3 GPH	0.1-0.2 GPH	0.6-1.3 GPH	12-24 GPH	VARIES	80	80	17 SCFM @ 175
TSS (MG/L)	10	31	31	0.7	0	0	0	0	40,000	37	VARIES	1,501	1,501	-	-	-	-	-	0	0.7	0.7	-
TOTAL HARDNESS (MG CaCO3/L)	228	228	228	228	228	228	228	228	228	228	VARIES	228	228	-	-	-	-	-	-	228	228	-
TOC (MG C/L)	6.4	6.4	6.4	4.5	4.5	4.5	4.5	4.5	2473	6.7	VARIES	97	97	-	-	-	-	-	-	4.5	4.5	-
pH	6.3	6.5	6.5	6.5	6.5	8.0	8.0	8.0	6.5	6.5	VARIES	6.5	6.5	5.5	14	1.3	14	<11	<11	6.5	6.5	-

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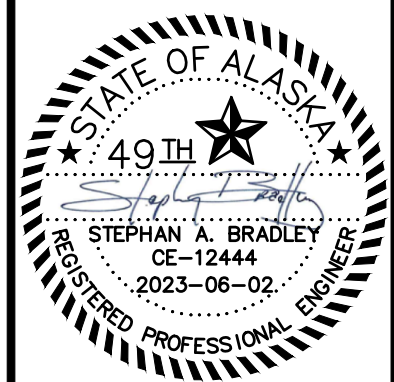


PROCESS AREA IDENTIFICATION	
00	RAW WATER SUPPLY
01	INLET WORKS AND RAPID MIX
02	DISSOLVED AIR FLOTATION
03	MULTIMEDIA FILTRATION
04	CHLORINE CONTACT
05	CHEMICAL SYSTEMS
06	WASTE HANDLING
07	HYPOCHLORITE GENERATION SYSTEM
08	COMPRESSOR SYSTEM
09	TREATED WATER STORAGE

AREA NOTES AND TAGGING CONVENTION:

1. PROCESS EQUIPMENT IN AREAS 01, 02, 03, AND 08 IS PRIMARILY SUPPLIED BY PRE-SELECTED VENDOR. EQUIPMENT AND INSTRUMENTATION THAT APPEARS ON PRE-SELECTED VENDOR SHOP DRAWINGS ARE TAGGED USING THE FOLLOWING FORMAT: AREA-TYPE-NUMBER (I.E. 02-HV-120). EQUIPMENT AND INSTRUMENTATION THAT DOES NOT APPEAR ON PRE-SELECTED VENDOR SHOP DRAWINGS ARE TAGGED USING THE FOLLOWING FORMAT: TYPE-NUMBER (I.E. HV-120). AS A RESULT, VALVE 02-HV-120 MAY A DIFFERENT PIECE OF EQUIPMENT THAN HV-120

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
PROCESS AREA KEY

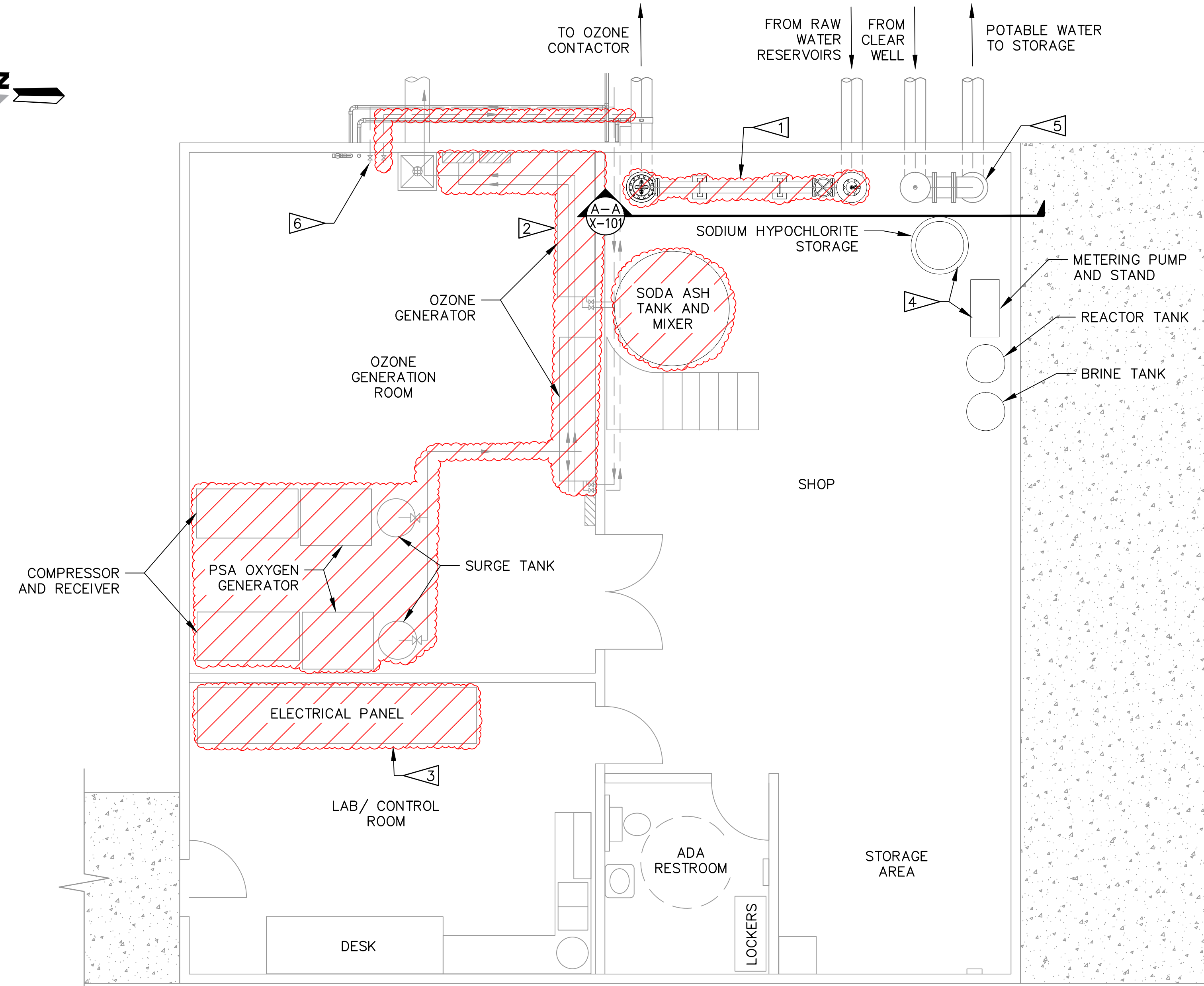
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

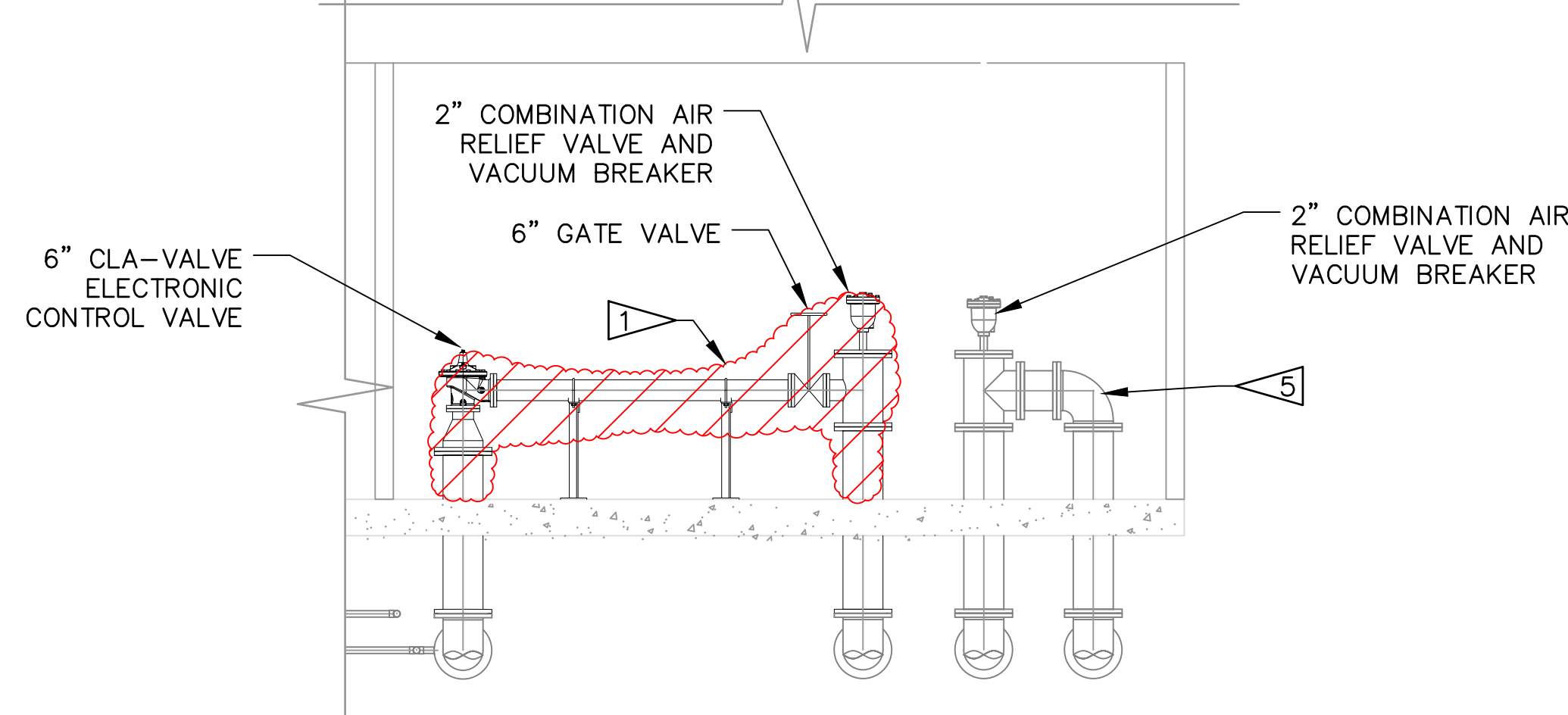
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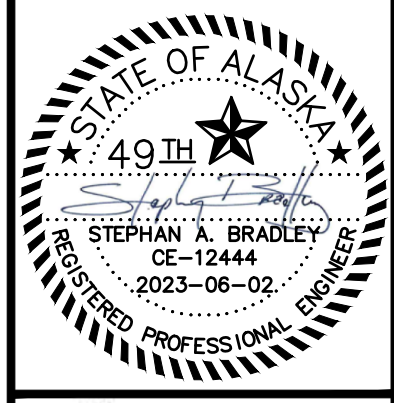
PROCESS MECHANICAL DEMOLITION - PLAN VIEW - CONTROL BUILDING



A-A X-101 DEMOLITION SECTION VIEW
1/4" = 1'-0"

- GENERAL NOTES:**
- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
 - 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
 - 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
- DEMOLITION NOTES:**
- 1 DEMO EXISTING RAW WATER PROCESS MECHANICAL PIPING AND INSTALL BLIND FLANGES.
 - 2 DEMO EXISTING OZONE GENERATION SYSTEM, AFTER NEW WTP IS OPERATIONAL.
 - 3 DEMO EXISTING ELECTRICAL CONTROL PANEL
 - 4 PROTECT EXISTING SODIUM HYPOCHLORITE GENERATION SYSTEM, INCLUDING METERING PUMPS, REACTOR TANK, BRINE TANK, AND STORAGE TANK.
 - 5 PROTECT EXISTING FINISHED WATER PIPING AND HYPOCHLORITE INJECTION QUILL, TEE, PIPE SPOOL, ARV, AND ELBOW WILL BE RELOCATED TO ADD A NEW FLOW METER AT THIS LOCATION.
 - 6 PROTECT EXISTING 2" COOPER COOLING SUPPLY HEADER. RE-USE FOR HYPOCHLORITE GENERATION SYSTEM.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

**CONTROL BUILDING DEMO - PLAN
MECHANICAL - DEMOLITION DRAWING**

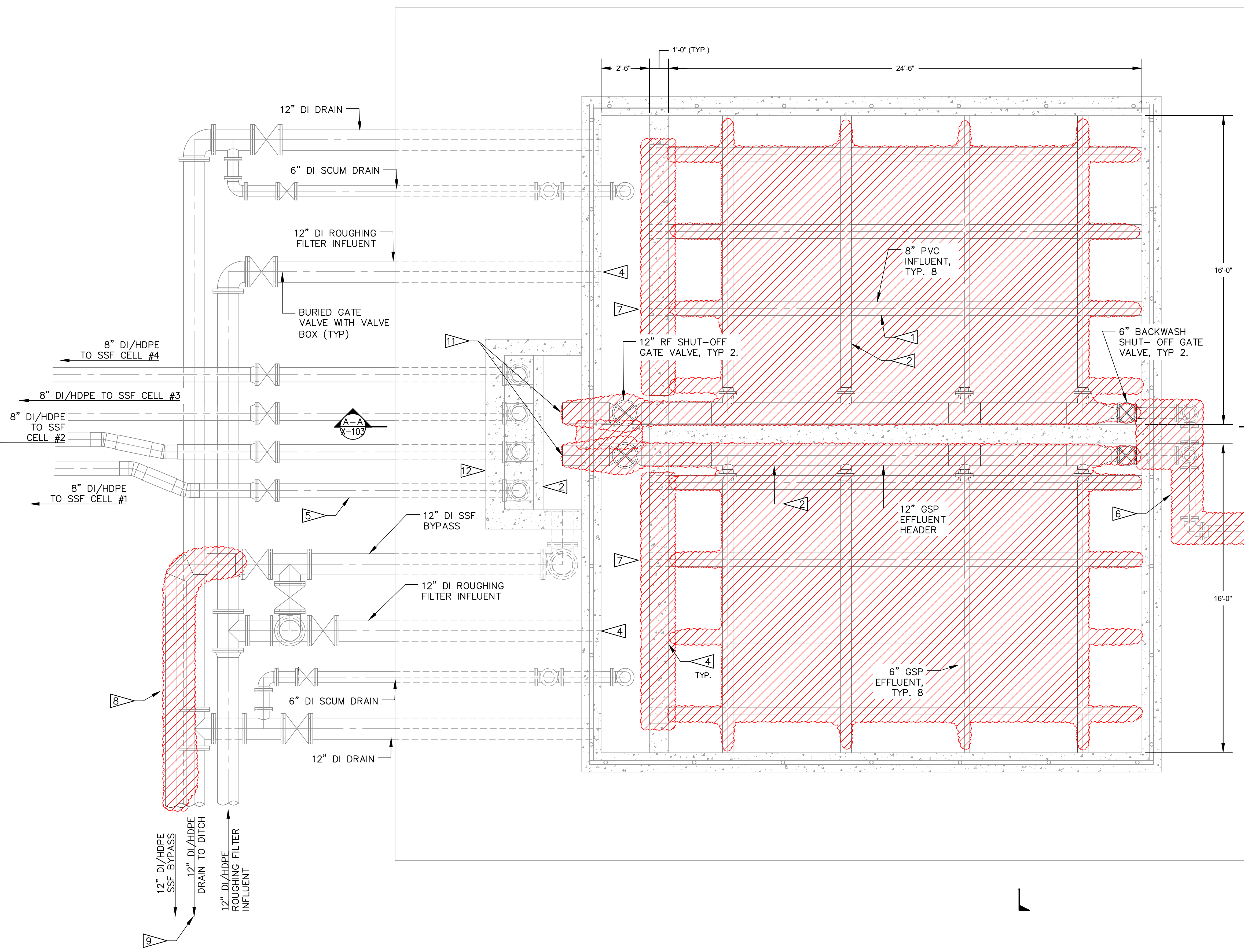
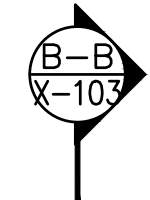
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CITY AND BOROUGH OF WRANGELL, ALASKA

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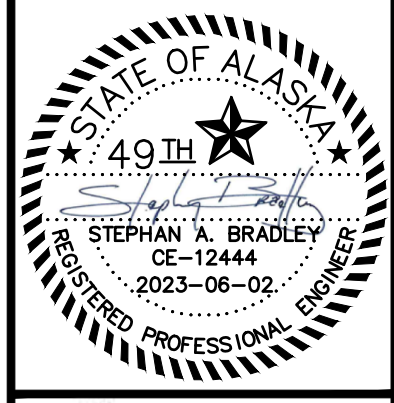
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- GENERAL NOTES:**
- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
 - 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
 - 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
- DEMOLITION NOTES:**
- 1 DEMO EXISTING 8" PVC INFLUENT MANIFOLD.
 - 2 GROUT OUTLET, BYPASS PIPE PENETRATION, AND FILL OUTLET BOX WITH FLOWABLE FILL TO CREATE A FLAT PLATFORM. SEE SPECIFICATIONS FOR SEQUENCING, AFTER NEW WTP IS OPERATIONAL.
 - 3 PROTECT EXISTING ROUGHING FILTER BASINS.
 - 4 GROUT AND CAP ABANDONED PIPE PENETRATIONS LIQUID TIGHT.
 - 5 PROTECT EXISTING SSF INFLUENT PIPING.
 - 6 DEMO BACKWASH SUPPLY BACK TO POTABLE WATER MAIN
 - 7 DEMO WALL FLUSH WITH BASIN FLOOR AND 18" FROM WALL.
 - 8 DEMO EXISTING SLOW SAND FILTER BYPASS PIPING DOWNSTREAM OF GATE VALVE AND CLOSE VALVE, AFTER NEW WTP IS OPERATIONAL.
 - 9 CONNECTS TO NEW FLOW CONTROL VALVE VAULT.
 - 10 DELETED.
 - 11 CAP ENDS PRIOR TO DEMO. SPLITTER BOX WILL BE USED DURING DEMO OF ROUGHING FILTERS.
 - 12 PROTECT EXISTING ROUGHING FILTER BASINS, FLOW SPLITTER BOX, AND EFFLUENT WEIR. THESE WILL BE IN USE DURING DEMO PERIOD AND UNTIL NEW WTP IS OPERATIONAL.

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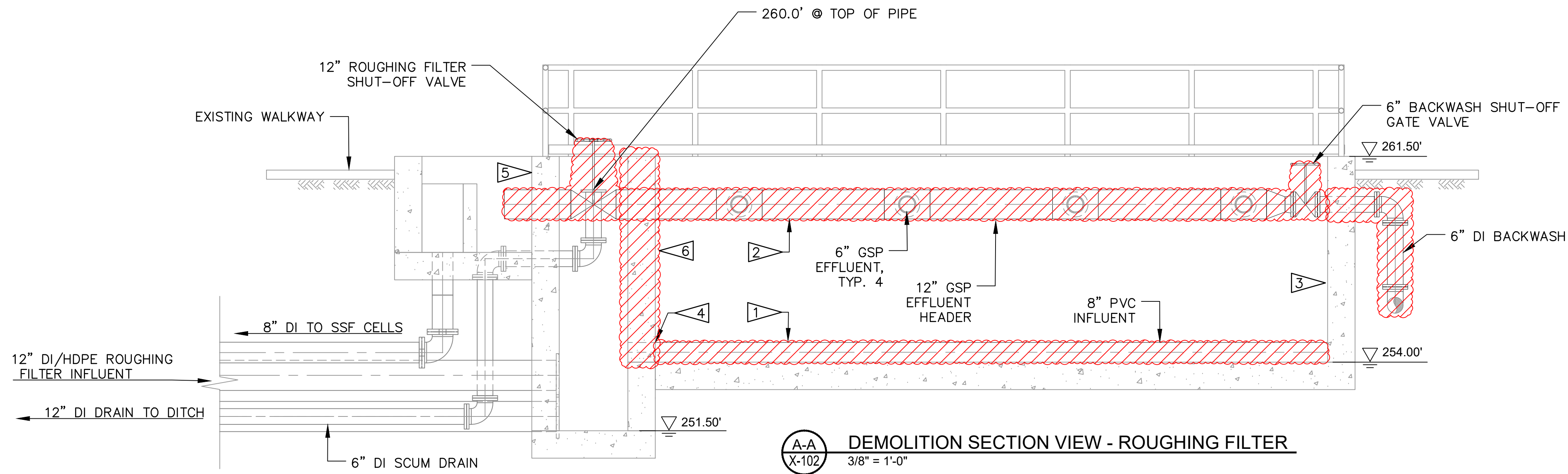
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**ROUGHING FILTER DEMO - PLAN
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

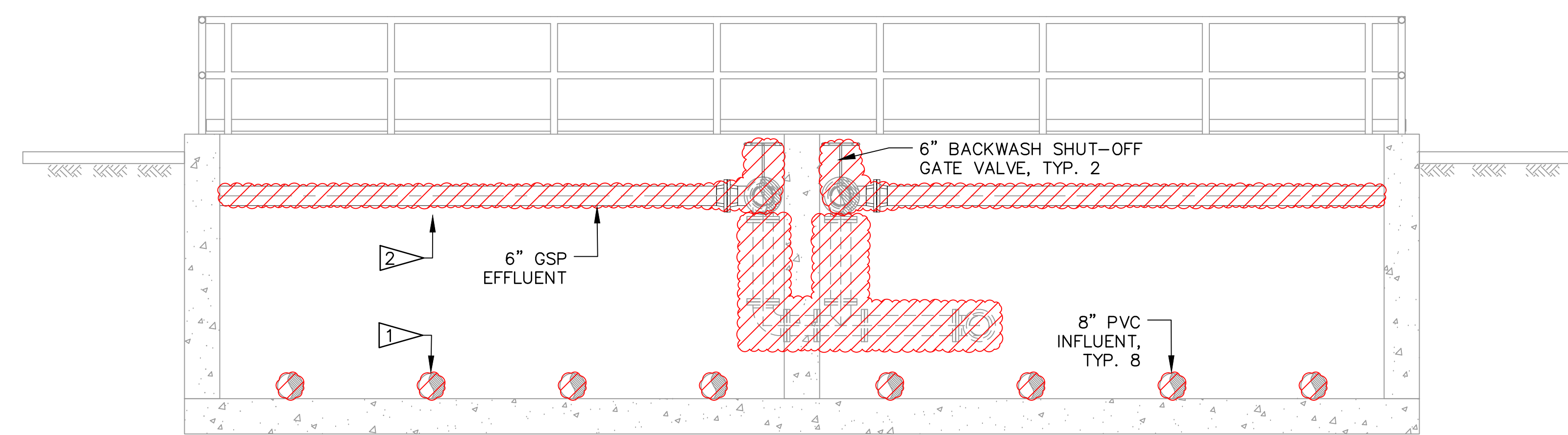
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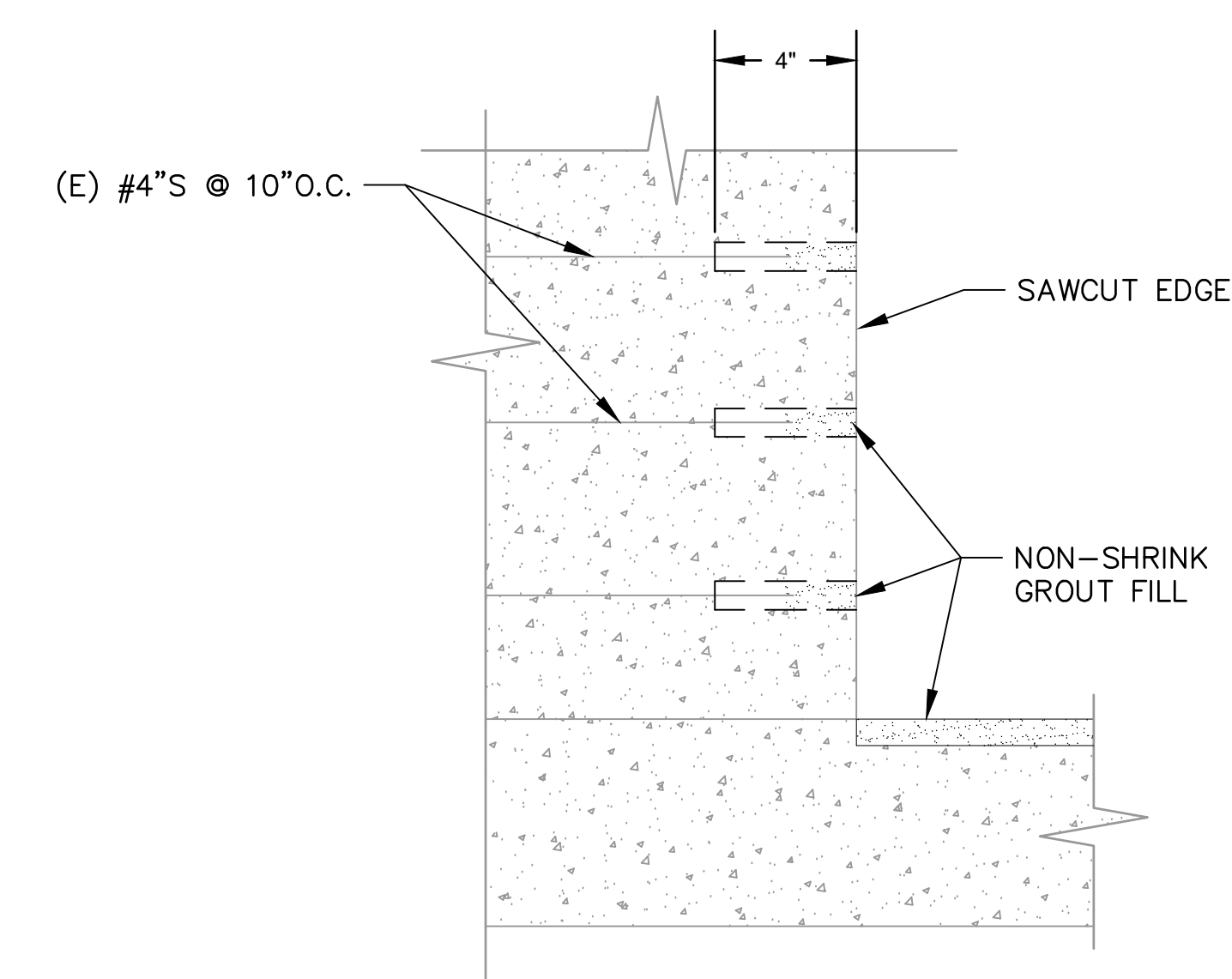
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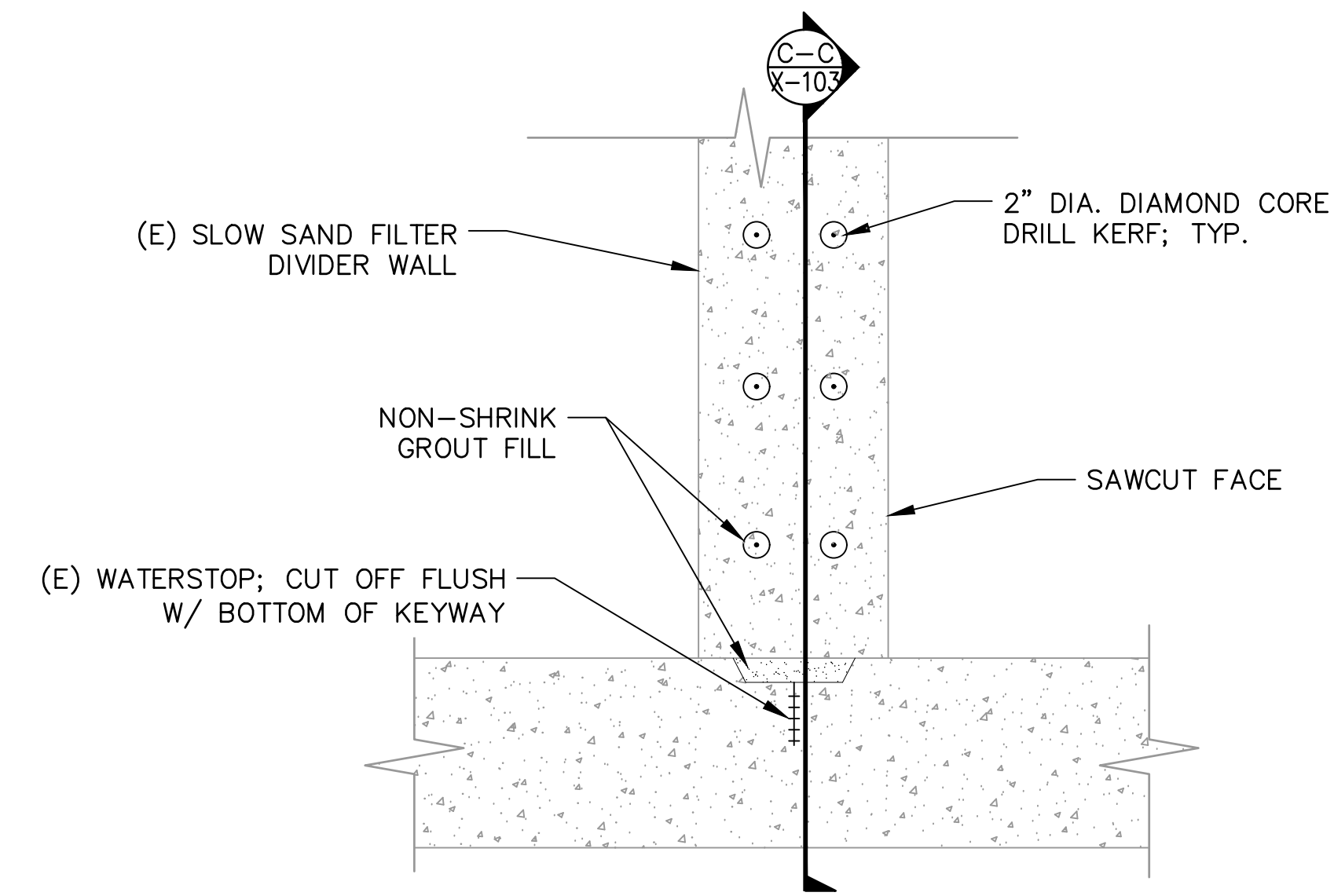
A-A
X-102
DEMOLITION SECTION VIEW - ROUGHING FILTER
3/8" = 1'-0"



B-B
X-102
DEMOLITION SECTION VIEW - ROUGHING FILTER
3/8" = 1'-0"



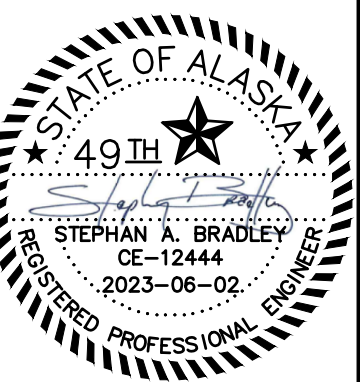
C-C
X-103
DEMO SECTION VIEW - SAWCUT PORTAL TREATMENT
NTS



C-C
X-103
DEMO ELEVATION VIEW - SAWCUT PORTAL TREATMENT
NTS

- GENERAL NOTES:**
- FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
 - FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
 - SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
- DEMOLITION NOTES:**
- DEMO EXISTING 8" PVC INFLUENT MANIFOLD.
 - DEMO EXISTING 12" GSP EFFLUENT HEADER, 6" GSP EFFLUENT COLLECTION MANIFOLD, 12" EFFLUENT SHUT-OFF GATE VALVES, AND 6" BACKWASH SHUT-OFF GATE VALVES.
 - PROTECT EXISTING ROUGHING FILTER BASINS.
 - GROUT ABANDONED PIPE PENETRATIONS LIQUID TIGHT.
 - FILL WITH FLOWABLE FILL TO THE TOP OF CONCRETE TO CREATE A PLATFORM, AFTER NEW WTP IS OPERATIONAL.
 - DEMO WALL FLUSH WITH BASIN FLOOR AT EL.= 254 FT AND 18" FROM WALLS.
 - AFTER SAWCUTTING AND REMOVAL OF WALL SECTIONS IS COMPLETE, PREPARE EXPOSED SURFACES TO RECEIVE GROUT AND EPOXY COATING.
 - USING A MINIMUM 2" DIAMETER DIAMOND CORE DRILLING BIT, CENTER OVER THE EXPOSED #4 HORIZONTAL REINFORCING BARS AND ADVANCE A KERF, A MINIMUM OF 4 INCHES INTO THE CONCRETE WALL.
 - USING HAND TOOLS OR A LIGHT DUTY ELECTRIC DEMOLITION HAMMER, REMOVE THE CONCRETE IMMEDIATELY AROUND THE EXPOSED REBAR AND WITHIN THE KERF, TO A MINIMUM DEPTH OF 2 INCHES.
 - CUT THE END OF THE EXPOSED REBAR BACK, NO LESS THAN 1", FROM THE EXPOSED FACE OF THE WALL.
 - THOROUGHLY CLEAN ALL SURFACES OF DUST AND CONCRETE DEBRIS, USING A POWER WASHER.
 - AT THE BASE OF THE WALL, TRIM ANY REMAINING WATER STOP FLUSH WITH THE WALL FACE AND BOTTOM OF THE KEYWAY.
 - APPLY COAT BOTTOM OF KEYWAY AND REBAR POCKETS WITH A NON-REWETTABLE BONDING AGENT.
 - WHILE THE BONDING AGENT IS STILL TACKY, FILL KEYWAY AND REBAR POCKETS WITH NON-FERROUS, NON-SHRINK GROUT TO RESULT IN FLUSH AND PLANAR SURFACES ON BOTH VERTICAL AND HORIZONTAL SURFACES.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**ROUGHING FILTER DEMO - SECTIONS
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

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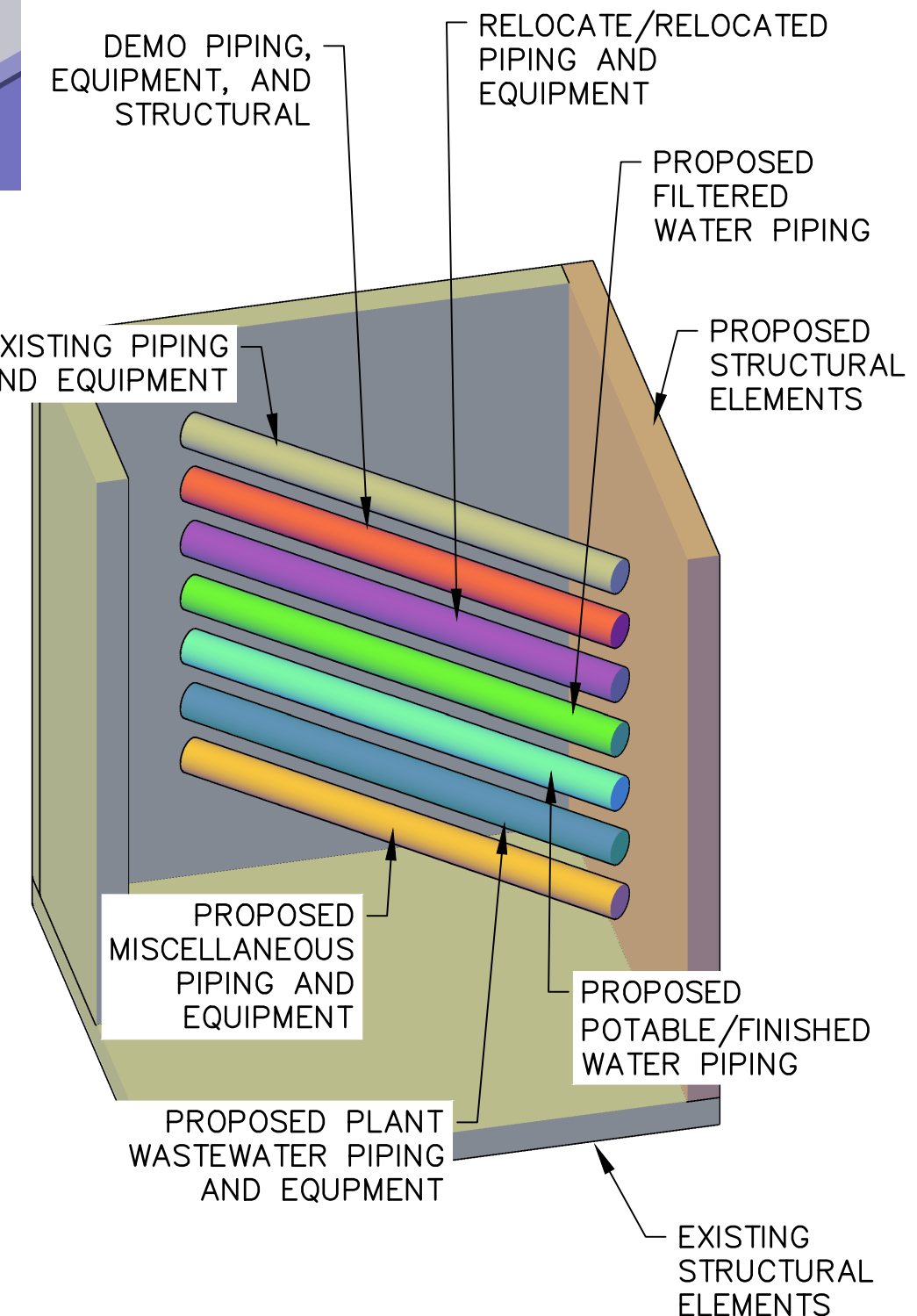
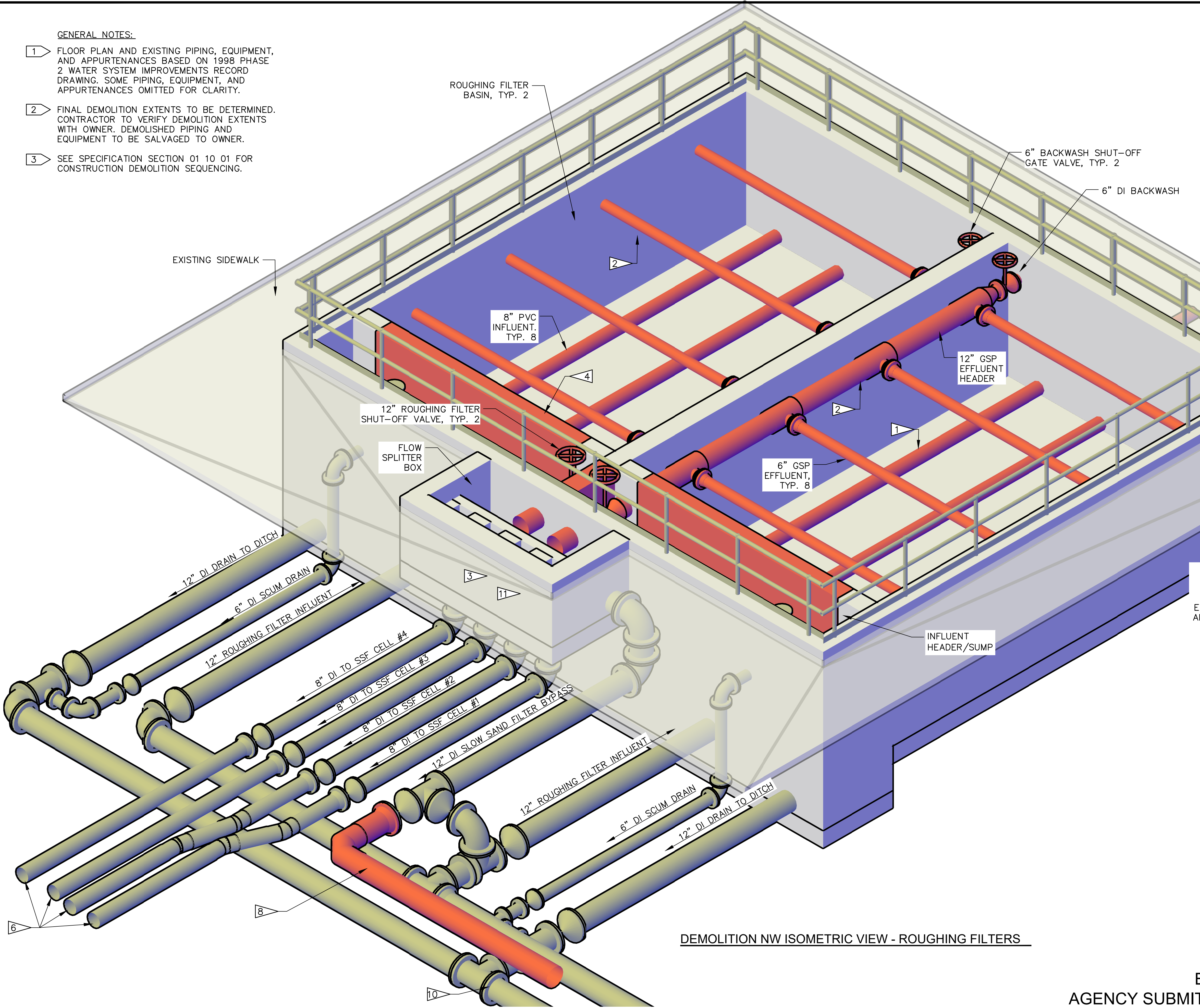
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GENERAL NOTES:

- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
- 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
- 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.

DEMOLITION NOTES:

- 1 DEMO EXISTING 8" PVC INFLUENT MANIFOLD.
- 2 DEMO EXISTING 12" GSP EFFLUENT HEADER, 6" GSP EFFLUENT COLLECTION MANIFOLD, 12" EFFLUENT SHUT-OFF GATE VALVES, AND 6" BACKWASH SHUT-OFF GATE VALVES.
- 3 PROTECT EXISTING ROUGHING FILTER BASINS, FLOW SPLITTER BOX, AND EFFLUENT WEIR. THESE WILL BE IN USE DURING DEMO AND UNTIL NEW WTP IS OPERATIONAL.
- 4 DEMO EXISTING INFLUENT HEADER SUMP WALL. GROUT ABANDONED PIPE PENETRATIONS LIQUID TIGHT.
- 5 PROTECT EXISTING 6" DI SCUM DRAINS AND 12" DI DRAINS.
- 6 PROTECT EXISTING BURIED SSF INFLUENT PIPING DURING DEMOLITIONS. SEE CONSTRUCTION SEQUENCING FOR DETAILS.
- 7 DEMO EXISTING BURIED INFLUENT PIPING UPSTREAM OF GATE VALVES AND CLOSE VALVES.
- 8 DEMO EXISTING SLOW SAND FILTER BYPASS PIPING DOWNSTREAM OF GATE VALVE AND CLOSE VALVE, AFTER NEW WTP IS OPERATIONAL.
- 9 NOT USED
- 10 EXISTING 12" SLOW SAND FILTER DRAIN PIPELINE CONNECTS TO NEW BACKWASH OUTLET FLOW CONTROL VAULT.
- 11 GROUT OUTLET, BYPASS PIPE PENETRATION, AND FILL OUTLET BOX WITH FLOWABLE FILL TO CREATE A FLAT PLATFORM. SEE SHEET G-09 FOR SEQUENCING, AFTER NEW WTP IS OPERATIONAL.

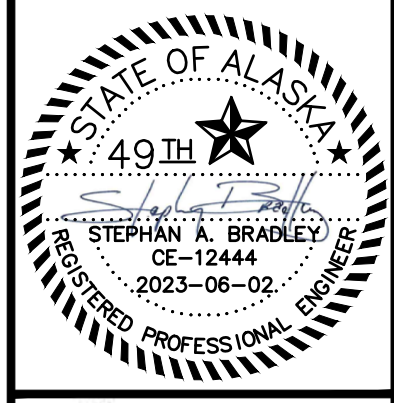


DEMOLITION NW ISOMETRIC VIEW - ROUGHING FILTERS

3D ISOMETRIC VIEW LEGEND

NOTE: SOME PIPING, EQUIPMENT, AND STRUCTURAL ELEMENTS HIDDEN OR SHOWN AS TRANSPARENT FOR CLARITY.

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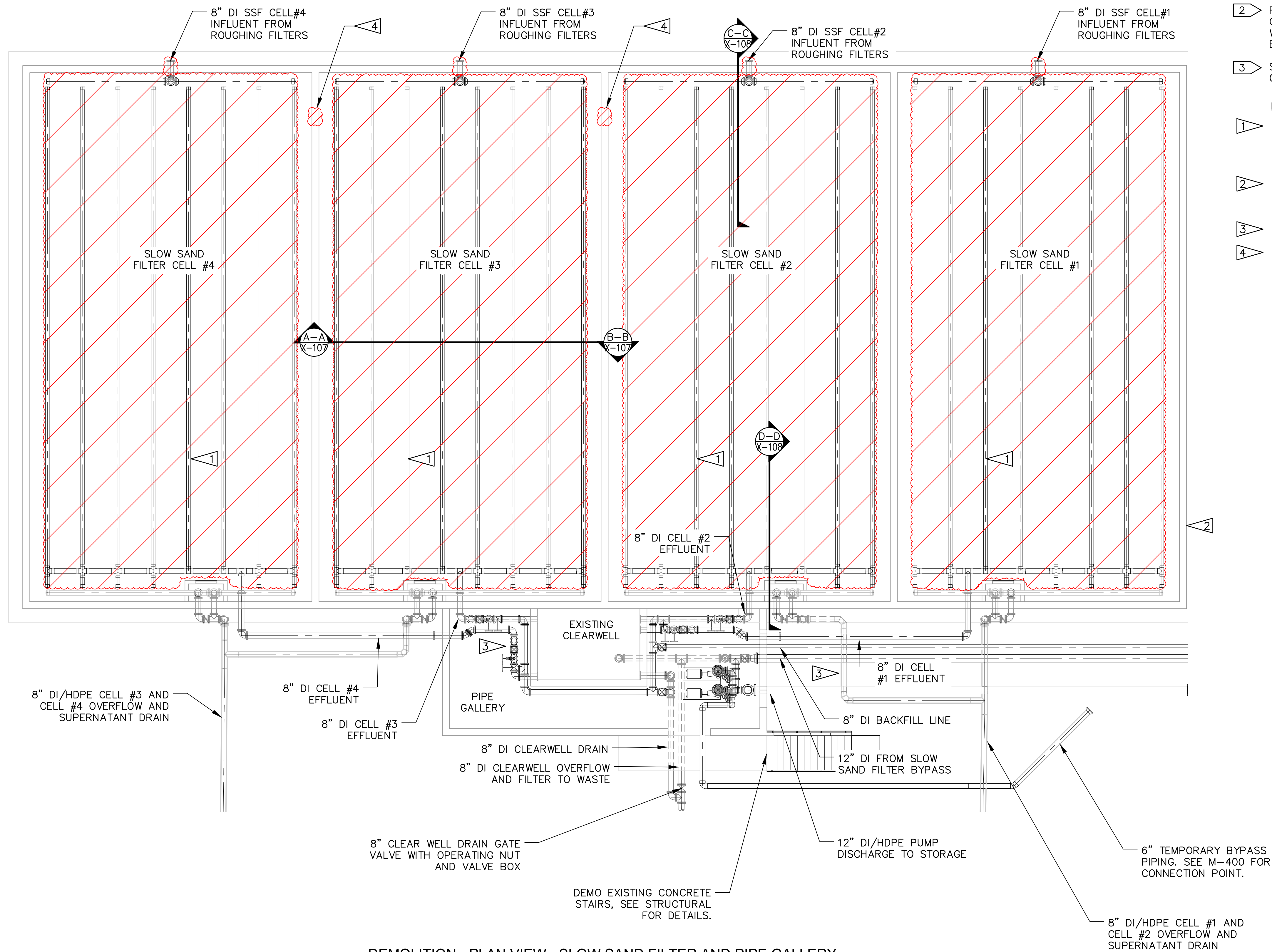
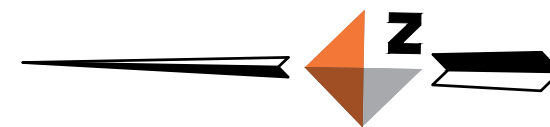
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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**ROUGHING FILTER DEMO - ISO VIEW
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

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X-104



DEMOLITION - PLAN VIEW - SLOW SAND FILTER AND PIPE GALLERY



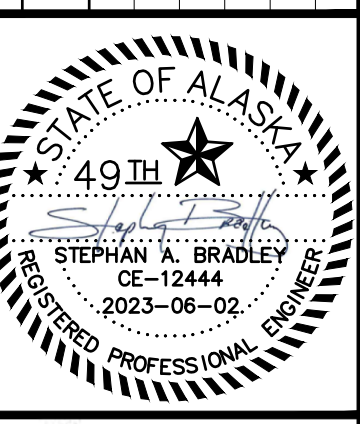
GENERAL NOTES:

- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
- 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
- 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.

DEMOLITION NOTES:

- 1 AFTER NEW WTP IS OPERATIONAL, DEMO EXISTING 6" SLOTTED PVC PIPES. SEE SHEETS X-105, X-106, AND X-107 FOR TYPICAL SLOW SAND FILTER CELL DEMOLITION DETAILS.
- 2 EACH OF THE FOUR SLOW SAND FILTERS CONTAINS APPROX. 10,500 FT³ OF MEDIA THAT MUST BE REMOVED AND SENT TO LANDFILL.
- 3 SEE SHEET X-110 FOR DEMO IN THESE AREAS.
- 4 PARTIAL DEMO, SEE SHEET X-109.

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WRANGELL, ALASKA

**EXIST. SLOW SAND FILTER DEMO - PLAN
MECHANICAL - DEMOLITION DRAWING**

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

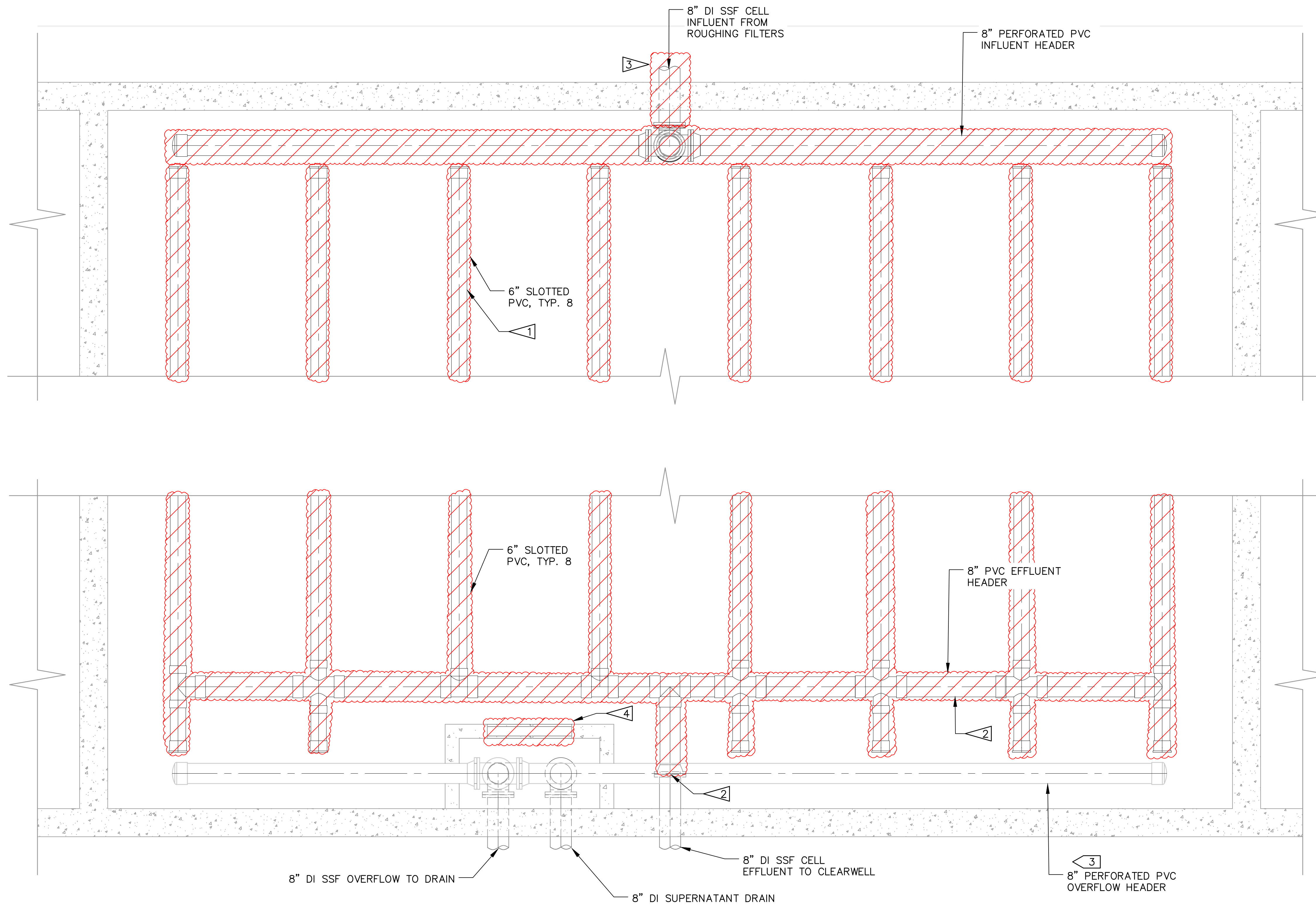
PROJECT 1528.50206.01
DATE 06/02/23

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X-105

\\bil-gis\BIL-Projects\28_50206-01\Plant3D\CWB WTP\Orthos\DWGs\P22-V-OP-P-SSF-PG.dwg PLOT DATE 2023-5-30 16:54 SAVED DATE 2023-04-28 16:54 USER: gplott

\\bil-gis\BIL-Projects\28_50206-01\Plant3D\CW WTP\Orthos\DWGs\P22-V-OP-P--SSF.dwg PLOT DATE 2023-5-30 16:54 SAVED DATE 2023-04-26 15:02 USER: gplatt



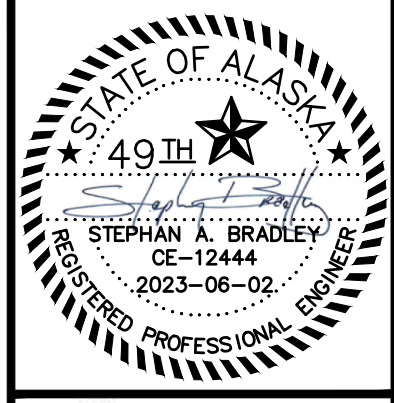
DEMOLITION - PLAN VIEW - TYPICAL SLOW SAND FILTER CELL



- GENERAL NOTES:**
- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWINGS AND SURVEY. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
 - 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
 - 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
 - 4 PROTECT FOR RE-USE AS OUTLET HEADER. RELOCATE TO CENTERLINE ELEVATION 255.0'.

- DEMOLITION NOTES:**
- 1 DEMO EXISTING 6" SLOTTED PVC PIPES.
 - 2 DEMO EXISTING 6" PERFORATED PVC EFFLUENT HEADER AND INSTALL BLIND FLANGE.
 - 3 DEMO TO WITHIN 2 FT OUTSIDE OF WALL, GROUT EMPTY PIPE WITH NON-SHRINK GROUT, CAP BOTH ENDS WITH PVC FLANGE OR EQUAL USING SS HARDWARE.
 - 4 DEMO FLUSH WITH FLOOR.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

**TYPICAL SSF BAY DEMO - PLAN
MECHANICAL - DEMOLITION DRAWING**

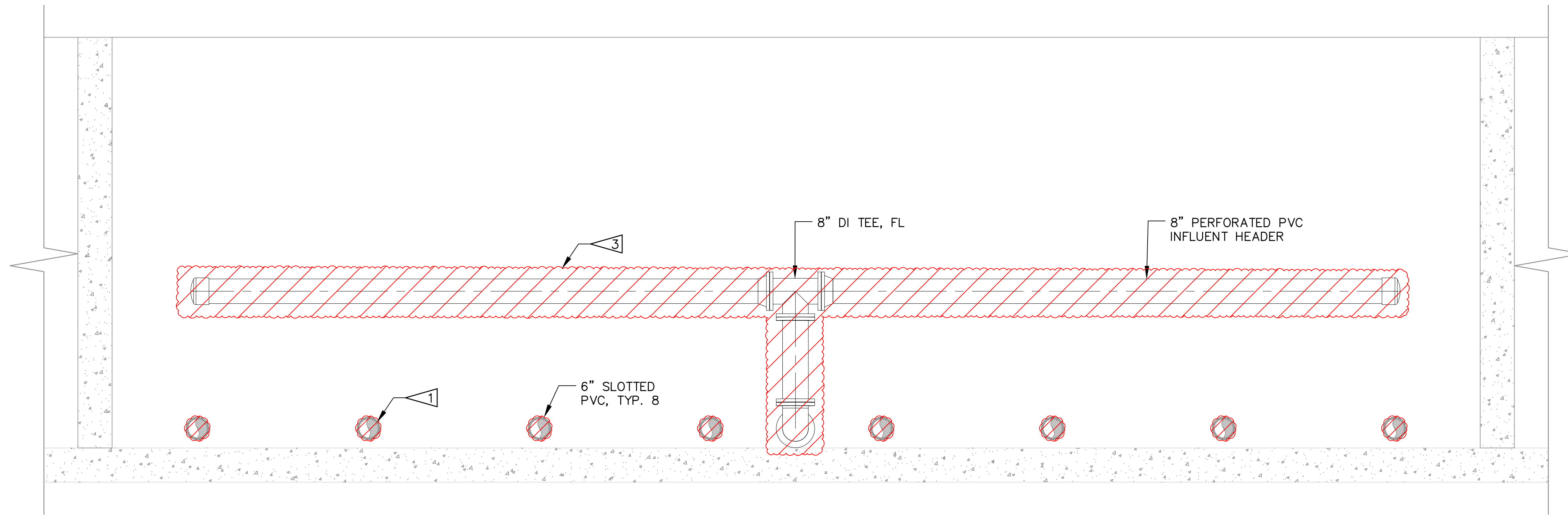
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

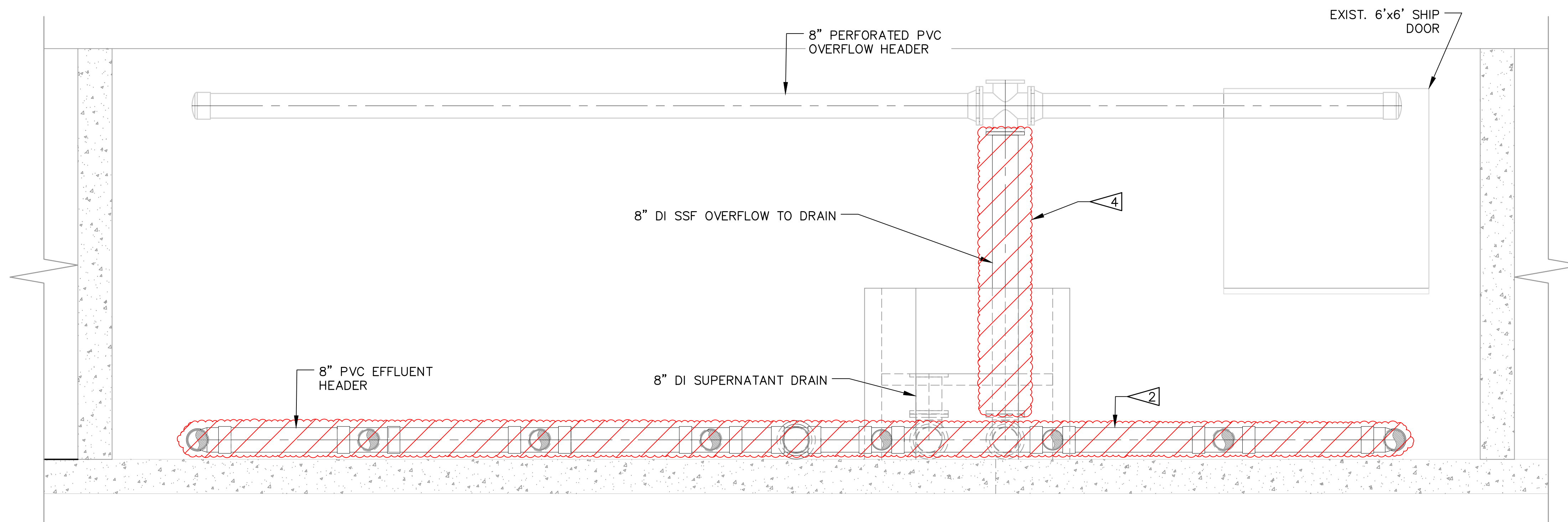
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X-106

\\bil-gis\BIL-Projects\28_50206-01\Plant3D\CW WTP\Orthos\DWGs\P22-V-OP-S-SSF.dwg PLOT DATE 2023-05-30 16:55 SAVED DATE 2023-04-26 14:58 USER: gplatt



A-A
X-105
DEMOLITION SECTION VIEW - TYPICAL SLOW SAND FILTER CELL
1/2" = 1'-0"



B-B
X-105
DEMOLITION SECTION VIEW - TYPICAL SLOW SAND FILTER CELL
1/2" = 1'-0"

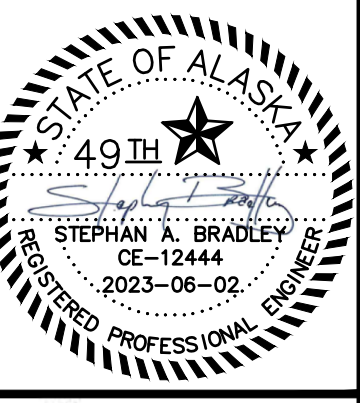
GENERAL NOTES:

- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
- 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
- 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.

DEMOLITION NOTES:

- 1 DEMO EXISTING 6" SLOTTED PVC PIPES.
- 2 DEMO EXISTING 6" PERFORATED PVC EFFLUENT HEADER.
- 3 DEMO EXISTING 8" PERFORATED PVC INFLUENT HEADER.
- 4 DEMO EXISTING 8" DI SSF OVERFLOW TO DRAIN PIPELINE TO ALLOW FOR 8" OVERFLOW HEADER ELEVATION ADJUSTMENT.

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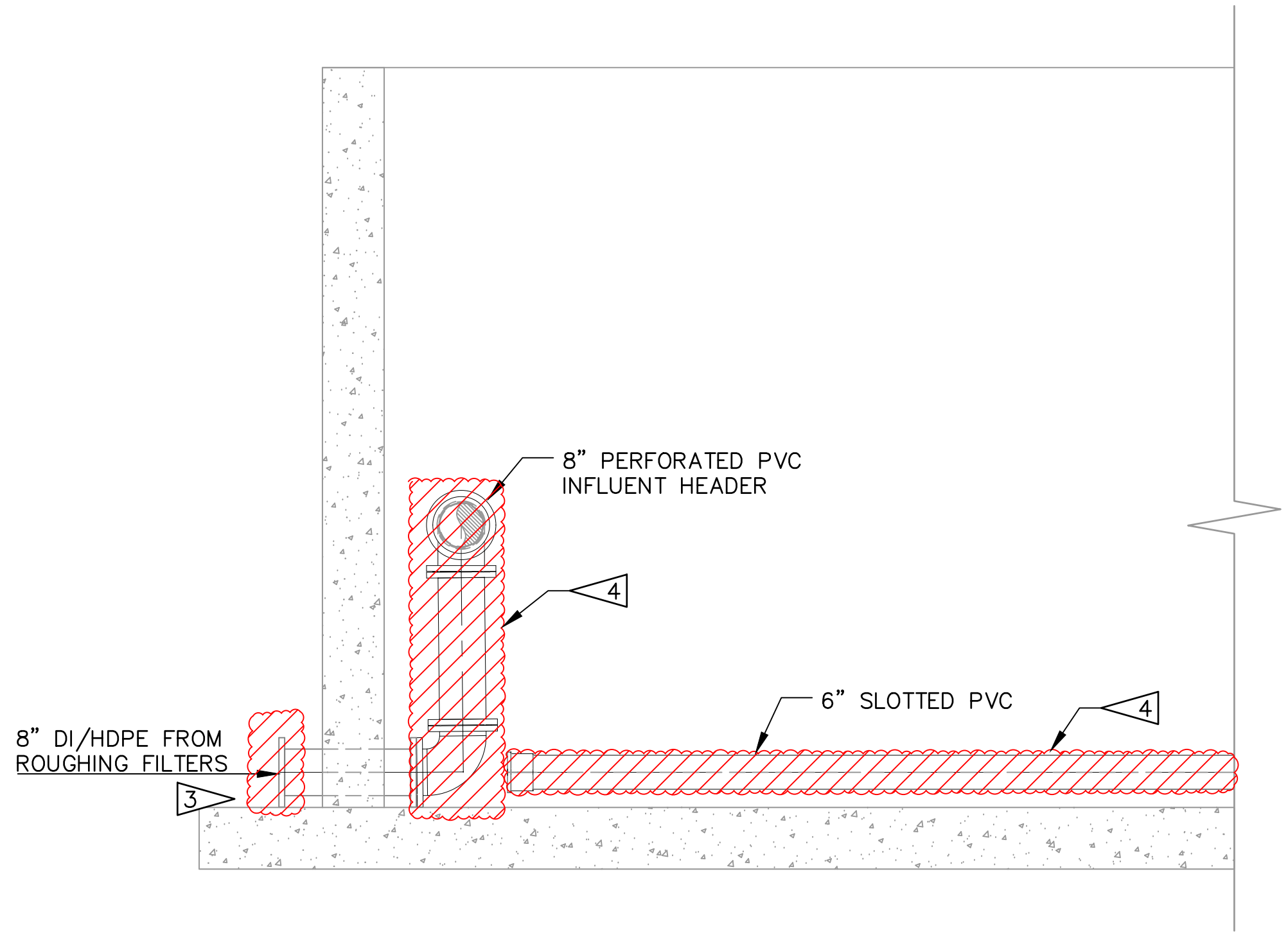
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**TYPICAL SSF BAY DEMO - SECTIONS
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

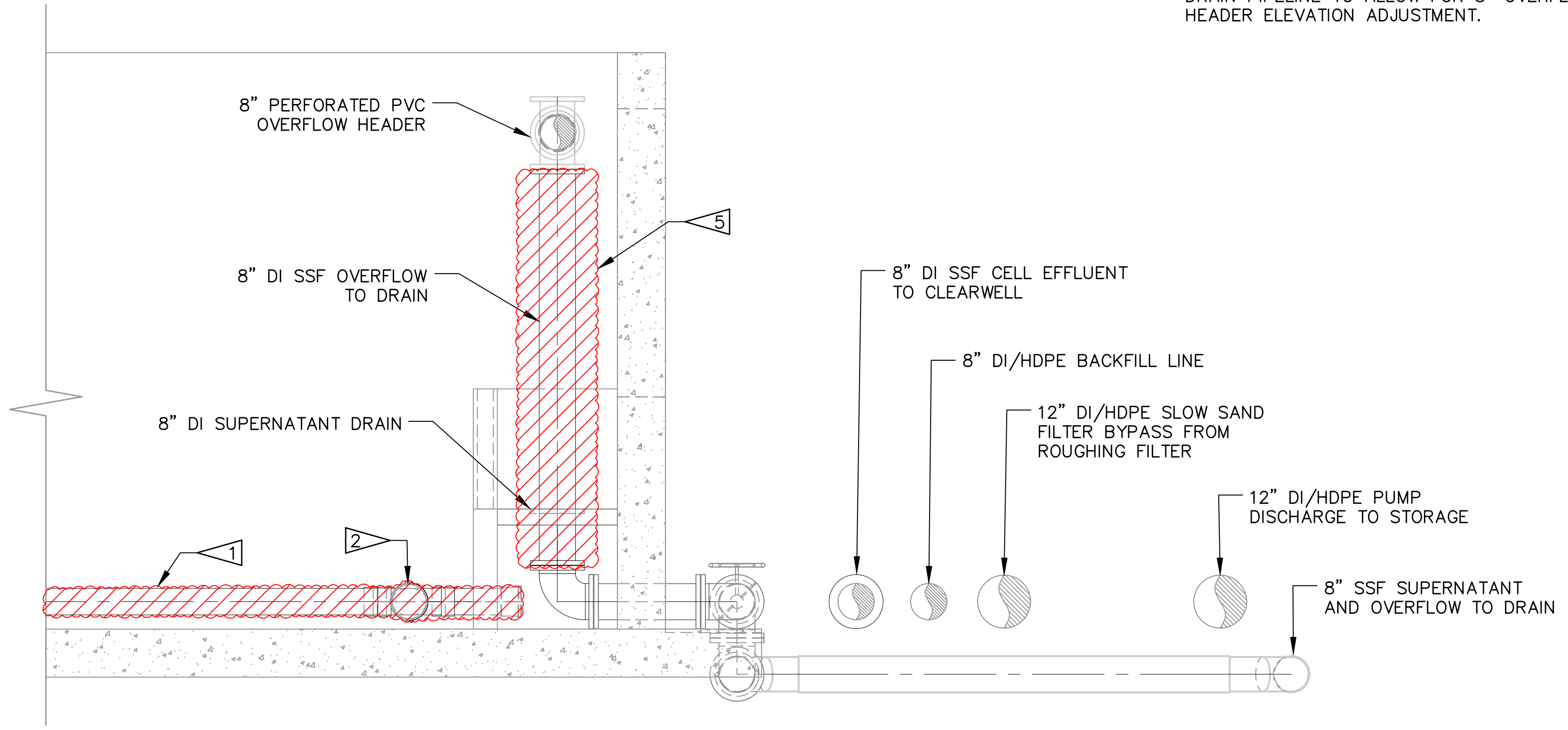
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\\bil-gis\BIL-Projects\28_50206-01\Plant3D\CW WTP\Orthos\DWGs\P22-V-OP-S-SSF-2.dwg PLOT DATE 2023-05-30 16:55 SAVED DATE 2023-05-01 16:44 USER: gplatt



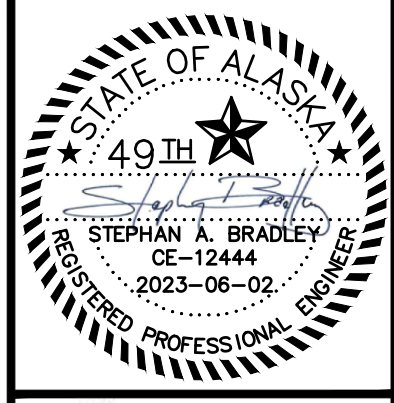
C-C
X-105
DEMOLITION SECTION VIEW - TYPICAL SLOW SAND FILTER CELL
1/2" = 1'-0"



D-D
X-105
DEMOLITION SECTION VIEW - TYPICAL SLOW SAND FILTER CELL
1/2" = 1'-0"

- GENERAL NOTES:**
- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
 - 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
 - 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
- DEMOLITION NOTES:**
- 1 DEMO EXISTING 6" SLOTTED PVC PIPES.
 - 2 DEMO EXISTING 6" PERFORATED PVC EFFLUENT HEADER.
 - 3 DEMO TO WITHIN 2 FT OUTSIDE OF WALL, GROUT EMPTY PIPE WITH NON-SHRINK GROUT, CAP BOTH ENDS WITH PVC FLANGE OR EQUAL USING SS HARDWARE.
 - 4 DEMO EXISTING 8" PERFORATED PVC INFLUENT HEADER.
 - 5 DEMO EXISTING 8" DI SSF OVERFLOW TO DRAIN PIPELINE TO ALLOW FOR 8" OVERFLOW HEADER ELEVATION ADJUSTMENT.

REVISIONS		BY
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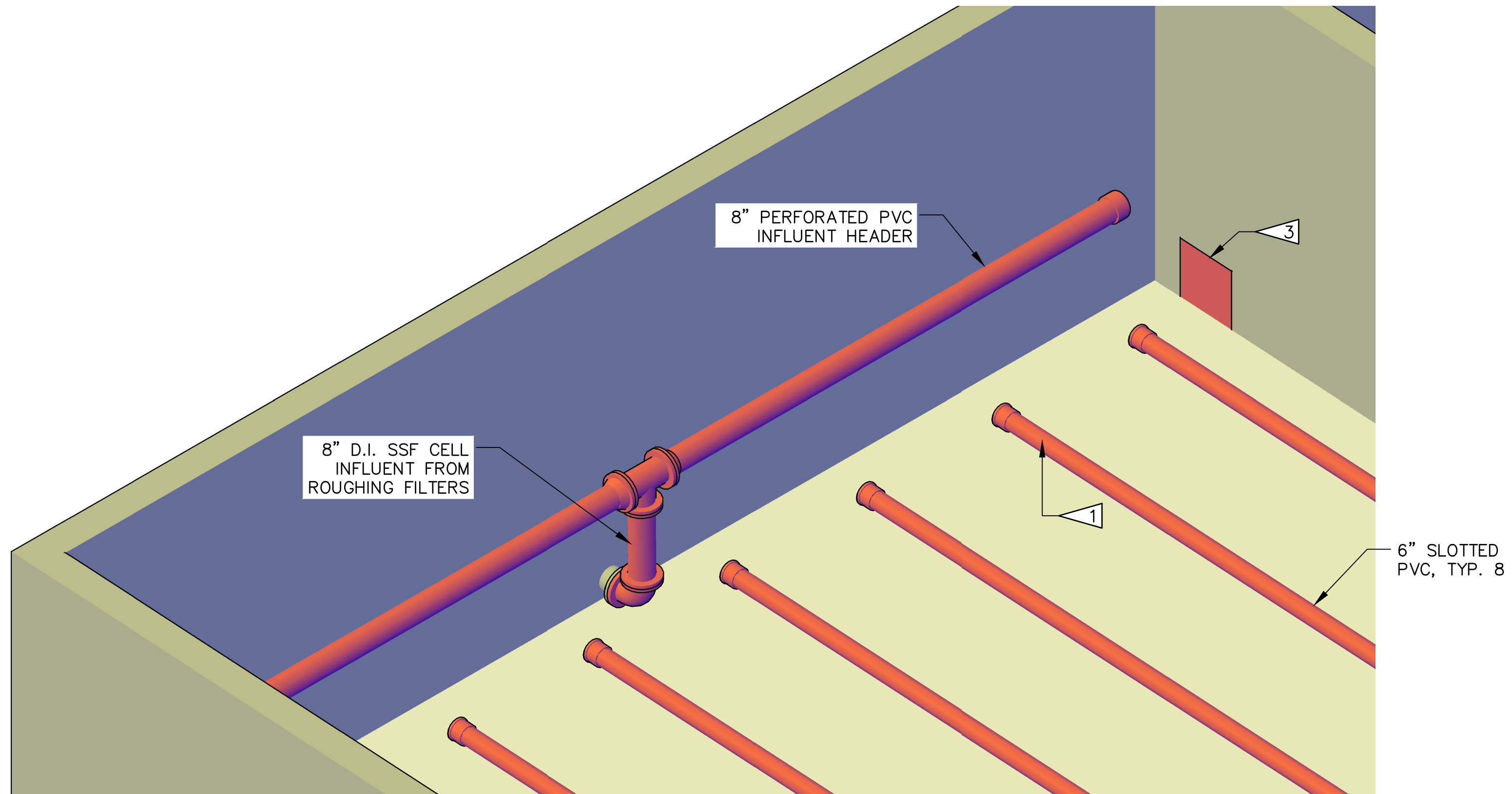
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**TYPICAL SSF BAY DEMO - SECTIONS
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

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DATE 06/02/23

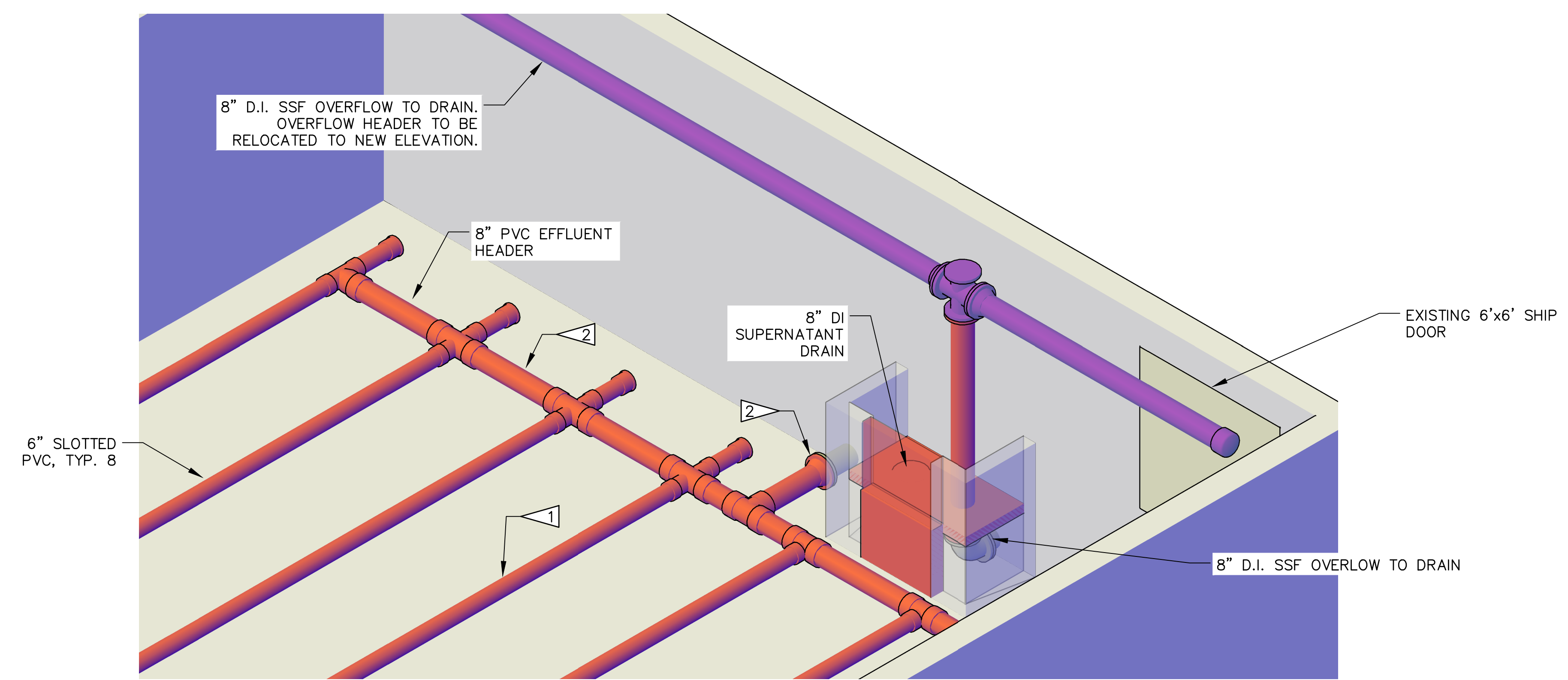
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DEMOLITION NW ISOMETRIC VIEW - TYPICAL SLOW SAND FILTER CELL



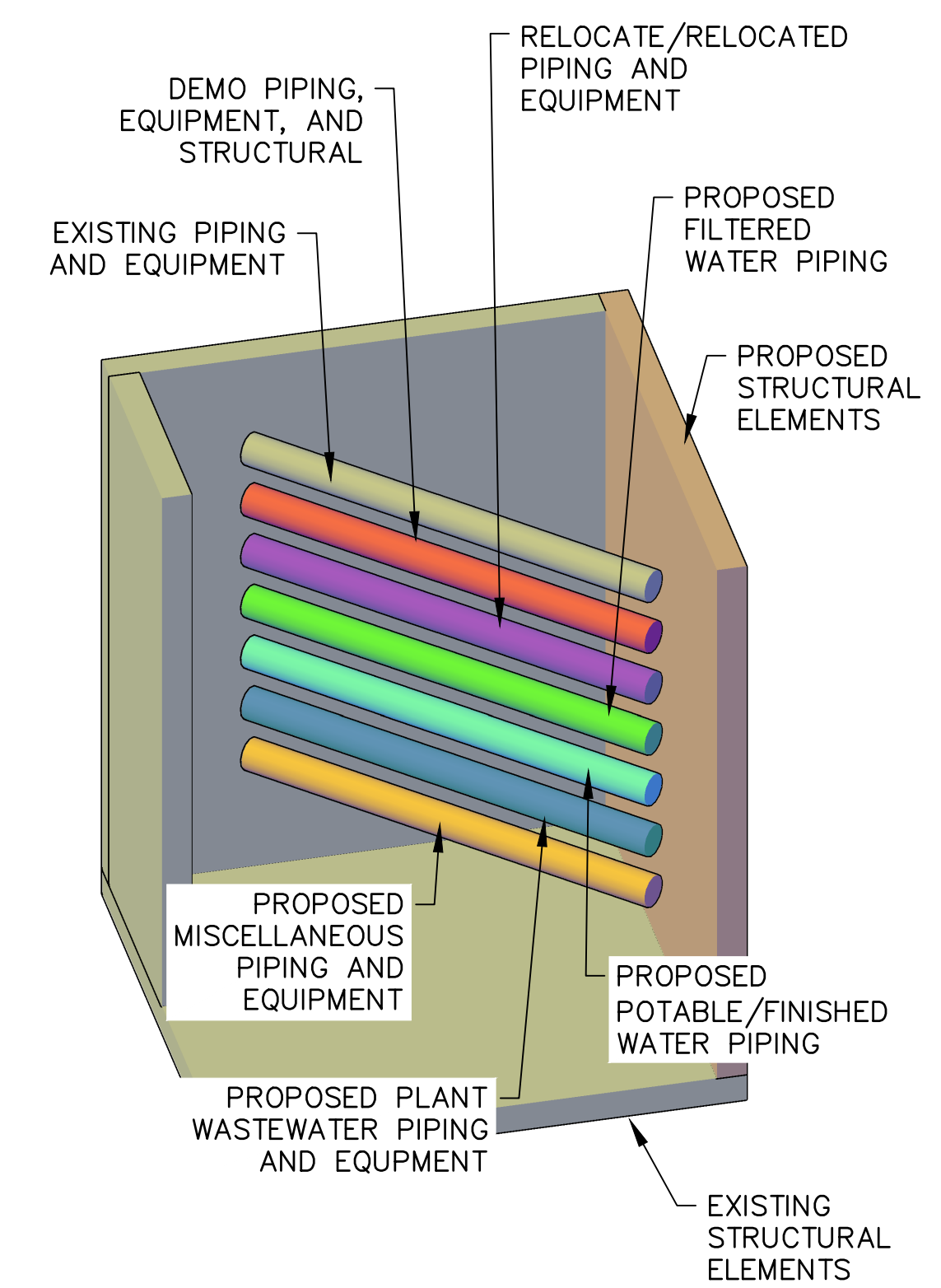
DEMOLITION SW ISOMETRIC VIEW - TYPICAL SLOW SAND FILTER CELL

GENERAL NOTES:

- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWING. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
- 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
- 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.

DEMOLITION NOTES:

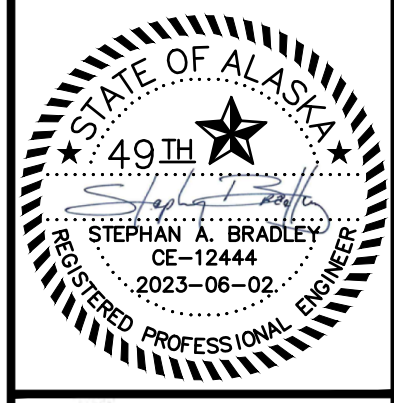
- 1 DEMO EXISTING 6" SLOTTED PVC PIPES.
- 2 DEMO EXISTING 6" PERFORATED PVC EFFLUENT HEADER AND INSTALL BLIND FLANGE.
- 3 CUT 4'x4' HOLE 2' FROM WALL BETWEEN BASINS 1 & 2 AND BETWEEN BASINS 3 & 4. HOLE FLUSH WITH FLOOR. REPAIR PER DETAIL AND SECTION ON SHEET X-103.



3D ISOMETRIC VIEW LEGEND

NOTE: SOME PIPING, EQUIPMENT, AND STRUCTURAL ELEMENTS HIDDEN OR SHOWN AS TRANSPARENT FOR CLARITY.

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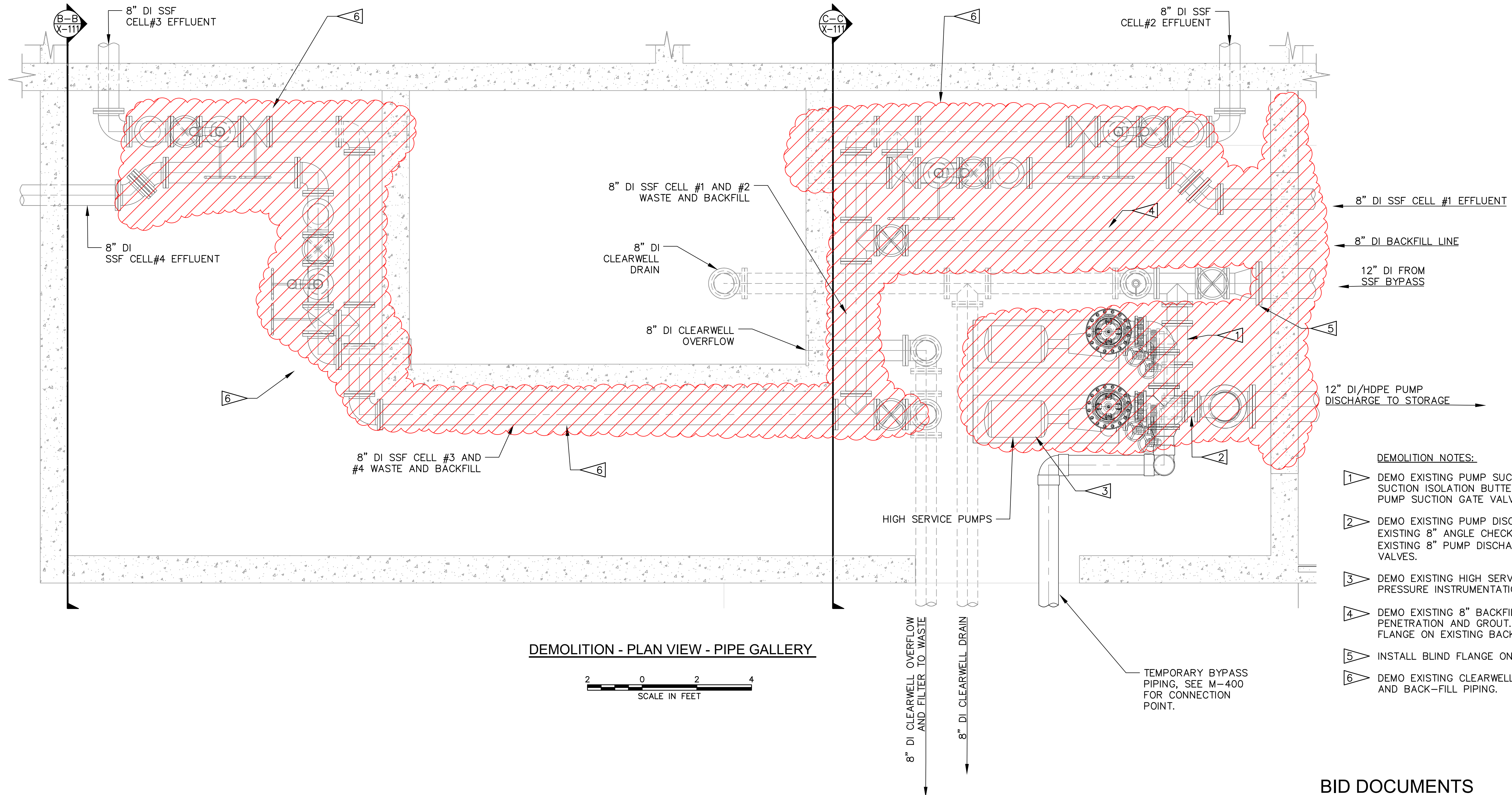
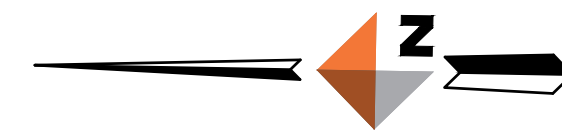
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**TYPICAL SSF BAY DEMO - ISO VIEW
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

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SHEET
X-109

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DEMOLITION - PLAN VIEW - PIPE GALLERY



GENERAL NOTES:

- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWINGS AND SURVEY. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
- 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
- 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
- 4 ALL EXISTING PIPE FITTINGS AND VALVES ARE 8" DUCTILE IRON, FLANGED UNLESS OTHERWISE NOTED.
- 5 ALL EXISTING VALVES ARE 8" GATE VALVES WITH HANDWHEEL OPERATORS UNLESS OTHERWISE NOTED.

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DEMOLITION NOTES:

- 1 DEMO EXISTING PUMP SUCTION HEADER, PUMP SUCTION ISOLATION BUTTERFLY VALVES, AND PUMP SUCTION GATE VALVE.
- 2 DEMO EXISTING PUMP DISCHARGE HEADER, EXISTING 8" ANGLE CHECK VALVES, AND EXISTING 8" PUMP DISCHARGE ISOLATION VALVES.
- 3 DEMO EXISTING HIGH SERVICE PUMPS, PRESSURE INSTRUMENTATION, AND PUMP PAD.
- 4 DEMO EXISTING 8" BACKFILL LINE TO PIPE PENETRATION AND GROUT. INSTALL BLIND FLANGE ON EXISTING BACKFILL VALVE.
- 5 INSTALL BLIND FLANGE ON SSF BYPASS LINE.
- 6 DEMO EXISTING CLEARWELL SHUT-OFF PIPING AND BACK-FILL PIPING.

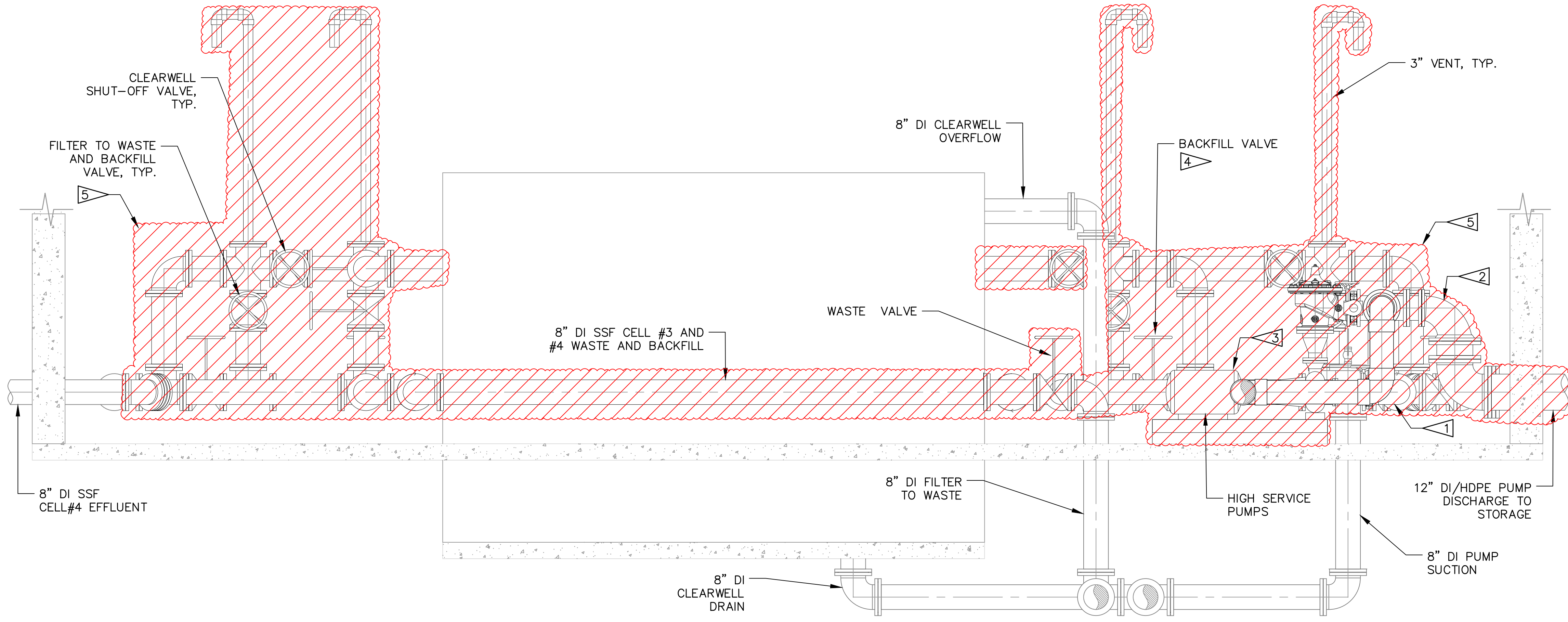
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**PIPE GALLERY DEMO - PLAN
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

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DATE 06/02/23

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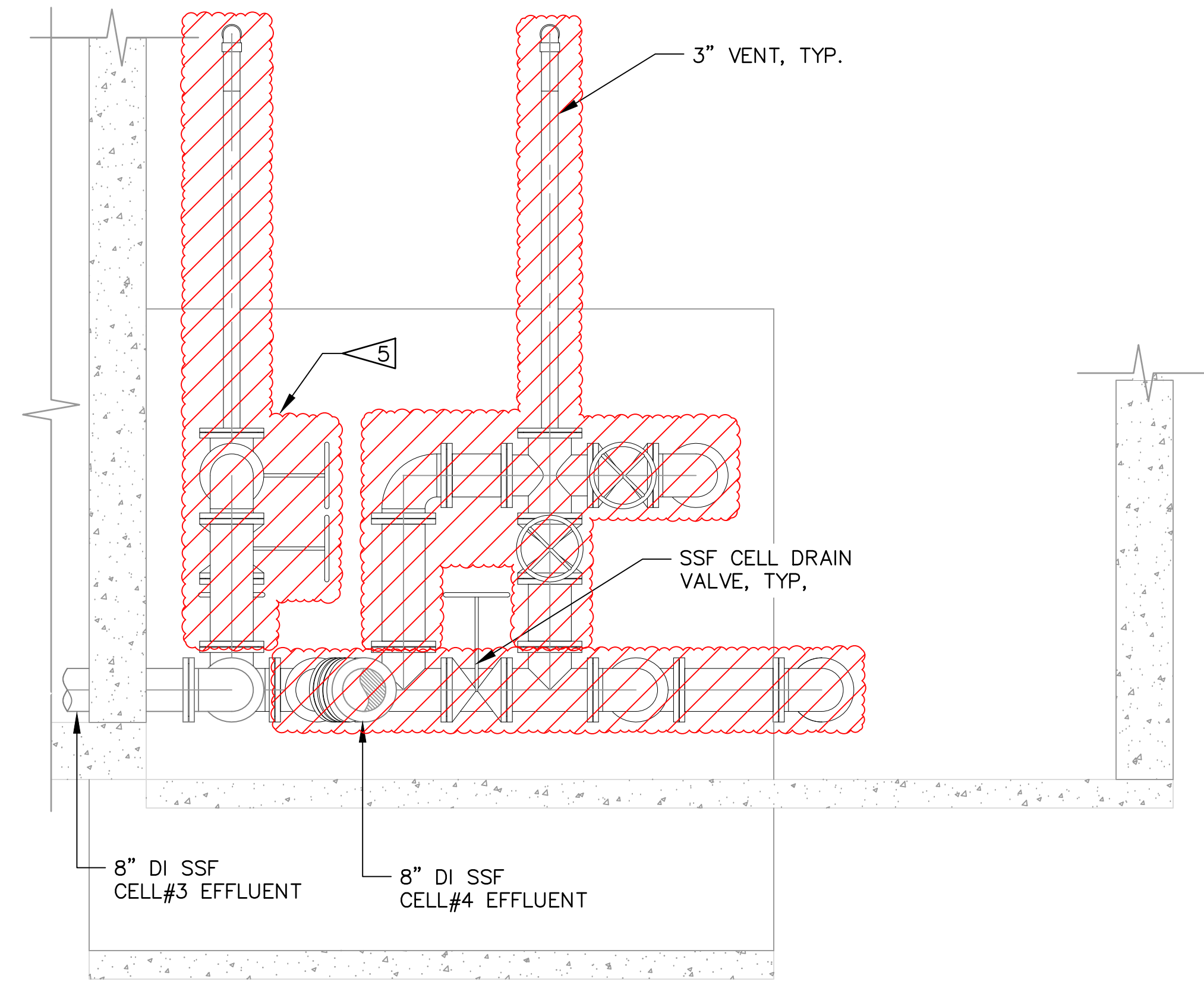
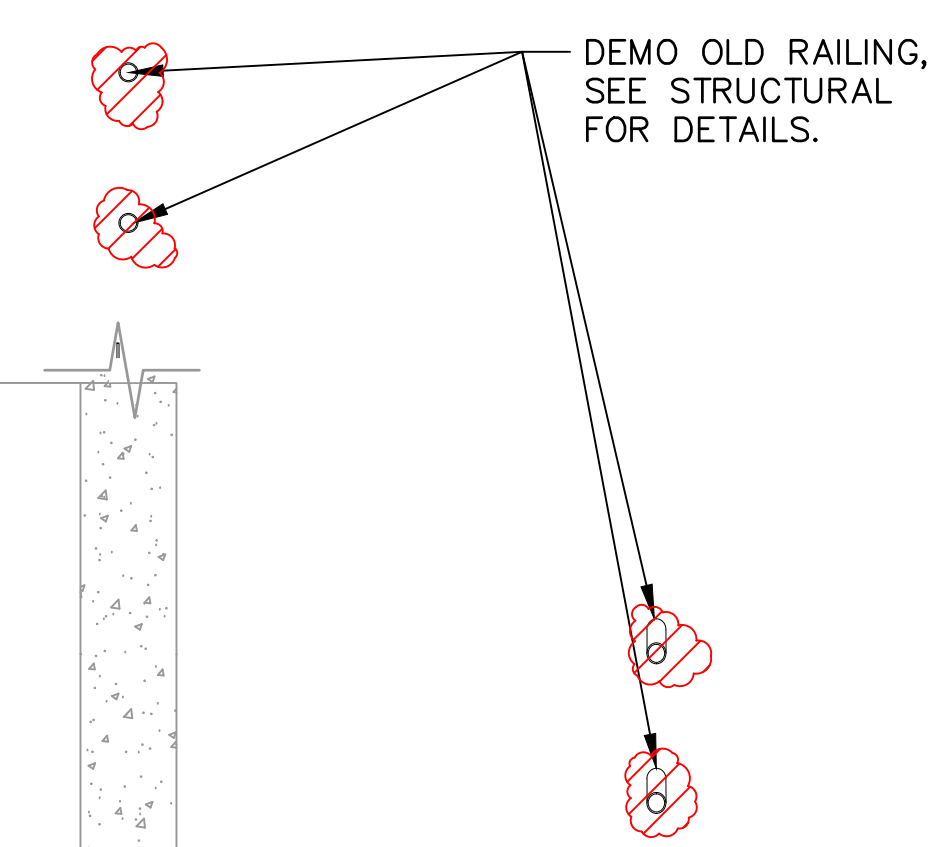
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- GENERAL NOTES:**
- FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWINGS AND SURVEY. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
 - FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
 - SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
 - ALL EXISTING PIPE FITTINGS AND VALVES ARE 8" DUCTILE IRON, FLANGED UNLESS OTHERWISE NOTED.
 - ALL EXISTING VALVES ARE 8" GATE VALVES WITH HANDWHEEL OPERATORS UNLESS OTHERWISE NOTED.

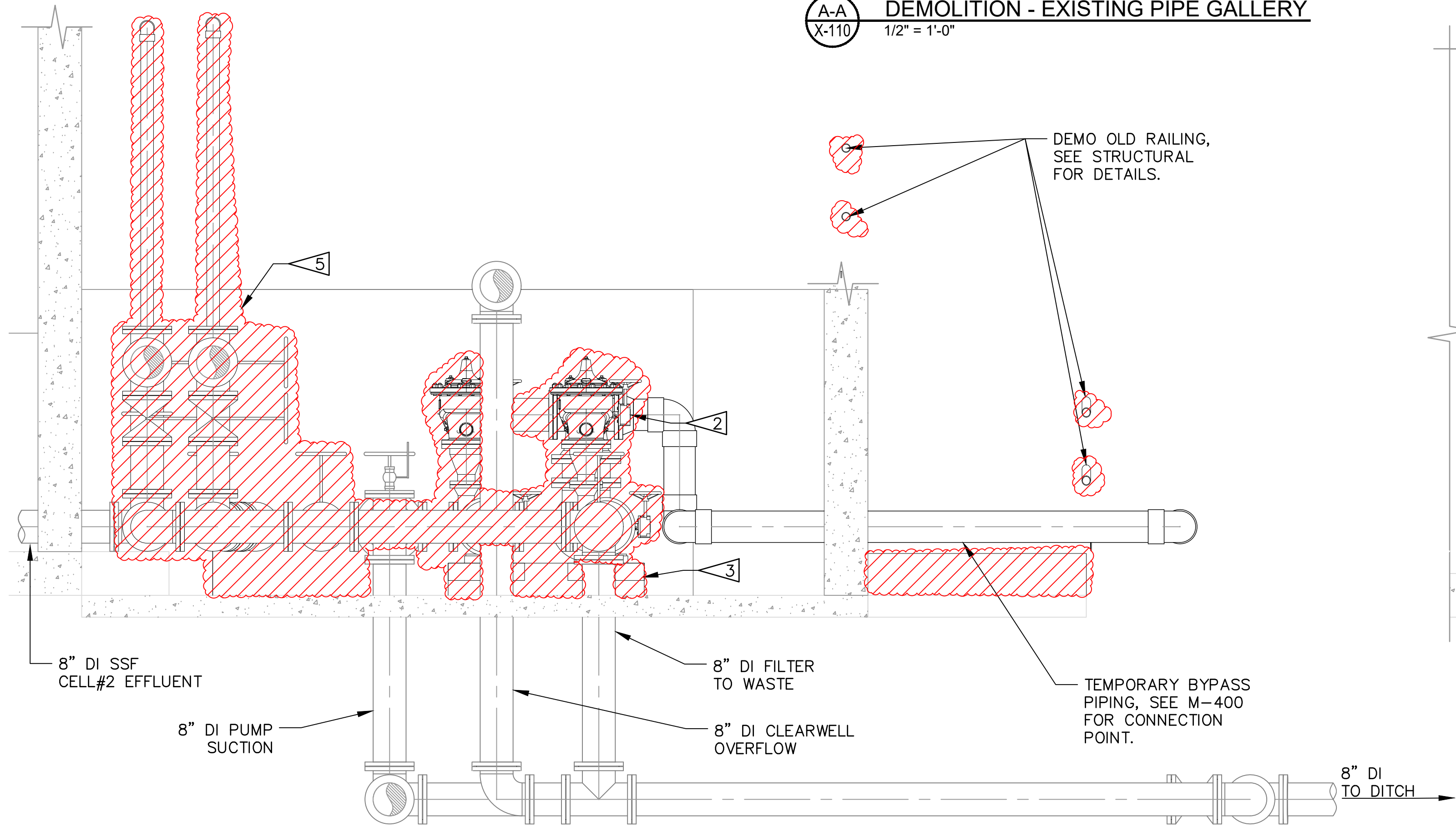
- DEMOLITION NOTES:**
- DEMO EXISTING PUMP SUCTION HEADER, PUMP SUCTION ISOLATION BUTTERFLY VALVES, AND PUMP SUCTION GATE VALVE.
 - DEMO EXISTING PUMP DISCHARGE HEADER, EXISTING 8" ANGLE CHECK VALVES, AND EXISTING 8" PUMP DISCHARGE ISOLATION VALVES. INSTALL BLIND FLANGE.
 - DEMO EXISTING HIGH SERVICE PUMPS, PRESSURE INSTRUMENTATION, AND PUMP PAD.
 - DEMO EXISTING 8" BACKFILL LINE TO PIPE PENETRATION AND GROUT. INSTALL BLIND FLANGE ON EXISTING BACKFILL VALVE.
 - DEMO EXISTING CLEAR WELL SHUT-OFF PIPING AND BACKFILL PIPING.

A-A
X-110
1/2" = 1'-0"

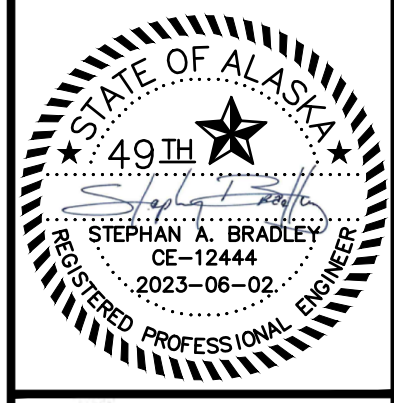


C-C
X-110
1/2" = 1'-0"

B-B
X-110
1/2" = 1'-0"



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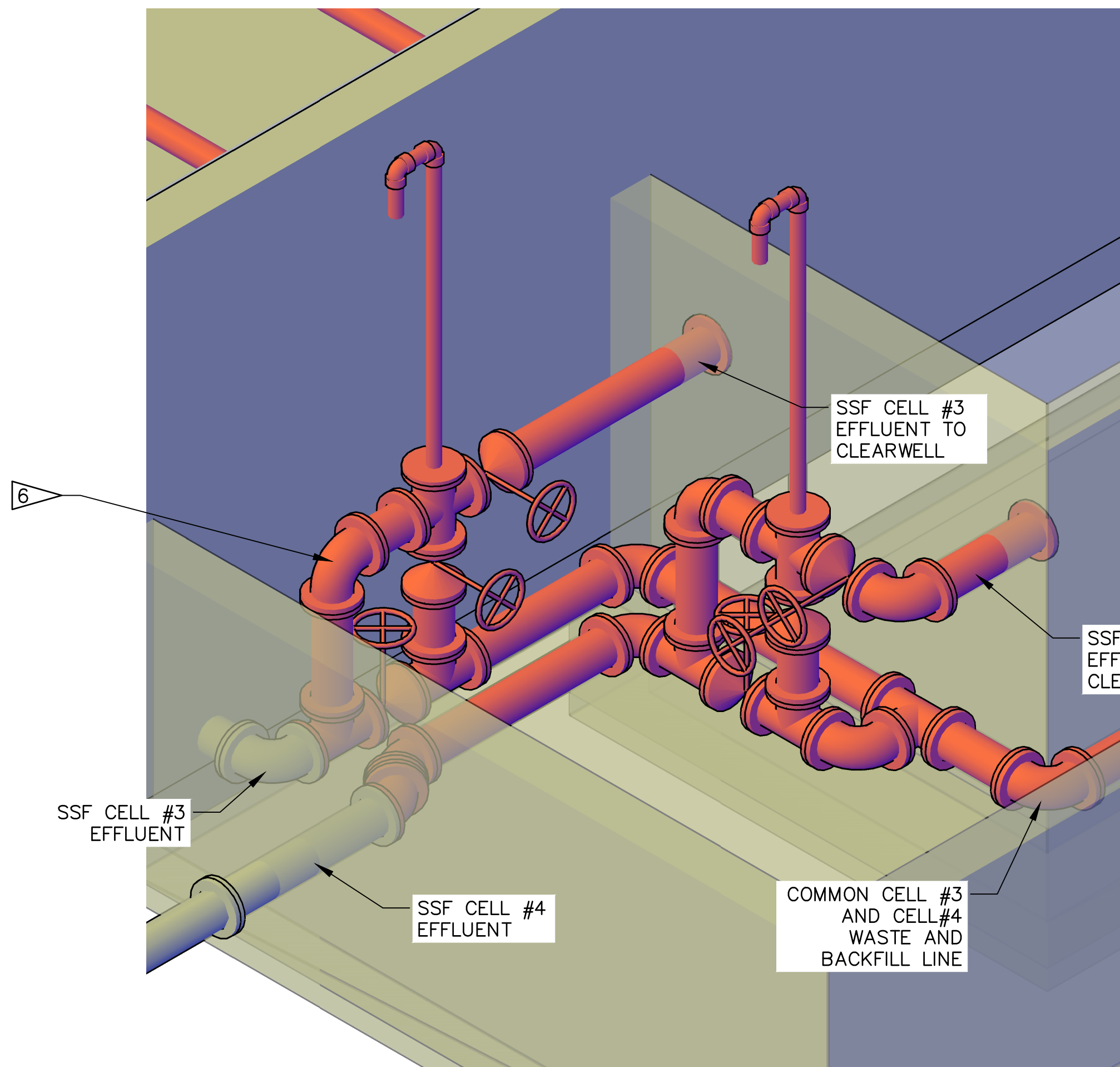
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**PIPE GALLERY DEMO - SECTIONS
MECHANICAL - DEMOLITION DRAWING**
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CITY AND BOROUGH OF WRANGELL, ALASKA

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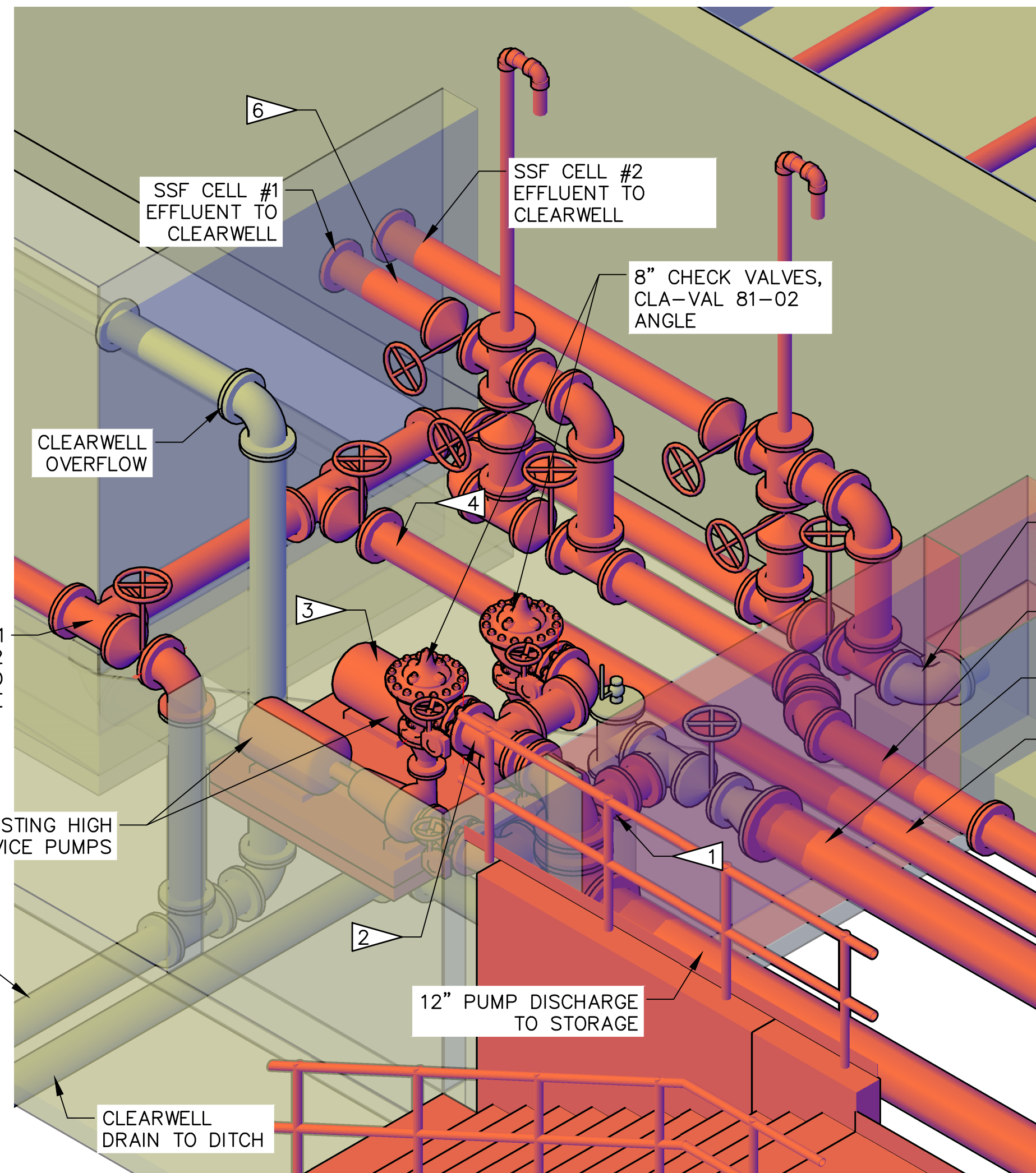
\\bil-gis\BIL-Projects\28_50206-01\Plant3D\CW WTP\Orthos\DWGs\P22-V-OP-1-PC.dwg PLOT DATE: 2023-05-30 16:57 SAVED DATE: 2023-05-30 16:16 USER: gplatt



NW ISOMETRIC - DEMOLITION - EXISTING PIPE GALLERY

GENERAL NOTES:

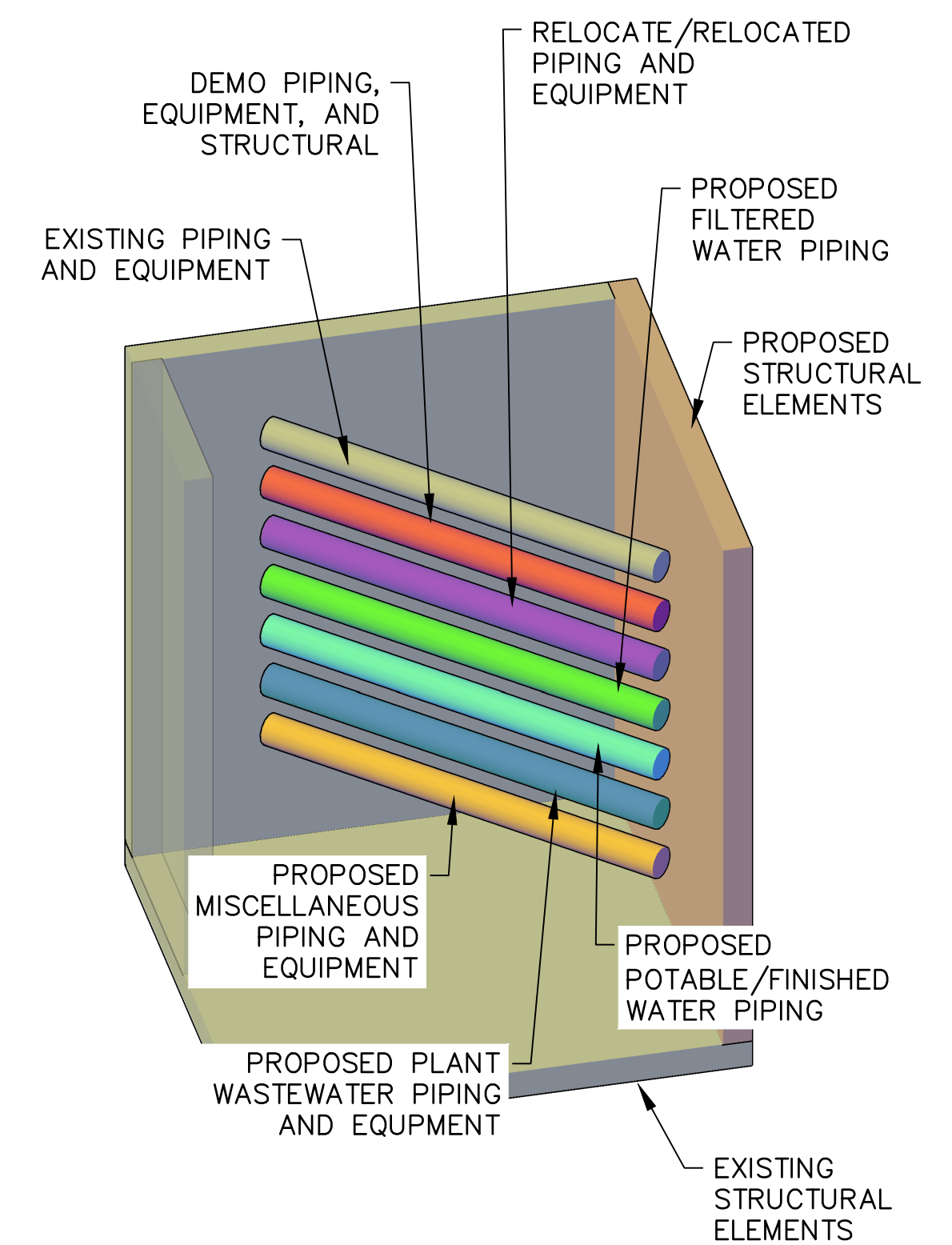
- 1 FLOOR PLAN AND EXISTING PIPING, EQUIPMENT, AND APPURTENANCES BASED ON 1998 PHASE 2 WATER SYSTEM IMPROVEMENTS RECORD DRAWINGS AND SURVEY. SOME PIPING, EQUIPMENT, AND APPURTENANCES OMITTED FOR CLARITY.
- 2 FINAL DEMOLITION EXTENTS TO BE DETERMINED. CONTRACTOR TO VERIFY DEMOLITION EXTENTS WITH OWNER. DEMOLISHED PIPING AND EQUIPMENT TO BE SALVAGED TO OWNER.
- 3 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.
- 4 ALL EXISTING PIPE FITTINGS AND VALVES ARE 8" DUCTILE IRON, FLANGED UNLESS OTHERWISE NOTED.
- 5 ALL EXISTING VALVES ARE 8" GATE VALVES WITH HANDWHEEL OPERATORS UNLESS OTHERWISE NOTED.



SW ISOMETRIC - DEMOLITION - EXISTING PIPE GALLERY

DEMOLITION NOTES:

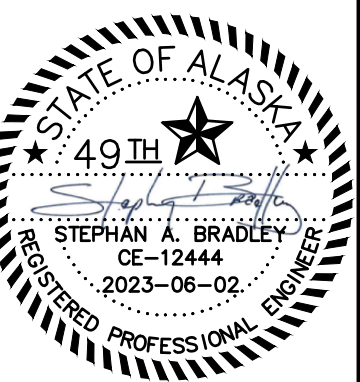
- 1 DEMO EXISTING PUMP SUCTION HEADER, PUMP SUCTION ISOLATION BUTTERFLY VALVES, AND PUMP SUCTION GATE VALVE.
- 2 DEMO EXISTING PUMP DISCHARGE HEADER, EXISTING 8" ANGLE CHECK VALVES, AND EXISTING 8" PUMP DISCHARGE ISOLATION VALVES.
- 3 DEMO EXISTING HIGH SERVICE PUMPS, PRESSURE INSTRUMENTATION, AND PUMP PAD.
- 4 DEMO EXISTING 8" BACKFILL LINE TO PIPE PENETRATION AND GROUT. INSTALL BLIND FLANGE ON EXISTING BACKFILL VALVE.
- 5 INSTALL BLIND FLANGE ON SLOW SAND FILTER BYPASS LINE.
- 6 DEMO EXISTING CLEARWELL SHUT-OFF PIPING, BACK-FILL PIPING, AND CLEARWELL INFLUENT PIPING..



3D ISOMETRIC VIEW LEGEND

NOTE: SOME PIPING, EQUIPMENT, AND STRUCTURAL ELEMENTS HIDDEN OR SHOWN AS TRANSPARENT FOR CLARITY.

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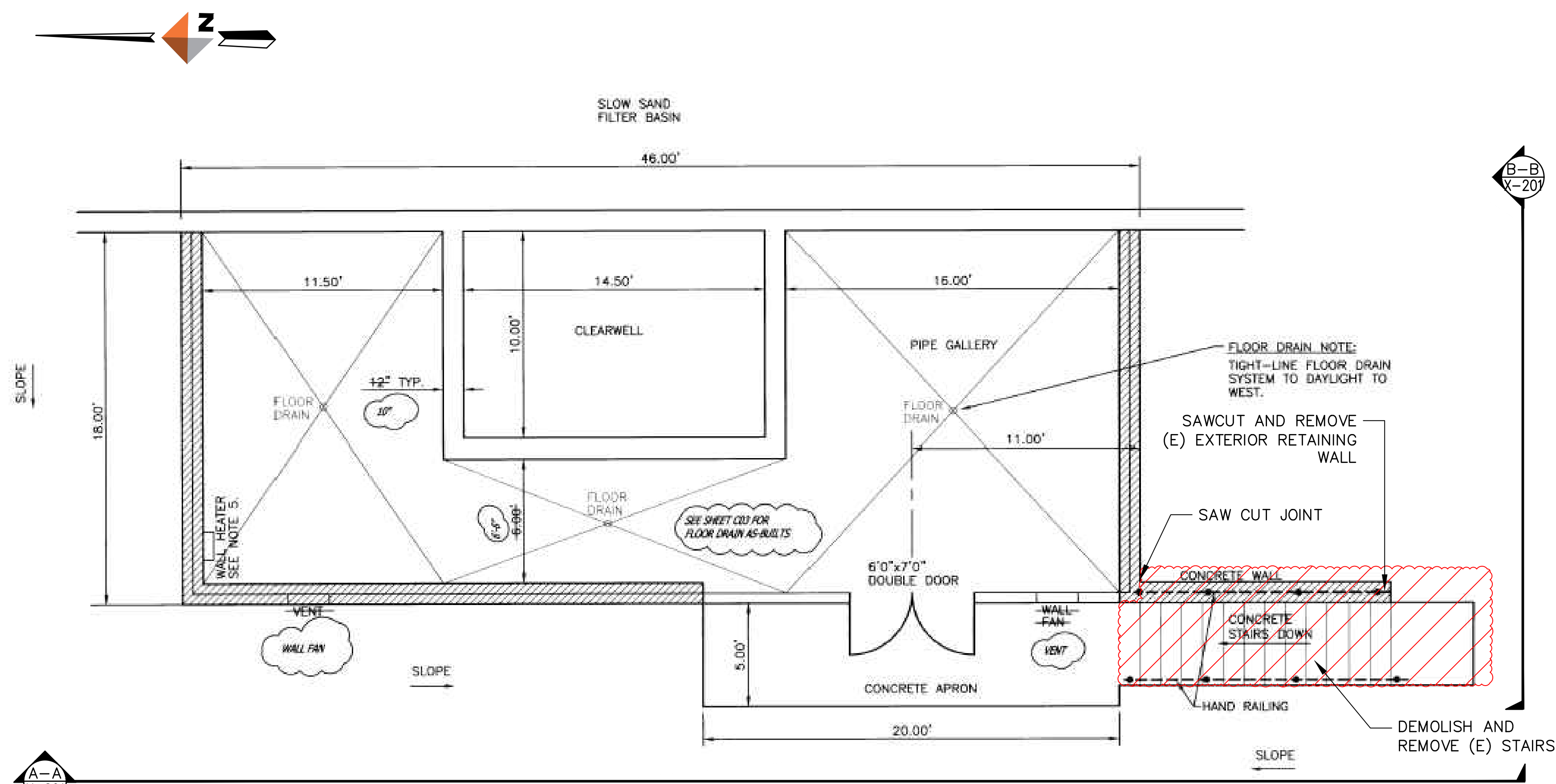
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**PIPE GALLERY DEMO - ISO VIEW
MECHANICAL - DEMOLITION DRAWING**
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

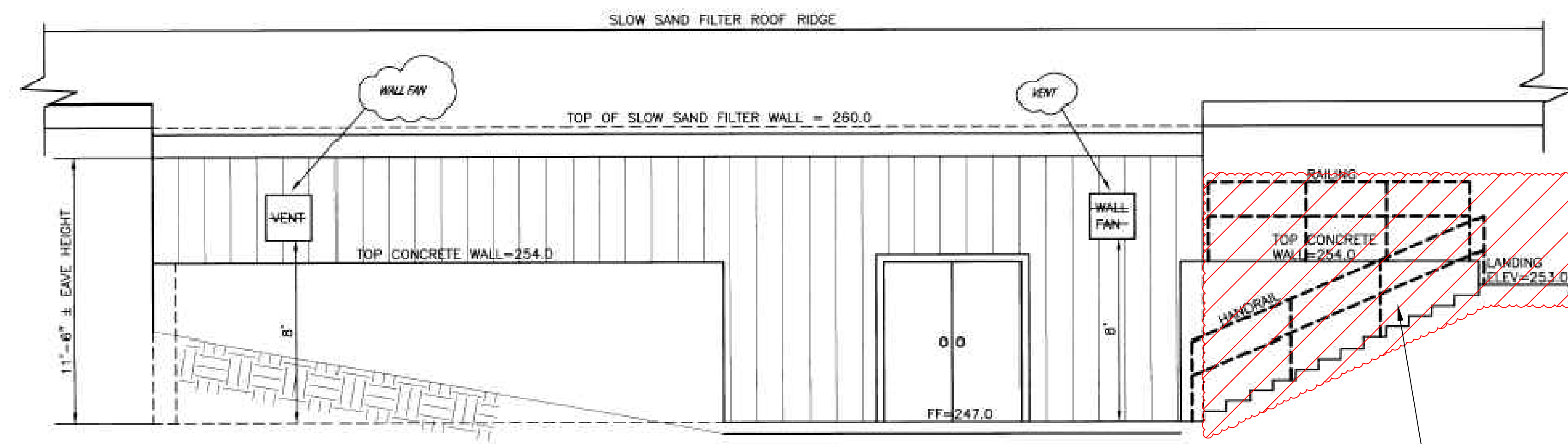
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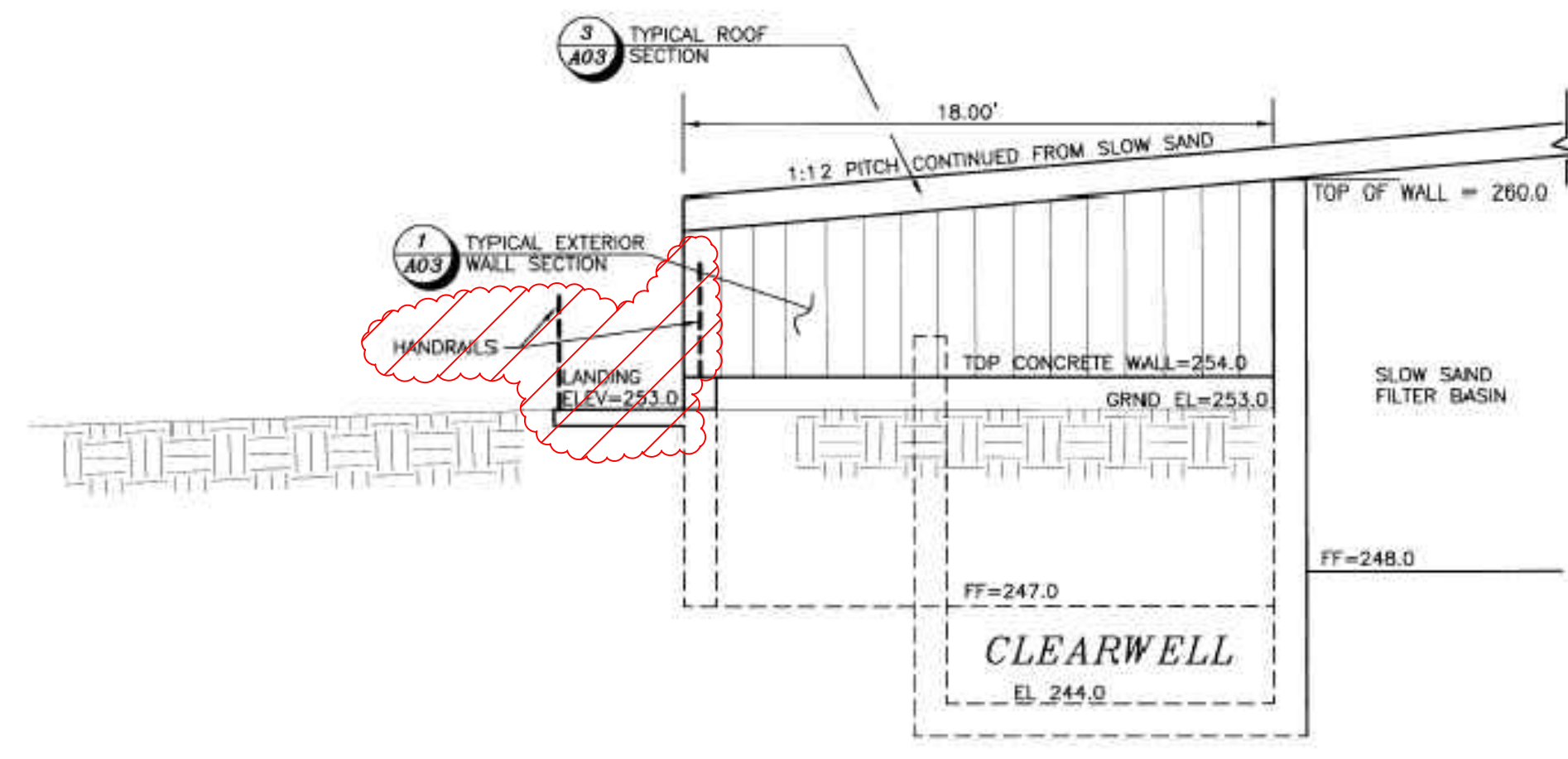
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PROCESS MECHANICAL DEMOLITION - PLAN VIEW - SELECTIVE DEMO PLAN

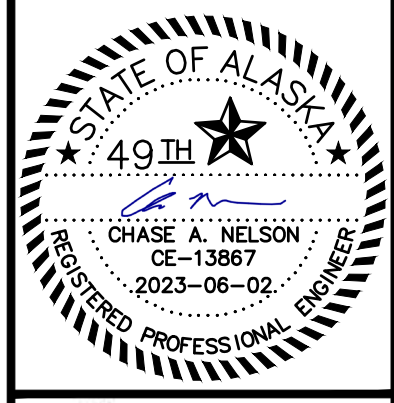


A-A X-201 DEMOLITION SECTION VIEW - WEST SIDE



B-B X-201 DEMOLITION SECTION VIEW - SOUTH SIDE

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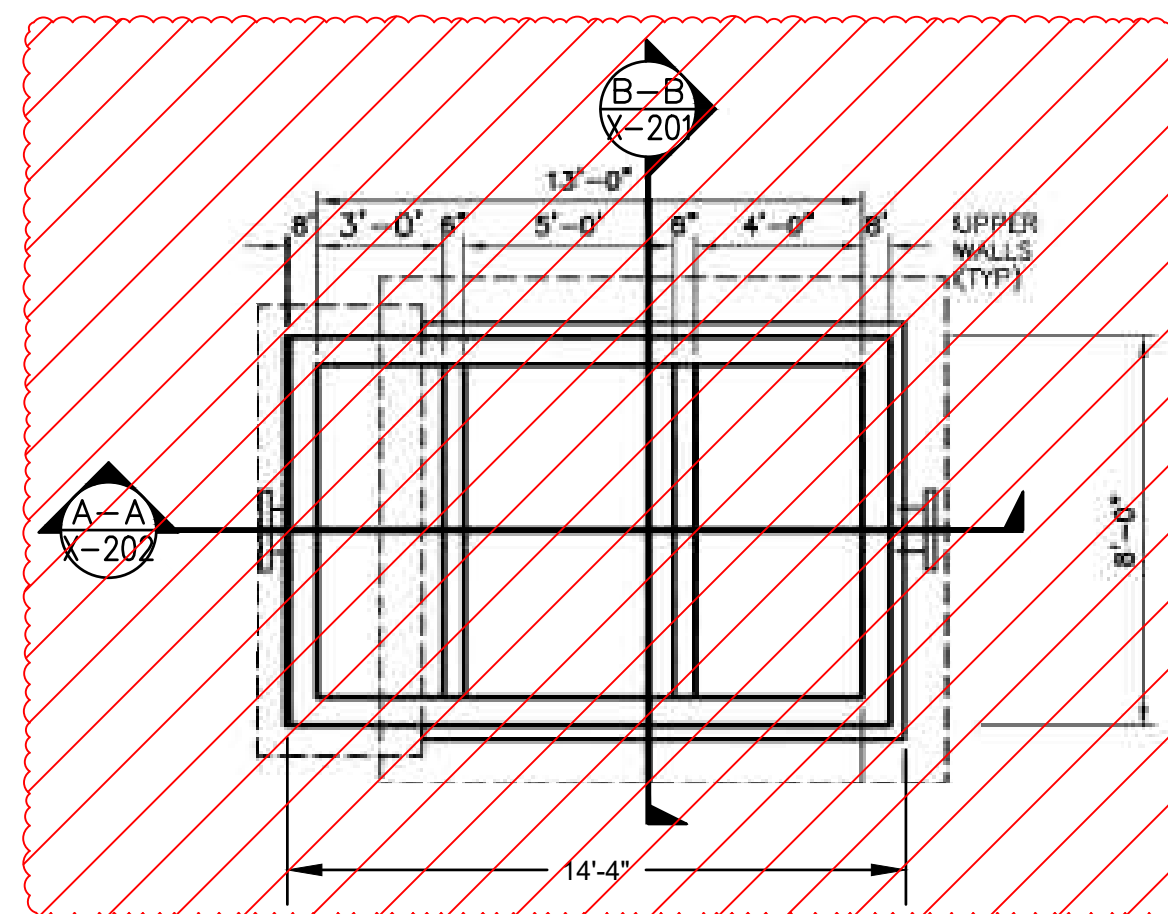
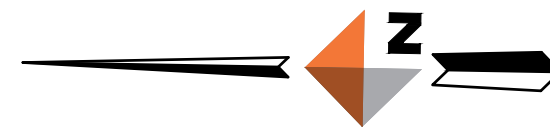
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SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

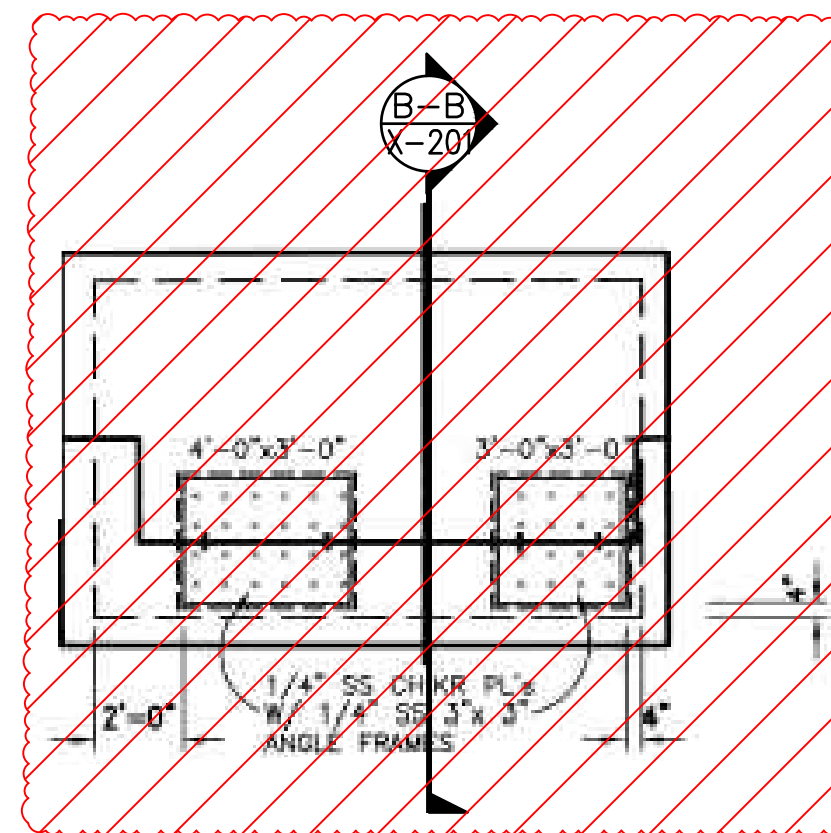
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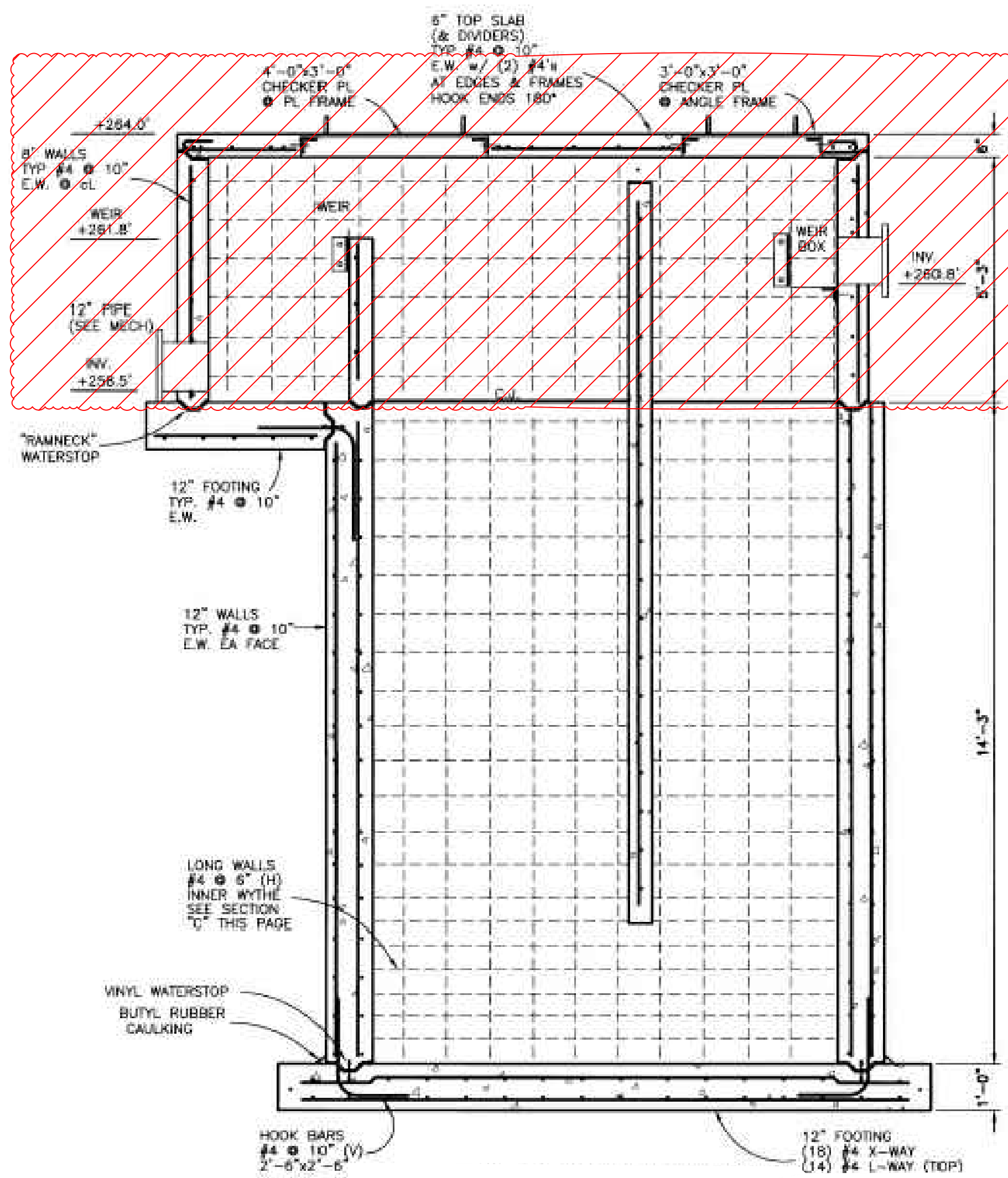
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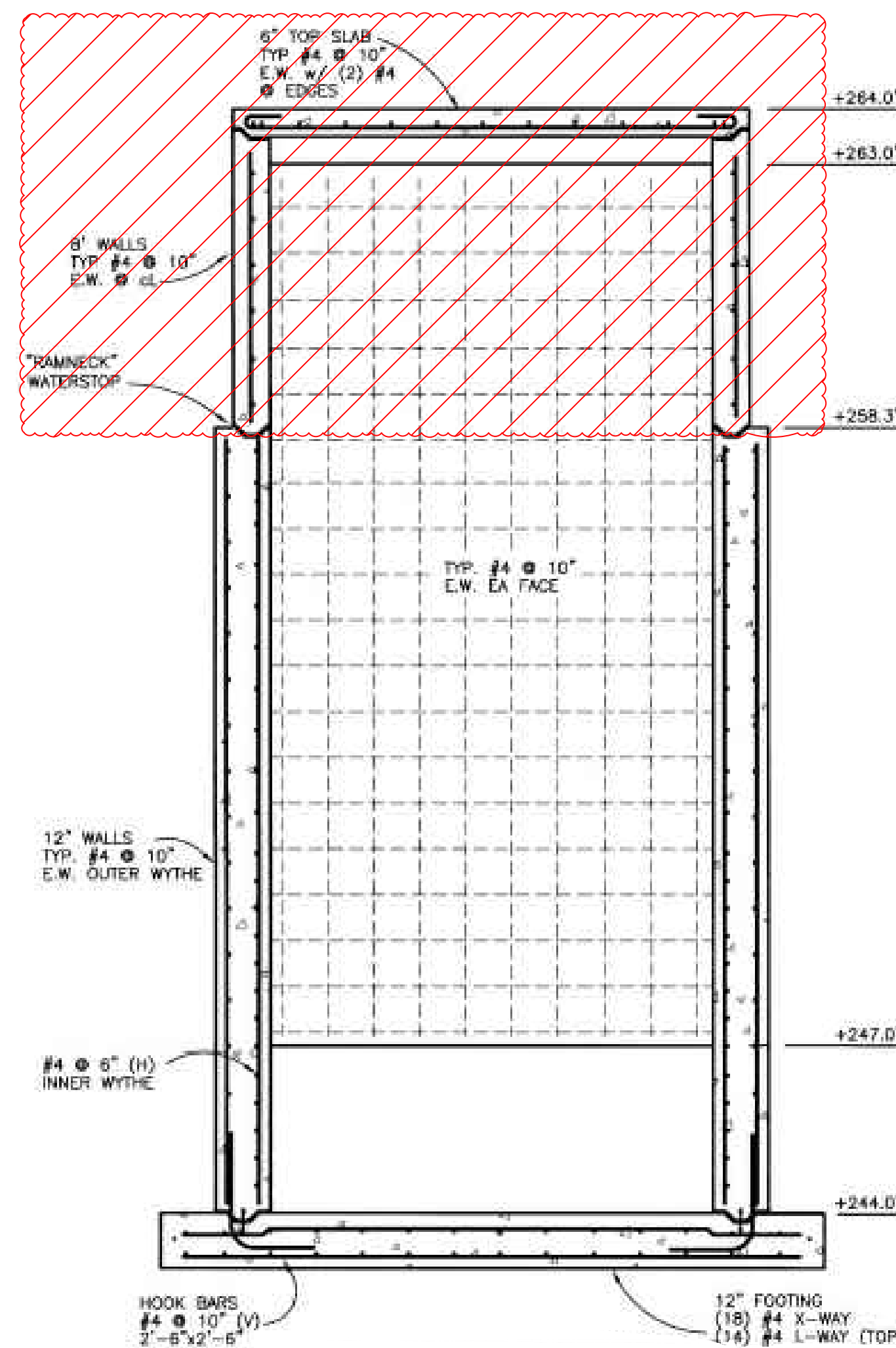
Vault Demolition - Plan View - Selective Demo



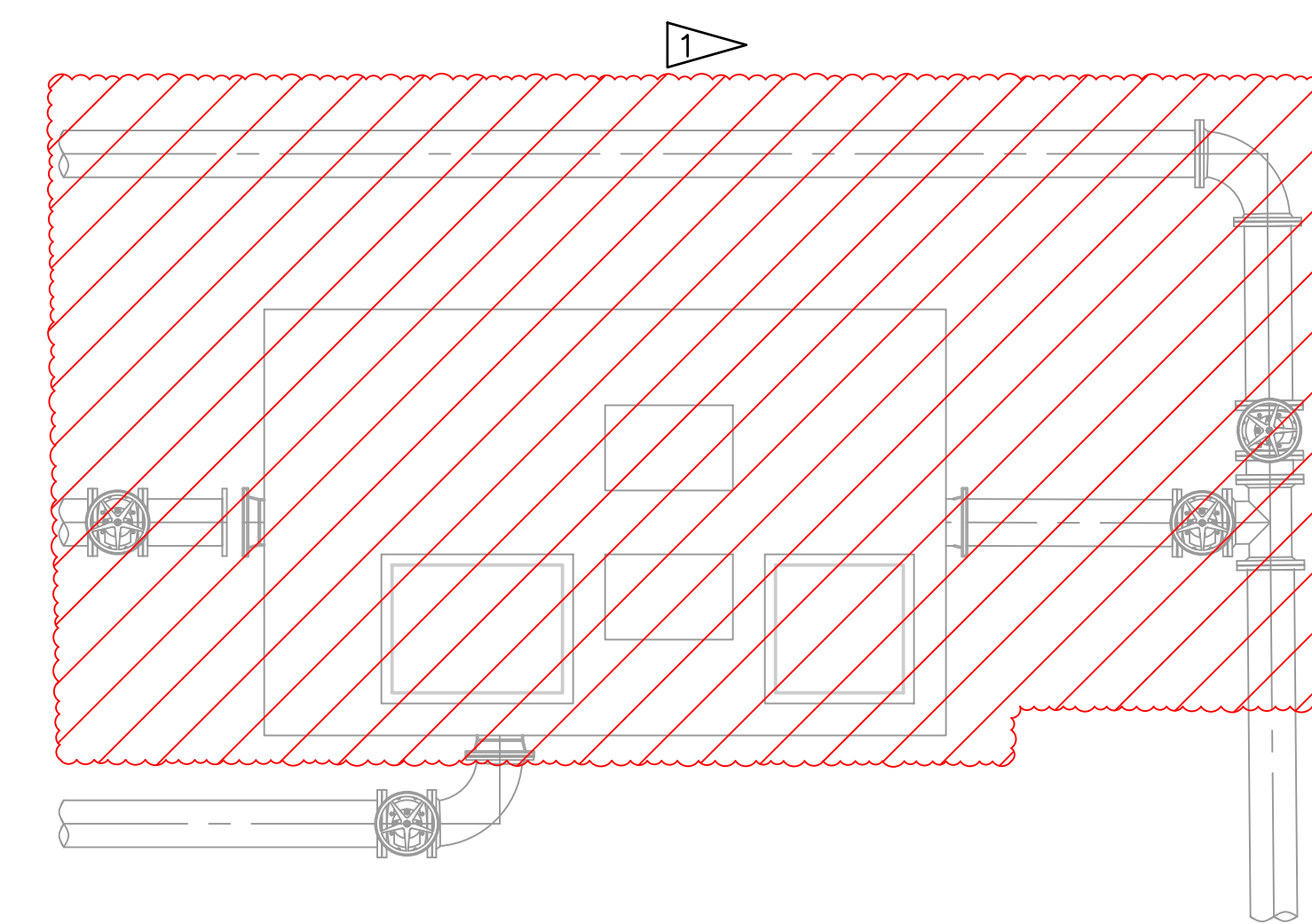
Vault Lid Demolition - Plan View - Selective Demo



A-A Vault Demolition - Section View
NTS



B-B Vault Demolition - Section View
NTS

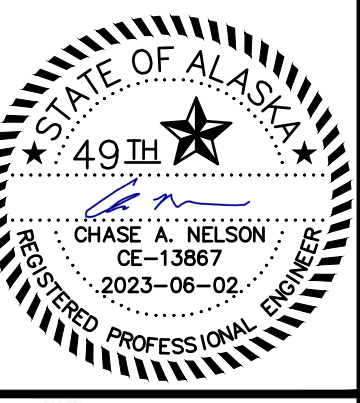


Vault and Piping Demolition - Plan View - Selective Demo

GENERAL NOTES:
1 SEE SPECIFICATION SECTION 01 10 01 FOR CONSTRUCTION DEMOLITION SEQUENCING.

DEMOLITION NOTES:
1 DEMO AS NEEDED TO REMAIN MIN 18" BELOW FINISHED GRADE, ABANDON REMAINING PIPE IN PLACE. OZONE EQUIPMENT CAN NOT BE DEMOLISHED UNTIL NEW TREATMENT PLANT IS ONLINE.

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OZONE CONTACTOR - SELECTIVE DEMO
STRUCTURAL - DEMOLITION DRAWING
SEC. 31; TOWNSHIP 62S; RANGE 84E
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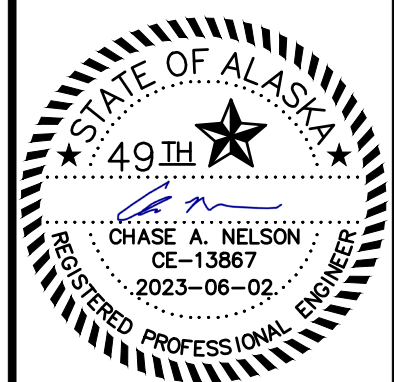
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SITE TOPOGRAPHICAL MAP



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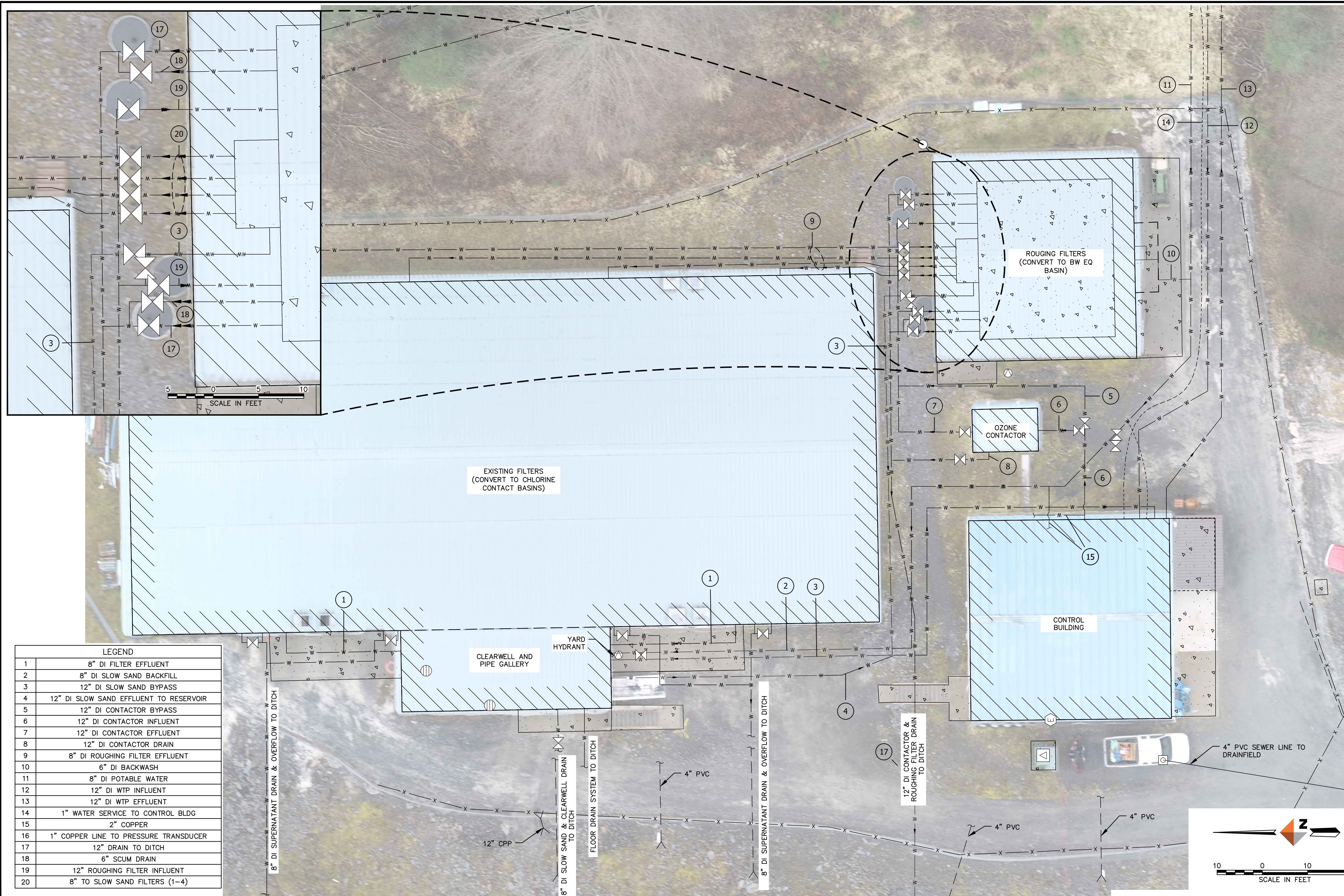
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
EXISTING SITE
TOPOGRAPHICAL MAP
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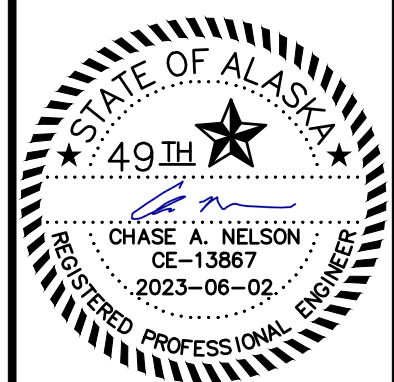


LEGEND	
1	8" DI FILTER EFFLUENT
2	8" DI SLOW SAND BACKFILL
3	12" DI SLOW SAND BYPASS
4	12" DI SLOW SAND EFFLUENT TO RESERVOIR
5	12" DI CONTACTOR BYPASS
6	12" DI CONTACTOR INFLUENT
7	12" DI CONTACTOR EFFLUENT
8	12" DI CONTACTOR DRAIN
9	8" DI ROUGHING FILTER EFFLUENT
10	6" DI BACKWASH
11	8" DI POTABLE WATER
12	12" DI WTP INFLUENT
13	12" DI WTP EFFLUENT
14	1" WATER SERVICE TO CONTROL BLDG
15	2" COPPER
16	1" COPPER LINE TO PRESSURE TRANSDUCER
17	12" DRAIN TO DITCH
18	6" SCUM DRAIN
19	12" ROUGHING FILTER INFLUENT
20	8" TO SLOW SAND FILTERS (1-4)

EXISTING SITE PLAN

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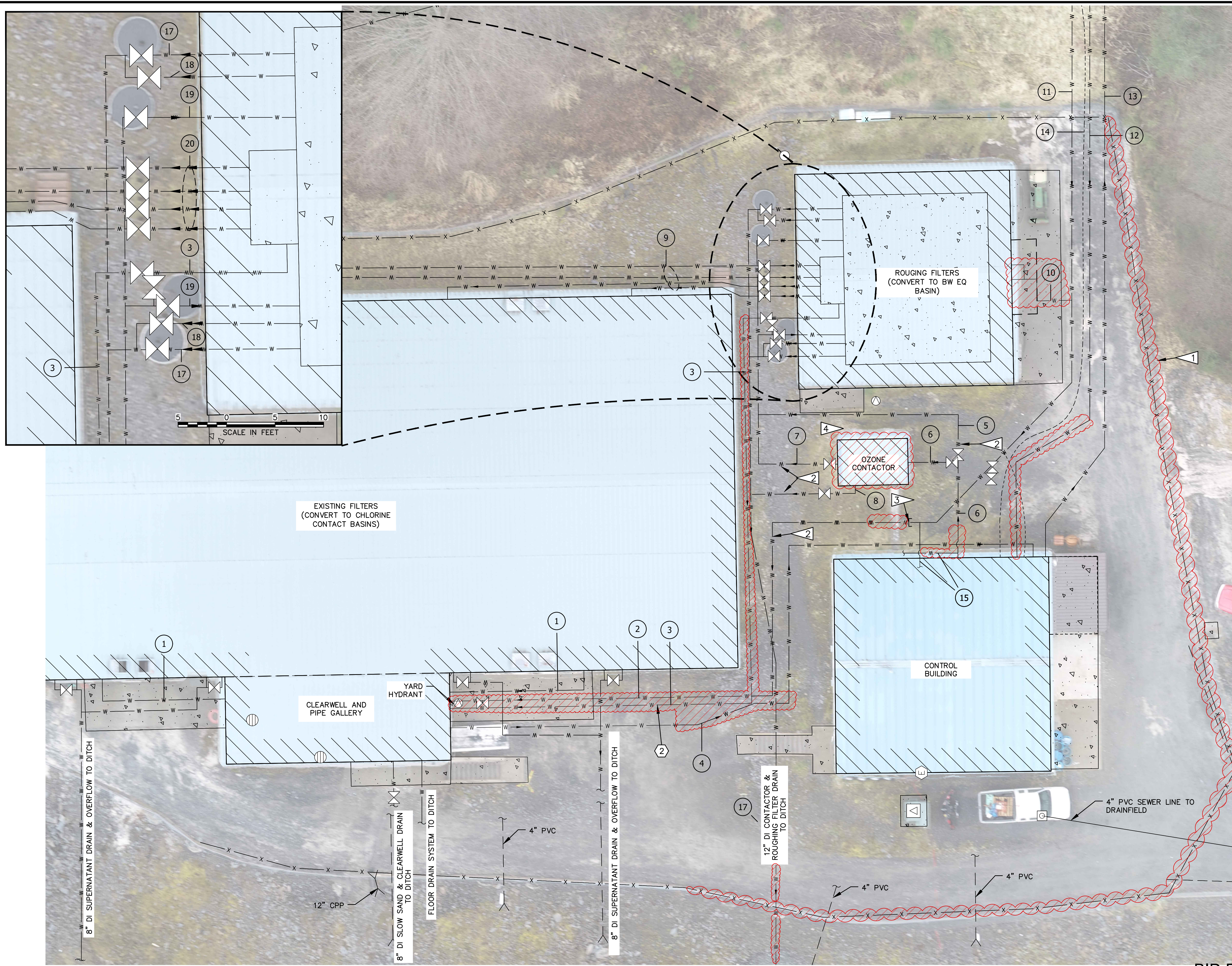
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
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EXISTING YARD PIPING PLAN
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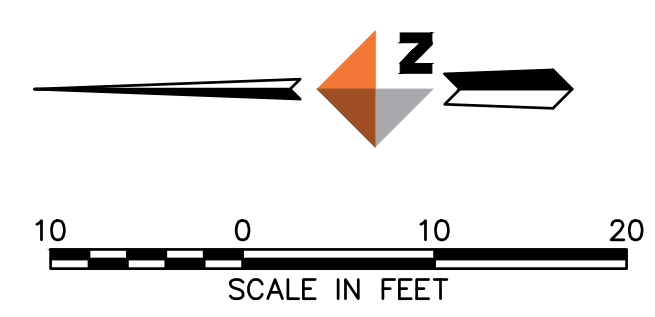
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- CONSTRUCTION NOTES:**
- 1 NOT USED
 - 2 ABANDON IN PLACE.
 - 3 CAP 8" POTABLE WATER LINE DOWNSTREAM OF 2" COPPER CONNECTION.
 - 4 DEMO ABOVE GRADE AFTER NEW WTP IS IN OPERATION.

- NOTES:**
- 1. REFER TO SEC 01 10 01 SEQUENCING SPECIFICATIONS FOR SEQUENCE OF DEMOLITION

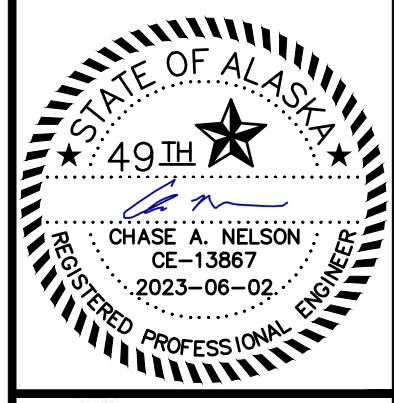
LEGEND	
1	8" DI FILTER EFFLUENT
2	8" DI SLOW SAND BACKFILL
3	12" DI SLOW SAND BYPASS
4	12" DI SLOW SAND EFFLUENT TO RESERVOIR
5	12" DI CONTACTOR BYPASS
6	12" DI CONTACTOR INFLUENT
7	12" DI CONTACTOR EFFLUENT
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16	1" COPPER LINE TO PRESSURE TRANSDUCER
17	12" DRAIN TO DITCH
18	6" SCUM DRAIN
19	12" ROUGHING FILTER INFLUENT
20	8" TO SLOW SAND FILTERS (1-4)



EXISTING SITE PLAN - DEMOLITION

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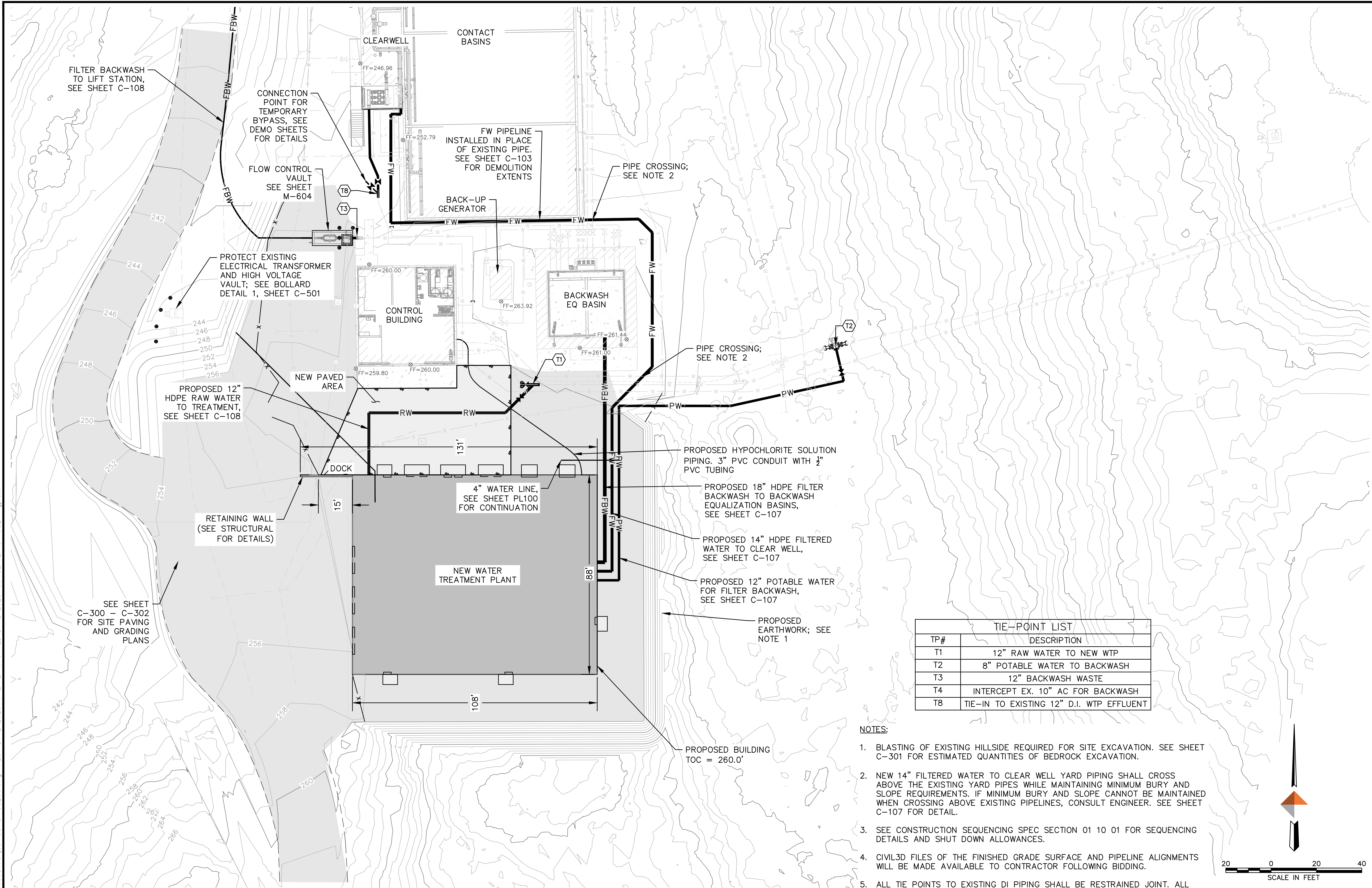
YARD PIPING DEMO PLAN

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
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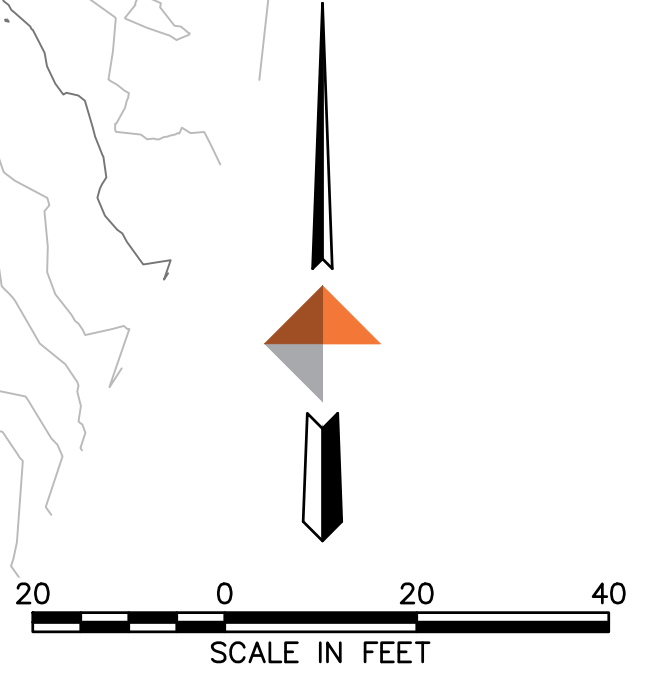
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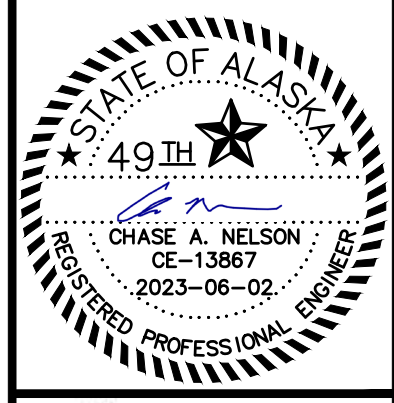
TIE-POINT LIST	
TP#	DESCRIPTION
T1	12" RAW WATER TO NEW WTP
T2	8" POTABLE WATER TO BACKWASH
T3	12" BACKWASH WASTE
T4	INTERCEPT EX. 10" AC FOR BACKWASH
T8	TIE-IN TO EXISTING 12" D.I. WTP EFFLUENT

- NOTES:**
- BLASTING OF EXISTING HILLSIDE REQUIRED FOR SITE EXCAVATION. SEE SHEET C-301 FOR ESTIMATED QUANTITIES OF BEDROCK EXCAVATION.
 - NEW 14" FILTERED WATER TO CLEAR WELL YARD PIPING SHALL CROSS ABOVE THE EXISTING YARD PIPES WHILE MAINTAINING MINIMUM BURY AND SLOPE REQUIREMENTS. IF MINIMUM BURY AND SLOPE CANNOT BE MAINTAINED WHEN CROSSING ABOVE EXISTING PIPELINES, CONSULT ENGINEER. SEE SHEET C-107 FOR DETAIL.
 - SEE CONSTRUCTION SEQUENCING SPEC SECTION 01 10 01 FOR SEQUENCING DETAILS AND SHUT DOWN ALLOWANCES.
 - CIVIL3D FILES OF THE FINISHED GRADE SURFACE AND PIPELINE ALIGNMENTS WILL BE MADE AVAILABLE TO CONTRACTOR FOLLOWING BIDDING.
 - ALL TIE POINTS TO EXISTING DI PIPING SHALL BE RESTRAINED JOINT. ALL HDPE TO HDPE JOINTS SHALL BE BUTT FUSED.



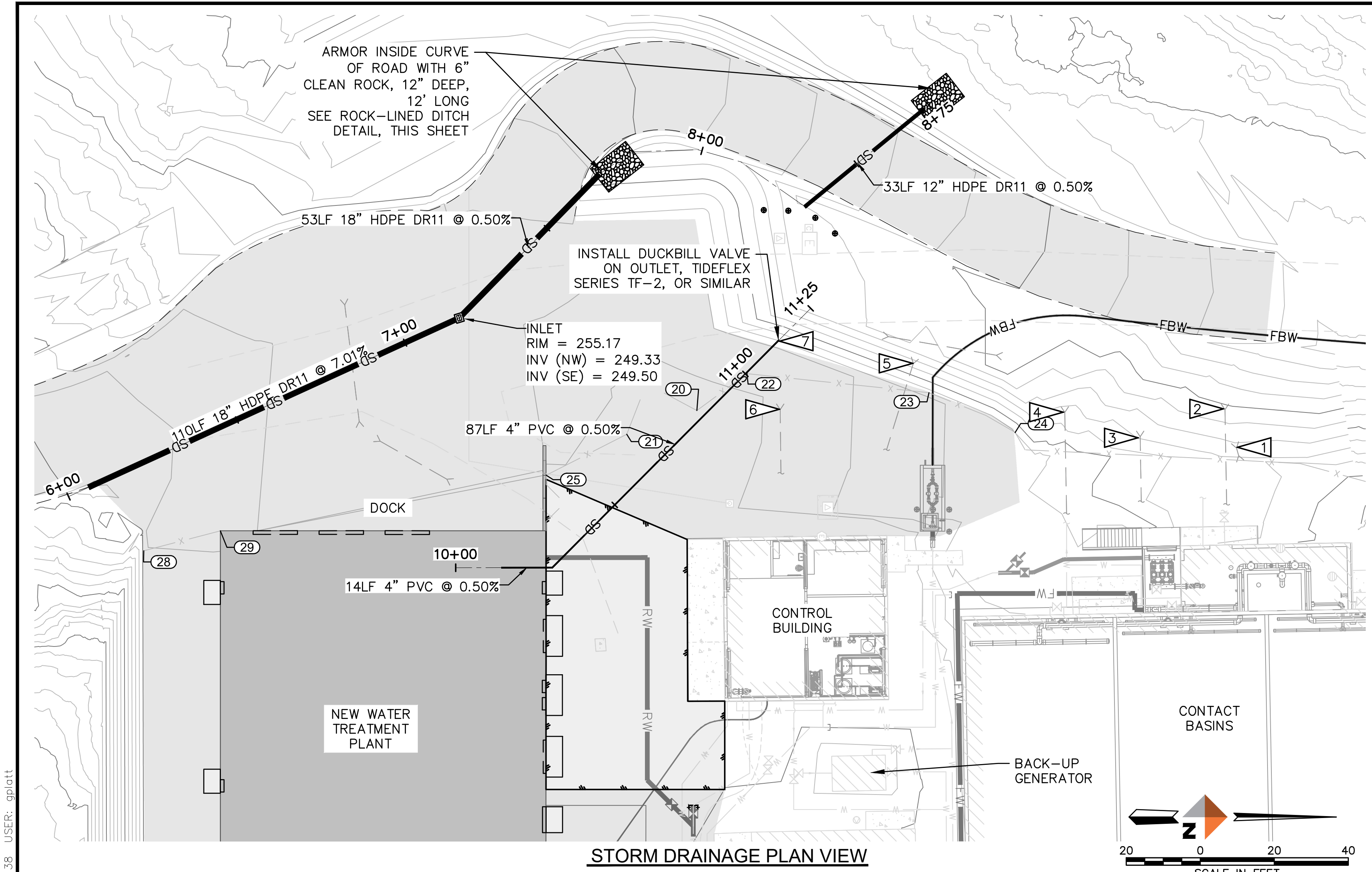
PROPOSED PIPING SITE PLAN

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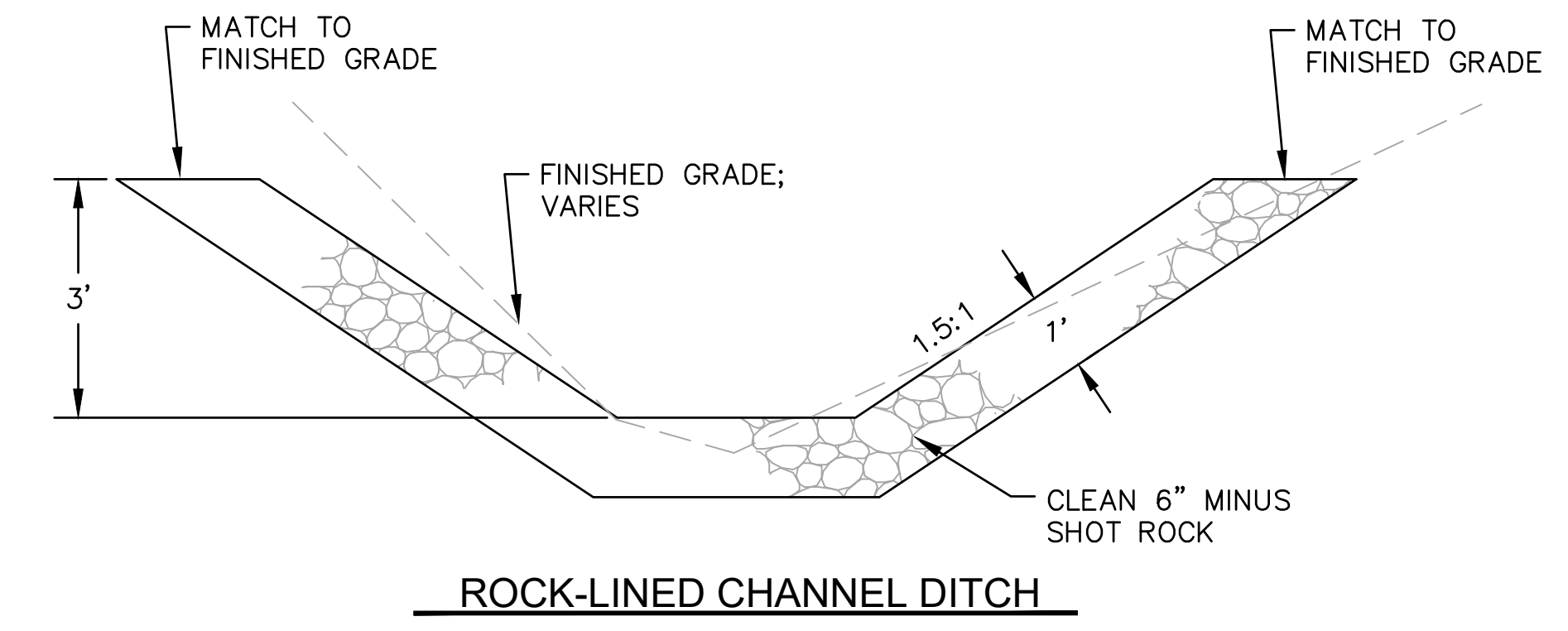
STORM DRAINAGE PLAN VIEW

NOTES:

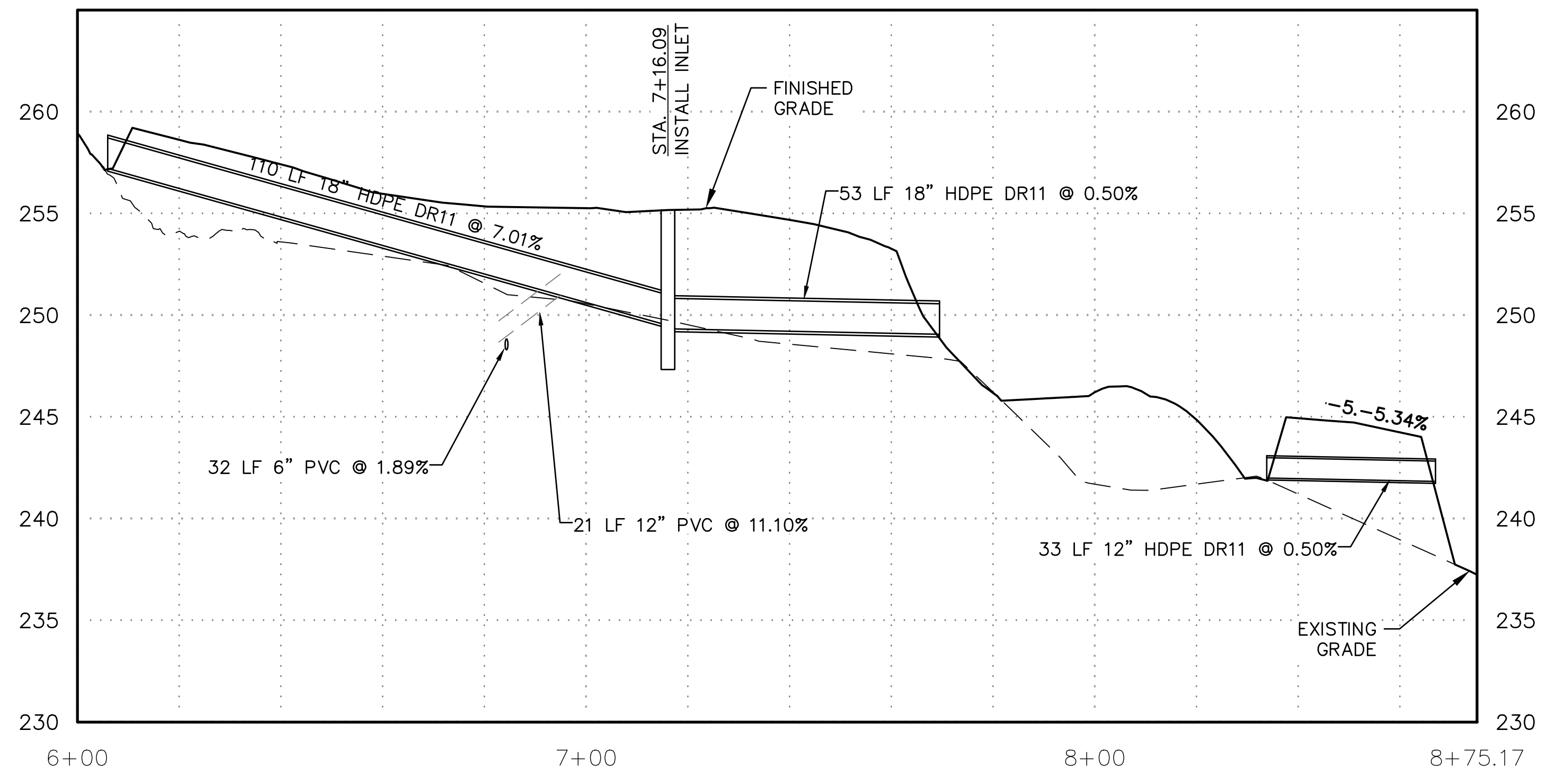
1. PIPE LENGTHS SHOWN ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
2. PROTECT EXISTING DRAIN PIPE IN PLACE. ADJUST PIPE LENGTHS AS NECESSARY TO DAYLIGHT FOLLOWING SITE GRADING.

EXISTING DRAIN PIPE DAYLIGHT ELEVATIONS

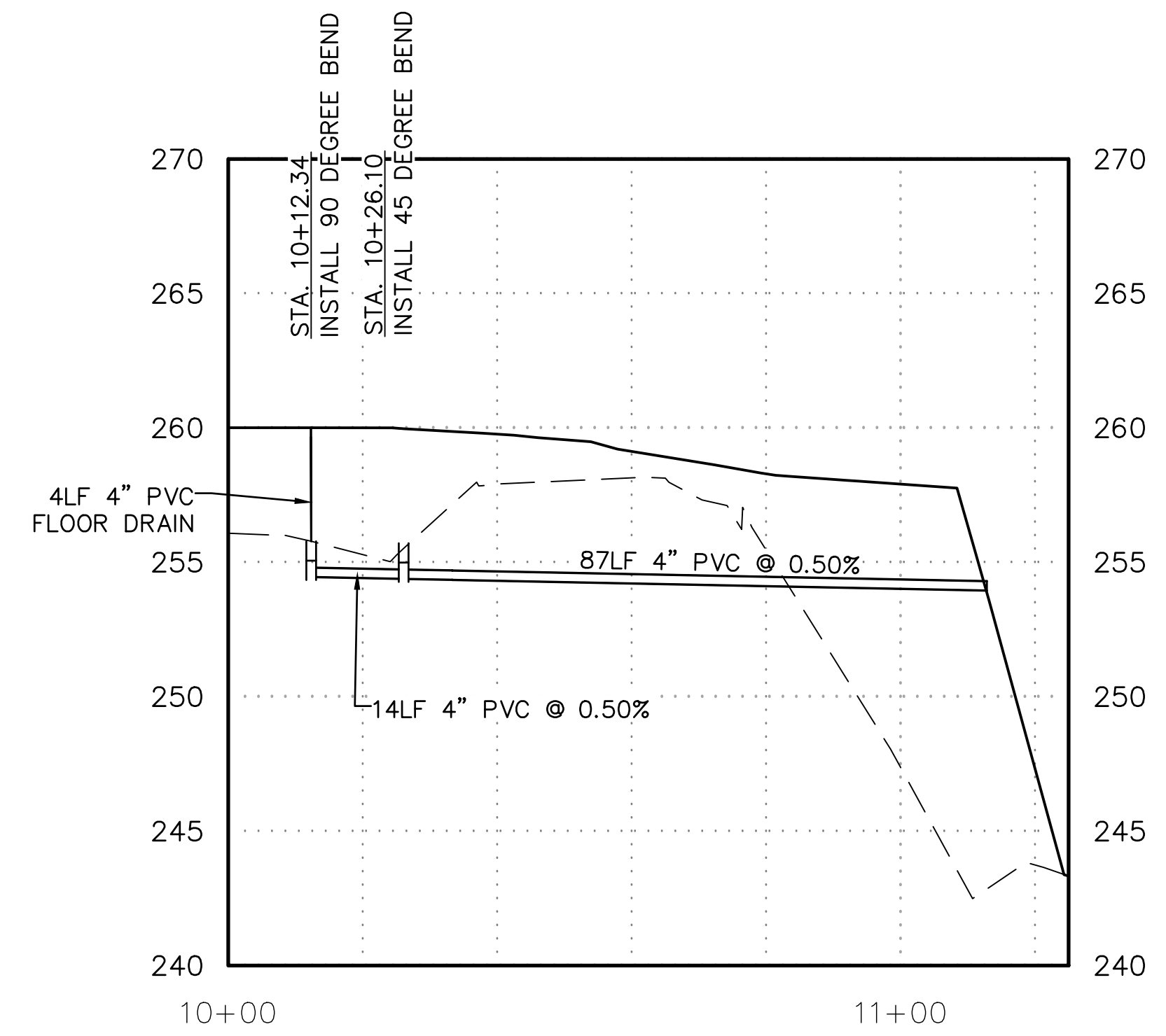
1	12" CPP	245.2'
2	8" DIP	240.5
3	4" PVC	245.7
4	8" DIP	244.0'
5	4" PVC	244.6'
6	4" PVC	253.6'
7	4" PVC	DAYLIGHT TO DITCH



ROCK-LINED CHANNEL DITCH

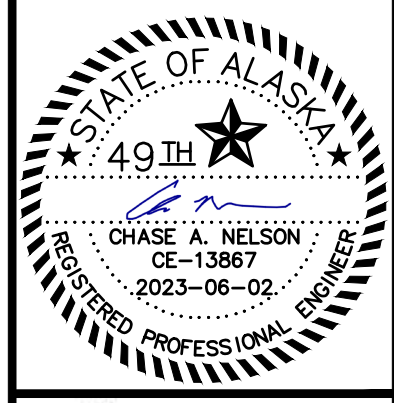


STORM DRAINAGE PROFILE VIEW



FLOOR DRAIN PIPING PROFILE VIEW

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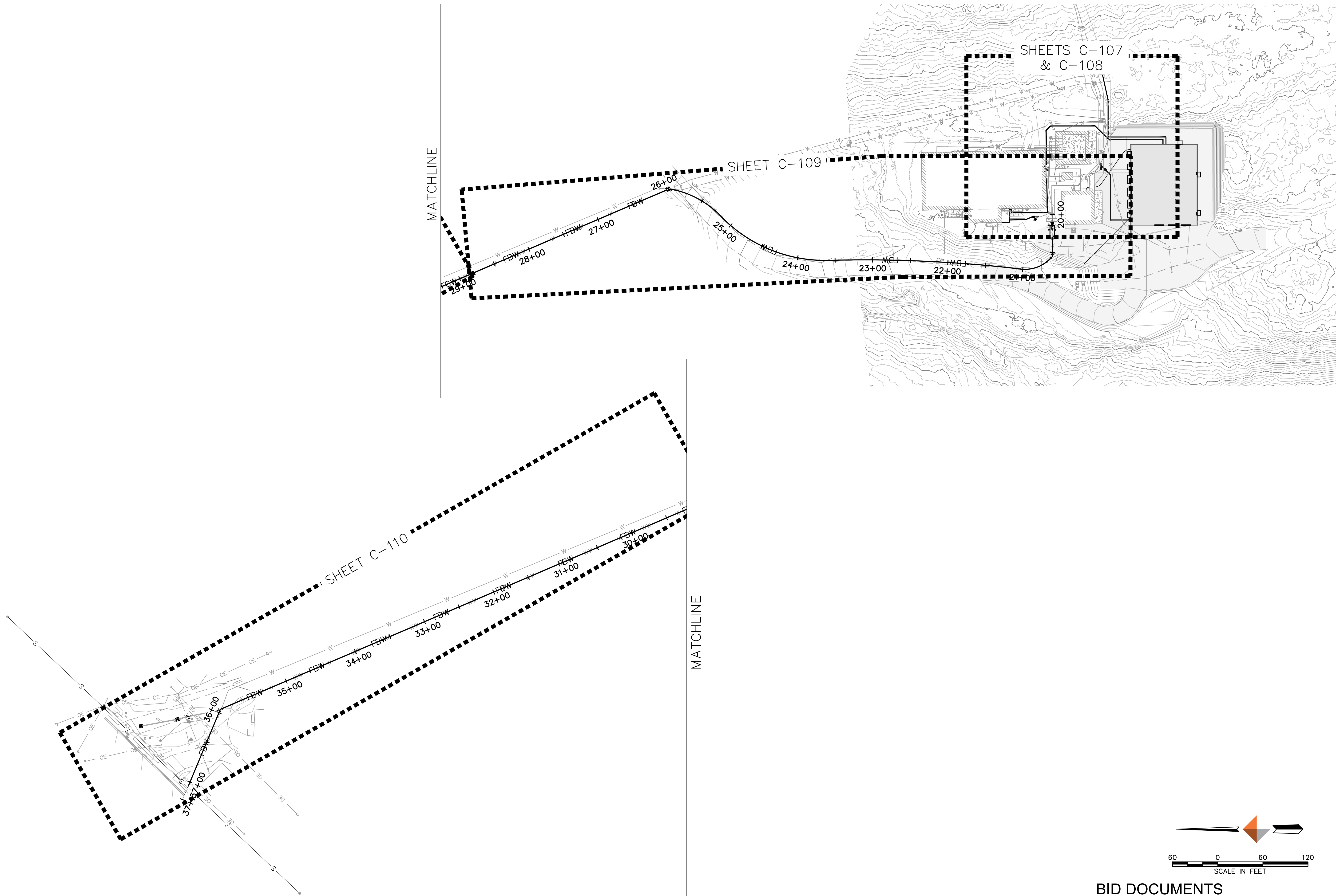
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
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STORM PLAN & PROFILE
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

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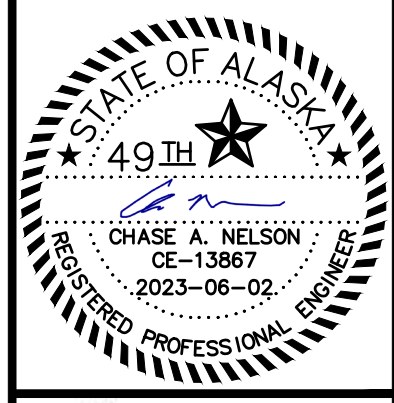
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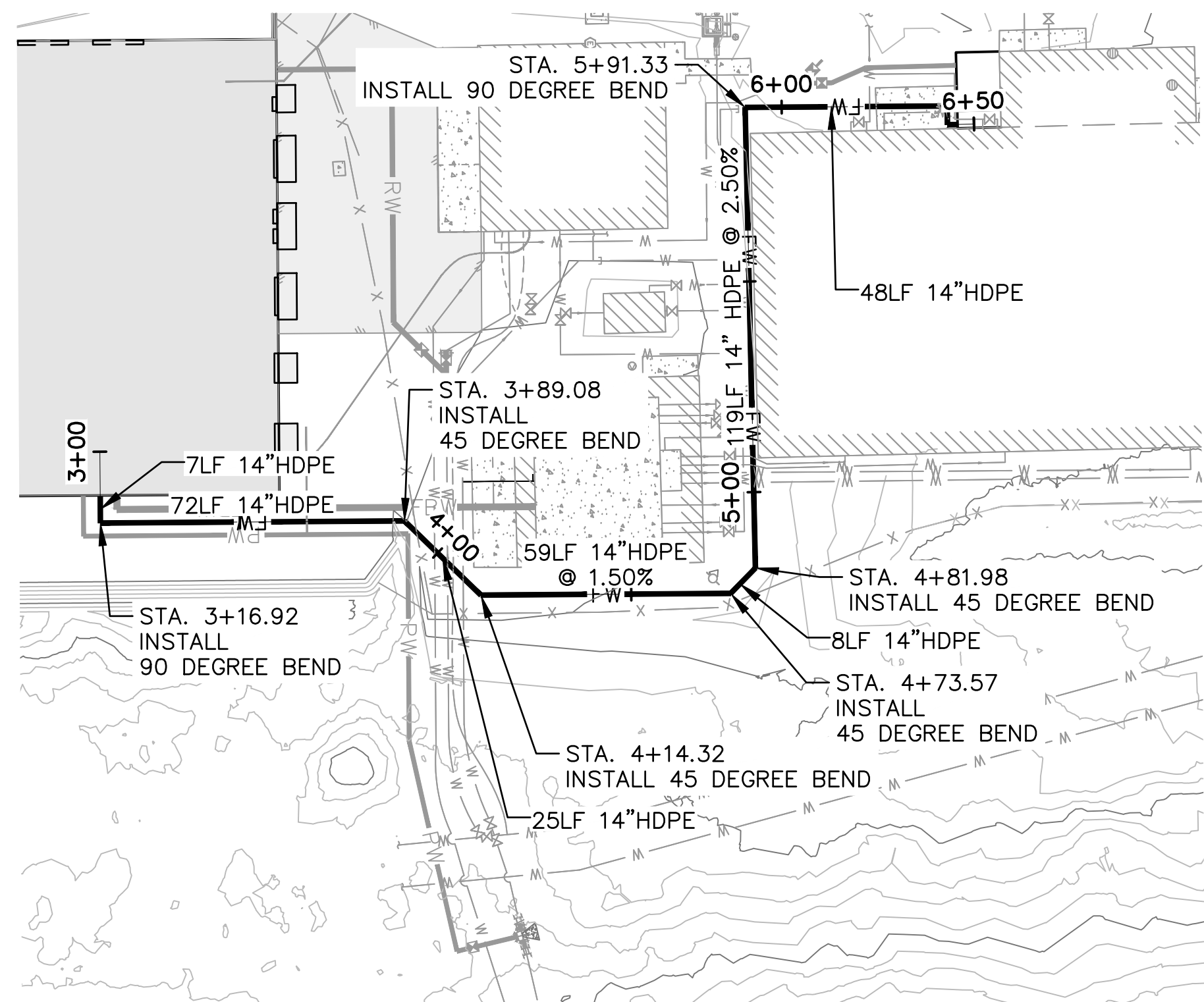
YARD PIPING KEY MAP

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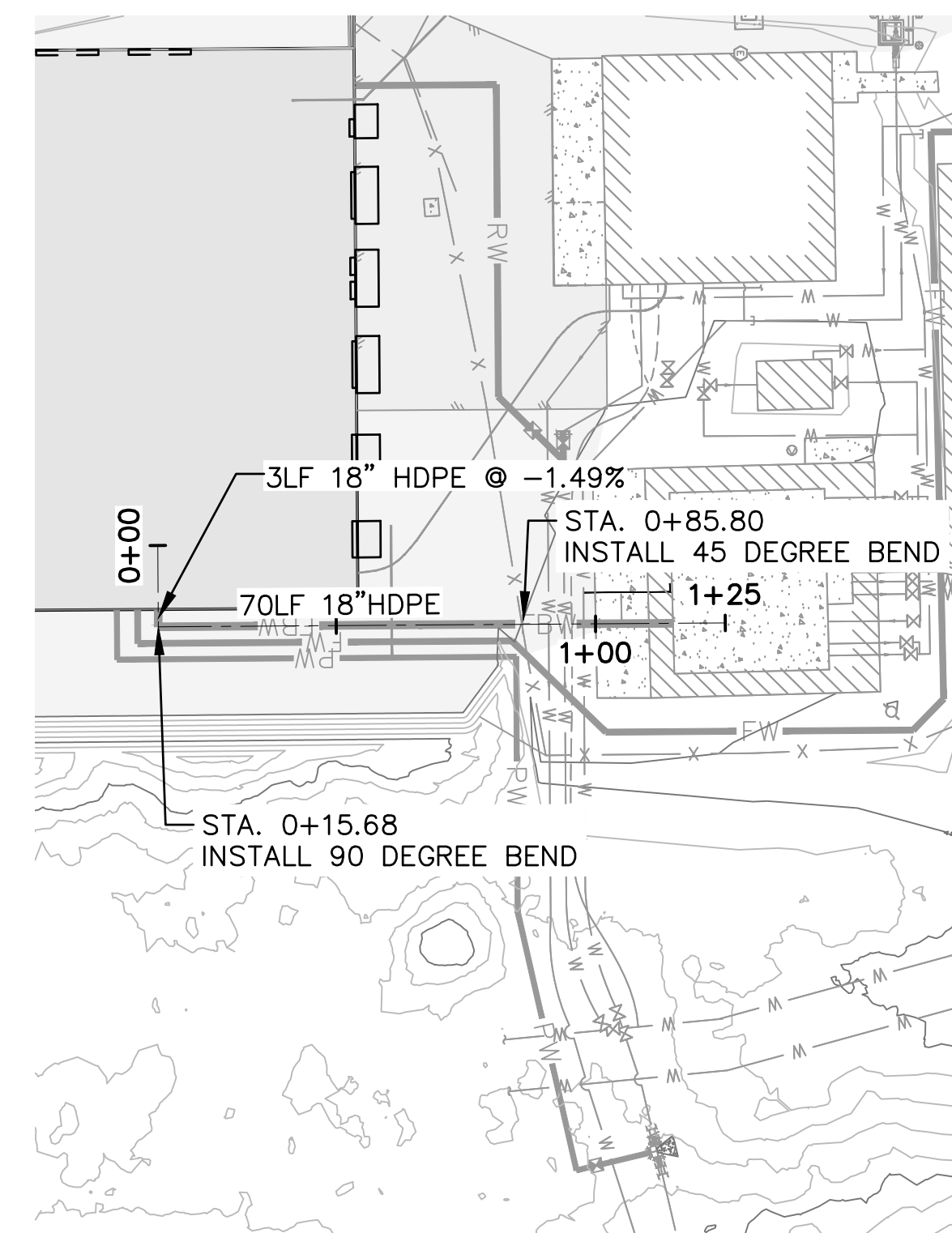
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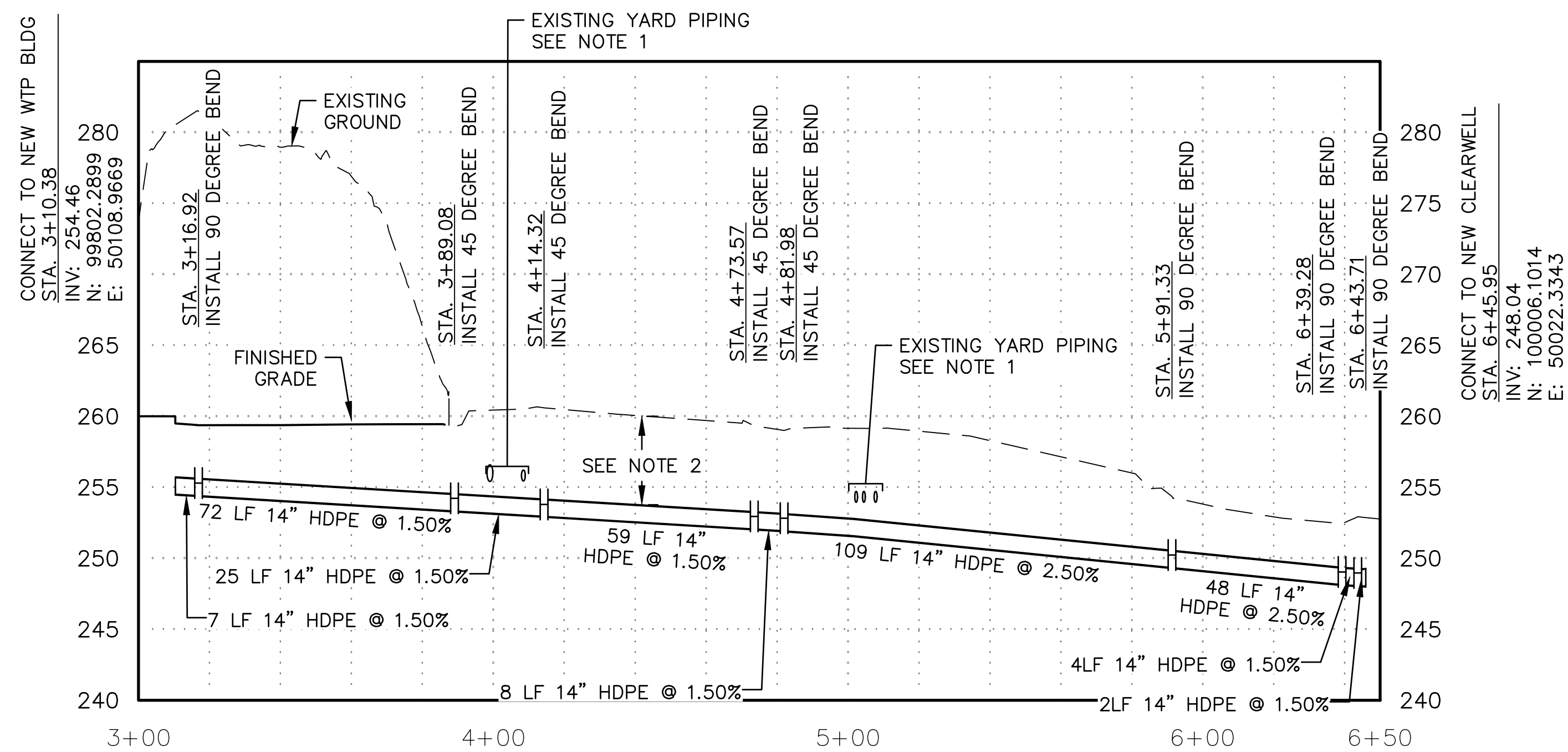
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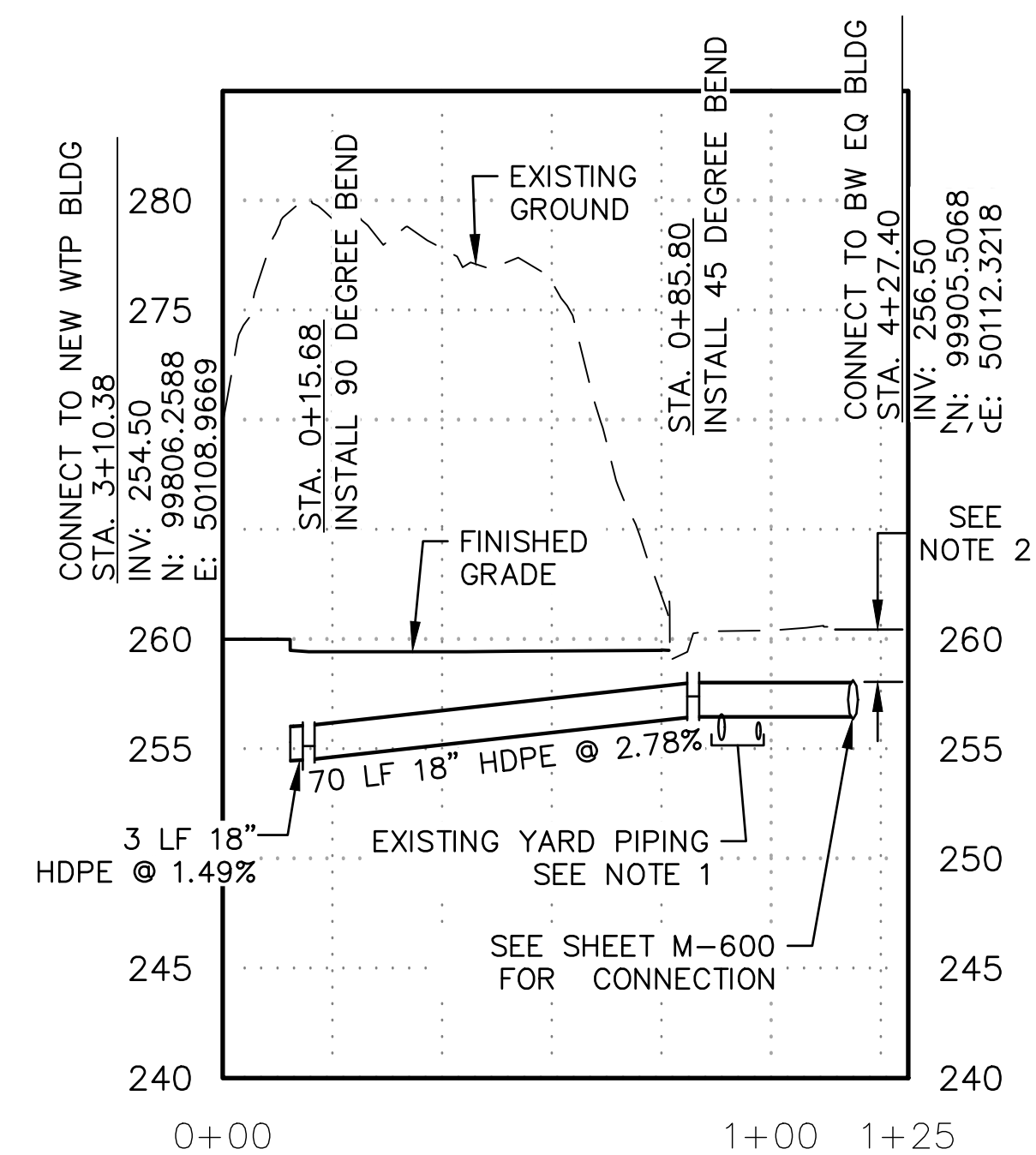
FILTERED WATER YARD PIPING PLAN VIEW



FILTER BACKWASH YARD PIPING PLAN VIEW



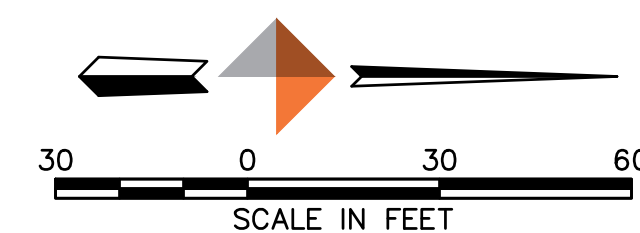
FILTERED WATER YARD PIPING PROFILE VIEW



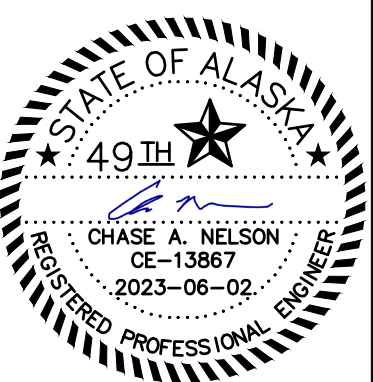
FILTER BACKWASH YARD PIPING PROFILE VIEW

NOTES:

1. INVERT ELEVATIONS OF EXISTING YARD PIPING ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS OF EXISTING YARD PIPING PRIOR TO CONSTRUCTION OF THE NEW WATER TREATMENT PLANT.
2. MAINTAIN MINIMUM 4' BURY DEPTH OF ALL YARD PIPING. INSULATION BOARD SHALL BE INSTALLED FOR ALL SECTION OF PIPE WHERE BURY DEPTH DOES NOT MEET MINIMUM.



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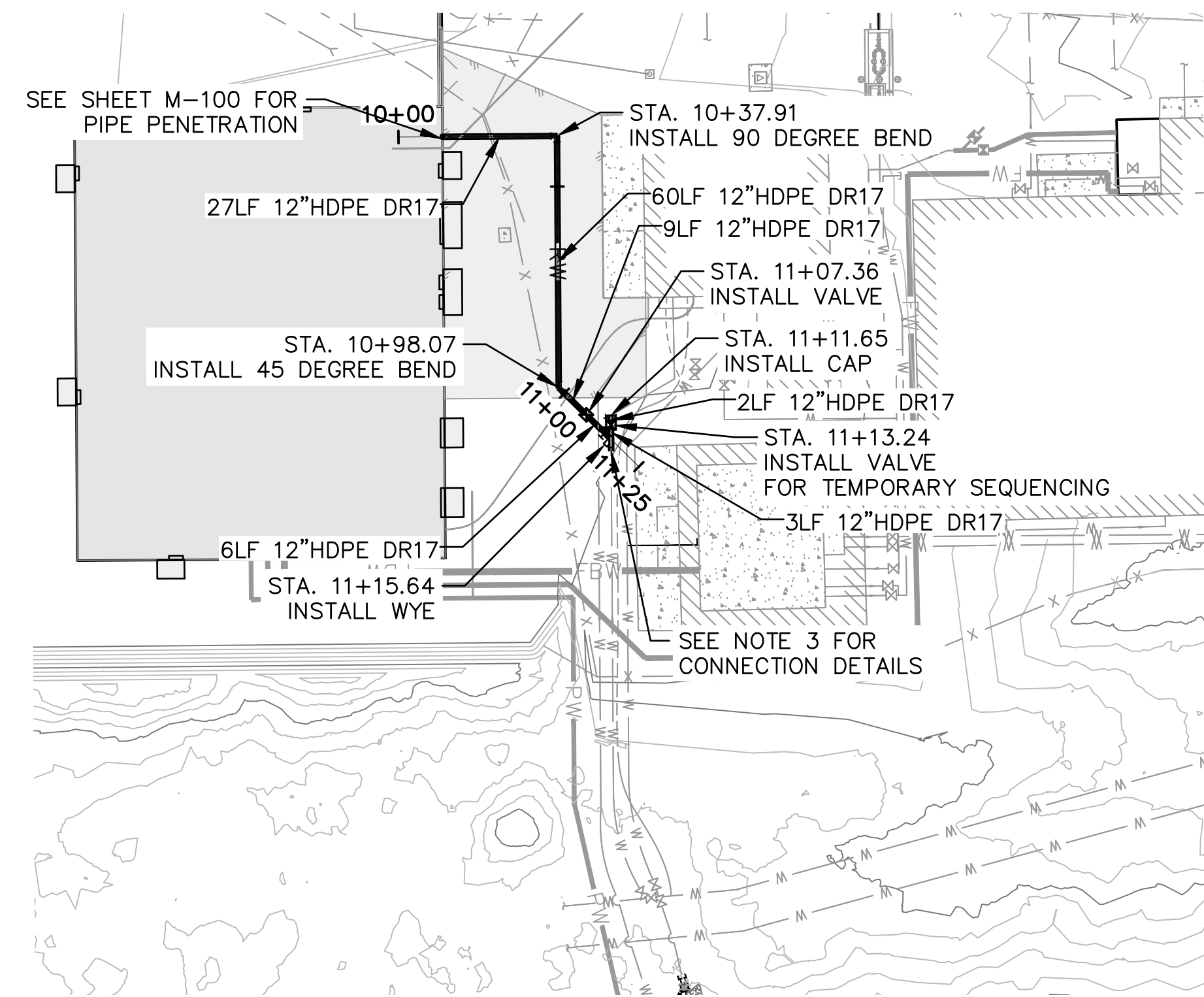
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WRANGELL, ALASKA
YARD PIPING PLAN & PROFILE
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

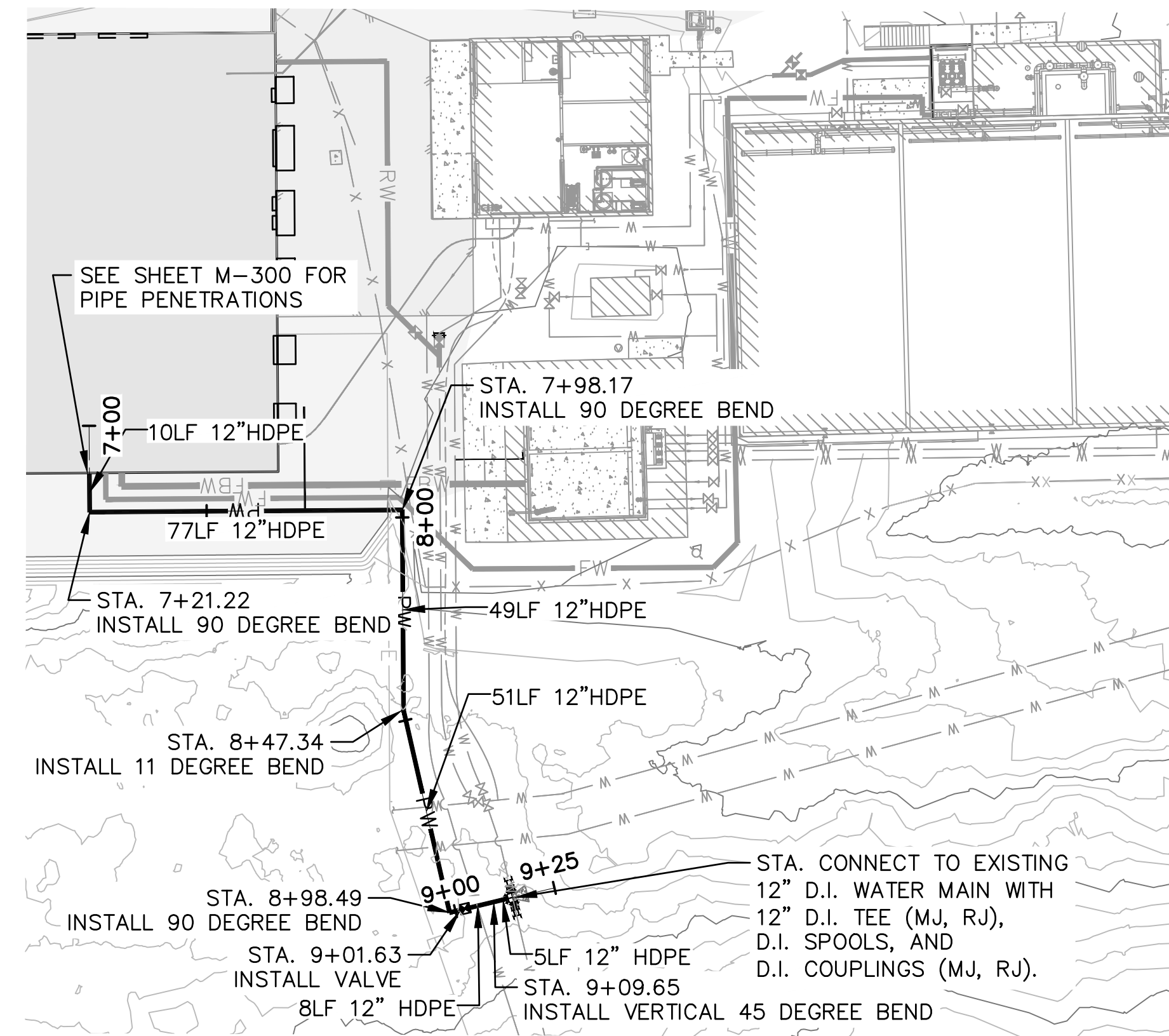
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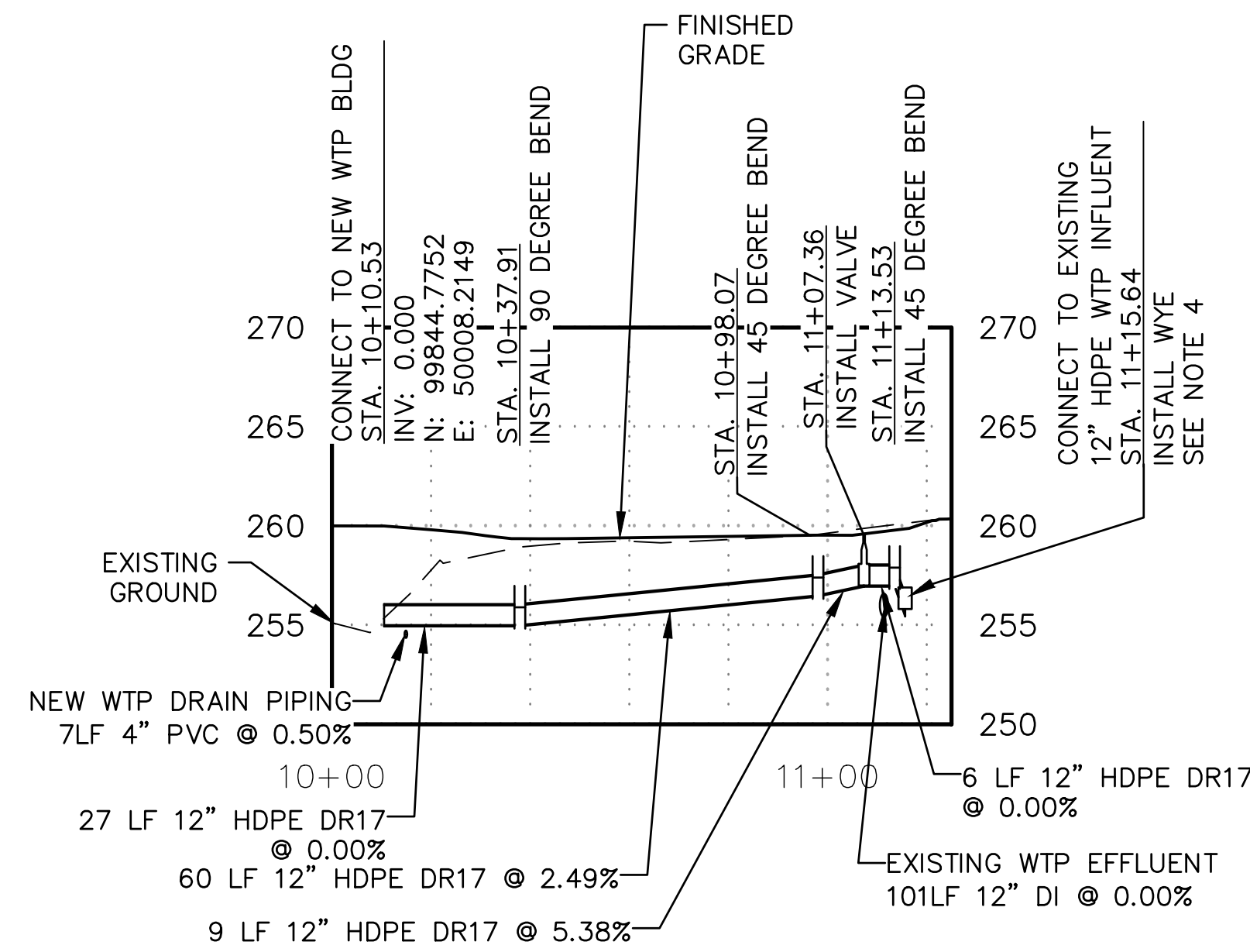
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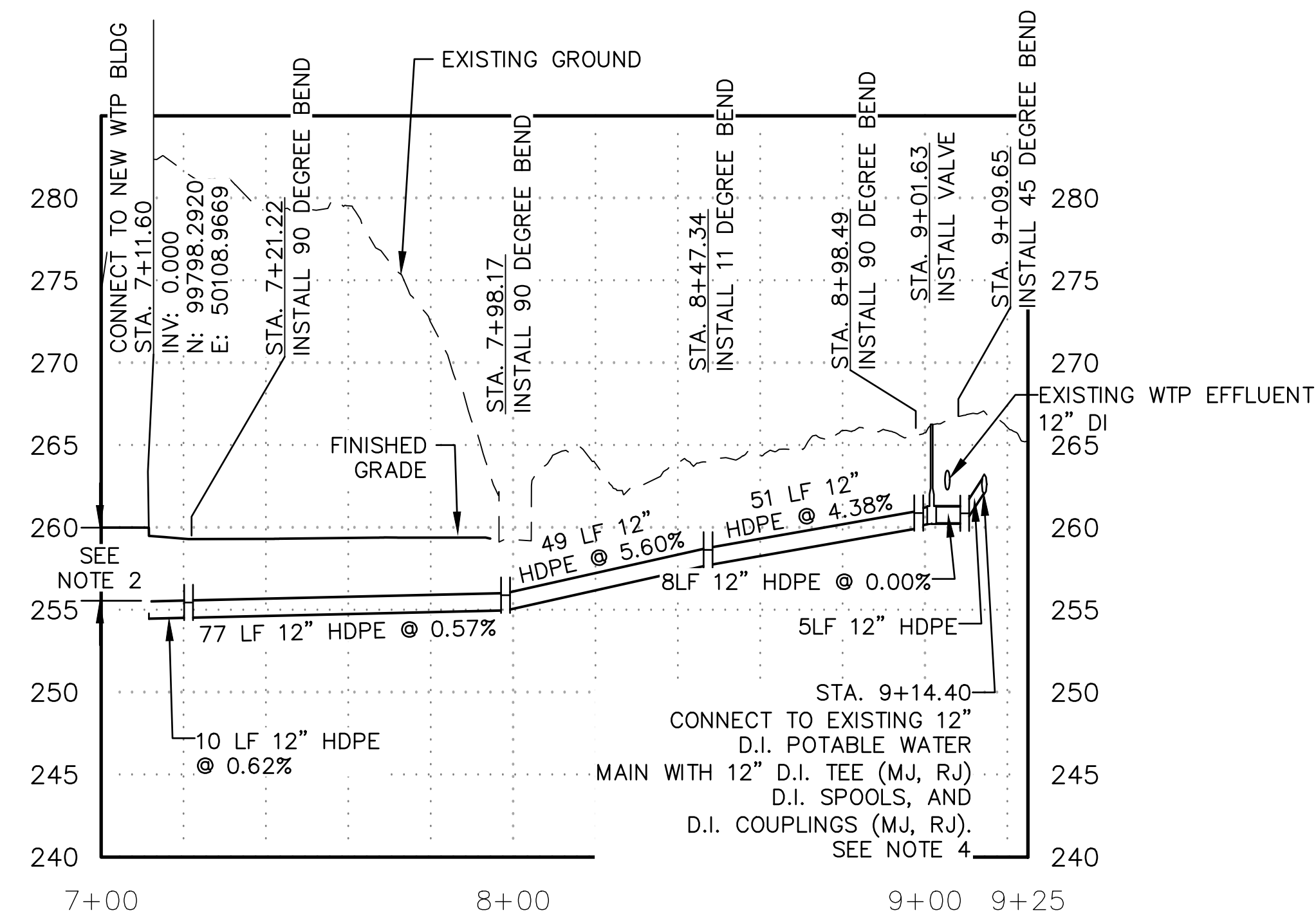
RAW WATER YARD PIPING PLAN VIEW



POTABLE WATER YARD PIPING PLAN VIEW



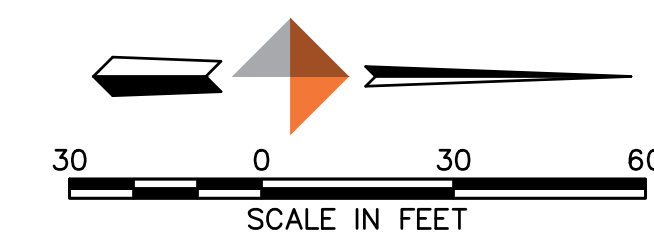
RAW WATER YARD PIPING PROFILE VIEW



POTABLE WATER YARD PIPING PROFILE VIEW

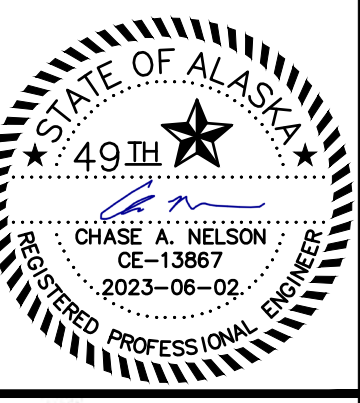
NOTES:

1. INVERT ELEVATIONS OF EXISTING YARD PIPING ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS OF EXISTING YARD PIPING PRIOR TO CONSTRUCTION OF THE NEW WATER TREATMENT PLANT.
2. MAINTAIN MINIMUM 4' BURY DEPTH OF ALL YARD PIPING. INSULATION BOARD SHALL BE INSTALLED FOR ALL SECTION OF PIPE WHERE BURY DEPTH DOES NOT MEET MINIMUM.
3. ISOLATE, CUT, AND DRAIN EXISTING 12" HDPE WTP INFLUENT PIPE. BUTT FUSE NEW 12" HDPE PIPE TO EXISTING 12" HDPE PIPE. ROTATE WYE DOWN TO CONNECT TO EXISTING PIPE AT ELEVATION FOUND DURING PRE-CONSTRUCTION FIELD INVERT VERIFICATION. INSTALL THRUST BLOCKS PER DETAIL 3, SHEET C-501.
4. POTABLE WATER CTE SEQUENCING:
 - 4.1. CUT EXISTING DI PIPE & INSTALL RJ MJ TEE AND RESTRAINED COUPLINGS & DI SPOOLS TO RECONNECT TO EXISTING 12" PIPELINE
 - 4.2. ROTATE TEE DOWN 45° TO ROUTE NEW PIPE UNDER ADJACENT PIPE
 - 4.3. INSTALL 45° BEND BACK TO HORIZONTAL
 - 4.4. INSTALL 12" VALVE AND THEN THE 90° BEND
 - 4.5. ALL MJ'S FITTED WITH MEGALUGS, POUR THRUST BLOCKS PER DETAIL 3, SHEET C-501



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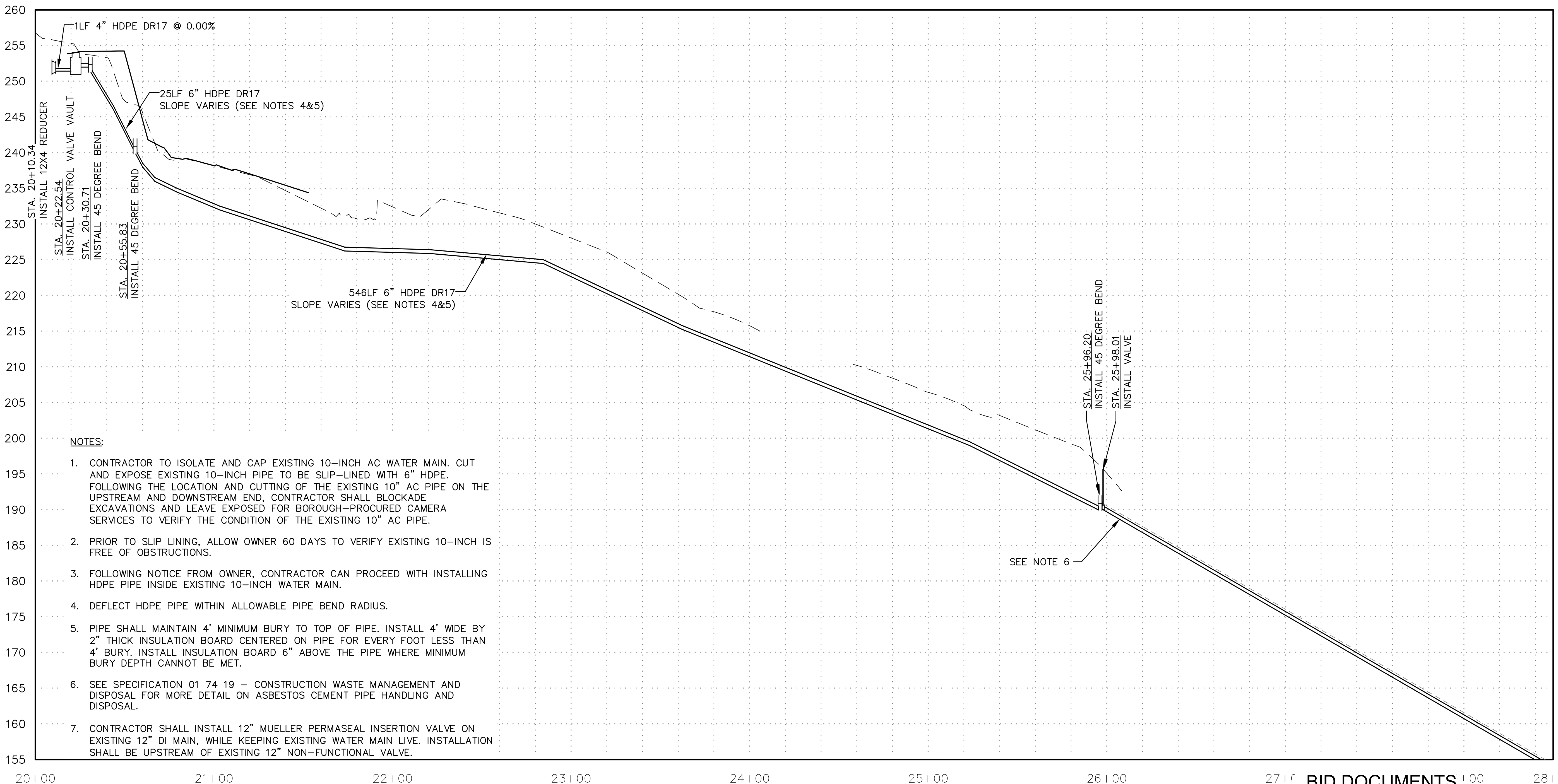
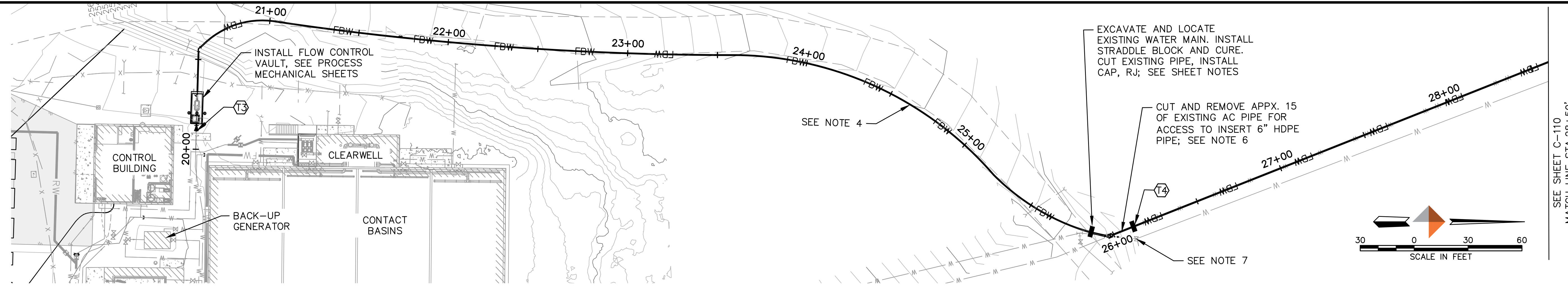
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
YARD PIPING PLAN & PROFILE
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 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
 DATE 06/02/2023

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 SHEET

C-108

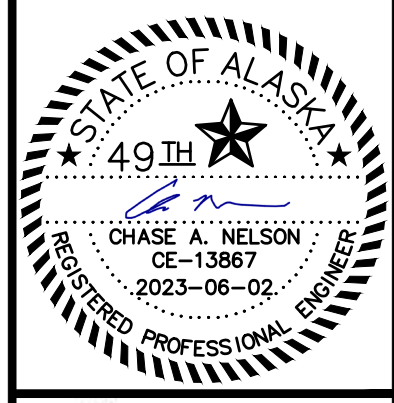
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NOTES:

1. CONTRACTOR TO ISOLATE AND CAP EXISTING 10-INCH AC WATER MAIN. CUT AND EXPOSE EXISTING 10-INCH PIPE TO BE SLIP-LINED WITH 6" HDPE. FOLLOWING THE LOCATION AND CUTTING OF THE EXISTING 10" AC PIPE ON THE UPSTREAM AND DOWNSTREAM END, CONTRACTOR SHALL BLOCKADE EXCAVATIONS AND LEAVE EXPOSED FOR BOROUGH-PROCURED CAMERA SERVICES TO VERIFY THE CONDITION OF THE EXISTING 10" AC PIPE.
2. PRIOR TO SLIP LINING, ALLOW OWNER 60 DAYS TO VERIFY EXISTING 10-INCH IS FREE OF OBSTRUCTIONS.
3. FOLLOWING NOTICE FROM OWNER, CONTRACTOR CAN PROCEED WITH INSTALLING HDPE PIPE INSIDE EXISTING 10-INCH WATER MAIN.
4. DEFLECT HDPE PIPE WITHIN ALLOWABLE PIPE BEND RADIUS.
5. PIPE SHALL MAINTAIN 4' MINIMUM BURY TO TOP OF PIPE. INSTALL 4' WIDE BY 2" THICK INSULATION BOARD CENTERED ON PIPE FOR EVERY FOOT LESS THAN 4' BURY. INSTALL INSULATION BOARD 6" ABOVE THE PIPE WHERE MINIMUM BURY DEPTH CANNOT BE MET.
6. SEE SPECIFICATION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL FOR MORE DETAIL ON ASBESTOS CEMENT PIPE HANDLING AND DISPOSAL.
7. CONTRACTOR SHALL INSTALL 12" MUELLER PERMASEAL INSERTION VALVE ON EXISTING 12" DI MAIN, WHILE KEEPING EXISTING WATER MAIN LIVE. INSTALLATION SHALL BE UPSTREAM OF EXISTING 12" NON-FUNCTIONAL VALVE.

REV	DATE	DESCRIPTION	BY

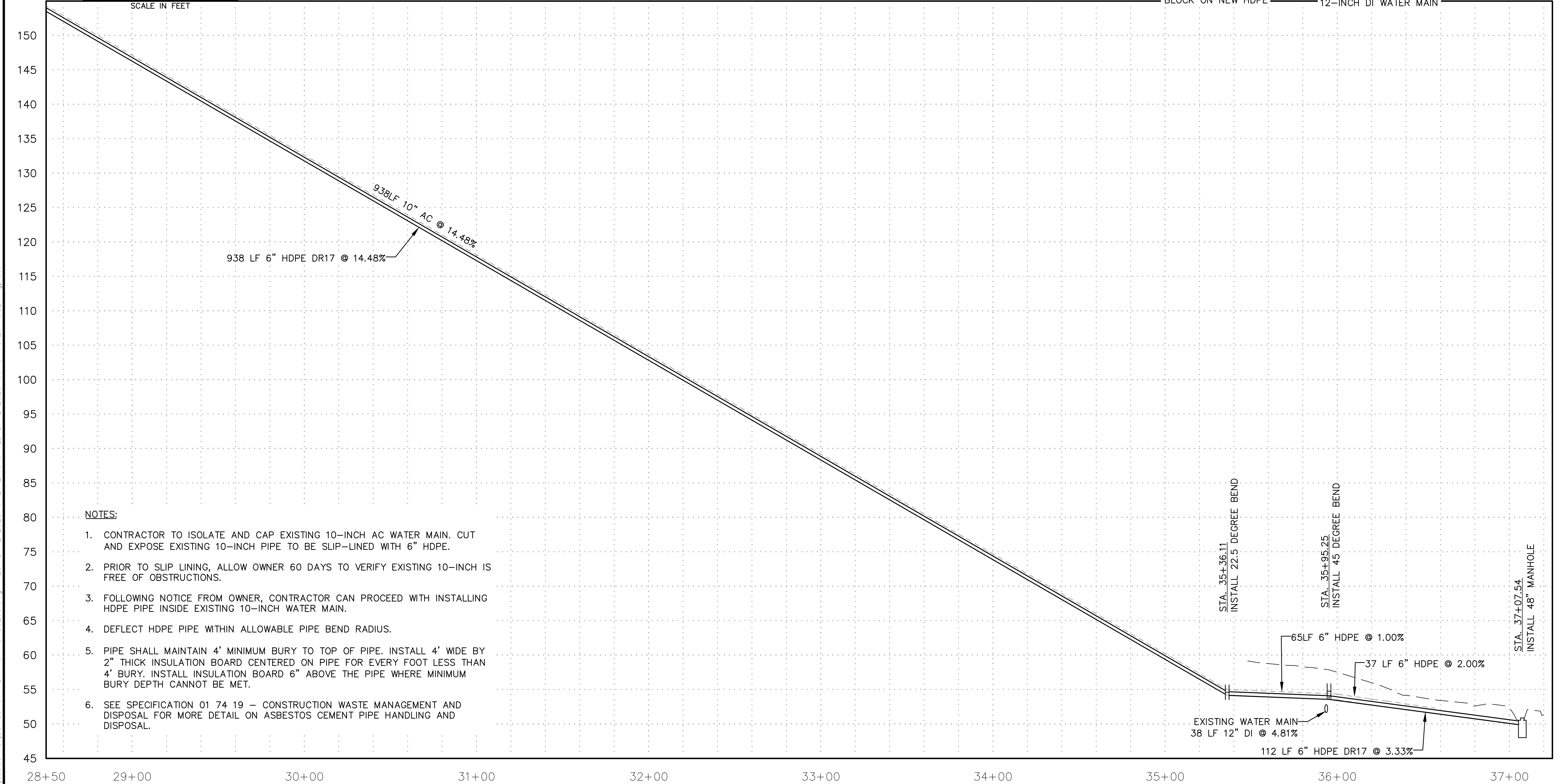
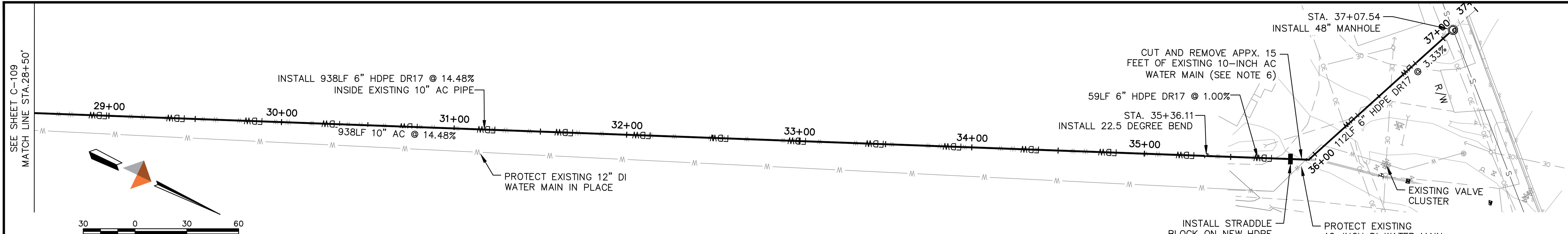


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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**FILTER BACKWASH PIPELINE
PLAN & PROFILE**
PROJECT 1528.50206.01
DATE 06/02/2023
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

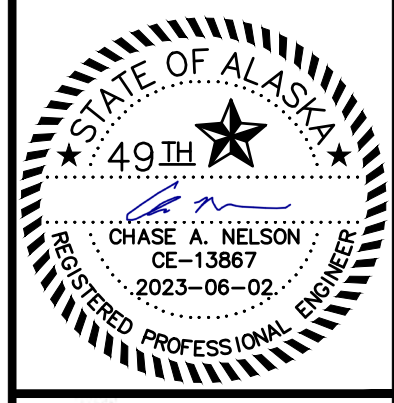
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- NOTES:**
1. CONTRACTOR TO ISOLATE AND CAP EXISTING 10-INCH AC WATER MAIN. CUT AND EXPOSE EXISTING 10-INCH PIPE TO BE SLIP-LINED WITH 6" HDPE.
 2. PRIOR TO SLIP LINING, ALLOW OWNER 60 DAYS TO VERIFY EXISTING 10-INCH IS FREE OF OBSTRUCTIONS.
 3. FOLLOWING NOTICE FROM OWNER, CONTRACTOR CAN PROCEED WITH INSTALLING HDPE PIPE INSIDE EXISTING 10-INCH WATER MAIN.
 4. DEFLECT HDPE PIPE WITHIN ALLOWABLE PIPE BEND RADIUS.
 5. PIPE SHALL MAINTAIN 4' MINIMUM BURY TO TOP OF PIPE. INSTALL 4' WIDE BY 2" THICK INSULATION BOARD CENTERED ON PIPE FOR EVERY FOOT LESS THAN 4' BURY. INSTALL INSULATION BOARD 6" ABOVE THE PIPE WHERE MINIMUM BURY DEPTH CANNOT BE MET.
 6. SEE SPECIFICATION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL FOR MORE DETAIL ON ASBESTOS CEMENT PIPE HANDLING AND DISPOSAL.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

**FILTER BACKWASH PIPELINE
PLAN & PROFILE**

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

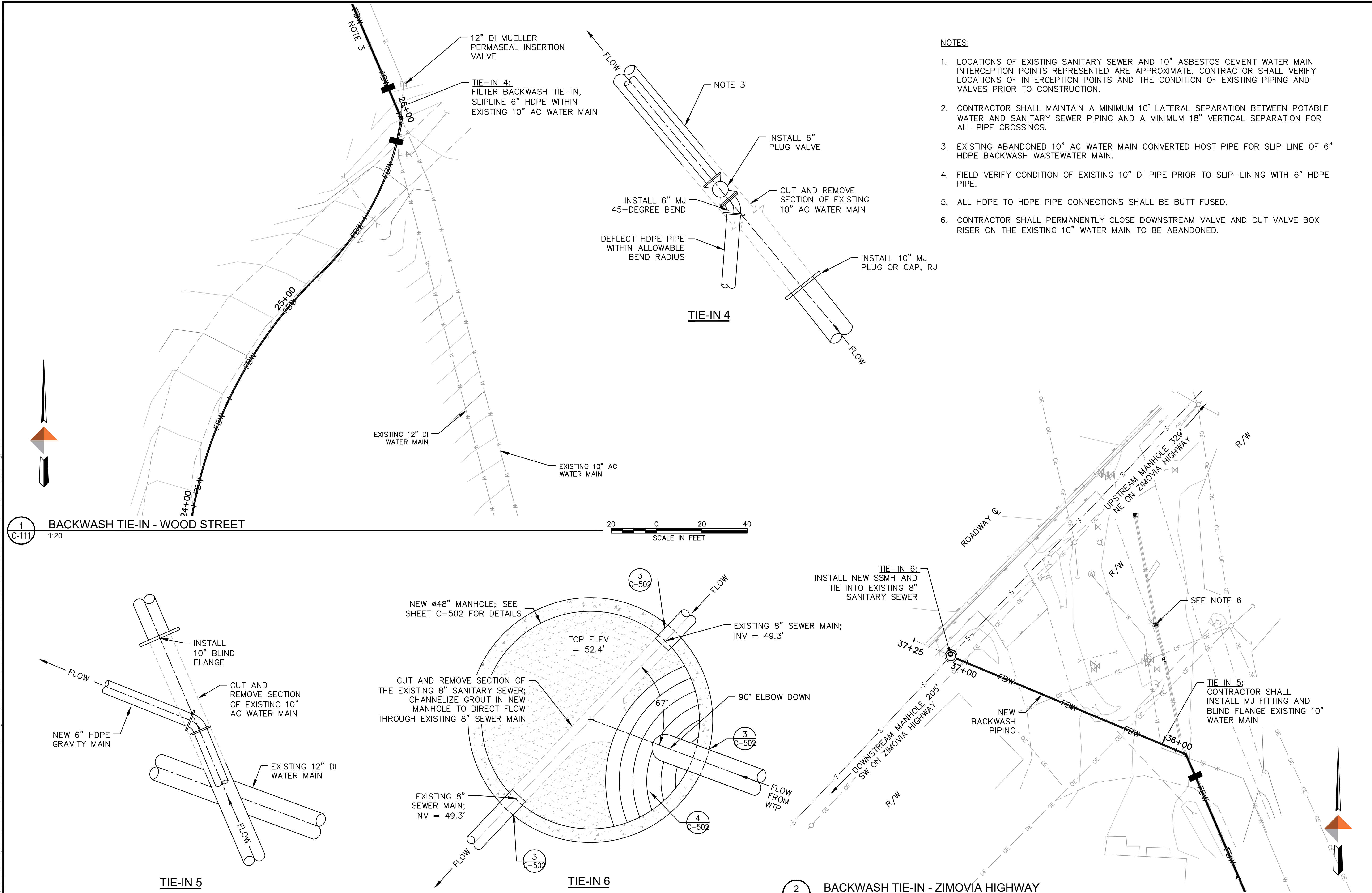
PROJECT 1528.50206.01
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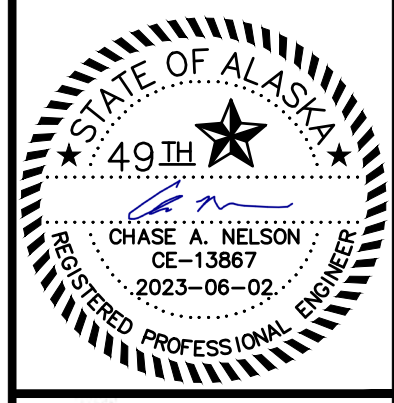
FILTER BACKWASH PLAN & PROFILE VIEW

BID DOCUMENTS
AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

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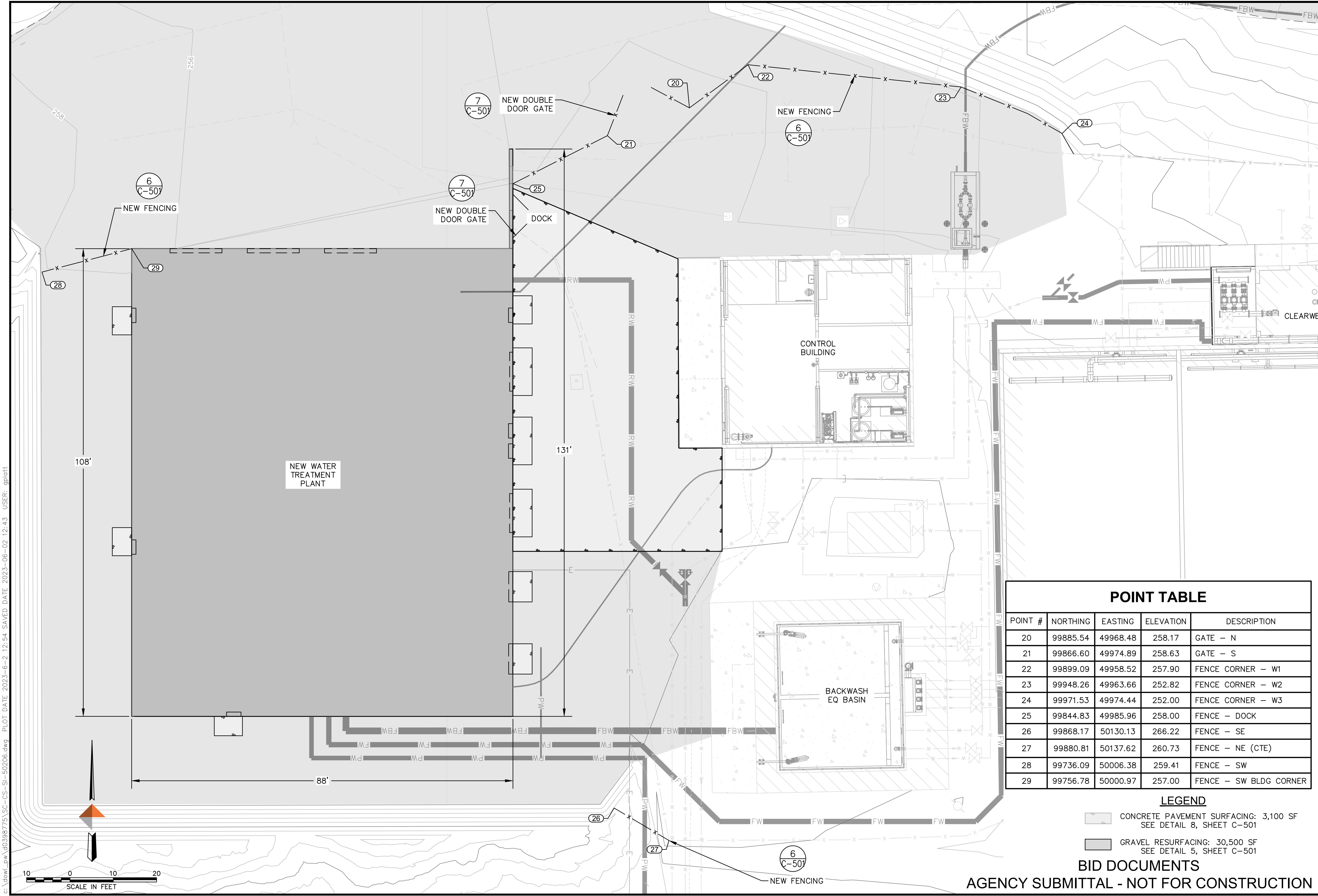
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

FILTER BACKWASH TIE-IN PLAN

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/2023

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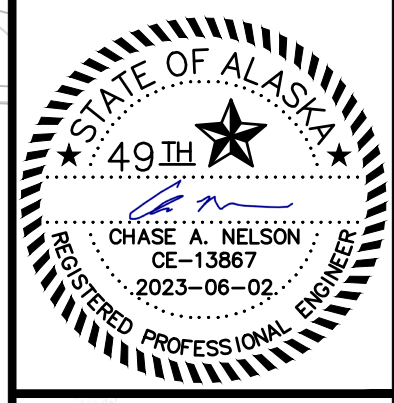


POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
20	99885.54	49968.48	258.17	GATE - N
21	99866.60	49974.89	258.63	GATE - S
22	99899.09	49958.52	257.90	FENCE CORNER - W1
23	99948.26	49963.66	252.82	FENCE CORNER - W2
24	99971.53	49974.44	252.00	FENCE CORNER - W3
25	99844.83	49985.96	258.00	FENCE - DOCK
26	99868.17	50130.13	266.22	FENCE - SE
27	99880.81	50137.62	260.73	FENCE - NE (CTE)
28	99736.09	50006.38	259.41	FENCE - SW
29	99756.78	50000.97	257.00	FENCE - SW BLDG CORNER

- LEGEND**
- CONCRETE PAVEMENT SURFACING: 3,100 SF
SEE DETAIL 8, SHEET C-501
 - GRAVEL RESURFACING: 30,500 SF
SEE DETAIL 5, SHEET C-501

BID DOCUMENTS
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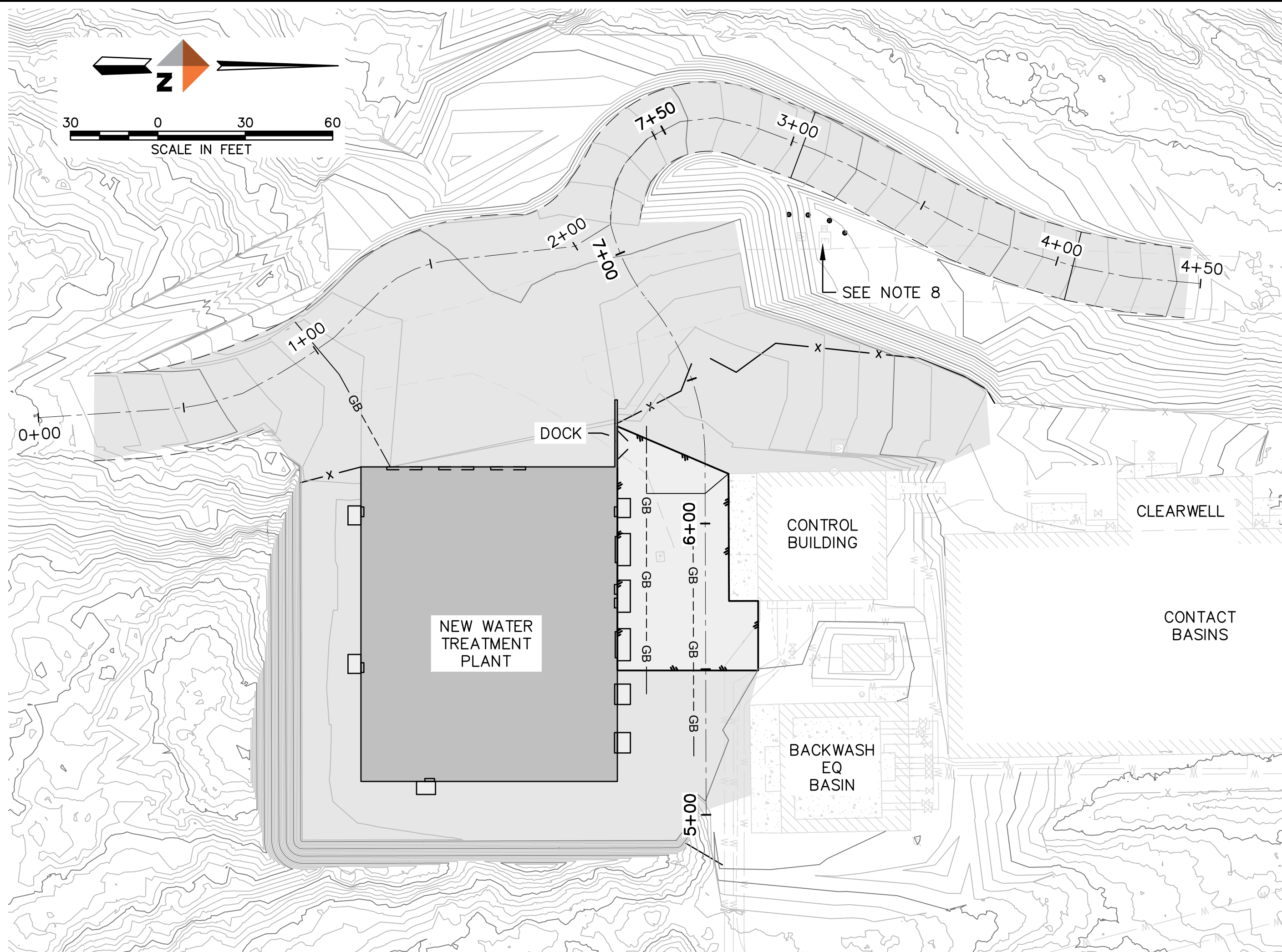
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
SITE SURFACE & FENCING PLAN
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
 DATE 06/02/2023

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 SHEET

C-300

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PROPOSED SITE GRADING PLAN

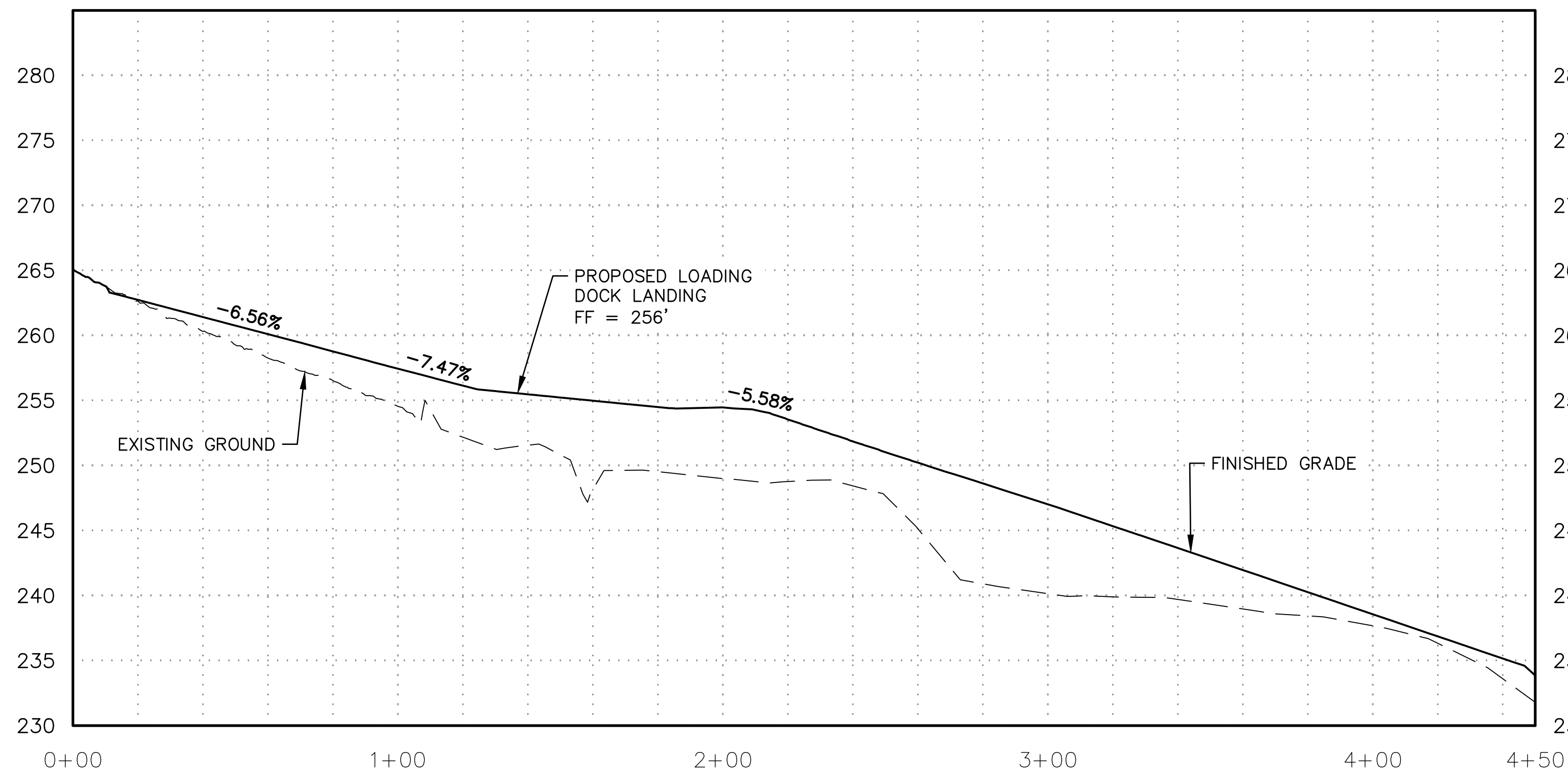
NOTES:

1. ALL UNSUITABLE MATERIAL, EXISTING PEAT, SOFT CLAY OR SILT, AND DEBRIS AND ORGANICS SHALL BE REMOVED BELOW ANY SPREAD FOOTINGS. REPLACE WITH STRUCTURAL FILL COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY MODIFIED PROCTOR, ASTM D1557. UNSUITABLE MATERIAL SHALL BE DISPOSED OF AT AN APPROVED LOCATION INCIDENTAL TO THE PAY ITEMS.
2. STRUCTURAL FILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT EXCEEDING TWELVE (12) INCHES IN LOOSE THICKNESS IF A LARGE VIBRATORY COMPACTOR IS USED, OR NOT EXCEEDING SIX INCHES IN LOOSE THICKNESS IF A HAND-OPERATED COMPACTOR IS USED. EACH LIFT OF STRUCTURAL FILL SHALL BE COMPACTED THROUGHOUT ITS ENTIRE DEPTH TO A DENSITY OF AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR, ASTM D1557.
3. STRUCTURAL FILL AND BACKFILL SHALL EXTEND Laterally FROM THE EDGE OF FOOTINGS, SLABS-ON-GRADE, AND PAVEMENTS TWELVE (12) INCHES FOR EACH FOOT OF FILL BENEATH THE FOOTING, SLAB, OR PAVEMENT.
4. ALL UTILITY PIPING SHALL BE PLACED ON SIX (6) INCHES OF COMPACTED BEDDING MATERIAL. THE BEDDING MATERIAL SHALL EXTEND SIX (6) INCHES ABOVE THE TOP OF PIPE, AND SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH STRUCTURAL FILL. SEE TRENCH DETAIL 4, SHEET C-501.
5. EXCAVATED SHOT ROCK WHICH DOES NOT MEET THE REQUIREMENTS FOR STRUCTURAL FILL MAY BE REUSED AS EMBANKMENT FILL BENEATH THE WOOD STREET REALIGNMENT SECTION OR BELOW OTHER UNPAVED DRIVE OR PARKING AREAS. MAXIMUM PARTICLE SIZE SHALL BE LIMITED TO TWELVE (12) INCHES.
6. SHOT ROCK SHALL BE PLACED AND COMPACTED IN LIFTS NOT EXCEEDING EIGHTEEN (18) INCHES IN LOOSE THICKNESS IF A LARGE VIBRATORY COMPACTOR IS USED.
7. ALL EXCAVATIONS SHALL BE COMPLETELY DEWATERED BEFORE PLACEMENT OF STRUCTURAL FILL.
8. PROTECT EXISTING ELECTRICAL TRANSFORMER AND HIGH VOLTAGE VAULT IN PLACE. SEE DETAIL 1, SHEET C-501 FOR BOLLARD DETAIL.

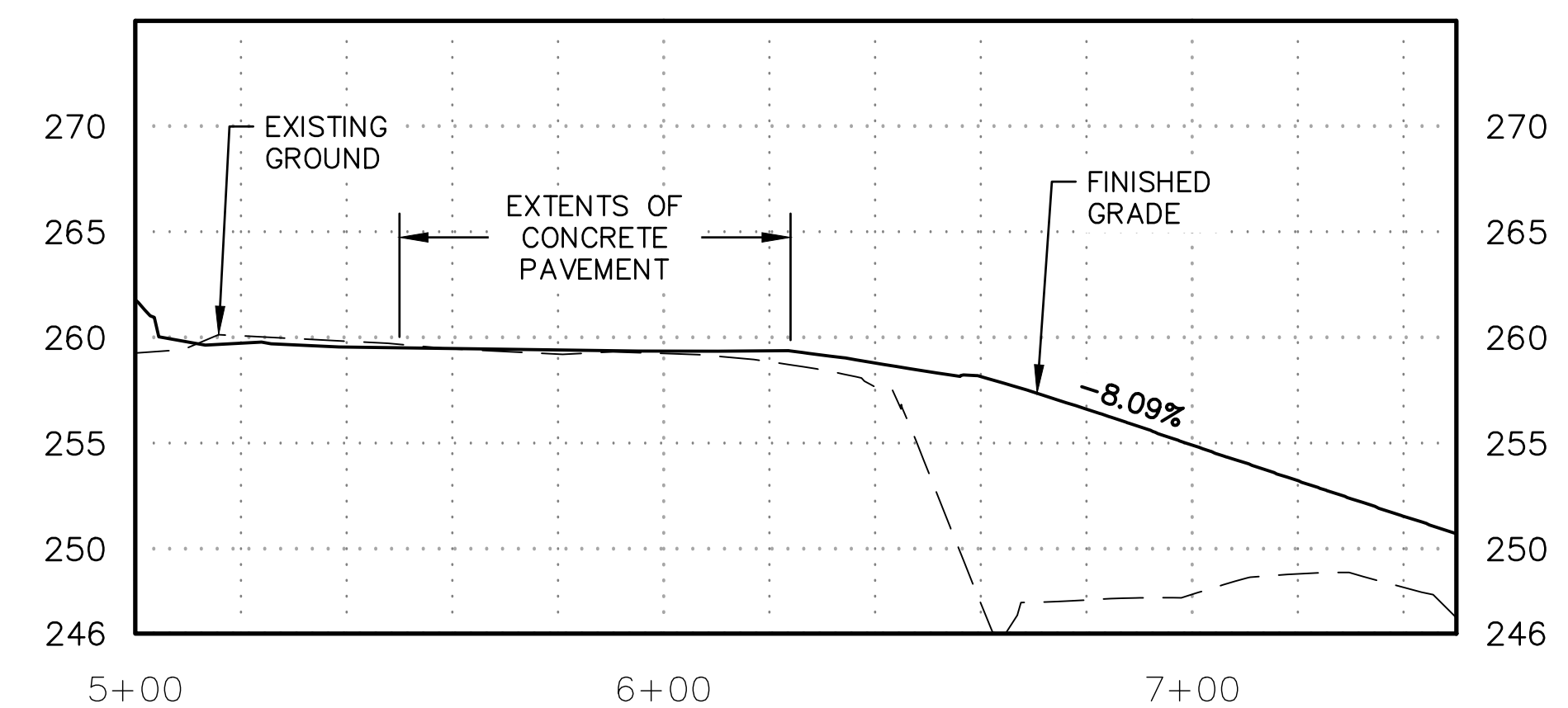
CUT/FILL QUANTITIES			
	CUT (YD ³)	FILL (YD ³)	NET (YD ³)
PROPOSED SITE & ROAD	7400	4900	2500
BEDROCK VS. FG	4600	-	-

NOTES:

1. PROPOSED SITE & ROAD EARTHWORK INCLUDES EXCAVATION OF ALL OVERBURDEN AND BEDROCK AND FILL REQUIRED TO BRING SITE TO FINISHED GRADE.
2. BEDROCK VS. FG IS THE APPROXIMATE QUANTITY OF BEDROCK THAT WILL REQUIRE BLASTING OR MECHANICAL EXCAVATION.

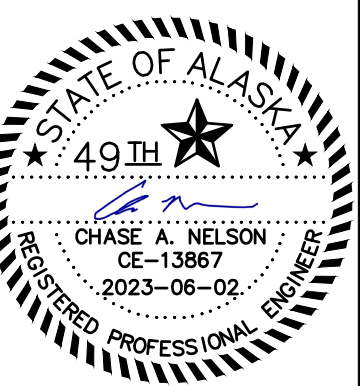


PROPOSED DRIVEWAY GRADING PROFILE



PROPOSED CONCRETE PAVEMENT GRADING PROFILE

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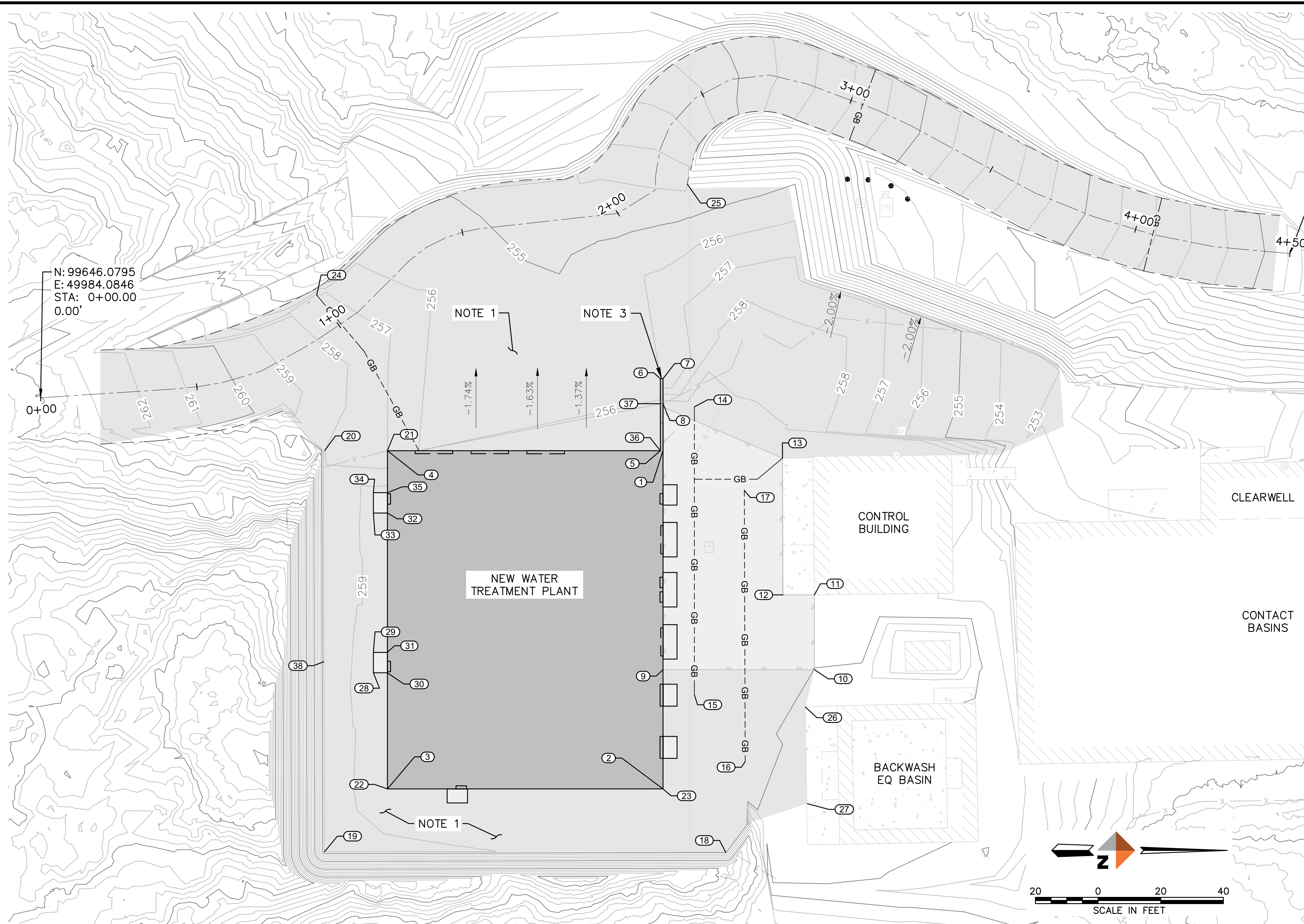
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
SITE PAVING, GRADING, & DRAINAGE
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
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C-301

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- NOTES:**
1. MAINTAIN NEGATIVE SLOPE FOR DRAINAGE AWAY FROM BUILDINGS.
 2. GRADING SHALL SLOPE AWAY FROM ALL BUILDINGS.
 3. DOCK WALL SHALL BE 15' LONG AT THE NEW WTP FF ELEVATION OF 260', AND SLOPE TO FINISHED GRADE AT 2H:1V. SEE STRUCTURAL FOR DETAILS.

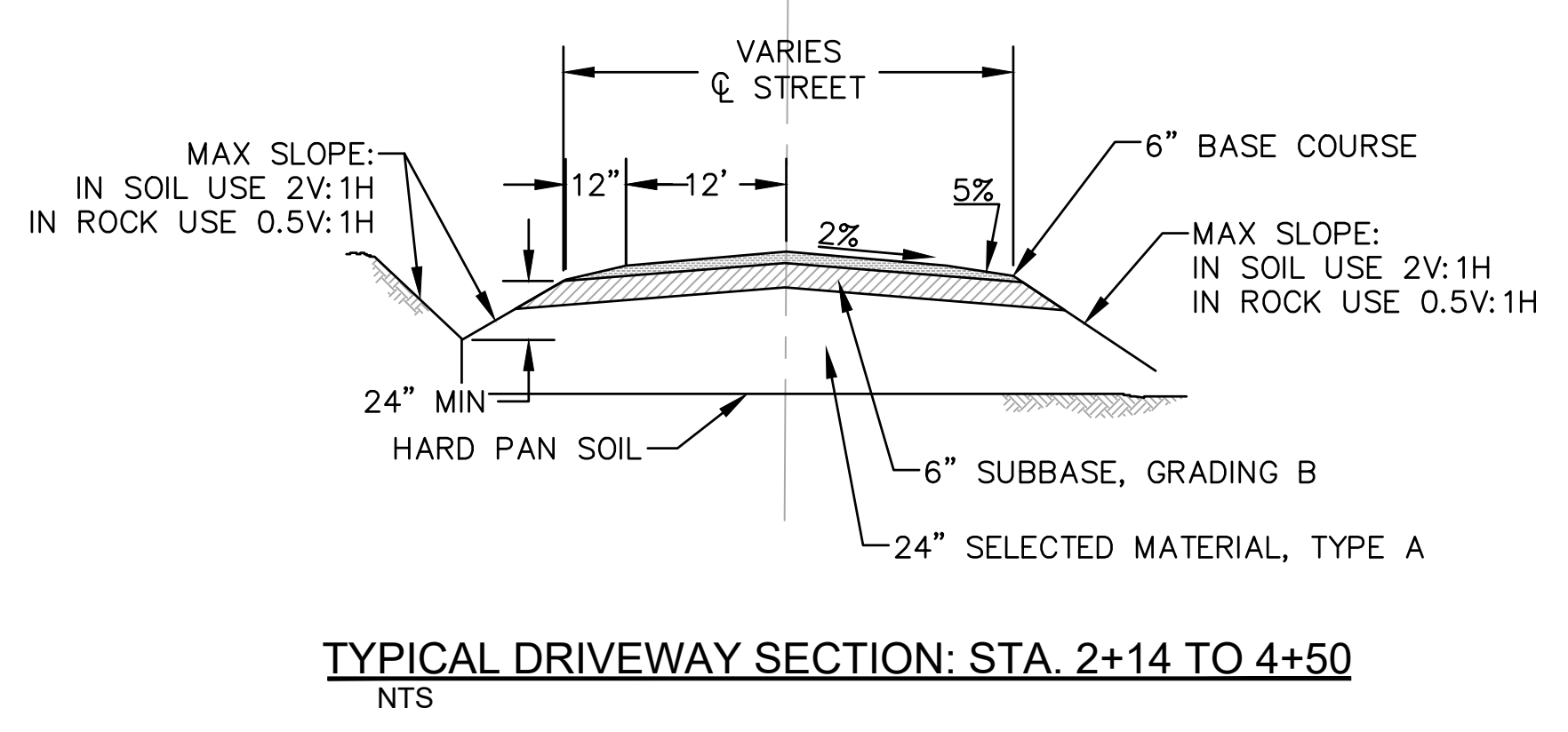
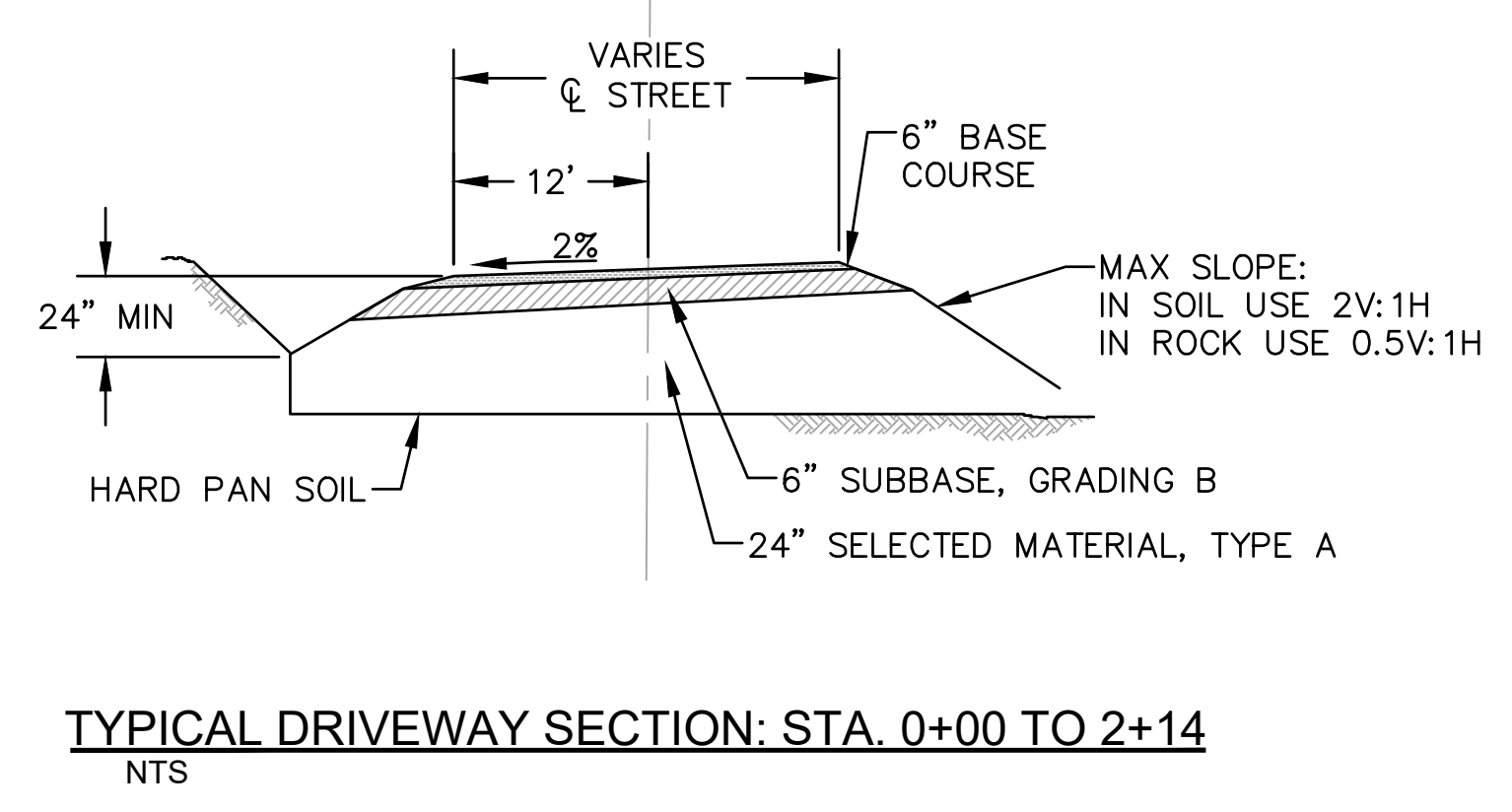
LEGEND

- Gravel Road Surface, Detail 5/C-501
- Concrete Pavement Surface, Detail 8/C-501

POINT TABLE

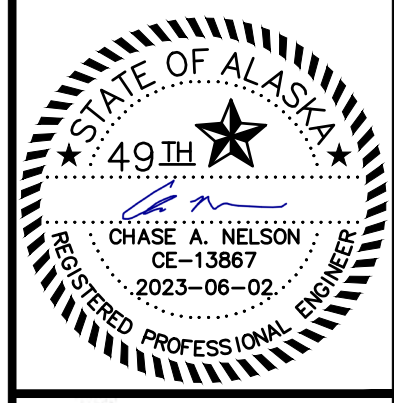
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	99844.76	50000.99	260.00	NW CORNER NEW BLDG FF
2	99844.75	50108.95	260.00	NE CORNER NEW BLDG FF
3	99756.79	50108.95	260.00	SE CORNER NEW BLDG FF
4	99756.79	50000.99	260.00	SW CORNER NEW BLDG FF
5	99843.94	50000.97	260.00	SE DOCK WALL CORNER (TOP)
6	99843.88	49977.97	256.00	SW DOCK WALL CORNER
7	99844.79	49977.97	256.00	NW DOCK WALL CORNER
8	99844.76	49985.97	260.00	DOCK WALL SLOPE START
9	99844.78	50070.87	260.00	SE PAVEMENT CORNER
10	99893.08	50070.87	260.01	NE PAVEMENT CORNER
11	99893.08	50047.00	259.53	NE PAVEMENT CTE CONTROL BLDG
12	99883.08	50047.02	259.41	SE PAVEMENT CTE CONTROL BLDG
13	99882.92	50003.33	259.40	SW PAVEMENT CTE CONTROL BLDG
14	99854.76	49986.98	259.80	SW PAVEMENT GRADE BREAK
15	99854.77	50078.92	259.80	SE PAVEMENT GRADE BREAK
16	99871.00	50100.22	259.65	NE PAVEMENT GRADE BREAK
17	99870.71	50013.64	259.35	NW PAVEMENT GRADE BREAK
18	99864.81	50129.27	260.00	NE TOE OF CUT SLOPE
19	99736.67	50129.07	259.00	SE TOE OF CUT SLOPE
20	99736.76	50000.94	258.00	SW TOE OF CUT SLOPE
21	99756.77	50000.97	257.00	SW BLDG CORNER SITE FG
22	99756.78	50108.96	259.50	SE BLDG CORNER SITE FG
23	99844.76	50108.97	259.50	NE BLDG CORNER FG
24	99734.22	49951.31	257.02	SW DRIVEWAY GRADE BREAK
25	99852.54	49915.91	254.00	NW DRIVEWAY GRADE BREAK
26	99890.20	50082.82	260.32	CTE BW EQ BASIN PAD (W)
27	99890.82	50113.67	260.41	CTE BW EQ BASIN PAD (E)
28	99752.30	50071.89	259.50	SE DOORWAY PAD BASE ELEV (SE CORNER)
29	99752.30	50065.37	259.50	SE DOORWAY PAD BASE ELEV (SW CORNER)
30	99756.76	50071.89	259.50	SE DOORWAY PAD BASE ELEV (NE CORNER)
31	99756.74	50065.36	259.50	SE DOORWAY PAD BASE ELEV (NW CORNER)
32	99756.78	50020.89	259.50	SW DOORWAY PAD BASE ELEV (NE CORNER)
33	99752.30	50020.89	259.33	SW DOORWAY PAD BASE ELEV (SE CORNER)
34	99752.30	50014.37	259.33	SW DOORWAY PAD BASE ELEV (SW CORNER)
35	99756.79	50014.38	259.42	SW DOORWAY PAD BASE ELEV (NW CORNER)
36	99843.90	50000.97	256.00	SE BASE OF DOCK WALL
37	99843.90	49985.98	256.00	BASE OF DOCK WALL
38	99736.46	50068.35	259.00	TOE OF SLOPE - MIDPOINT (S)

PROPOSED SITE GRADING PLAN



REVISIONS

REV	DATE	DESCRIPTION	BY



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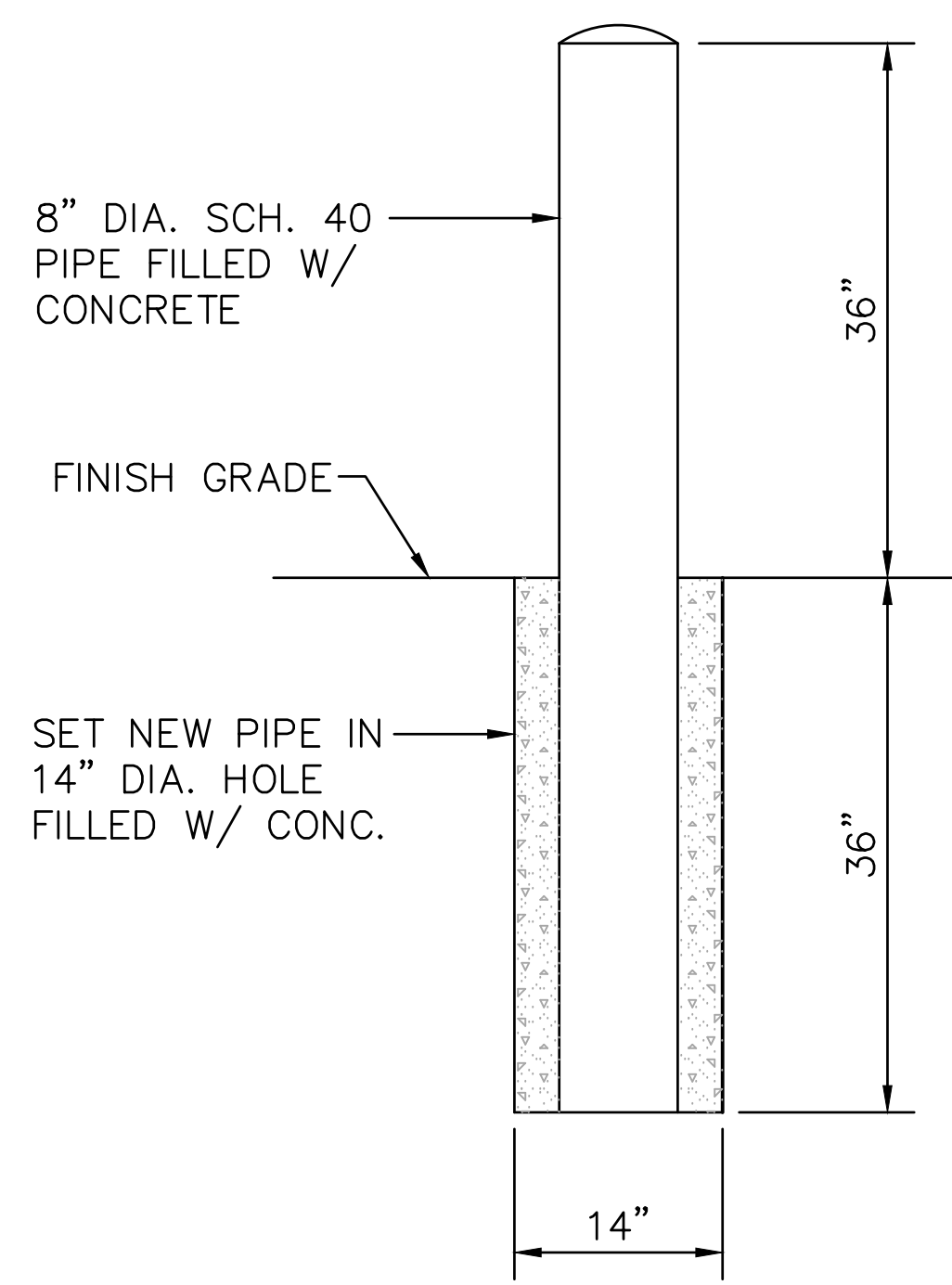
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

PROPOSED SITE GRADING PLAN

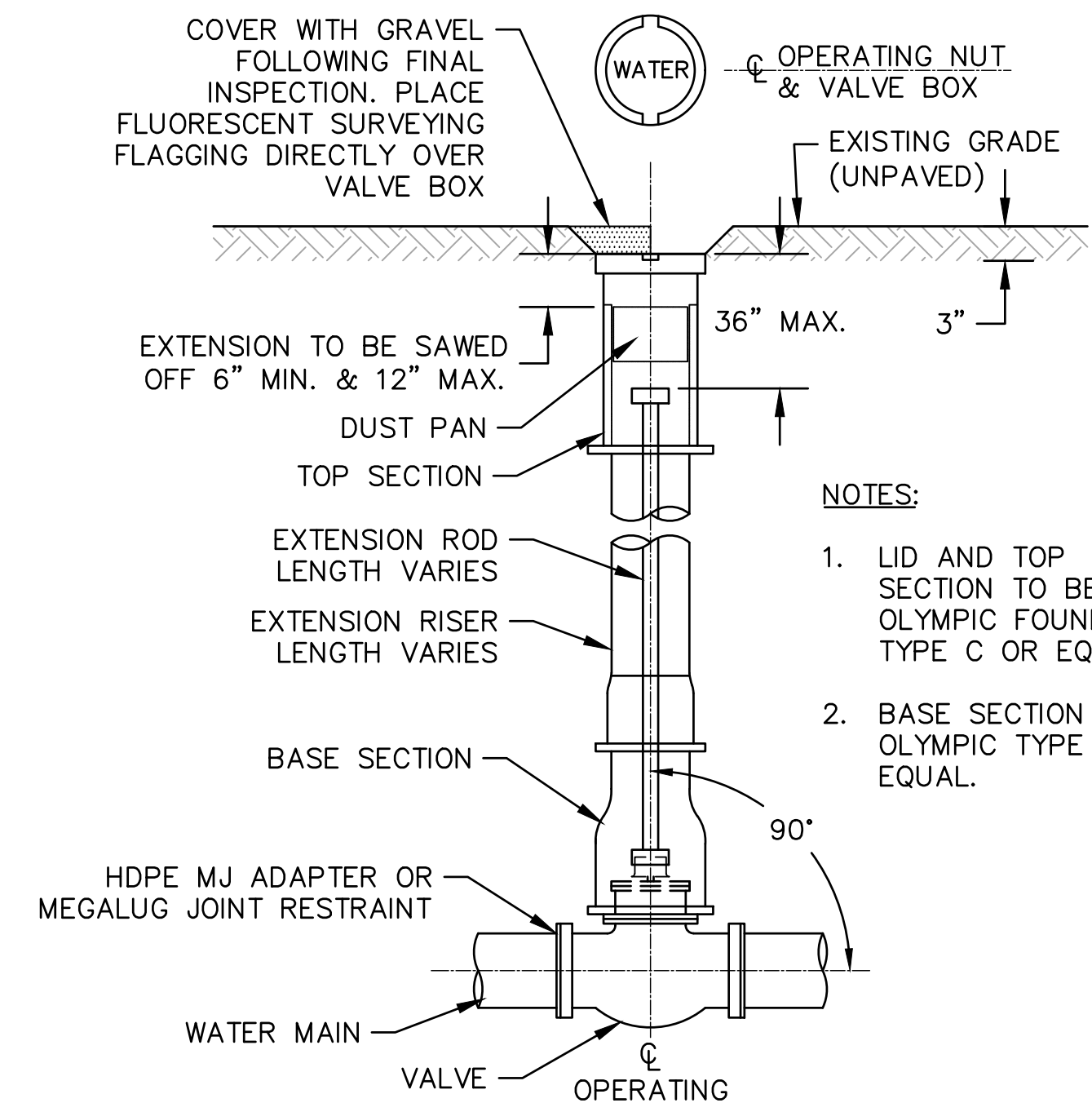
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/2023

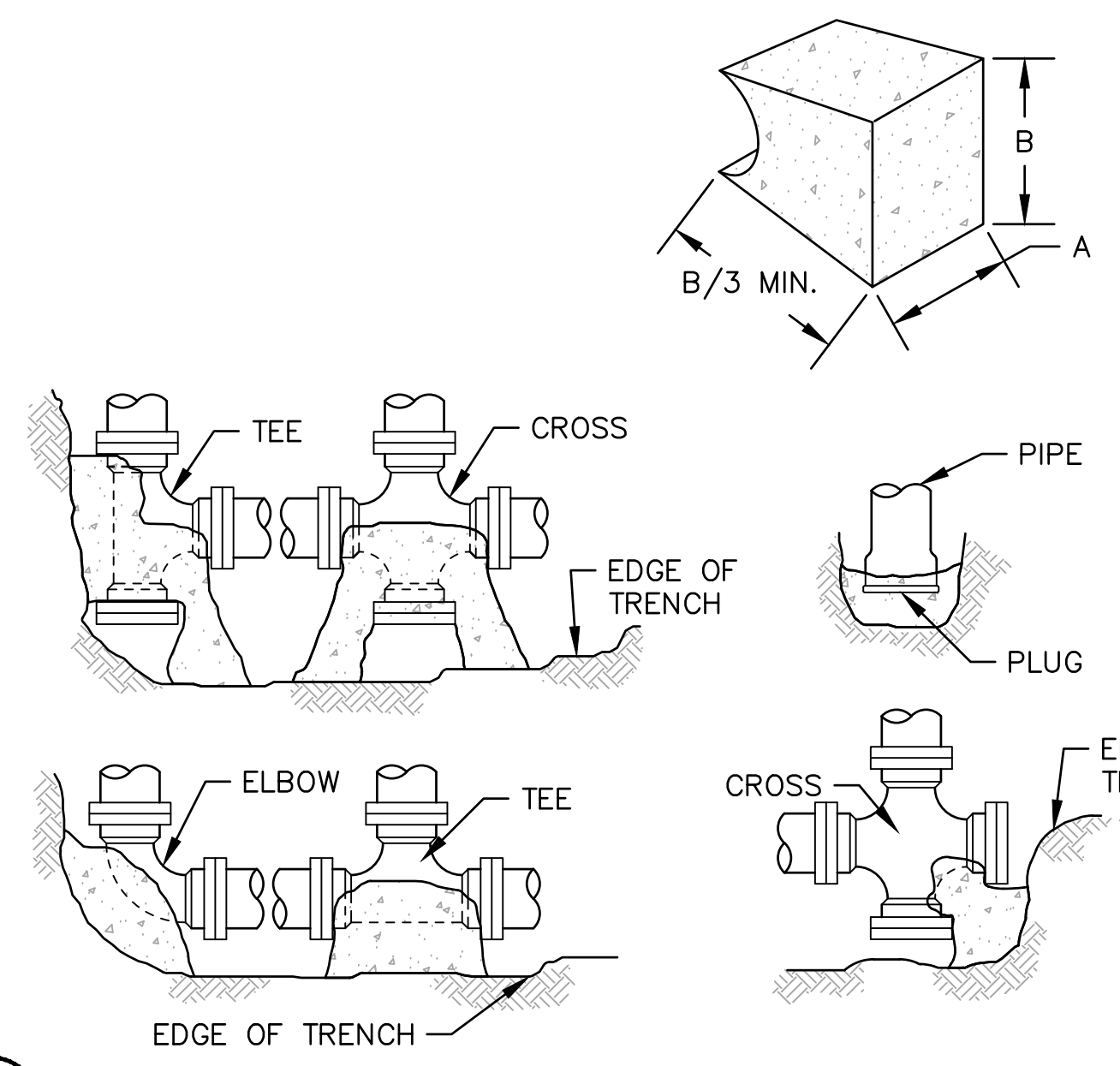
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1 BOLLARD DETAIL
C-501 NTS



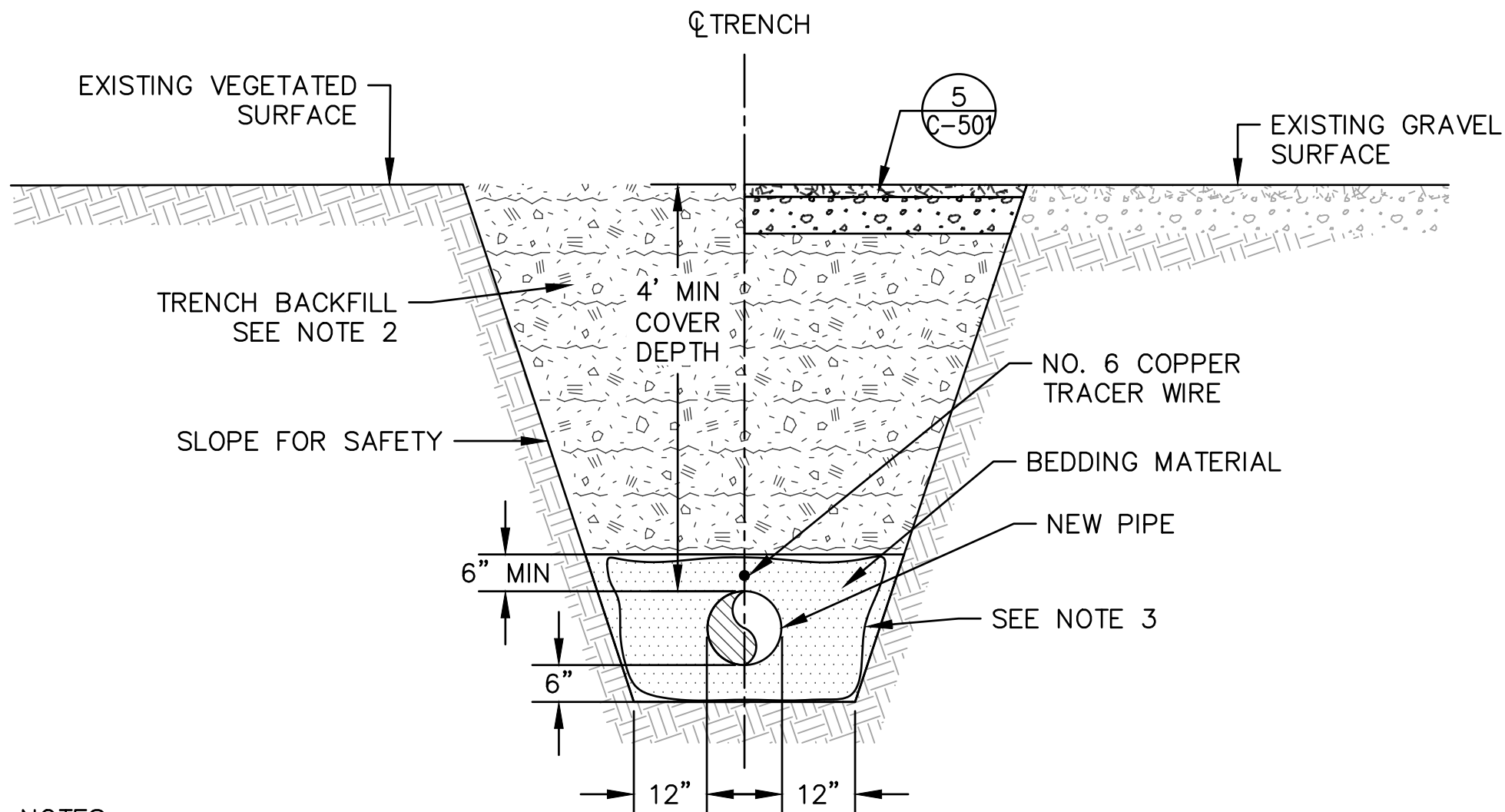
2 TYPICAL MAIN LINE VALVE WITH OPERATING ROD
C-501 NTS



3 THRUST BLOCK DETAILS
C-501 NTS

BASE AREA TABLE								
FITTING SIZES	MIN BASE AREA SQ FT							
	TEES & PLUGS		90° BEND		45° BEND & WYES		REDUCERS & 22.5° BEND	
	A	B	A	B	A	B	A	B
6"	2'-3"	1'-11"	2'-8"	2'-4"	2'-0"	1'-8"	1'-9"	1'-0"
8"	3'-0"	2'-6"	3'-6"	3'-2"	2'-8"	2'-3"	2'-0"	1'-6"
10"	3'-8"	3'-3"	4'-4"	4'-0"	3'-3"	2'-10"	2'-5"	2'-0"
12"	4'-3"	4'-0"	5'-1"	4'-10"	3'-10"	3'-6"	2'-9"	2'-6"
14"	5'-8"	4'-1"	6'-9"	5'-0"	5'-0"	3'-8"	3'-7"	2'-7"
16"	6'-3"	4'-10"	7'-8"	5'-9"	5'-9"	4'-2"	4'-5"	2'-9"

- NOTES:
- THIS TABLE IS BASED ON A 150' PSI MAIN PRESSURE TEST AND 1500 PSF SOIL BEARING PRESSURE.
 - WRAP ALL DUCTILE IRON FITTINGS WITH POLYETHYLENE.
 - ALL THRUST BLOCK SHALL BE FORMED TO THE SHAPES BELOW. UNFORMED BLOCKS WILL BE REJECTED.
 - THRUST BLOCKS ARE REQUIRED AT ALL TEES, PLUGS, REDUCERS, CAPS, AND BENDS DEFLECTING 11.25' OR MORE REGARDLESS OF WHETHER THEY ARE IN A RESTRAINED JOINT SECTION OF PIPE. ALL HYDRANTS SHALL REQUIRE A THRUST BLOCK AT THE HYDRANT IN ADDITION TO THE BEARING BLOCK.

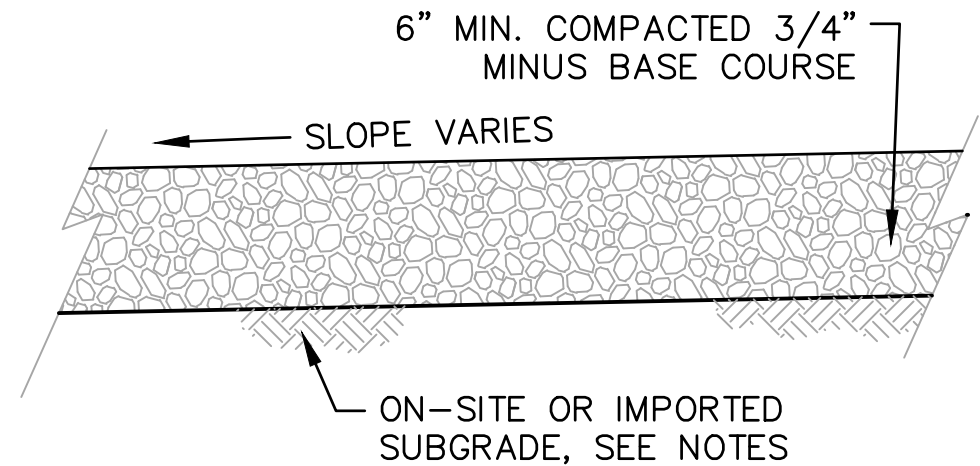


- NOTES:
- BEDDING MATERIAL SHALL MEET GRADATION REQUIREMENTS BELOW AND SHOULD BE PLACED AND COMPACTED TO A DEPTH OF AT LEAST SIX INCHES (6") BELOW UTILITY LINES. BEDDING MATERIAL SHALL EXTEND SIX INCHES (6") ABOVE TOP OF PIPE, AND SHOULD BE COMPACTED TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR, ASTM D1557.
 - THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH STRUCTURAL FILL IN LIFTS NOT EXCEEDING ONE FOOT (12"), COMPACTED TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR, ASTM D1557. THE COMPACTION OF BACKFILL WILL BE ACCOMPLISHED BY MECHANICAL MEANS WITHOUT THE AID OF WATER.
 - GEOTEXTILE FABRIC SHALL BE USED IF SILTY MATERIAL IS ENCOUNTERED AT THE BOTTOM OF EXCAVATION AND IF SILTY EXCAVATED MATERIAL IS APPROVED FOR REUSE AS BACKFILL ABOVE THE PIPE BEDDING.

STRUCTURAL FILL		BEDDING	
SIEVE SIZE	PERCENT FILTER	SIEVE SIZE	PERCENT FILTER
3"	100*	1/2"	100
1-1/2"	70-100	3/8"	80-100
3/4"	30-100	NO. 4	20-75
1/2"	25-100	NO. 8	12-60
NO. 4	20-49	NO. 30	2-30
NO. 40	0-25	NO. 200	0-6
NO. 200	0-6		
0.02MM	0-3		

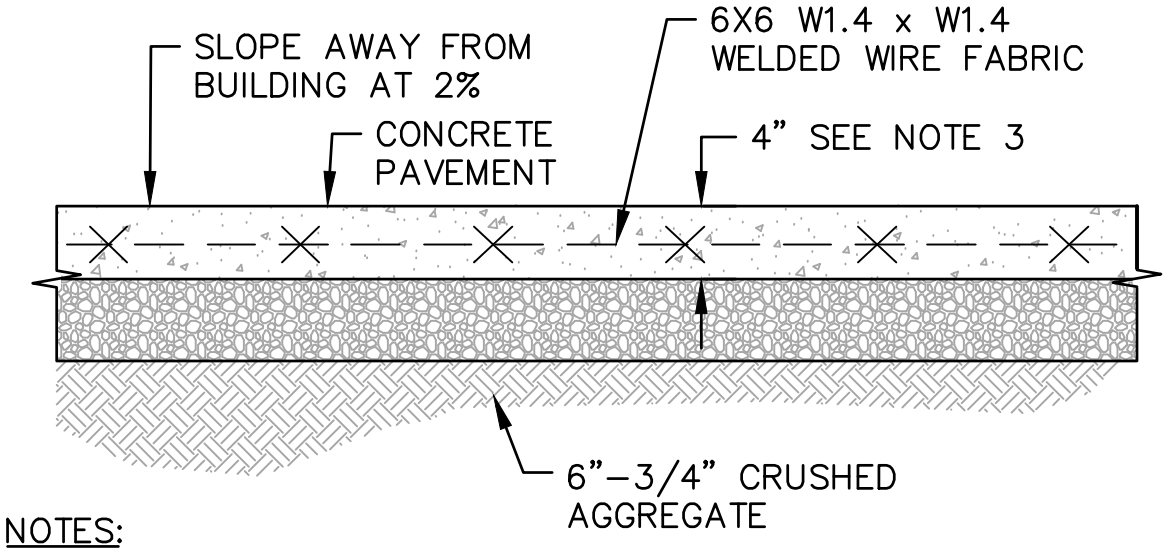
*THE FILL MAY CONTAIN UP TO 10% COBBLES

4 TRENCH DETAIL
C-501 NTS



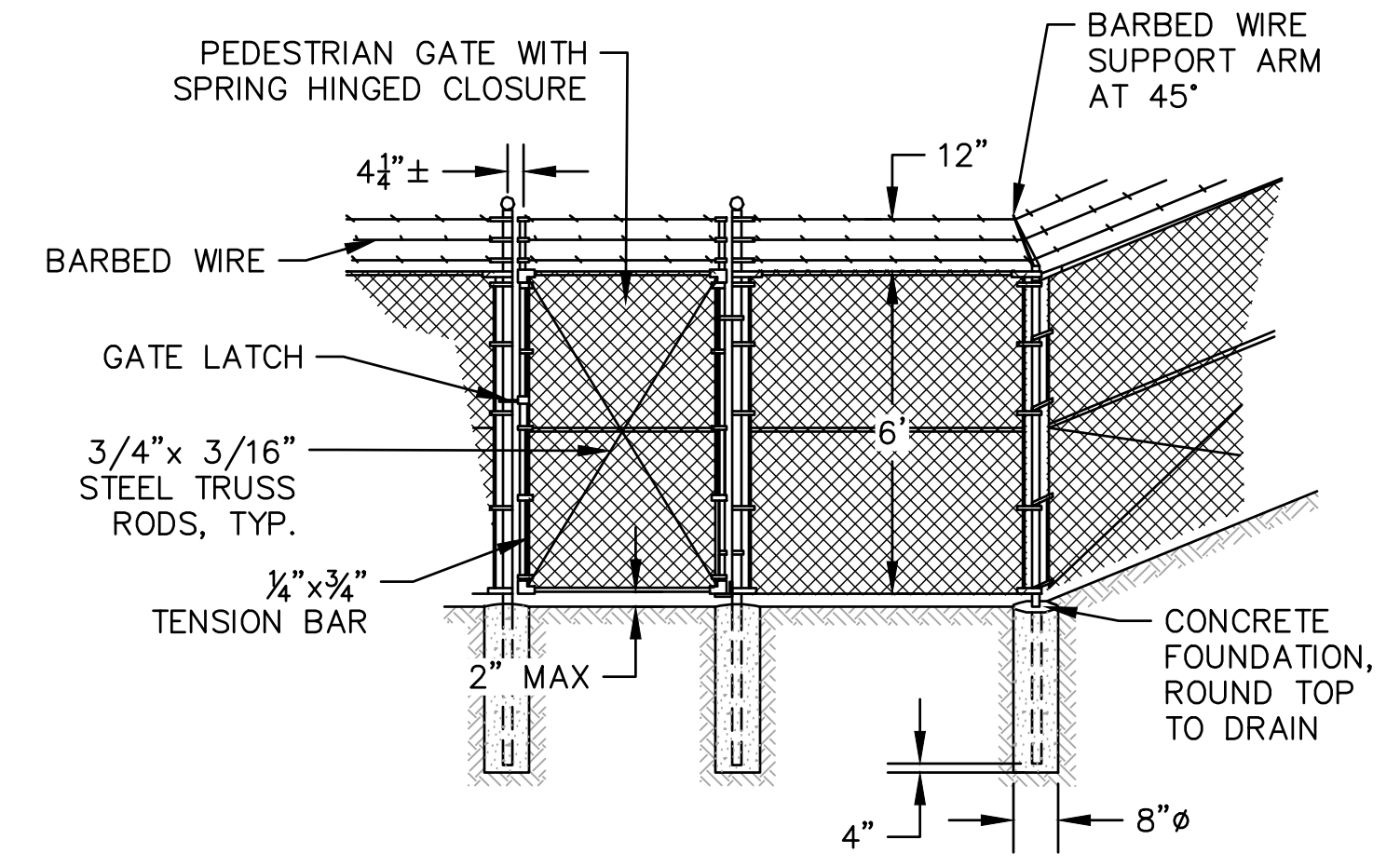
- NOTES:
- EXCAVATED SHOT ROCK WHICH DOES NOT MEET THE REQUIREMENTS FOR STRUCTURAL FILL MAY BE USED AS EMBANKMENT FILL BENEATH THE WOOD STREET REALIGNMENT SECTION OR BELOW OTHER UNPAVED DRIVE OR PARKING AREAS.
 - MAXIMUM PARTICLE SIZE SHALL BE LIMITED TO 12". SHOT ROCK SHOULD BE PLACED AND COMPACTED IN LIFTS NOT EXCEEDING 18" IN LOOSE THICKNESS IF A LARGE VIBRATORY COMPACTOR IS USED. EACH ROCK FILL LAYER SHOULD BE SPREAD UNIFORMLY AND COMPACTED WITH 5 PASSES OF A 10+ TON VIBRATORY ROLLER OR AS APPROVED BY ENGINEER.
 - COMPACT SUBGRADE OR BASE COURSE TO 95% OF MAXIMUM DRY DENSITY, PER ASTM D1557.
 - PRIOR TO PLACEMENT OF AGGREGATE BASE COURSE, ALL TOPSOIL AND DELETERIOUS MATERIAL SHOULD BE REMOVED.

5 GRAVEL SURFACE SECTION DETAIL
C-501 NTS

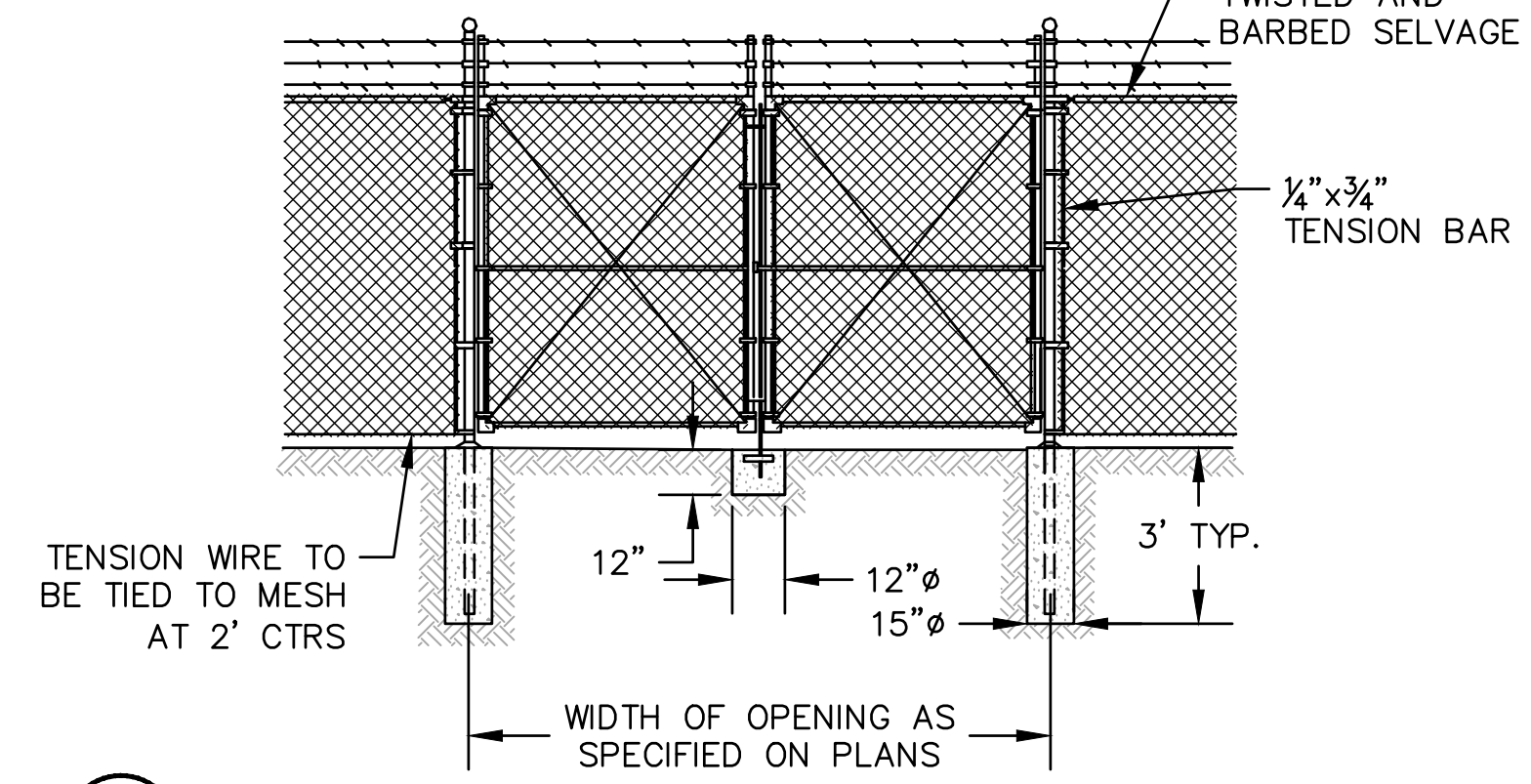


- NOTES:
- COMPACT SUBGRADE OR BASE COURSE TO 95% OF MAXIMUM DRY DENSITY, PER ASTM D1557.
 - CONTRACTION JOINTS SHALL BE PLACED AT 10' MAX INTERVALS AND SHALL HAVE A MINIMUM DEPTH OF 3/4" AND MINIMUM WIDTH OF 1/8".
 - SIDEWALKS IN FRONT ADJACENT TO OVERHEAD DOORS SHALL BE 8" THICK AND REINFORCED WITH #4 BAR AT 12" O.C. EACH WAY.

8 TYPICAL CONCRETE DETAIL
C-501 NTS



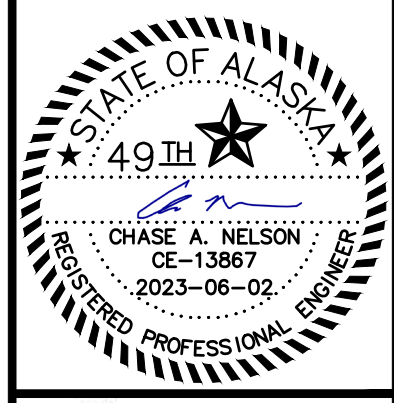
6 FENCING DETAIL
C-501 NTS



7 GATE DETAIL
C-501 NTS

BID DOCUMENTS
AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
GENERAL CIVIL & YARD PIPING
DETAILS

PROJECT 1528.50206.01
DATE 06/02/2023

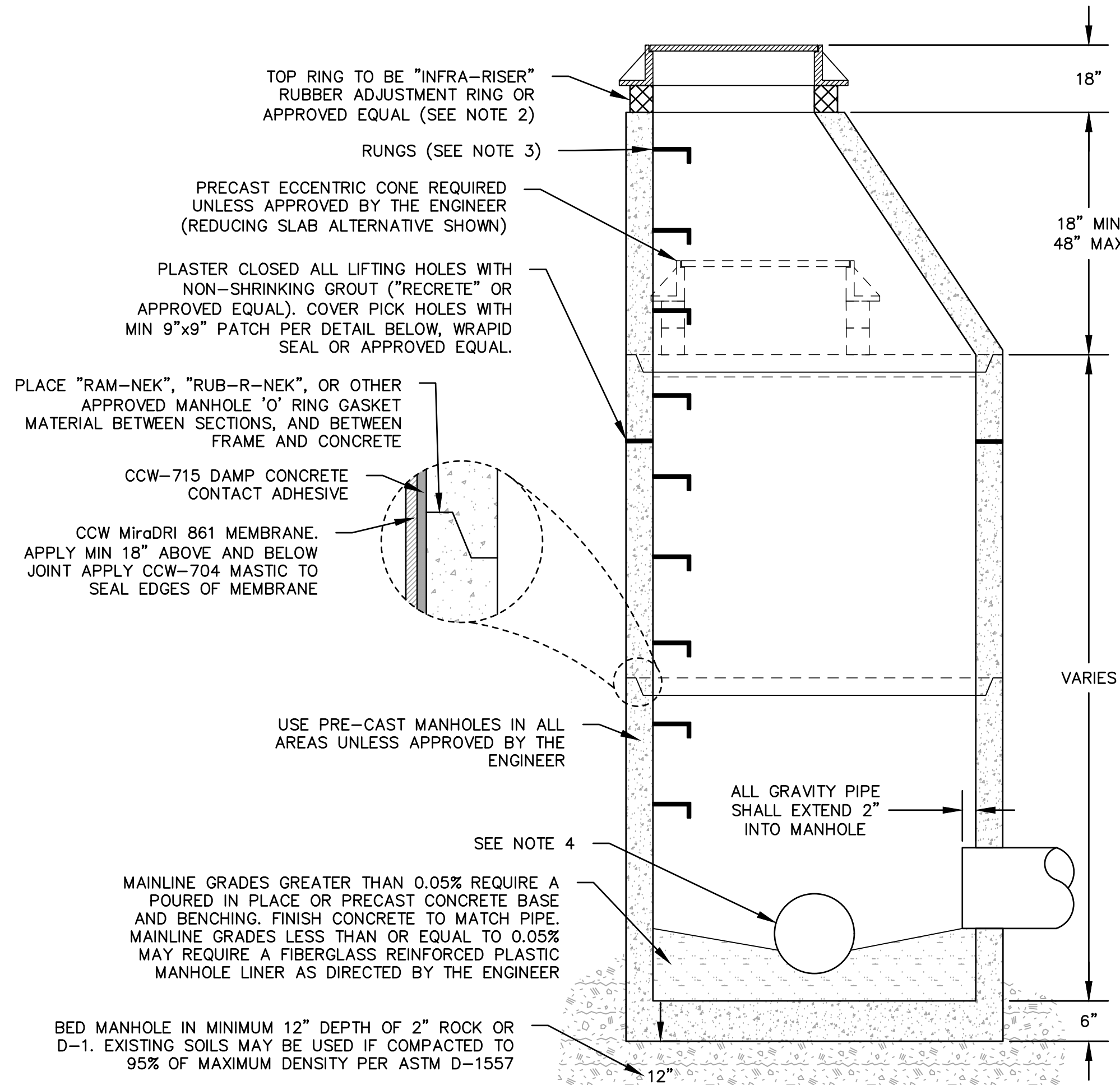
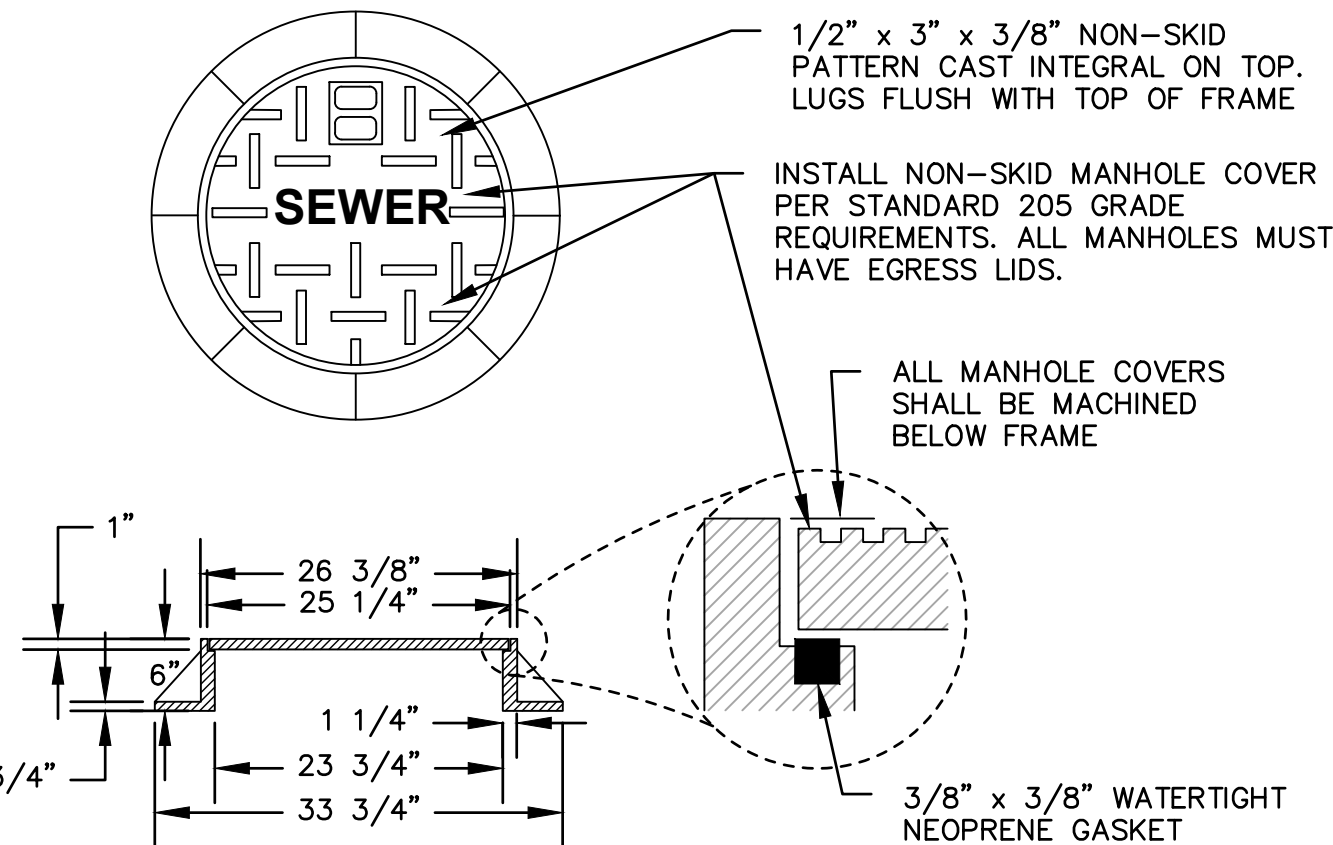
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C-501

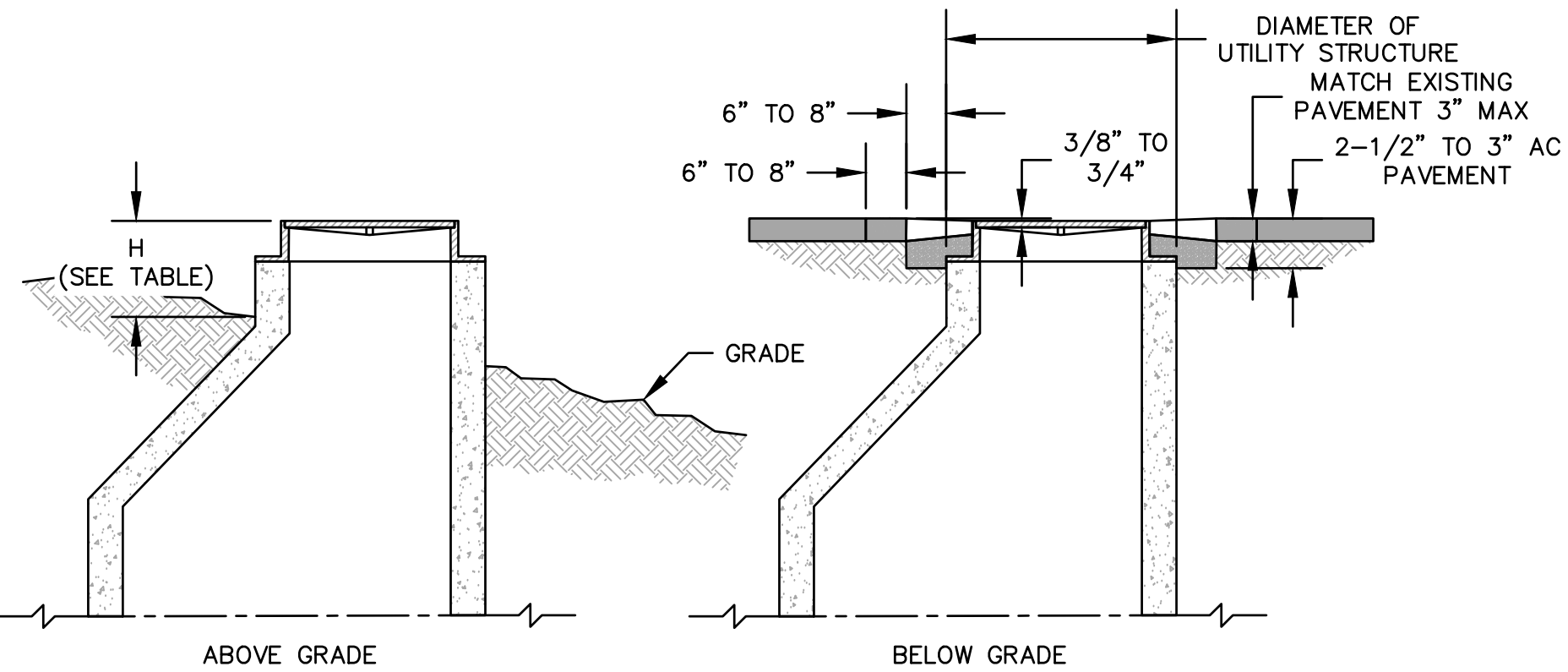
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NOTES:

1. FRAME MUST BE MACHINED TO FIT WATERTIGHT NEOPRENE GASKET
2. MANHOLE COVER SHALL BE WATERTIGHT WITH NO HOLES, SHALL HAVE THE WORD "SEWER" CAST IN COVER AND SHALL BE PROVIDED WITH AN INTEGRAL POCKET LIFT HANDLE
3. FRAME AND MANHOLE COVER DIMENSIONS SHALL BE IN ACCORDANCE WITH OLYMPIC CONSTRUCTION CASTINGS NO. MH30A WITH EGRESS LID, OR AN APPROVED EQUAL
4. FRAME AND MANHOLE COVER SHALL BE DUCTILE OR CAST IRON AND A TYPE THAT WILL NOT CREATE A HAZARD FOR BICYCLE TRAFFIC
5. IF MAINLINE IS 20" OR GREATER, PROVIDE MANHOLE WITH 30" OPENING IN COVER & FRAME
6. ALL MANHOLE COVERS SHALL BE MACHINED BELOW FRAME AS SHOWN IN GASKET DETAIL



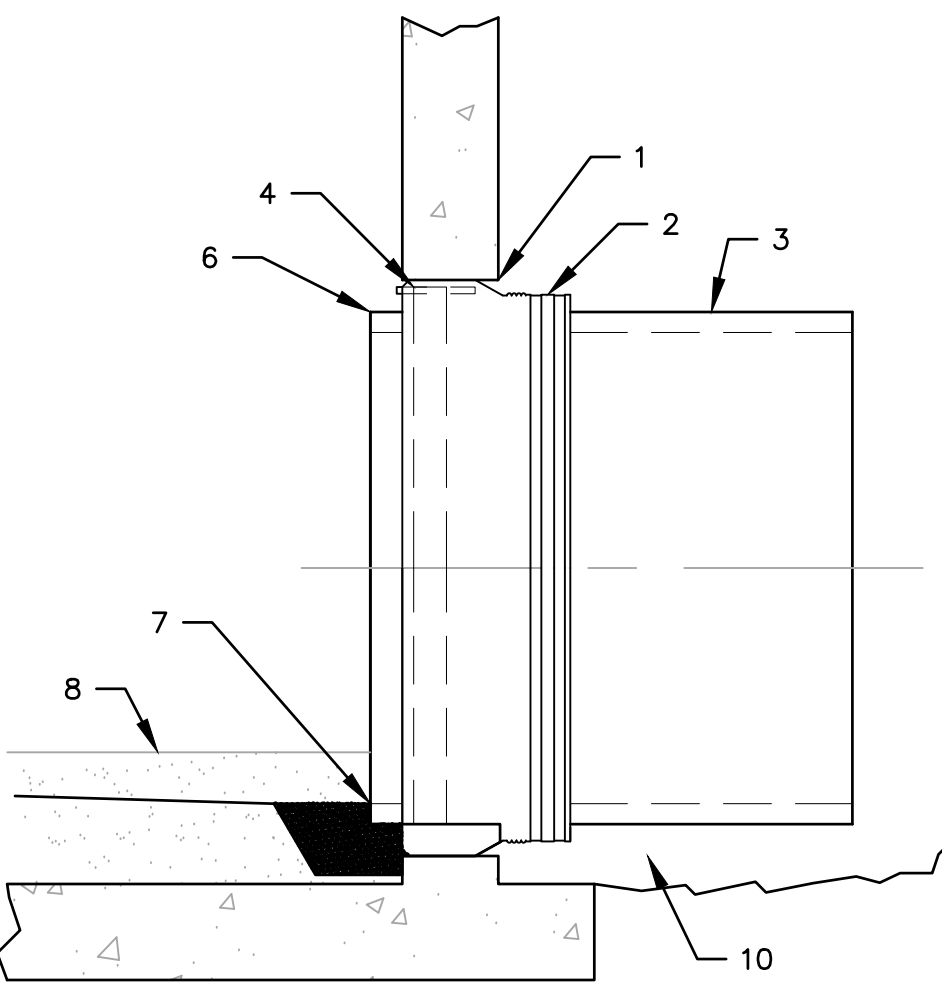
- NOTES:**
1. USE NO MORE THAN ONE 4" ADJUSTING RING FOR NEW CONSTRUCTION OR UNPAVED ROADS. USE NO MORE THAN THREE 4" RINGS FOR RECONSTRUCTION OF PAVED OR CHIPSEAL ROADS. TOP ADJUSTING RINGS SHALL BE AN "INFRA-RISER" RUBBER ADJUSTING RING OR APPROVED EQUAL. MATCH FINAL GRADE PER DETAIL 2, THIS SHEET.
 2. USE "PL POLYURETHANE SELF-LEVELING CONCRETE CRACK SEALANT" OR APPROVED EQUAL FOR "INFRA-RISER" INSTALLATION.
 3. RUNGS TO BE PLACED 12" O.C. ON UNOBSTRUCTED SIDE OF MANHOLE. LAST RUNG SHALL BE 18" MAX FROM BOTTOM OF MANHOLE. AND TOP RUNG SHALL BE 6" MAXIMUM FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, LAST RUNG SHALL BE PLACED 6" OVER SMALLEST PIPE. RUNGS SHALL BE LANE POLYETHYLENE 14" LADDER STEPS OR AN APPROVED EQUAL.
 4. MAXIMUM PIPE DIAMETER SHALL BE 20" FOR A TYPE I MANHOLE. FOR LARGER PIPES, USE A TYPE II MANHOLE. MANHOLES INTERSECTED BY MORE THAN 2 PIPES, 15" DIAMETER OR LARGER, USE A TYPE II MANHOLE. MINIMUM MAINLINE DIAMETER SHALL BE 8".
 5. REFER TO ASTM C-478 FOR DESIGN REQUIREMENTS AND C-478-69 FOR MINIMUM STEEL FOR BARREL AND BASE. BLOCKOUTS SHALL BE FORMED.
 6. IF MANHOLE IS WITHIN A ROADWAY, COMPACTION TESTS MUST BE TAKEN ON BACKFILL EVERY 3'. DENSITY SHALL BE 95% OF MAXIMUM PROCTOR DENSITY.
 7. MANHOLE FRAMES MAY BE RAISED TO ACCOMMODATE PAVEMENT OVERLAYS PROVIDED THE DISTANCE FROM THE TOP OF THE FRAME TO THE FIRST RUNG IS LESS THAN 36".



MANHOLE HEIGHTS ABOVE GRADE		MANHOLE DEPTHS BELOW GRADE	
LOCATION OF MANHOLE	HEIGHT (H)	LOCATION OF MANHOLE	DEPTH (D)
UNDEVELOPED & SWAMPY AREAS	12" TO 24"	PAVED STREETS (SEE NOTE 1)	3/8"-3/4"
HIGHWAY ROW'S OUTSIDE OF TRAFFIC AREAS	1" TO 6"	BACKYARDS, GRAVEL STREETS, AND TRAVELED ALLEY AREAS	6" MAX

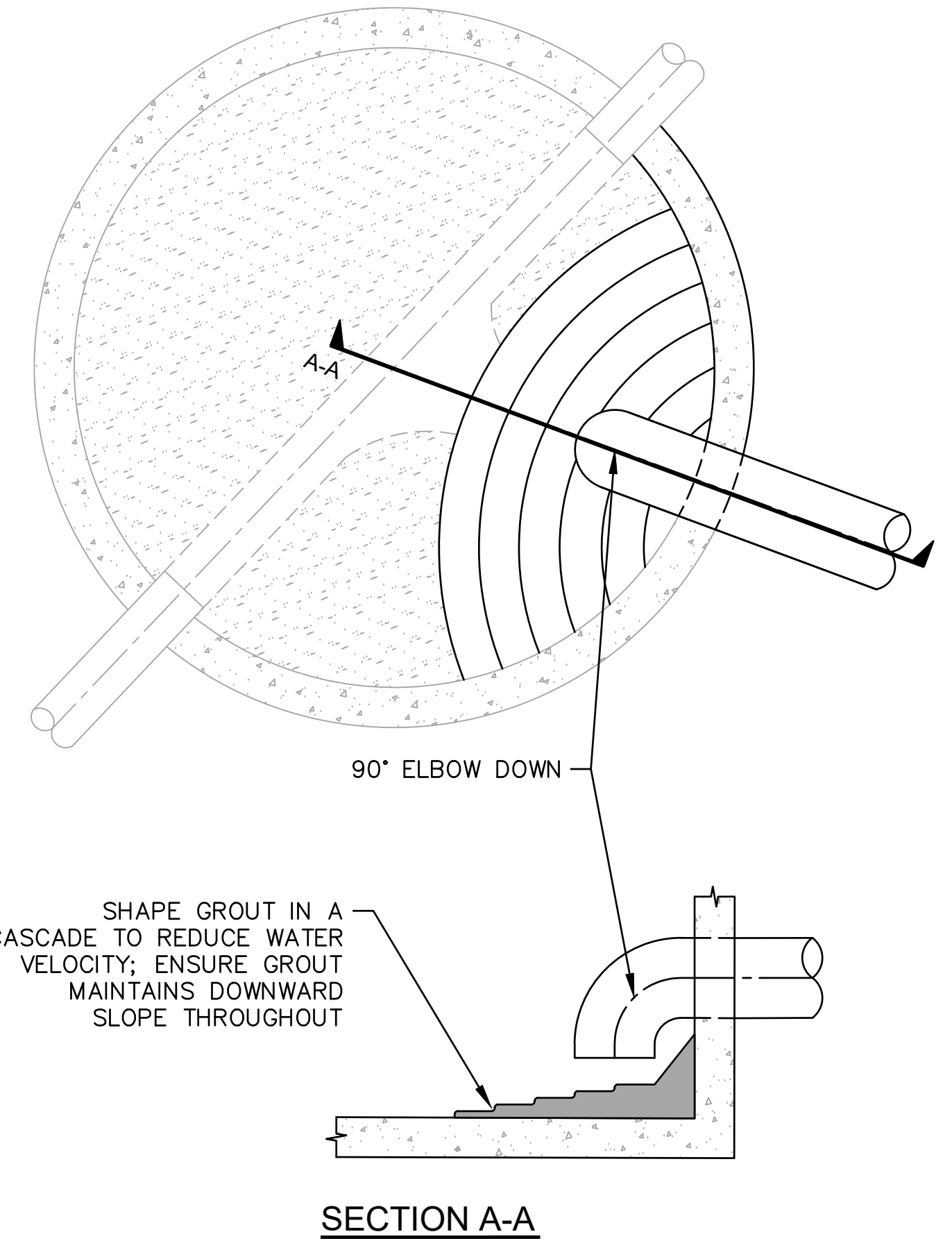
- NOTES:**
1. MANHOLE LID MUST CONFORM TO THE GRADE AND CROSS SLOPE OF THE STREET
 2. MEASUREMENT SHALL BE TAKEN FROM THE TOP OF THE FRAME
 3. FOR BACKYARDS, GRAVEL STREETS AND TRAVELED ALLEY AREAS, BACKFILL TO MATCH EXISTING GRADE

2 MANHOLE HEIGHT DETAILS
C-502 NTS



- NOTES:**
1. CORED HOLE IN MANHOLE WALL SHALL BE SMOOTH AND FREE OF POROSITY, SPALLING, OR FLAKING. REPAIR WITH HYDRAULIC CEMENT IF PROFILE EXISTS.
 2. TRELLEBORG KOR-N-SEAL II 206-36 SERIES CONNECTOR
 3. 12" DUCTILE IRON GRAVITY SEWER
 4. ENSURE KORBAND IS PROPERLY LOCATED IN CONNECTOR GROOVE WITH WEDGE AT TOP OF CLOCK POSITION
 5. LOCATE BOOT FLUSH WITH INSIDE FACE OF MANHOLE
 6. PIPE SHALL PROTRUDE 2" INSIDE MANHOLE INTERIOR FACE
 7. GROUT THE CRADLE OF PIPE TO MATCH MANHOLE INVERT
 8. REPAIR MANHOLE CHANNEL SHAPING TO BLEND WITH EXISTING
 9. ALL MANHOLE CONNECTIONS SHALL BE 100% WATERTIGHT
 10. FLOW FILL TO PIPE SPRINGLINE WITHIN 2' OF MANHOLE

3 MANHOLE CONNECTION - GRAVITY SEWER
C-502 NTS



4 ENERGY DISSIPATION DETAIL
C-502 NTS

1 TYPE I & II MANHOLE DETAIL
C-502 NTS

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
FILTER BACKWASH TIE-IN DETAILS
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/2023

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C-502

STRUCTURAL GENERAL NOTES:

1. APPLICABLE SPECIFICATIONS AND CODES
CONSTRUCTION AND DESIGN SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION, AND WITH THE LATEST EDITION OF THE APPLICABLE SPECIFICATIONS AND THE REQUIREMENTS NOTED AS FOLLOWS.
2. SPECIAL INSPECTION
 - a. SOILS – TABLE 1705.6 OF THE IBC
 - i. PERIODIC INSPECTION OF FOUNDATION SOIL BEARING CAPACITY, DEPTH, FILL MATERIALS CLASSIFICATION AND SUBGRADE PREPARATION AND COMPACTION.
 - ii. FULL TIME INSPECTION OF ENGINEERED FILL PLACEMENT AND COMPACTION.
 - b. CONCRETE – TABLE 1705.3 OF THE IBC
 - i. PERIODIC INSPECTION OF REINFORCEMENT BEFORE CONCRETE IS PLACED.
 - ii. FULL TIME INSPECTION OF ANCHOR RODS AND OTHER EMBEDDED ITEMS AS IDENTIFIED HEREIN.
 - iii. FULL TIME INSPECTION DURING PLACEMENT OF CONCRETE INCLUDING THE TAKING OF TEST SPECIMENS, SLUMP AND AIR CONTENT MEASUREMENT. INSPECTION AND TESTING SHALL BE LIMITED TO STRUCTURAL REINFORCED CONCRETE WITH TESTING FREQUENCY IN ACCORDANCE WITH THE PROJECT TECHNICAL SPECIFICATIONS.
 - c. STEEL – AISC 360 FOR STRUCTURAL STEEL, IBC TABLE 1705.2.2 FOR STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL (COLD-FORMED STEEL, REBAR, ETC.)
 - i. FULL TIME INSPECTION FOR HIGH-STRENGTH BOLTING FOR SLIP CRITICAL CONNECTIONS PER AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
 - ii. PERIODIC INSPECTION FOR HIGH STRENGTH BOLTING FOR BEARING TYPE CONNECTIONS PER AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
 - iii. FULL TIME INSPECTION OF COMPLETE AND PARTIAL PENETRATION GROVE WELDS, MULTI-PASS FILLET WELDS AND SINGLE PASS FILLET WELDS GREATER THAN 5/16" IN ACCORDANCE WITH AWS D1.1.
 - iv. PERIODIC INSPECTION OF FRAME JOINT DETAILS FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS.
3. DESIGN LOADS
 - a. DESIGN LOADS AND LOAD APPLICATIONS SHALL BE IN ACCORDANCE WITH IBC.
 - b. UNIFORM FLOOR LIVE LOADS
 - i. ALL FLOOR AREAS, UNLESS OTHERWISE INDICATED 125 PSF
 - c. ROOF LOADS
 - i. MINIMUM ROOF SNOW LOAD 55 PSF
 - ii. DRIFT SURCHARGE LOADS IN ACCORDANCE WITH ASCE 7
 - (a) BASIC GROUND SNOW LOAD 60 PSF
 - (b) IMPORTANCE FACTOR I = 1.10
 - d. WIND LOADS IN ACCORDANCE WITH CHAPTER 26 OF ASCE 7
 - i. OCCUPANCY OR RISK CATEGORY III
 - ii. BASIC WIND SPEED (3-SEC GUST) 147 MPH
 - iii. EXPOSURE CATEGORY D
 - e. SEISMIC LOADS
 - i. IMPORTANCE FACTOR I = 1.25
 - ii. MAPPED SPECTRAL RESPONSE S_s 0.249
 - iii. MAPPED SPECTRAL RESPONSE S_1 0.255
 - iv. SITE CLASS C
 - v. SPECTRAL RESPONSE COEFFICIENT S_{DS} 0.216
 - vi. SPECTRAL RESPONSE COEFFICIENT S_{D1} 0.255
 - vii. SEISMIC DESIGN CATEGORY D
 - f. SPECIAL LOADS
 - i. MECHANICAL EQUIPMENT LOADS ACTUAL OPERATING LOADS
 - g. ADDITIONAL LOADS REFERENCED ON THE DRAWINGS.
4. CONSTRUCTION LOADS
STRUCTURES HAVE BEEN DESIGNED FOR DEAD LOADS AND THE DESIGN LOADS NOTED ABOVE. PROVIDE TEMPORARY BRACING, SHORING OR OTHER SUPPLEMENTAL SUPPORT DURING CONSTRUCTION AS NECESSARY TO PROTECT THE STRUCTURES FROM EXCESSIVE CONSTRUCTION LOADS.
5. FOUNDATIONS
 - a. FOUNDATION DESIGN CRITERIA
 - i. MAXIMUM ALLOWABLE SOIL BEARING PRESSURE - 5,000 PSF
 - ii. LATERAL SOIL PRESSURE 60 PCF EQUIVALENT FLUID PRESSURE (AT-REST)
 - iii. DESIGN FROST DEPTH BELOW EXTERIOR GRADE - 2 FEET FOR WARM BUILDINGS AND 3 FEET FOR COLD STORAGE
 - b. AVOID EXCESSIVE WETTING OR DRYING OF THE FOUNDATION EXCAVATIONS DURING CONSTRUCTION.
6. CONCRETE
 - a. CONCRETE CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318).
 - b. DETAILING, FABRICATION AND PLACEMENT OF REINFORCEMENT SHALL CONFORM TO DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI 315).
 - c. MATERIALS
 - i. CONCRETE
 - (a) STRUCTURAL CAST - IN - PLACE $f_c = 4,000$ PSI
 - (b) EXTERIOR WALKS, CURBS, RAMPS $f_c = 4,000$ PSI
 - ii. REINFORCING MATERIALS
 - (a) REINFORCING BARS ASTM A615, GRADE 60
 - (b) WELDED WIRE FABRIC ASTM A185, FURNISH IN SHEETS ONLY
 - iii. POST-INSTALLED ANCHOR OR REBAR DOWEL ADHESIVE
 - (a) HILTI HIT HY-200 OR HIT-RE 500 V3
 - d. ALL BENT REINFORCING BARS SHALL BE SHOP FABRICATED ONLY. REBENDING OR WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS AUTHORIZED BY ENGINEER.
 - e. END HOOKS IN REINFORCING BARS, SHOWN ON THE DRAWINGS BUT NOT DIMENSIONED, SHALL CONFORM TO ACI 318.
 - f. CONCRETE COVER OVER REINFORCEMENT SHALL BE 2" CLEAR, EXCEPT FOR THE FOLLOWING, UNLESS OTHERWISE NOTED.
 - i. CONCRETE PLACED AGAINST AND PERMANENTLY IN CONTACT WITH EARTH 3" CLEAR
 - ii. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH OR WATER
 - (a) BEAMS, COLUMNS 1 1/2" CLEAR
 - (b) WALLS 1 1/2" CLEAR

- g. REINFORCEMENT SPLICES NOT PERMITTED EXCEPT AS DETAILED OR AUTHORIZED BY THE ENGINEER. LAP REINFORCING BARS THE FOLLOWING MINIMUMS AT ALL SPLICES, CORNERS AND INTERSECTIONS, UNLESS OTHERWISE INDICATED. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BAR.

BAR SIZE	REG BARS	TOP BARS
#3	1'-3"	1'-7"
#4	1'-9"	2'-3"
#5	2'-0"	2'-9"
#6	2'-5"	3'-3"
#7	3'-6"	4'-9"
#8	4'-0"	5'-2"
#9	4'-6"	5'-10"
#10	5'-1"	6'-7"

- h. LAP WELDED WIRE FABRIC ONE FULL MESH AT SPLICES.
 - i. STAGGER ADJACENT REINFORCEMENT LAP SPLICES IN WALLS 18" MINIMUM.
 - j. PROVIDE BAR SUPPORTS TO PROPERLY SECURE AND SUPPORT REINFORCING BARS AND WELDED WIRE FABRIC AT POSITIONS SHOWN ON THE DRAWINGS. IN ADDITION TO NORMAL ACCESSORIES PROVIDE #5 STANDEES AT 36" O.C. TO SUPPORT TOP REINFORCEMENT IN BASE SLABS, AND #3 U OR Z SHAPE SPACERS AT 72" O.C. EACH WAY IN WALLS WITH TWO CURTAINS OF REINFORCEMENT.
 - k. DOWELS, PIPES AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION DURING CONCRETE PLACEMENT.
 - l. REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PART EMBEDDED IN CONCRETE. PROVIDE 2" CLEARANCE IN ALL CASES UNLESS OTHERWISE INDICATED. NO EMBEDDED ITEM SHALL BE SUSPENDED FROM, SUPPORTED BY, OR BRACED IN PLACE FROM THE STRUCTURAL REINFORCEMENT.
 - m. LOCATE CONSTRUCTION JOINTS WHERE SHOWN ON THE DRAWINGS OR AS AUTHORIZED BY THE ENGINEER. SLABS, JOISTS AND BEAMS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE EXCEPT WHERE DETAILED ON DRAWINGS.
 - n. THOROUGHLY CLEAN BY MECHANICAL SCARIFICATION ALL KEYWAYS AND CONSTRUCTION JOINTS PRIOR TO PLACING CONCRETE IN ADJACENT POUR.
 - o. PROTECT ALL PROJECTING WATERSTOPS FROM DAMAGE AND EXPOSURE DURING CONSTRUCTION. FIRMLY TIE ALL ENDS AND EDGES OF WATERSTOPS AT 18" MAXIMUM TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
 - p. BEGIN SPACING OF BARS WHICH PARALLEL CONSTRUCTION AND EXPANSION JOINTS 2" CLEAR EACH SIDE OF JOINT.
 - q. UNLESS OTHERWISE SHOWN, PLACE 2-#5 (1 EACH FACE) WITH 2'-0" PROJECTIONS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLABS.
 - r. PROVIDE AN ADDITIONAL 500 LINEAL FEET EACH OF #4 AND #5 REINFORCING BARS FOR USE AS DIRECTED DURING CONSTRUCTION.
 - s. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4", UNLESS OTHERWISE INDICATED.
7. SLABS ON GRADE
 - a. SLAB ON GRADE CONTROL JOINTS ARE DENOTED "CJ" ON DRAWINGS. SLAB ON GRADE CONSTRUCTION JOINTS ARE DENOTED "CONST JT." AT CONTRACTOR'S OPTION CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR CONTROL JOINTS.
 - b. LOCATE WELDED WIRE FABRIC 1 1/2" CLEAR FROM TOP OF SLAB.
 - c. PROVIDE 1-#4 X 4'-0" PARALLEL TO EDGE OF SLAB OPPOSITE THE END OF ALL DISCONTINUED SLAB JOINTS, AND 1-#4 X 4'-0" DIAGONAL BAR AT ALL REENTRANT CORNERS. PLACE BARS MID-DEPTH IN SLAB AND 2" CLEAR FROM EDGE OR CORNER.
 - d. SLOPE BOTTOM SURFACE OF SLABS AS NECESSARY TO MAINTAIN MINIMUM THICKNESS NOTED ON DRAWINGS FOR ALL SLABS WITH SLOPING TOP SURFACE OR DEPRESSION FOR TILE.
 8. STRUCTURAL STEEL
 - a. STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS.
 - b. MATERIAL
 - i. STRUCTURAL STEEL W-SHAPES ASTM A992, GRADE 50
 - ii. STRUCTURAL STEEL PLATES, BARS, ANGLES, AND CHANNELS ASTM A36
 - iii. HOLLOW STRUCTURAL STEEL ASTM A500, GRADE B
 - iv. STEEL PIPE ASTM A53, GRADE B
 - v. HIGH - STRENGTH BOLTS ASTM F3125, GRADE A325
 - vi. ANCHOR RODS ASTM F1554
 - vii. HEADED ANCHOR STUDS (HAS) ASTM A108, TYPE B
 - c. ALL STRUCTURAL STEEL BOLTED CONNECTIONS SHALL BE SNUG-TIGHTENED, 3/4" DIAMETER A325 - N BOLTS WITH STANDARD HOLES, UNLESS OTHERWISE NOTED.
 - d. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE - STEEL (AWS D1.1) AND SHALL BE PERFORMED BY WELDERS QUALIFIED BY THE APPROPRIATE AWS TEST FOR THE WELDING PERFORMED.
 9. EQUIPMENT INSTALLATION
 - a. ALL OPENINGS SHOWN SHALL BE VERIFIED, AND ALL STRUCTURAL DIMENSIONS AND DETAILS PERTAINING TO EQUIPMENT INSTALLATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ACTUAL EQUIPMENT FURNISHED.
 - b. EQUIPMENT SUPPORTS, ANCHORAGES AND OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO PLACING CONCRETE.
 10. ARCHITECTURAL ELEVATION 100'-0" = CIVIL ELEVATION 260.00' FOR THE NEW FILTER BUILDING. THE ELEVATIONS SHOWN AT THE PIPE GALLERY ADDITION ARE BASED ON EXISTING PLAN ELEVATIONS LISTED IN THE RECORD DRAWINGS FOR THAT STRUCTURE.

SIEVE SIZE	PERCENT FINER	SIEVE SIZE	PERCENT FINER
3"	100*	1"	100%
1 1/2"	70-100	3/4"	90% TO 100%
3/4"	30-100	3/8"	20% TO 55%
1/2"	25-100	#4	0% TO 10%
NO. 4	20-49	#8	0% TO 5%
NO. 40	0-25		
NO. 200	0-6		
0.02mm	0-3		

STRUCTURAL FILL GRADATION
CRUSHED STONE

DRAIN GRAVEL GRADATION
CRUSHED STONE

REV	DATE	DESCRIPTION



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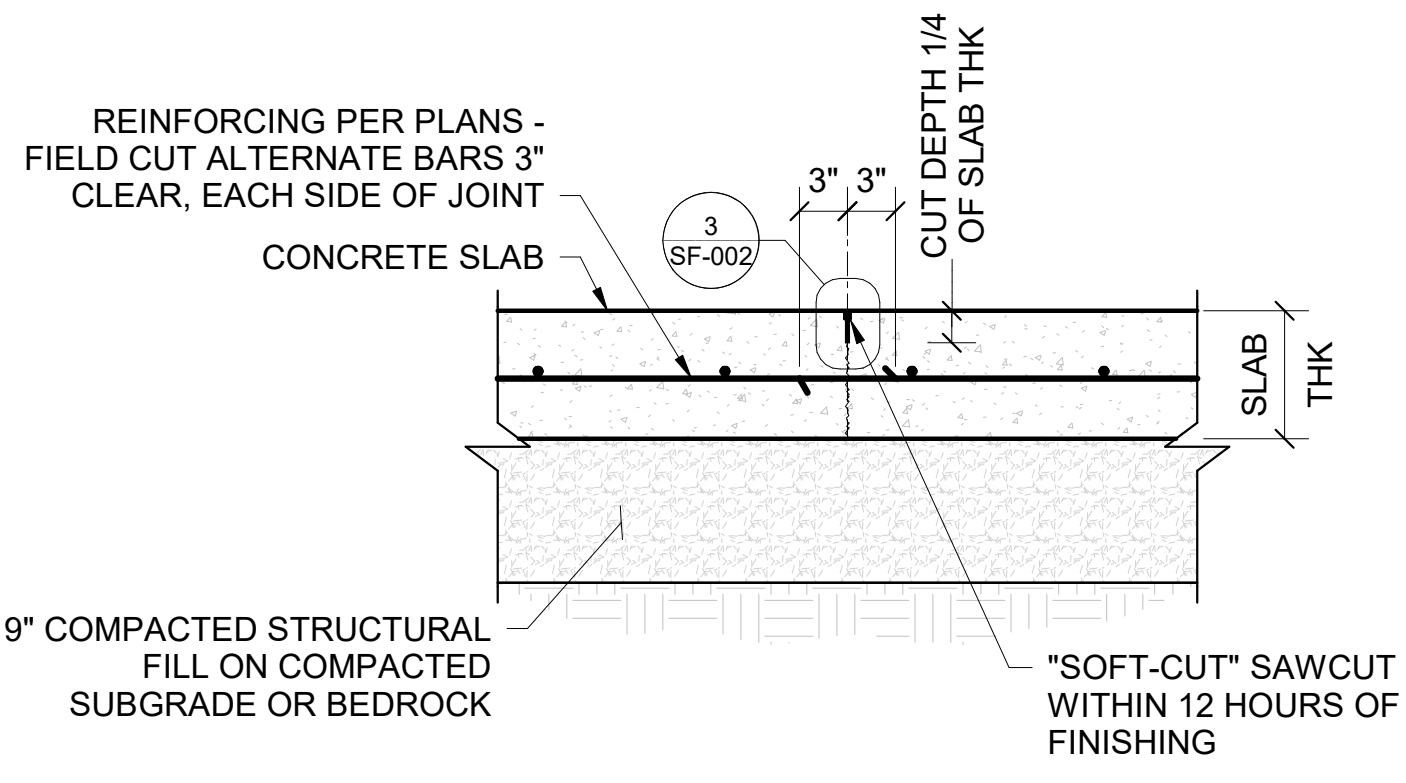
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

STRUCTURAL FOUNDATION NOTES

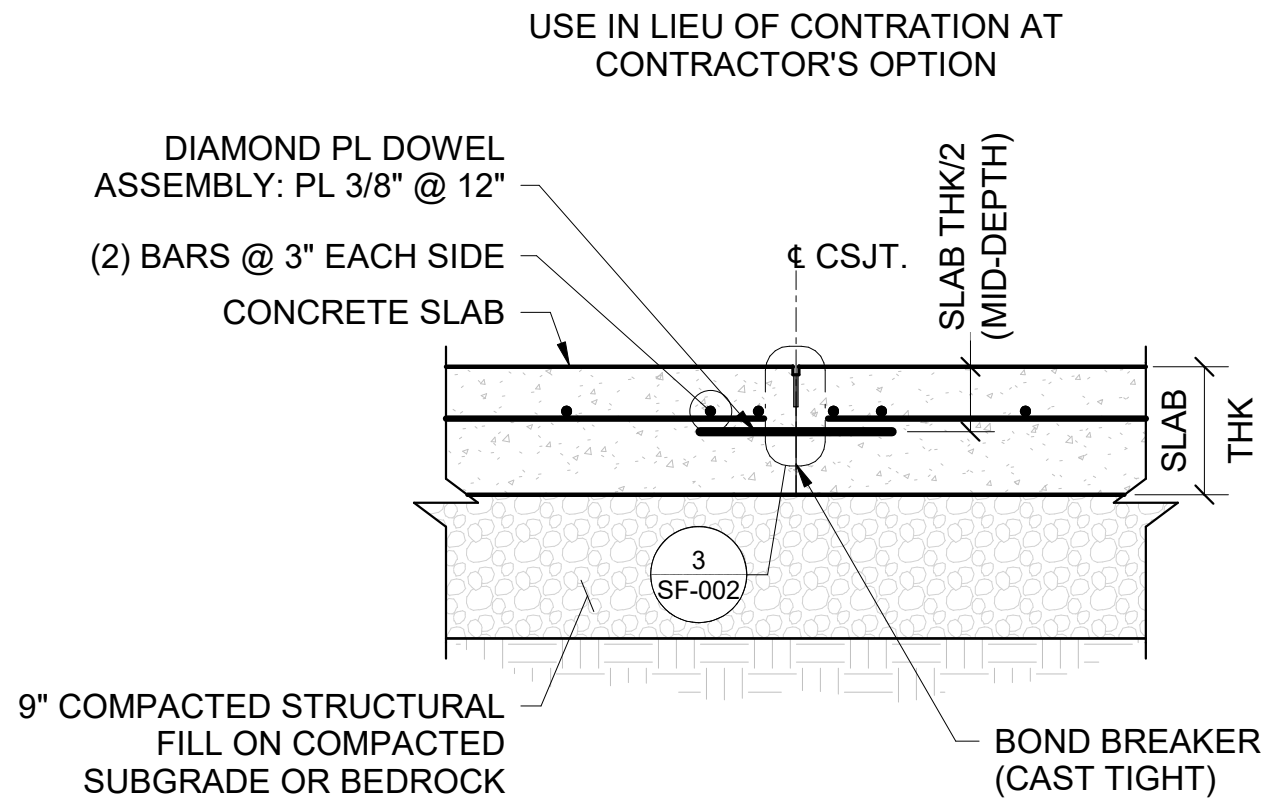
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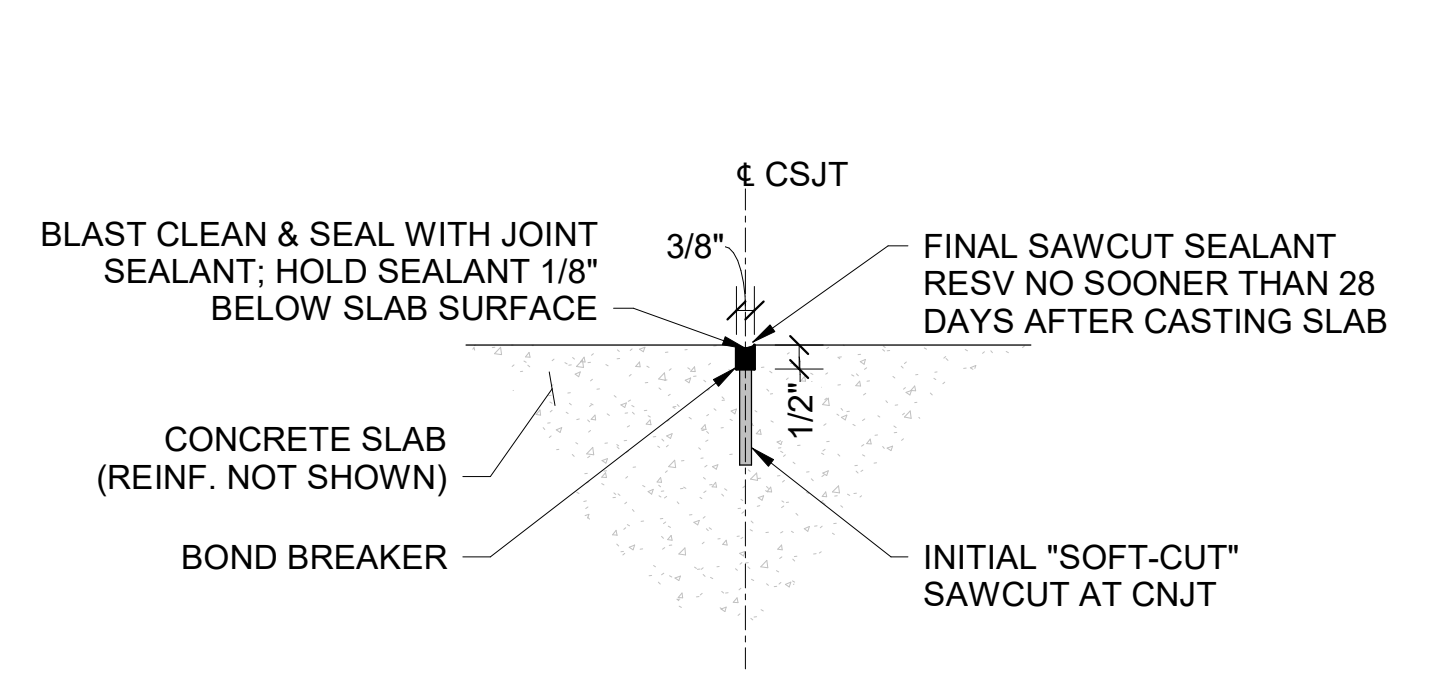
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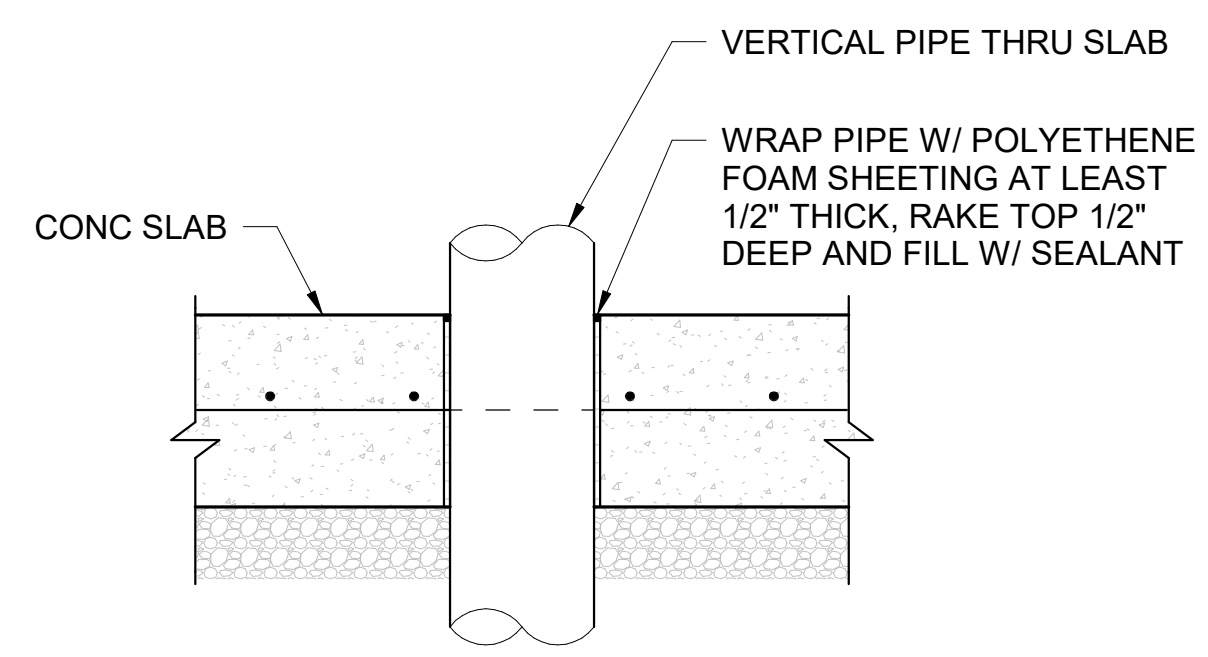
1 **DETAIL**
SF-002 SLAB ON GRADE CONTRACTION JOINT



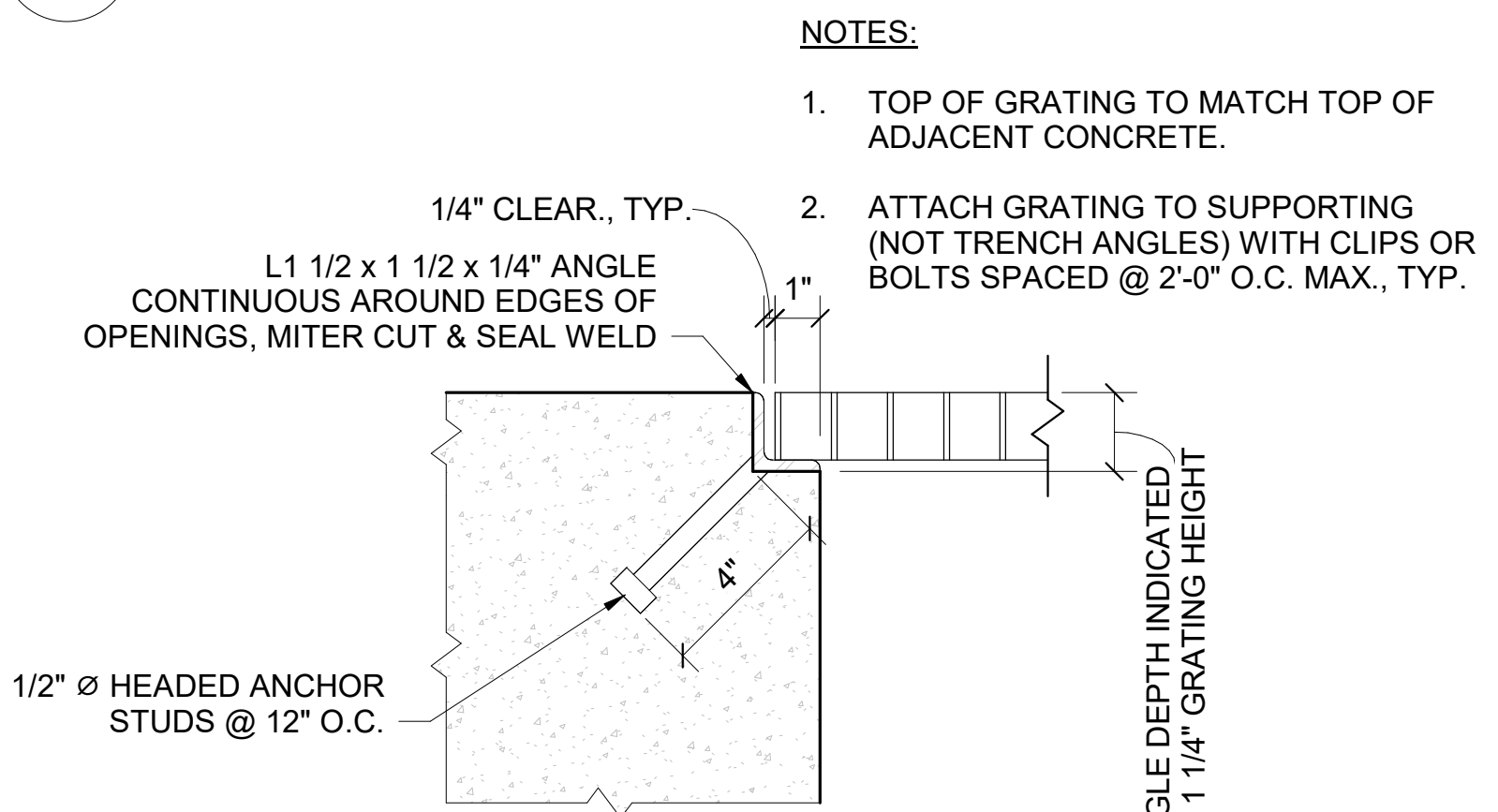
2 **DETAIL**
SF-002 CONSTRUCTION JOINT



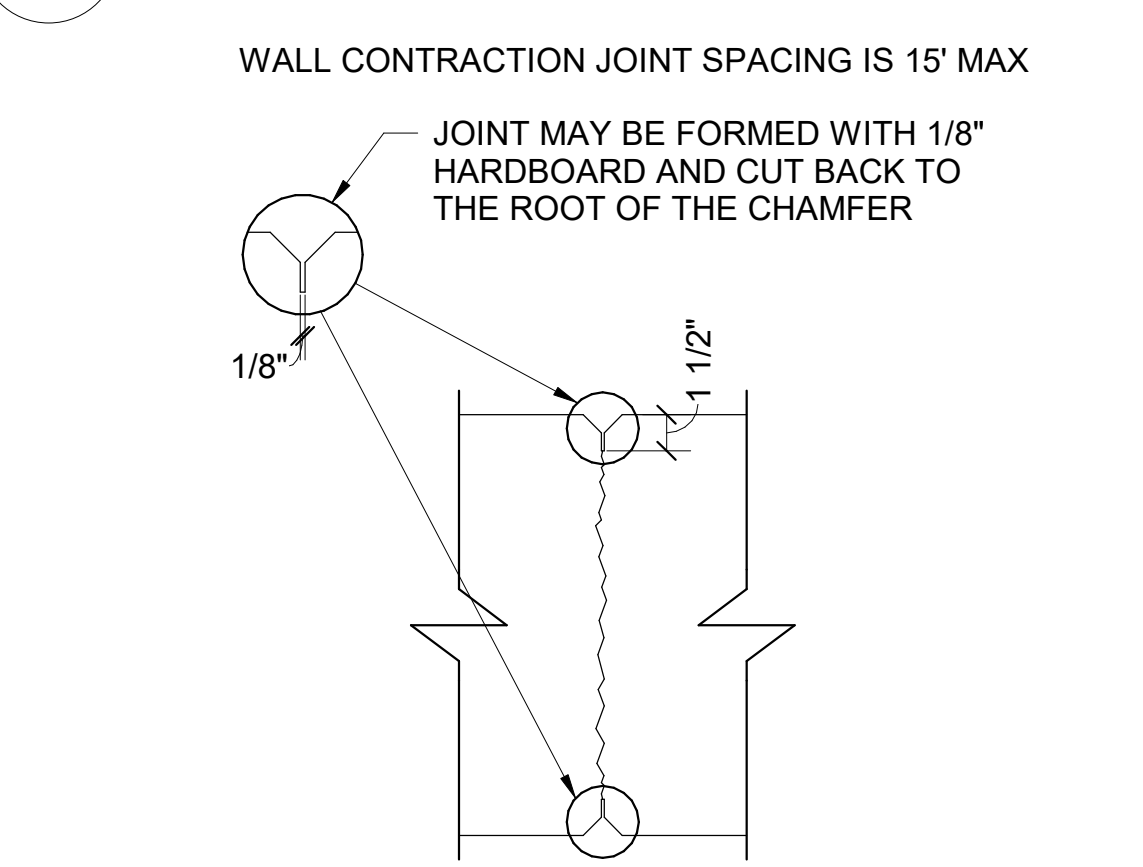
3 **DETAIL**
SF-002 ENLARGED SLAB JOINT



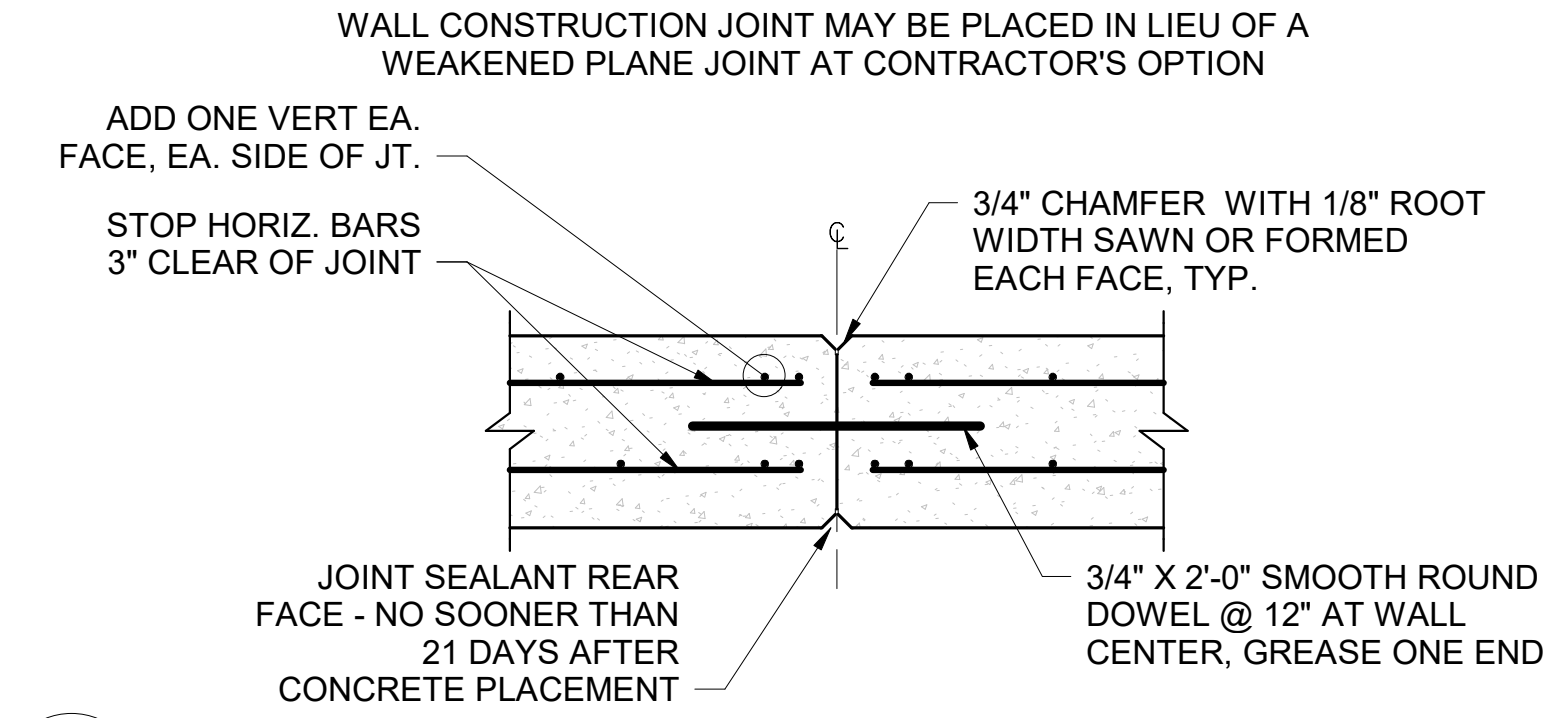
4 **DETAIL**
SF-002 PIPE PENETRATION THRU SLAB



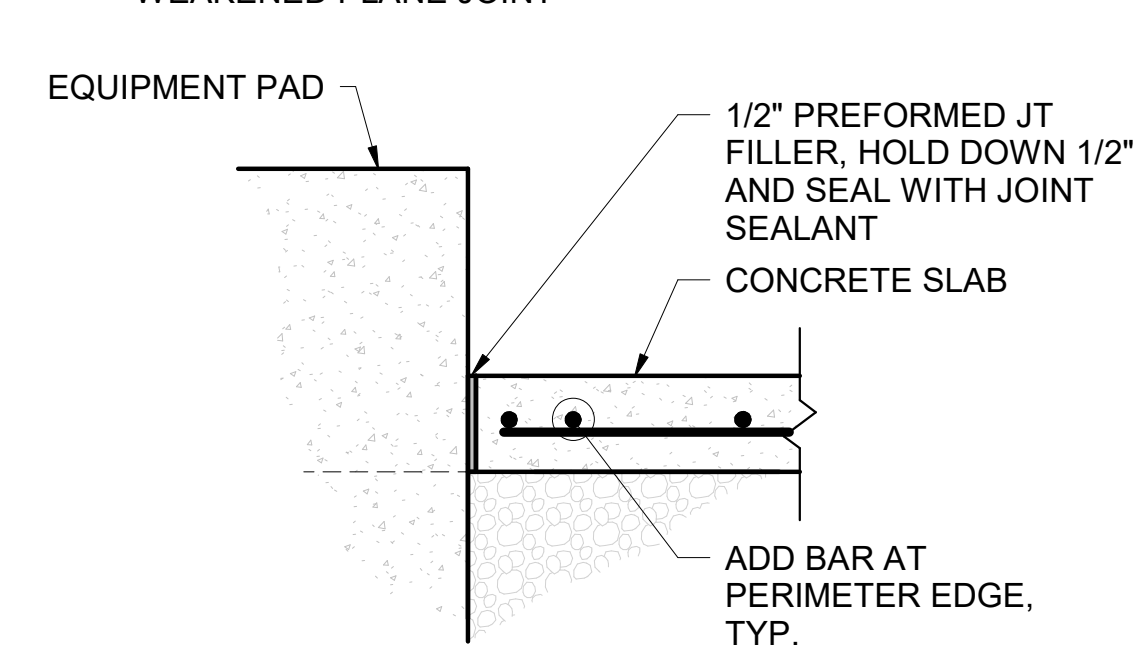
6 **DETAIL**
SF-002 GRATING - HEADED ANCHOR STUDS



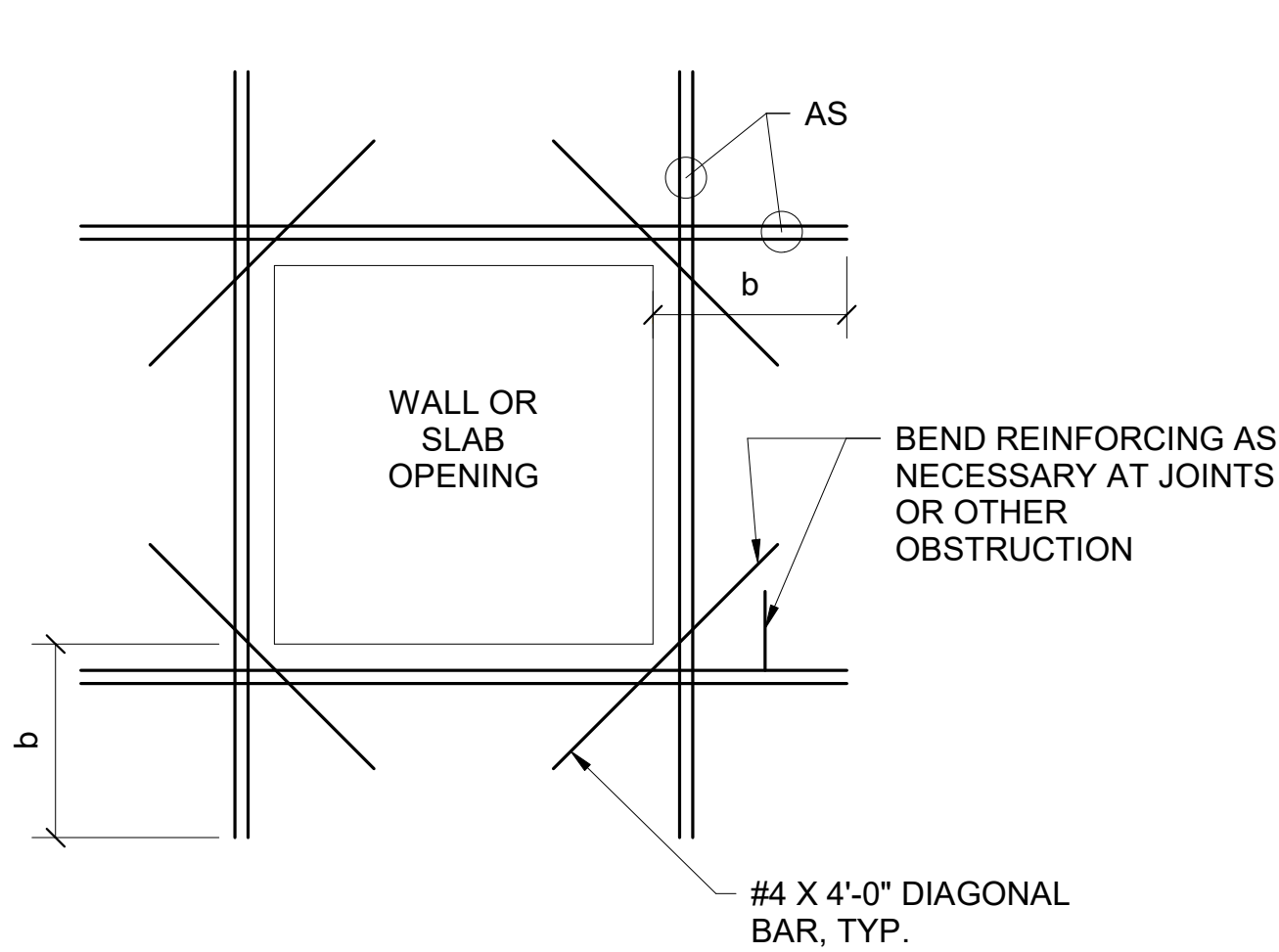
7 **SECTION**
SF-002 CONCRETE WALL CONTRACTION JOINT - WEAKENED PLANE JOINT



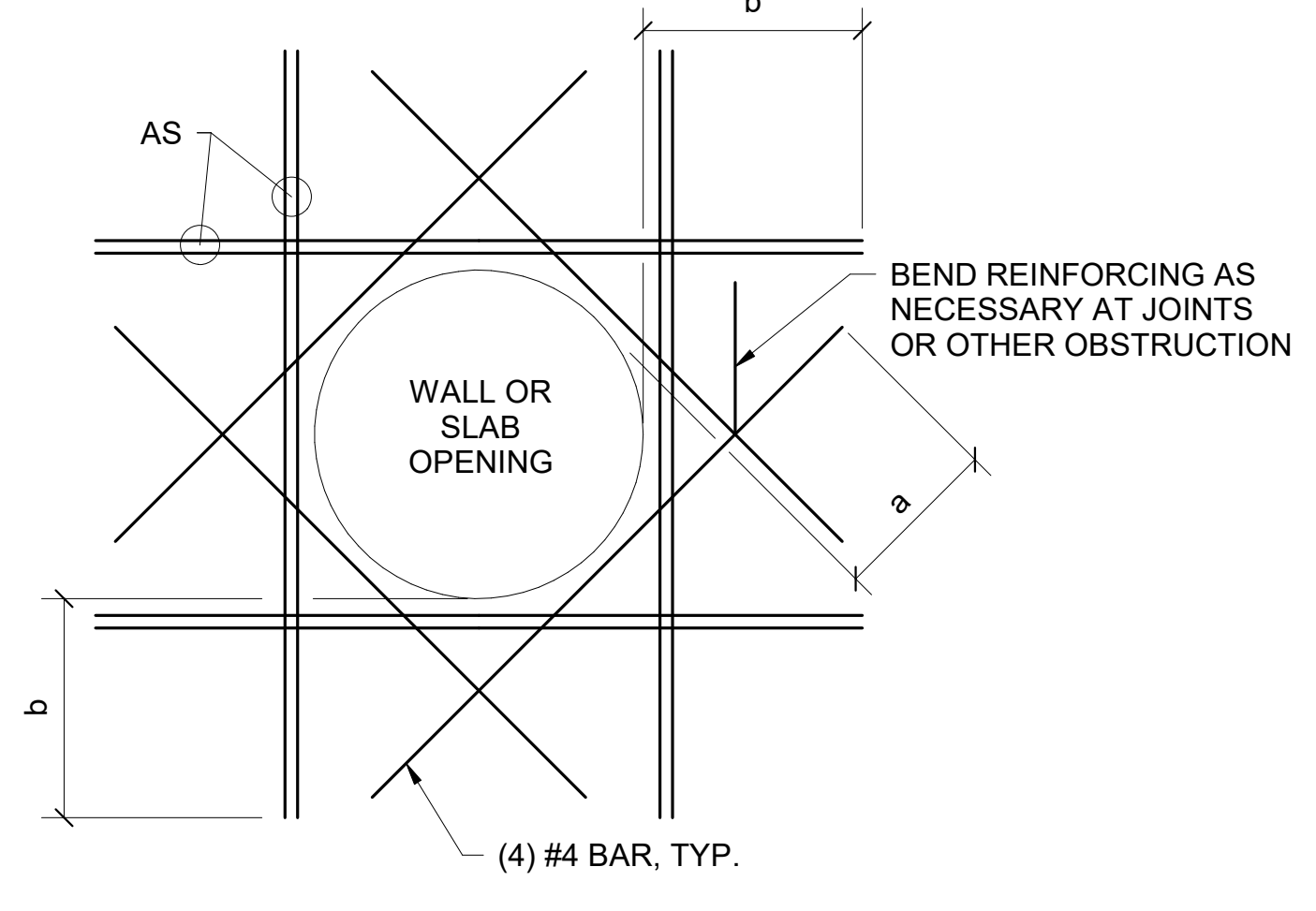
10 **SECTION**
SF-002 CONCRETE WALL CONSTRUCTION JOINT



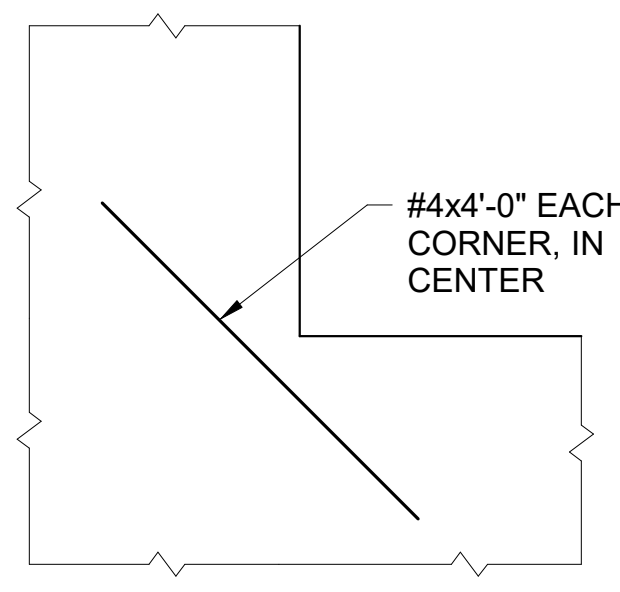
11 **SECTION**
SF-002 SLAB ISOLATION JOINT



RECTANGULAR OPENINGS



CIRCULAR OPENINGS



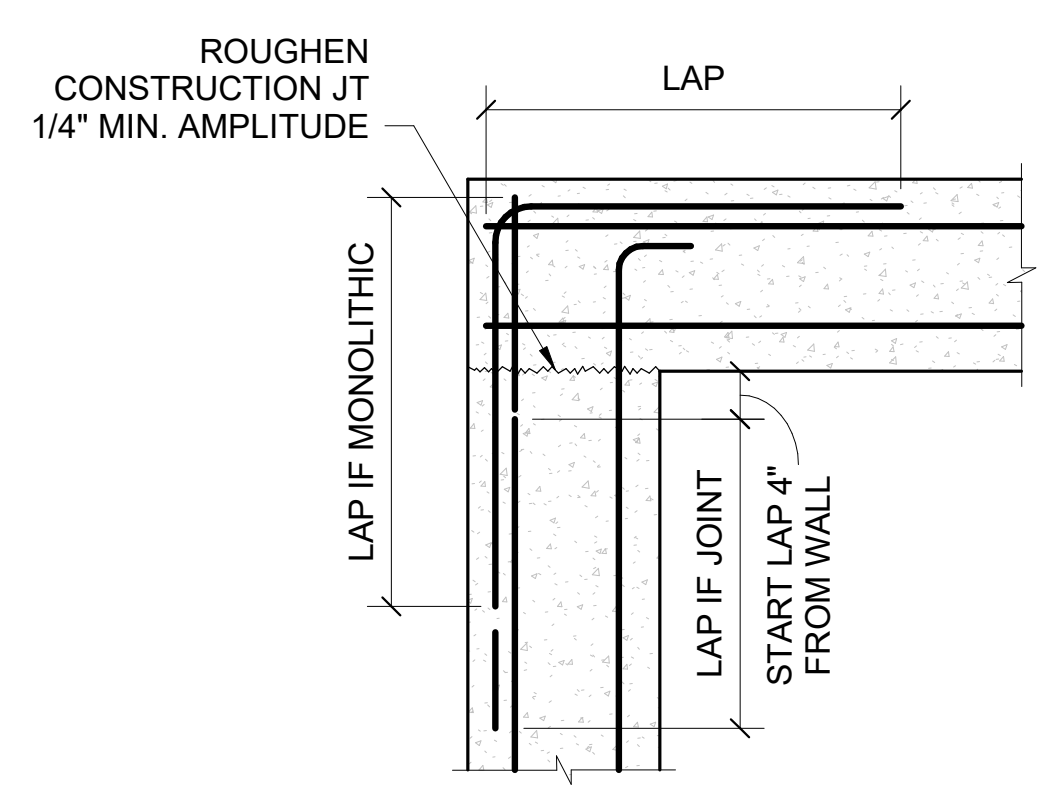
ISOLATED RE-ENTRANT CORNERS

NOTES:

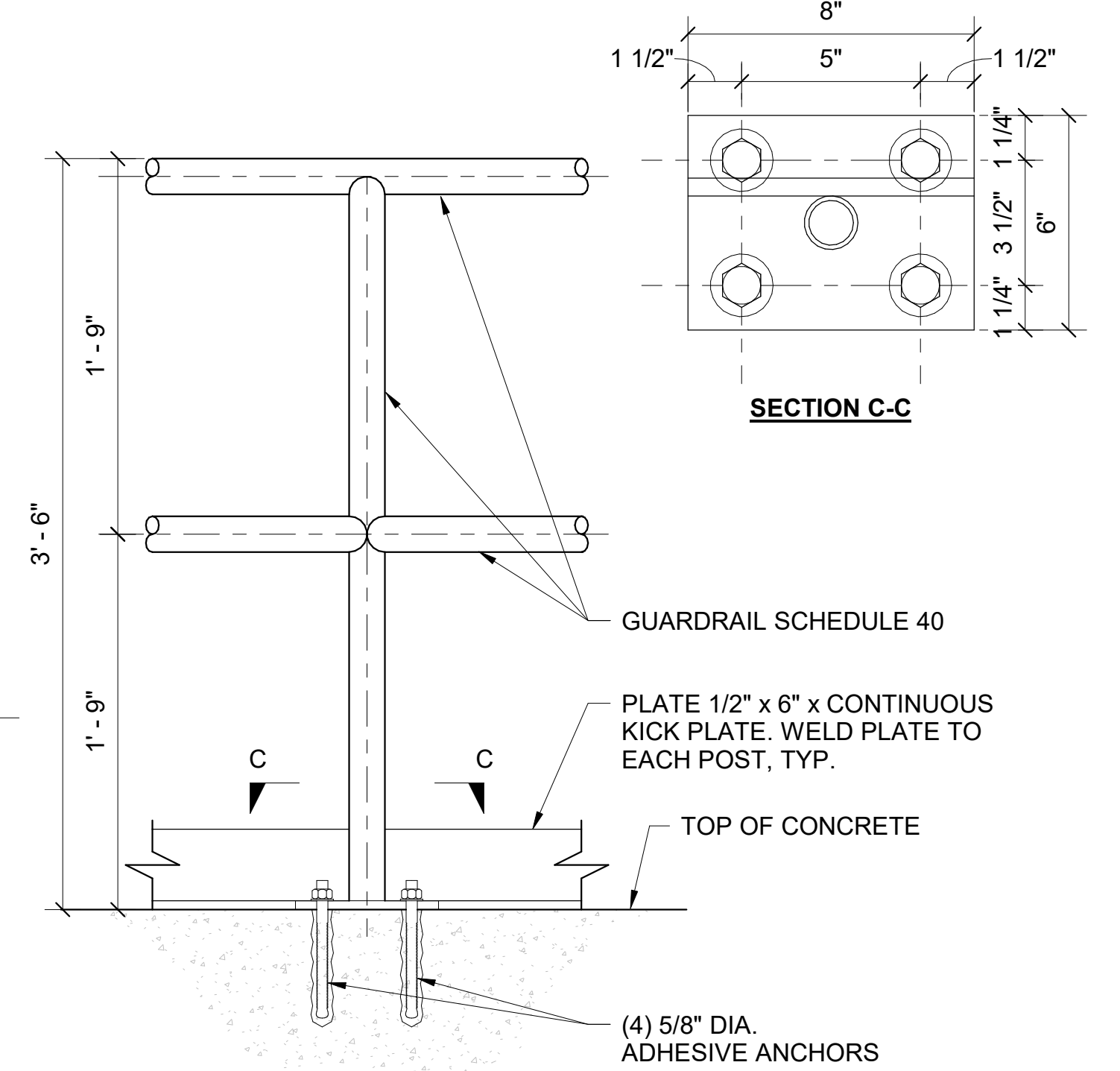
- 'AS' = ADDITIONAL BARS EQUAL IN TOTAL NUMBER TO REGULAR REINFORCEMENT CUT BY THE OPENING. PLACE ONE-HALF TOTAL BARS TO EACH SIDE OF OPENING & IN THE SAME TRANSVERSE POSITION AS THE REGULAR REINFORCEMENT.
- 'AS' BAR SIZE TO BE SAME AS REGULAR REINFORCEMENT IN EACH DIRECTION.
- THIS DETAIL APPLIES UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS.
- ADDITIONAL BARS TO BE PLACED AT OF WALL OR SLAB WHERE ONE LAYER OF REINFORCING IS PROVIDED AND AT EACH FACE WHERE TWO LAYERS OF REINFORCING ARE PROVIDED.
- ADDITIONAL HORIZONTAL AND VERTICAL BARS ARE NOT NECESSARY FOR HOLES 8 TO 11 INCHES. USE ONLY THE DIAGONAL BARS. FOR HOLES SMALLER THAN 8 INCHES DO NOT CUT BARS, SPREAD NORMAL REINFORCING AROUND HOLE (NO DIAGONALS NEEDED).

BAR SIZE	a	b
#4	18"	24"
#5	24"	30"
#6	30"	36"
#7	42"	54"
#8	48"	62"
#9	54"	70"
#10	61"	79"

5 **DETAIL**
SF-002 TYPICAL ADDITIONAL REINFORCEMENT AT OPENINGS



8 **DETAIL**
SF-002 TYP. CONCRETE WALL CORNER



ELEVATION
GUARDRAIL TOP MOUNTED TO CONCRETE FLOOR

12 **SECTION**
SF-002 TYPICAL GUARDRAIL - STEEL TO CONCRETE

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
STANDARD CONCRETE DETAILS

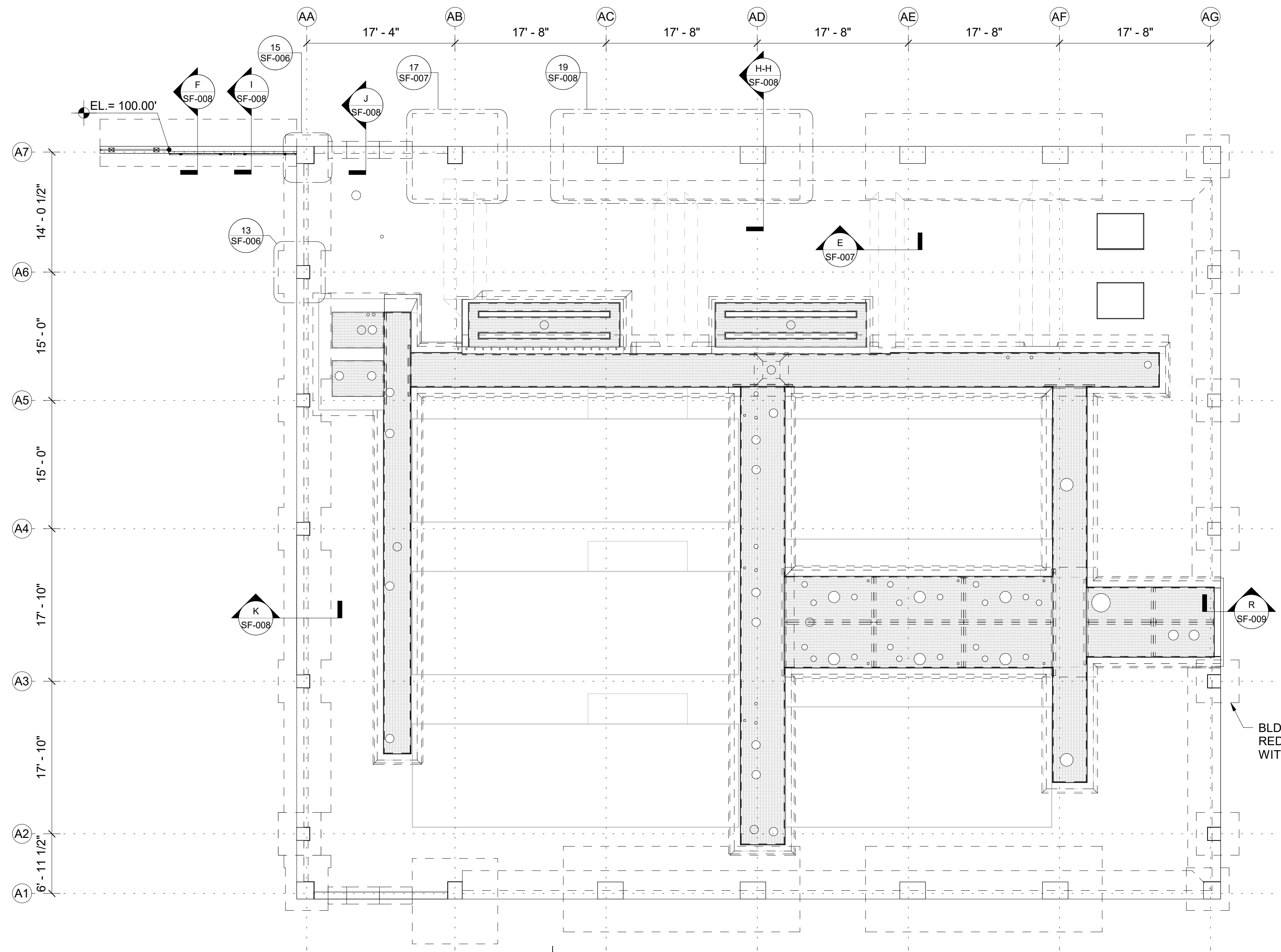
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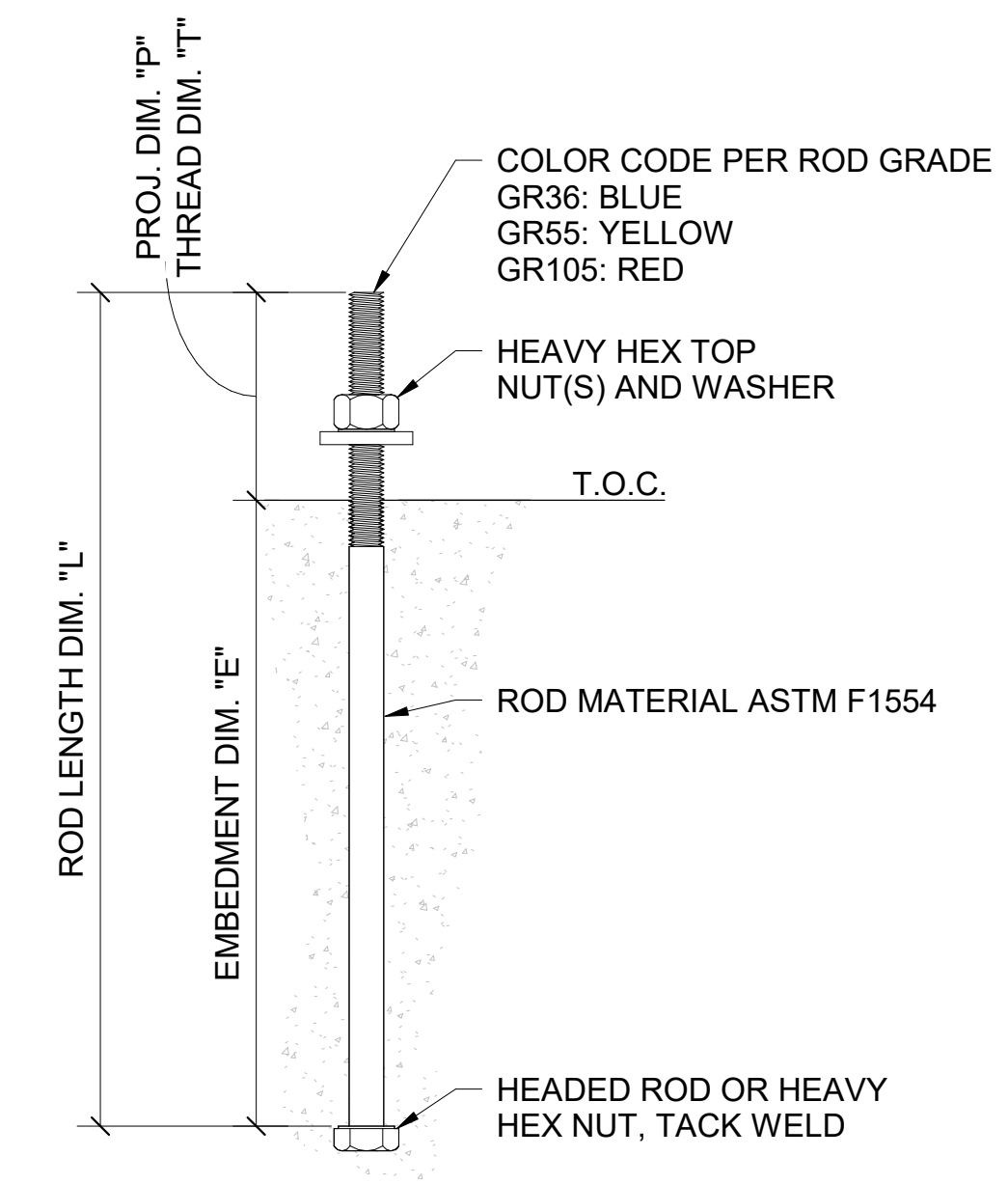
SF-002

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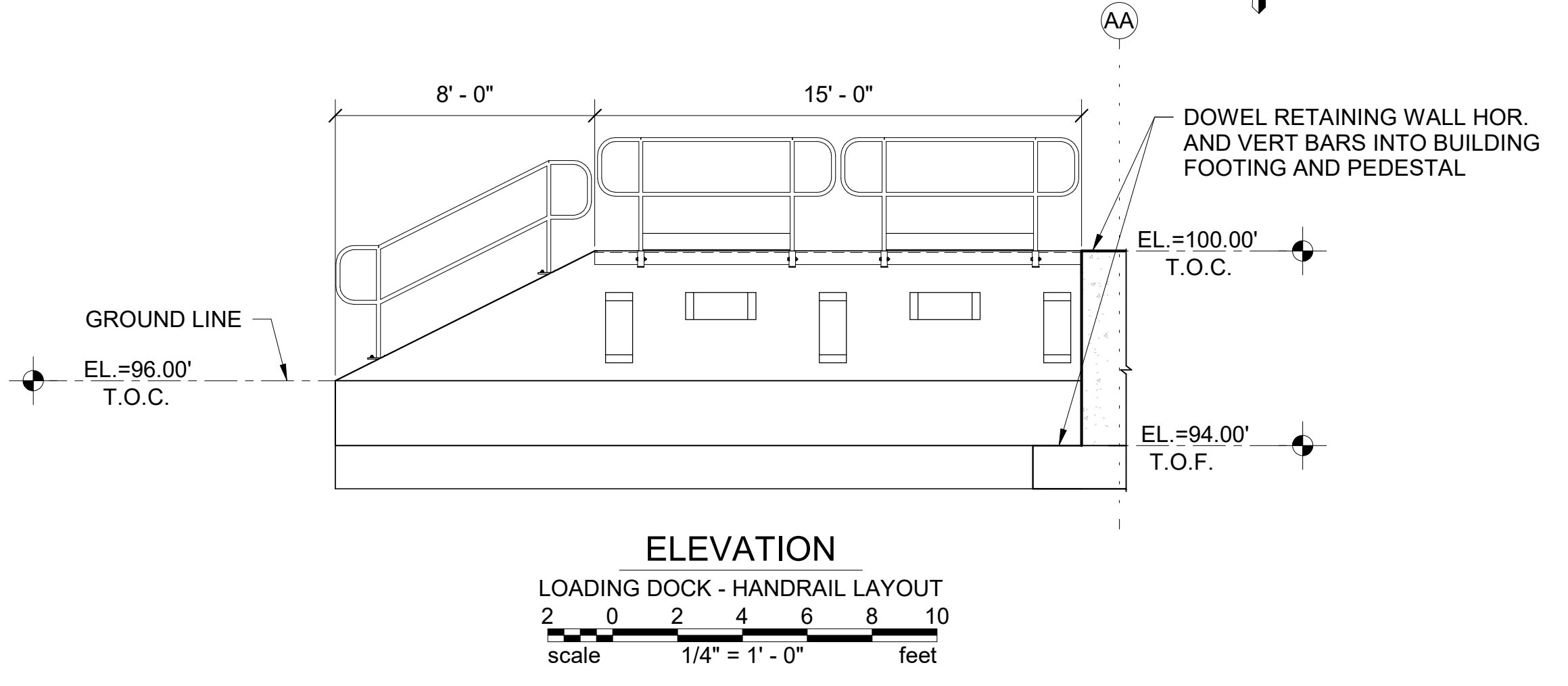
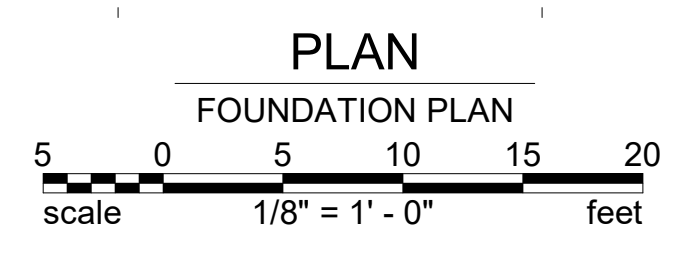
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- NOTES:**
- SEE SHEET SF-001 FOR STRUCTURAL FOUNDATION NOTES.
 - SEE ANCHOR BOLT PLANS BY THE PRE-ENGINEERED METAL BUILDING (PEMB) MANUFACTURER FOR ANCHOR BOLT (ROD) LOCATIONS.
 - FOUNDATION PLANS AND DETAILS ARE BASED ON ESTIMATED PEMB COLUMN REACTIONS AND COLUMN BASE ARRANGEMENTS, THEREFORE, FOUNDATION CONCRETE CONSTRUCTION MAY NOT PROCEED UNTIL CERTIFIED PEMB DRAWINGS ARE REVIEWED BY DOWL.



DETAIL
 SF-003 CIP ANCHOR ROD - SEE SCHEDULE FOR VALUES



CAST-IN-PLACE ANCHOR ROD SCHEDULE												
ANCHOR MARK	USE	ANCHOR TYPE	QTY	ROD DIA	ROD MTL	PROJECTION DIM "P"	THREAD DIM "T"	EMBEDMENT DIM "E"	ROD LENGTH DIM "L"	FINISH	LUG PL REQ'D ?	TOP NUT QTY PER ANC
ANC-01	BLDG COLS	BARE	40	3/4"	GR 55	4"	4"	12"	1'-4"	GALV	NO	1
ANC-02	BLDG COLS	BARE	88	1"	GR 55	4"	4"	15"	1'-7"	GALV	NO	1
ANC-03	DAF TANKS	BARE	18	3/4"	GR 55	9"	4"	15"	2'-0"	GALV	NO	1
ANC-04	SATR SKIDS	BARE	18	3/4"	GR 55	4"	4"	8"	1'-0"	GALV	NO	1
ANC-05	FILTER TRAINS	BARE	12	3/4"	GR 55	9"	4"	15"	2'-0"	GALV	NO	1
ANC-06	MIX STR	BARE	24	3/4"	GR 55	4"	4"	20"	2'-0"	GALV	NO	1
ANC-07	BLOWER	BARE	12	3/4"	GR 55	5"	5"	19"	2'-0"	GALV	NO	2

- ANCHOR ROD SCHEDULE NOTES:**
- ONLY CAST-IN-PLACE ANCHORS SCHEDULED HERE. SEE PRE-ENGINEERED BLDG PLANS OR CONCRETE DETAILS FOR POST-INSTALLED ANCHORS.
 - BARE ANCHOR TYPE INDICATES NO ANCHOR SLEEVE. SLEEVE ANCHOR TYPE INDICATES THAT AN EMBEDDED POLYETHYLENE ANCHOR SLEEVE IS REQUIRED.
 - ANCHOR ROD MATERIAL IN ACCORDANCE WITH ASTM F1554 WITH GRADE AS SCHEDULED. GR 55 SHALL BE WELDABLE. COLOR CODE GR 36 BLUE, GR 55 YELLOW.
 - HEADED ANCHORS MAY BE USED OR THREAD AND TACK WELD A HEAVY HEX NUT ON EMBEDMENT END, UNLESS A LUG PLATE IS SCHEDULED.
 - NUTS SHALL BE HEAVY HEX IN ACCORDANCE WITH ASTM A563.
 - PROVIDE A FLAT WASHER WITH EACH ANCHOR ROD IN ACCORDANCE WITH ASTM F436 TYPE 1 UNLESS INDICATED OTHERWISE.
 - GALV FINISH INDICATES A HOT DIPPED GALVANIZED ANCHORAGE ASSEMBLY IN ACCORDANCE WITH ASTM F2329. TAP NUTS AFTER GALV TO ENSURE OPERABLE THREADS.
 - ANCHOR RODS MUST BE SECURED IN FINAL POSITION WITH TEMPLATES OR OTHER BRACING ARRANGEMENTS BEFORE PLACING CONCRETE.

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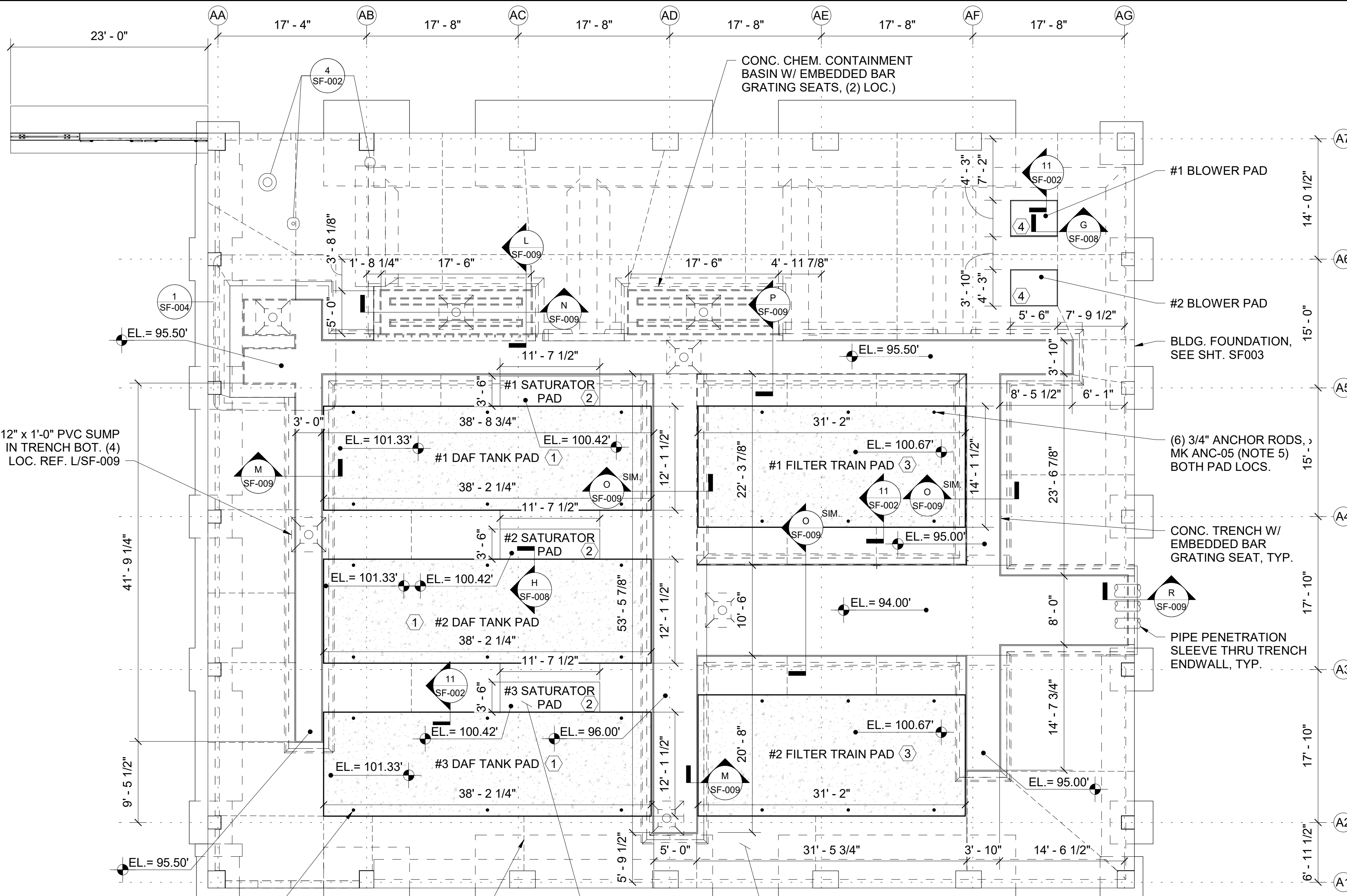
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
BUILDING FOUNDATION PLAN

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SF-003

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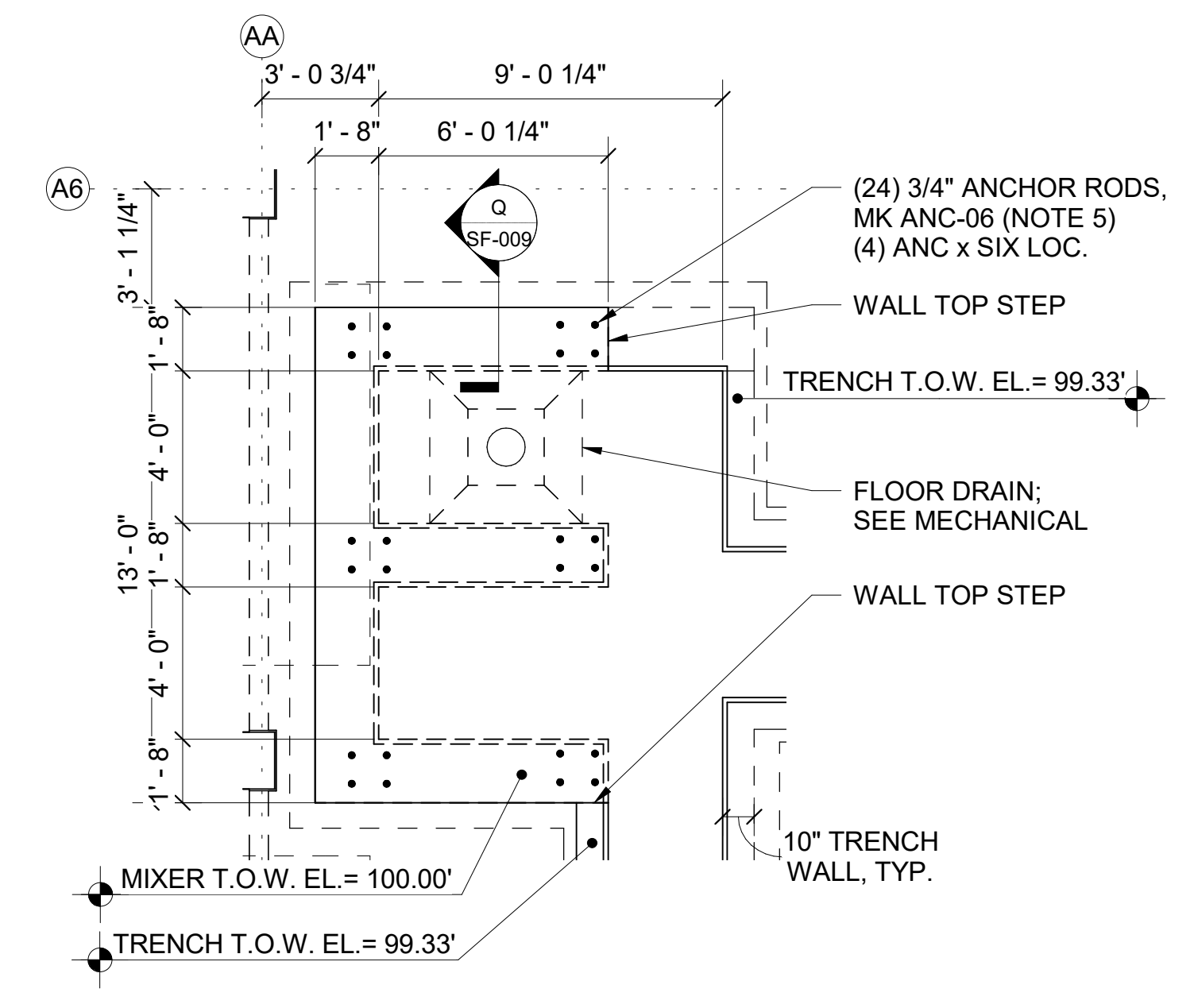


NOTES:

- SEE SHEET SF001 FOR STRUCTURAL GENERAL NOTES.
- SEE SHEET SF003 FOR THE BUILDING FOUNDATION.
- NO UNDERGROUND UTILITY INFORMATION IS SHOWN HERE, SEE PROCESS MECHANICAL PIPING AND BUILDING PLUMBING DRAWINGS.
- NO ELECTRICAL GROUNDING IS SHOWN HERE, SEE ELECTRICAL DRAWINGS.
- SEE AWC EQUIPMENT DRAWINGS FOR EQUIPMENT LOCATION AND ANCHOR ROD LAYOUT.
- PLAN SIZE AND T.O.C. ELEVATION OF CONCRETE PADS SUPPORTING EQUIPMENT ARE BASED ON AWC EQUIPMENT DRAWINGS. CAST CONCRETE PADS BEFORE BUILDING SLAB.
- CMU WALL REINFORCING DOWELS ARE NOT SHOWN IN PLAN, REFER TO CONCRETE SECTIONS & DETAILS.

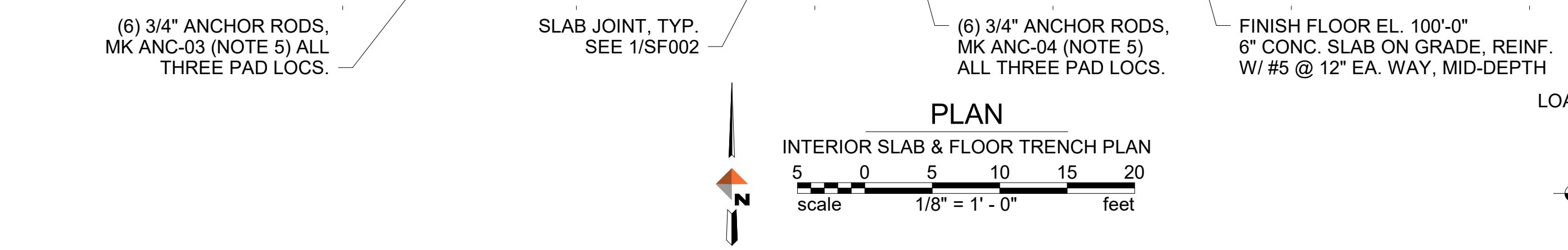
LEGEND:

- DAF TANK PAD, (3) LOCATIONS T.O.C. EL. 101'-4", 22" THICK
- SATURATOR PAD, (3) LOCATIONS T.O.C. EL. 100'-5", 11" THICK
- FILTER TRAIN PAD, (2) LOCATIONS T.O.C. EL. 100'-8", 14" THICK
- BLOWER PAD, (2) LOCATIONS T.O.C. EL. 100'-6", 18" THICK



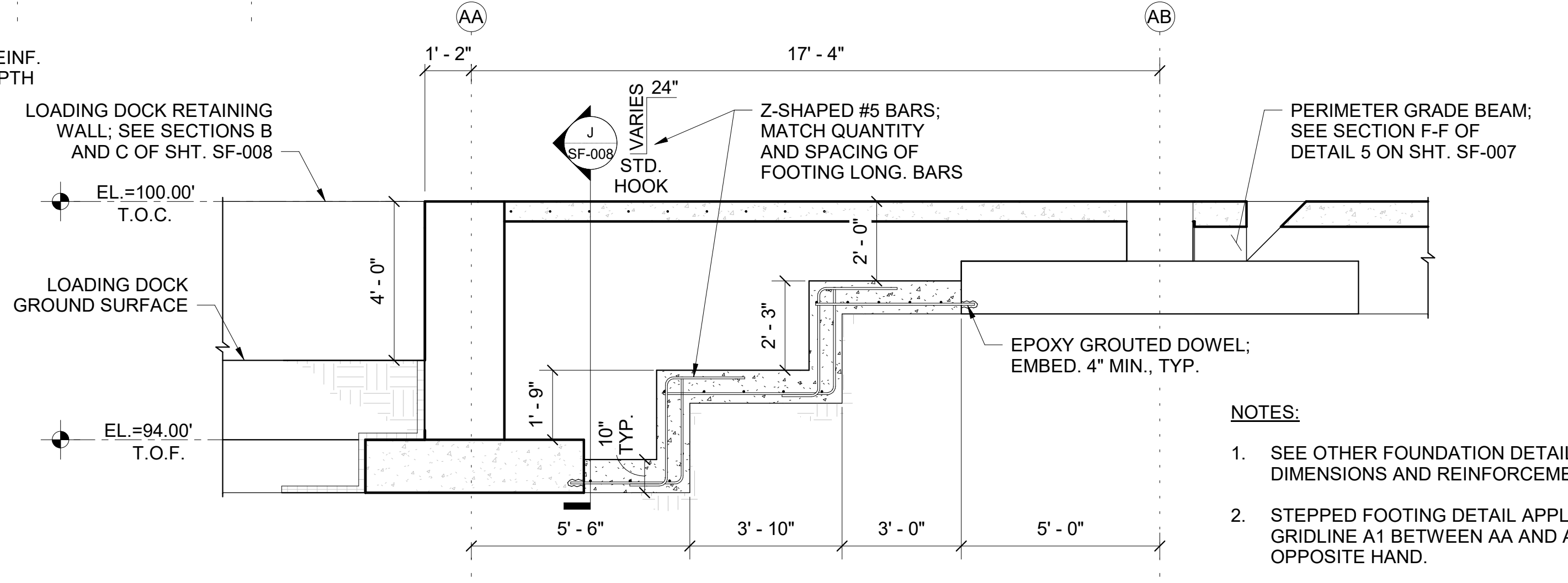
1 SF-004 PARTIAL PLAN DETAIL
MIXER AREA TRENCH

scale 1/4" = 1'-0" feet



PLAN
INTERIOR SLAB & FLOOR TRENCH PLAN

scale 1/8" = 1'-0" feet



ELEVATION
STEPPED FOOTING DETAIL ON GRIDLINE A7

scale 1/2" = 1'-0" feet

NOTES:

- SEE OTHER FOUNDATION DETAILS FOR DIMENSIONS AND REINFORCEMENT.
- STEPPED FOOTING DETAIL APPLIES TO GRIDLINE A1 BETWEEN AA AND AB BUT OPPOSITE HAND.

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WRANGELL, ALASKA

BUILDING FLOOR TRENCH AND SLAB PLAN

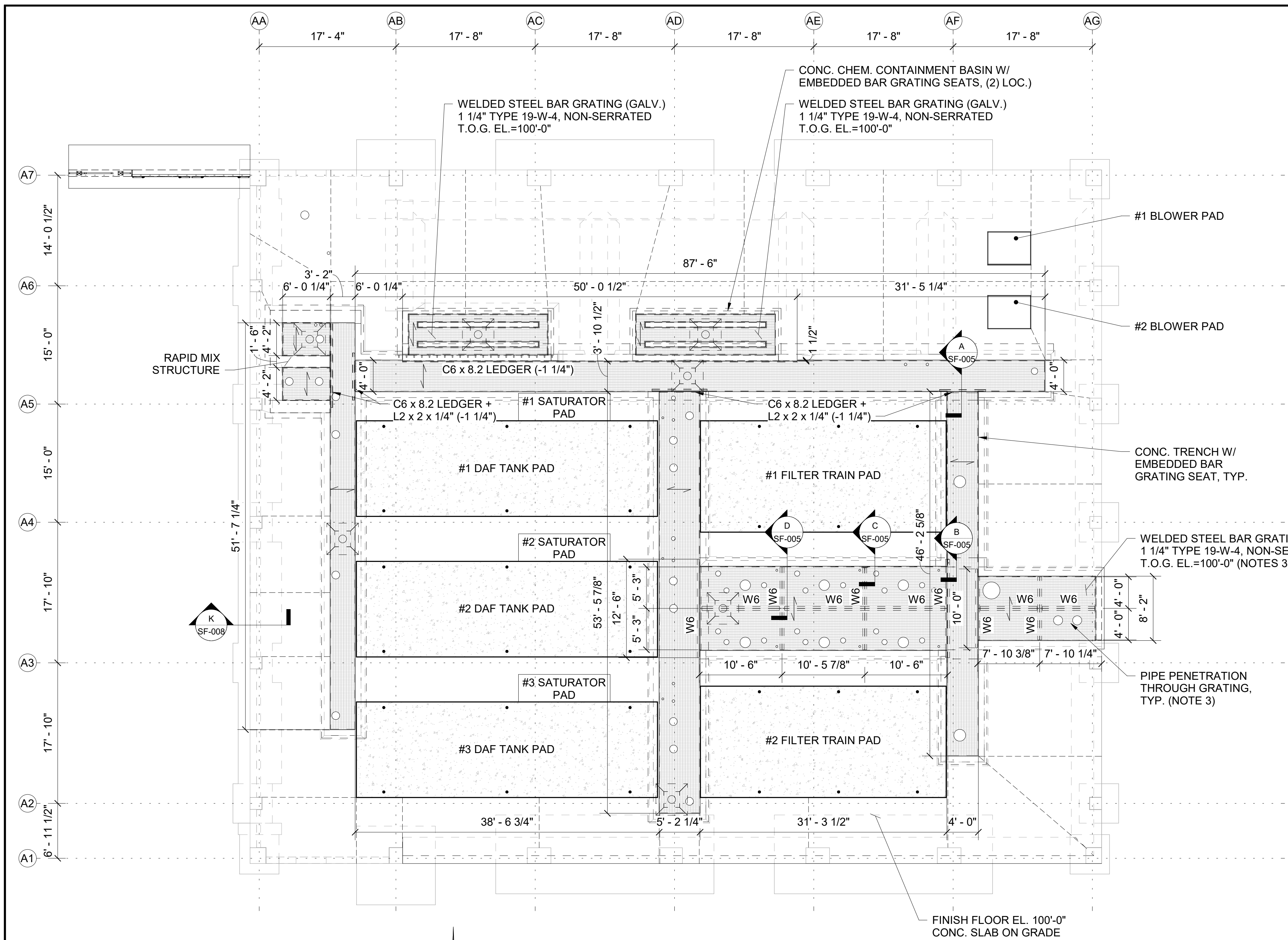
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SF-004

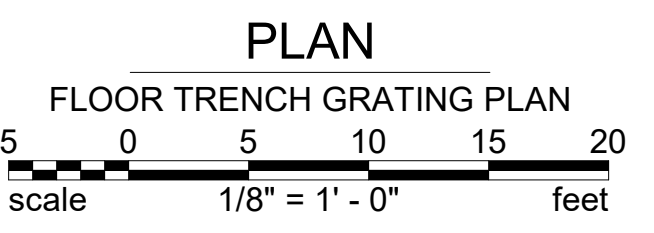
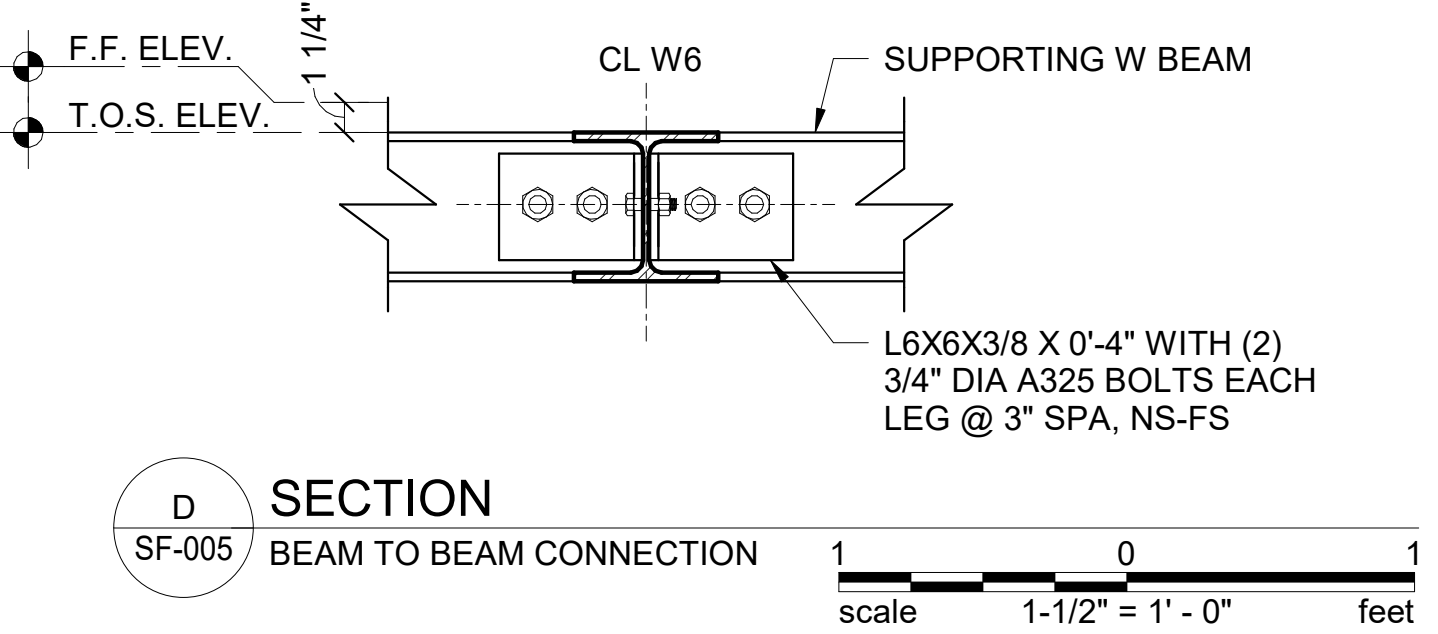
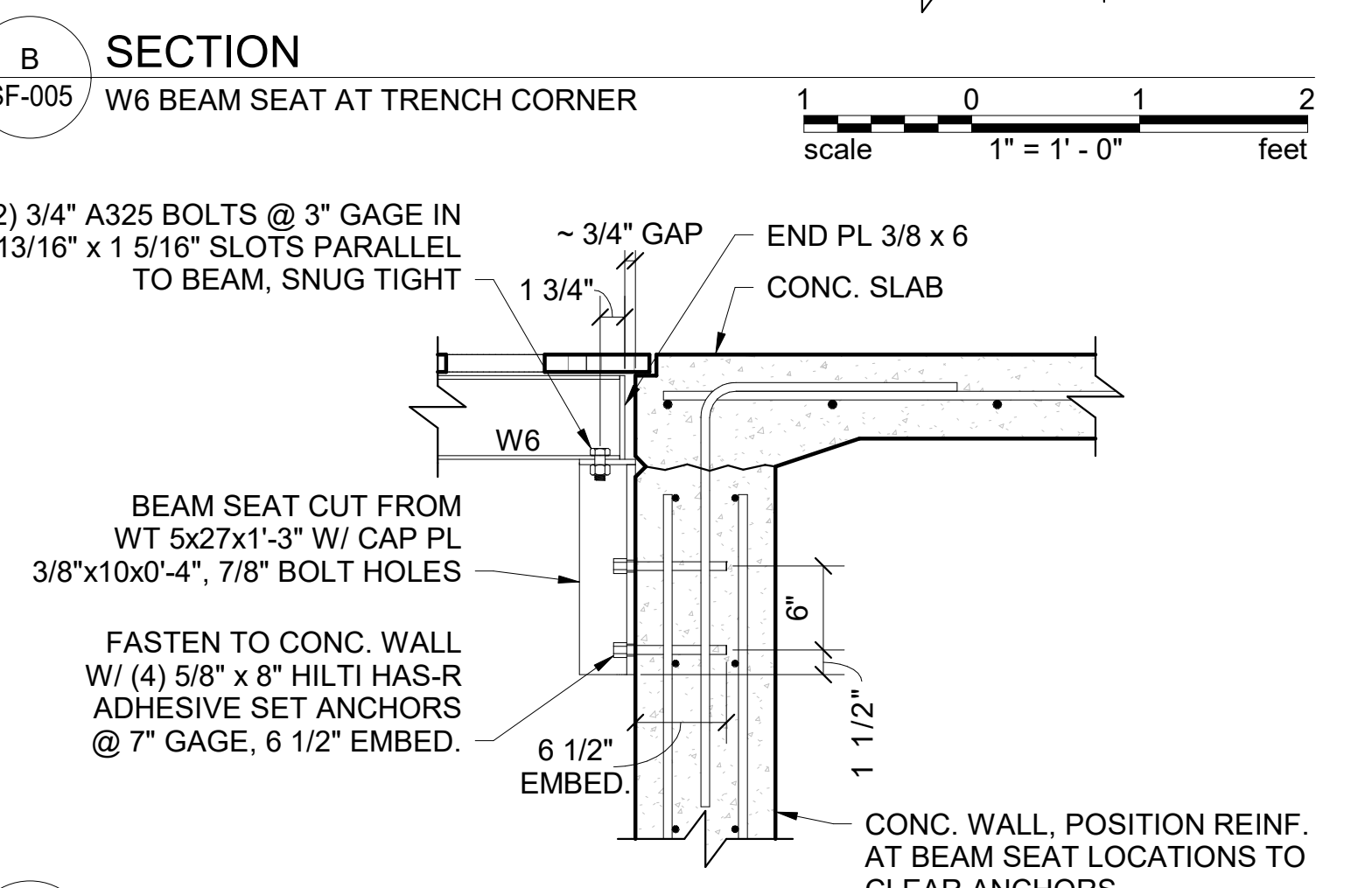
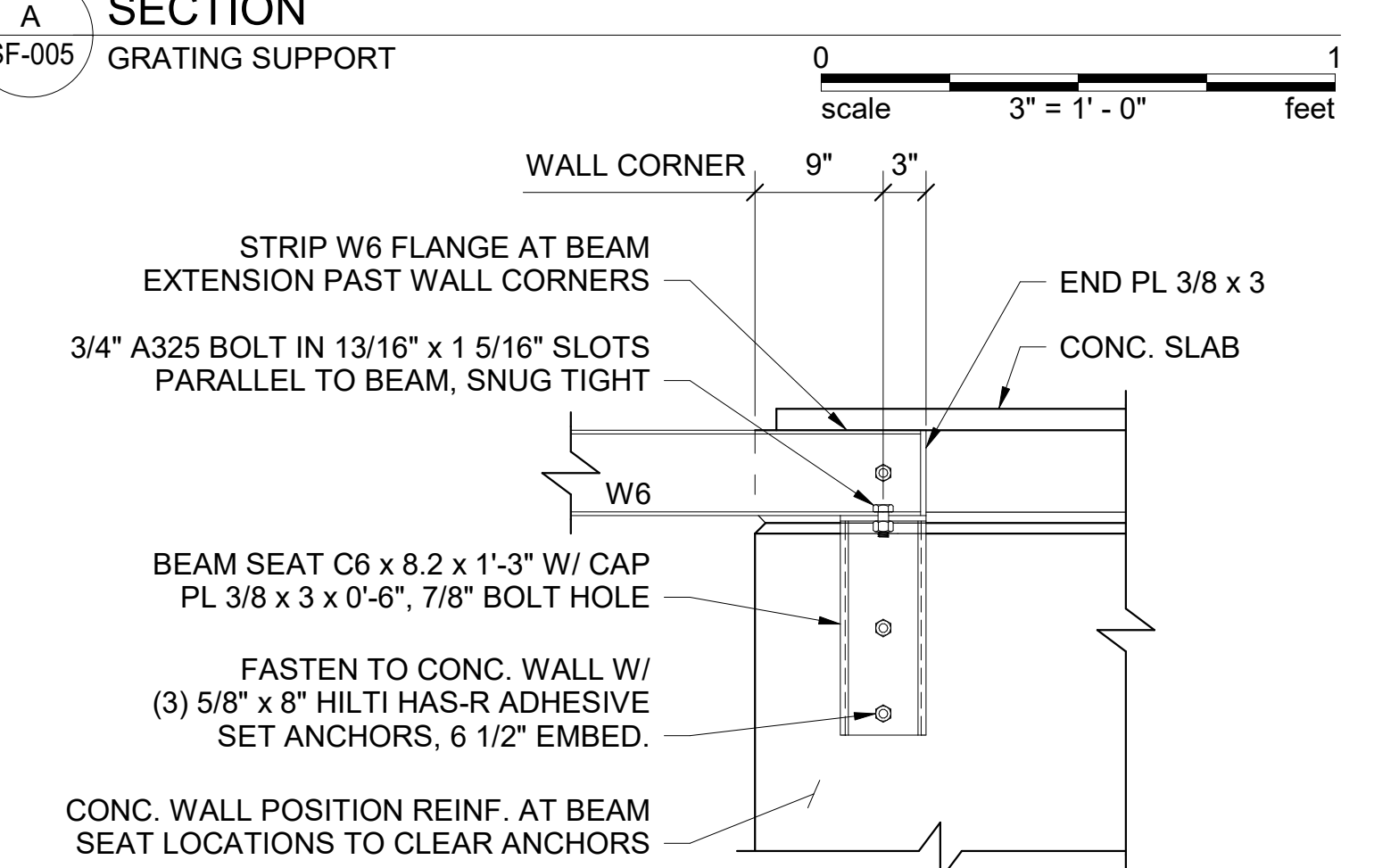
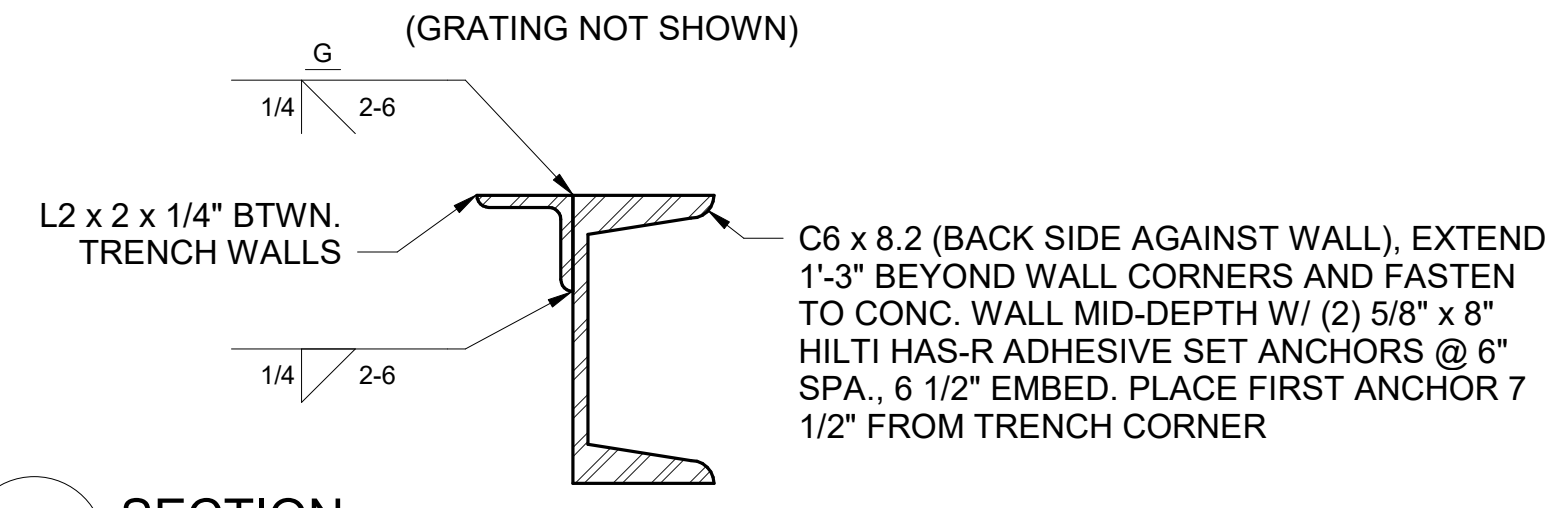
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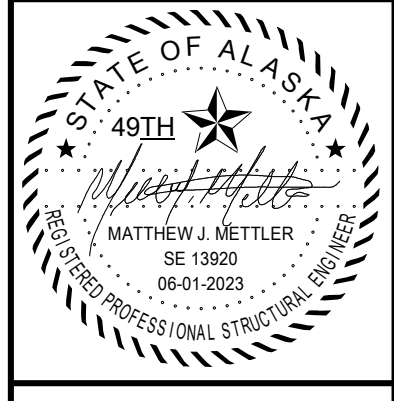


- NOTES:**
- SEE SHEET SF001 FOR STRUCTURAL FOUNDATION NOTES.
 - SEE SHEET SF004 FOR TRENCH LAYOUT DETAILS.
 - NO IN-TRENCH PIPING IS SHOWN HERE. SIZE AND LOCATE PIPING PENETRATIONS THROUGH GRATING PER PIPING LAYOUT PLANS. SPLIT GRATING PANELS AT PIPE PENETRATIONS TO ACCOMMODATE GRATING INSTALL/REMOVAL. GRATING PENETRATION INSIDE DIAMETER TO BE NOMINAL PIPING DIAMETER PLUS TWO INCHES. BAND PENETRATIONS TO INCLUDE TOE PLATE.
 - FLOOR TRENCH GRATING PANELS ARE TO BE REMOVABLE AND THEREFORE MECHANICALLY FASTENED TO SUPPORTS. MAXIMUM PANEL WEIGHT IS APPROXIMATELY 150 LBS.

- LEGEND:**
- W6 STEEL BEAM SIZE, W6 x 15 (-1 1/4")
 - WELDED STEEL BAR GRATING (GALV.)
 - BAR GRATING SPAN DIRECTION
 - (-1 1/4") INDICATES T.O.S. DIMENSION BELOW EL. 100.00



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 WRANGELL, ALASKA
FLOOR TRENCH GRATING PLAN

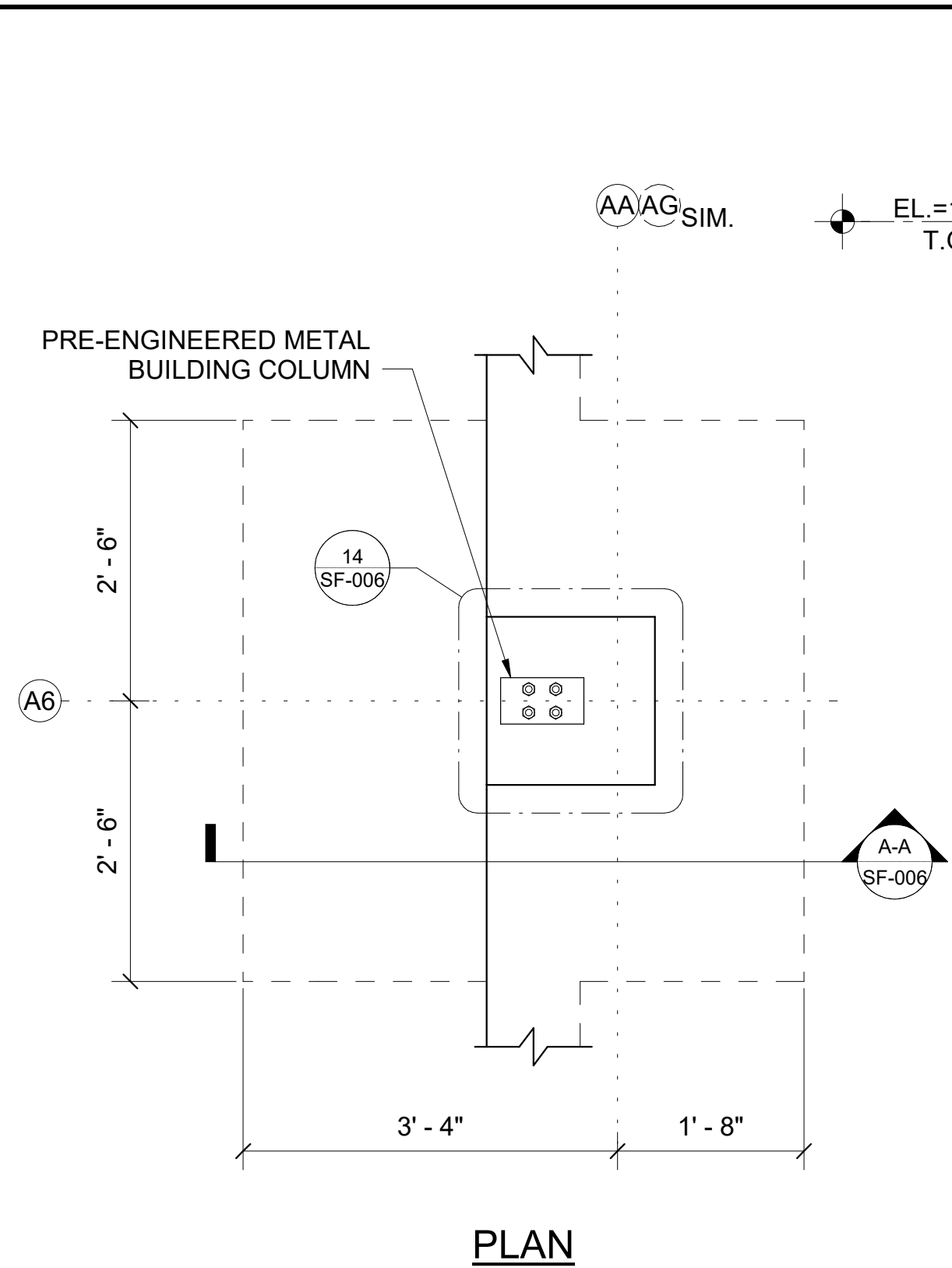
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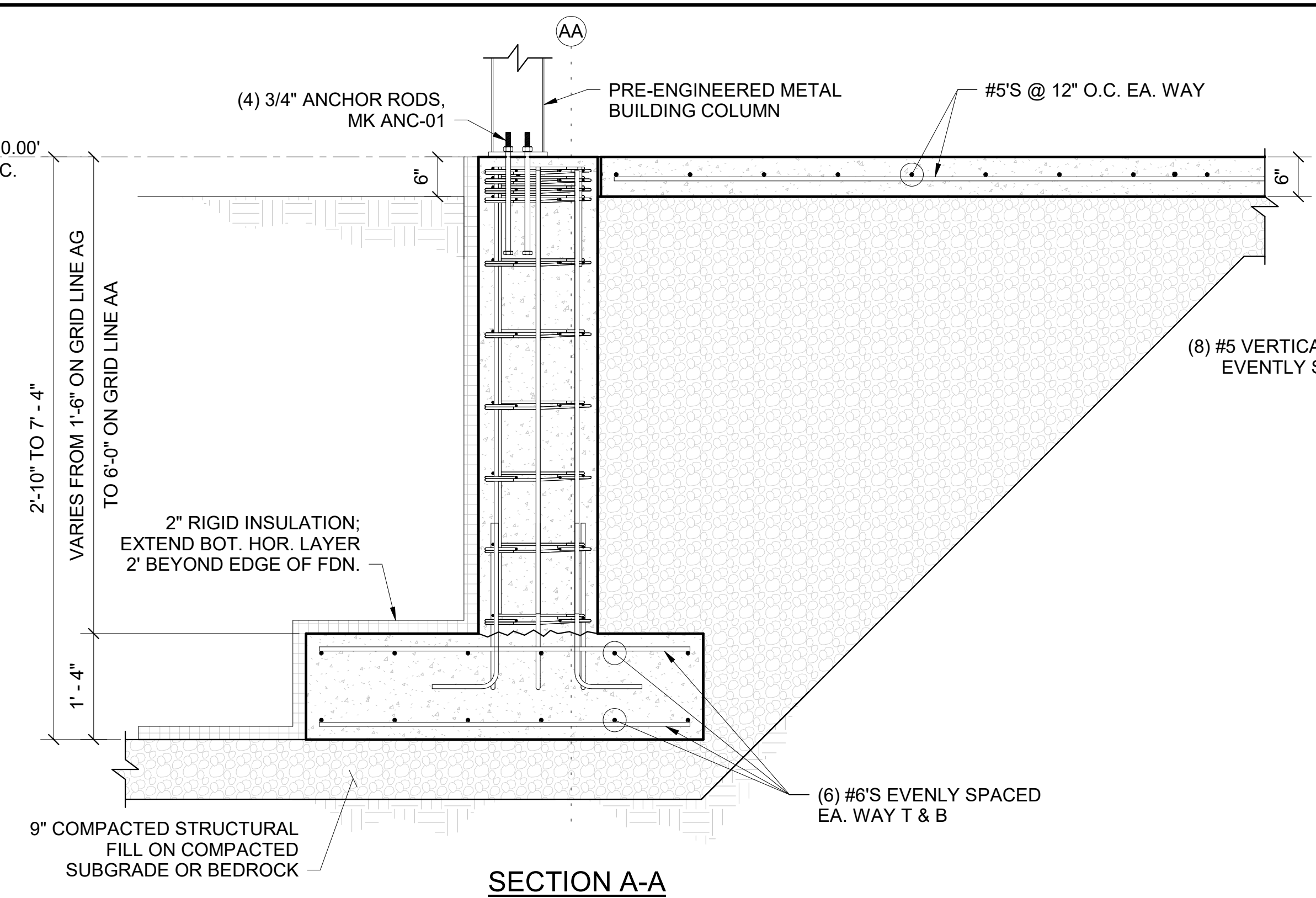
SF-005

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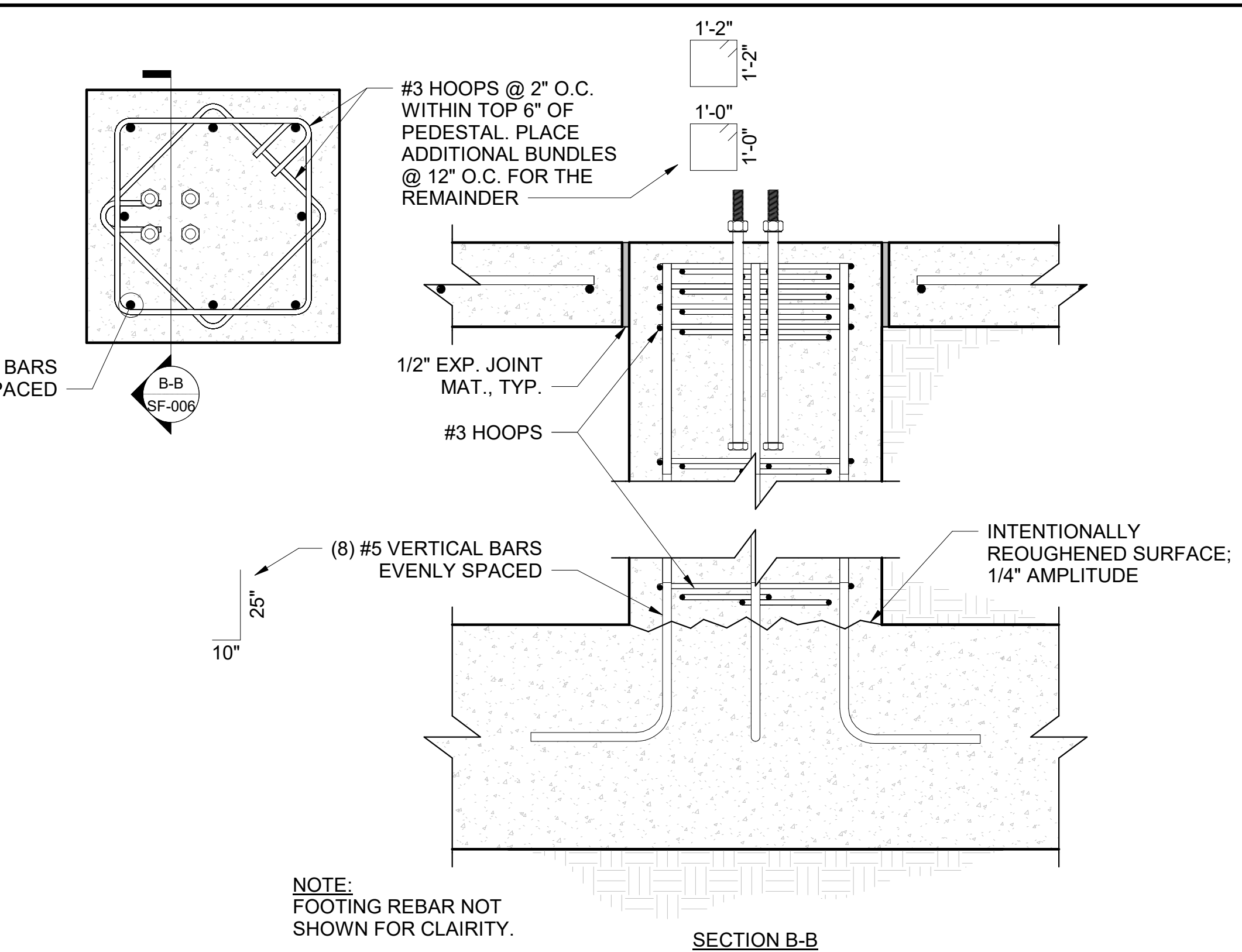
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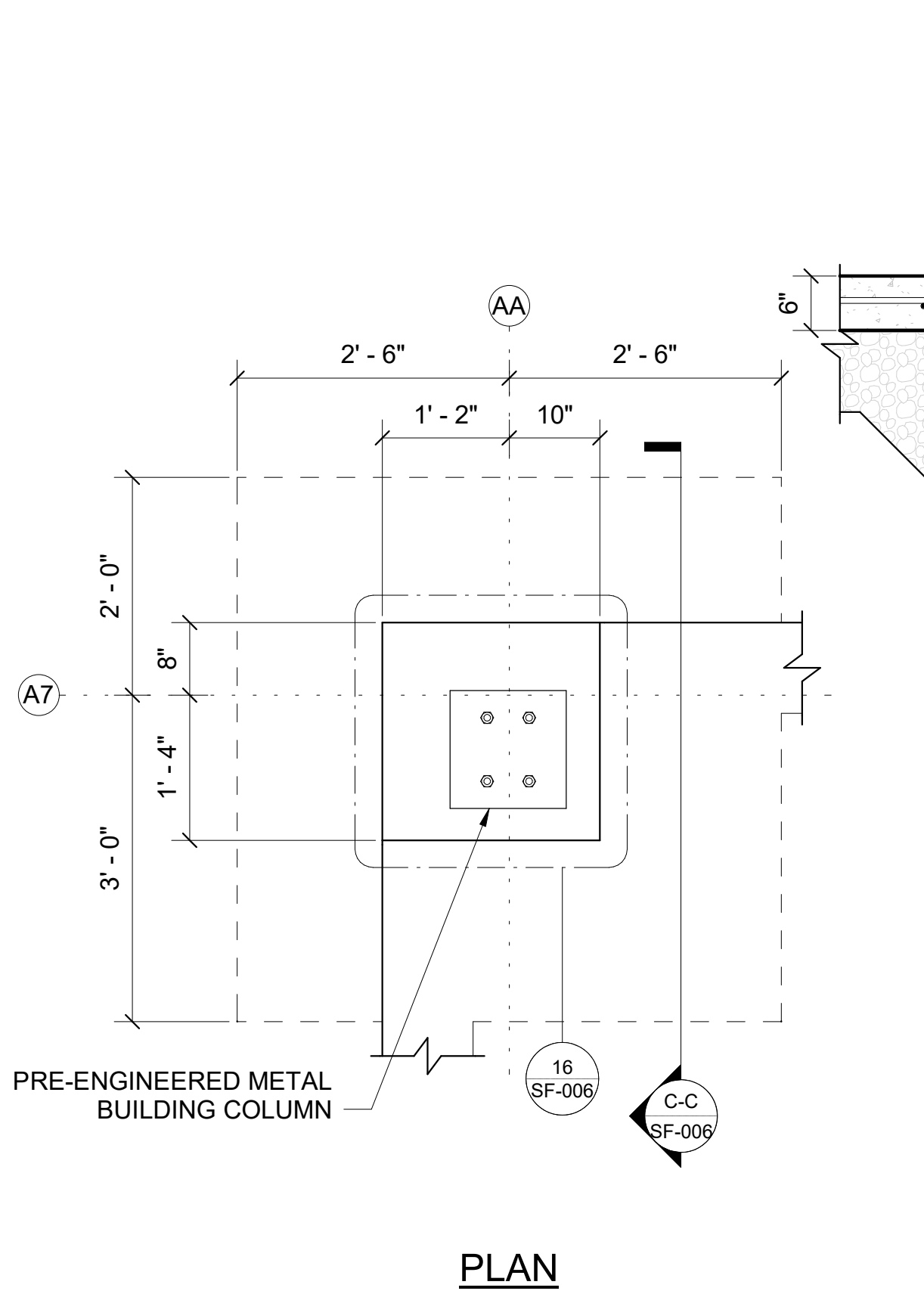
13
SF-006
DETAIL
FDN. AT BLDG. END WALLS



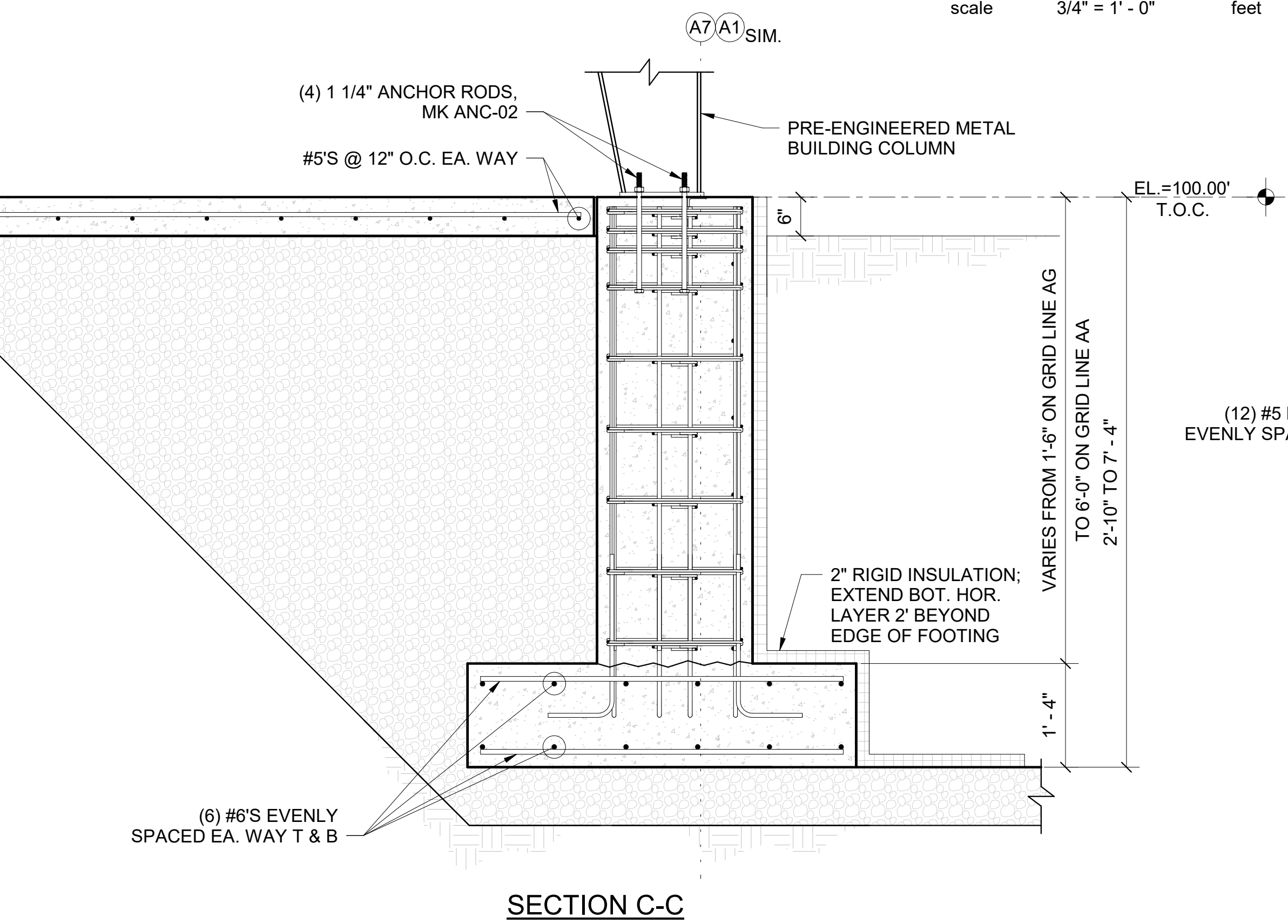
SECTION A-A



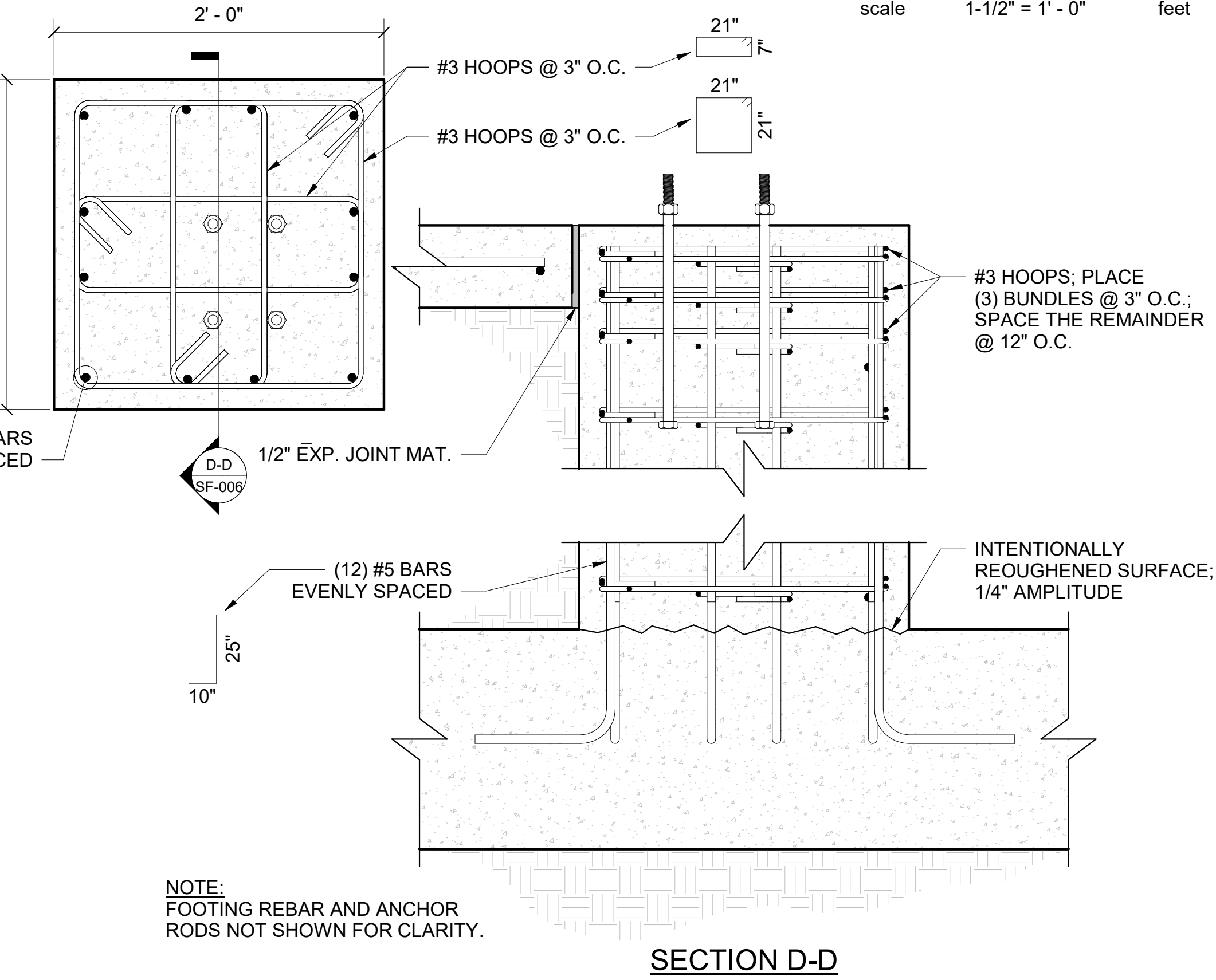
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SF-006
DETAIL
END WALL COLUMN PEDESTAL



15
SF-006
DETAIL
FDN. AT BLDG. CORNERS



SECTION C-C

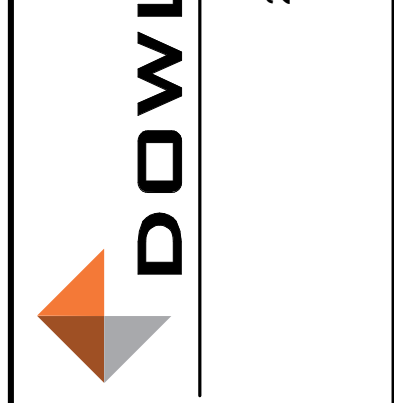


16
SF-006
DETAIL
BLDG. CORNER PEDESTAL

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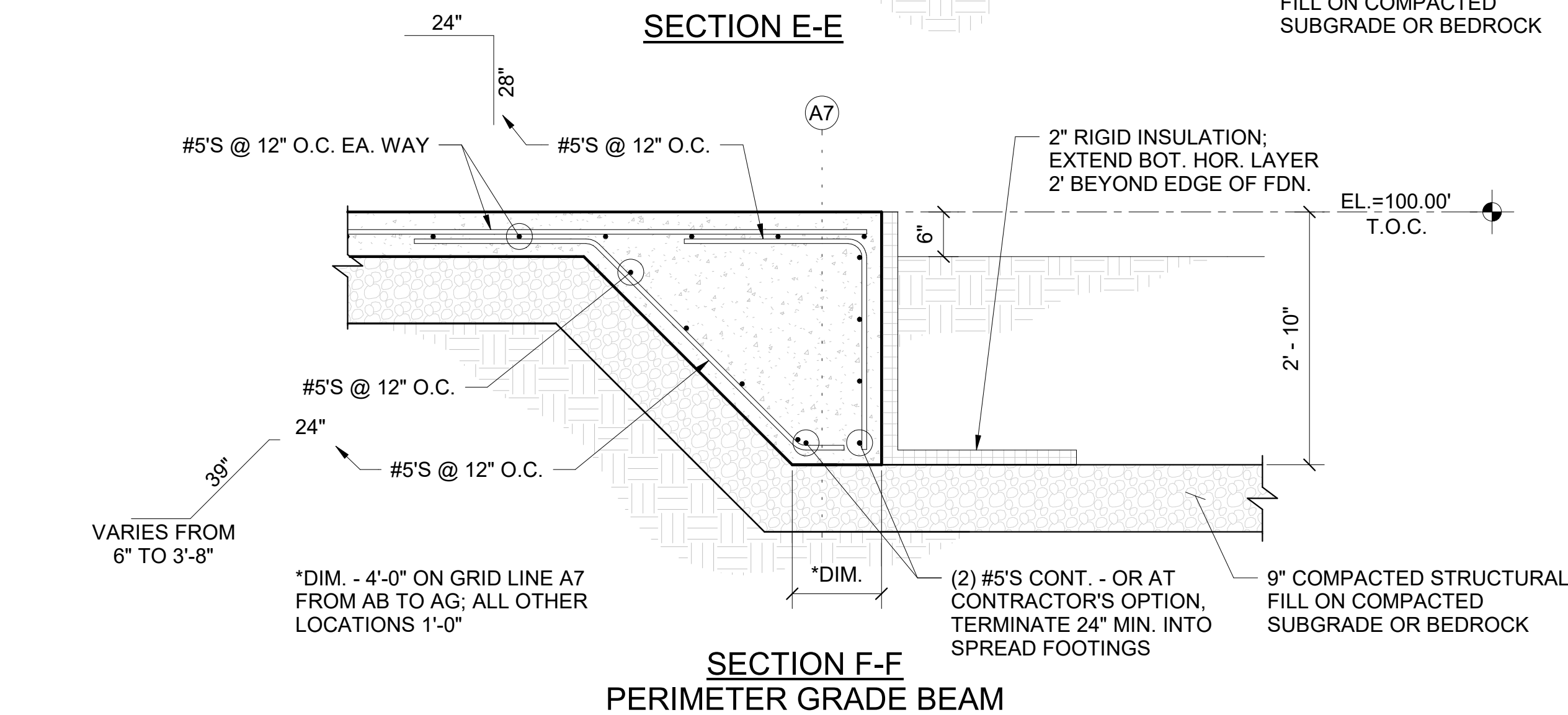
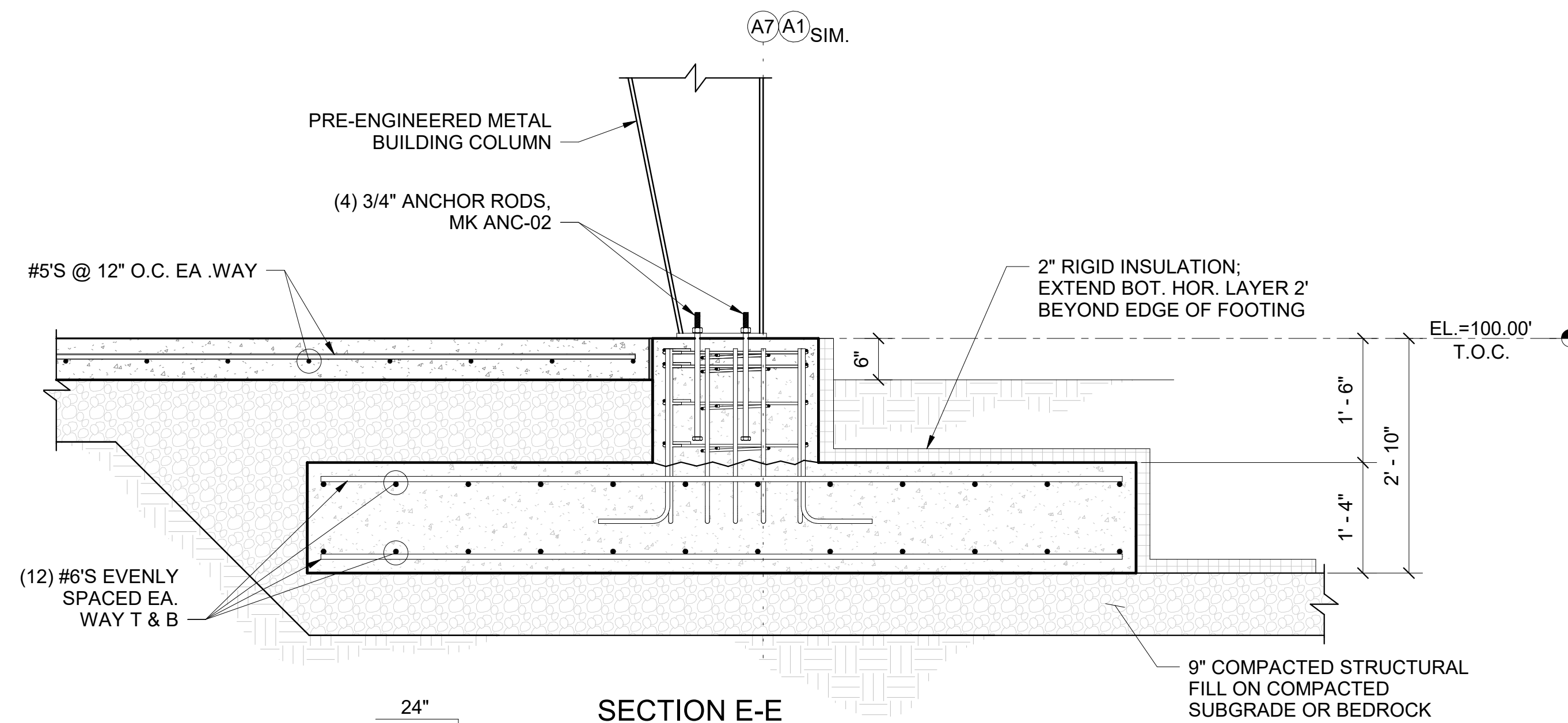
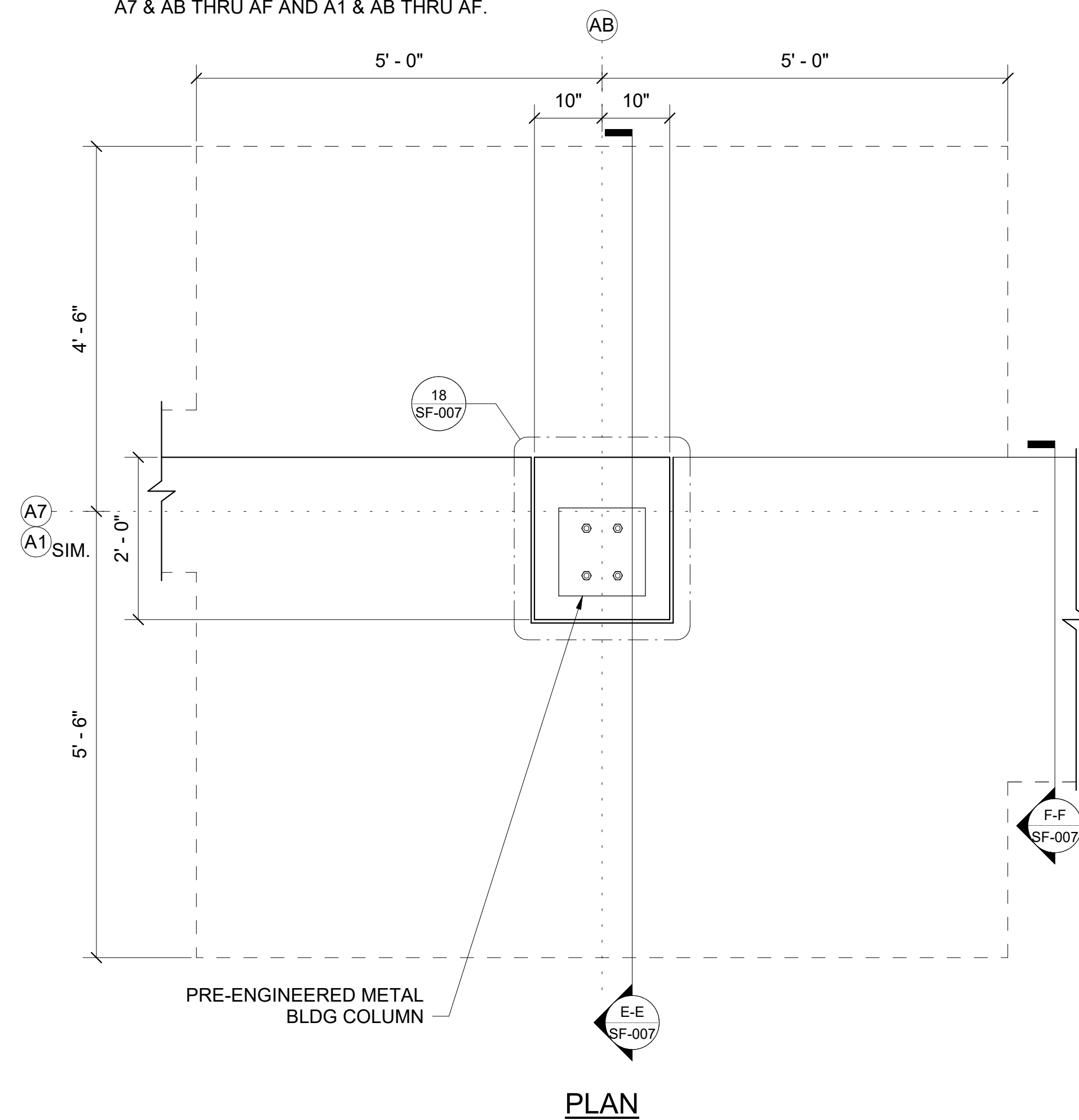
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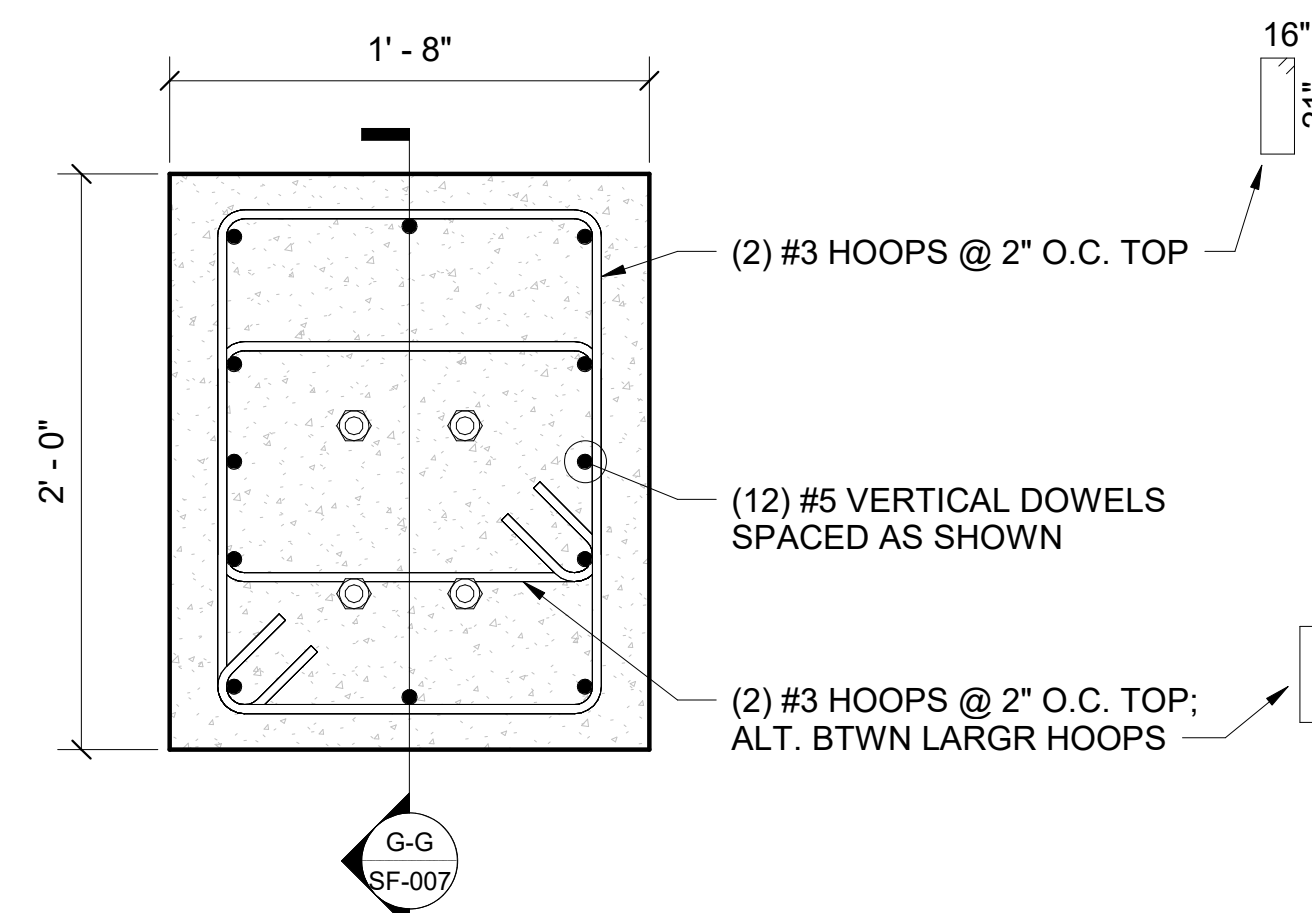
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SF-007

NOTE:
 THIS DETAIL APPLIES TO GRID LOCATIONS
 A7 & AB THRU AF AND A1 & AB THRU AF.



17
 SF-007
DETAIL
 FDN. AT RIGID FRAME COLUMN

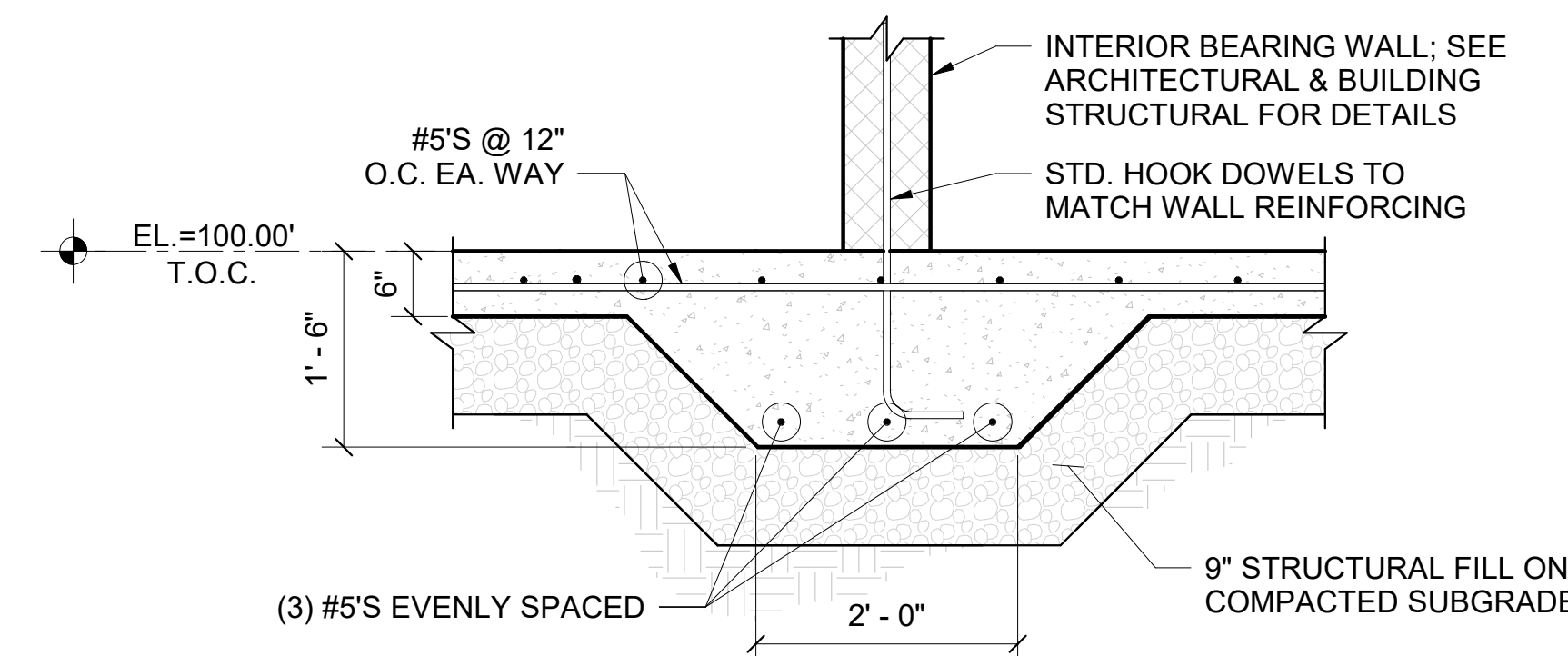


NOTE:
 FOOTING REINF. STEEL NOT
 SHOWN FOR CLARITY.

SECTION G-G

scale 1-1/2" = 1'-0" feet

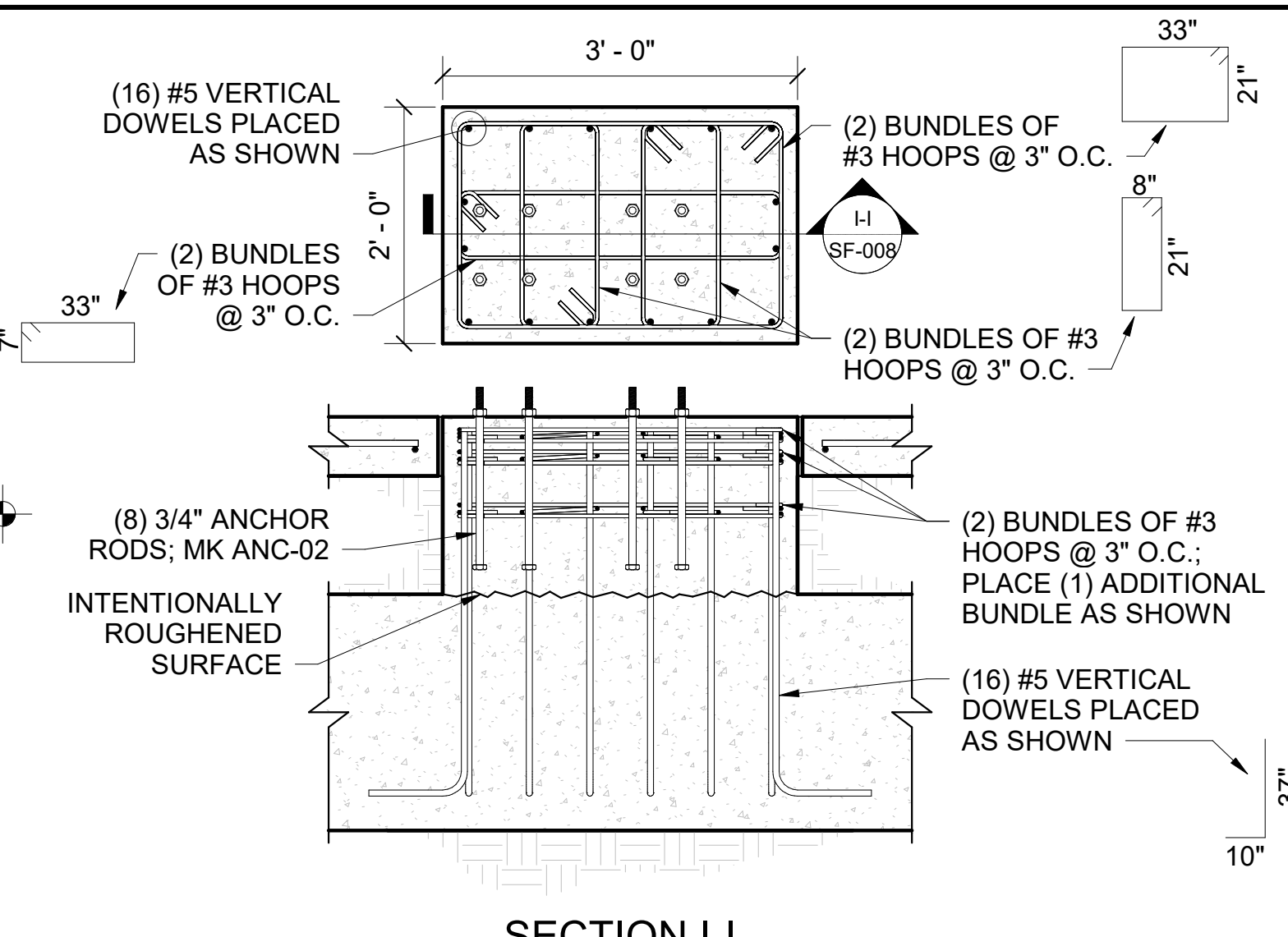
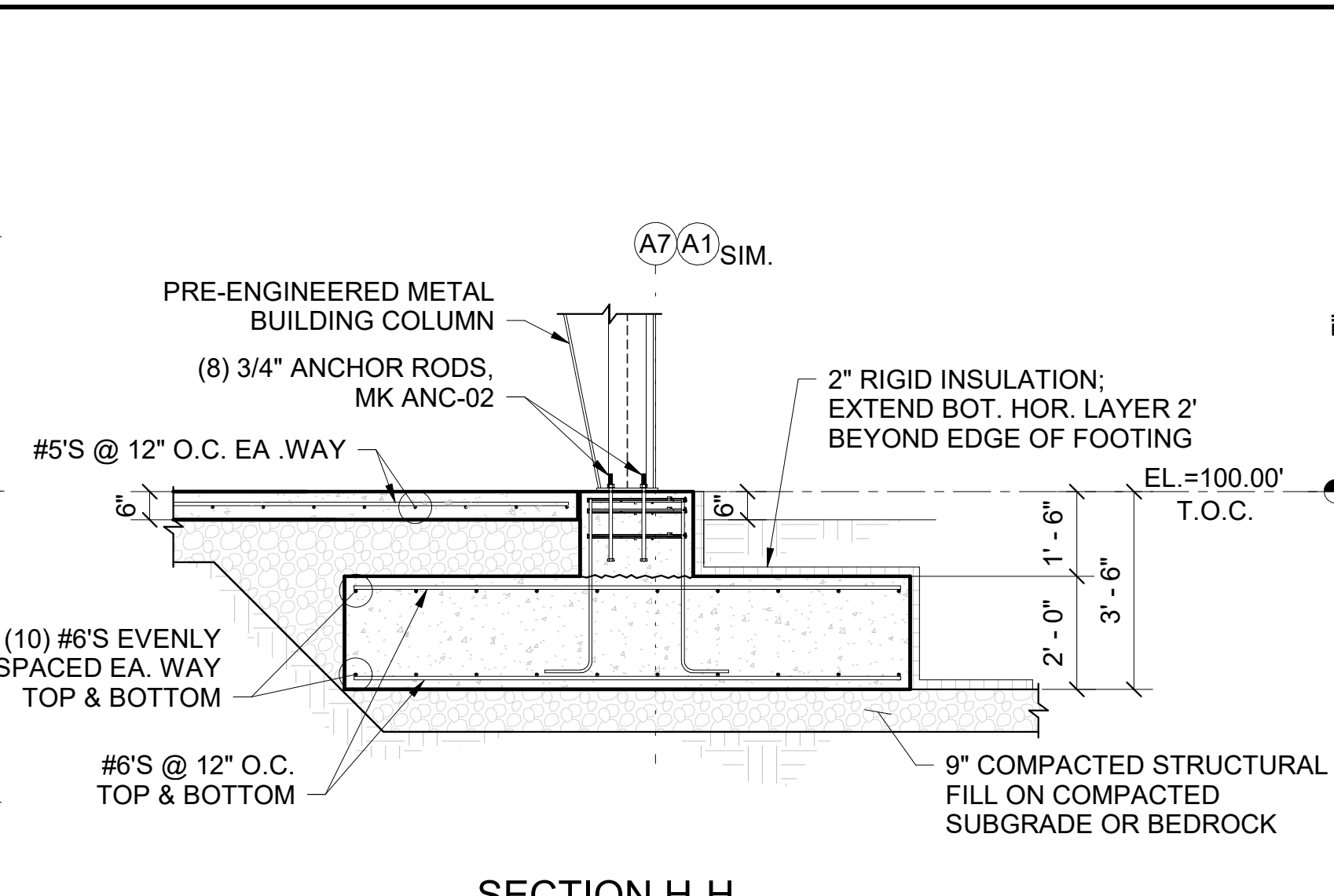
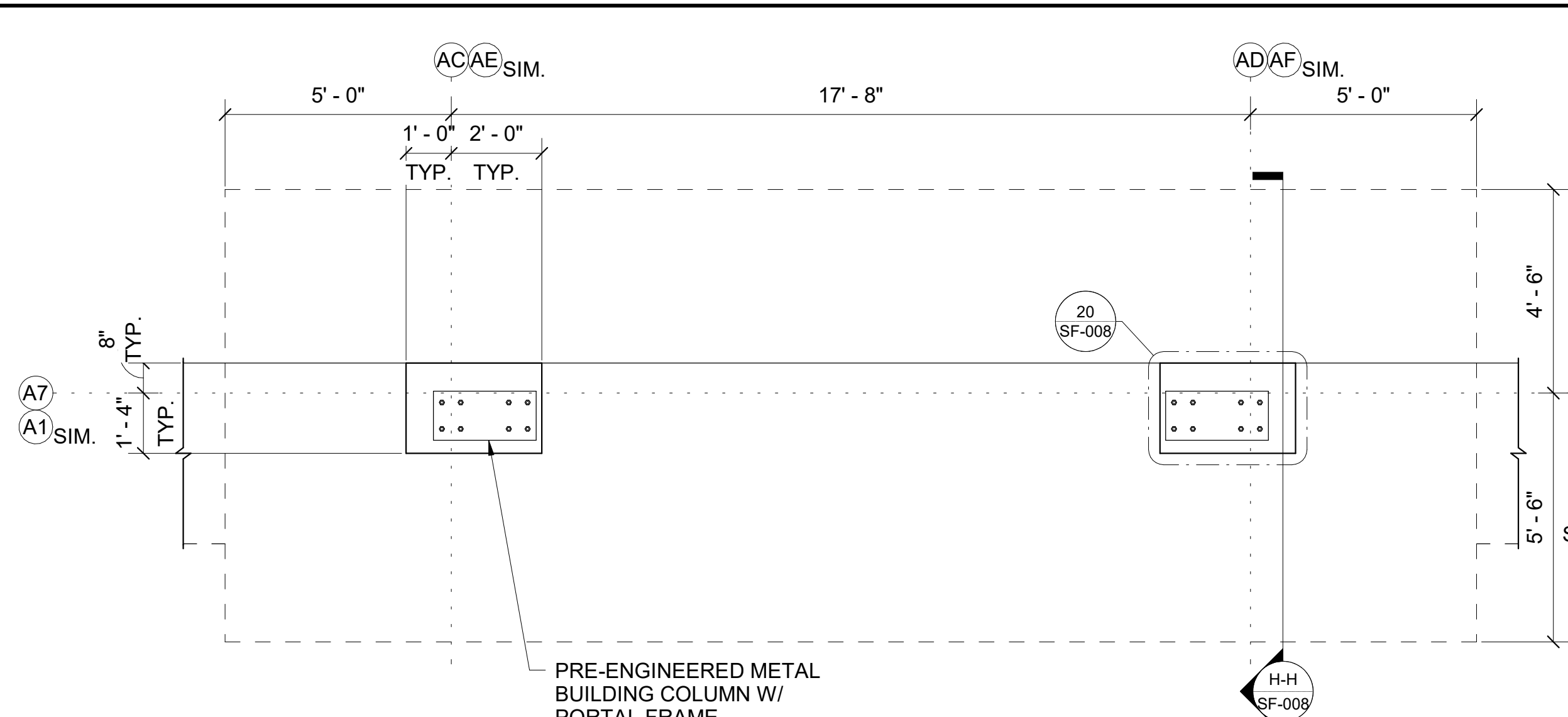
E
 SF-007
SECTION
 INTERIOR BEARING WALL FOOTING



scale 3/4" = 1'-0" feet

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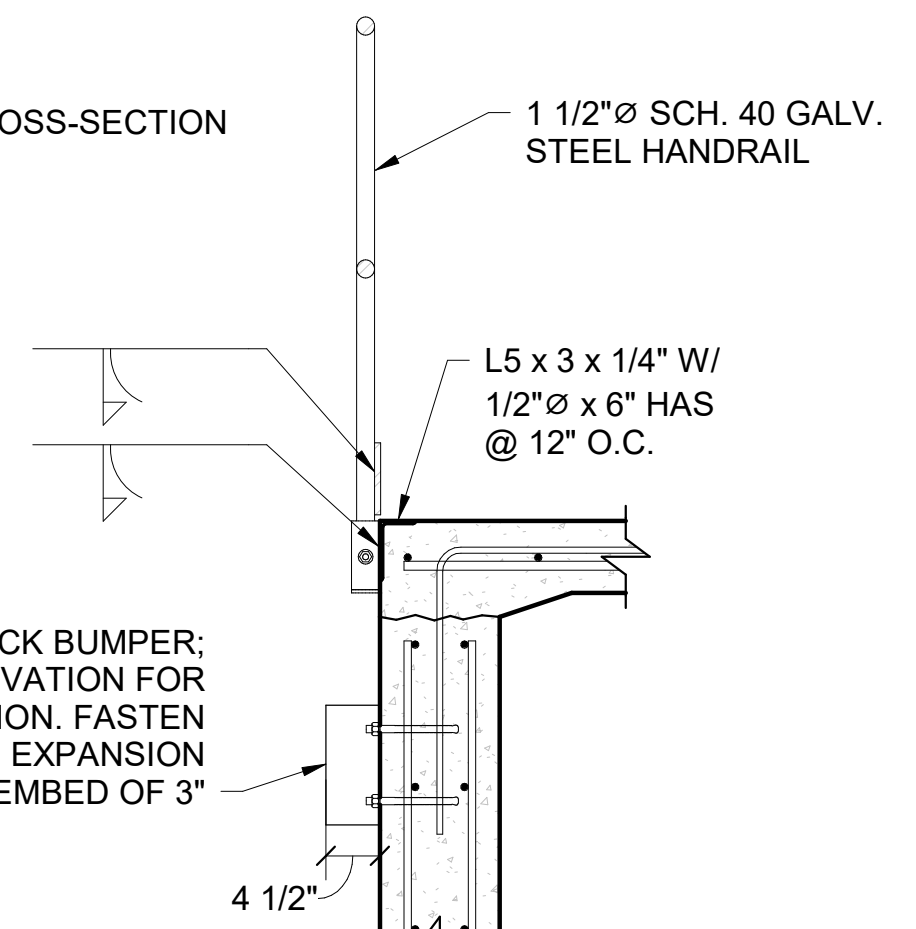
19 SF-008 DETAIL FND. AT PORTAL FRAMES

SECTION H-H

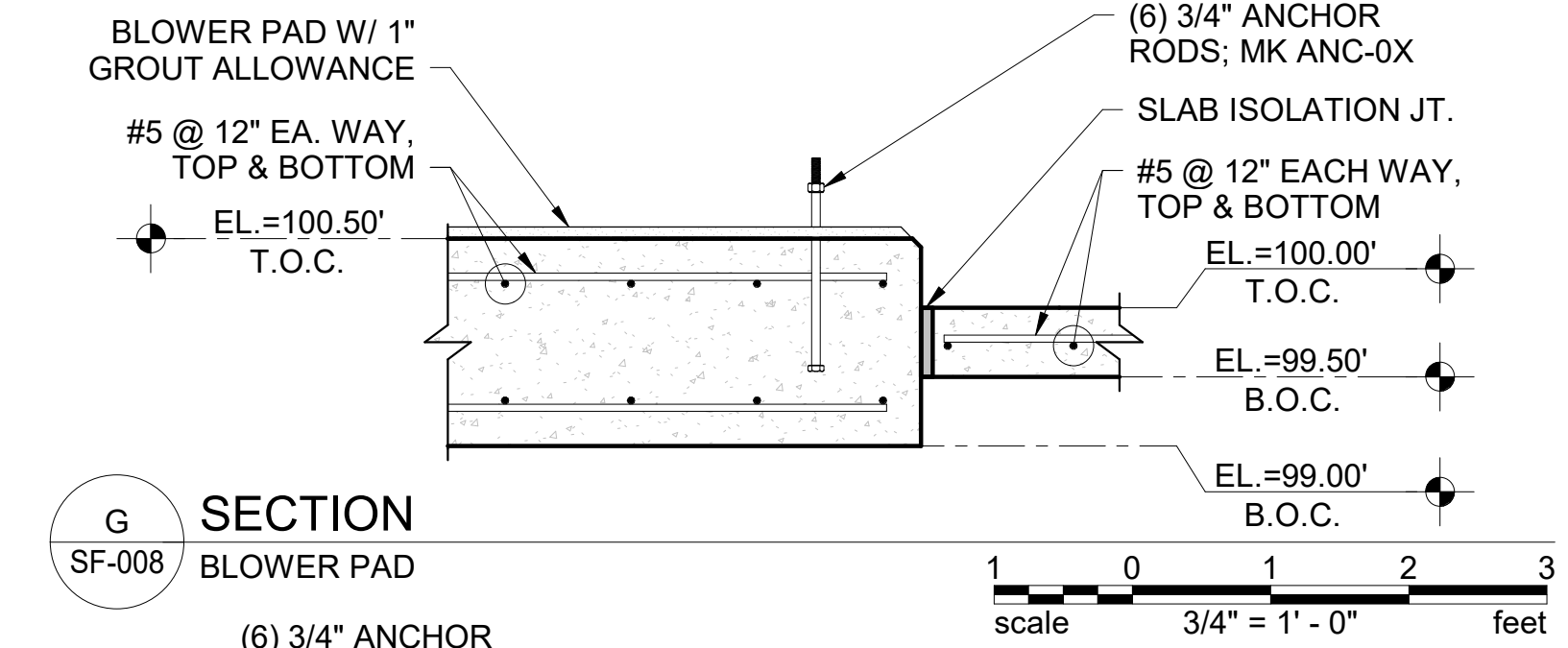
20 SF-008 DETAIL PORTAL FRAME PEDESTAL

SECTION I-I

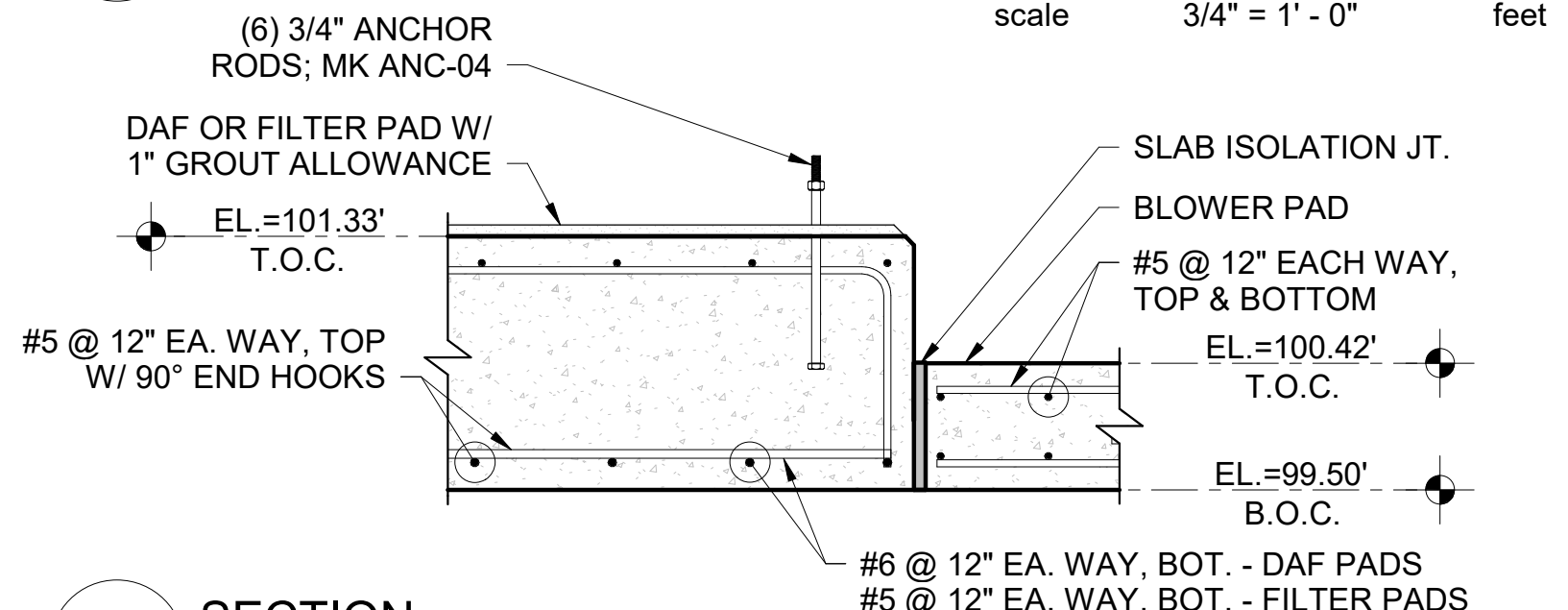
NOTE: SEE RETAINING WALL CROSS-SECTION FOR DETAILS OF REIF.



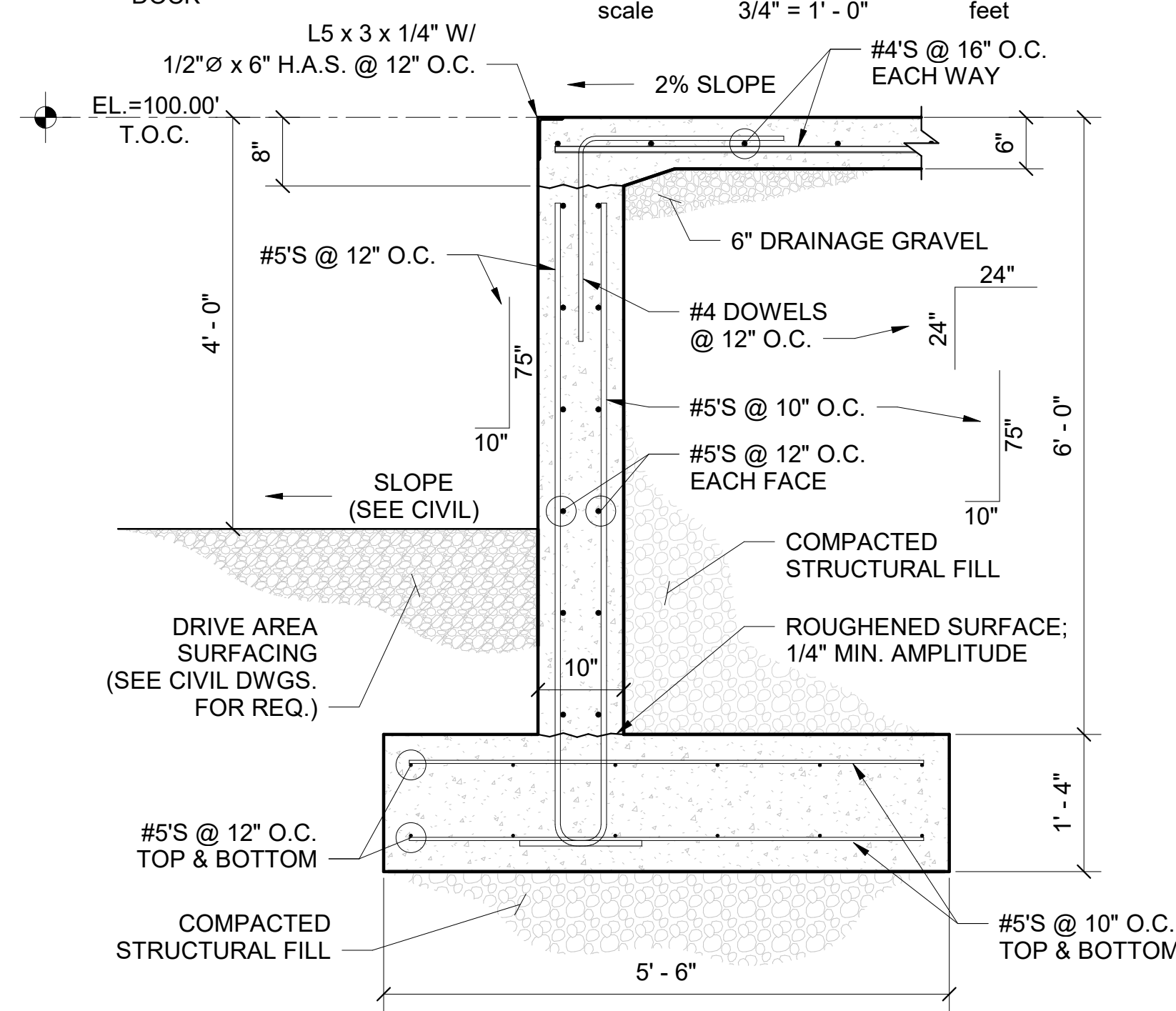
F SF-008 SECTION REMOVABLE HANDRAIL AT LOADING DOCK



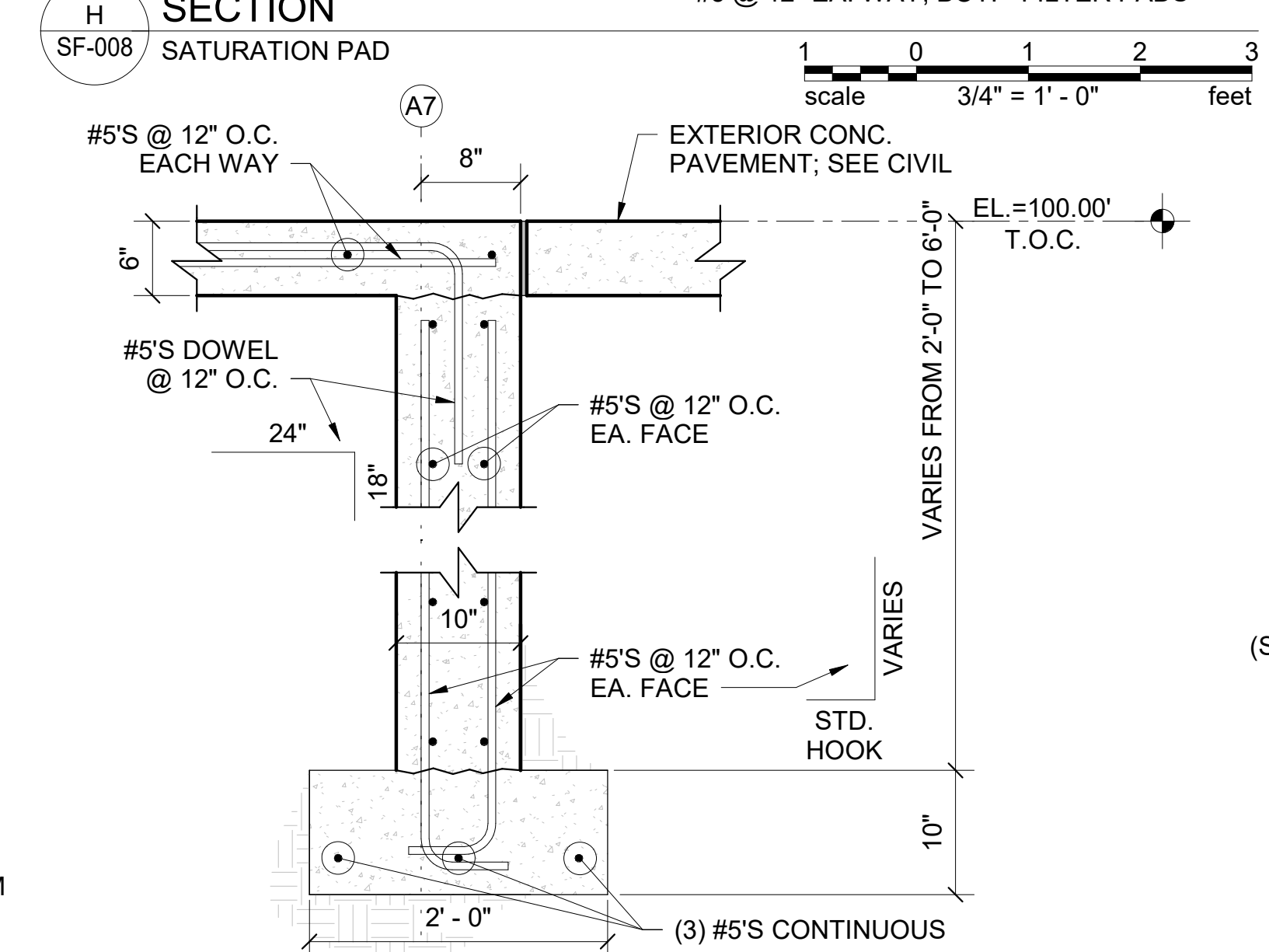
G SF-008 SECTION BLOWER PAD



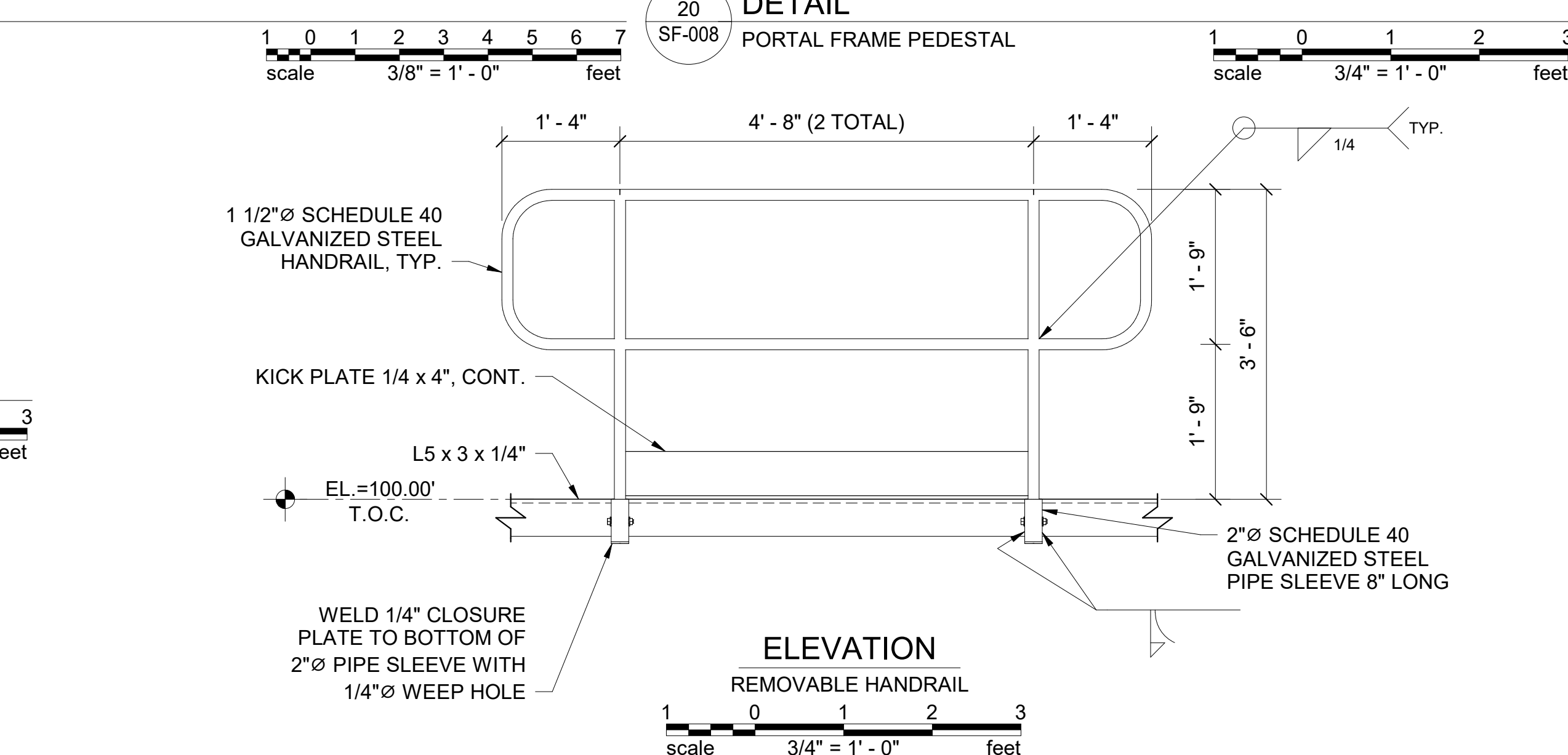
H SF-008 SECTION SATURATION PAD



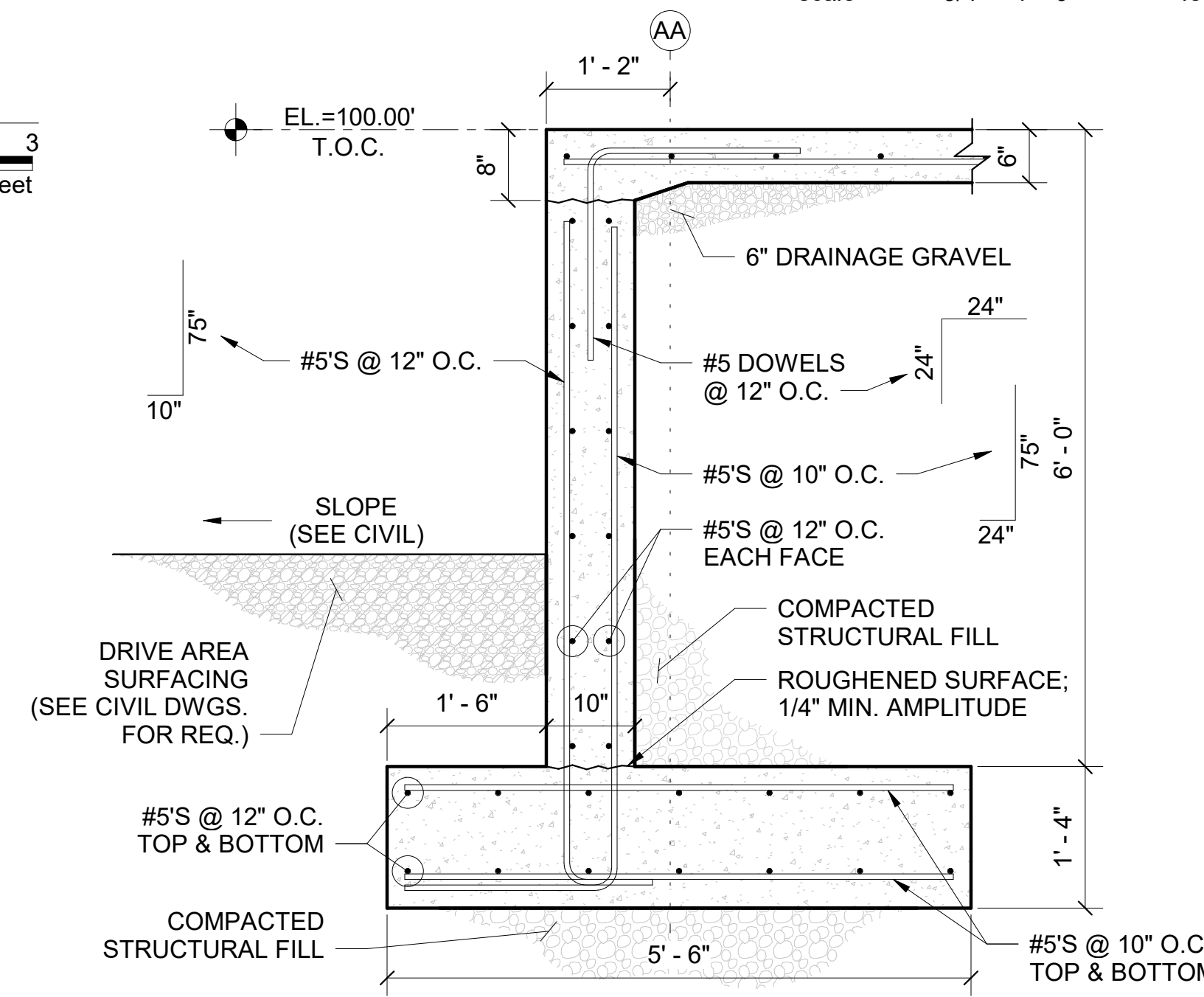
I SF-008 SECTION LOADING DOCK RETAINING WALL



J SF-008 SECTION STEPPED FOUNDATION WALL BTWN. GRIDS AA & AB



ELEVATION REMOVABLE HANDRAIL



K SF-008 SECTION BUILDING FDN. - WEST WALL

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FOUNDATION DETAILS

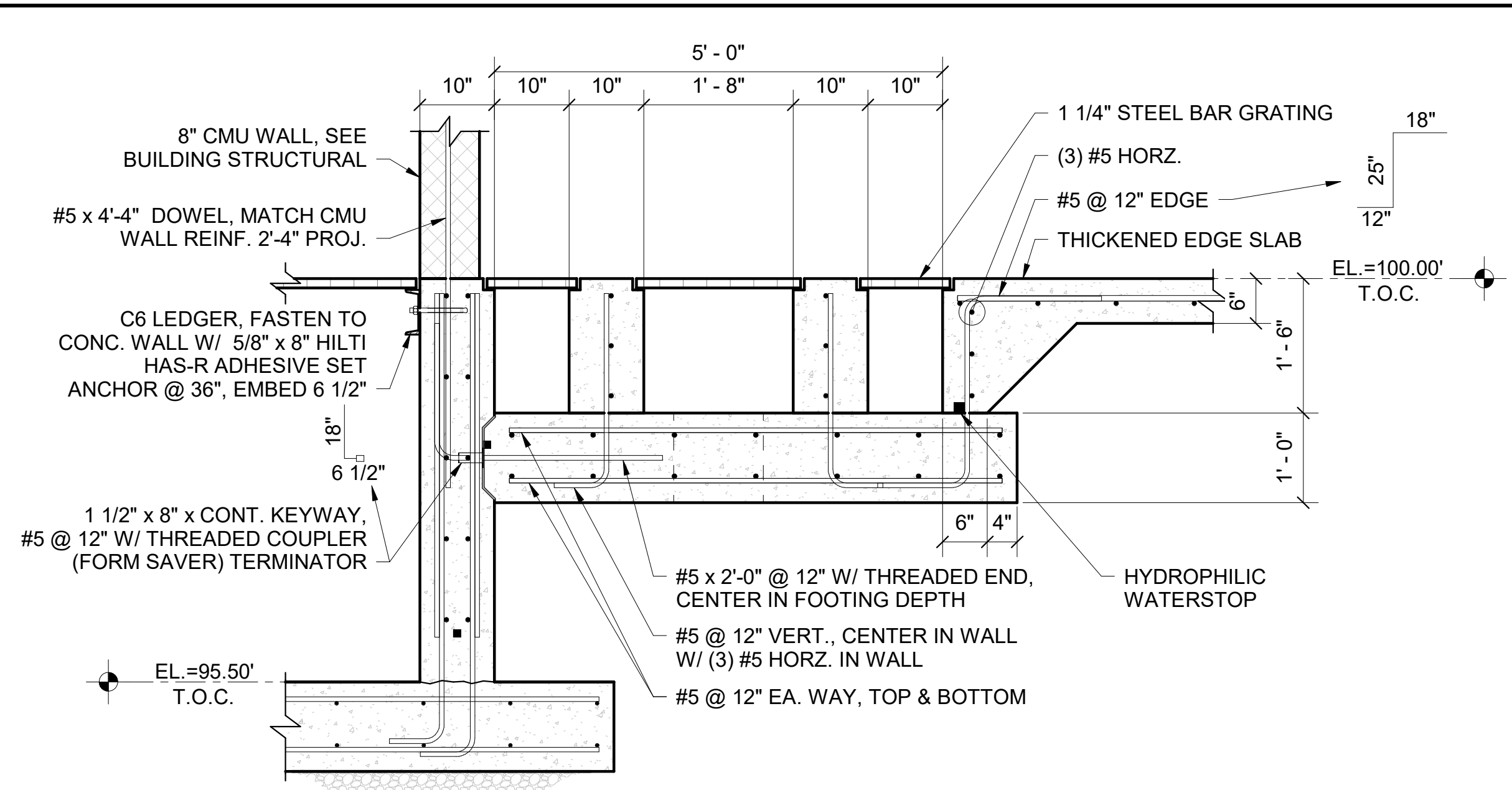
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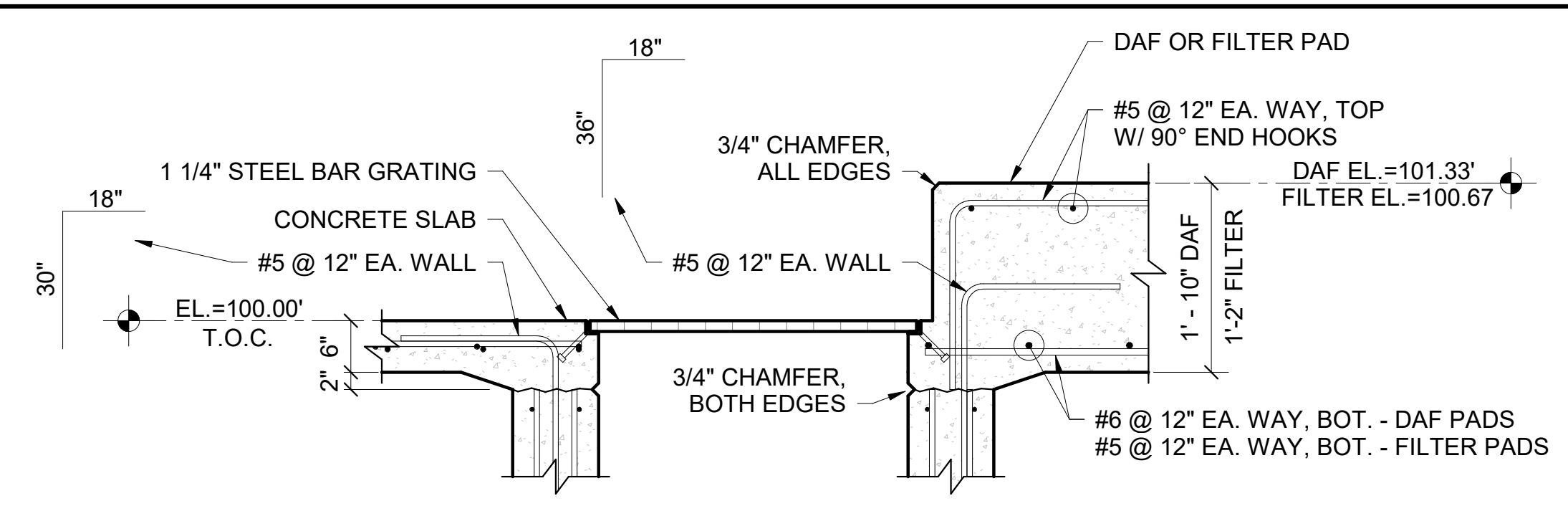
SF-008

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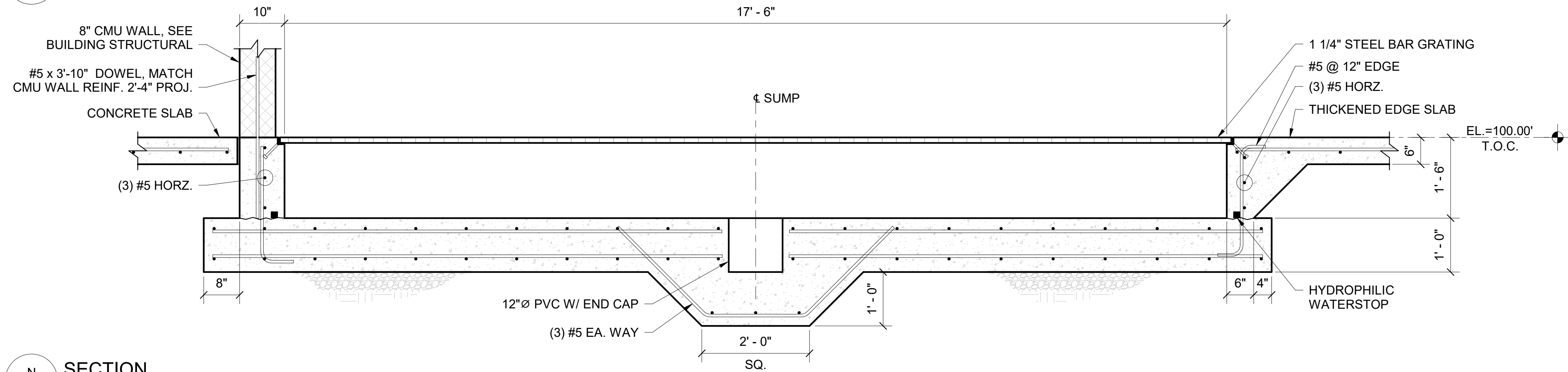
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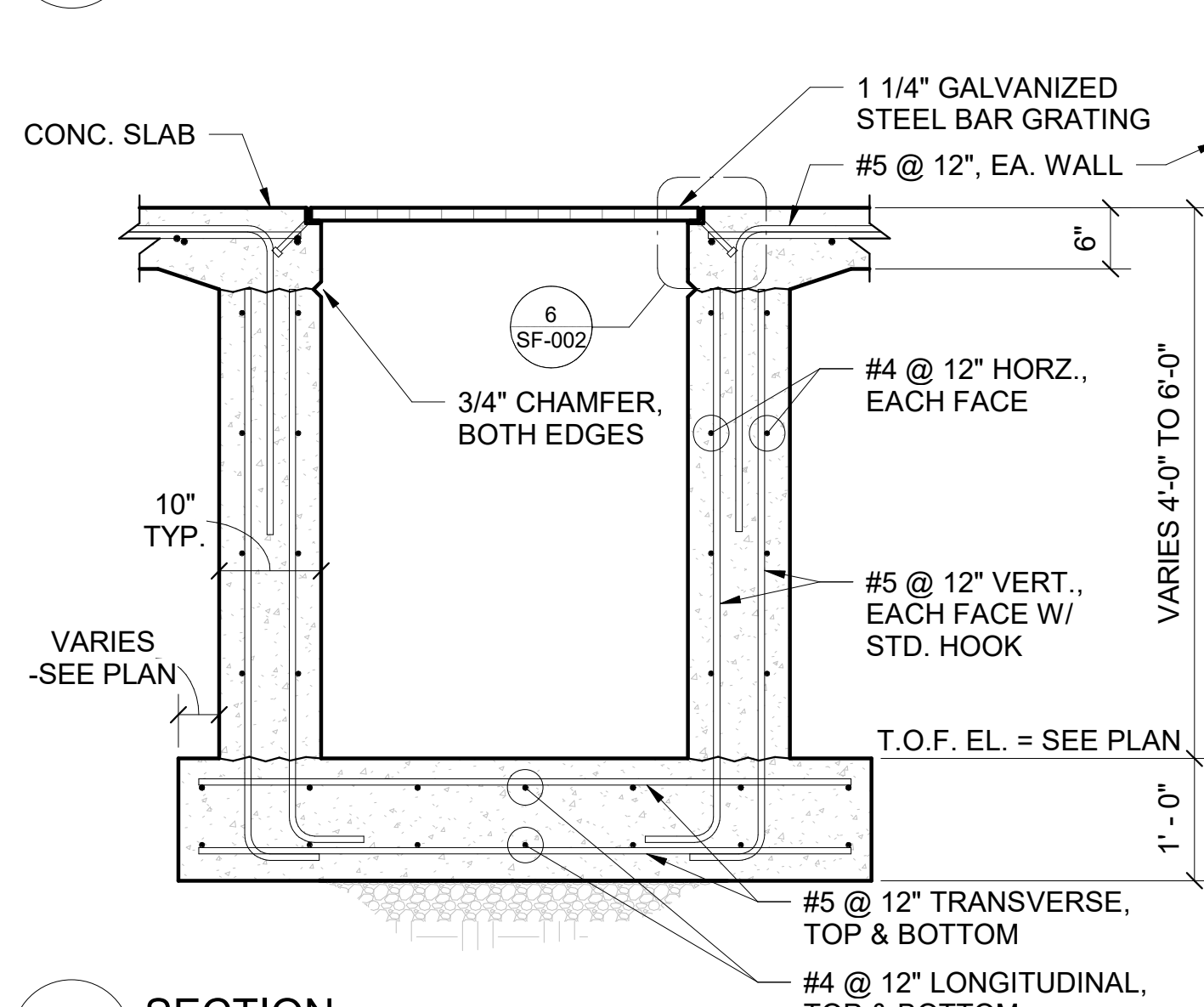
M SECTION
SF-009 TRENCH UPPER PORTION



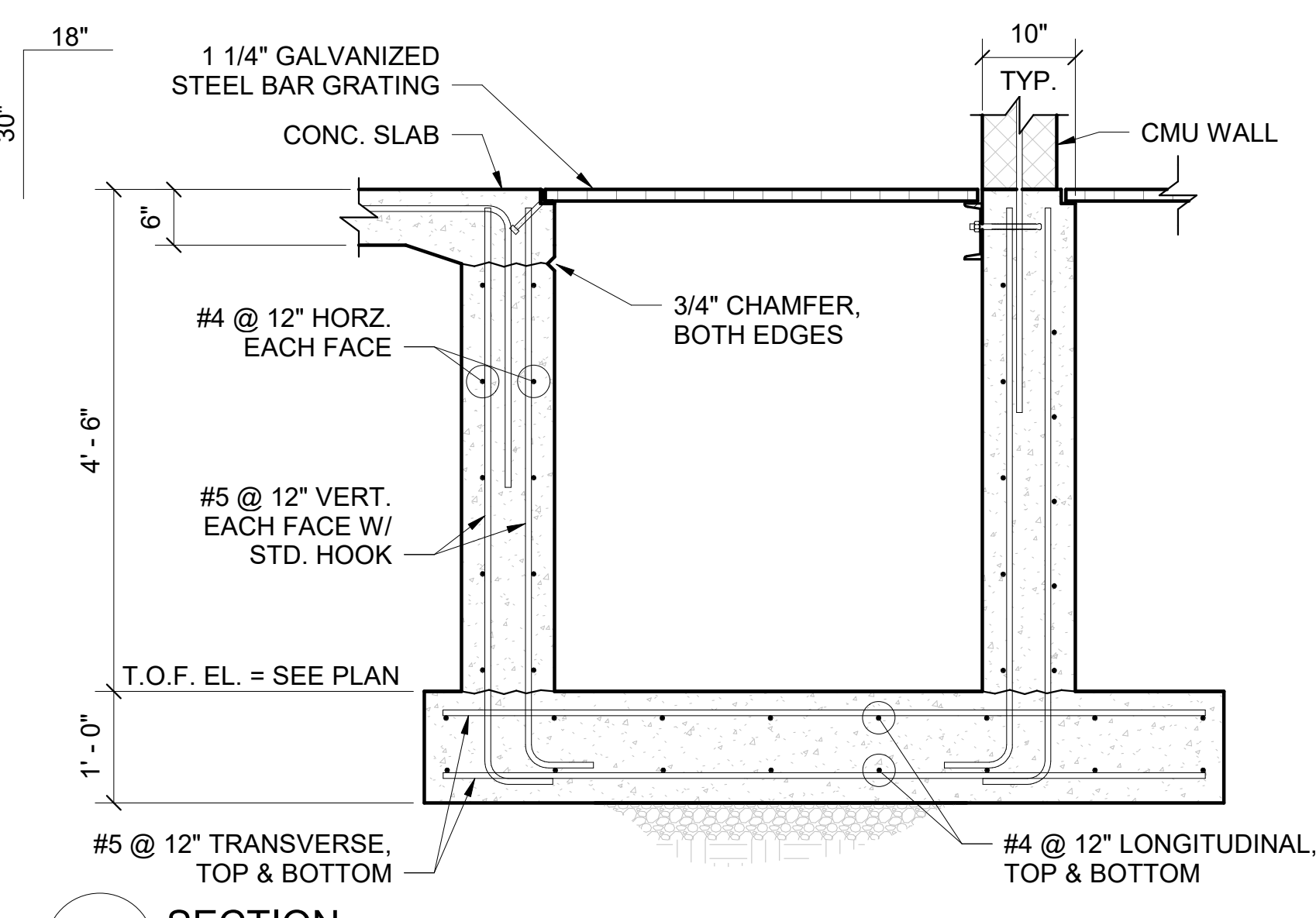
L SECTION
SF-009 CHEMICAL TOTE CONTAINMENT



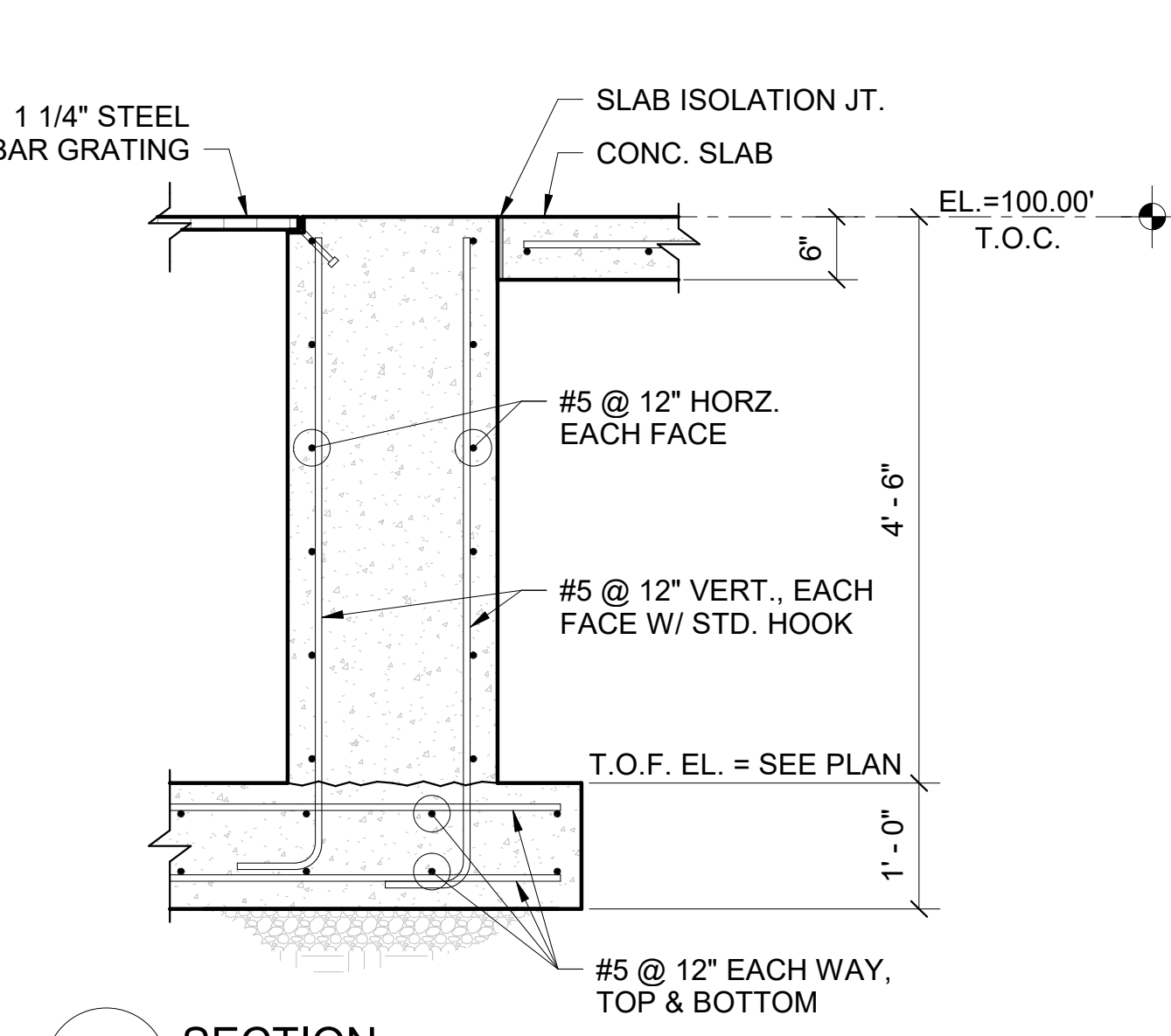
N SECTION
SF-009 CHEMICAL TOTE CONTAINMENT



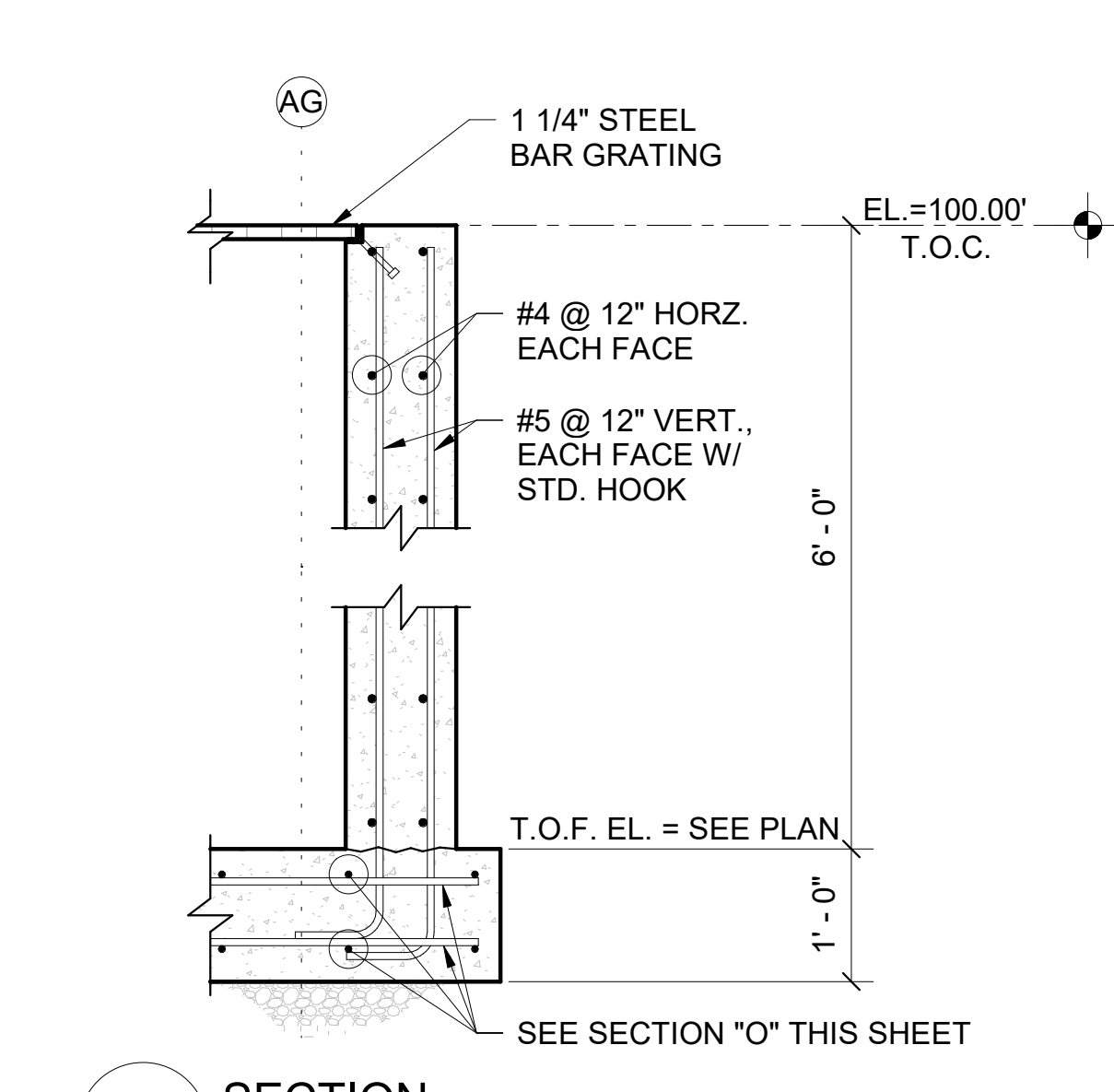
O SECTION
SF-009 PIPE TRENCH



P SECTION
SF-009 PIPE TRENCH AT CMU WALL



Q SECTION
SF-009 MIXER TRENCH



R SECTION
SF-009 TRENCH ENDWALL

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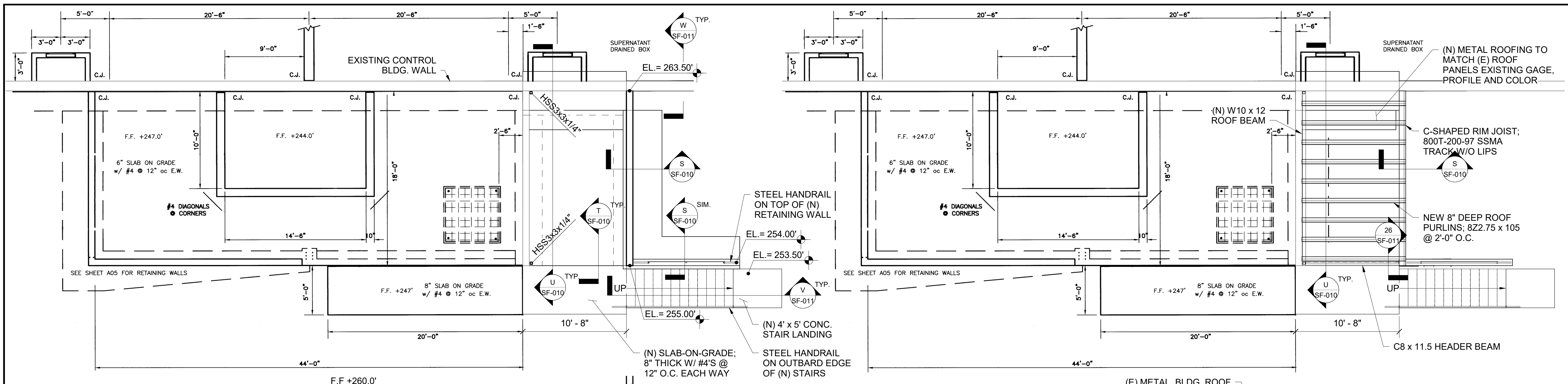
FLOOR TRENCH DETAILS

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DATE 05/02/2023

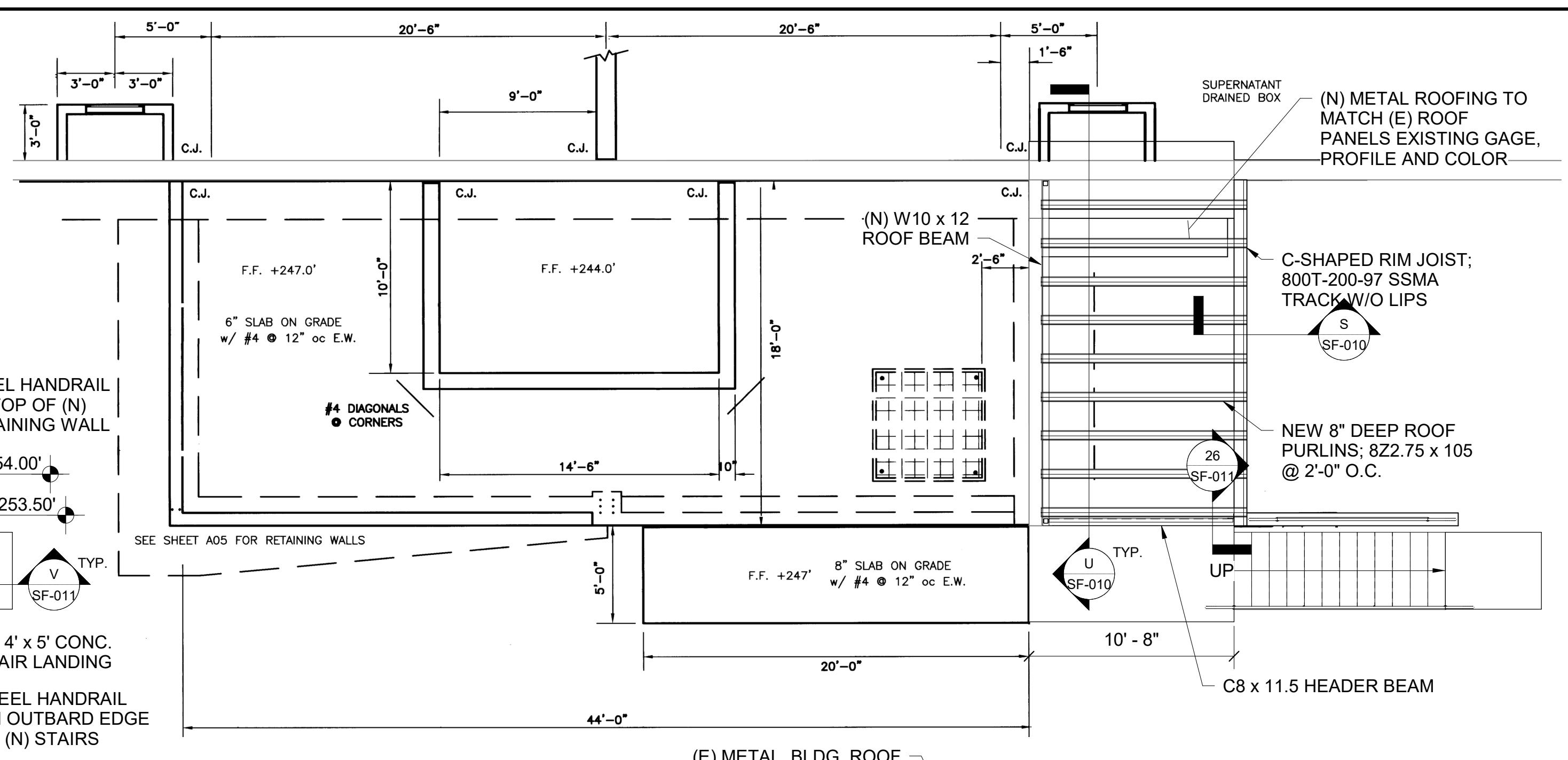
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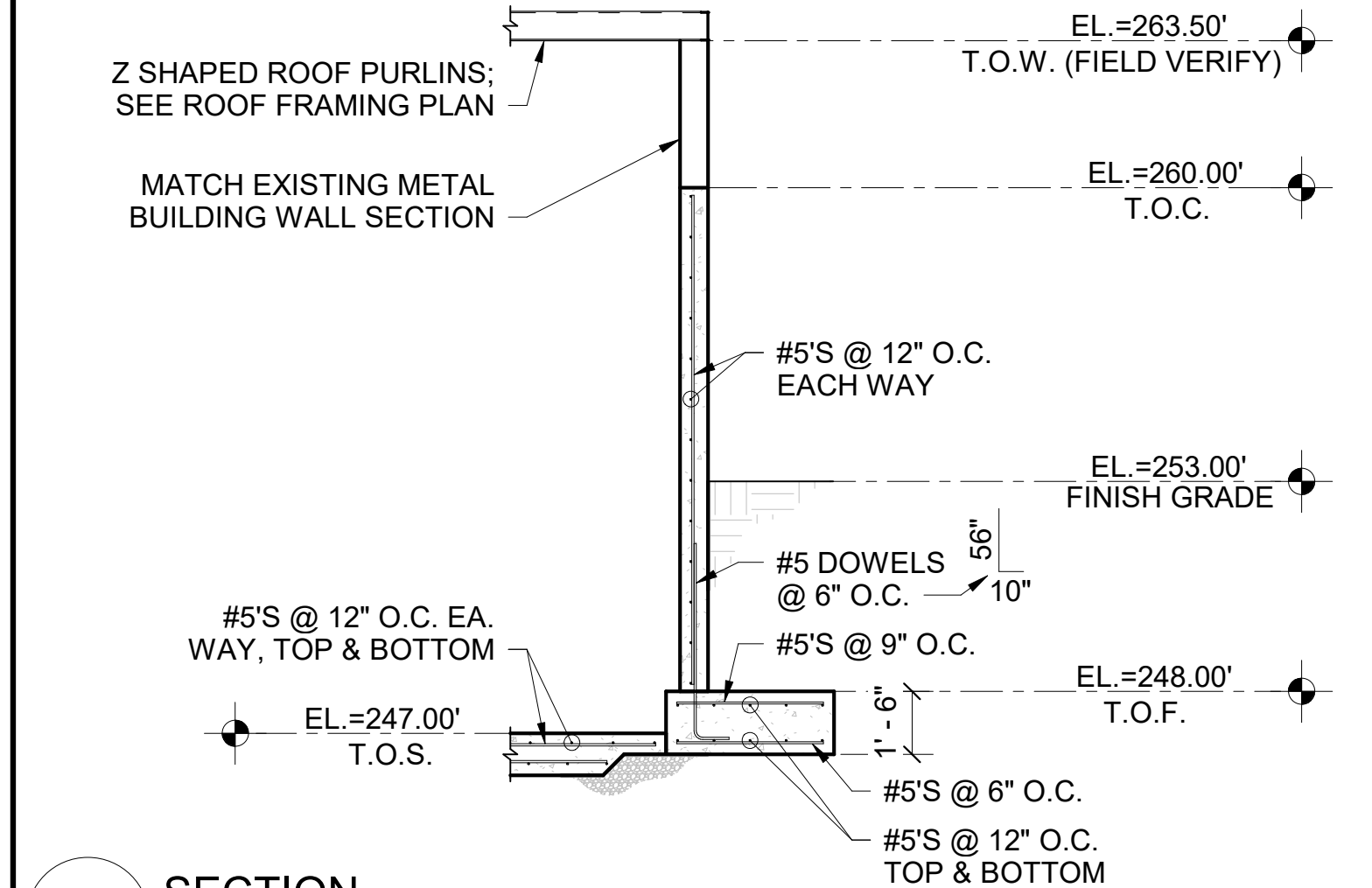
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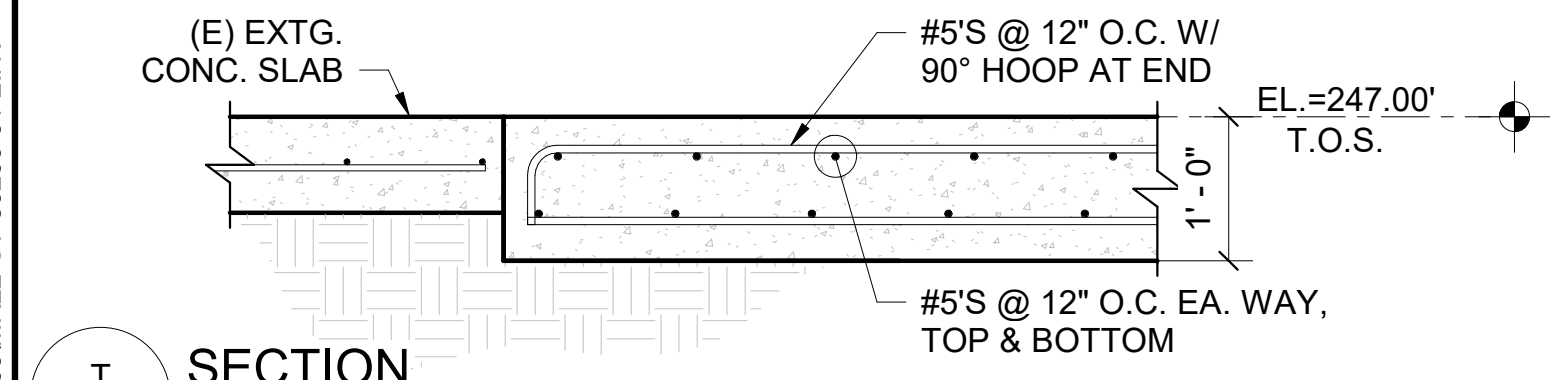
FOUNDATION PLAN & SECTION
 PIPE GALLERY BUILDING PUMP ROOM ADDITION
 scale 3/16" = 1' - 0" feet



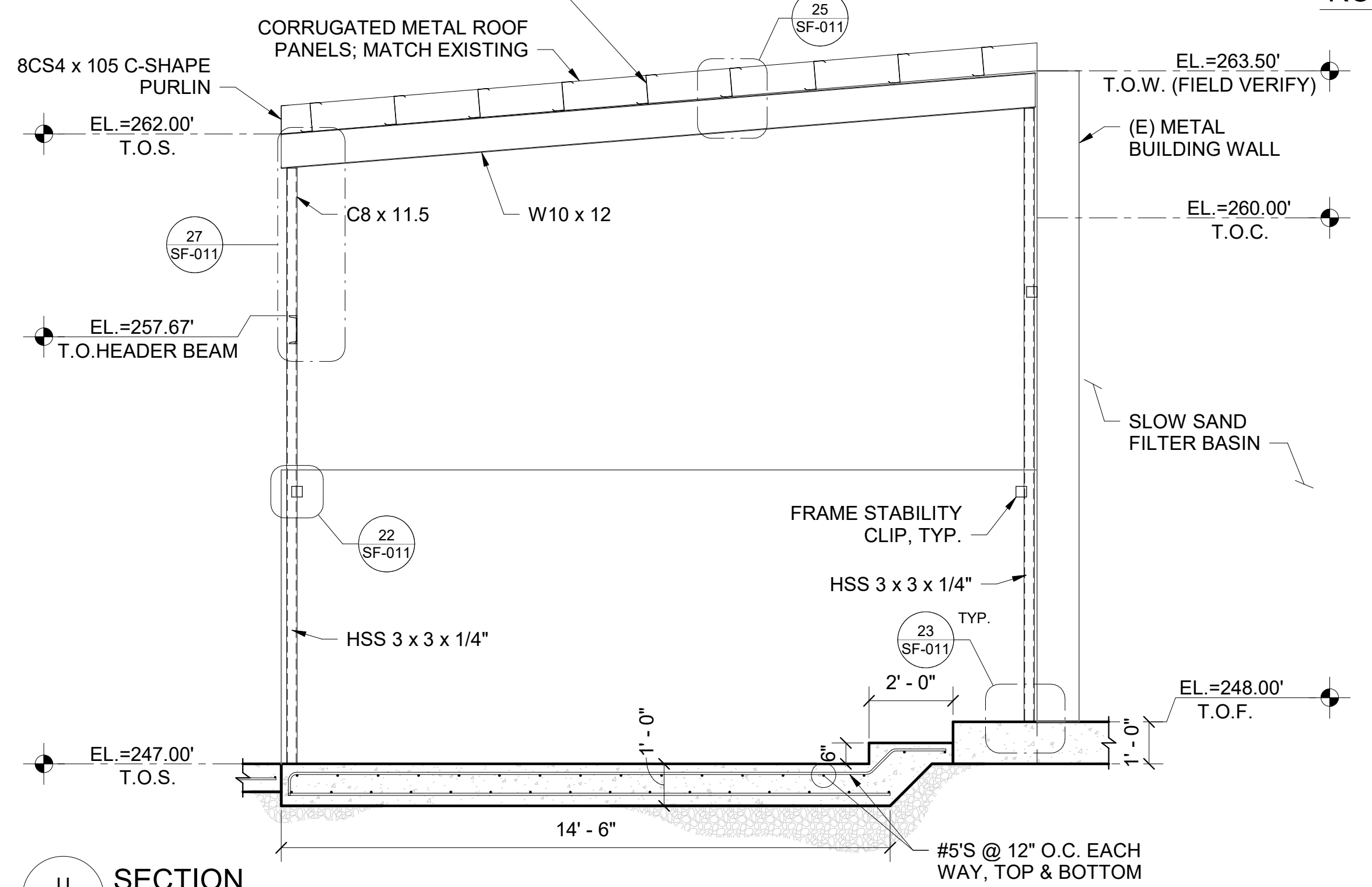
ROOF FRAMING PLAN & SECTION
 PIPE GALLERY BUILDING ADDITION
 scale 3/16" = 1' - 0" feet



S SECTION
 SF-010 (N) PUMP ROOM RETAINING WALL

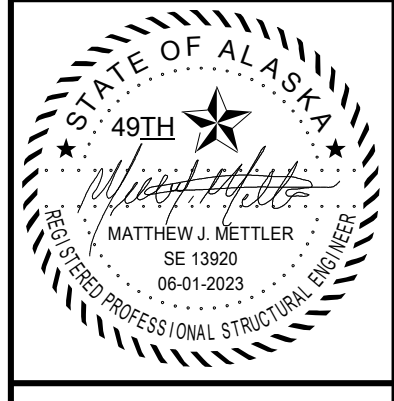


T SECTION
 SF-010 ROLL-UP DOOR THRESHOLD



U SECTION
 SF-010 PUMP ROOM ADDITION
 scale 3/8" = 1' - 0" feet

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**PIPE GALLERY BUILDING ADDITION
 FOUNDATION & FRAMING PLANS**

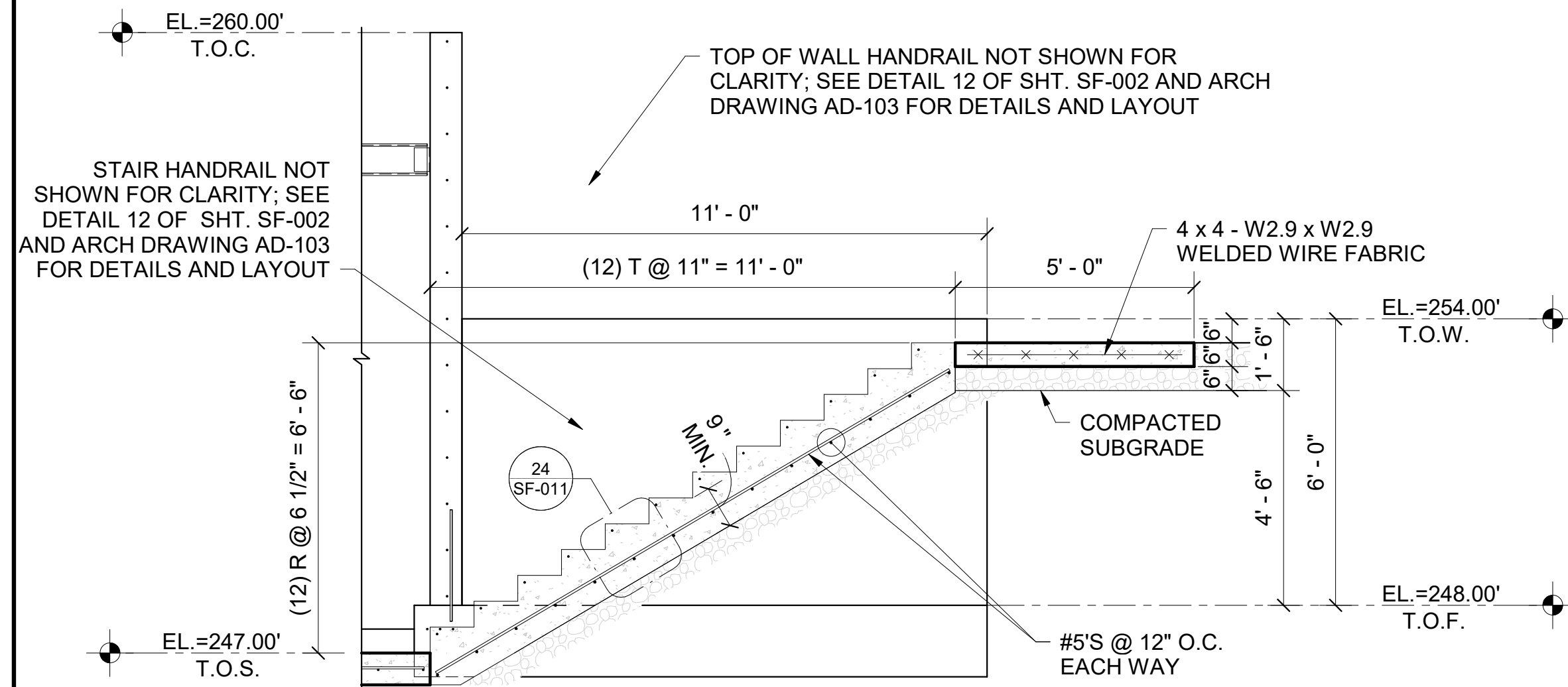
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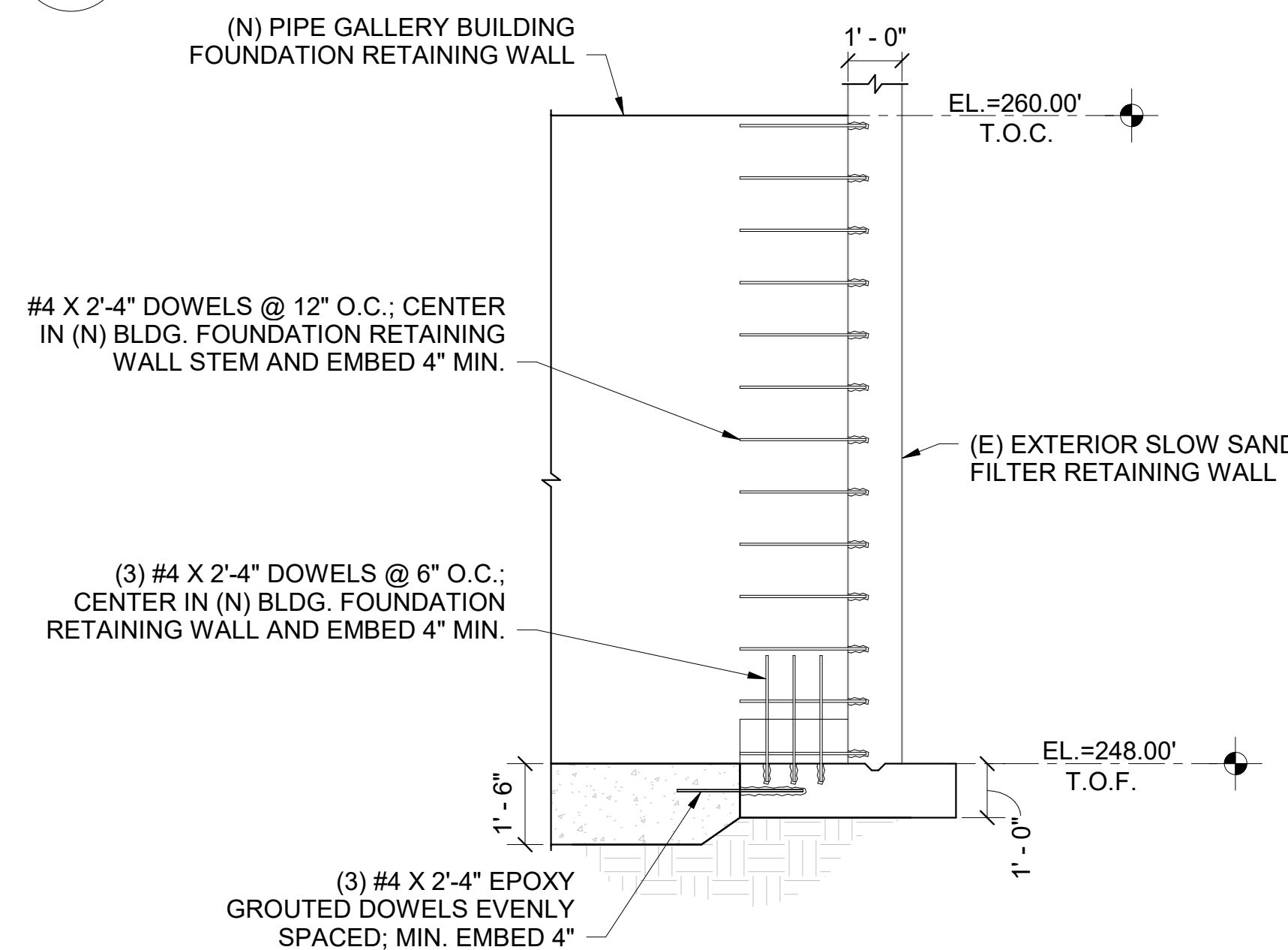
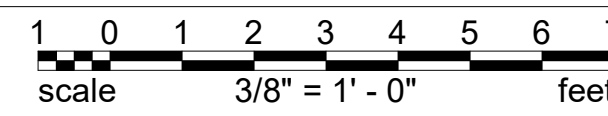
SF-010

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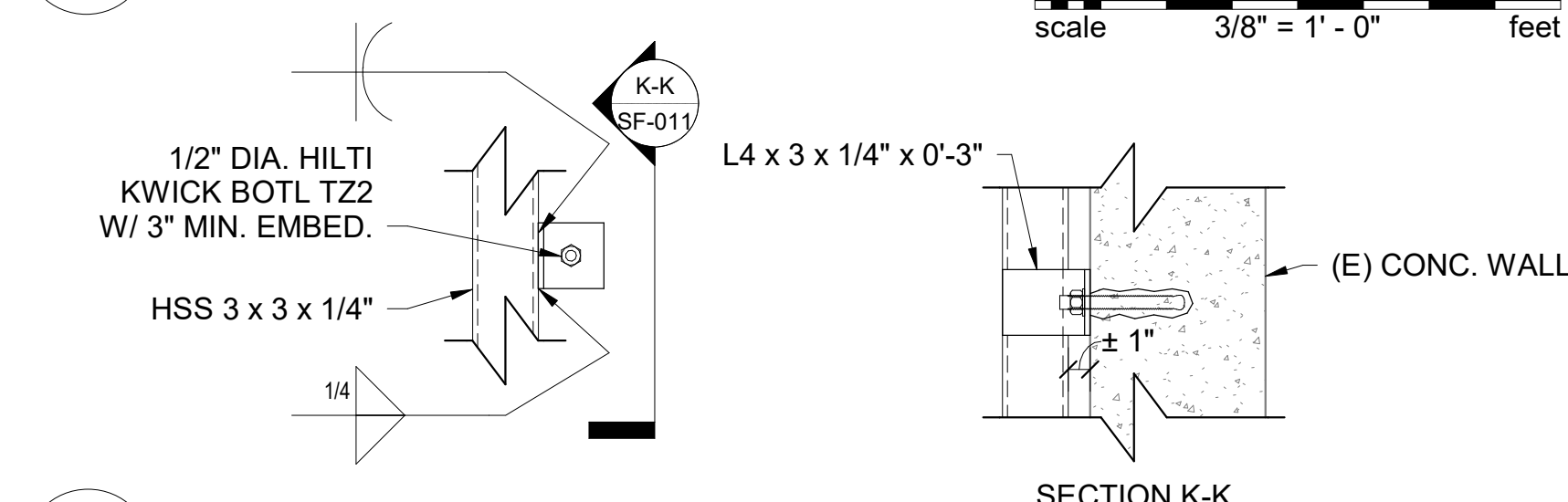
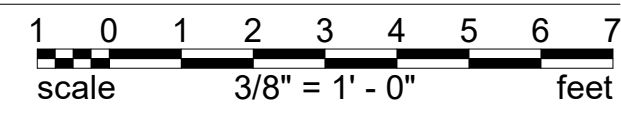
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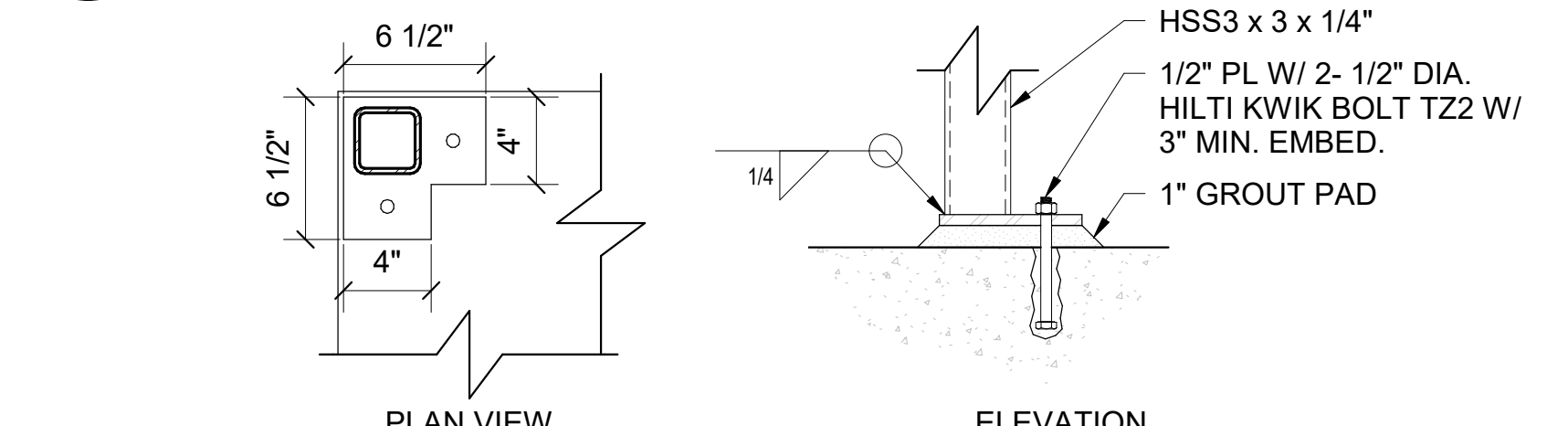
V SECTION
SF-011 RETAINING WALL ELEVATION & STAIRS



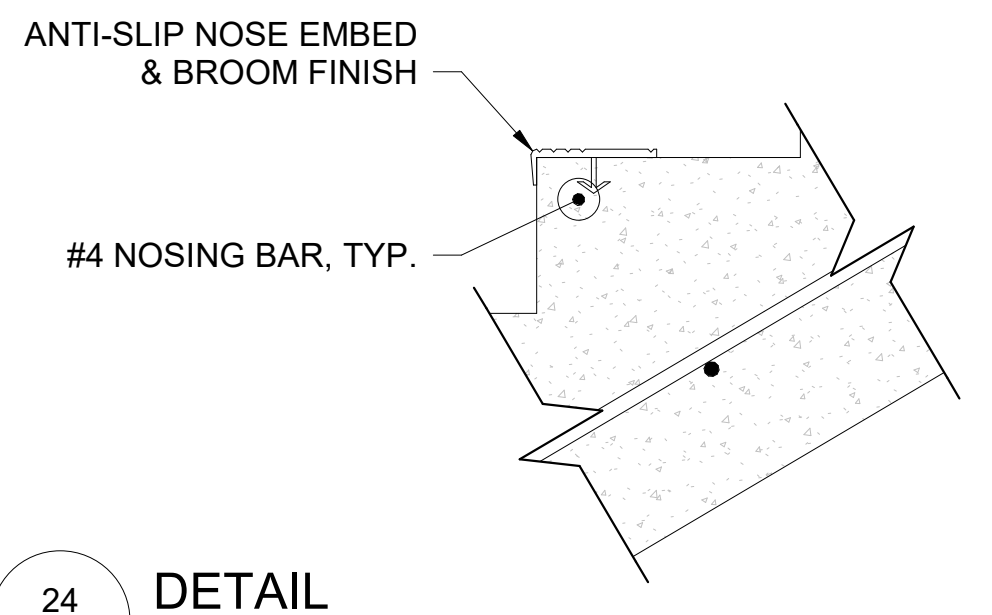
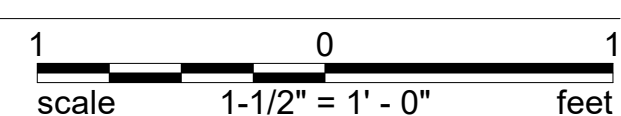
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SF-011 RETAINING WALL CONNECTION



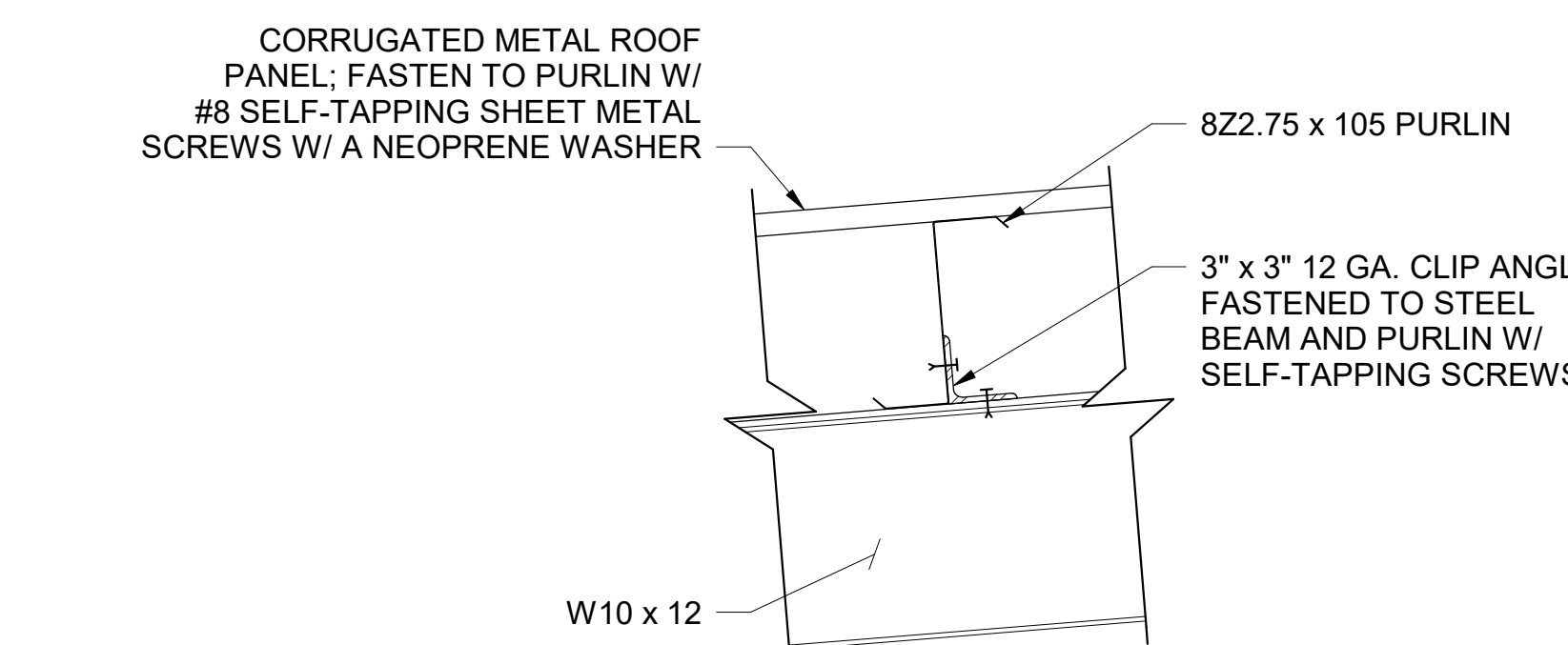
22 DETAIL
SF-011 FRAME STABILITY CLIP



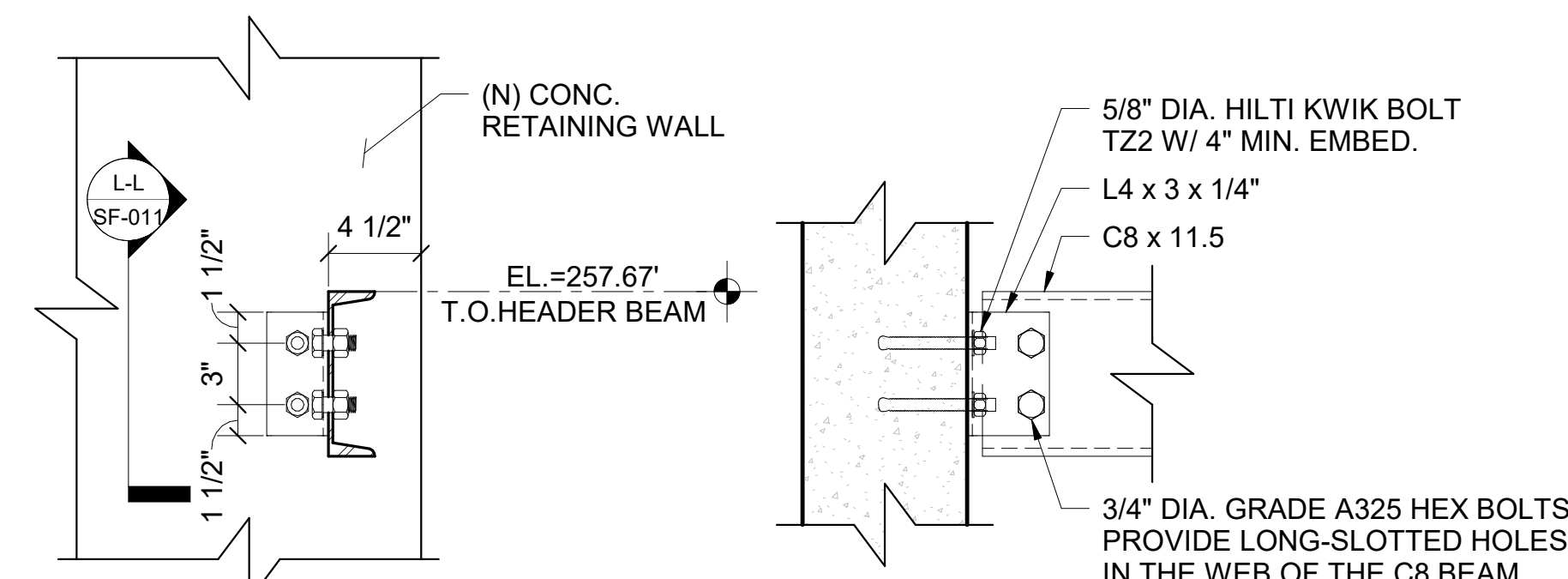
23 DETAIL
SF-011 BASE PLATE FOR HSS 3x3 COLUMNS



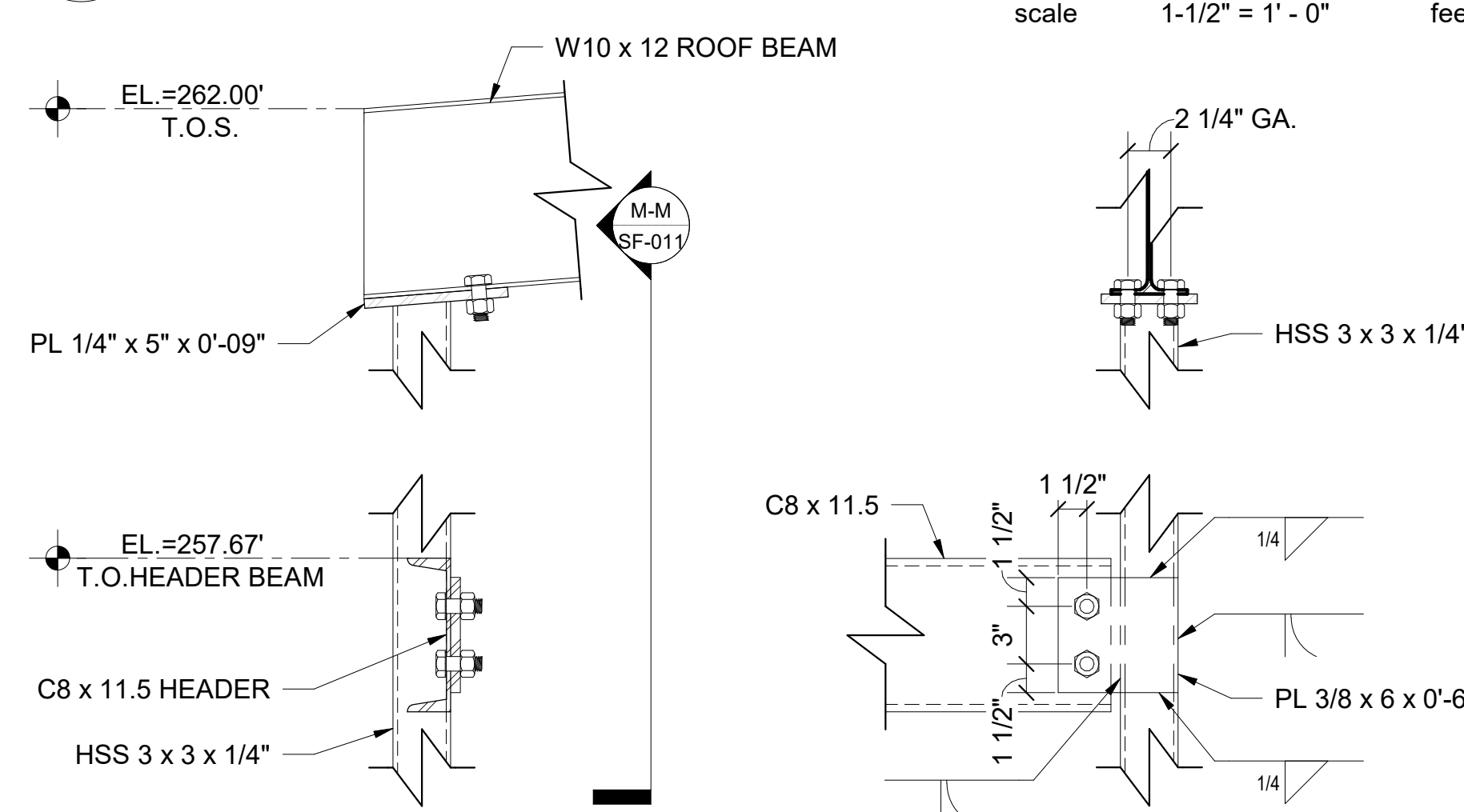
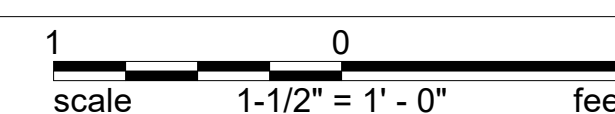
24 DETAIL
SF-011 NOSING DETAIL



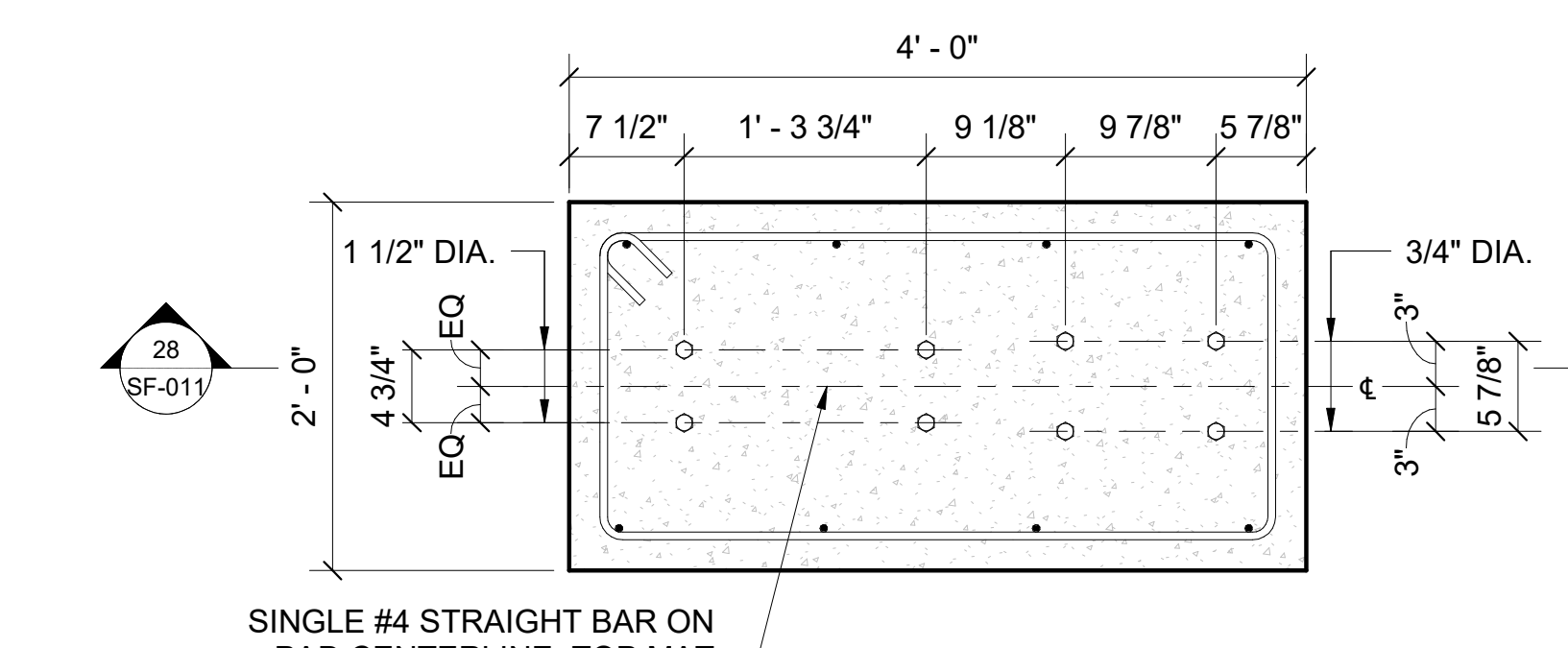
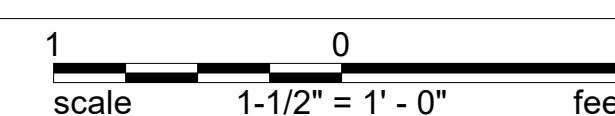
25 DETAIL
SF-011 ROOF PURLIN TO STEEL BEAM AND METAL BUILDING WALL CONNECTION



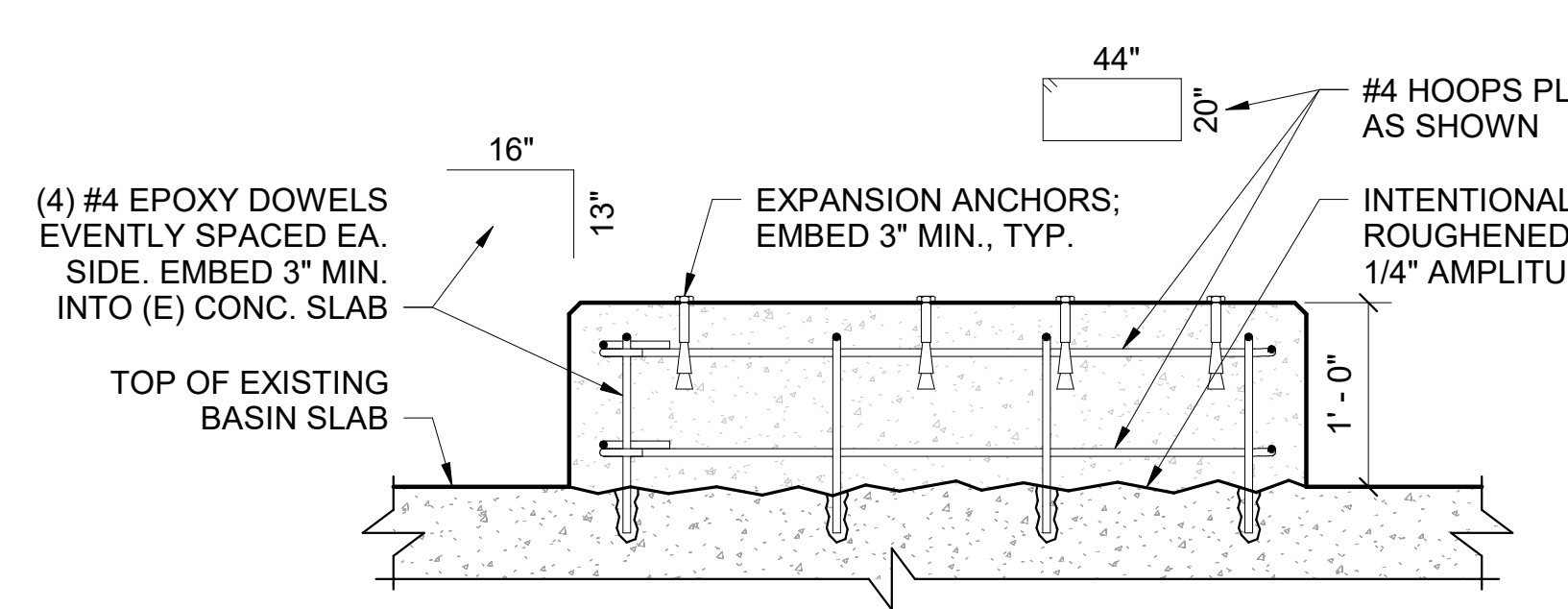
26 DETAIL
SF-011 HEADER BEAM TO WALL CONNECTION



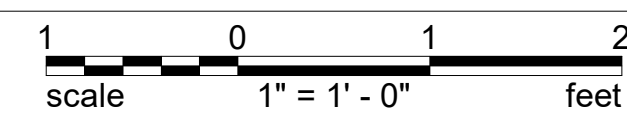
27 DETAIL
SF-011 HEADER & ROOF BEAM CONNECTION



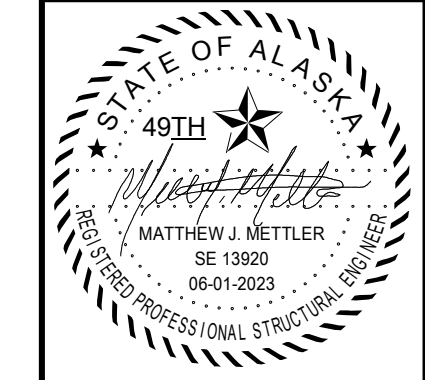
28 DETAIL
SF-011 EQ. BASIN CIRCULATION PUMP PAD*



28 DETAIL
SF-011 EQ. BASIN CIRCULATION PUMP PAD*



REV	DATE	DESCRIPTION



DOWL
www.dowl.com
222 N. 32nd Street, #700
Billings, Montana 59101
406-656-6399

WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
**PIPE GALLERY BUILDING ADDITION
STRUCTURAL DETAILS**

PROJECT 1528.50206.01
DATE 05/02/2023

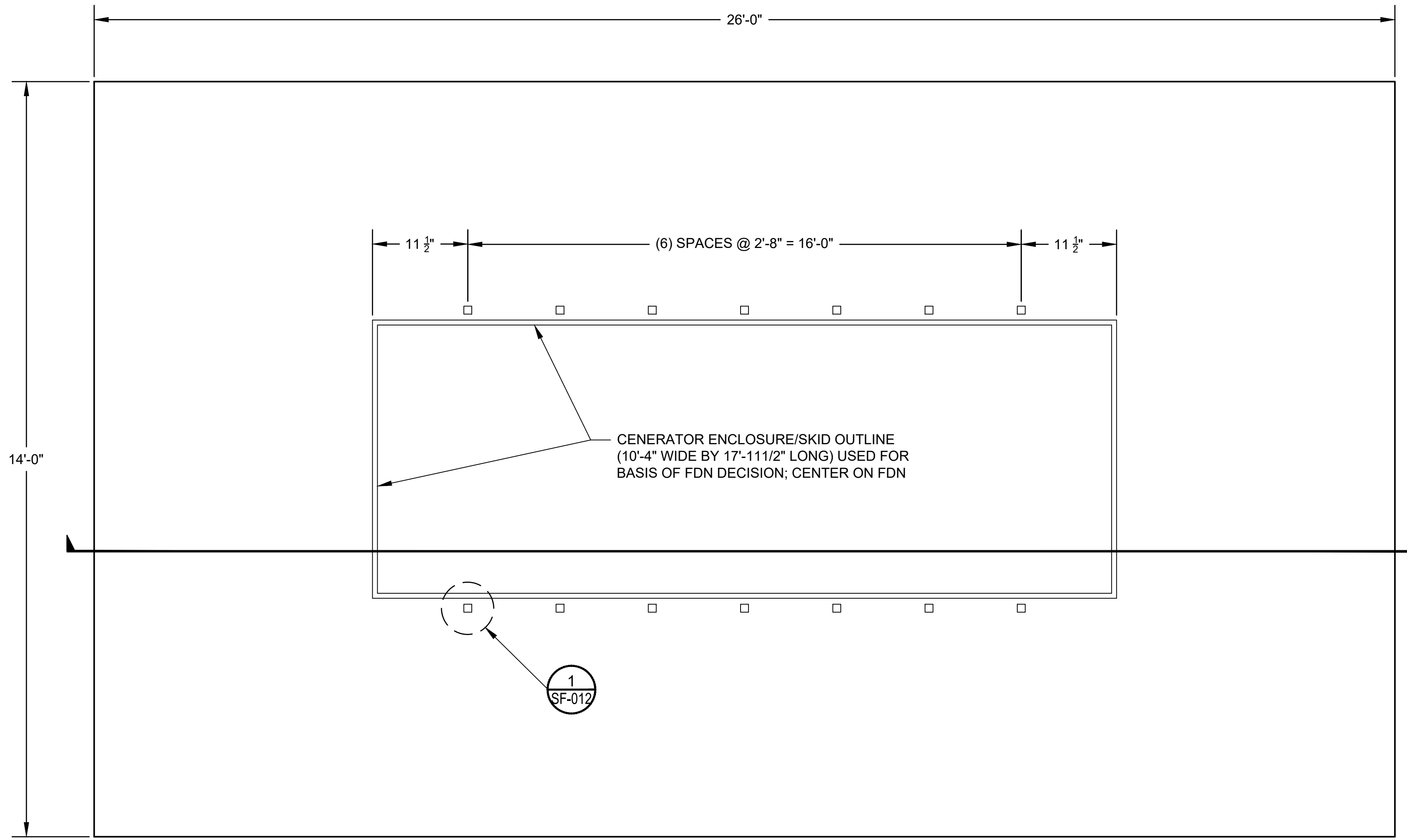
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SHEET

SF-011

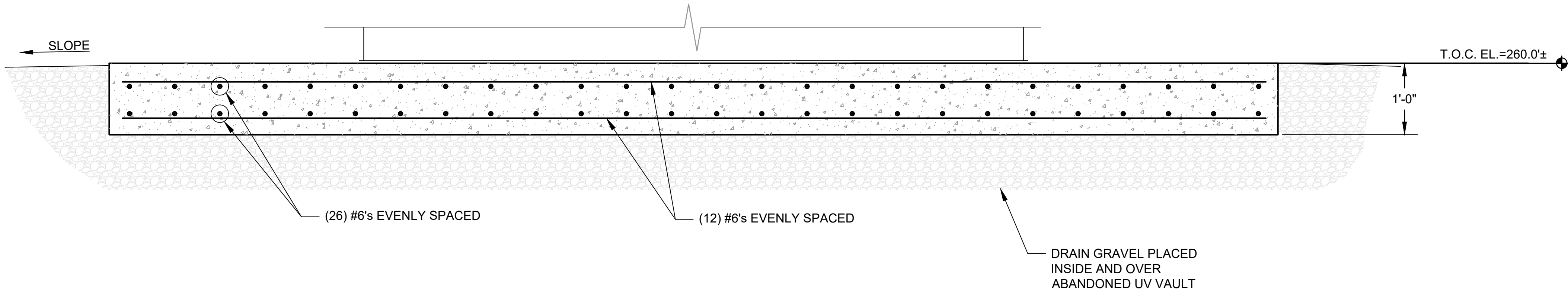
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PLAN VIEW - BACK-UP GENERATOR FOUNDATION
NTS



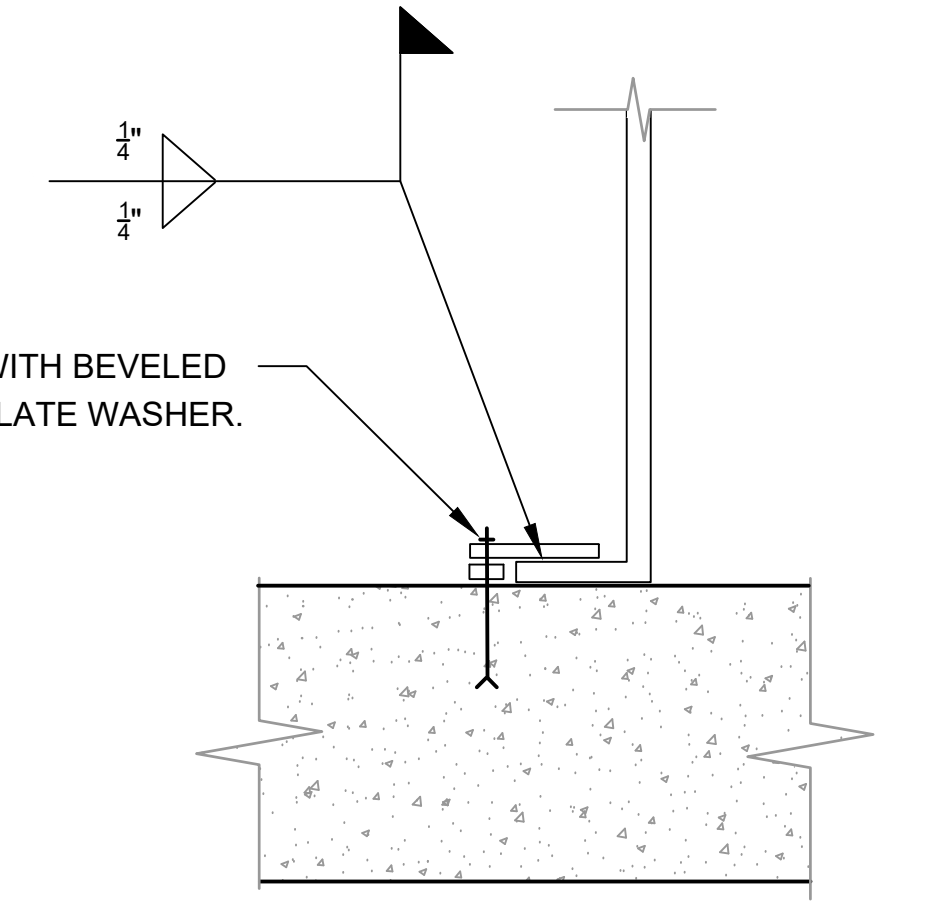
SECTION VIEW - BACK-UP GENERATOR FOUNDATION
NTS

GENERAL NOTES:
1. SEE STRUCTURAL FOUNDATION NOTE SHEET SF-001 FOR MATERIAL REQUIREMENTS.

REV	DATE	DESCRIPTION	BY



DOWL
AECL848
www.dowl.com
3535 College Road, #100
Fairbanks, Alaska 99709
907-374-0275



DETAIL - GENERATOR ANCHOR
NTS

WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
BACK-UP GENERATOR FOUNDATION
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.50206.01
DATE 06/02/23

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SF-012