

CITY OF UNALASKA

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CITY OF UNALASKA

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PROJECT DESCRIPTION

THIS PROJECT REPLACES UNALASKA'S EXISTING WATER TREATMENT FACILITY (PWSID 260309) WITH A NEW PLANT. THE NEW WATER TREATMENT PLANT WILL DISINFECT RAW WATER FROM ICY CREEK RESERVOIR WITH ULTRAVIOLET RADIATION AND CHLORINE GAS IN ACCORDANCE WITH THE LONG TERM 2 ENHANCED SURFACE WATER TREATMENT RULE.

PROJECT TEAM

SURVEY, CIVIL ARCHITECTURAL, STRUCTURAL

LARSEN CONSULTING GROUP, Inc
3710 WOODLAND DR. SUITE 2100
ANCHORAGE, AK 99517
(907) 243-8985

PROCESS

THE DANIELS GROUP
1907 ELK CREEK RD.
ELK CITY, ID 83525
(208) 842-2235

MECHANICAL, ELECTRICAL

RSA ENGINEERING, Inc
191 E. SWANSON AVE. SUITE 101
WASILLA, AK 99654
(907) 357-1521

CONTROLS

BOREAL CONTROLS, Inc.
3100 CHANNEL DR. SUITE 210N
JUNEAU, AK 99801
(907) 586-8367

**PYRAMID WATER TREATMENT PLANT
ISSUED FOR BID
12/6/13**



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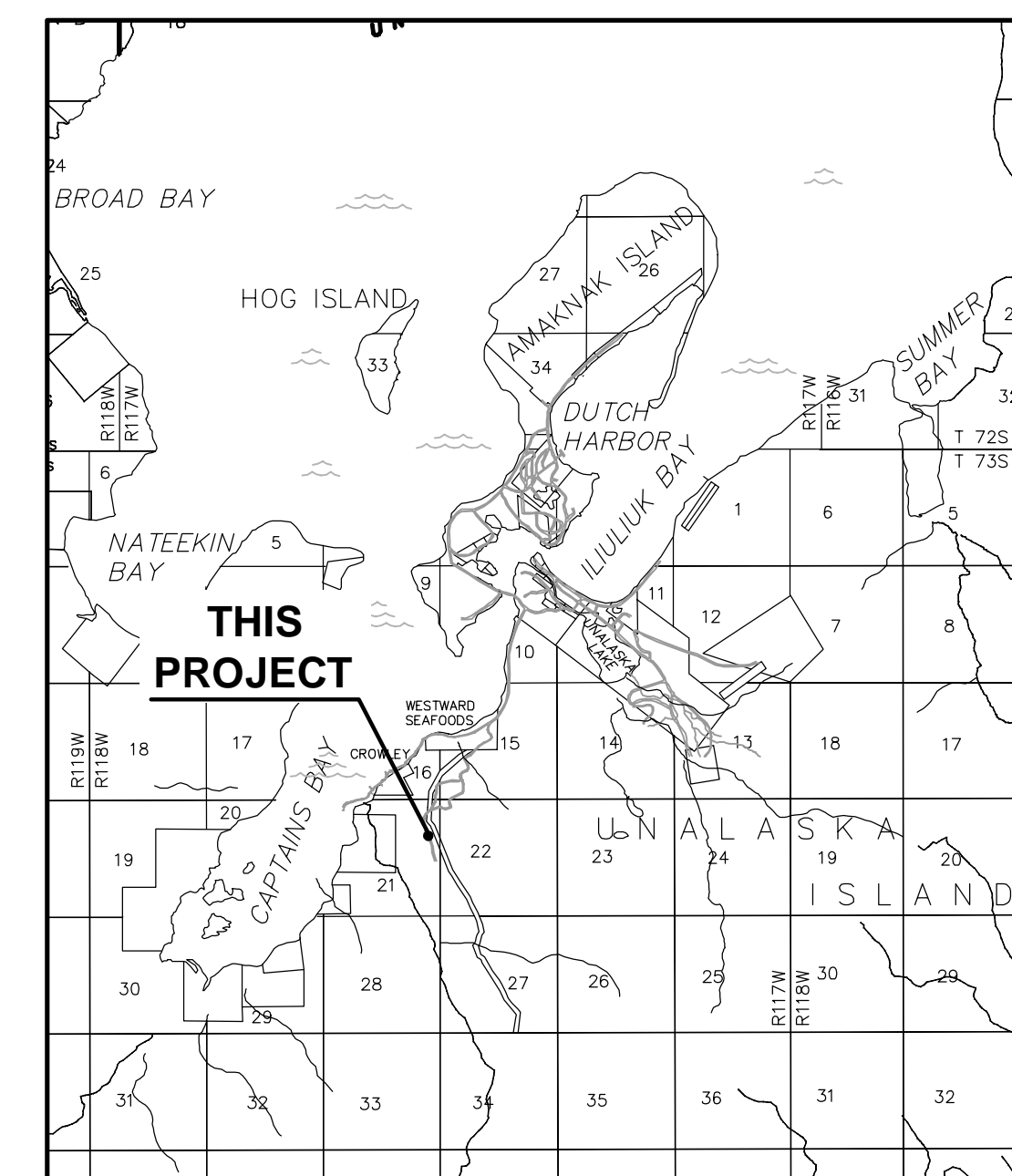
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VICINITY MAP

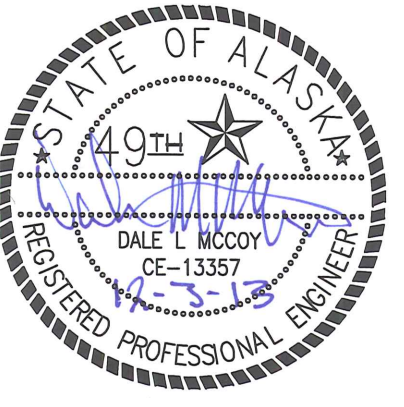
PYRAMID WATER TREATMENT PLANT

850.01



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CITY OF UNALASKA UNALASKA, ALASKA



GENERAL NOTES

- EXISTING FACILITIES AND GROUND CONTOURS ARE BASED ON A VARIETY OF SOURCES SEE SHEET V1.0. CONTRACTOR SHALL VERIFY SITE CONDITIONS.
- ALL WORK PERFORMED ON THE WATER SYSTEM SHALL CONFORM TO THE LATEST VERSION OF THE ADEC 18 AAC 80 DRINKING WATER STANDARDS.
- ALL WATER PIPING AND ASSOCIATED APPURTENANCES SHALL BE NSF 61 COMPLIANT.
- ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE WASTEWATER SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH ADEC 18 AAC 72 - WASTEWATER DISPOSAL REGULATIONS.
- ALL BURIED DUCTILE IRON PIPE & FITTINGS SHALL BE WRAPPED WITH ONE LAYER OF 8-MIL THICK POLYETHYLENE ENCASUREMENT "BAGGIES" IN ACCORDANCE WITH "METHOD A" OF ANSI/AWWA A21.5/C105.
- EXISTING UTILITIES ARE APPROXIMATE. FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES AND STRUCTURES ENCOUNTERED DURING CONSTRUCTION. EXERCISE CAUTION DURING EXCAVATION. CONTRACTOR SHALL IMMEDIATELY CONTACT OWNER'S REPRESENTATIVE IF A CONFLICT IS FOUND BETWEEN PLANS AND WHAT IS IN THE GROUND. RECORD LOCATIONS AND CHANGES TO UTILITIES IN SURVEY NOTES AND ON THE CONSTRUCTION DRAWINGS.
- CONFINED ALL VEHICLES, CONSTRUCTION EQUIPMENT, MATERIALS, AND OPERATIONS WITHIN THE CONSTRUCTION LIMITS INDICATED ON SHEET C1.0.
- UNLESS DIRECTED OTHERWISE BY THE CONTRACT DOCUMENTS OR OWNER'S REPRESENTATIVES, RESTORE ALL DISTURBED PROPERTY TO ORIGINAL CONDITIONS.
- INSTALL NORTH AMERICAN GREEN VMAX SC 250 OR APPROVED EQUAL PER MANUFACTURER'S RECOMMENDATION ON ALL SLOPES OF 1:2 OR LESS GREATER THAN 5 FEET IN TOTAL HEIGHT.
- RE-SEED ALL DISTURBED AREAS OUTSIDE GRAVEL PAD AREAS OR STABILIZED SLOPES. APPLY SEED MIX CONTAINING 60% NORTAN (NORTHCOAST) HAIRGRASS AND 40% BOREAL RED FESCUE. SEEDING SHALL BE APPLIED AT A RATE 45 POUNDS PER SQUARE ACRE. FERTILIZER SHOULD BE COMPOSED OF 20% NITROGEN, 20% PHOSPHORUS, AND 10% POTASSIUM. FERTILIZER MIX SHALL BE APPLIED AT 450 TO 500 POUNDS PER SQUARE ACRE.

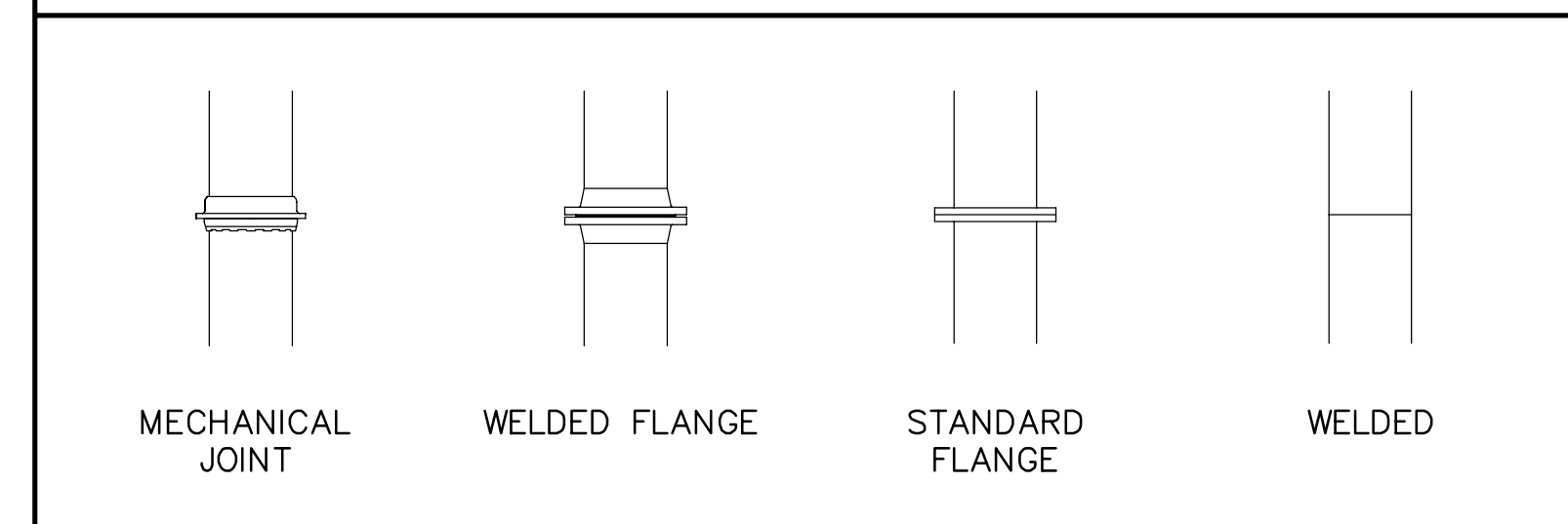
ABBREVIATIONS

AB	ANCHOR BOLT	IFC	INTERNATIONAL FIRE CODE
AC	ASPHALT CEMENT	INV	INVERT
ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	LF	LINEAR FEET
ADOT & PF	ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES	LT	LEFT
AFF	ABOVE FINISH FLOOR	MAX	MAXIMUM
ASSY	ASSEMBLY	MB	MACHINE BOLT
BC	BUILDING CORNER	ME	MATCH EXISTING
BF	BURIED FUEL LINE	MH	MANHOLE
BH	BORE HOLE	MIN	MINIMUM
BLDG	BUILDING	MJ	MECHANICAL JOINT
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BTU	BRITISH THERMAL UNITS	NIC	NOT IN CONTRACT
CB	CATCH BASIN	NFS	NON-FROST SUSCEPTIBLE
CC	COPPER X COPPER	NO	NORMALLY OPEN
CL	CENTER LINE	NSF	NATIONAL SANITATION FOUNDATION
CMP	CORRUGATED METAL PIPE	NTS	NOT TO SCALE
CPEP	CORRUGATED POLYETHYLENE PIPE	OC	ON CENTER
CON'T	CONTINUATION	OD	OUTSIDE DIAMETER
CONC	CONCRETE	PE	PLAIN END
CT	CONDUIT	PL	PLATE
CTRL	CONTROL	PP	POWER POLE
CU	COPPER	PPD	POUNDS PER DAY
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DI	DUCTILE IRON	PRV	PRESSURE RELIEF VALVE
DIP	DUCTILE IRON PIPE	PVC	POLYVINYL CHLORIDE
DW	DISCHARGE TO WASTE	R	RADIUS
EA	EACH	RED	REDUCING
EL	ELEVATION	RT	RIGHT
EW	EACH WAY	RW	RAW WATER
EXIST	EXISTING	SF	SQUARE FEET
FC	FENCE CORNER	SHLDR	SHOULDER
FE	FLOOR ELEVATION	SL	PIPE SLOPE
FF	FINISH FLOOR	SSCO	SANITARY SEWER CLEANOUT
FG	FINISH GRADE	SSMH	SANITARY SEWER MANHOLE
FH	FIRE HYDRANT	SS	STAINLESS STEEL
FL	FLANGE	STL	STEEL
FT	FEET OR FOOT	STA	STATION
FTG	FOOTING	SW	SAMPLE WATER
FIP	FEMALE IRON PIPE	TB	THRUST BLOCK
FW	FINISH WATER	TH	TEST HOLE
GAL	GALLON	TO	TANK OVERFLOW
GALV	GALVANIZED	TP	TEST PIT
GB	GRADE BREAK	TR	THRUST RESTRAINT
GPM	GALLONS PER MINUTE	TW	TREATED WATER
GV	GATE VALVE	TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE	UT	UNDERGROUND TELEPHONE
HORZ	HORIZONTAL	UV	ULTRAVIOLET
HP	HORSE POWER	UVT	ULTRAVIOLET TRANSMITTANCE
IBC	INTERNATIONAL BUILDING CODE	VERT	VERTICAL
ID	INSIDE DIAMETER	WS	WOOD STAVE PIPE
IE	INVERT ELEVATION	WTP	WATER TREATMENT PLANT

CIVIL LEGEND

PROPOSED	EXISTING	DESCRIPTION
	-----	CONSTRUCTION LIMITS
	-----	RIGHT OF WAY
	-----	UTILITY CORRIDOR
	-----	ROAD CENTERLINE
	-----	TRAIL
		GATE
		CULVERT
		CONTOURS
		DRAINAGE DIRECTION DRAINAGE
		DRAINAGE SWALE
		SLOPE SYMBOL
		EDGE OF CUT SLOPE
		TOE OF FILL SLOPE
		SEWER LINE
	----- CT -----	CONDUIT
----- DW -----	----- DW -----	DISCHARGE WATER
----- FW -----	----- FW -----	FINISH WATER
----- RW -----	----- RW -----	RAW WATER
----- SW -----	----- SW -----	SAMPLE WATER
----- TW -----	----- TW -----	TREATED WATER
	----- WS -----	WOOD STAVE
		STANDARD FITTING
		FIRE HYDRANT
		SEWER CLEANOUT
		PIPELINE DEMOLITION
		WATER VALVE
		AIR RELEASE VALVE
		BOLLARD
		GRADE BREAK
		CONCRETE
		GRAVEL SURFACE
		REVEGETATED AREA
		NATIVE GROUND
		IMPORTED FILL
		TELEPHONE PEDESTAL
		TEST PIT LOCATION
		BORE HOLE LOCATION
		ELECTRICAL BOX

PIPE CONNECTION LEGEND



PRELIMINARY CODE STUDY

2009 INTERNATIONAL BUILDING CODE
 2009 INTERNATIONAL FIRE CODE

OCCUPANCY CLASSIFICATION:
 TREATMENT/PROCESS/OFFICE AREA - F-1, 2,250/100 = 22 Occupants
 MODERATE HAZARD CHLORINE STORAGE - H-3, 600/200 = 3 Occupants
 OXIDIZING GAS STORAGE

CONSTRUCTION TYPE: TYPE V-B

FIRE SUPPRESSION: AUTOMATIC FIRE SPRINKLER SYSTEM INSTALLED THROUGHOUT FACILITY.

FIRE DETECTION: AUTOMATIC SMOKE DETECTION SHALL BE INSTALLED PER THE FIRE CODE (CHAPTERS 37, 39 & 40)

ALLOWABLE AREA CALCULATION:

<u>H-3 AREA</u>	
BASE AREA:	5,000 SF, ONE STORY
SPRINKLER INCREASE:	15,000 SF
FRONTAGE INCREASE:	2,800 SF
TOTAL ALLOWABLE	22,800 SF
<u>F-1 AREA</u>	
BASE AREA:	8,500 SF, ONE STORY
SPRINKLER INCREASE:	25,500 SF
FRONTAGE INCREASE:	5,400 SF
TOTAL ALLOWABLE	39,400 SF

ACTUAL: ONE STORY
 H-3: 600 SF
 F-1: 2,250 SF

OCCUPANCY SEPARATION (TABLE 508.4): 1-HOUR FIRE BARRIER WALL REQUIRED WITH SPRINKLER SYSTEM (BOTH SIDES), 2-HOUR FIRE BARRIER WALL REQUIRED IF NOT SPRINKLERED.

EGRESS: EGRESS FROM THE CHLORINE STORAGE ROOM (H OCCUPANCY) SHOULD NOT EXIT THROUGH THE F-1 OCCUPANCY, BUT DIRECTLY TO THE EXTERIOR (VERIFY CODE PROVISIONS).

ISSUED FOR BID	REVISION
DM	BY
12/2/13	DATE
INC	NO.

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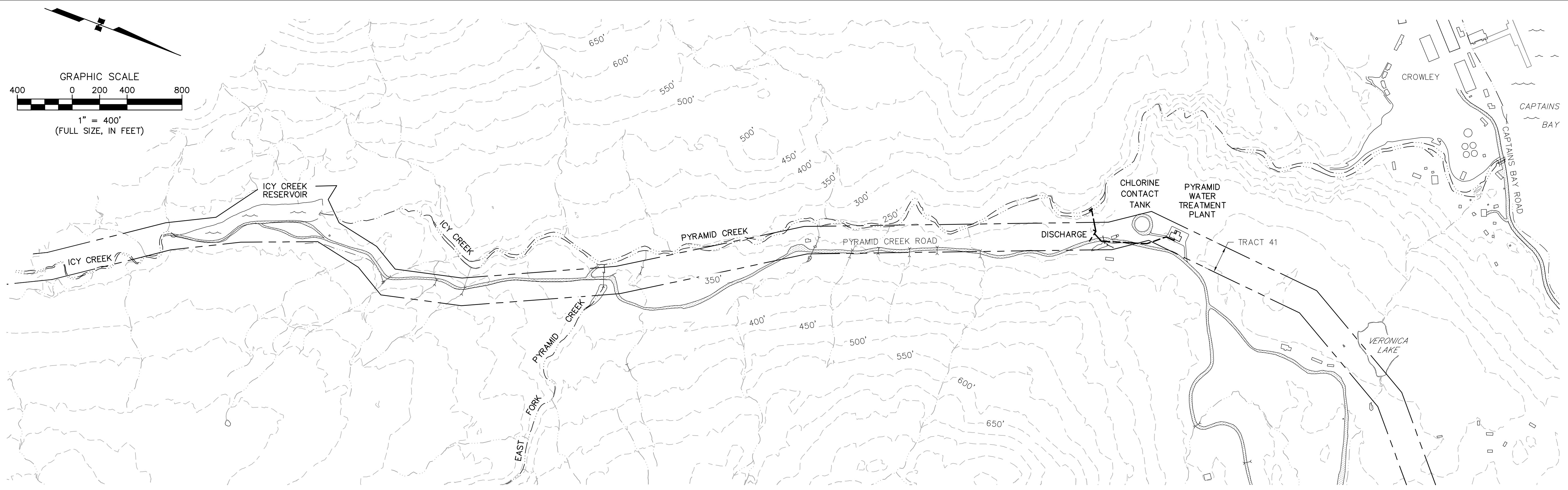
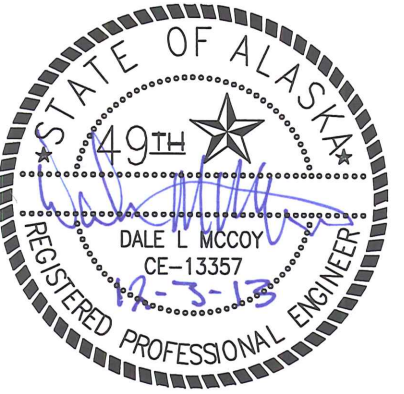
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 LARSEN CONSULTING GROUP
 architecture • engineering • surveying

CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 LEGEND, ABBREVIATIONS,
 NOTES

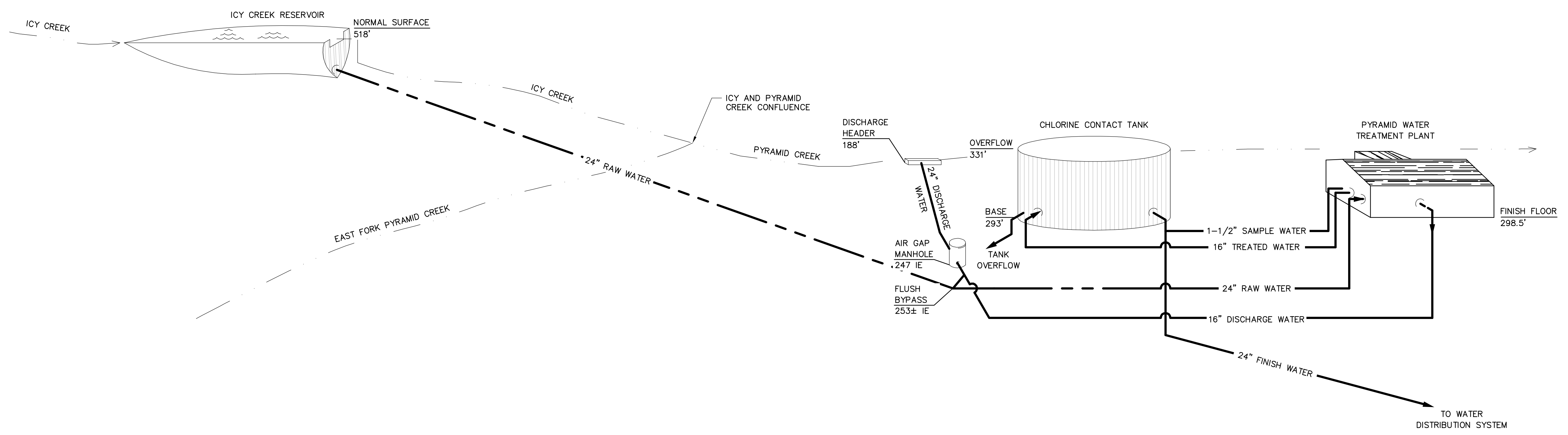
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 Date/Time: 04:10
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OVERVIEW

SCALE: 1" = 400'



SCHEMATIC

SCALE: NTS

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CITY OF UNALASKA

**PYRAMID WTP
UNALASKA, ALASKA
WATER SYSTEM OVERVIEW
AND DIAGRAM**

SCALE:	AS SHOWN
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DRAWN BY:	CS
CHECKED BY:	GW
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FILE NO.	850.01
SHEET NUMBER	G1.1 OF

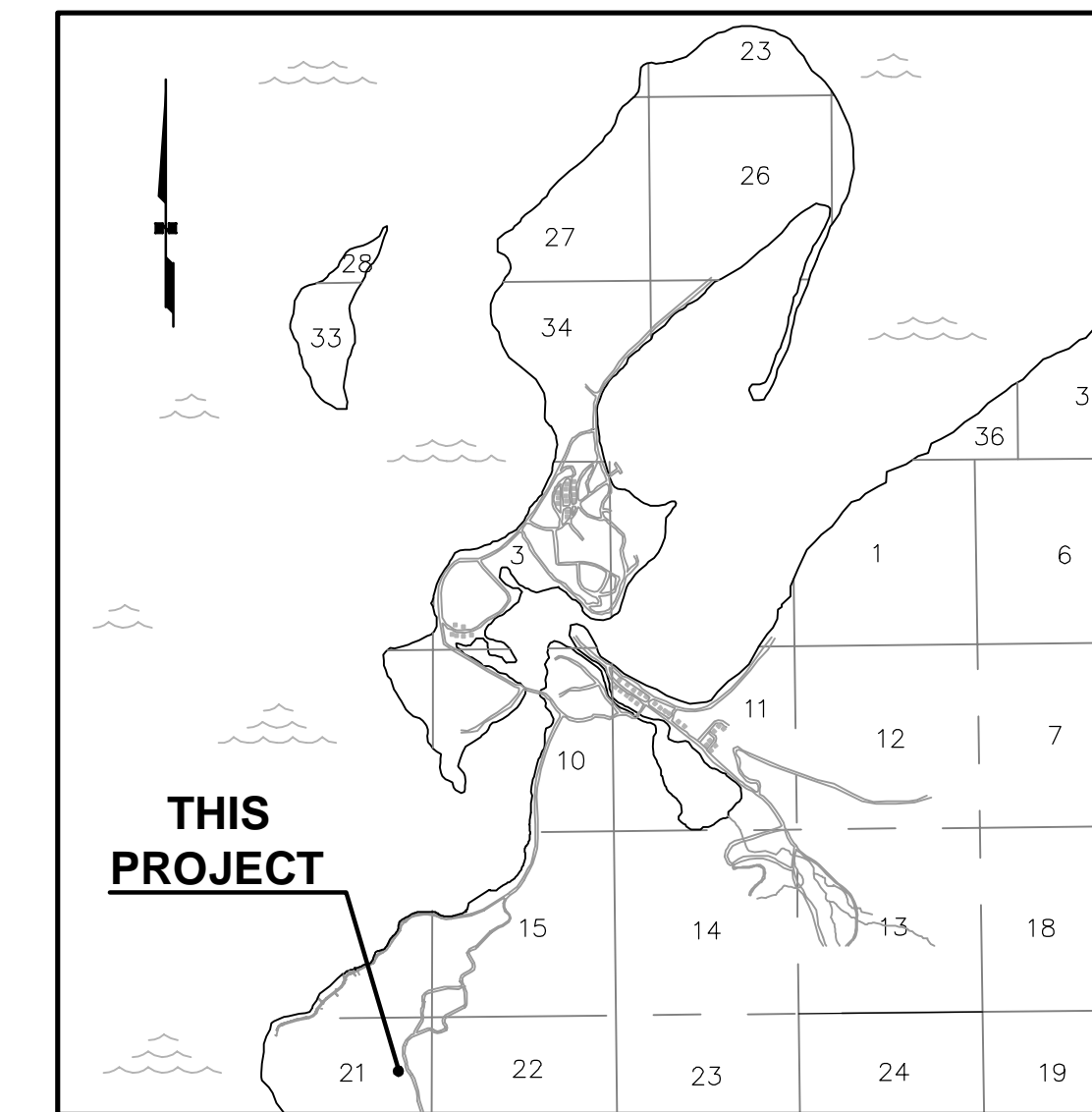
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Date: 03 Dec 2013 2:31 pm
Date/time: G1.1 GENERAL SYS. SCH.
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SURVEY LEGEND

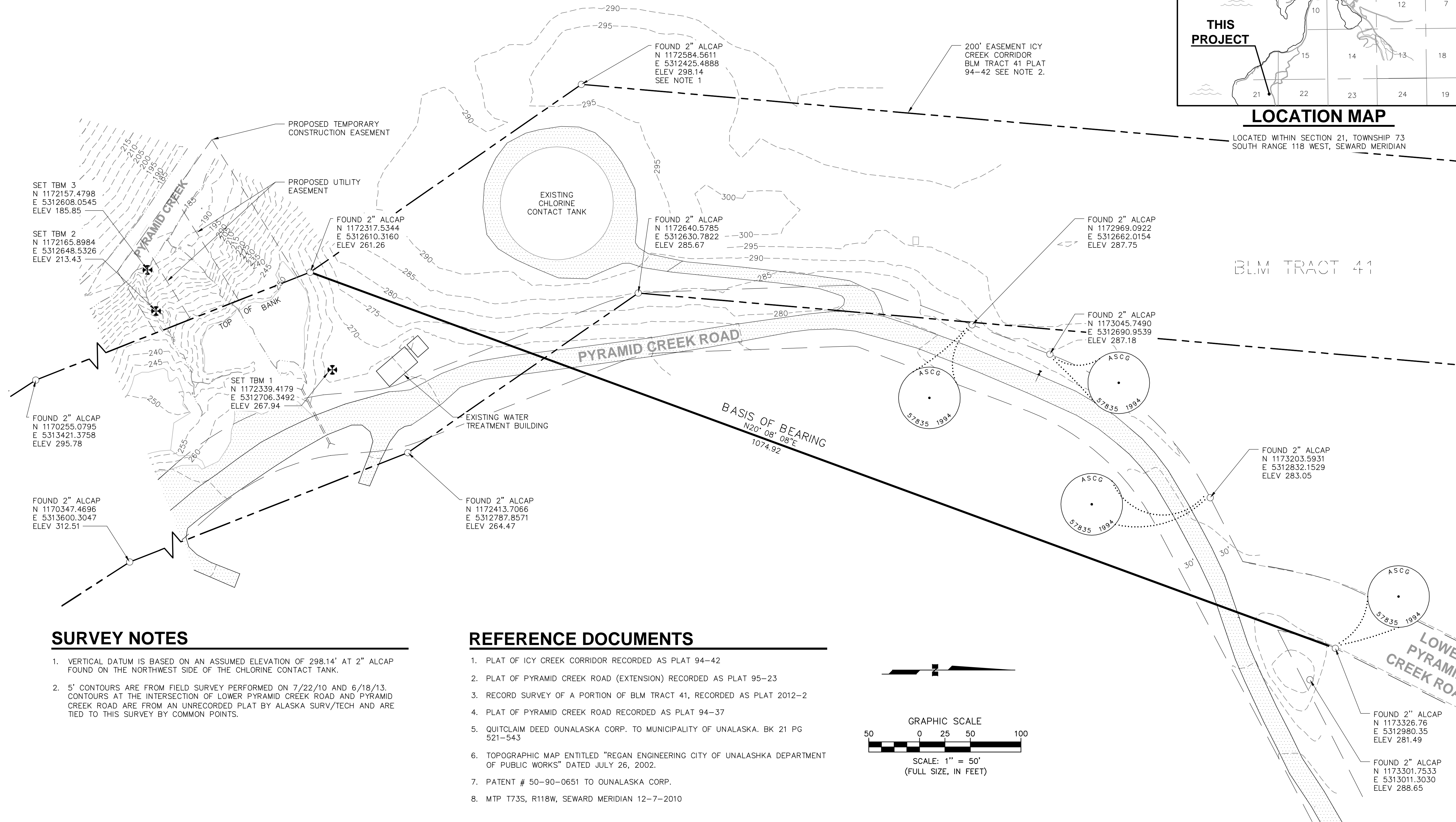
SYMBOL	DESCRIPTION
XX'XX'XX"	MEASURED
---80---	CONTOUR
○	FOUND MONUMENT
⊕	SET TBM
---	RIGHT-OF-WAY BASED ON RECORD MONUMENTS
---	RECORD BLM TRACT 41
▨	GRAVEL ROAD

SECTION 21 TOWNSHIP 73
SOUTH, RANGE 118 WEST
SEWARD MERIDIAN



LOCATION MAP

LOCATED WITHIN SECTION 21, TOWNSHIP 73
SOUTH RANGE 118 WEST, SEWARD MERIDIAN

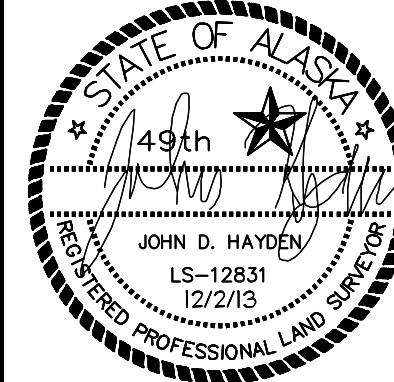
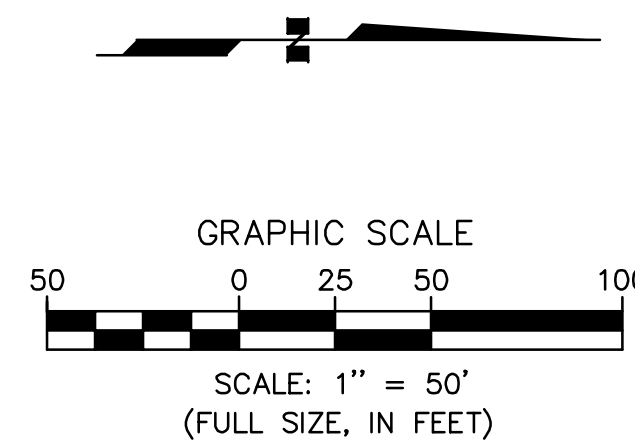


SURVEY NOTES

- VERTICAL DATUM IS BASED ON AN ASSUMED ELEVATION OF 298.14' AT 2" ALCAP FOUND ON THE NORTHWEST SIDE OF THE CHLORINE CONTACT TANK.
- 5' CONTOURS ARE FROM FIELD SURVEY PERFORMED ON 7/22/10 AND 6/18/13. CONTOURS AT THE INTERSECTION OF LOWER PYRAMID CREEK ROAD AND PYRAMID CREEK ROAD ARE FROM AN UNRECORDED PLAT BY ALASKA SURV/TECH AND ARE TIED TO THIS SURVEY BY COMMON POINTS.

REFERENCE DOCUMENTS

- PLAT OF ICY CREEK CORRIDOR RECORDED AS PLAT 94-42
- PLAT OF PYRAMID CREEK ROAD (EXTENSION) RECORDED AS PLAT 95-23
- RECORD SURVEY OF A PORTION OF BLM TRACT 41, RECORDED AS PLAT 2012-2
- PLAT OF PYRAMID CREEK ROAD RECORDED AS PLAT 94-37
- QUITCLAIM DEED OUNALASKA CORP. TO MUNICIPALITY OF UNALASKA. BK 21 PG 521-543
- TOPOGRAPHIC MAP ENTITLED "REGAN ENGINEERING CITY OF UNALASKA DEPARTMENT OF PUBLIC WORKS" DATED JULY 26, 2002.
- PATENT # 50-90-0651 TO OUNALASKA CORP.
- MTP T73S, R118W, SEWARD MERIDIAN 12-7-2010



NO.	DATE	BY	REVISION
1	12/2/13	JM	ISSUED FOR BID

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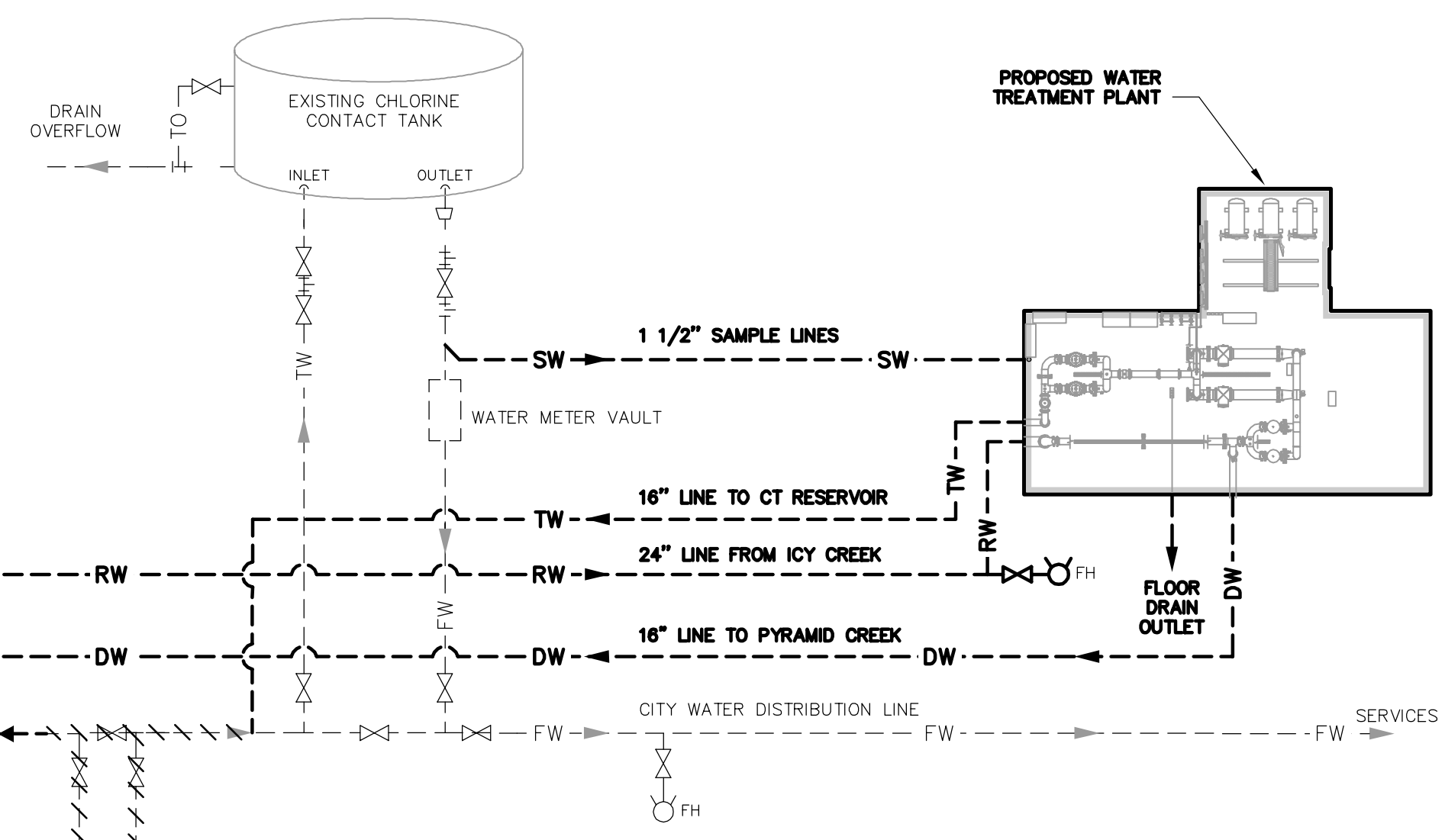
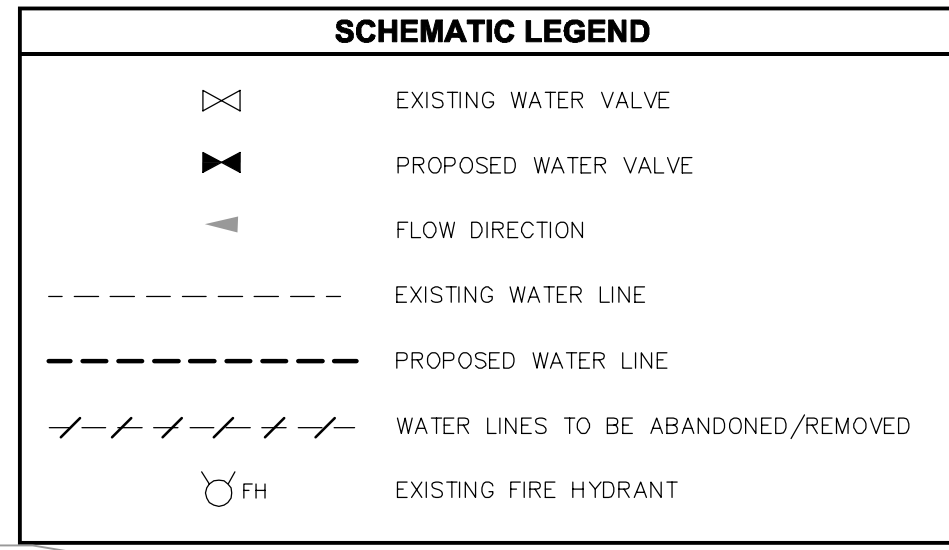
CITY OF UNALASKA

**PYRAMID WTP
UNALASKA, ALASKA**

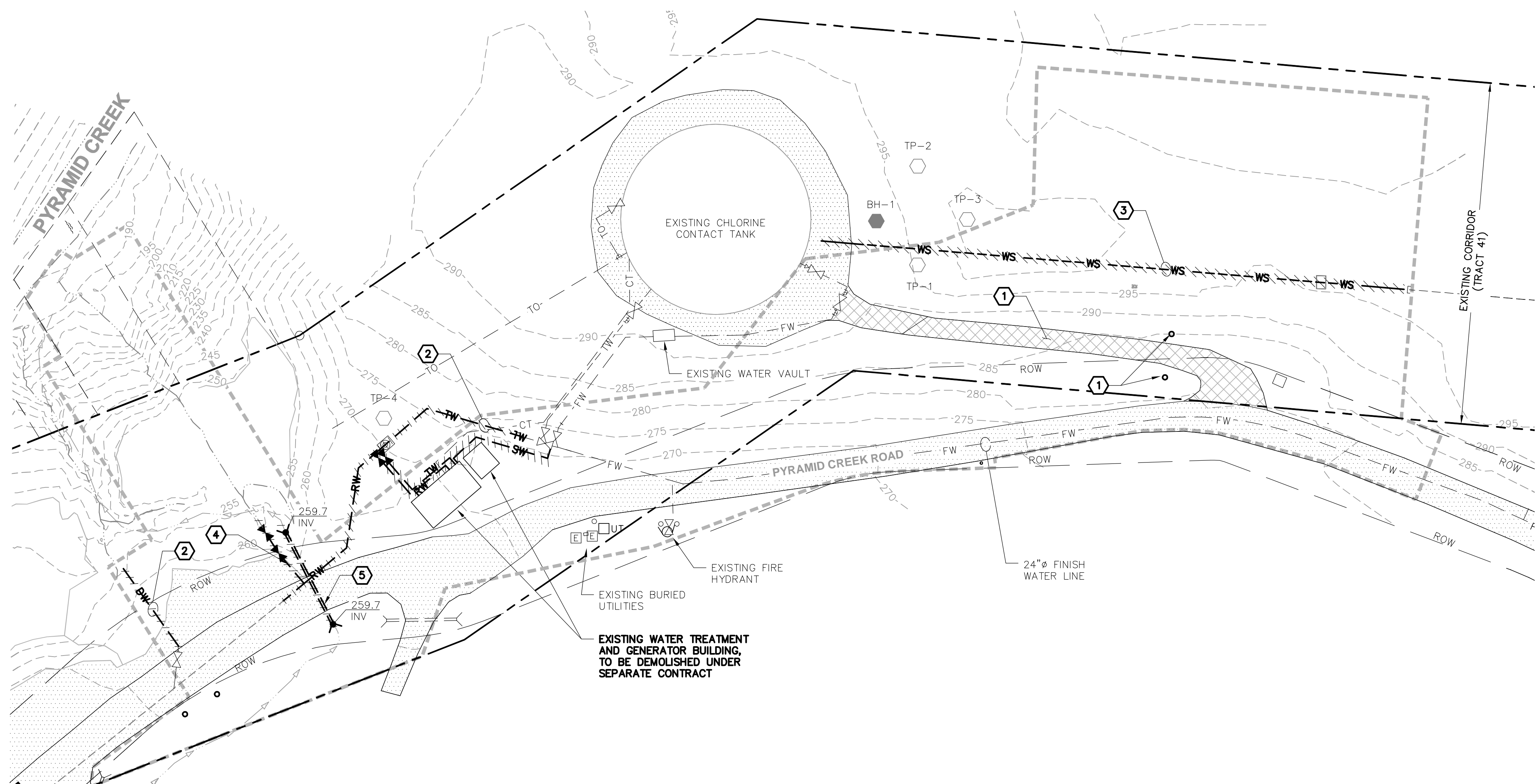
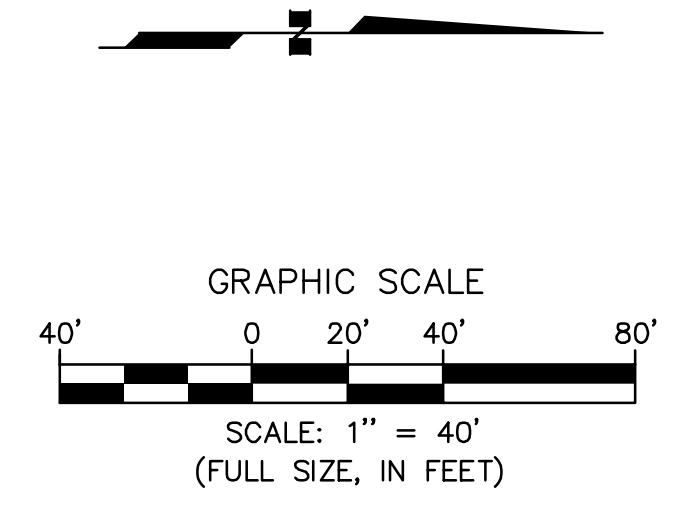
SITE CONTROL

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DRAWN BY:	CS
CHECKED BY:	JDH
DATE:	12/2/13
FILE NO.	850.04
SHEET NUMBER	V1.0 OF

Plotted By: Curtis
Date: Dec 2, 2013 3:51 pm
Date of Issue: V1.0 SWY CTRL
Filename: F:\Survey Projects\850.01_Unalaska_WTP.dwg\850.01_V1.0_Unalaska.dwg



SCHEMATIC
SCALE: NTS



1 DEMOLITION PLAN
D1.0 SCALE: 1" = 40'

DEMOLITION INSTRUCTIONS

- REMOVE AND DISPOSE OF STEEL PIPE GATE POSTS. SCARIFY EXISTING GRAVEL ACCESS DRIVE (MINIMUM 6" DEEP). PLACE TOPSOIL AND ORGANIC MATERIAL RECOVERED FROM PROPOSED GRAVEL ACCESS AND BUILDING PAD SEE SITE PLAN. SMOOTH AND RESEED. MINIMUM 5% CROSS SLOPE.
- REMOVE OR ABANDONED IN PLACE EXISTING BURIED WATER LINES AND APPURTENANCES BETWEEN POINTS OF CONNECTION (SEE SITE PLAN) AND EXISTING WATER TREATMENT BUILDING.
- REMOVE EXISTING 16" DIAMETER WOOD STAVE PIPE AND APPURTENANCES FROM WITHIN CONSTRUCTION LIMITS.
- REMOVE AND DISPOSE OF EXISTING 6" LINE AND CAP LINE AFTER THE NEAREST VALVE TO THE RAW WATER LINE.
- REMOVE AND DISPOSE OF 62LF OF 24"Ø CPEP CULVERT. REPLACE WITH CLASSIFIED AND 6" SURFACE COURSE MATERIAL ALL COMPACTED TO 95% MAX DRY DENSITY. GRADE TO MATCH EXISTING ROAD CONTOURS WITH A SMOOTH TRANSITION FROM EXITING ROAD TO REPLACED SECTION.

DEMOLITION NOTES

- EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE. PRIOR TO DEMOLITION THE CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL UTILITIES DUE TO BE DEMOLISHED OR ABANDONED. PRESERVE AND PROTECT ALL UTILITIES, STRUCTURES, AND APPURTENANCES NOT DESIGNATED FOR DEMOLITION.
- IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE OF ALL OBSTACLES ENCOUNTERED WITHIN THE DEMOLITION LIMITS NOT SHOWN ON PLANS.
- ALL ITEMS TO BE REMOVED SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DISPOSAL FEES.
- THE CITY OF UNALASKA SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL COMPONENTS REMOVED.
- CONTRACTOR SHALL SUBMIT PHASING PLAN TO ALLOW BOTH EXISTING WATER TREATMENT FACILITIES AND APPURTENANT PIPING TO BE OPERATIONAL UNTIL THE NEW PLANT IS FULLY FUNCTIONAL AND COMMISSIONED INTO SERVICE.

Plotted By: John F.
Date/time: 03/11/2013 2:32 pm
Date/time: 01/08/2013 11:41 am
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CITY OF UNALASKA

PYRAMID WTP
UNALASKA, ALASKA
DEMOLITION PLAN

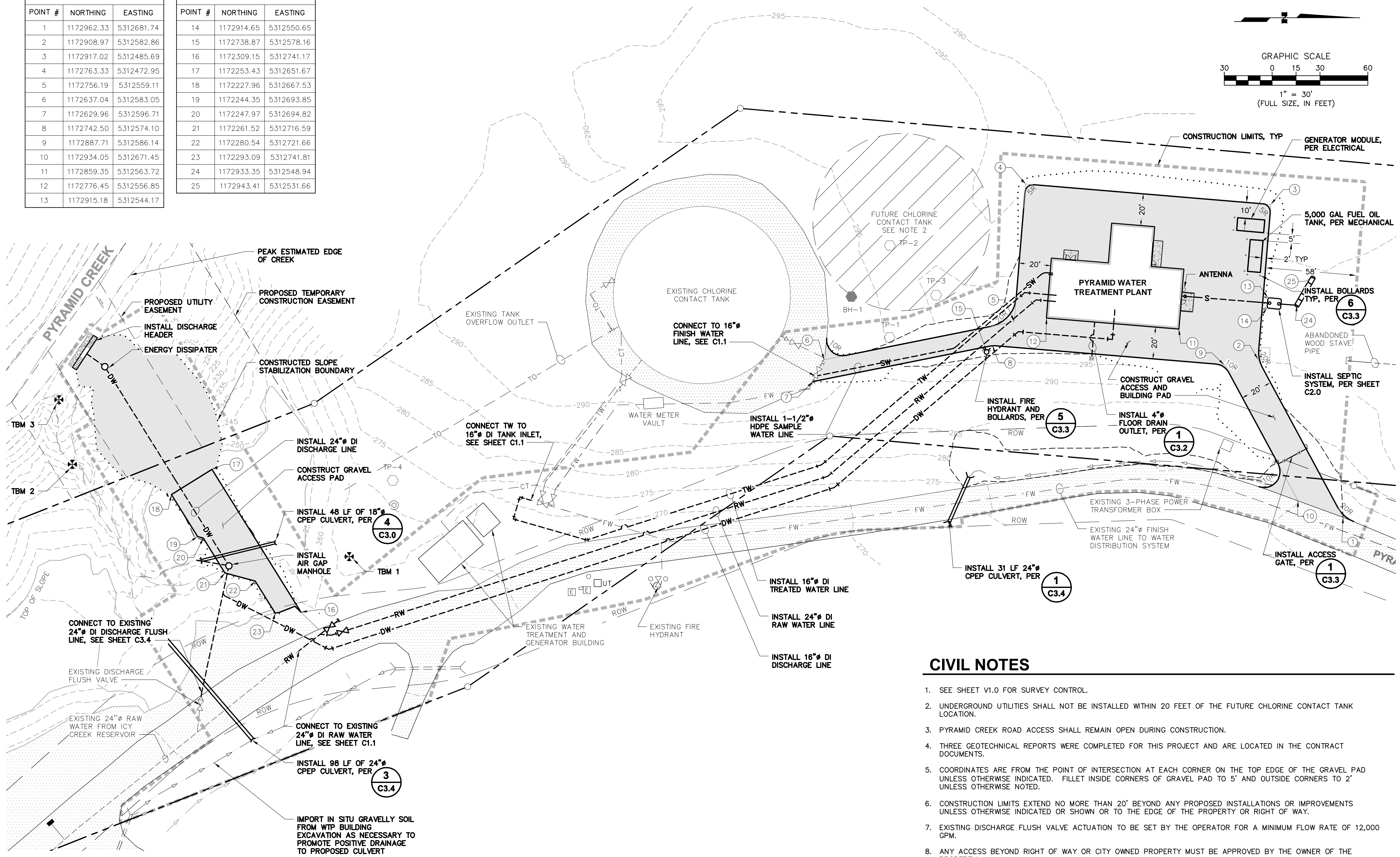
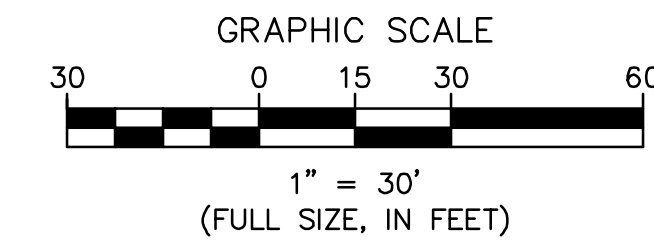
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DESIGNED BY:	DM
DRAWN BY:	CS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	D1.0 OF

NO.	DATE	BY	REVISION
1	12/2/13	DM	ISSUED FOR BID



POINT #	NORTHING	EASTING
1	1172962.33	5312681.74
2	1172908.97	5312582.86
3	1172917.02	5312485.69
4	1172763.33	5312472.95
5	1172756.19	5312559.11
6	1172637.04	5312583.05
7	1172629.96	5312596.71
8	1172742.50	5312574.10
9	1172887.71	5312586.14
10	1172934.05	5312671.45
11	1172859.35	5312563.72
12	1172776.45	5312556.85
13	1172915.18	5312544.17

POINT #	NORTHING	EASTING
14	1172914.65	5312550.65
15	1172738.87	5312578.16
16	1172309.15	5312741.17
17	1172253.43	5312651.67
18	1172227.96	5312667.53
19	1172244.35	5312693.85
20	1172247.97	5312694.82
21	1172261.52	5312716.59
22	1172280.54	5312721.66
23	1172293.09	5312741.81
24	1172933.35	5312548.94
25	1172943.41	5312531.66



CIVIL NOTES

- SEE SHEET V1.0 FOR SURVEY CONTROL.
- UNDERGROUND UTILITIES SHALL NOT BE INSTALLED WITHIN 20 FEET OF THE FUTURE CHLORINE CONTACT TANK LOCATION.
- PYRAMID CREEK ROAD ACCESS SHALL REMAIN OPEN DURING CONSTRUCTION.
- THREE GEOTECHNICAL REPORTS WERE COMPLETED FOR THIS PROJECT AND ARE LOCATED IN THE CONTRACT DOCUMENTS.
- COORDINATES ARE FROM THE POINT OF INTERSECTION AT EACH CORNER ON THE TOP EDGE OF THE GRAVEL PAD UNLESS OTHERWISE INDICATED. FILLET INSIDE CORNERS OF GRAVEL PAD TO 5' AND OUTSIDE CORNERS TO 2' UNLESS OTHERWISE NOTED.
- CONSTRUCTION LIMITS EXTEND NO MORE THAN 20' BEYOND ANY PROPOSED INSTALLATIONS OR IMPROVEMENTS UNLESS OTHERWISE INDICATED OR SHOWN OR TO THE EDGE OF THE PROPERTY OR RIGHT OF WAY.
- EXISTING DISCHARGE FLUSH VALVE ACTUATION TO BE SET BY THE OPERATOR FOR A MINIMUM FLOW RATE OF 12,000 GPM.
- ANY ACCESS BEYOND RIGHT OF WAY OR CITY OWNED PROPERTY MUST BE APPROVED BY THE OWNER OF THE PROPERTY.

1 SITE PLAN
C1.0 SCALE: 1" = 30'

Plotted By: John F. Dec 2013 2:32 pm
 Date/Time: 03/10/2013 11:41 AM
 Filename: F:\Civil Projects\850.01_Unalaska_WTP.dwg\850.01_DSL_Unalaska.dwg

NO.	DATE	BY	REVISION
1	12/2/13	DM	ISSUED FOR BID

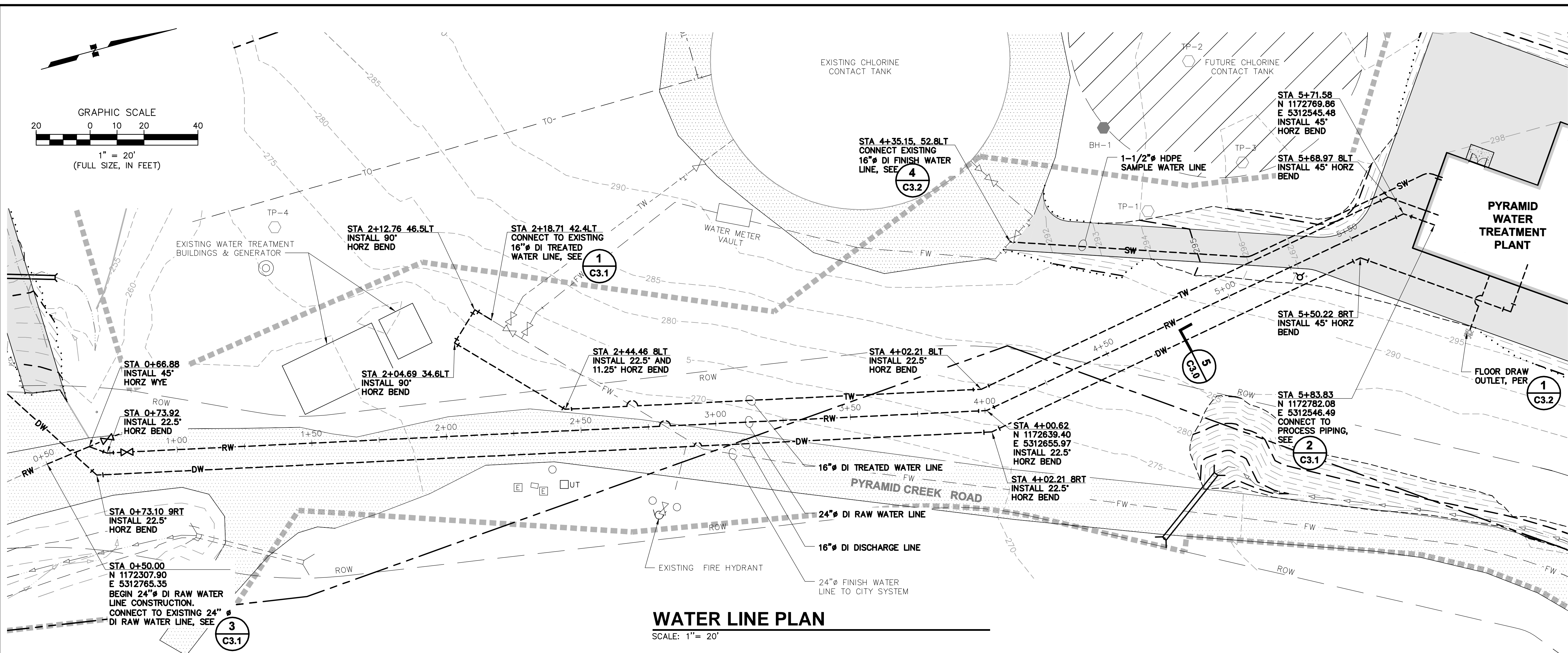
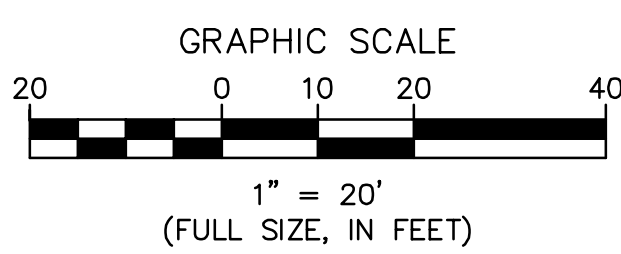
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CITY OF UNALASKA

**PYRAMID WTP
 UNALASKA, ALASKA
 WATER TREATMENT PLANT
 SITE PLAN**

SCALE:	AS SHOWN
DESIGNED BY:	DM
DRAWN BY:	CS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.:	850.01
SHEET NUMBER	C1.0 OF

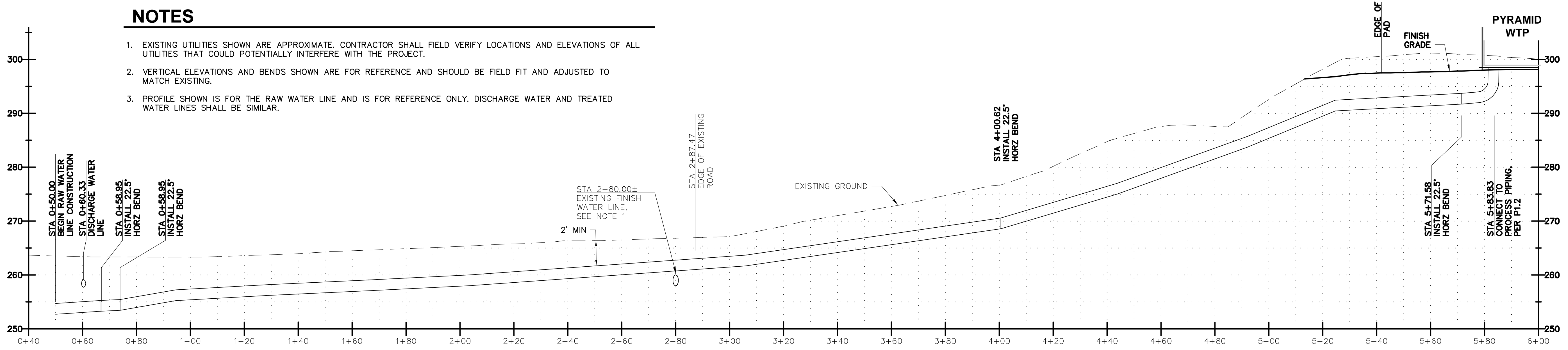


WATER LINE PLAN

SCALE: 1" = 20'

NOTES

- EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF ALL UTILITIES THAT COULD POTENTIALLY INTERFERE WITH THE PROJECT.
- VERTICAL ELEVATIONS AND BENDS SHOWN ARE FOR REFERENCE AND SHOULD BE FIELD FIT AND ADJUSTED TO MATCH EXISTING.
- PROFILE SHOWN IS FOR THE RAW WATER LINE AND IS FOR REFERENCE ONLY. DISCHARGE WATER AND TREATED WATER LINES SHALL BE SIMILAR.



WATER LINE PROFILE

SCALE: 1" = 20' (HORIZONTAL)
SCALE: 1" = 10' (VERTICAL)

Plotted By: JshF
Date: 03/11/2013 2:32 PM
Date Time: 03/11/2013 2:32 PM
Filename: F:\Civil\Projects\850.01_Unalaska_WTP.dwg_850.01_DSL_Unalaska.dwg

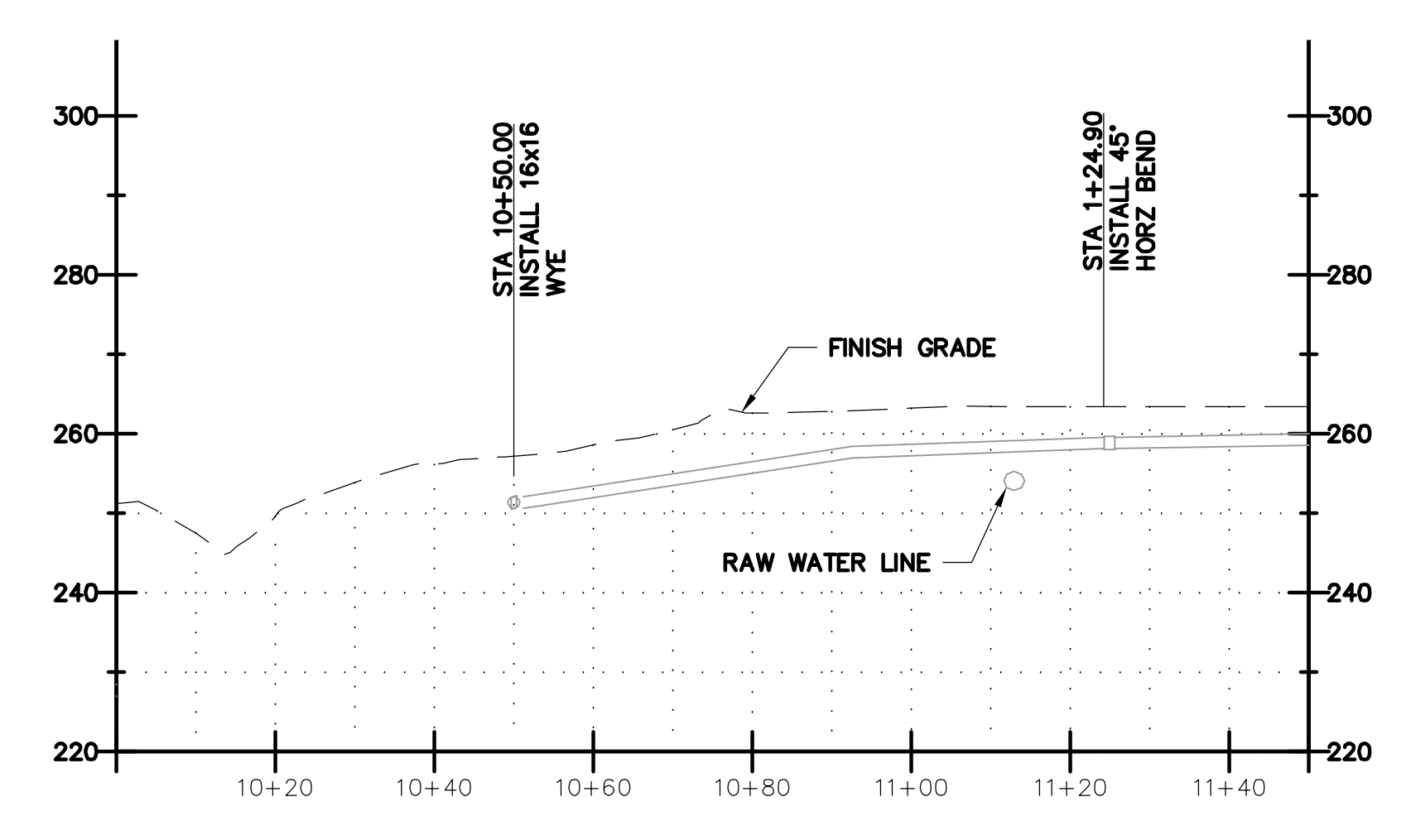
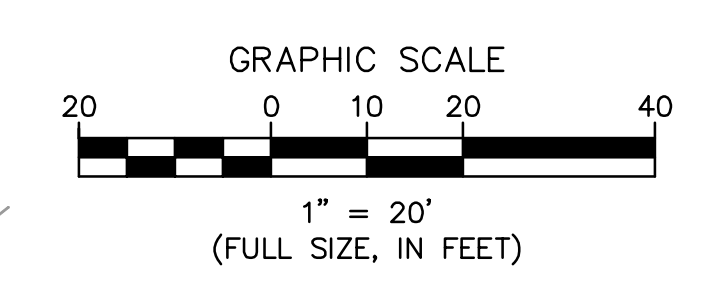
NO.	DATE	BY	REVISION
1	12/2/13	DM	ISSUED FOR BID

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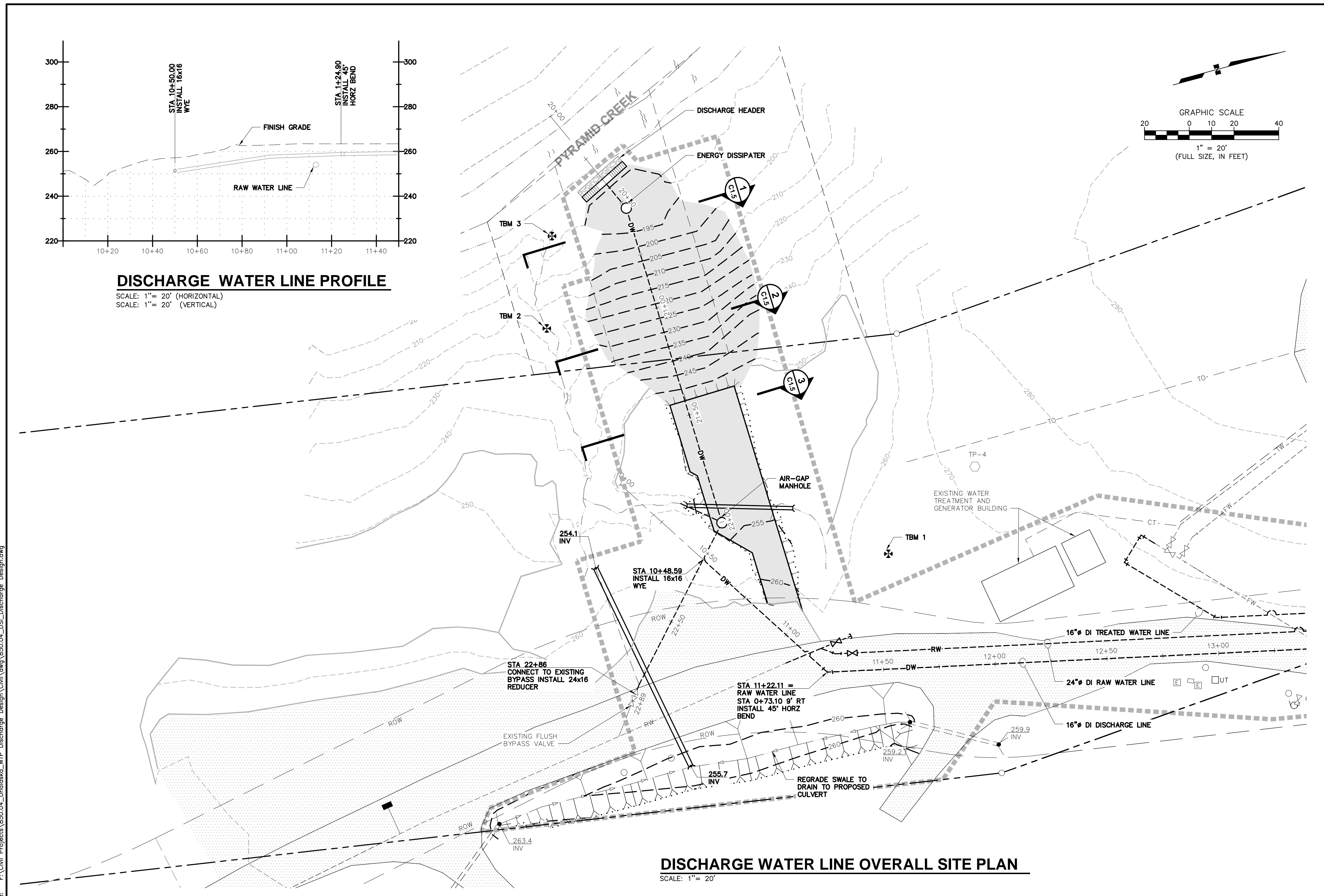
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PYRAMID WTP UNALASKA, ALASKA	
WATER LINE PLAN & PROFILE	
SCALE:	AS SHOWN
DESIGNED BY:	DM
DRAWN BY:	CS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	
C1.1	OF



DISCHARGE WATER LINE PROFILE
 SCALE: 1" = 20' (HORIZONTAL)
 SCALE: 1" = 20' (VERTICAL)



DISCHARGE WATER LINE OVERALL SITE PLAN
 SCALE: 1" = 20'

Plotted By: John F. Dec 2013 2:32 pm
 Date/Time: C1.2
 Filename: F:\Civil Projects\850.04_Unalaska_WTP_Discharge Design\Civil.dwg\850.04_DSI_Discharge Design.dwg

NO.	DATE	BY	REVISION
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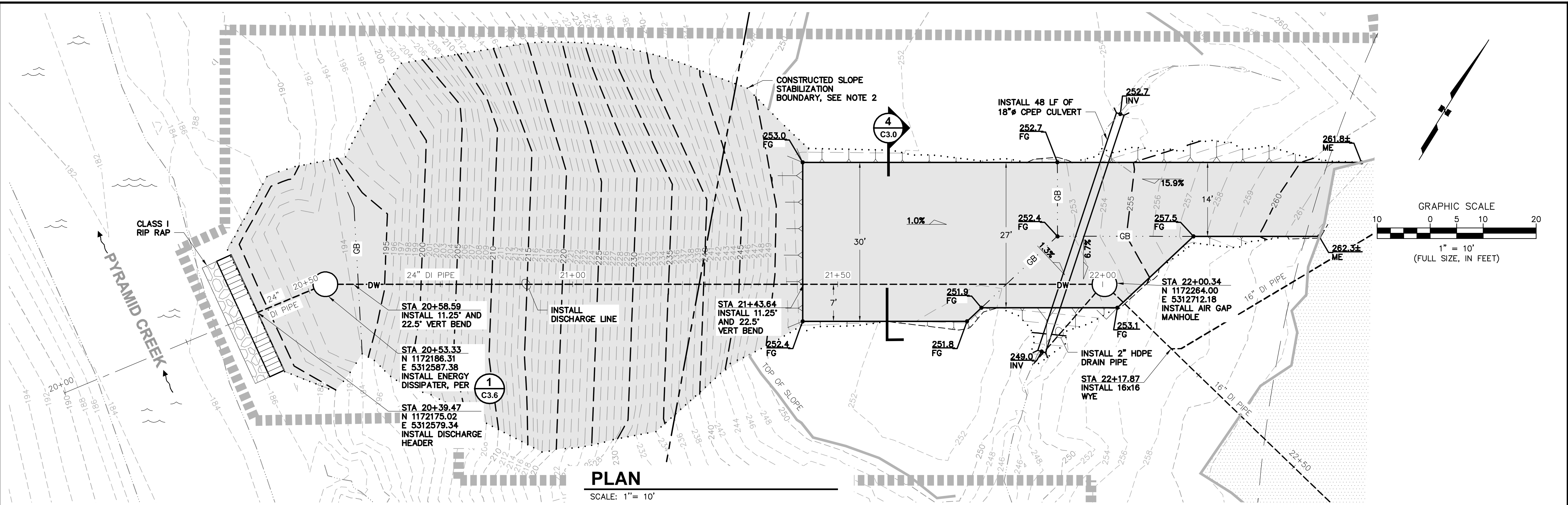
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**PYRAMID WTP
 UNALASKA, ALASKA**

**DISCHARGE WATER LINE
 SITE PLAN**

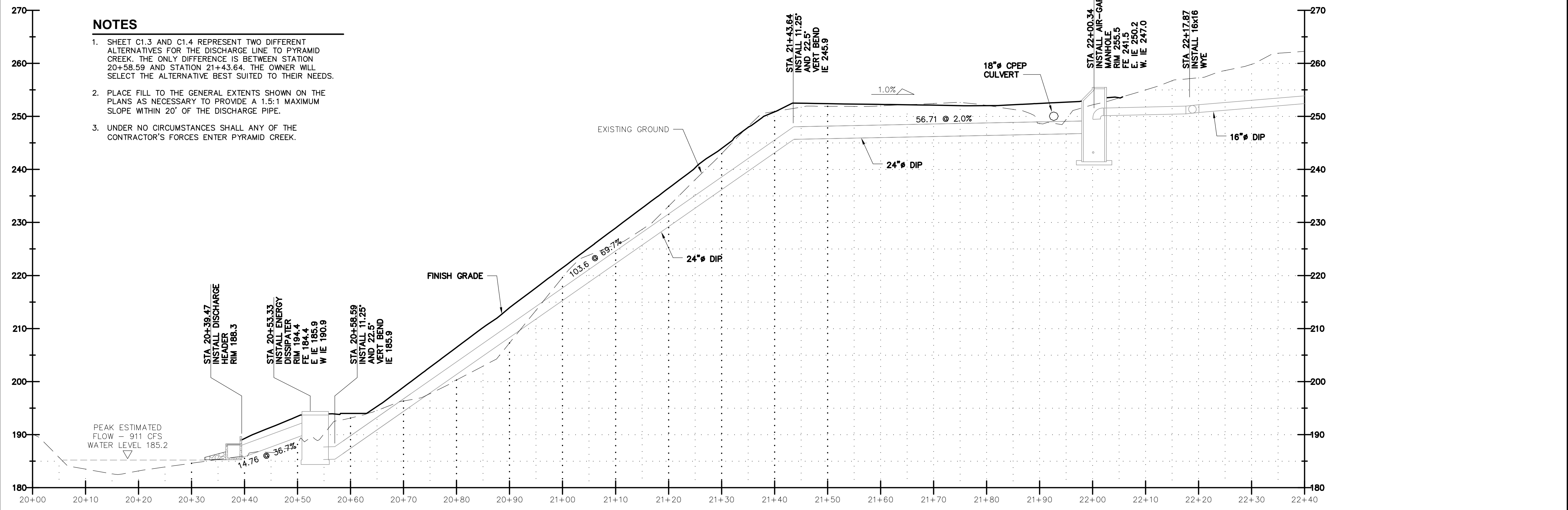
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DRAWN BY:	CS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	
C1.2	OF



PLAN
SCALE: 1" = 10'

NOTES

1. SHEET C1.3 AND C1.4 REPRESENT TWO DIFFERENT ALTERNATIVES FOR THE DISCHARGE LINE TO PYRAMID CREEK. THE ONLY DIFFERENCE IS BETWEEN STATION 20+58.59 AND STATION 21+43.64. THE OWNER WILL SELECT THE ALTERNATIVE BEST SUITED TO THEIR NEEDS.
2. PLACE FILL TO THE GENERAL EXTENTS SHOWN ON THE PLANS AS NECESSARY TO PROVIDE A 1.5:1 MAXIMUM SLOPE WITHIN 20' OF THE DISCHARGE PIPE.
3. UNDER NO CIRCUMSTANCES SHALL ANY OF THE CONTRACTOR'S FORCES ENTER PYRAMID CREEK.

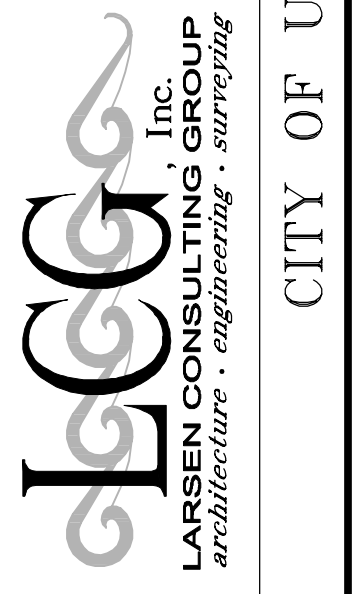


PROFILE (ALTERNATIVE A)
SCALE: 1" = 10' (HORIZONTAL)
SCALE: 1" = 10' (VERTICAL)

Plotted By: John F.
Date: 03 Dec 2013 2:32 pm
Time: 11:41
Filename: F:\Civil Projects\850.04_Unalaska_WTP_Discharge Design\Civil\850.04_DSI_Discharge Design.dwg

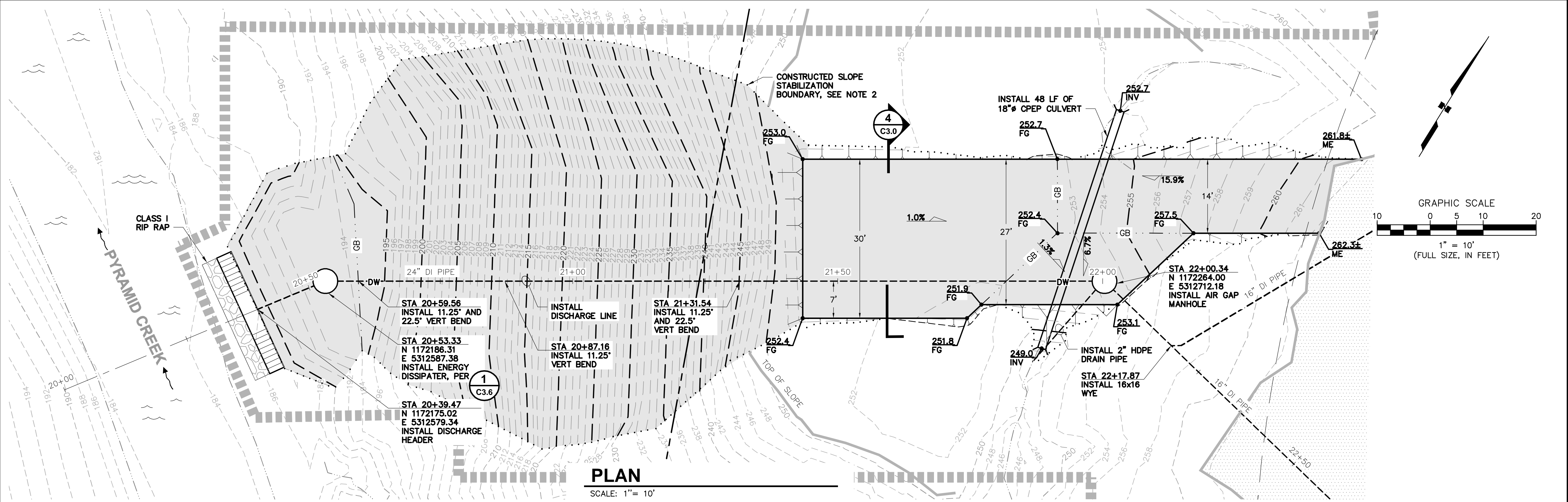
NO.	DATE	BY	ISSUED FOR	REVISION
1	12/2/13	DM	DM	

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**PYRAMID WTP
UNALASKA, ALASKA**
BURIED DISCHARGE WATER LINE
PLAN AND PROFILE

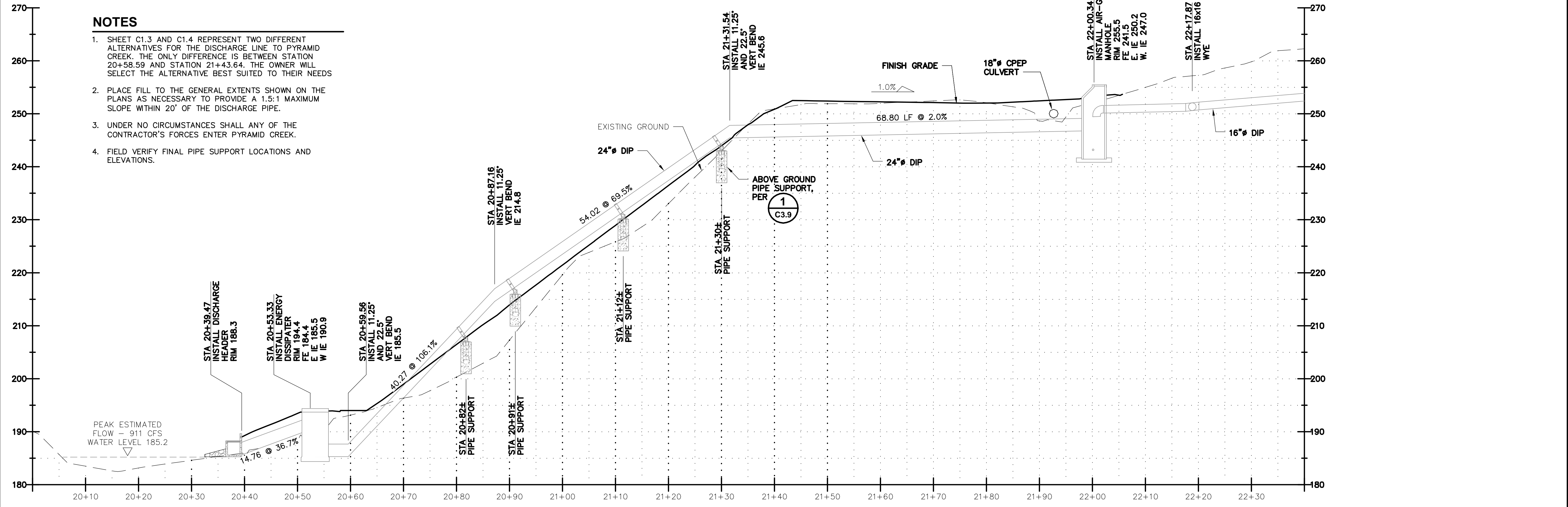
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DRAWN BY:	CS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	C1.3 OF



PLAN
SCALE: 1" = 10'

NOTES

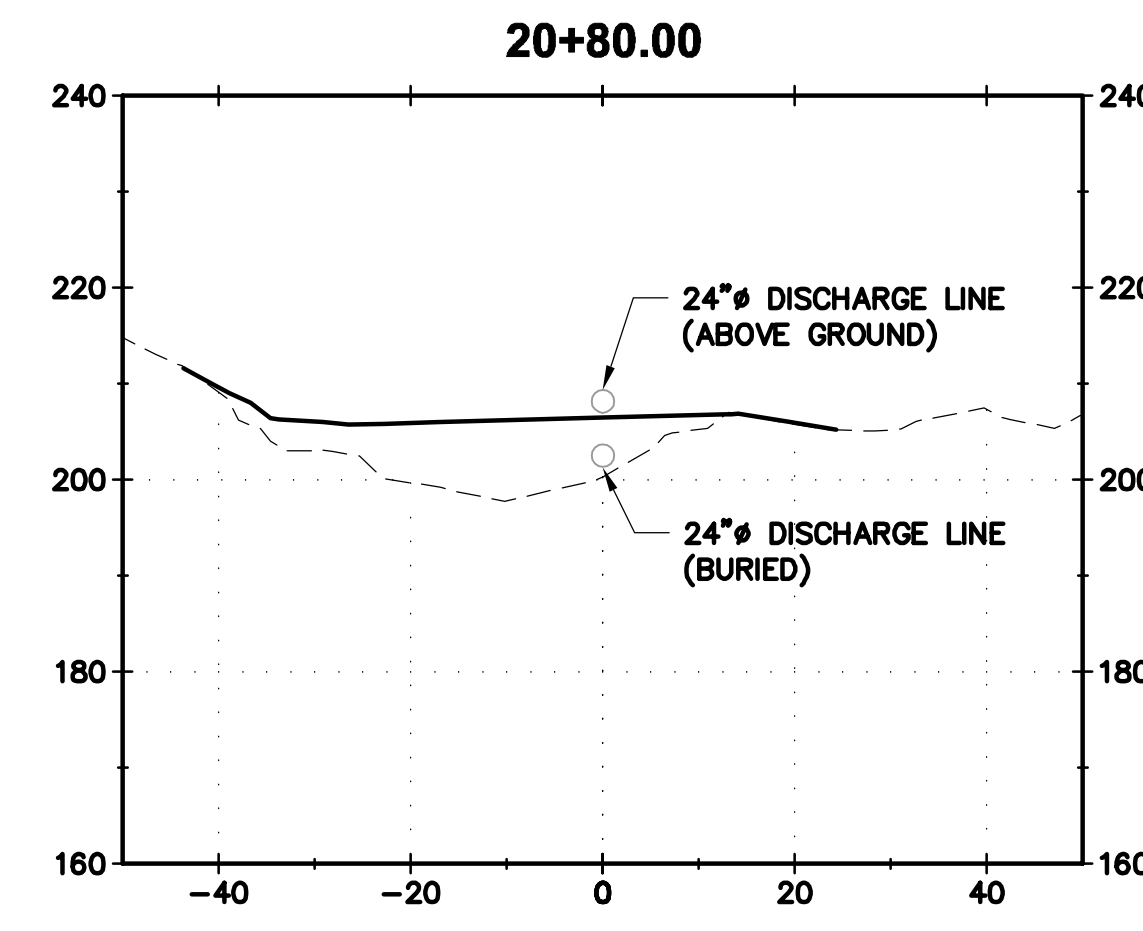
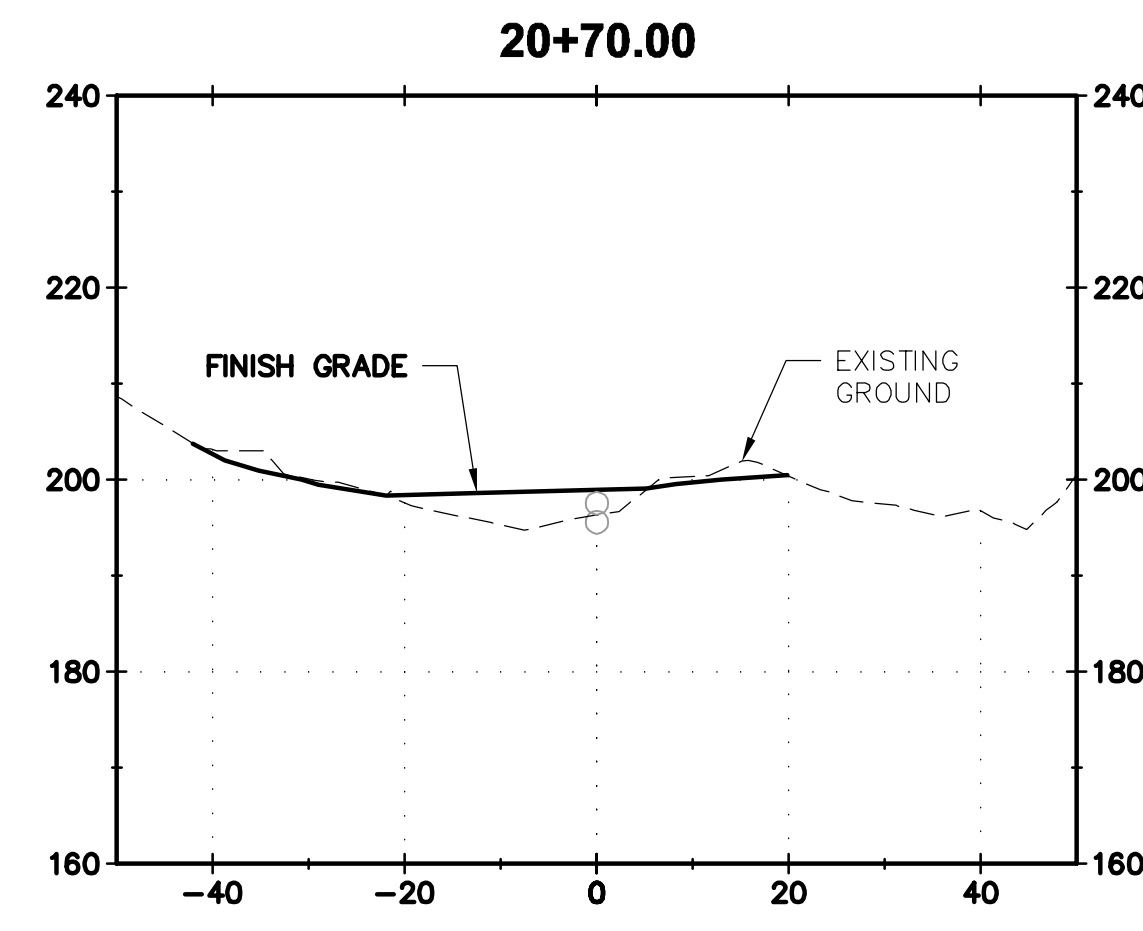
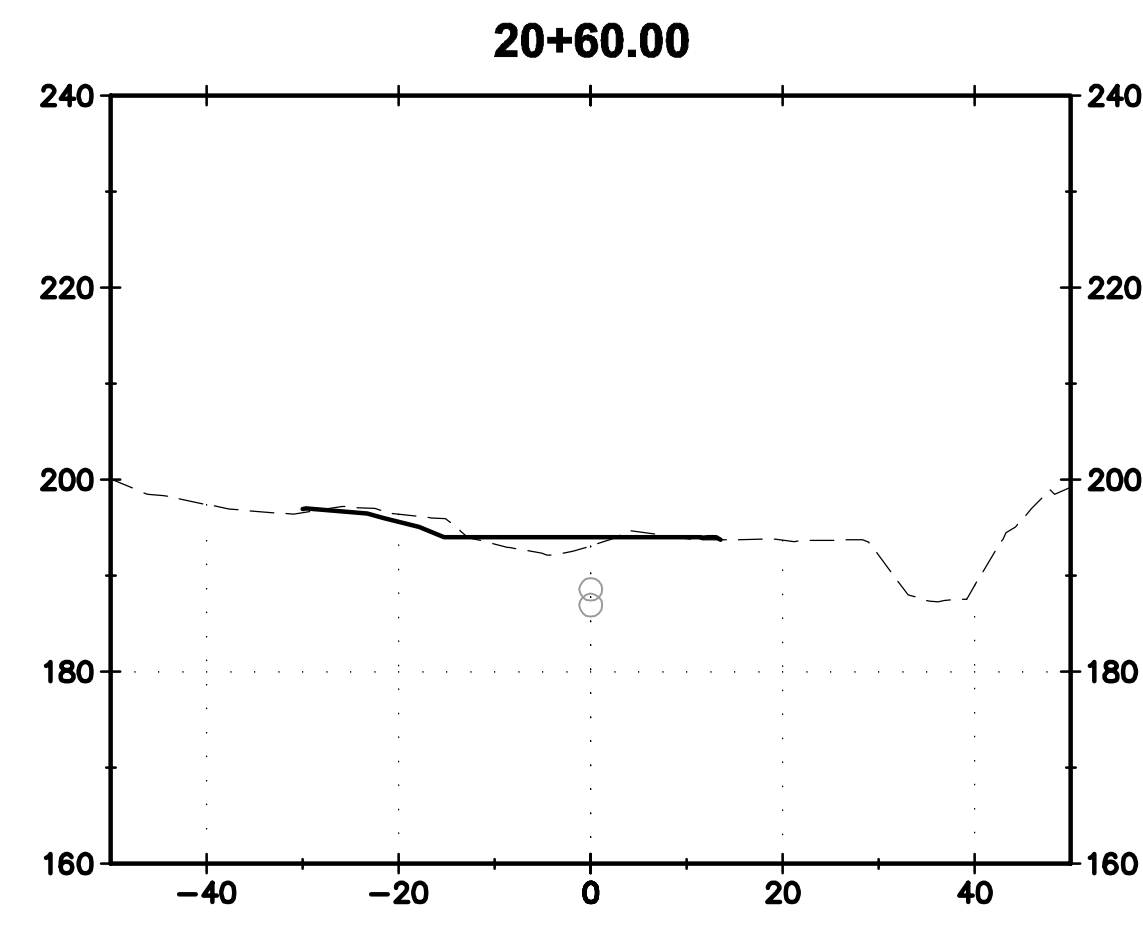
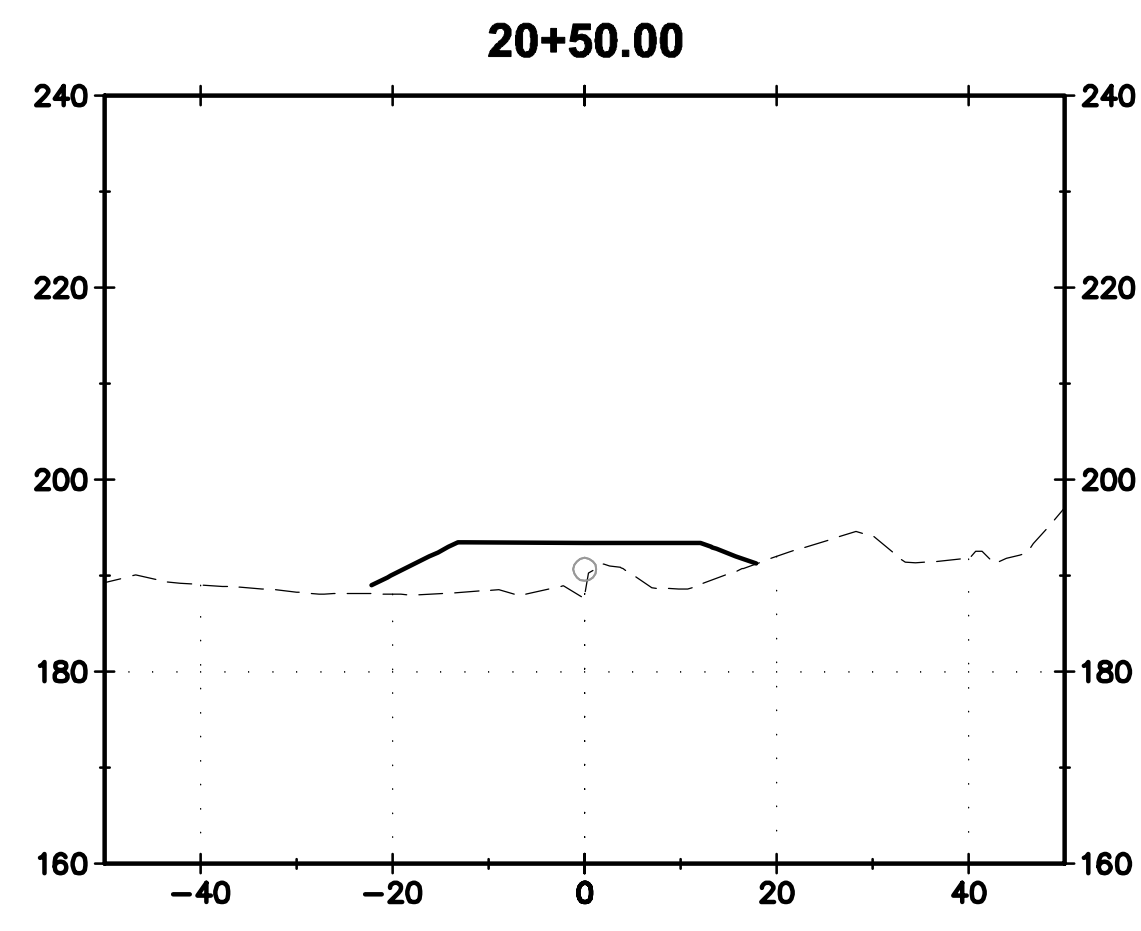
1. SHEET C1.3 AND C1.4 REPRESENT TWO DIFFERENT ALTERNATIVES FOR THE DISCHARGE LINE TO PYRAMID CREEK. THE ONLY DIFFERENCE IS BETWEEN STATION 20+58.59 AND STATION 21+43.64. THE OWNER WILL SELECT THE ALTERNATIVE BEST SUITED TO THEIR NEEDS.
2. PLACE FILL TO THE GENERAL EXTENTS SHOWN ON THE PLANS AS NECESSARY TO PROVIDE A 1.5:1 MAXIMUM SLOPE WITHIN 20' OF THE DISCHARGE PIPE.
3. UNDER NO CIRCUMSTANCES SHALL ANY OF THE CONTRACTOR'S FORCES ENTER PYRAMID CREEK.
4. FIELD VERIFY FINAL PIPE SUPPORT LOCATIONS AND ELEVATIONS.



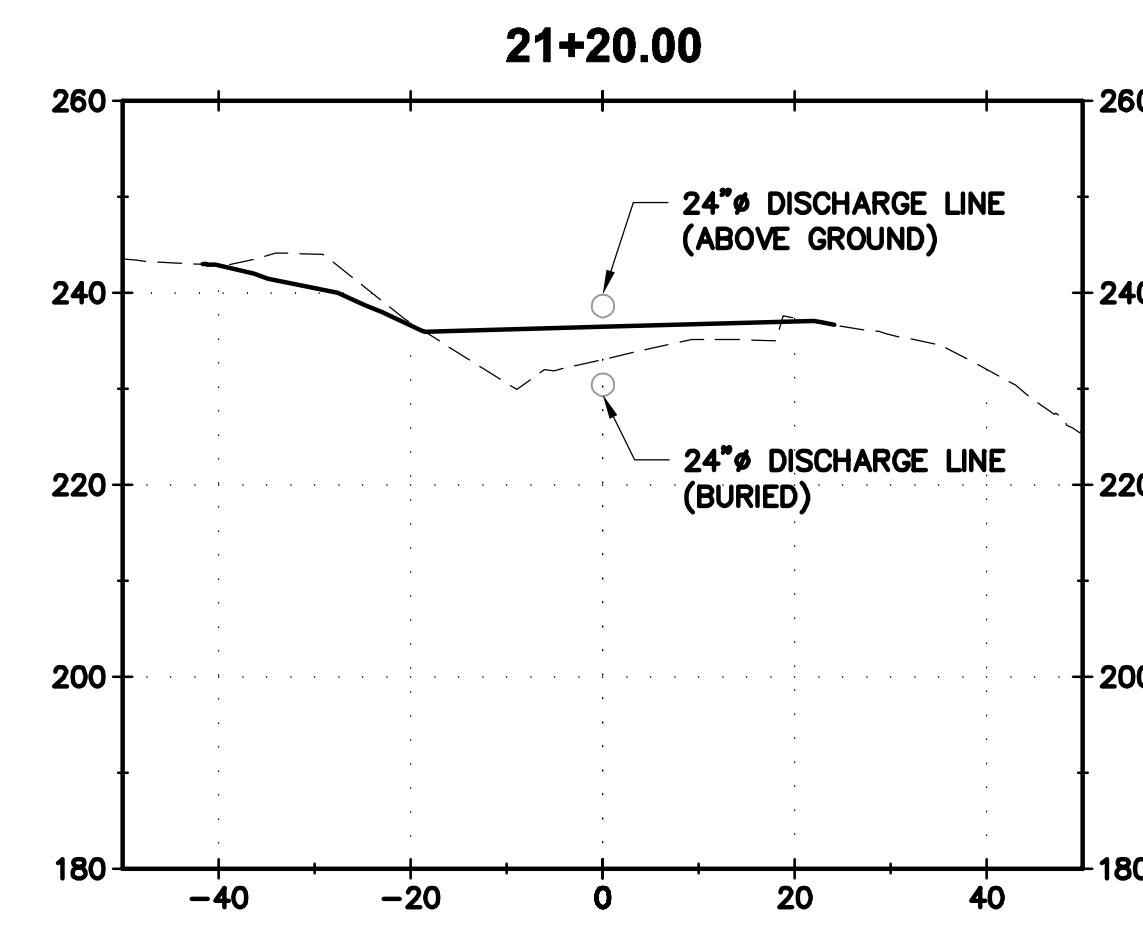
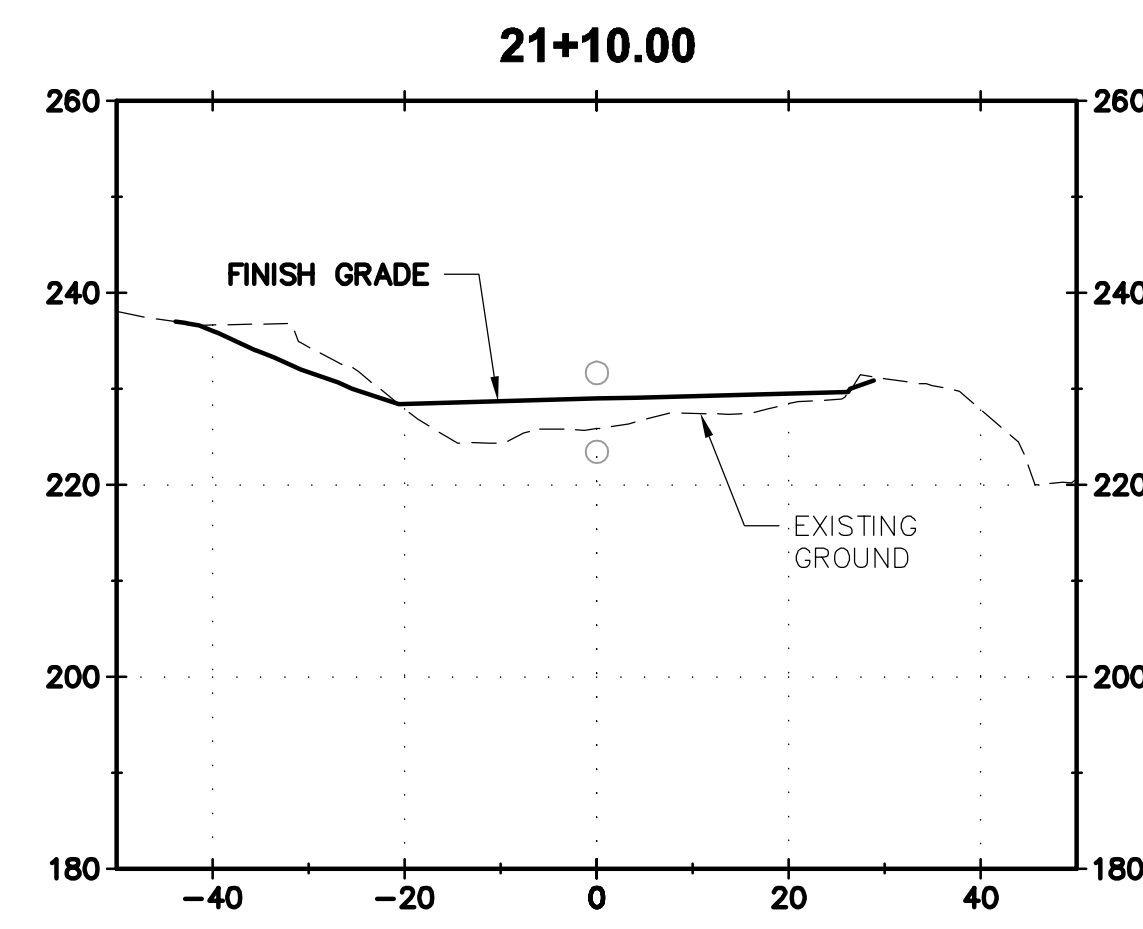
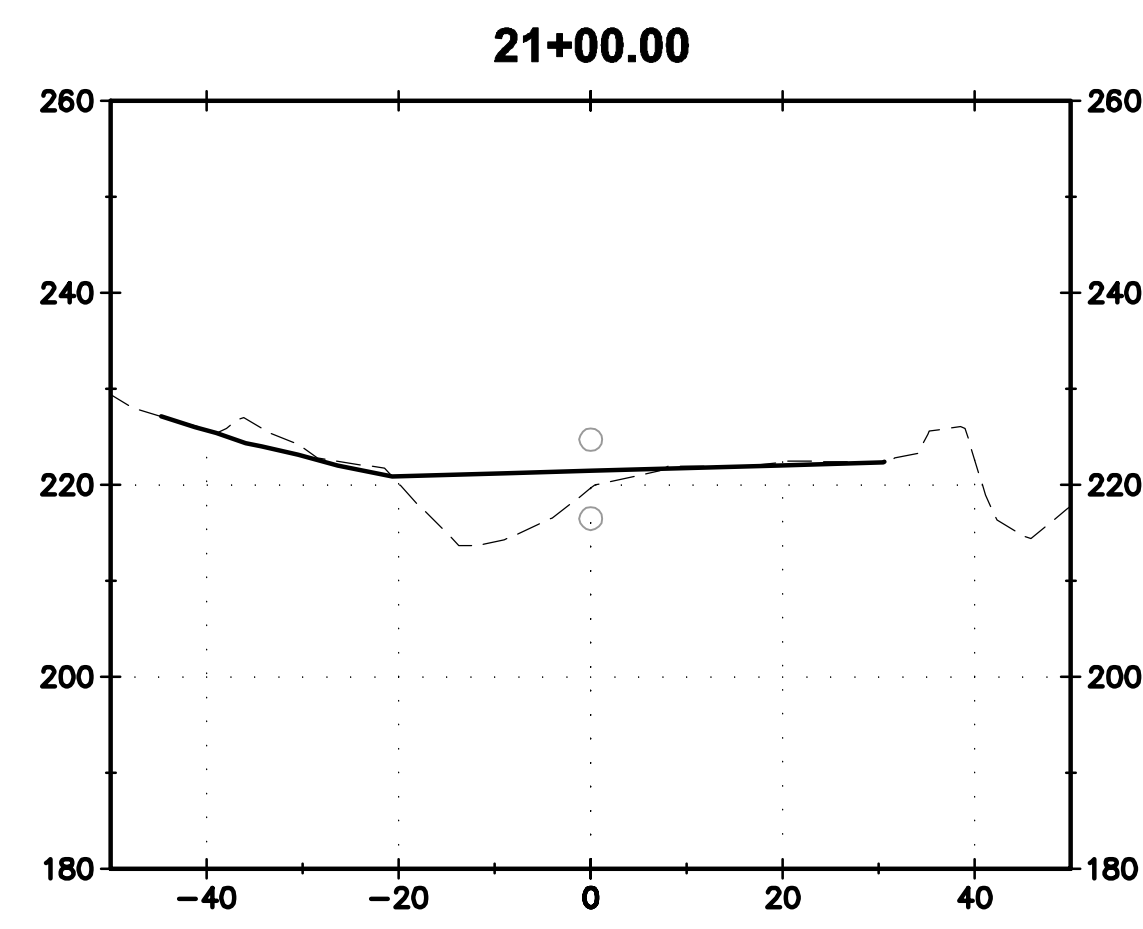
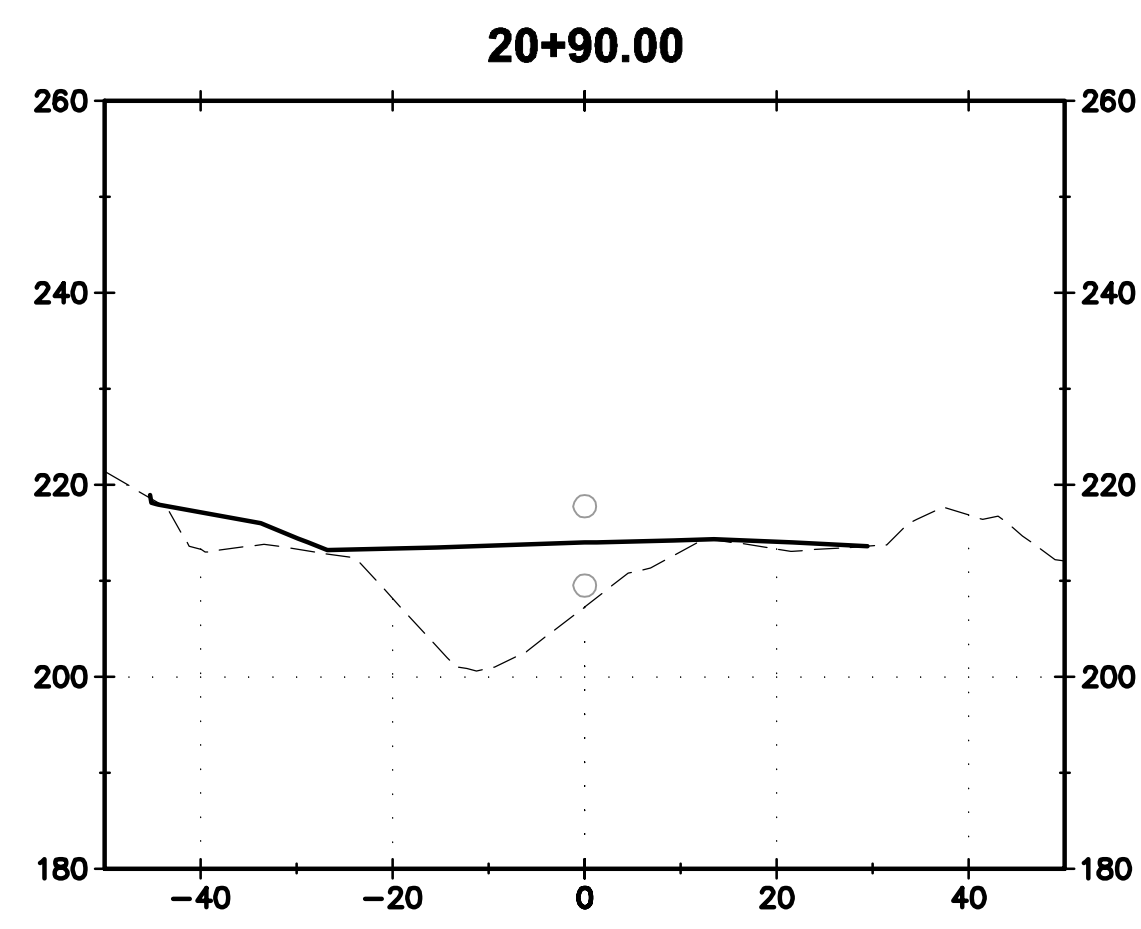
PROFILE (ALTERNATIVE B)
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SCALE: 1" = 10' (VERTICAL)

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Date: 03 Dec 2013 2:32 pm
Time: 11:41
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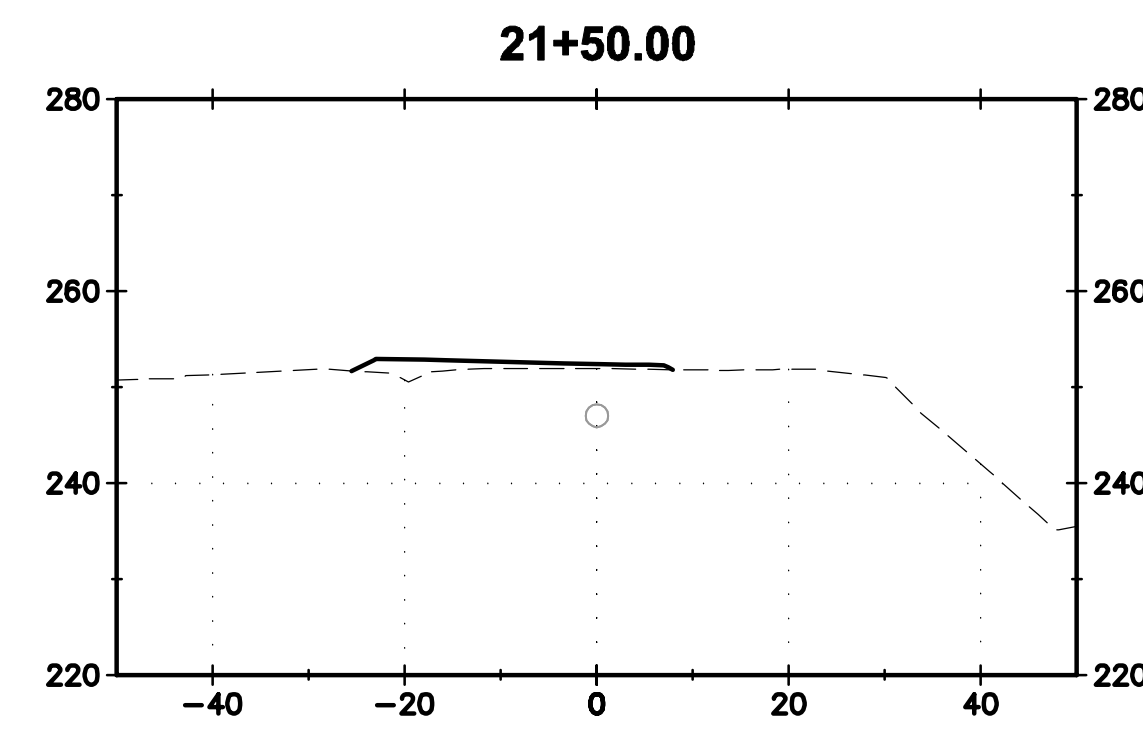
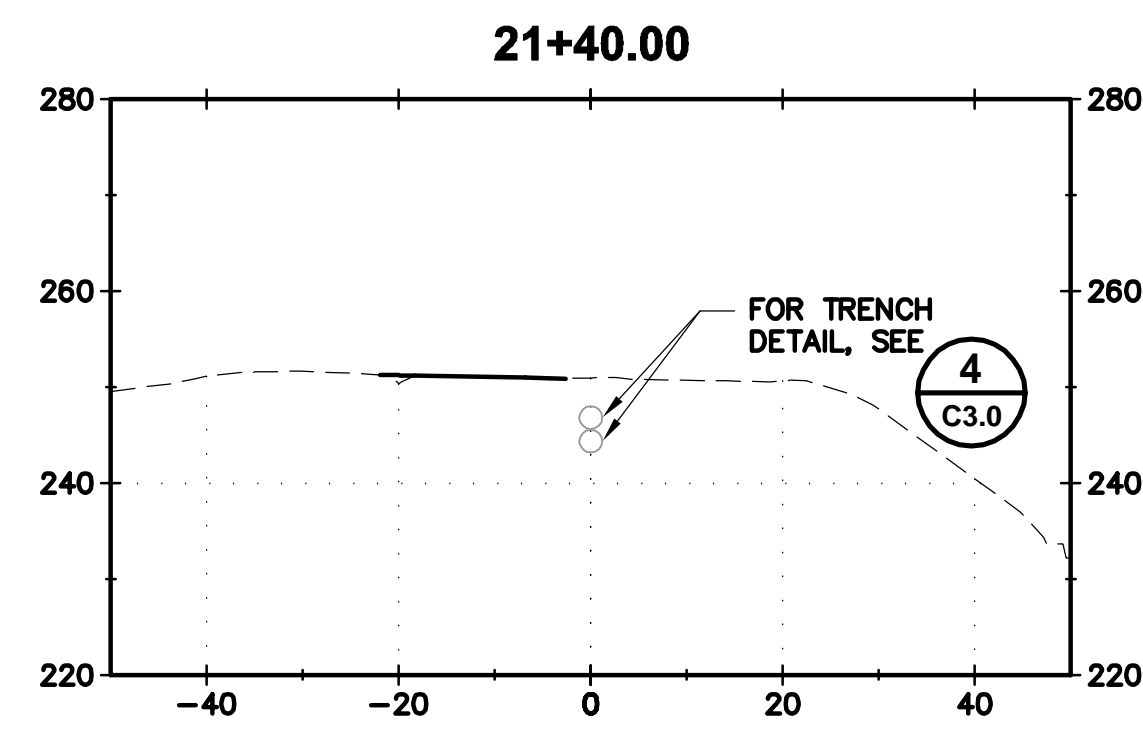
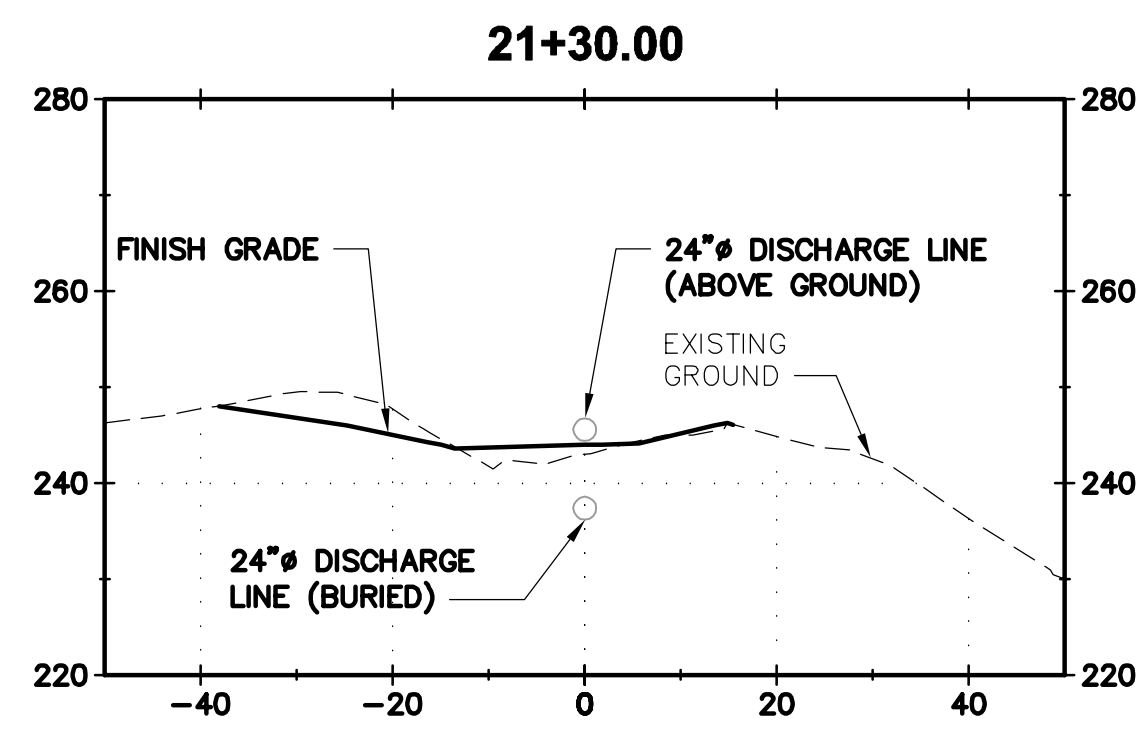
3710 Woodland Dr. Suite 2100 Anchorage, AK 99517 (907) 543-8965		CITY OF UNALASKA	
		PYRAMID WTP UNALASKA, ALASKA ABOVE GROUND DISCHARGE WATER LINE PLAN AND PROFILE	
SCALE:	AS SHOWN	DESIGNED BY:	DM
DRAWN BY:	CS	CHECKED BY:	GW
DATE:	12/2/13	FILE NO.:	850.01
SHEET NUMBER		C1.4 OF	
NO.	DATE	BY	REVISION
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1 CONSTRUCTED SLOPE STABILIZATION SECTIONS
C1.5 SCALE: 1" = 20' (HORIZONTAL)
 SCALE: 1" = 20' (VERTICAL)



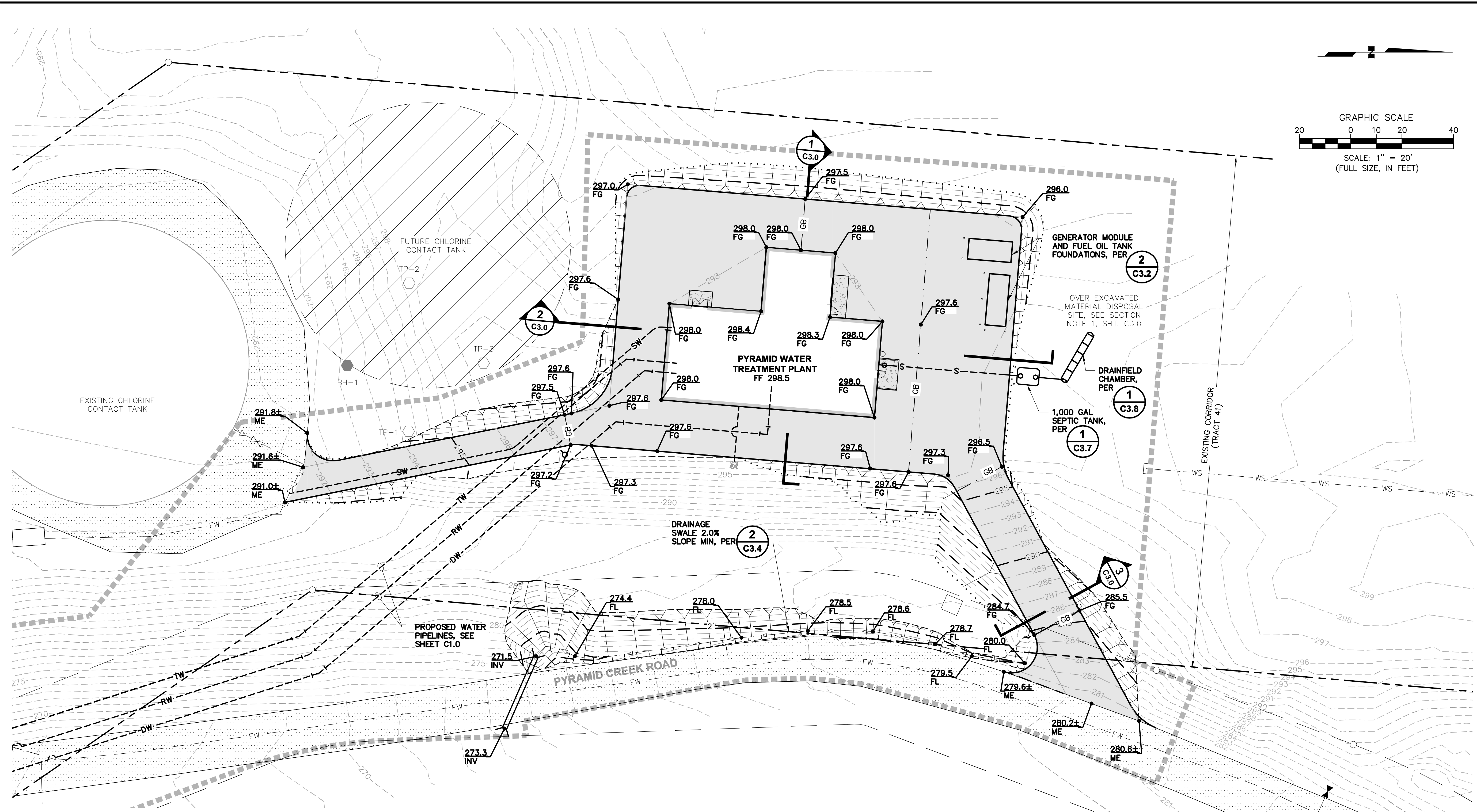
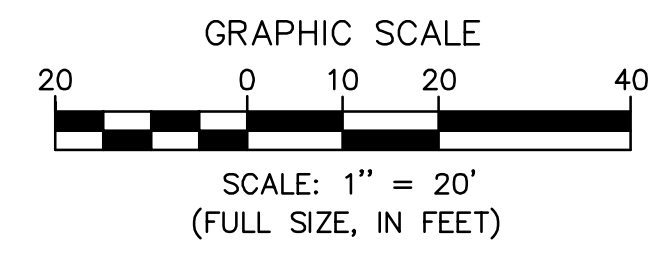
2 CONSTRUCTED SLOPE STABILIZATION SECTIONS
C1.5 SCALE: 1" = 20' (HORIZONTAL)
 SCALE: 1" = 20' (VERTICAL)



3 CONSTRUCTED SLOPE STABILIZATION SECTIONS
C1.5 SCALE: 1" = 20' (HORIZONTAL)
 SCALE: 1" = 20' (VERTICAL)

Plotted By: Curtis
 Date/Time: 04/15/2013 2:06 pm
 File Name: F:\Civil Projects\850.04_Unalaska_WTP_Discharge Design\Civil.dwg\850.04_DSI_Discharge Design.dwg

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						DM	BY
						12/2/13	DATE
						INC.	NO.
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CITY OF UNALASKA PYRAMID WTP UNALASKA, ALASKA CONSTRUCTED SLOPE STABILIZATION CROSS SECTIONS							
SCALE: AS SHOWN							
DESIGNED BY: DM							
DRAWN BY: CS							
CHECKED BY: GWF							
DATE: 12/2/13							
FILE NO. 850.01							
SHEET NUMBER							
C1.5							
OF							



SEPTIC NOTES

1. DRAINFIELD HAS BEEN SIZED BASED ON THE UNDERSTANDING THAT THE WATER TREATMENT PLANT (WTP) DOES NOT HAVE FULL TIME OPERATORS AT THE FACILITY. WTP PERSONNEL CHECK THE PLANT OPERATIONS, TAKE SAMPLES AND PERFORM TESTS ON AN AS NEEDED BASIS. ONE VISIT TO THE PLANT BY ONE TECHNICIAN PER DAY HAS BEEN ASSUMED. NORMAL USE WILL MOST LIKELY GENERATE ONE TOILET FLUSH AND HAND WASHING. IT HAS BEEN ASSUMED THAT THE TOILET WILL BE A 1.3 GAL/FLUSH UNIT AND THAT HAND WASHING WILL ADD ANOTHER 0.7 GALLONS TO THE FLOW. NORMAL WASTEWATER GENERATION WILL THEREFORE BE 2 GPD.
2. DESIGN FLOW FOR THE ONSITE WASTEWATER TREATMENT SYSTEM (OWTS) ASSUMES THAT AT INTERVAL, A CREW OF WORKERS WILL BE AT THE WTP TO PERFORM MAINTENANCE THAT MAY TAKE SEVERAL HOURS. DESIGN FLOW HAS BEEN ASSUMED TO BE ONE TOILET FLUSH AND HAND WASHING FOR 13-INDIVIDUALS PER DAY, GENERATING 26 GPD OF WASTEWATER FLOW.
3. THE SOILS FOR THE AREA OF THE DRAINFIELD ARE ASSUMED TO BE THE SAME AS THOSE NOTED IN TEST PIT: TP-3 OF THE GEOTECHNICAL REPORT FOR THE WTP BUILDING, BY NORTHERN GEOTECHNICAL ENGINEERING, DATED JULY, 2010. THE SOILS IN TP-3 CONSIST OF ABOUT 6-INCHES OF ORGANIC MAT, OVER APPROXIMATELY 3.5- FEET OF BROWN SAND WITH SILT, SOFT, DAMP, UNDERLAIN BY A GRAY, SILTY SAND W/GRAVEL, DAMP, DENSE TO THE DEPTH OF THE TEST PIT AT ABOUT 5.5- FEET.
4. THE GRAY SILTY SAND MATERIAL HAS BEEN ESTIMATED TO BE A SANDY LOAM HAVING AN APPLICATION RATE OF 0.5 GAL/DAY/SF. THE SILTY SAND AT AN APPROXIMATE DEPTH OF 4- FEET IS USED AS THE EFFLUENT RECEIVING SURFACE AT THE BOTTOM OF THE PROPOSED CHAMBERS.
5. THE LONG AXIS OF THE DRAINFIELD SHALL BE ORIENTED PARALLEL TO THE CONTOURS.

GRADING NOTES

1. ALL UNUSABLE AND UNSUITABLE EXCAVATION MATERIAL (I.E., ORGANICS, DEBRIS, MUCK, OR CONTAMINATED SOIL) SHALL BE DISPOSED OF AT AN CITY OF UNALASKA APPROVED DISPOSAL SITE, AND AT CONTRACTOR EXPENSE.
2. ELEVATIONS SHOWN ARE TO FINISH GRADE AT THE EDGE OF GRAVEL, OR GROUND, UNLESS OTHERWISE NOTED. SEE SHEET V1.0 FOR VERTICAL DATUM DESCRIPTION.
3. PROVIDE MINIMUM DEPTH OF 12" SELECT FILL UNDER GRAVEL ACCESS AND BUILDING PAD.
4. TAKE PREVENTIVE MEASURES TO MINIMIZE DAMAGE TO NATURAL VEGETATION, SOIL EROSION, AND SEDIMENT TRANSPORT DURING AND AFTER CONSTRUCTION. UPON COMPLETION ALL DISTURBED AREAS SHALL BE PROMPTLY REPAIRED AS SPECIFIED.

1 GRADING PLAN
C2.0 SCALE: 1" = 20'

Plotted By: JshF
 Date: 03 Dec 2013 2:33 pm
 Date of Issue: 12/2/13
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PYRAMID WTP
UNALASKA, ALASKA
WATER TREATMENT PLANT
GRADING PLAN

SCALE:	AS SHOWN
DESIGNED BY:	DM
DRAWN BY:	CS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	C2.0 OF

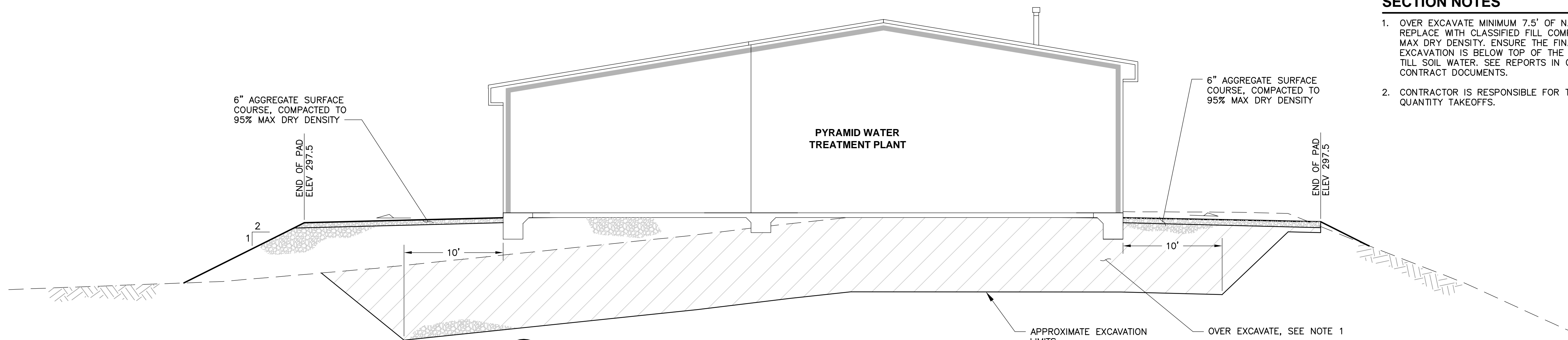
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CITY OF UNALASKA

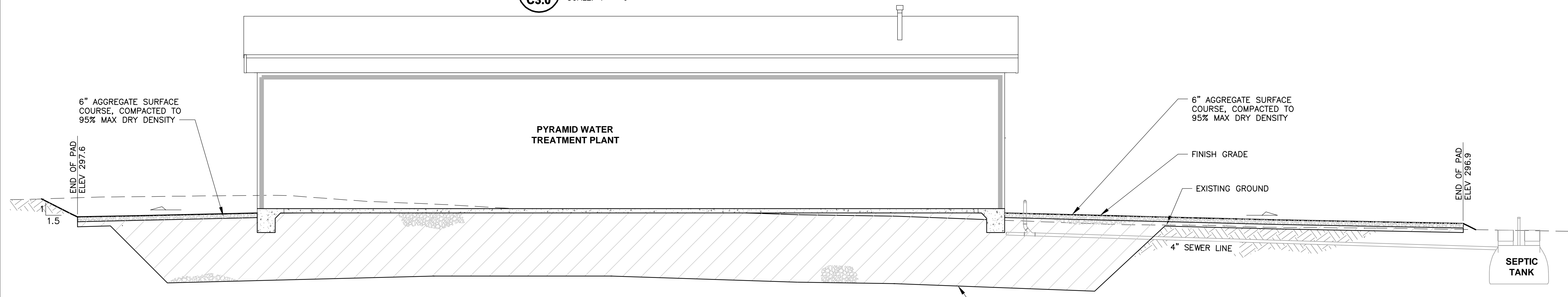


SECTION NOTES

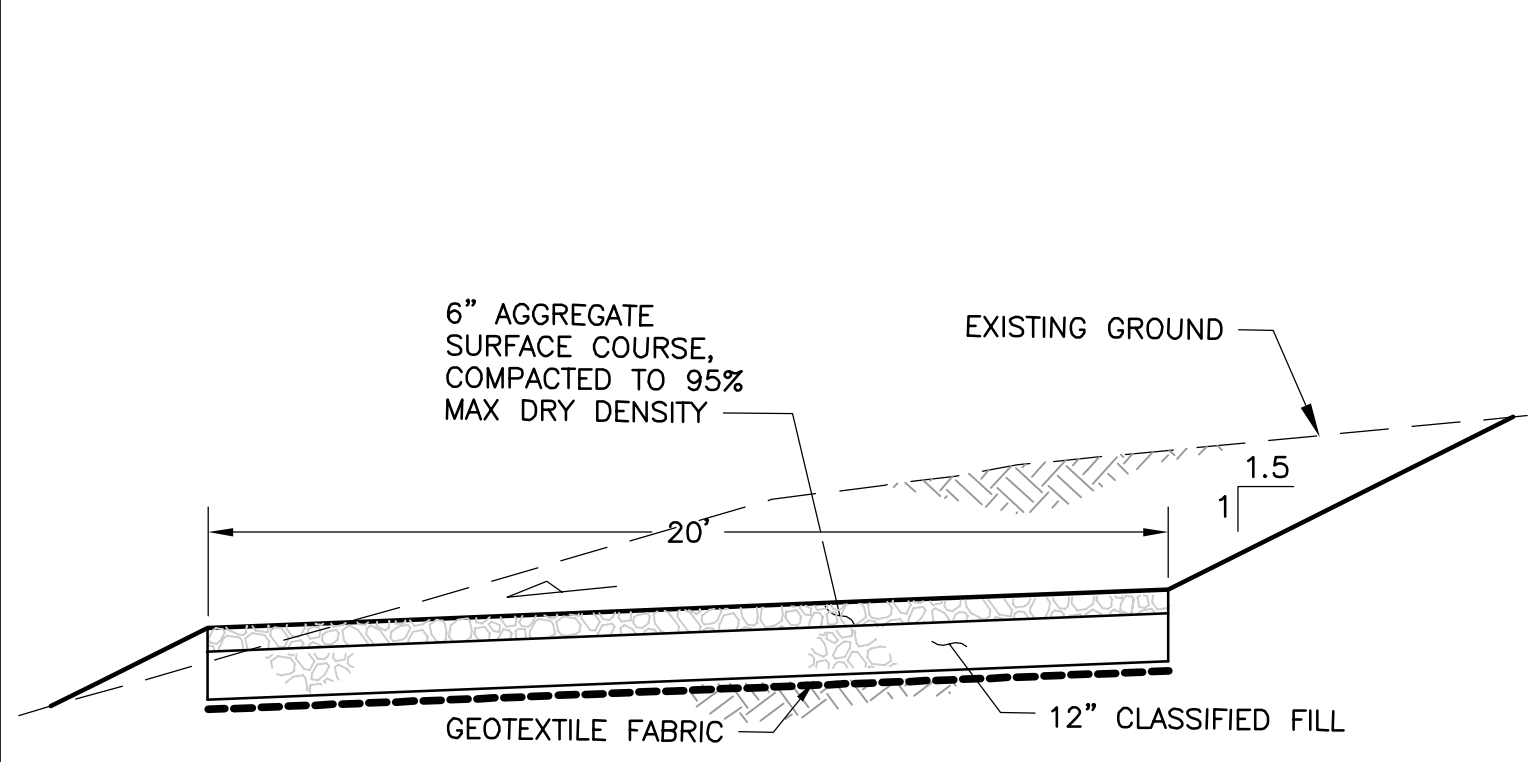
- OVER EXCAVATE MINIMUM 7.5' OF NATIVE SOIL AND REPLACE WITH CLASSIFIED FILL COMPACTED TO 95% MAX DRY DENSITY. ENSURE THE FINAL DEPTH OF EXCAVATION IS BELOW TOP OF THE GREY GLACIAL TILL SOIL WATER. SEE REPORTS IN GEOTECHNICAL CONTRACT DOCUMENTS.
- CONTRACTOR IS RESPONSIBLE FOR THEIR OWN QUANTITY TAKEOFFS.



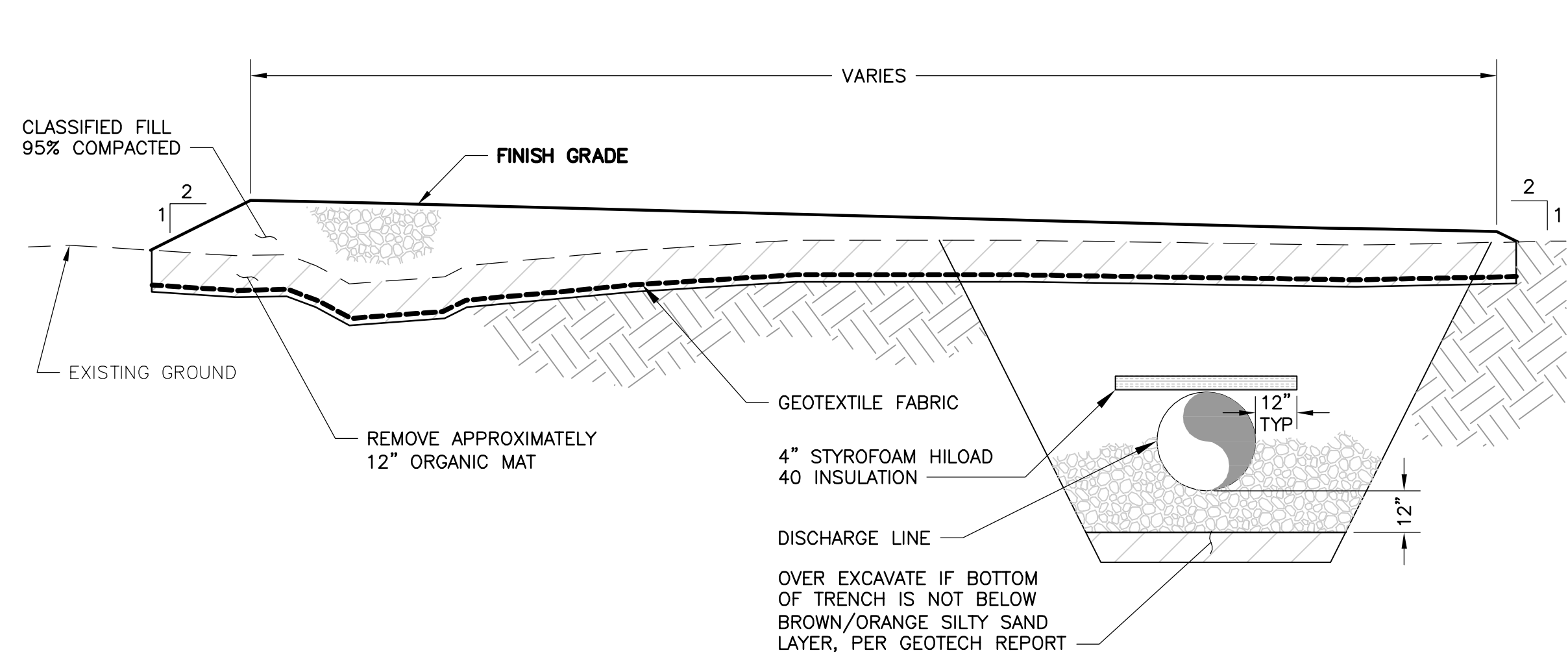
1 NORTH BUILDING SECTION
C3.0 SCALE: 1" = 6'



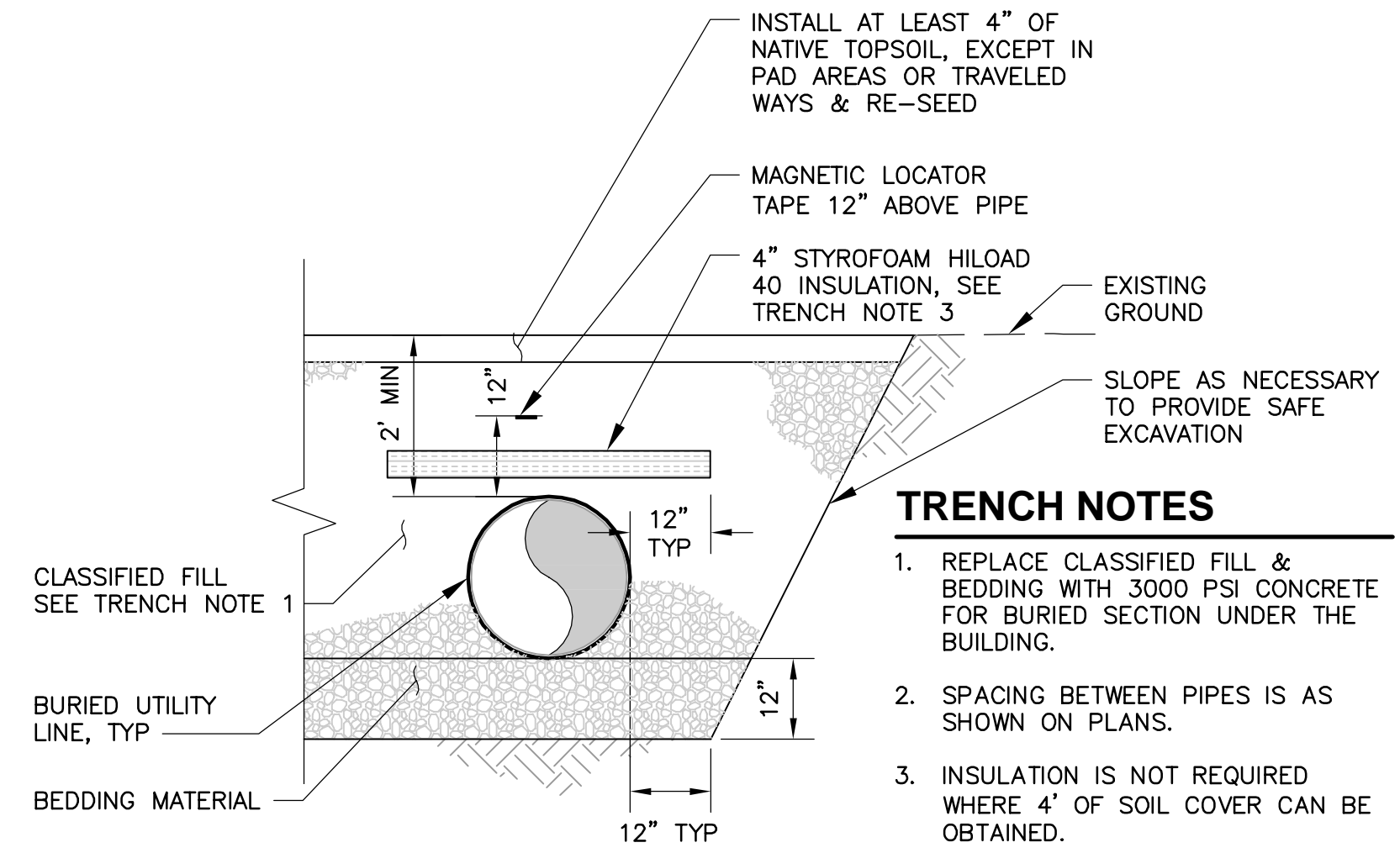
2 WEST BUILDING SECTION
C3.0 SCALE: 1" = 6'



3 ACCESS ROAD SECTION
C3.0 SCALE: 1" = 4'



4 DISCHARGE GRAVEL ACCESS PAD SECTION
C3.0 SCALE: 1" = 3'



5 TYPICAL TRENCH SECTION
C3.0 SCALE: 1" = 2'

TRENCH NOTES

- REPLACE CLASSIFIED FILL & BEDDING WITH 3000 PSI CONCRETE FOR BURIED SECTION UNDER THE BUILDING.
- SPACING BETWEEN PIPES IS AS SHOWN ON PLANS.
- INSULATION IS NOT REQUIRED WHERE 4' OF SOIL COVER CAN BE OBTAINED.

Plotted By: John F. Wood
 Date: 03 Dec 2013 2:33 pm
 Title: C3.0
 Filename: F:\Civil Projects\850.01_Unalaska_WTP.dwg, 850.01_DSIDT_Unalaska.dwg

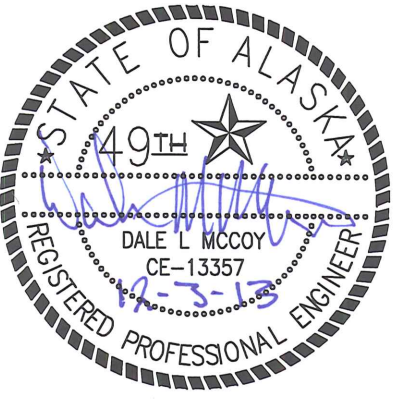
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 (907) 543-8965



CITY OF UNALASKA

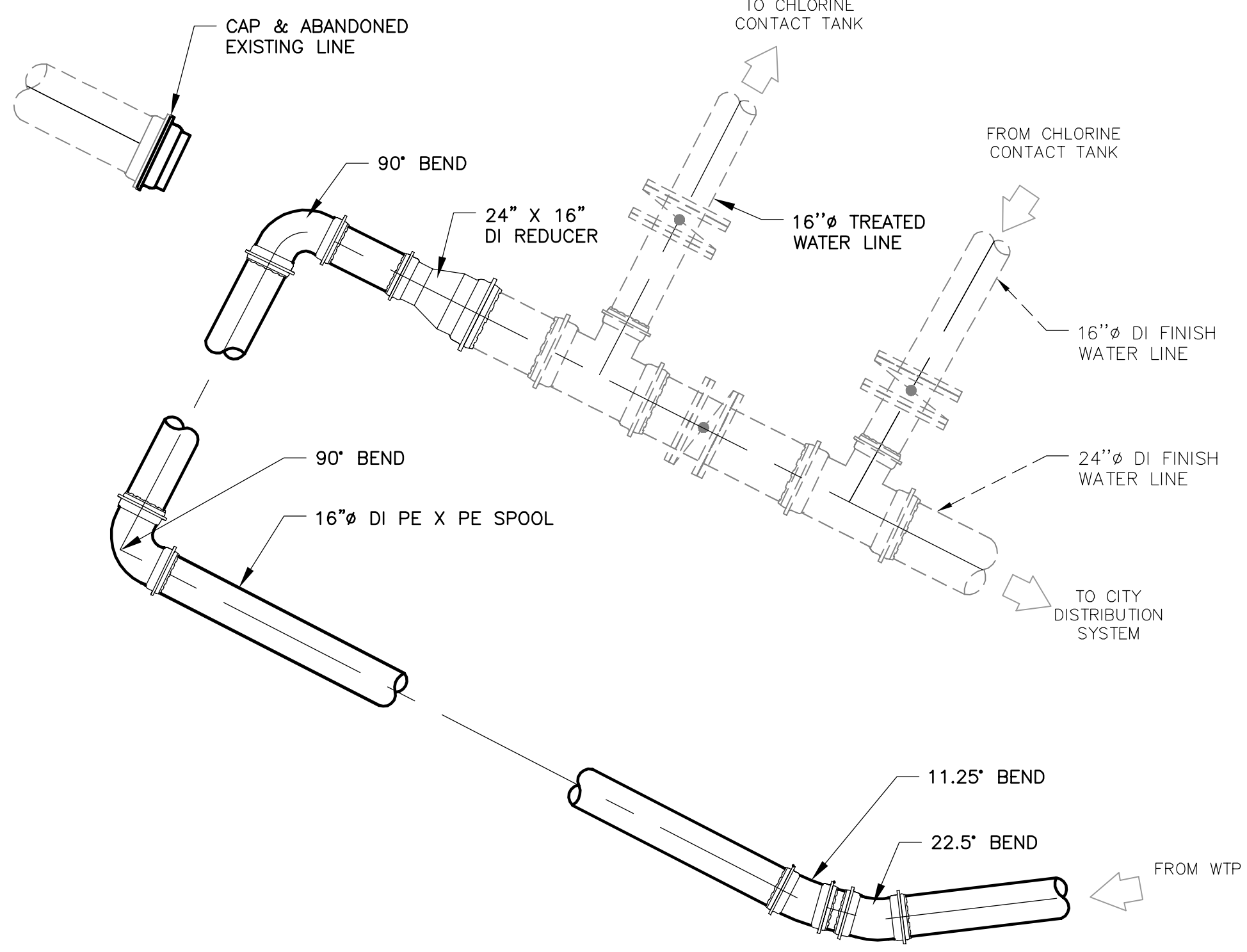
PYRAMID WTP
 UNALASKA, ALASKA
 CIVIL SECTIONS

SCALE:	AS SHOWN
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DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	C3.0 OF



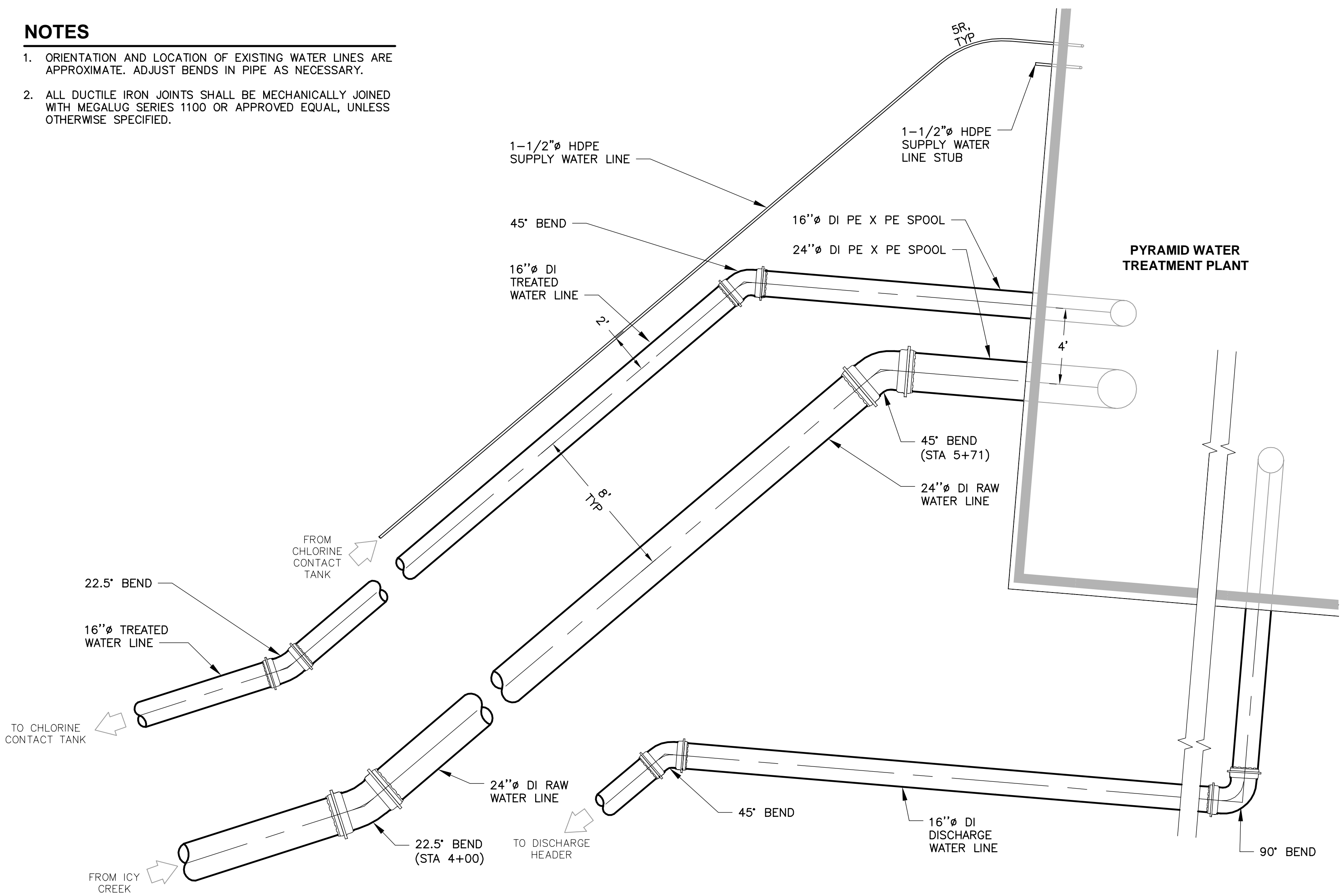
NOTES

1. ORIENTATION AND LOCATION OF EXISTING WATER LINES ARE APPROXIMATE. ADJUST BENDS IN PIPE AS NECESSARY.
2. ALL DUCTILE IRON JOINTS SHALL BE MECHANICALLY JOINED WITH MEGALUG SERIES 1100 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED.



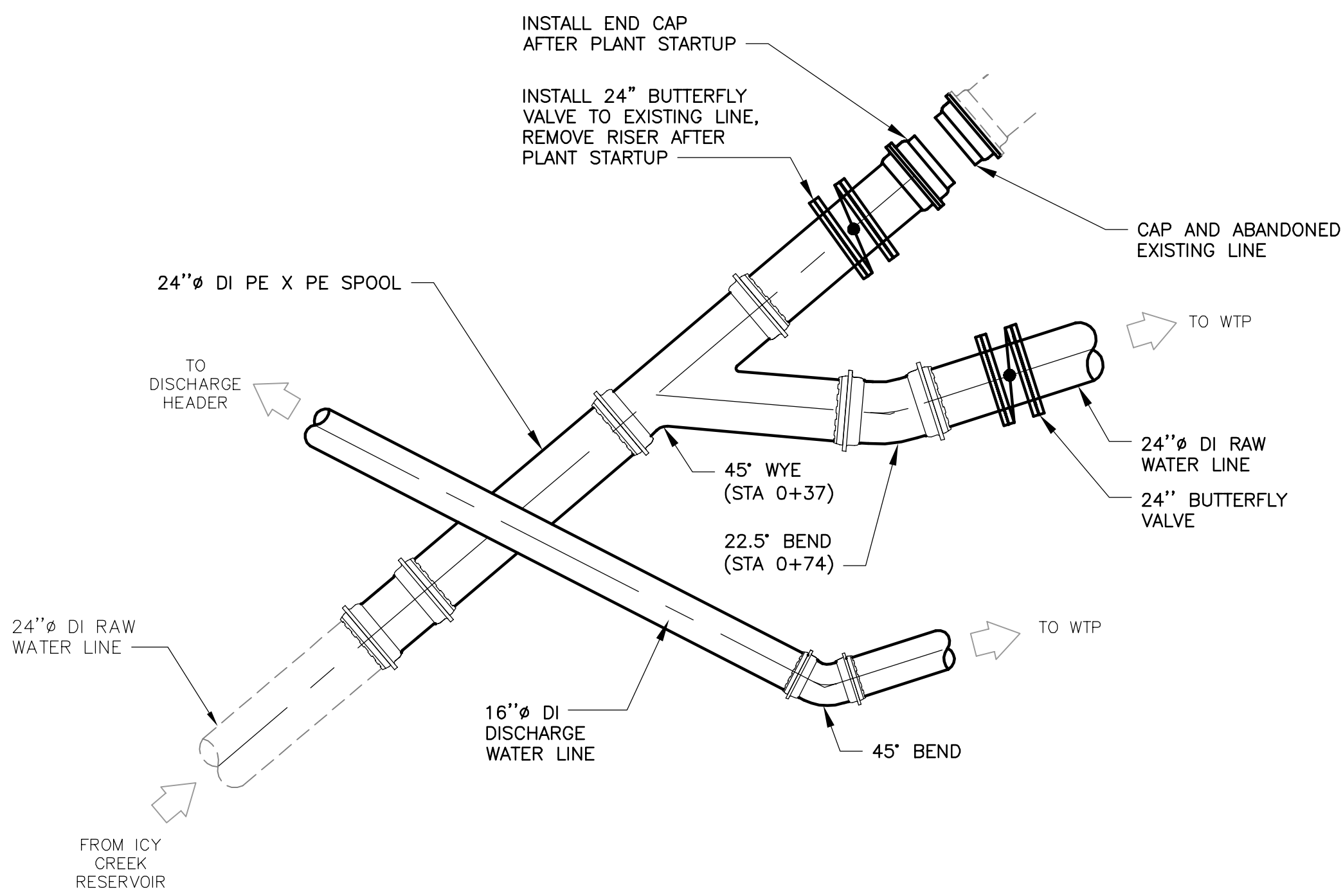
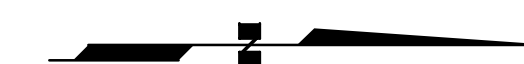
1 TREATED WATER LINE CONNECTION

C3.1 SCALE: 1" = 4'



2 WATER LINE BUILDING CONNECTIONS

C3.1 SCALE: 1" = 4'



3 RAW WATER CONNECTION

C3.1 SCALE: 1" = 4'



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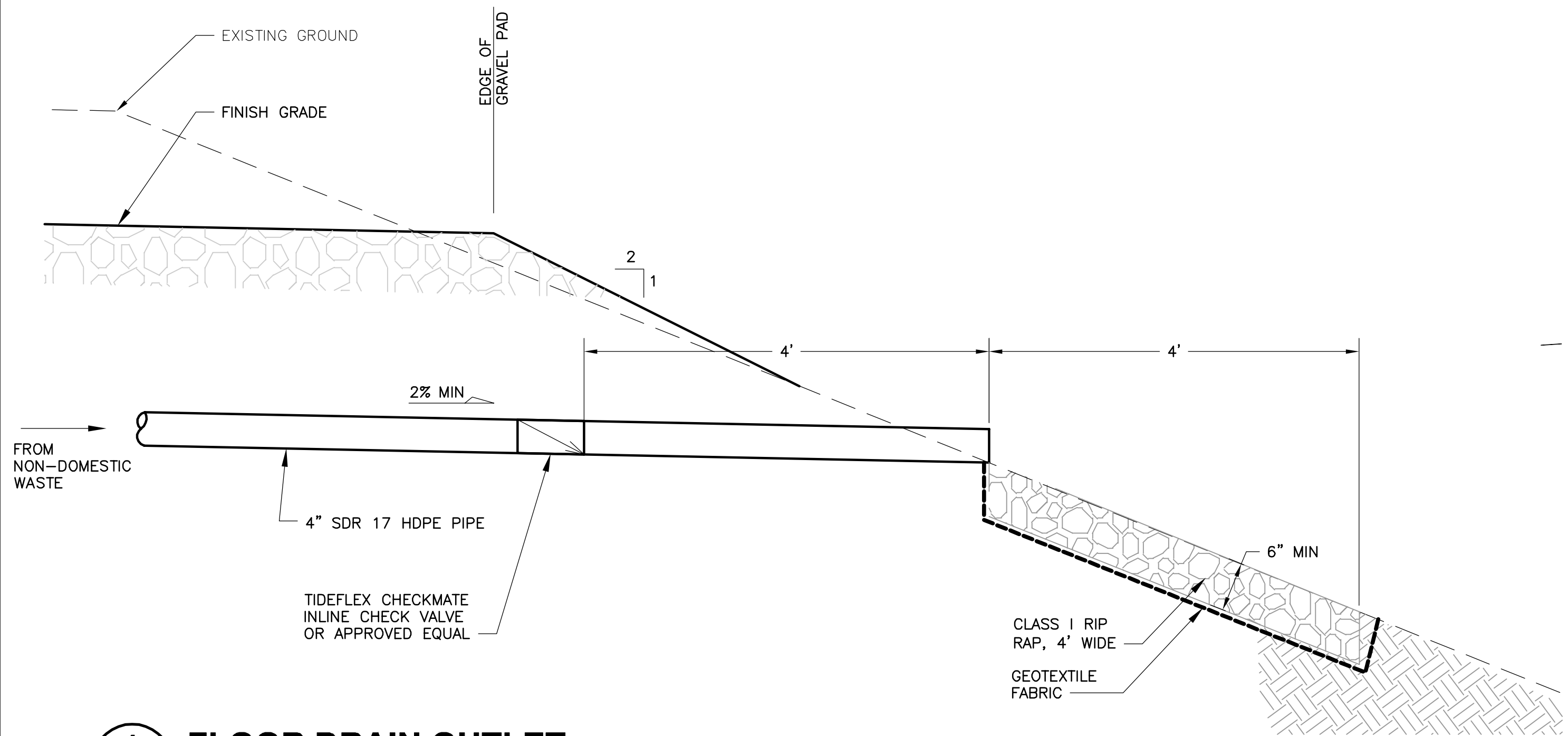


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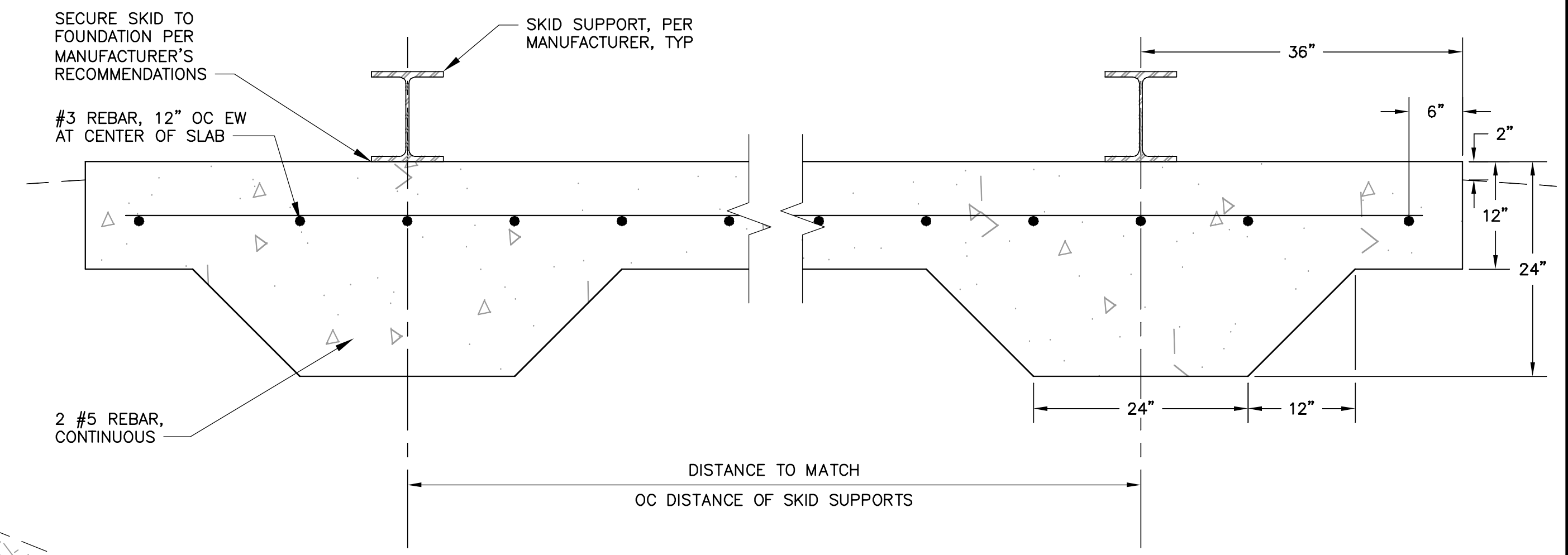
PYRAMID WTP
UNALASKA, ALASKA
EXTERIOR PIPING LAYOUT

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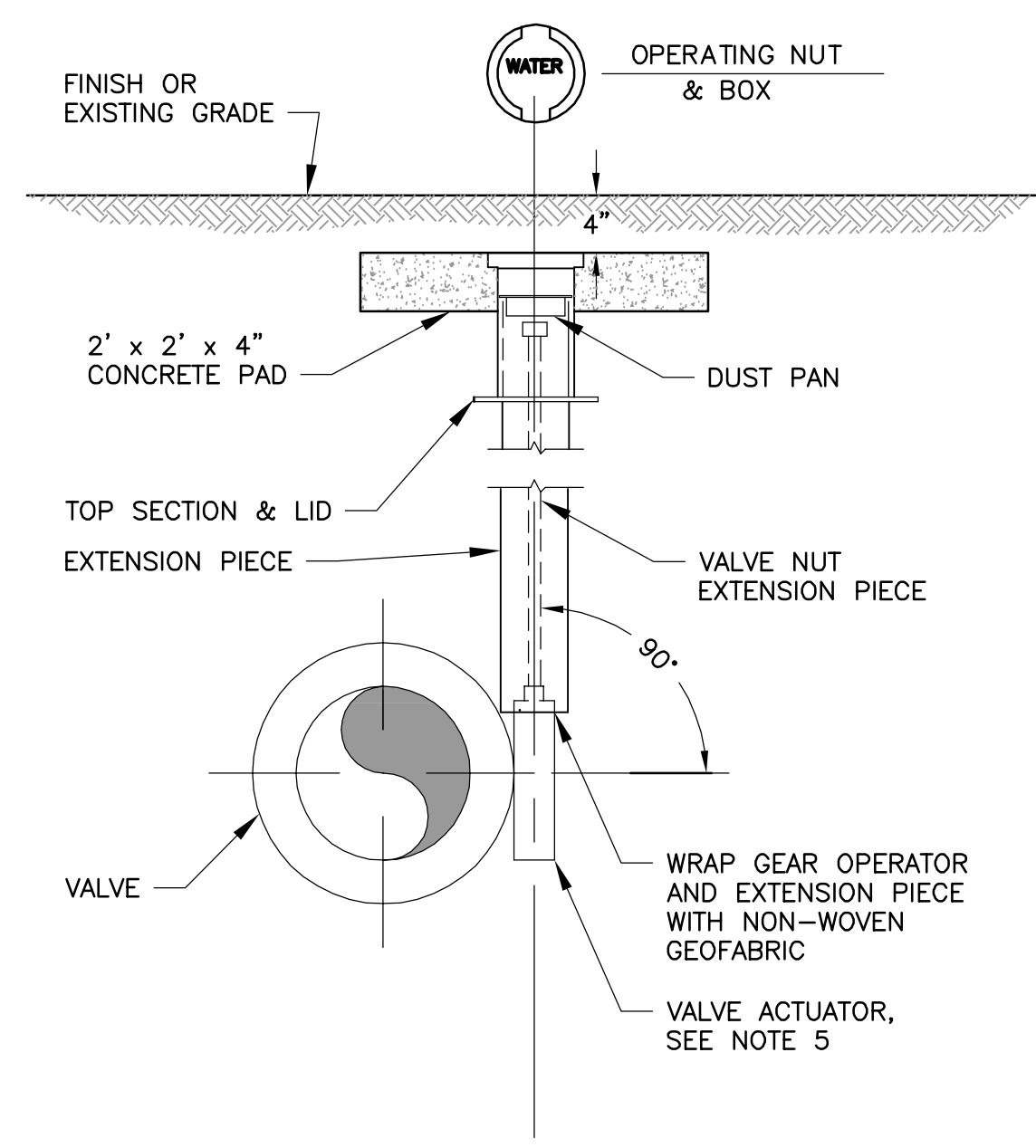
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1 FLOOR DRAIN OUTLET
C3.2 SCALE: 1" = 1'

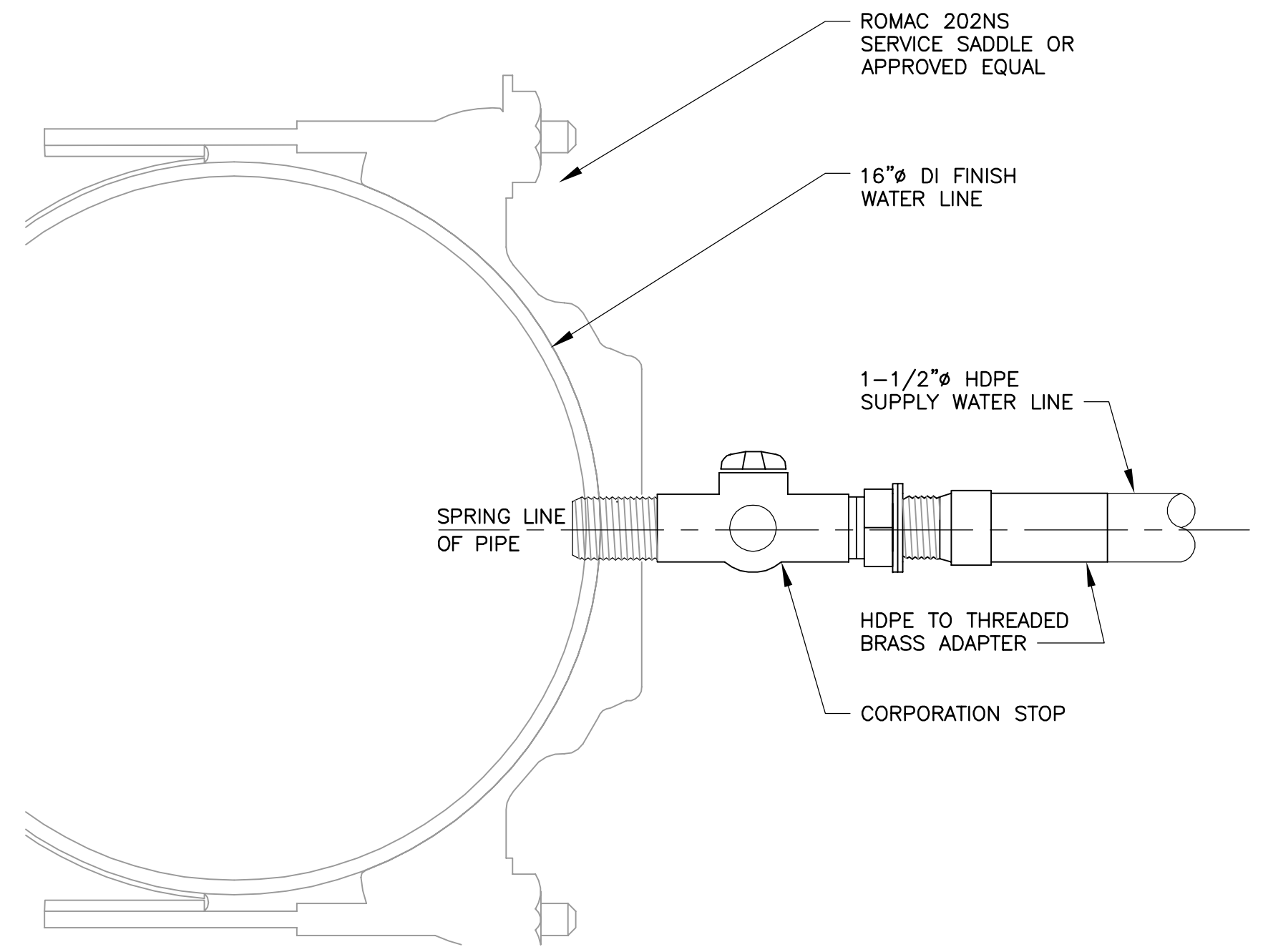


2 FUEL TANK AND GENERATOR FOUNDATION
C3.2 SCALE: 1" = 1'



- NOTES**
- LID AND TOP SECTION TO BE INLAND FOUNDRY CO. 02059, 02060 OR EQUAL.
 - EXTENSION PIECE TO BE A SECTION OF 5" DIAMETER SINGLE HUB SOIL PIPE OR APPROVED EQUAL.
 - VALVE BOX DUST PAN SHALL BE INLAND FOUNDRY CO. 2052-6 OR APPROVED EQUAL.
 - INSTALL A VALVE NUT EXTENSION PIECE SO THE OPERATING NUT IS 12" TO 24" FROM THE VALVE BOX LID.
 - VALVE ACTUATORS SHALL BE SET TO NOT CLOSE FASTER THAN RECOMMENDED BY THE MANUFACTURER.

3 BURIED BUTTERFLY VALVE BOX
C3.2 SCALE: NTS



4 SAMPLE WATER LINE CONNECTION
C3.2 SCALE: 4" = 1'

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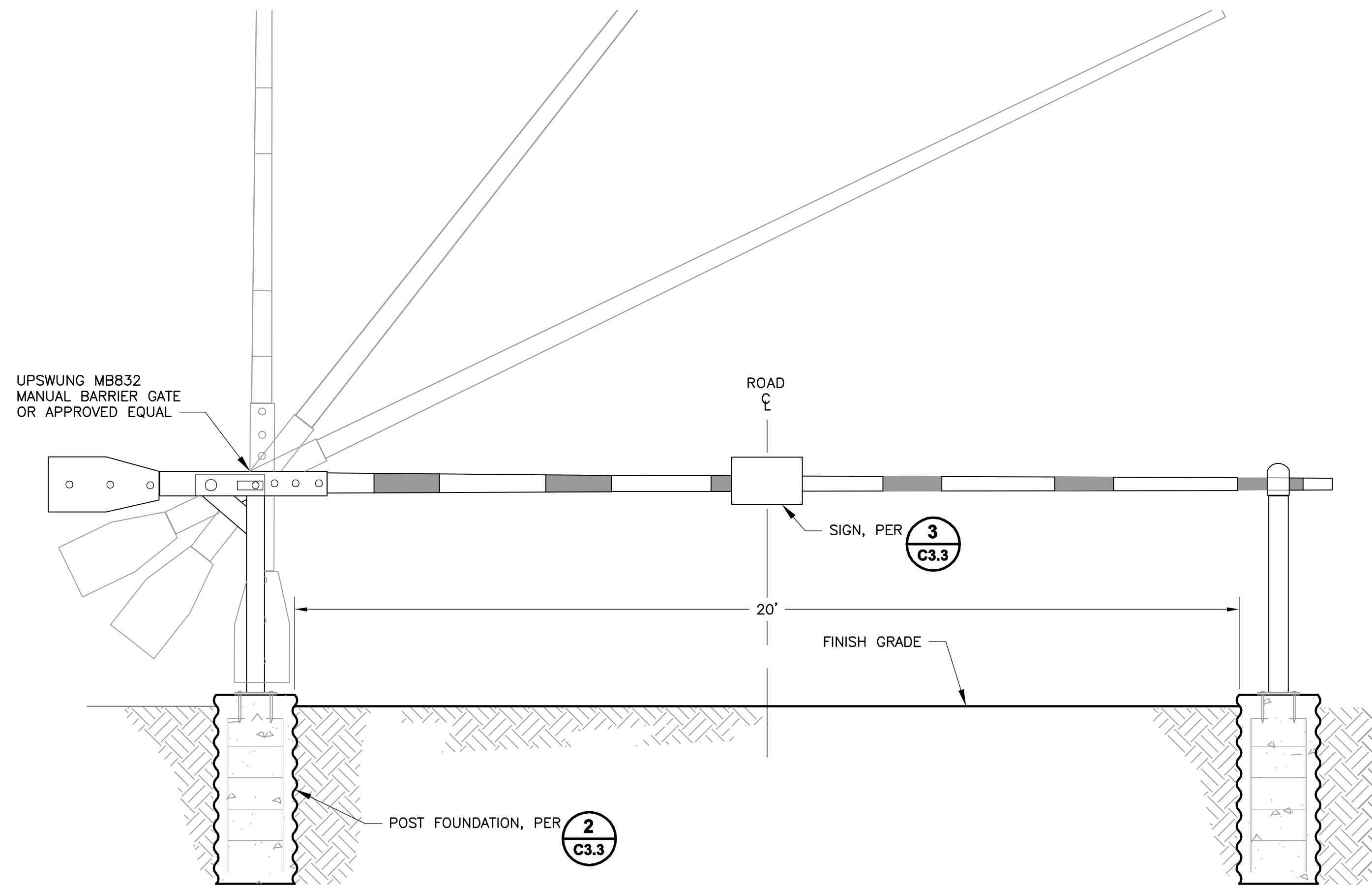
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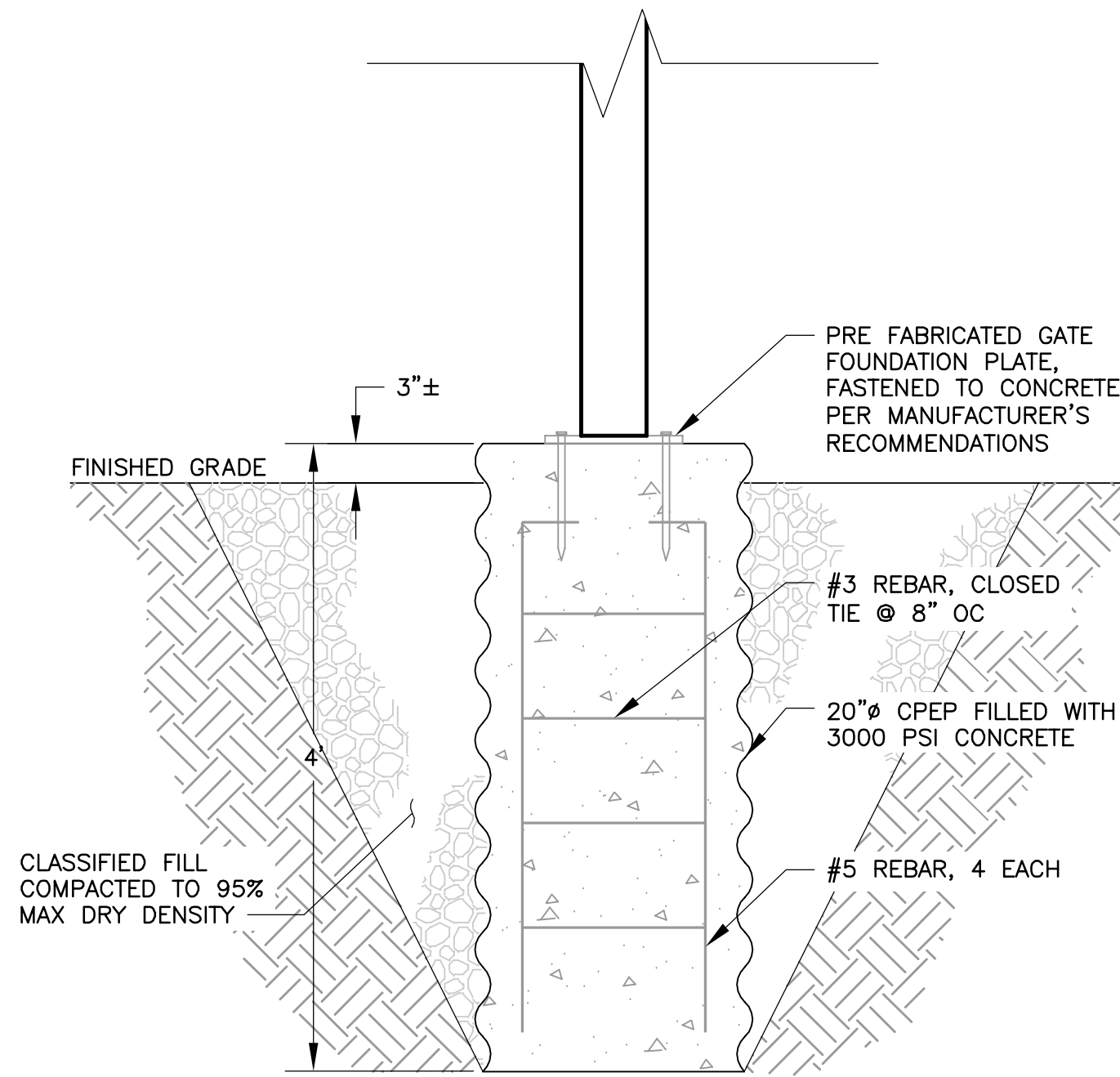
CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 CIVIL DETAILS
 (1 of 2)

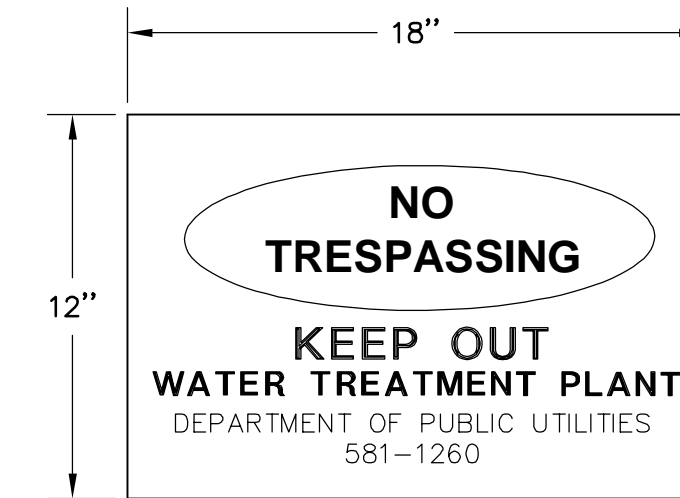
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1 ACCESS GATE
C3.3 SCALE: 1" = 2'

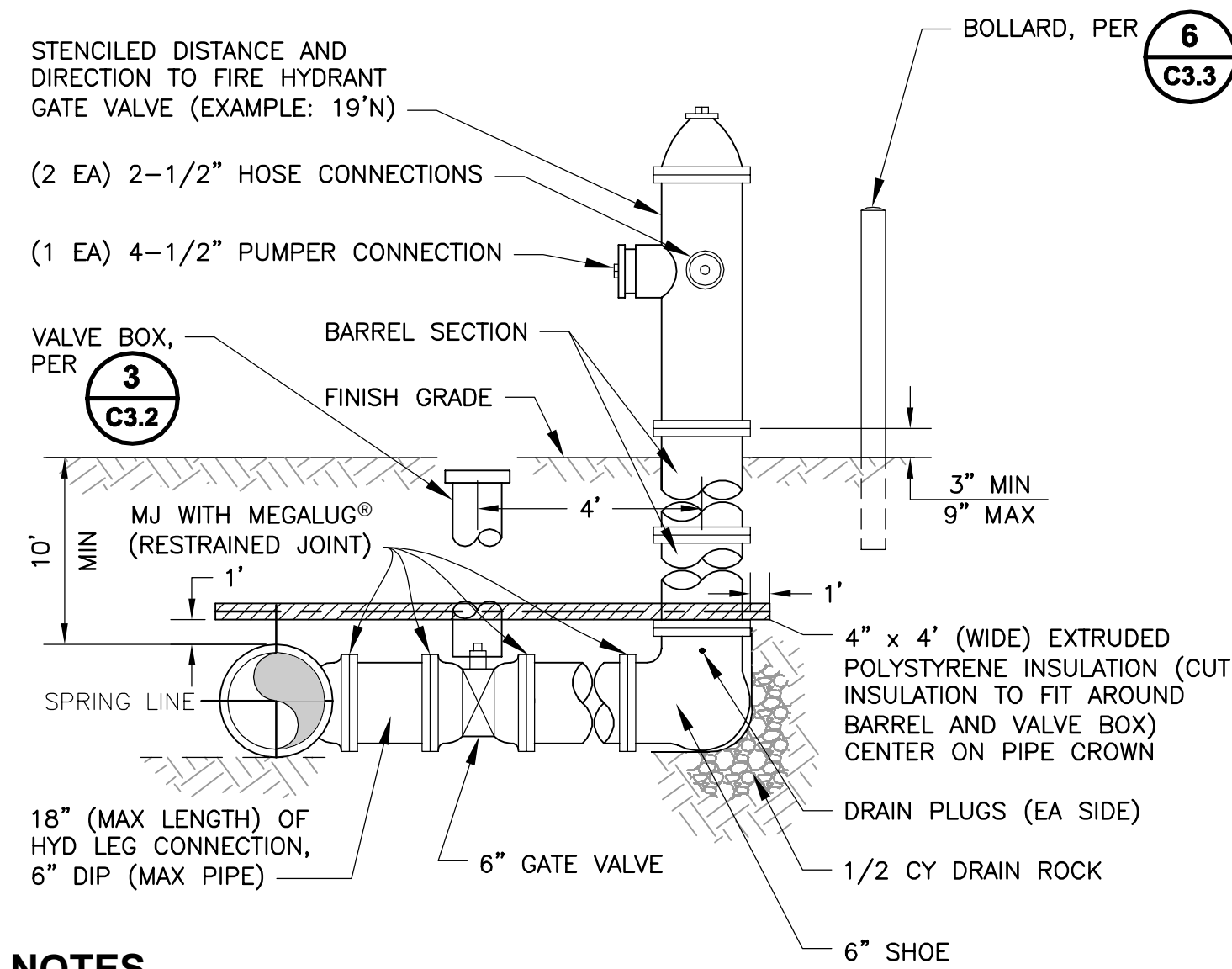


2 ACCESS GATE FOUNDATION DETAIL
C3.3 SCALE: 1" = 1'



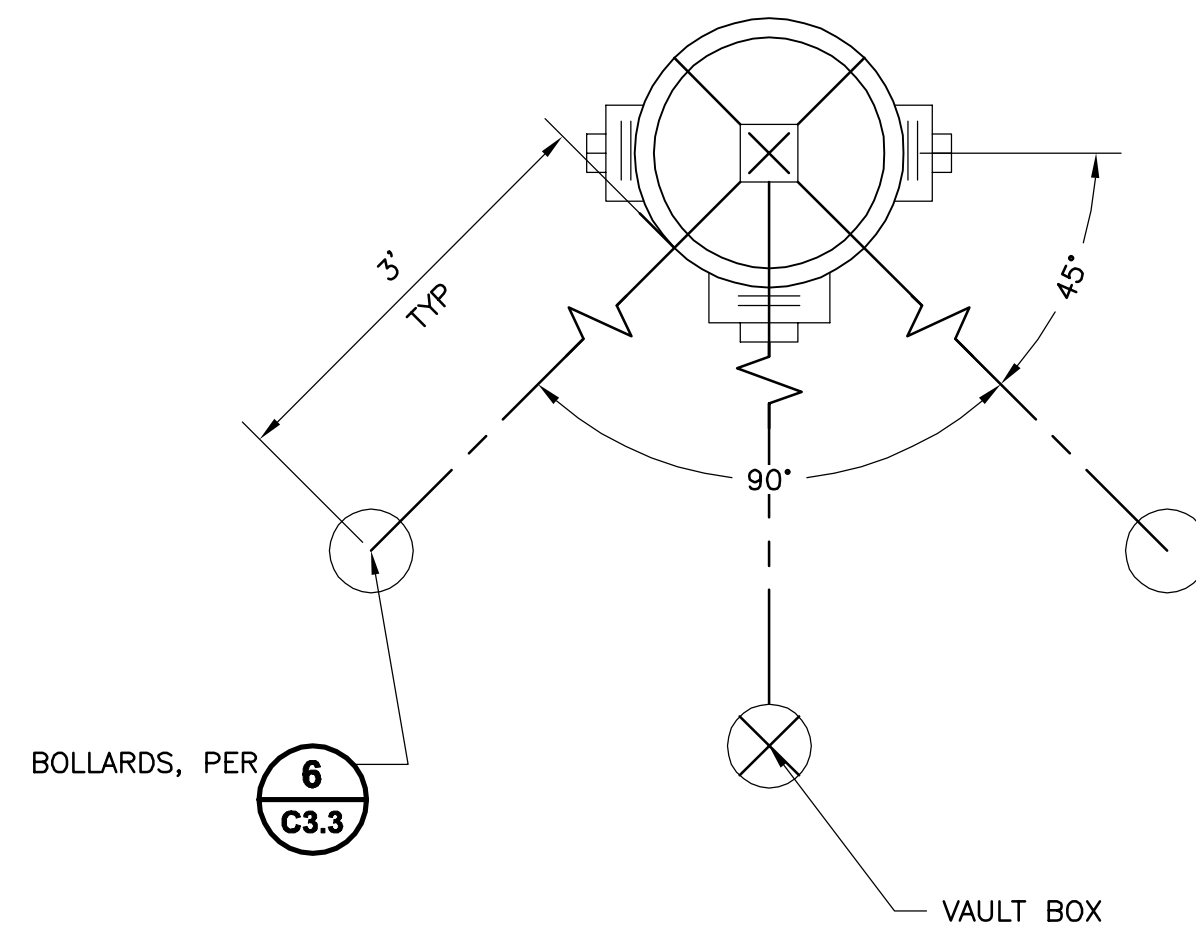
- NOTES**
1. ATTACH SIGN TO ACCESS GATE PER GATE MANUFACTURER'S RECOMMENDATIONS.
 2. SIGN MATERIAL SHALL BE 0.125" ALUMINUM SHEETING.
 3. LETTERING SHALL BE 1.5 INCH HELVETICA BOLD, OR EQUIVALENT ON A WHITE BACKGROUND WITH MINIMUM 0.5 INCHES FROM LETTERING TO EDGE. LETTERS SHALL BE BLACK.
 4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF SIGN FOR CITY APPROVAL.

3 SIGN DETAIL
C3.3 SCALE: 2" = 1'



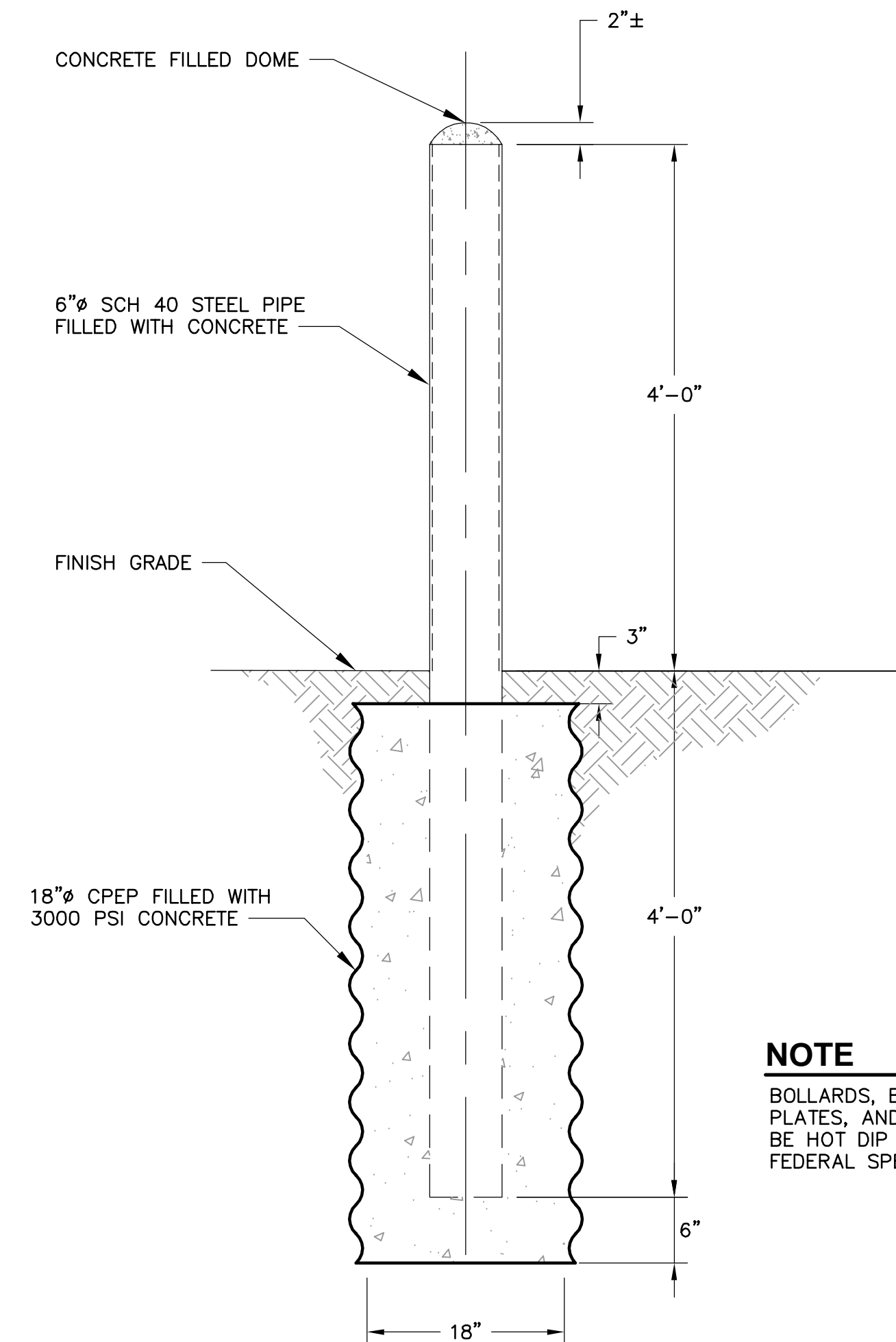
- NOTES**
1. HYDRANT BARREL SHALL BE INSTALLED PLUMB AND THE LEG SHALL BE LEVEL.
 2. DRAIN PLUG TO BE REMOVED BY CONTRACTOR.
 3. HYDRANT SHALL BE PAINTED GREEN, FOR NON POTABLE WATER.
 4. ALL JOINTS SHALL BE MECHANICALLY JOINTED WITH MEGALUG OR APPROVED EQUAL.
 5. ALL BACKFILL MATERIAL AROUND HYDRANT BARREL SHALL BE D-1 BEDDING MATERIAL.

4 FIRE HYDRANT DETAIL
C3.3 SCALE: 1" = 1'



- NOTE**
- BOLLARDS SHALL BE INSTALLED PLUMB AND LOCATED TO ALLOW UNRESTRICTED ACCESS TO PUMPER AND HOSE CONNECTIONS.

5 FIRE HYDRANT BOLLARD PLAN
C3.3 SCALE: 2" = 1'



- NOTE**
- BOLLARDS, BOLLARD CONNECTION PLATES, AND CONNECTORS SHALL BE HOT DIP GALVANIZED AS PER FEDERAL SPECIFICATION QQ-Z-351.

6 BOLLARD DETAIL
C3.3 SCALE: 1" = 1'

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C3.3

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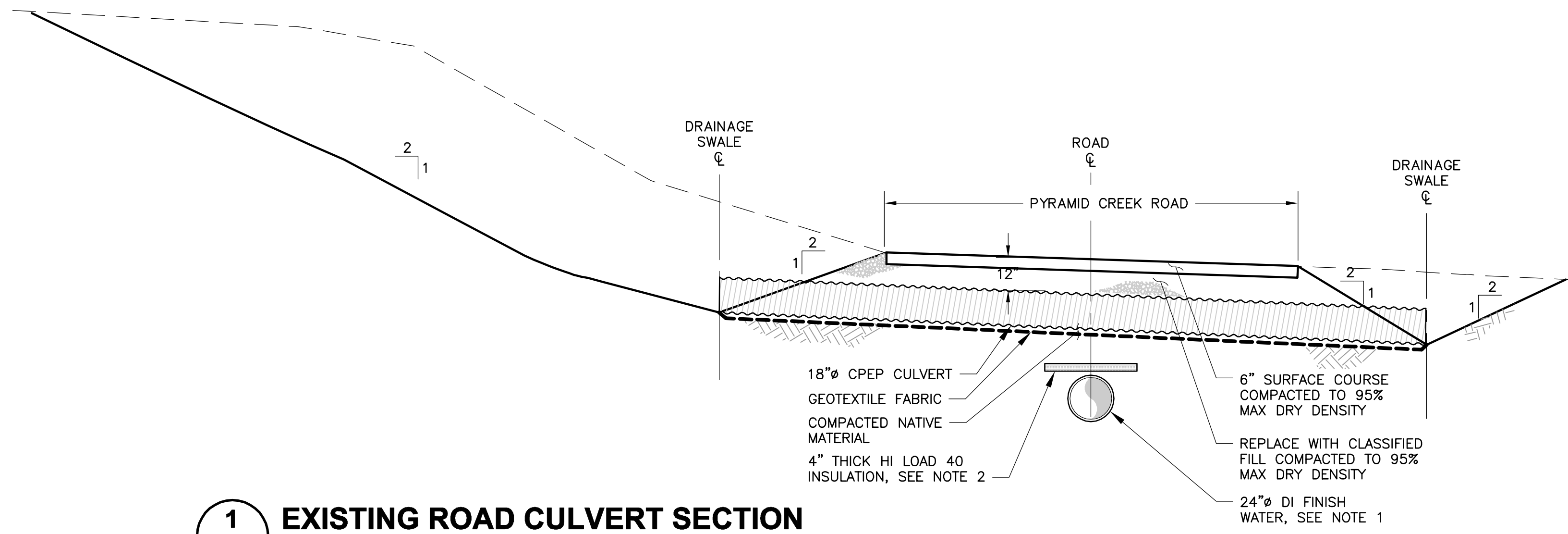
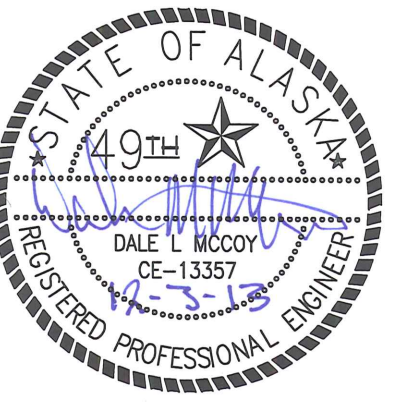


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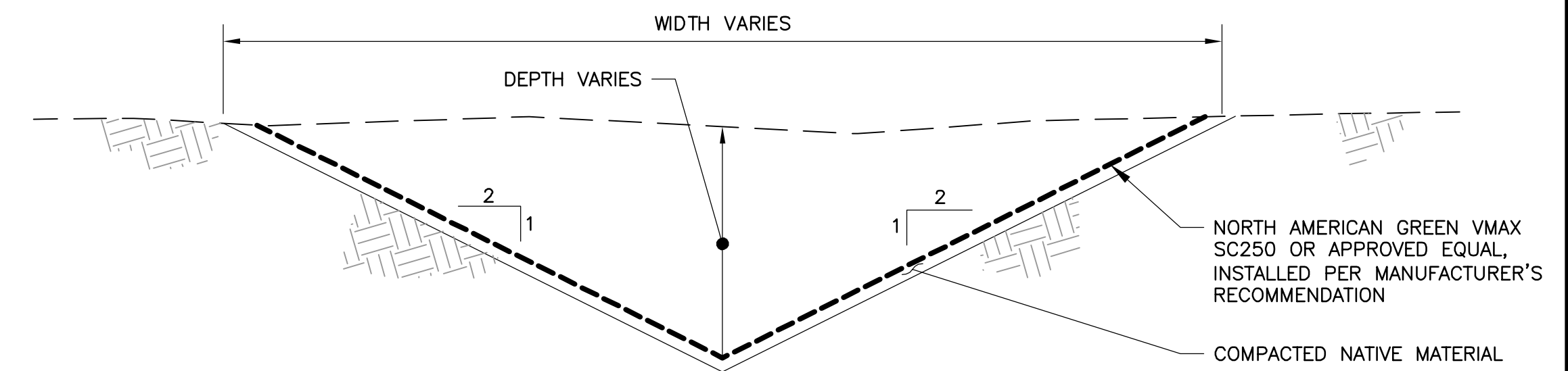
PYRAMID WTP
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CIVIL DETAILS
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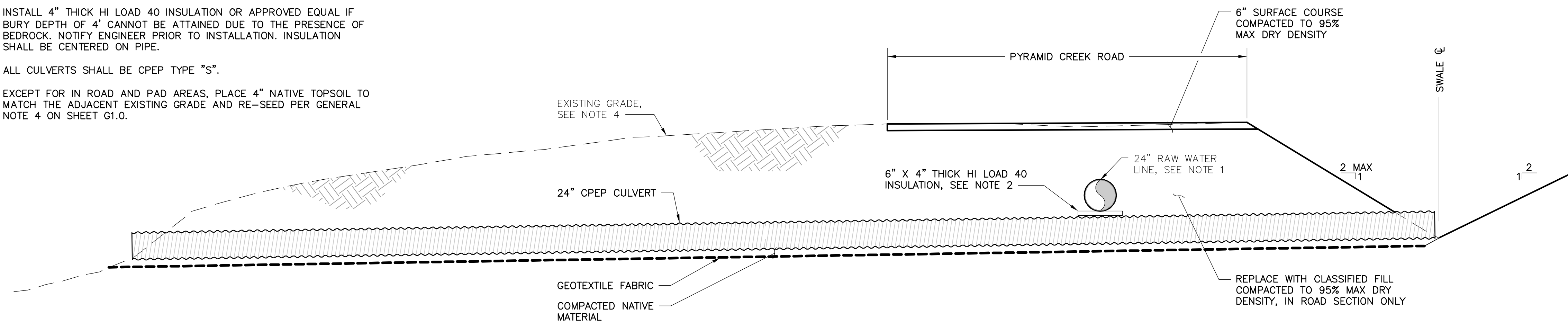
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C3.4 EXISTING ROAD CULVERT SECTION
SCALE: 1" = 4'



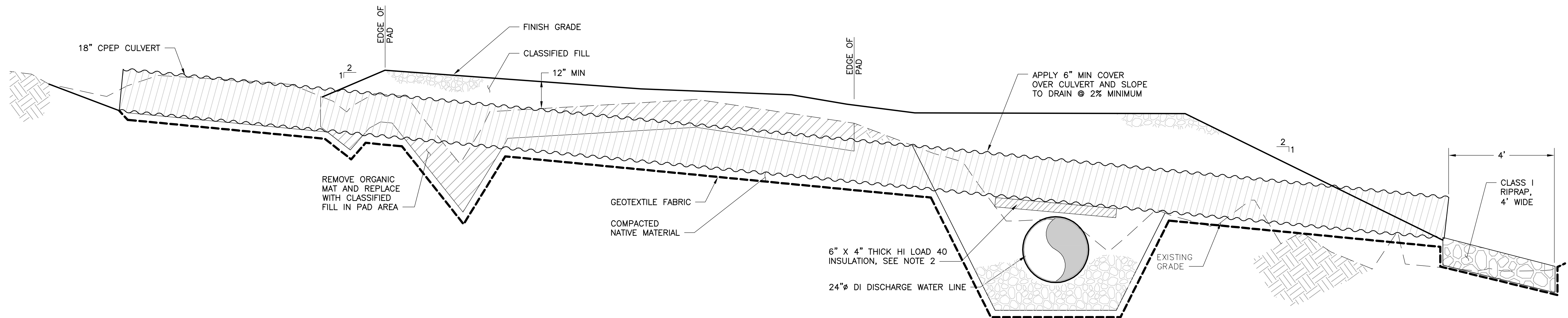
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C3.4 TYPICAL SWALE SECTION
SCALE: 1" = 1'

CULVERT NOTES

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF THE FINISH WATER LINE OR RAW WATER LINE AND IMMEDIATELY CONTACT THE OWNER'S REPRESENTATIVES IF A CONFLICT IS FOUND.
2. INSTALL 4" THICK HI LOAD 40 INSULATION OR APPROVED EQUAL IF BURY DEPTH OF 4" CANNOT BE ATTAINED DUE TO THE PRESENCE OF BEDROCK. NOTIFY ENGINEER PRIOR TO INSTALLATION. INSULATION SHALL BE CENTERED ON PIPE.
3. ALL CULVERTS SHALL BE CPEP TYPE "S".
4. EXCEPT FOR IN ROAD AND PAD AREAS, PLACE 4" NATIVE TOPSOIL TO MATCH THE ADJACENT EXISTING GRADE AND RE-SEED PER GENERAL NOTE 4 ON SHEET G1.0.



3
C3.4 CULVERT RELOCATION SECTION
SCALE: 1" = 5'



4
C3.4 CONSTRUCTION PAD CULVERT SECTION
SCALE: 1" = 2'

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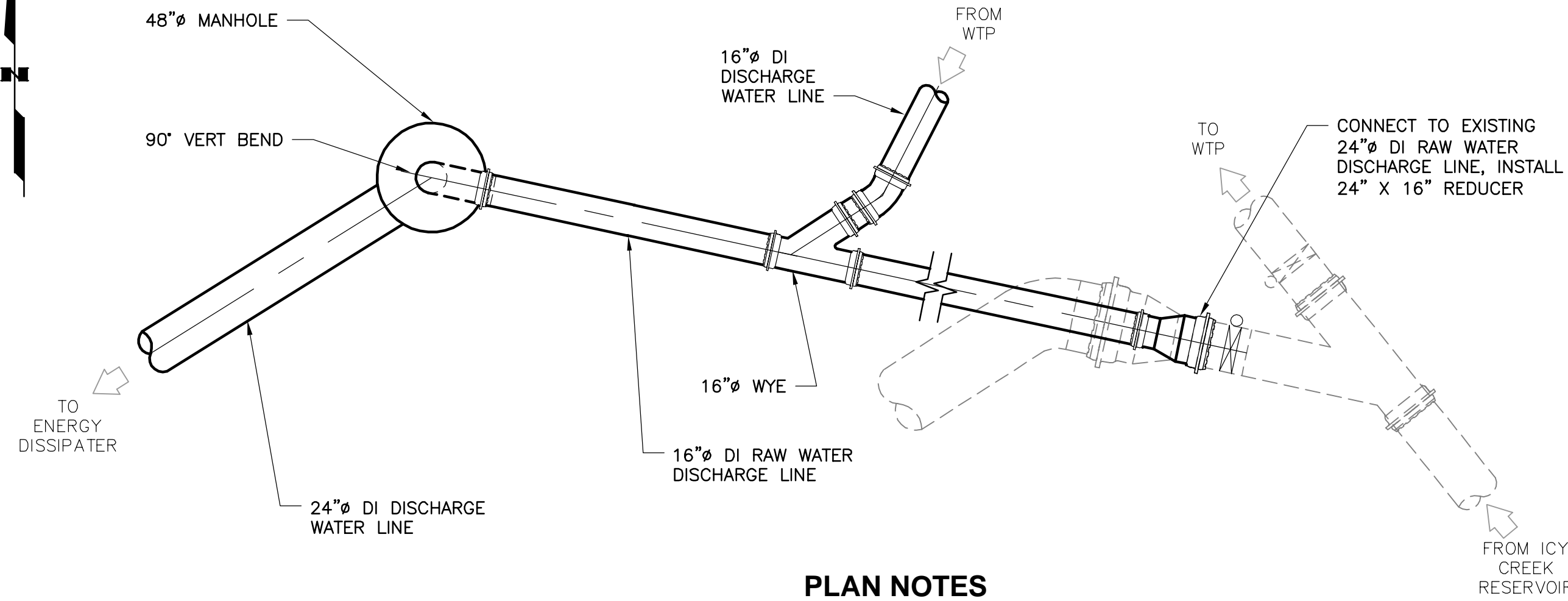


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PYRAMID WTP
UNALASKA, ALASKA
DRAINAGE DETAILS

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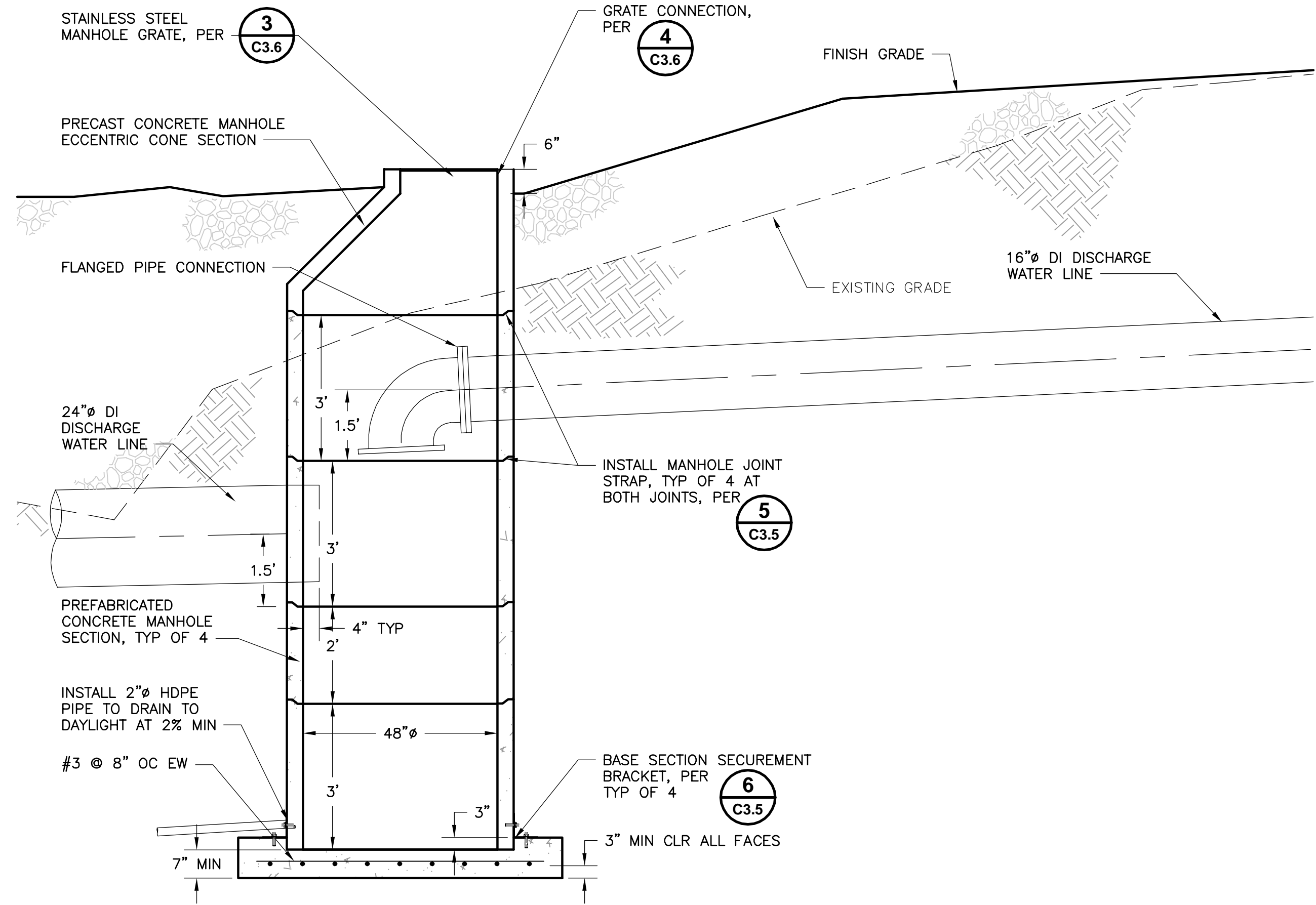
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C3.4 OF



PLAN NOTES

- EXISTING PIPE LOCATIONS ARE APPROXIMATE. FIELD VERIFY PIPE LOCATIONS AND NOTIFY THE ENGINEER IF DISCREPANCIES ARE FOUND.
- REMOVE AND SALVAGE EXISTING 36" DI BLOW-OFF LINE AND STORE IN LOCATION WITHIN 1/4 MILE SPECIFIED BY THE CITY.
- ALL DUCTILE IRON JOINTS SHALL BE MECHANICALLY JOINED WITH MEGALUG SERIES 1100 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED.

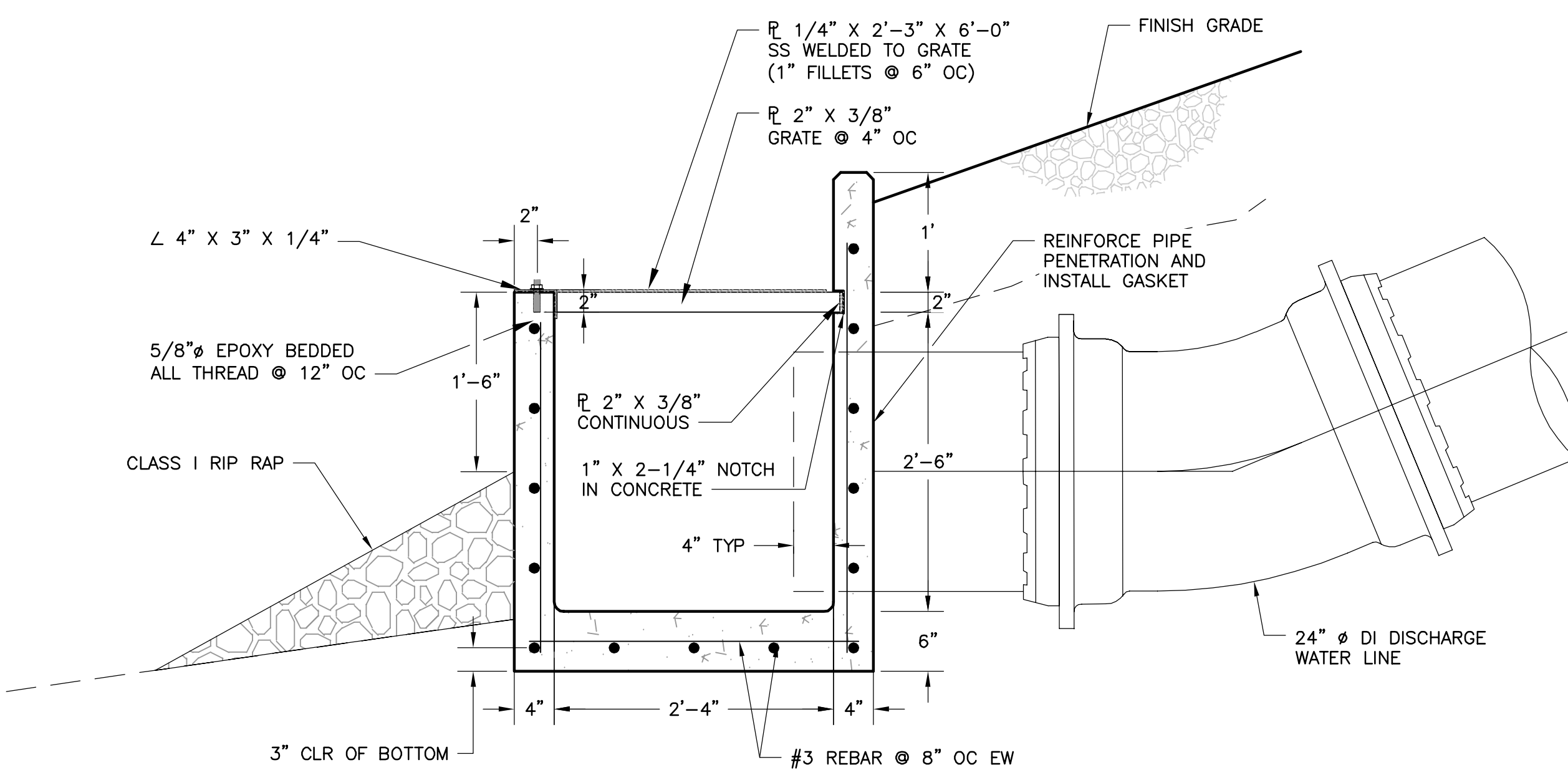
1 AIR GAP MANHOLE PLAN
C3.5 SCALE: 1" = 5'



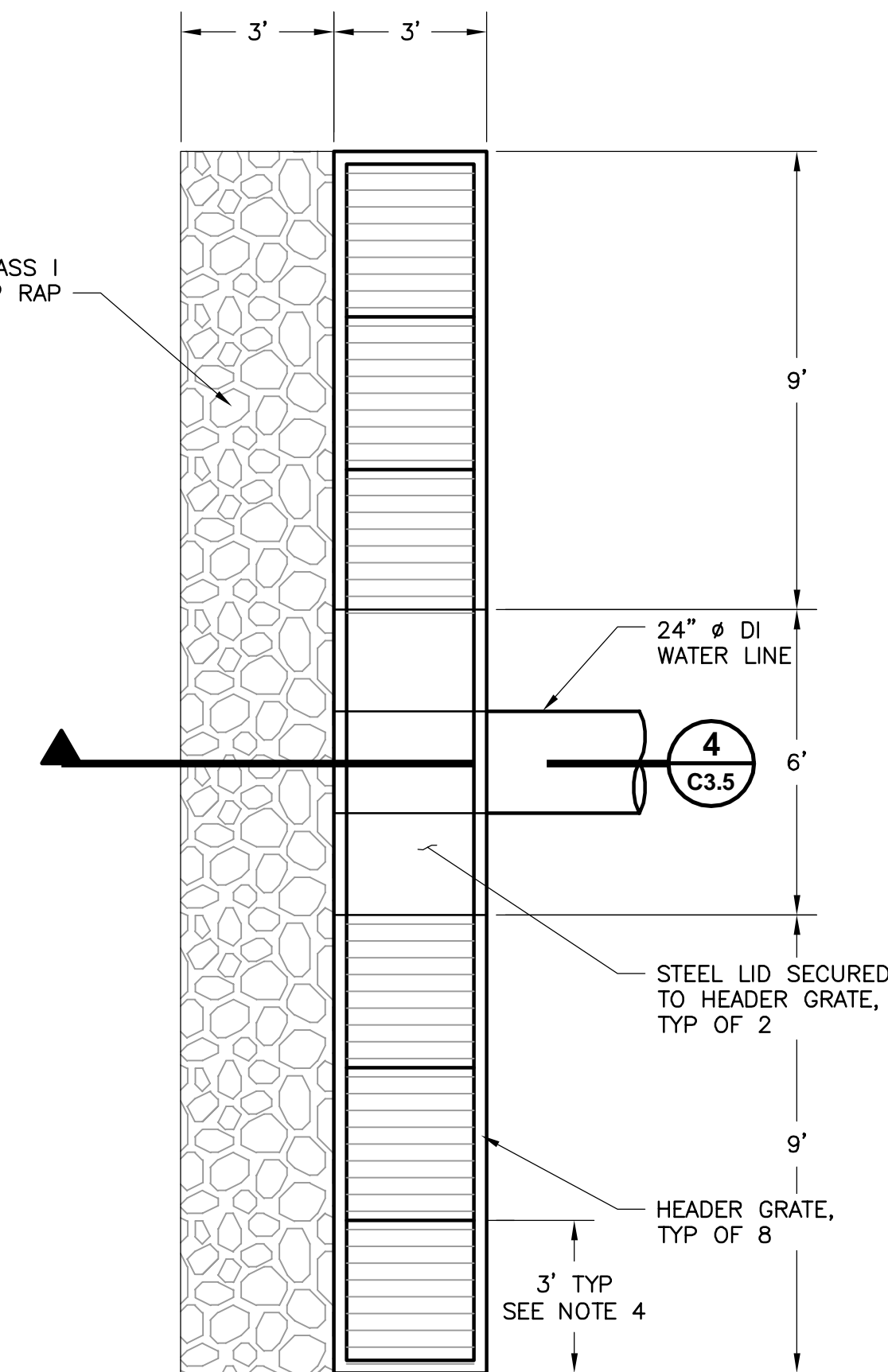
2 AIR GAP MANHOLE SECTION
C3.5 SCALE: 1" = 2'

MANHOLE NOTES

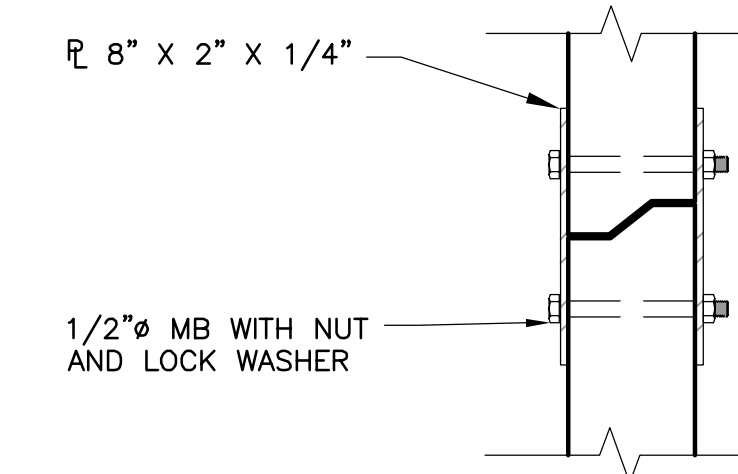
- ALL MANHOLE SECTIONS SHALL BE PRECAST OR CAST IN PLACE UNLESS OTHERWISE SPECIFIED AND SHALL CONFORM TO ALL THE REQUIREMENTS OF ASTM C478. IF THE CONTRACTOR CHOOSES TO CAST IN PLACE THE MANHOLES, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE PROPOSED MANHOLE FOR ENGINEER APPROVAL PRIOR TO CONSTRUCTION.
- ALL MANHOLE PIPE PENETRATIONS SHALL BE PRECAST OR FORMED AND SHALL BE ADEQUATELY REINFORCED. FOR-N-SEAL GASKETS OR APPROVED EQUAL SHALL BE USED UNLESS OTHERWISE SPECIFIED.
- ALL MANHOLE BARREL SECTION JOINTS SHALL BE STRAPPED IN 4 EQUALLY SPACED LOCATIONS PER JOINT & SEALED WITH AN ELASTOMERIC GASKET.
- DISCHARGE HEADER GRATES SHALL BE 3' WIDE MAXIMUM WITH 3 FASTENERS ON EACH SIDE THAT CONNECTS WITH THE CONCRETE STRUCTURE.



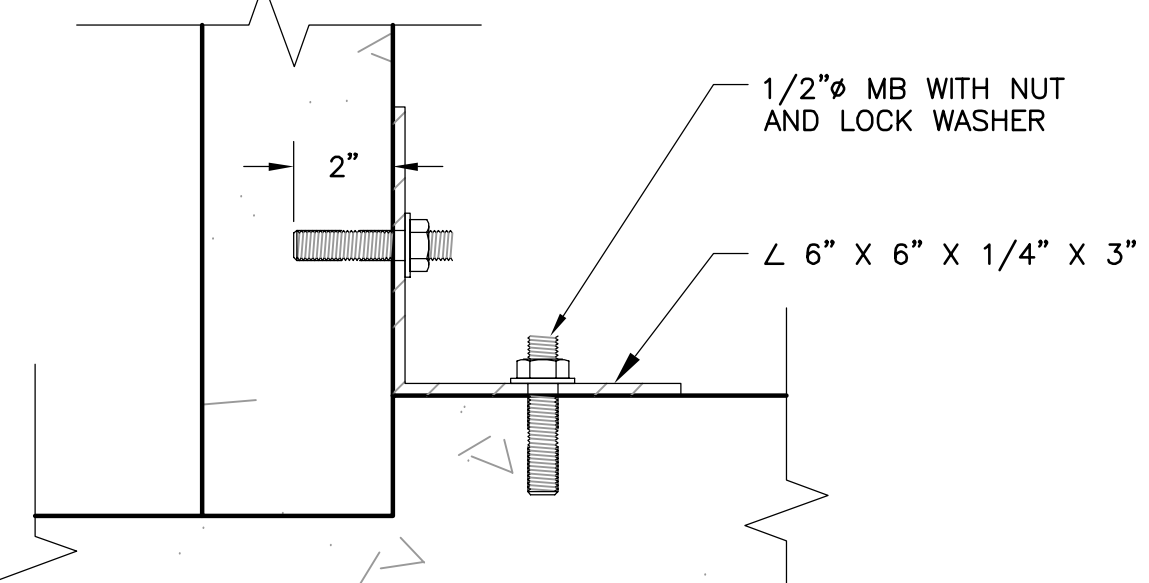
4 DISCHARGE HEADER SECTION
C3.5 SCALE: 1" = 1'



3 DISCHARGE HEADER PLAN
C3.5 SCALE: 1" = 3'



5 MANHOLE JOINT STRAP
C3.5 SCALE: 2" = 1'



6 SECUREMENT BRACKET
C3.5 SCALE: 3" = 1'

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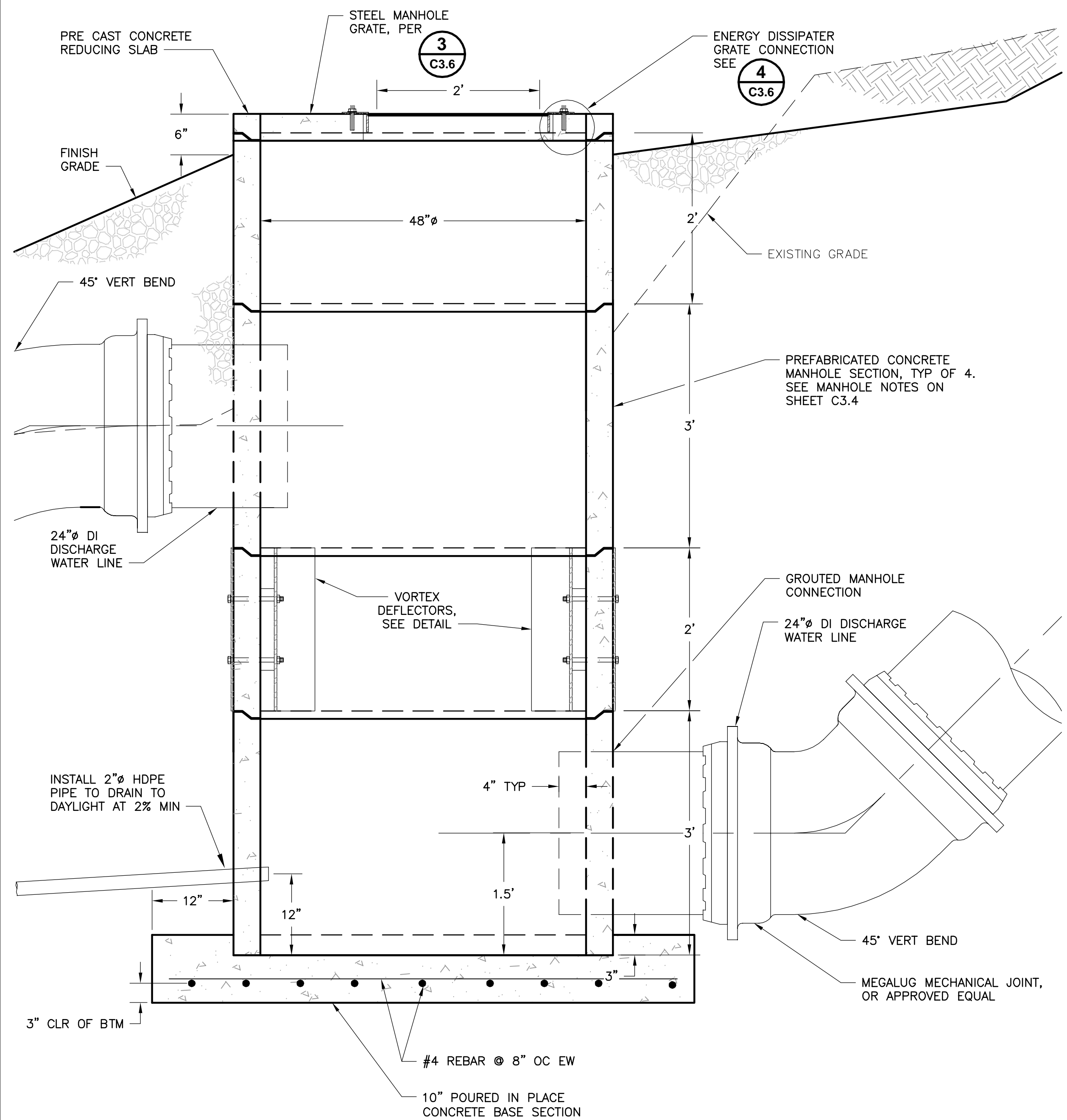
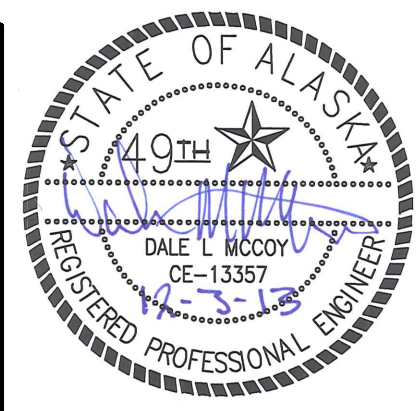
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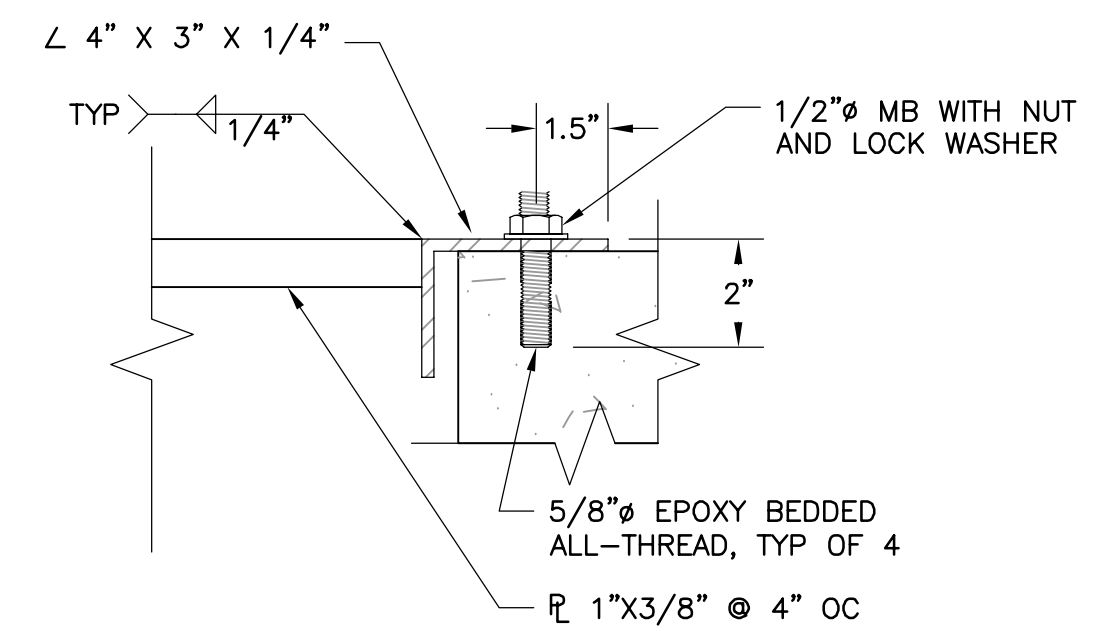
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 DISCHARGE STRUCTURE DETAILS

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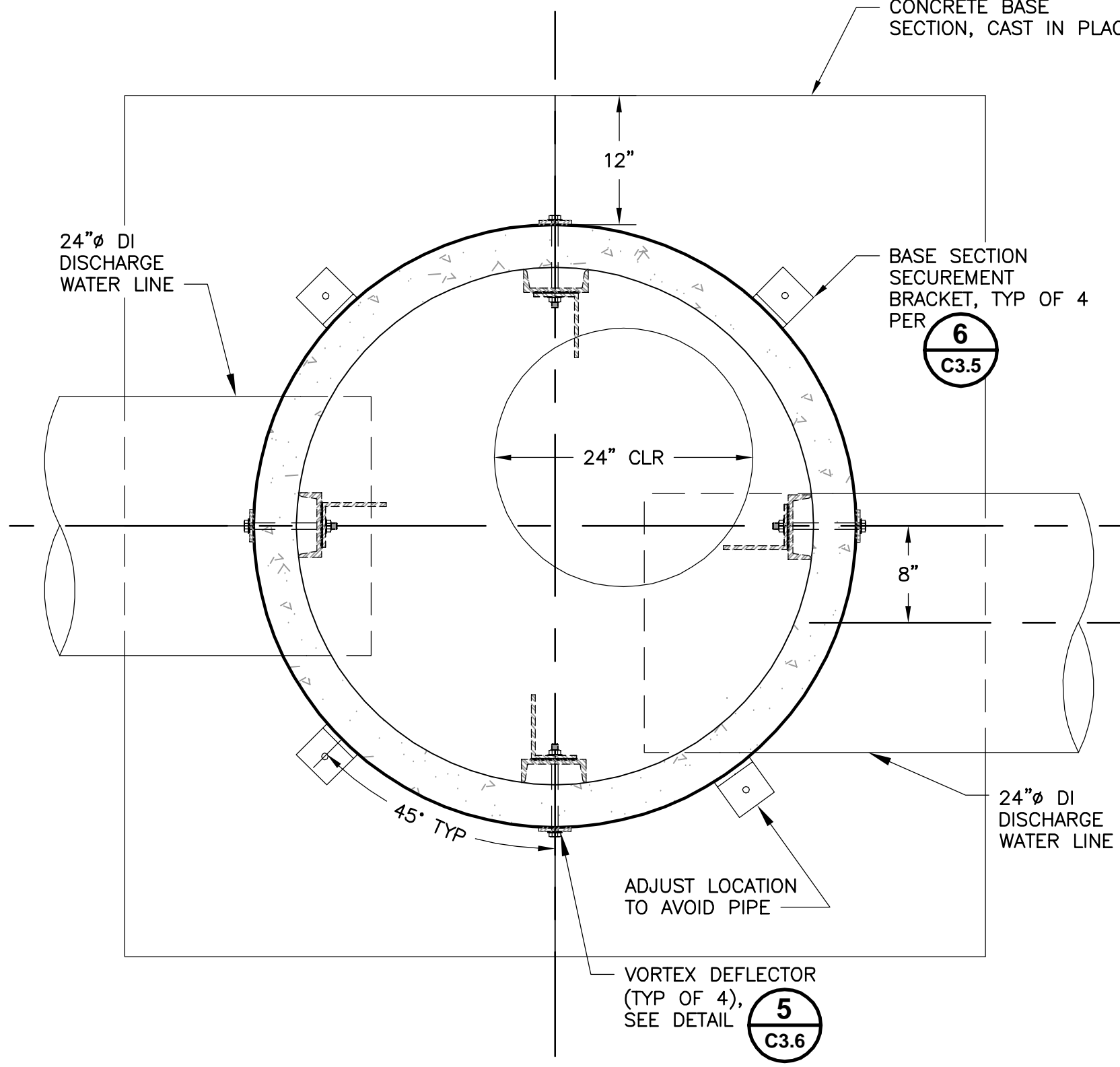
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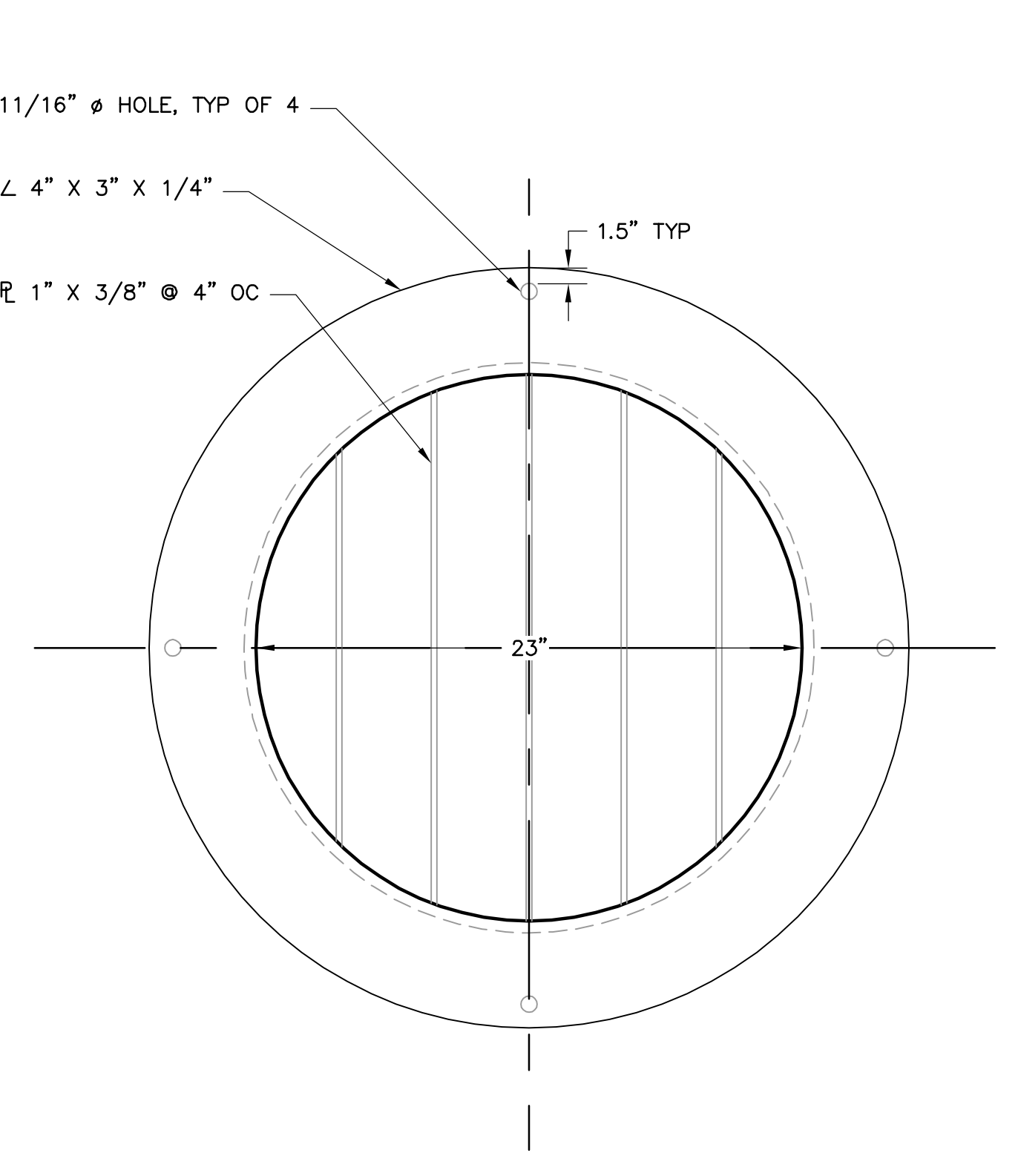
1 ENERGY DISSIPATER SECTION
 C3.6 SCALE: 1" = 1'



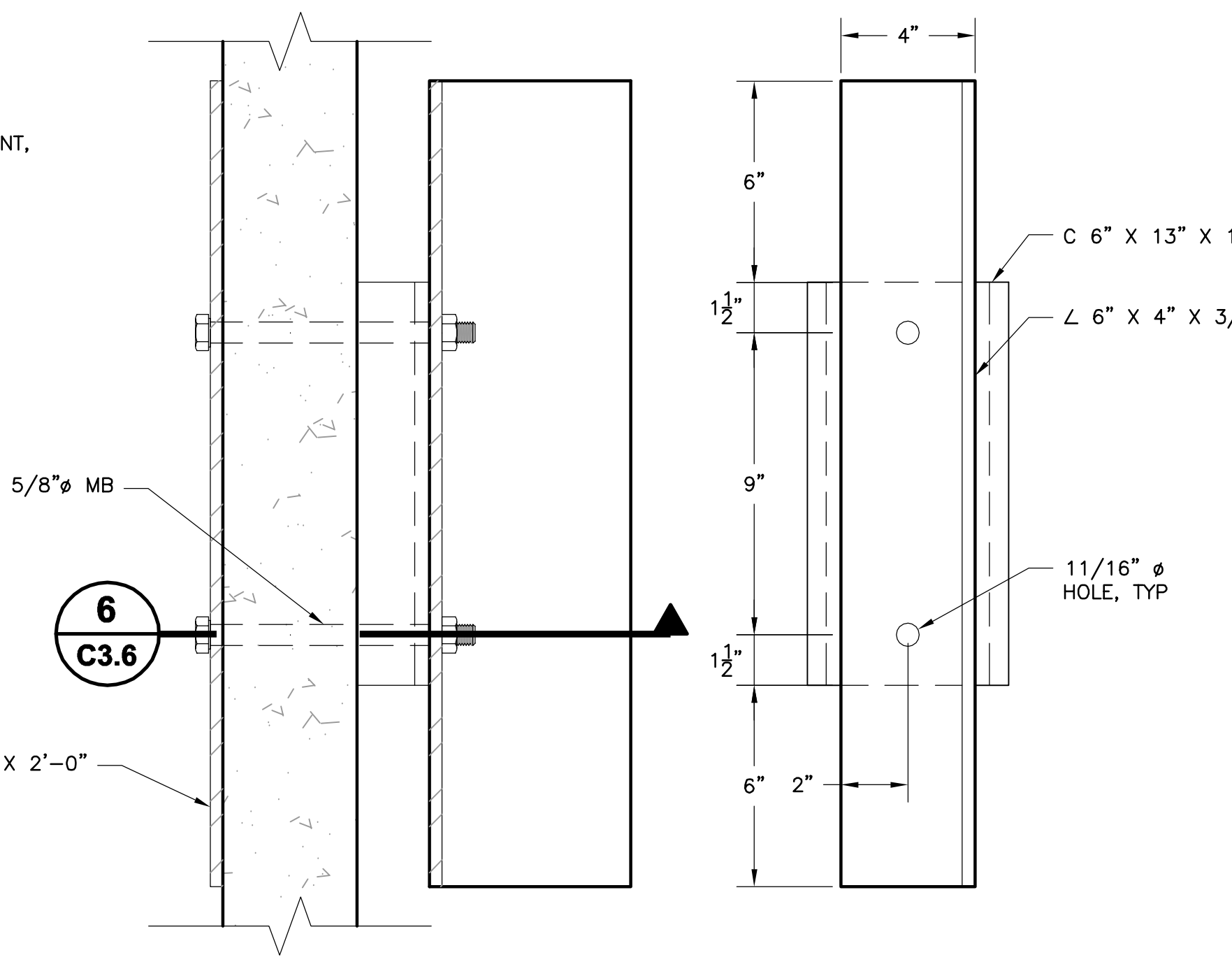
4 STEEL MANHOLE GRATE CONNECTION
 C3.6 SCALE: 3" = 1'



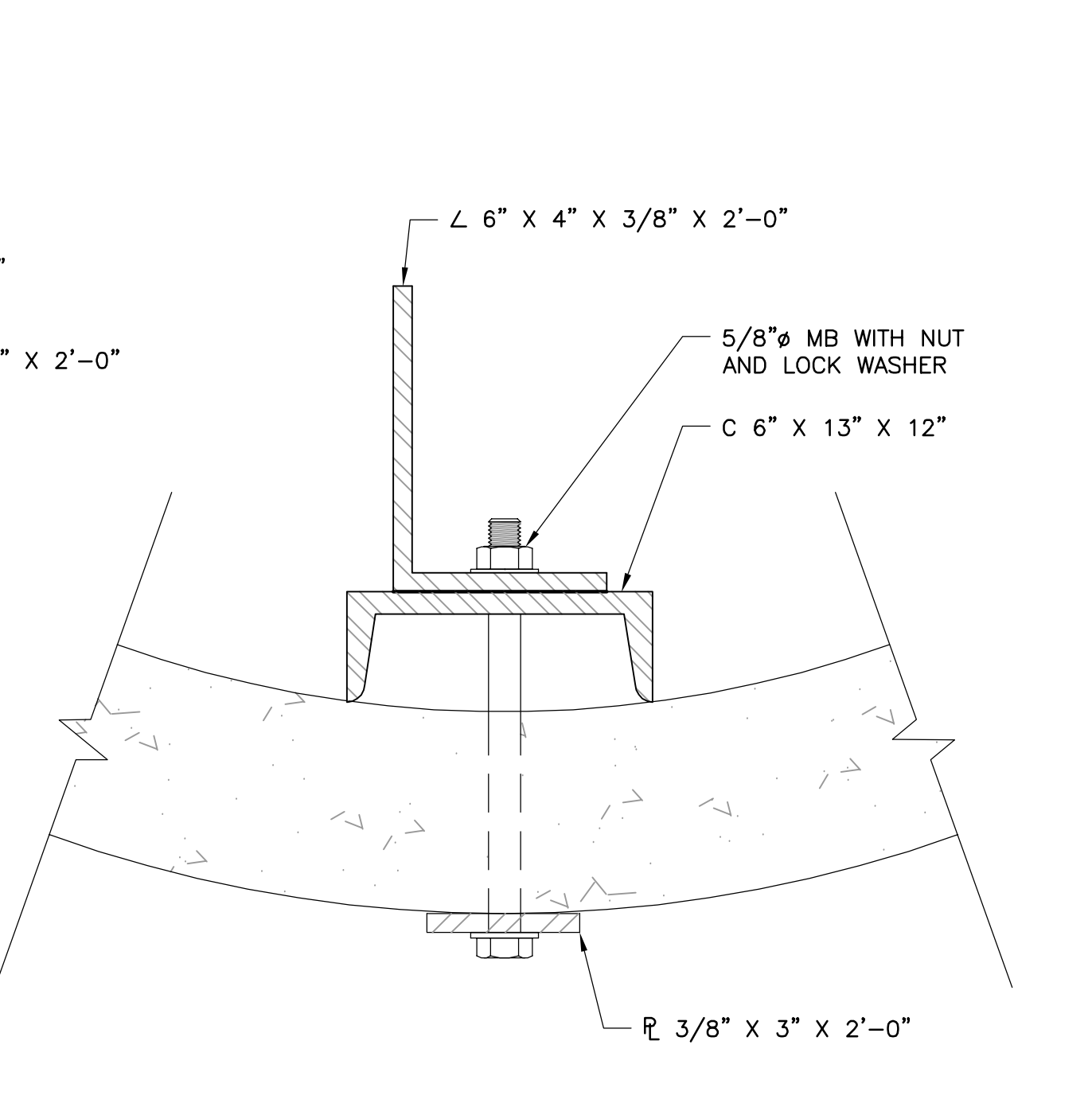
2 ENERGY DISSIPATER PLAN
 C3.6 SCALE: 1" = 1'



3 STEEL MANHOLE GRATE
 C3.6 SCALE: 2" = 1'



5 VORTEX DEFLECTOR
 C3.6 SCALE: 3" = 1'



6 VORTEX DEFLECTOR CONNECTION
 C3.6 SCALE: 4" = 1'

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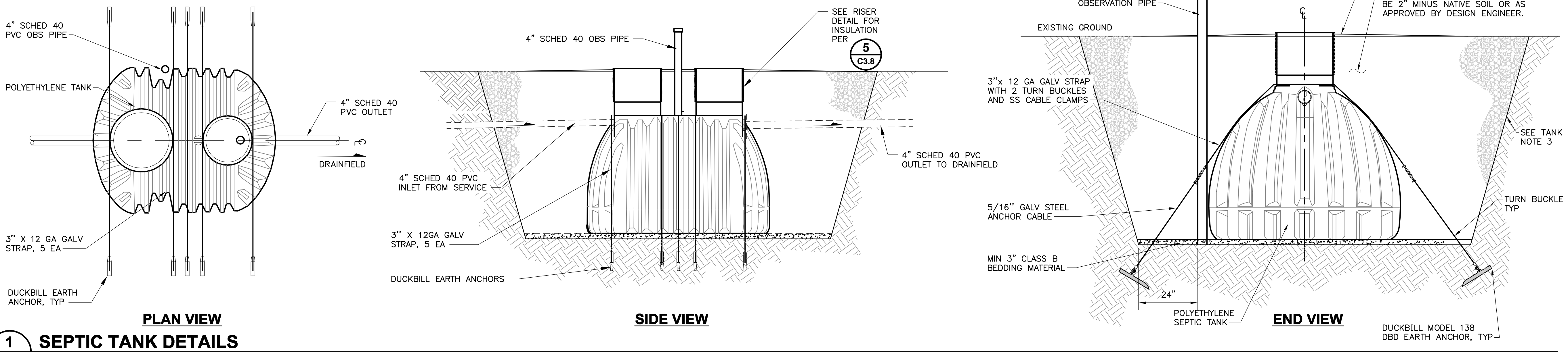
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PYRAMID WTP
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 ENERGY DISSIPATER DETAILS

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1 SEPTIC TANK DETAILS
SCALE: 1" = 2'

TANK NOTES:

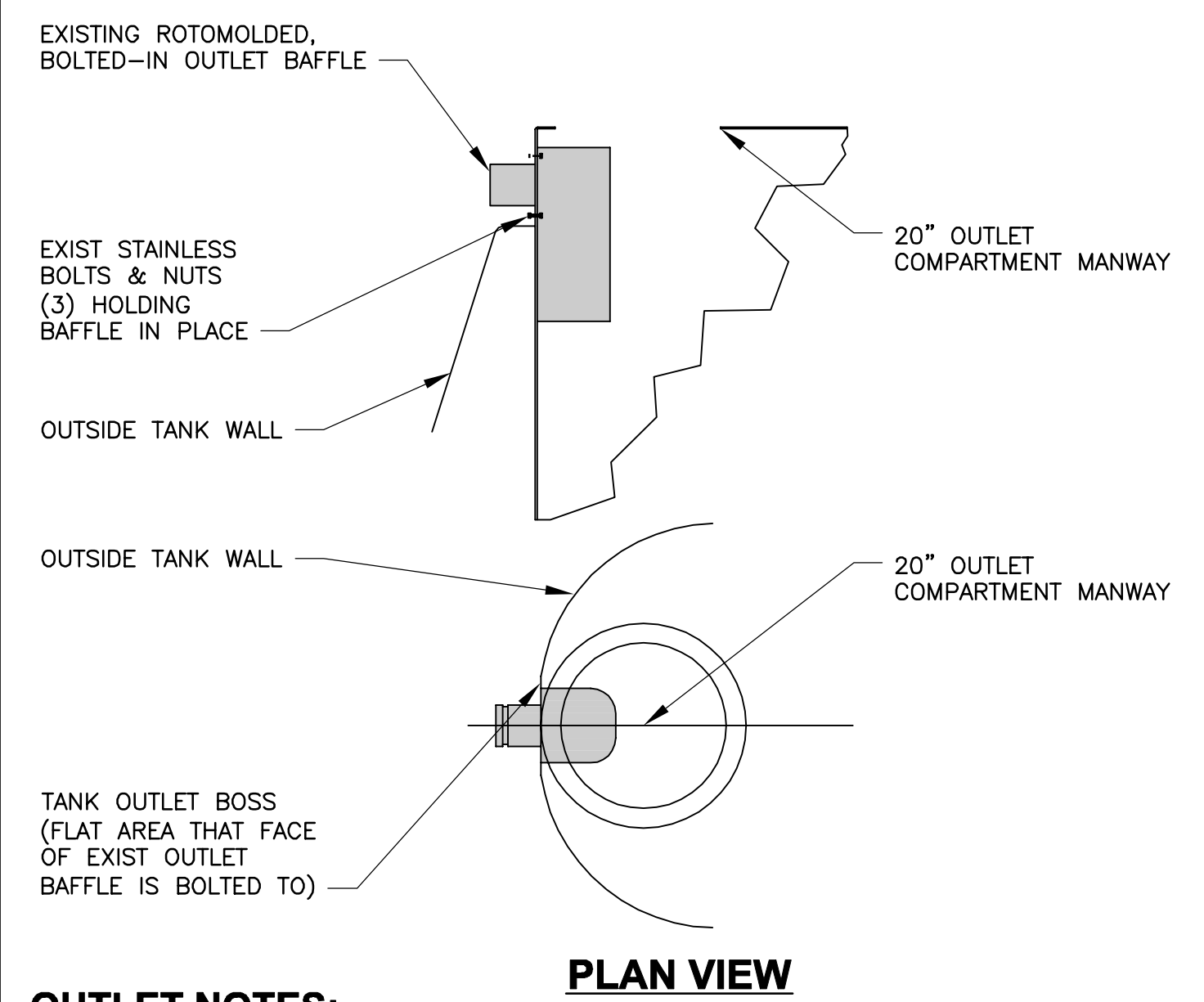
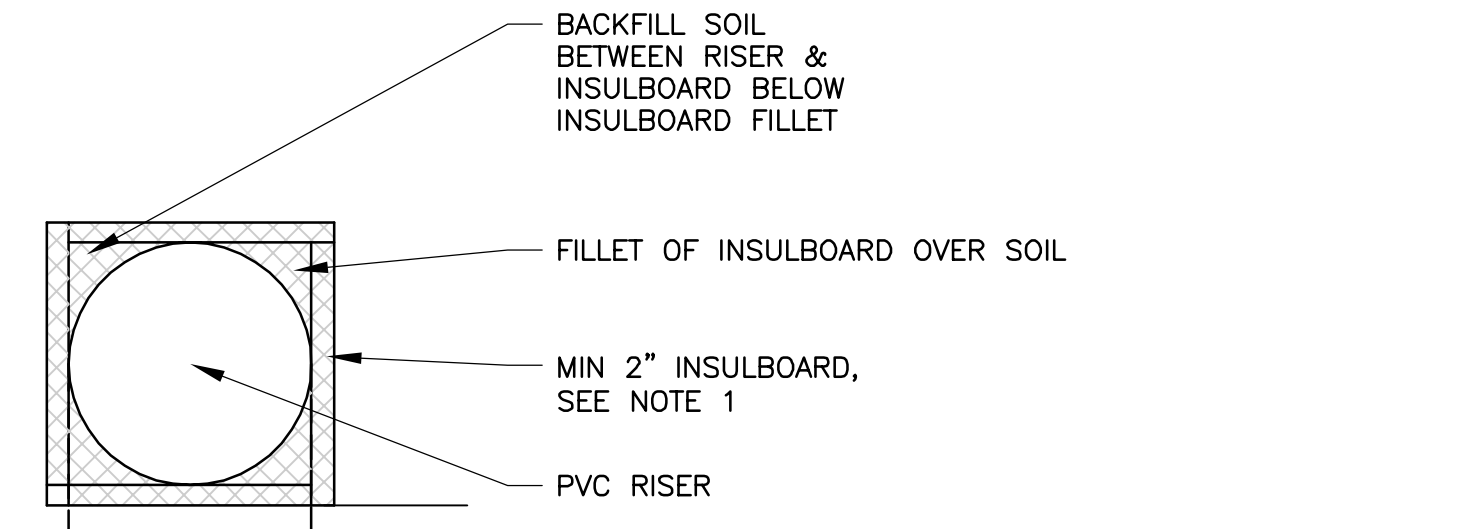
- TANK SHOWN IS A 1,000 GAL TANK. INSTALLER SHALL FOLLOW DIRECTIONS OF PLAN SHEET FOR PROPER TANK SELECTION AND PLACEMENT.
- INSTALL TANK IN ACCORDANCE WITH ALL MANUFACTURER INSTRUCTIONS, GUIDELINES AND RECOMMENDATIONS.
- PLACE AND COMPACT BACKFILL AROUND TANK IN MAXIMUM 12" LOOSE LIFTS. PLACE AND COMPACT BACKFILL TO BOTTOM OF INLET AND OUTLET PIPE FOR FULL SUPPORT BEFORE INSTALLING PIPES INTO AND OUT OF TANK.
- EXTEND BACKFILL TO 1" BELOW BOTTOM OF RISER LID, SLOPE AWAY FROM TANK AT MINIMUM 2% FOR 5- FEET TO DIRECT RUN-OFF AWAY FROM RISER.
- TANK ANCHORS SHALL BE DUCKBILL 138DBD OR APPROVED EQUAL.
- EACH TANK SHALL HAVE 5 ANCHOR STRAPS, LOCATED AS SHOWN ON THE TANK DETAILS.
- MINIMUM WIRE ROPE WORKING LIMIT SHALL BE 1,960 LBS.
- HOLD-DOWN TURNBUCKLES SHALL BE 1/2" X 6" GALVANIZED. MINIMUM TURNBUCKLE WORKING LOAD LIMIT SHALL BE 2,200 LBS.

SEPTIC TANK INFORMATION

- SEPTIC TANK SHALL BE GREER POLYETHYLENE TANK OR APPROVED EQUAL.
- THE SEPTIC TANK SHALL BE A 1,000 GALLON, 2-COMPARTMENT TANK.
- RETRO-FIT THE OUTLET OF TANK TO ACCEPT THE BEAR MODEL 910 OUTLET FILTER AS INDICATED IN DETAIL 4 ON THIS SHEET.

SEPTIC TANK BUOYANCY CALCULATIONS

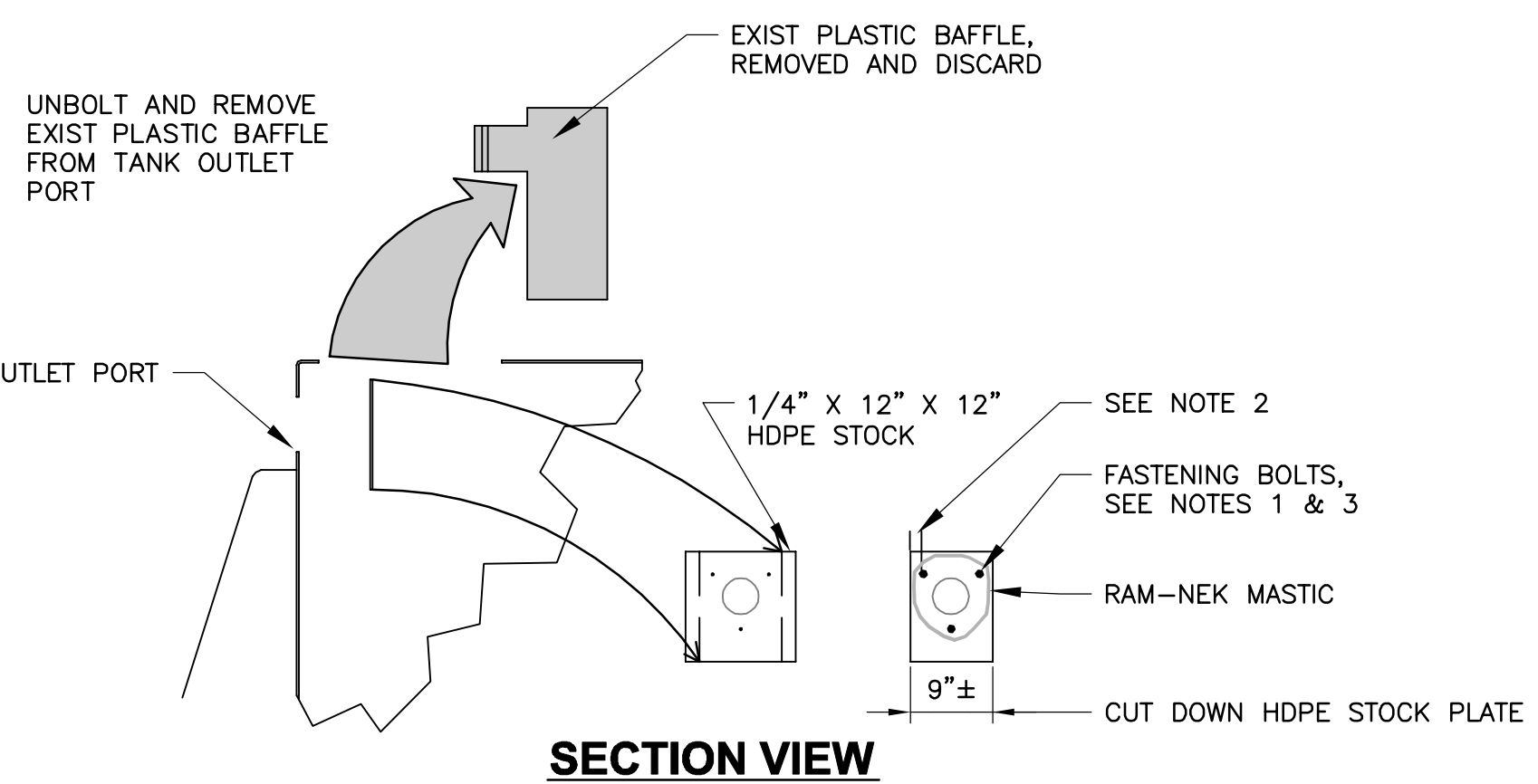
1,000 GALLON TANK	
GROSS TANK VOL (GALS)=	1,200
TANK UPLIFT FORCE (LBS)=	10,008
TANK FOOTPRINT (SF)=	55.25
COVER SOIL DEPTH (FT)=	2
COVER SOIL (LBS/CF)=	100
COVER SOIL (TOTAL LBS)=	11,050
TANK WEIGHT (LBS)=	558
RESULTANT FORCE (LBS)=	+1,600



OUTLET NOTES:

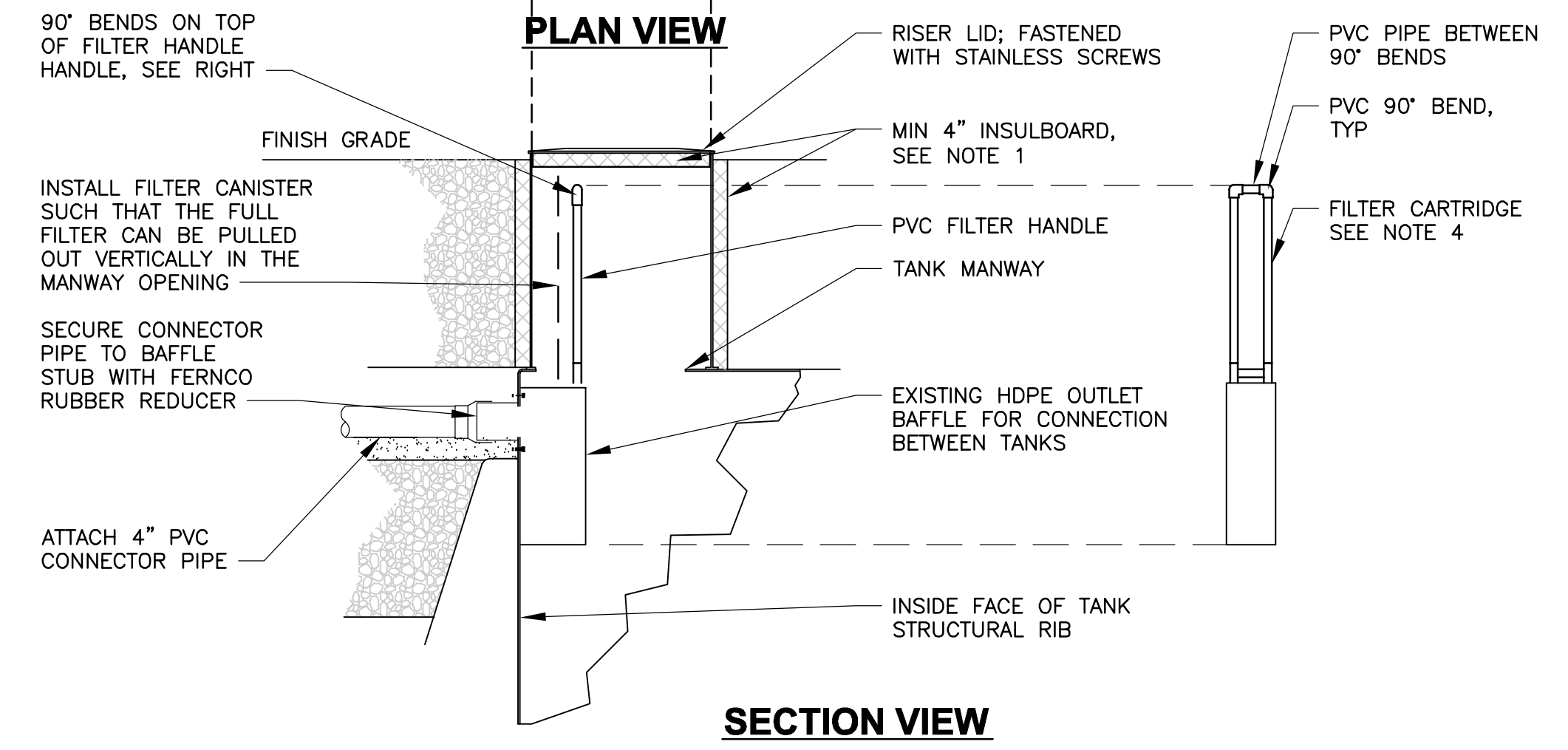
- EXAMINE TANK UPON ARRIVAL TO ENSURE IT IS IN GOOD CONDITION AND THAT ALL TANK COMPONENTS ARE PRESENT.
- REMOVE EXISTING ROTOMOLDED TANK OUTLET BAFFLE FROM DOSING TANK ONLY, BY REMOVING BOLTS AND NUTS SECURING BAFFLE TO TANK BOSS. RETAIN BOLTS AND NUTS TO SECURE HDPE STOCK TO TANK. SAVE BOLTS & NUTS FOR REUSE.

2 TANK MODIFICATIONS TO FIT OUTLET FILTER
SCALE: 1" = 2'



BAFFLE REPLACEMENT NOTES:

- USE SAME BOLTS SECURING EXISTING BAFFLE IN PLACE TO INSTALL & FASTEN HDPE STOCK PLATE TO INSIDE TANK BOSS.
- CUT 1/4" HDPE STOCK WIDTH TO FIT INSIDE TANK BOSS DIMS. ENSURE MIN 1" STOCK MATERIAL FROM EDGE BOLT HOLE TO EDGE STOCK PLATE.
- COPY BOLT PATTERN ONTO HDPE STOCK PLATE. CUT HDPE STOCK TO FIT WIDTH OF OUTLET BOSS. HOLD CUT HDPE UP TO OUTLET BOSS AND TRACE BOLT AND OUTLET PORT HOLES ONTO HDPE STOCK PLATE.
- CUT HOLE IN HDPE STOCK PLATE, CENTERED ON TANK OUTLET HOLE, TO DIAMETER SPECIFIED BY GROMMET SUPPLIER.
- INSTALL PIPE GROMMET IN HOLE. CUT OUTSIDE OF GROMMET AS REQUIRED TO ALLOW FASTENING BOLTS TO FIT EXISTING HOLES IN TANK OUTLET BOSS.
- INSTALL MASTIC (RAM-NEK OR APPROVED EQUAL) ON HDPE STOCK PLATE OUTSIDE BOLTS.
- INSTALL AND BOLT HDPE STOCK PLATE WITH GROMMET INTO TANK BOSS.



TANKS RISER NOTES:

- INSTALL MIN 4" HI-DENSITY, CLOSED CELL INSULBOARD; DOW HI-40 OR DESIGN ENGINEER APPROVED EQUAL. FOLLOW INSTALLATION DIRECTIONS OF RISER INSULATION DETAIL.
- FURNISH & INSTALL BEAR MODEL 910 EFFLUENT FILTER AVAILABLE THROUGH BEAR ONSITE AT 877-653-4583
- MEASURE SUPPORT LEG LENGTH FROM FILTER & INSTALL TO ENSURE FILTER DOES NOT FATIGUE DISCHARGE PIPE.
- INSTALL SCHED 40 PVC FILTER CARTRIDGE HANDLE EXTENSION TO WITHIN 6" OF BOTTOM RISER LID. INSTALL 90° BENDS & CONNECTOR PIPE AT TOP.
- SECURE ORENCO RISER ADAPTER TO TOP OF TANK WITH STAINLESS FLATHEAD WOOD SCREWS MATCHING SIZE OF ORIGINAL LID LAG BOLTS. SEE RISER ATTACHMENT DETAIL.

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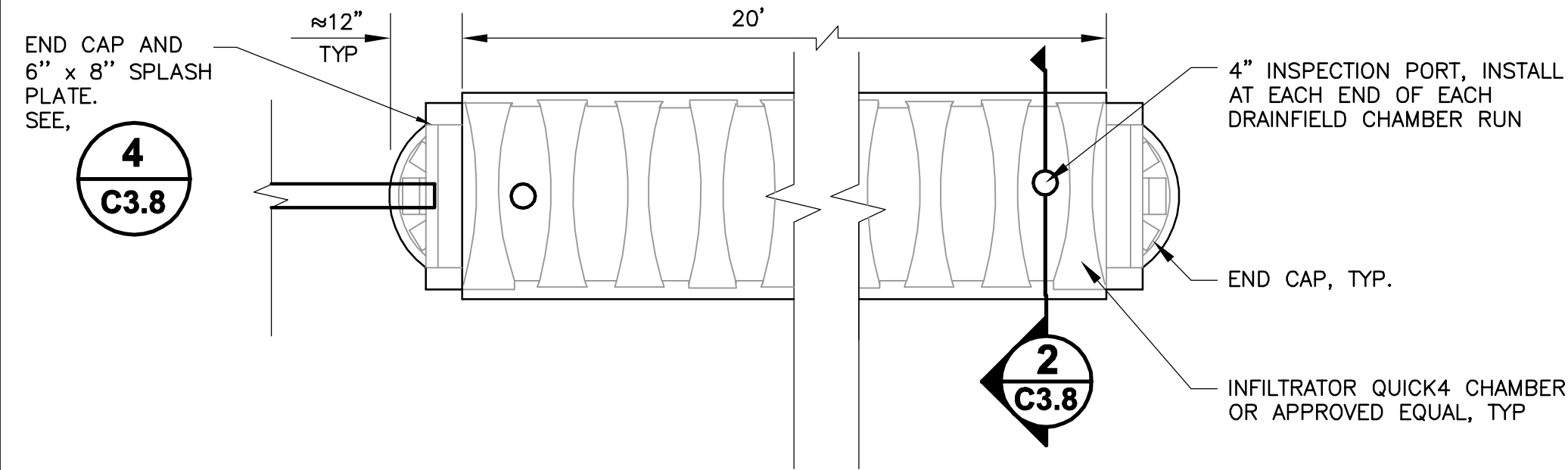


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 UNALASKA, ALASKA
 SEPTIC TANK
 DETAILS

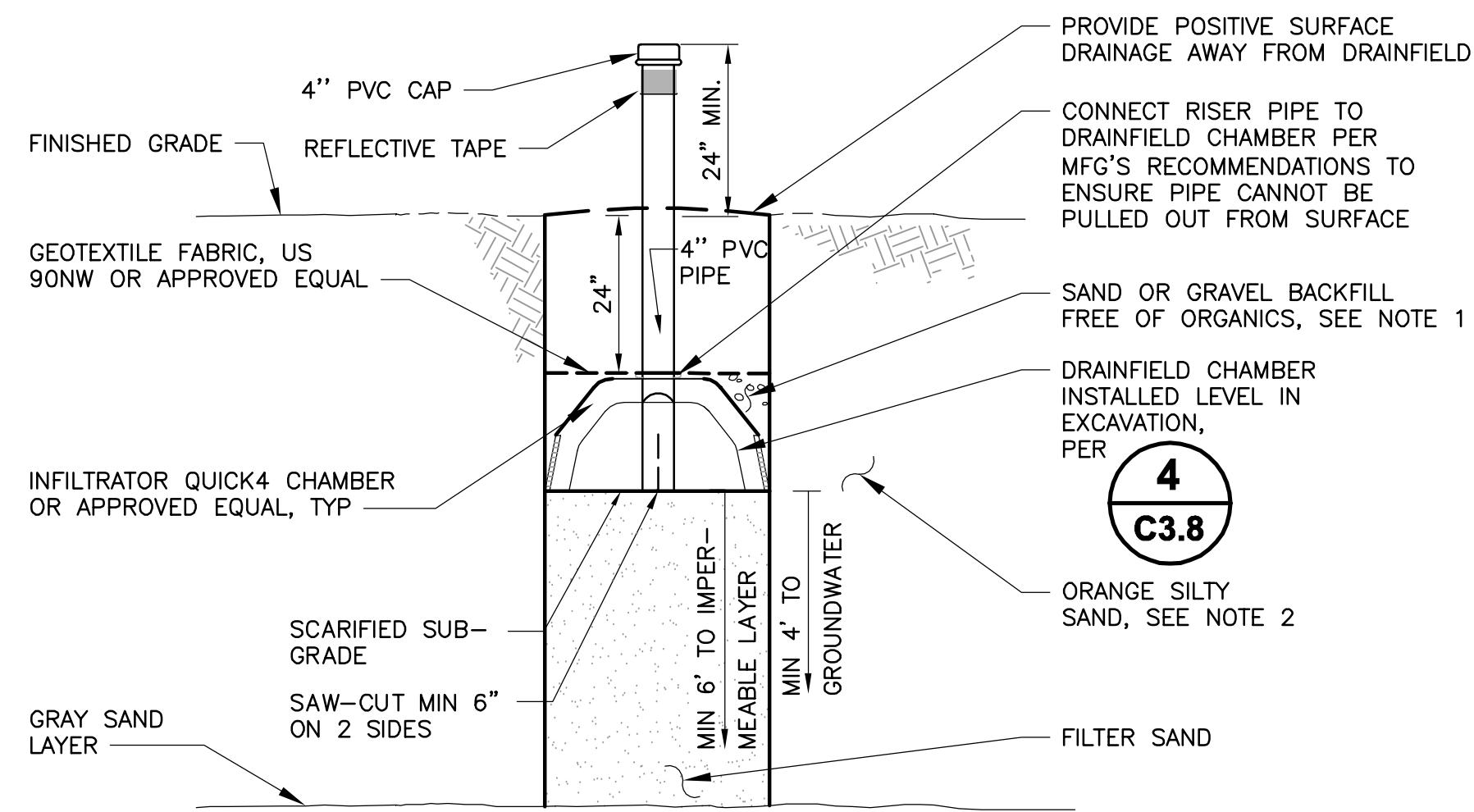
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1 SEPTIC DRAINFIELD CHAMBER LAYOUT
 SCALE: 1" = 2'



CHAMBERED BED NOTES:

1. FILL AROUND OUTSIDE AND BETWEEN CHAMBERS WITH SEWER ROCK TO PREVENT INFILTRATION OF FINES INTO CHAMBER LOUVERS AND PROVIDE FULL FIELD INFILTRATION.
2. EXCAVATE THROUGH ORANGE SILTY SAND HORIZON TO GRAY SAND BELOW. PER GEOTECH REPORT BACKFILL TO 7.5 FT BELOW FINISH GRADE WITH LOCAL SAND CONTAINING LESS THAN 5% FINES AND NO PARTICLES GREATER THAN 1" DIAMETER.

2 TYPICAL DRAINFIELD TRENCH SECTION
 SCALE: 1" = 2'

DRAINAGE FIELD NOTES:

1. ALL WORK SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN INSTALLER CURRENTLY CERTIFIED AND IN GOOD STANDING WITH THE ADEC OR A LICENSED PE IN THE STATE OF ALASKA.
2. NO VEHICLE TRAFFIC SHALL BE ALLOWED ON THE DRAINFIELD AREAS PRIOR TO, DURING OR AFTER CONSTRUCTION.
3. ALL MANHOLES, OBSERVATION PIPES AND CLEANOUTS SHALL BE BROUGHT TO THE SURFACE AND CAPPED OR LIDDED AS SHOWN ON THE DRAWING.
4. PROVIDE WATER TIGHT FITTINGS FOR ALL MANHOLE APPURTENANCES, CONNECTIONS AND PENETRATIONS.
5. DEPTH OF BURY FOR ALL SEWER PIPING SHALL BE MIN. 28" TO TOP OF PIPE. WHERE MINIMUM DEPTH CAN NOT BE ATTAINED, FURNISH & INSTALL 1" DOW HI-40, HIGH DENSITY, CLOSED CELL FOAM (NOT WHITE BEAD BOARD) INSULATION OVER PIPE AT PIPE CROWN. PROVIDE 4" WIDTH INSULATION, CENTER ON CROWN OF PIPE.
6. INSTALLER SHALL HAVE ON-SITE, AT ALL TIMES DURING INSTALLATION PROCESS, AN OPTICAL LEVEL OR LASER LEVEL TO ALLOW 1) ACCURATE PLACEMENT OF COMPONENTS AND 2) THE DESIGNER/INSPECTOR TO VERIFY THE ELEVATIONS OF THE SYSTEM COMPONENTS.
7. WITHIN 5 WORKING DAYS OF COMPLETION OF THE PROJECT, THE INSTALLER SHALL PROVIDE TO THE ENGINEER, A SET OF RED-LINED DRAWINGS SHOWING AS-BUILT MEASUREMENTS OF THE COMPLETE SYSTEM INSTALLATION. SWING TIE HORIZONTAL MEASUREMENTS SHALL BE TAKEN FROM THE REFERENCE POINTS. REFERENCE POINTS SHALL BE THE SW AND NW PROPERTY CORNERS OF THE LOTS. AT A MINIMUM, THE FOLLOWING ITEMS SHALL BE LOCATABLE UNDER SNOW CONDITIONS BY USE OF SWING TIES:
 - CENTER OF BUILDING CLEANOUT
 - CENTER OF ALL OBSERVATION PORTS AND MANHOLES AT TANKS
 - CENTER OF ALL LINE CLEANOUTS
 - CORNERS OF EACH DRAINFIELD BED
 - CENTER OF ALL PIPE BENDS, HORIZONTAL & VERTICAL
 - CENTER OF ALL MONITORING PIPES
 - CENTER OF ALL FLOW DIVIDERS/VAULTS
8. ALL MEASUREMENTS SHALL BE TAKEN TO THE NEAREST 1/100 FOOT (1/8 INCH). MEASUREMENTS SHALL BE, WHEREVER POSSIBLE, LESS THAN 100 FT. TAPE SHALL BE HELD TAUT TO PROVIDE AS ACCURATE A MEASUREMENT AS POSSIBLE.
9. VERTICAL ELEVATION MEASUREMENTS SHALL BE TAKEN, BASED ON FINISH FLOOR OF THE BLDG AT THE FOLLOWING POINTS MINIMUM:
 - INLET AND OUTLET OF TANK, TOP OF PIPE EACH CLEANOUT BEGINNING, MIDPOINT AND END OF EACH DRAINFIELD BED AT:
 - ELEVATION OF BOTTOM OF DRAINFIELD BEDS
 - ELEVATION OF BOTTOM OF LATERAL PIPES
 - ELEVATION OF FINISHED GRADE

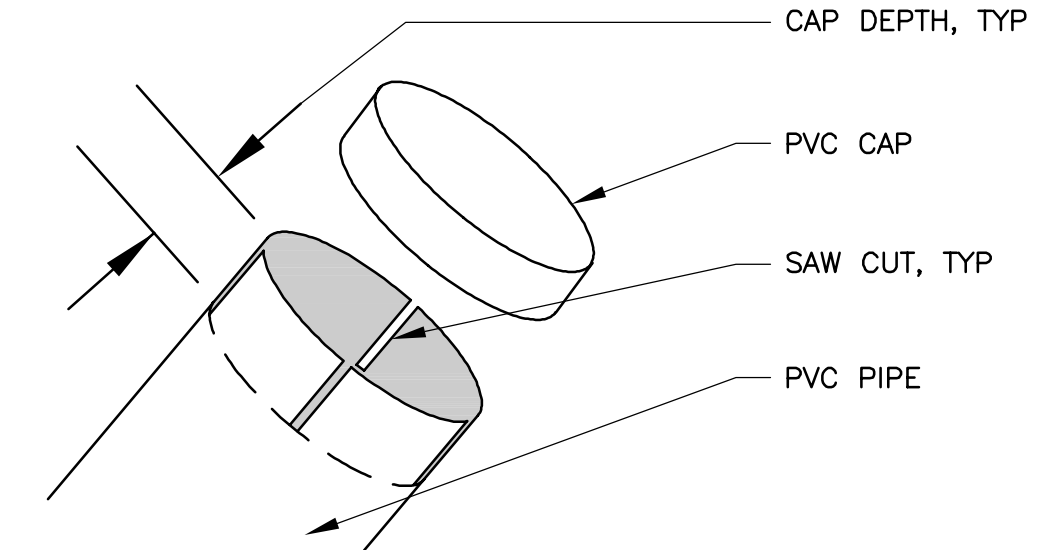
SYSTEMS DESIGN CRITERIA

APPLICATION RATE IS BASED ON TABLE 7 OF THE ADEC INSTALLERS MANUAL FOR CONVENTIONAL ONSITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS.

BUILDING	OCCUPANTS	UNIT FLOW	EST. PEAK FLOW
TREATMENT PLANT	1-30 MIN/DAY	4 GPD	26 GPD

SOIL CLASSIFICATION= SANDY LOAM AR= 0.5 G/SF/D
 DRAINFIELD AREA= 26 GPD/0.5 G/SF/D= 52 SF
 # INFILTRATOR QUICK4 STD CHAMBERS=
 26 SF/11.32 SF/CHAMBER= 4.6 (USE 5)

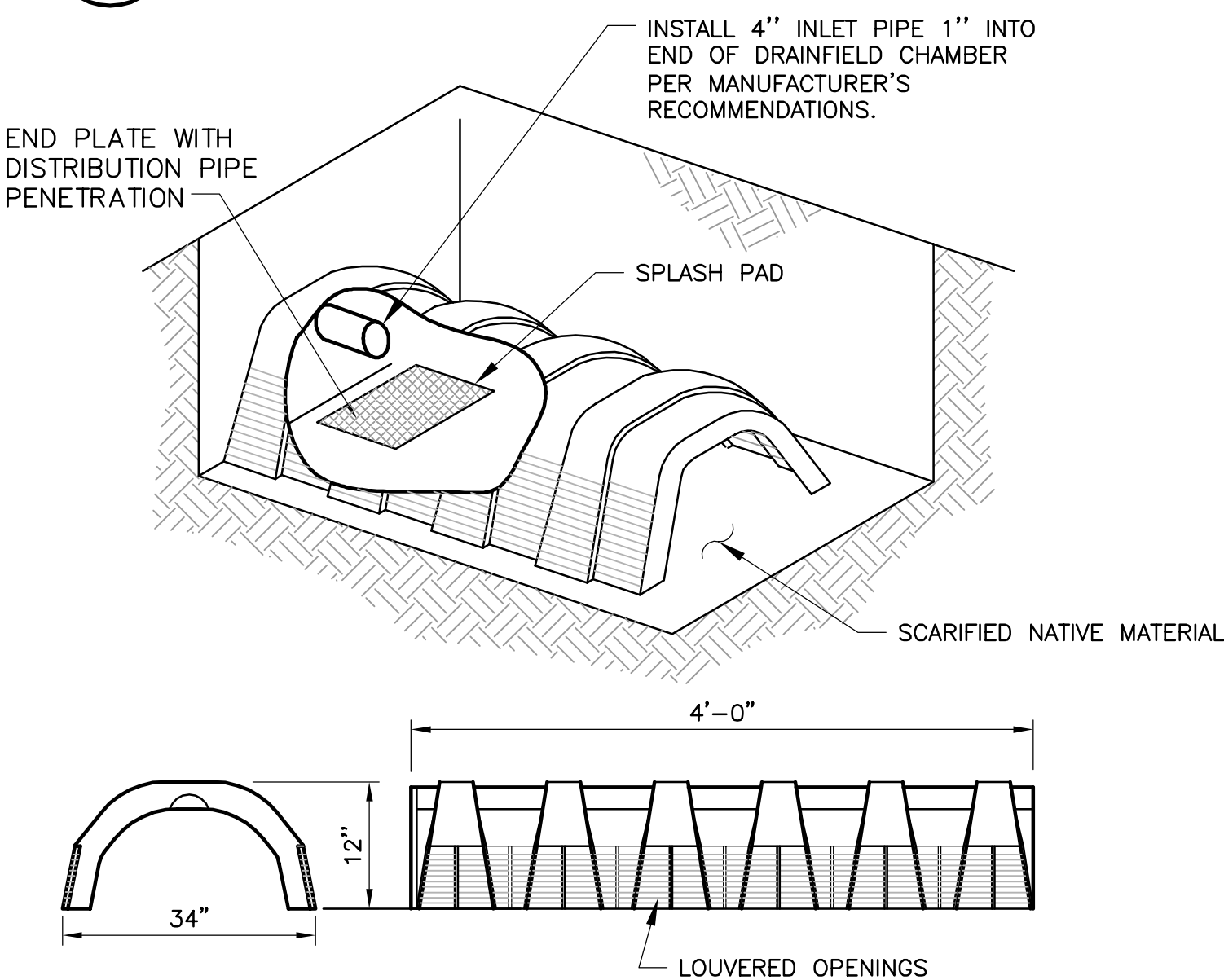
10. SEPTIC TANKS SHALL CONFORM WITH ALL ADEC REQUIREMENTS, AND BE INSTALLED IN ACCORDANCE WITH ALL MANUFACTURER'S DIRECTIONS.
11. GRAVITY SLOPE FOR ALL SYSTEM PIPING (FROM BUILDING TO SEPTIC TANK AND FROM SEPTIC TANK TO DRAINFIELD) SHALL BE 2% MIN, 10% MAX. SLOPE OF INFILTRATORS IN DRAINFIELD SHALL BE LEVEL (0%). THE INVERT AND TOP & BOTTOM Baffle ELEVATION OF THE SEPTIC TANK INLET, INTERMEDIATE Baffle AND OUTLET SHALL CONFORM TO THE REQUIREMENTS OF REFERENCE (12), 18 AAC 72.950.
12. THE INSTALLER SHALL GIVE THE ENGINEER A MINIMUM OF 48 HOURS PRIOR NOTICE FOR EACH OF THE FOLLOWING 3 SYSTEM INSTALLATION INSPECTIONS:
 - A. AFTER THE TANK HAS BEEN SET AND DRAINFIELD BEDS HAVE BEEN DUG AND SCARIFIED,
 - B. AFTER ROCK/CHAMBERS AND PIPING HAVE BEEN PLACED AND BEFORE ANY BACKFILLING OVER PIPE, AND
 - C. AFTER FINAL BACKFILL HAS PLACED, FOR FINAL INSPECTION.
13. INSTALLER SHALL SCARIFY DRAINFIELD TRENCH BOTTOM OVER FULL SURFACE WITH STEEL YARD RAKE (NOT SPRING LEAF RAKE) TO BREAK UP ANY SMearing CAUSED BY THE HOLE BUCKET. PERFORM SCARIFYING IMMEDIATELY PRIOR TO PLACING CHAMBERS. DO NOT WALK IN TRENCH AFTER SCARIFYING. DO NOT OPERATE EQUIPMENT IN TRENCH.
14. SHAPE FINISHED GRADE SURFACE OF DRAINFIELD AS INDICATED ON SITE PLAN. CREATE SMOOTH FLOW PATTERNS AWAY FROM THE NEW DRAINFIELD AS SHOWN BY DRAINAGE ARROWS ON PLAN SHEET.
15. ALL COMPONENTS INCORPORATED INTO THIS INSTALLATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MFG'S/SUPPLIER'S RECOMMENDATIONS, INSTRUCTIONS AND GUIDELINES. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLER TO BE FAMILIAR WITH THESE REQUIREMENTS, AND TO HAVE COPIES OF THE INSTRUCTIONS ON HAND, ON SITE, AT ALL TIMES WHILE INSTALLING, ADJUSTING OR TESTING THE COMPONENT.
16. DO NOT INSTALL ANY COMPONENTS IN A FLOODED EXCAVATION.
17. COMPACT SOIL BELOW ADV VAULT (2 FT HORZ ALL DIRECTIONS) TO MIN 95% MAX DRY DENSITY.



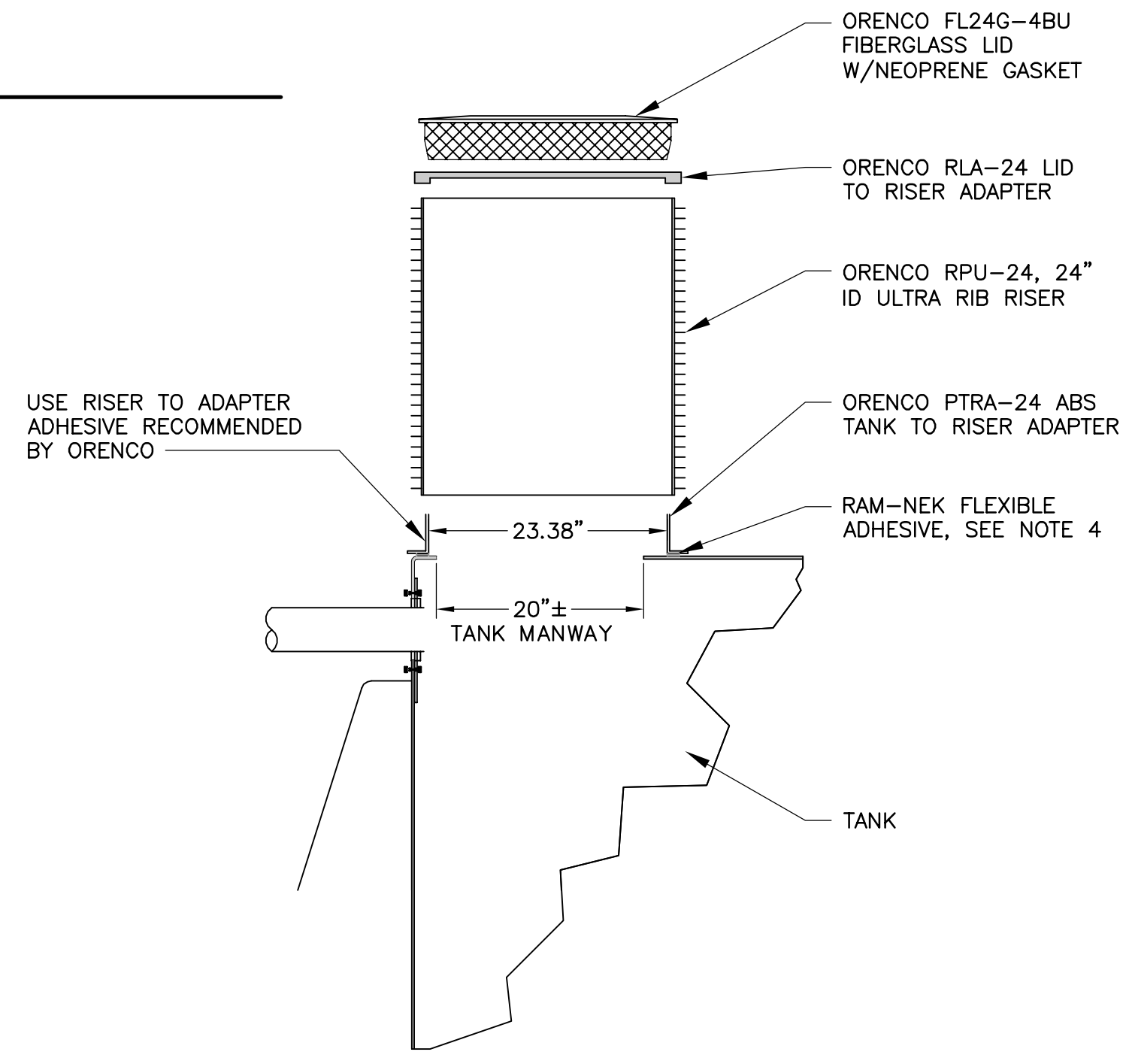
RISER PIPE CAP NOTES:

1. SAW CUT THE TOP OF THE PIPE THE DEPTH OF THE CAP, ON THE QUADRANTS OF THE PIPE TO ALLOW EASE OF CAP REMOVAL IN THE FUTURE.
2. DETAIL APPLIES TO ALL OBSERVATION PORTS AND RISER PIPES
3. USE THIS SAME CAP DETAIL FOR THE 12" VALVE VAULT FOR THE FLUSHING ASSEMBLIES.

3 RISER AND SMALL VAULT CAP
 SCALE: NOT TO SCALE



4 DRAINFIELD CHAMBER
 SCALE: 1" = 2'



TANK RISER NOTES:

1. USE EXISTING LID HOLES IN TOP OF TANK AT MANWAY IF POSSIBLE. CHECK HOLE DISTANCE FROM OPENING AND VERIFY THAT LAG BOLT HEADS WILL NOT INTERFERE WITH INSTALLATION OF RISER TO ADAPTER. COPY EXISTING LID BOLT HOLE PATTERN TO RISER ADAPTER. DRILL LAG BOLT HOLES IN ADAPTER TO MATCH EXISTING PATTERN IN TANK; PATTERN AND SIZE.
2. IF EXISTING LID SECURING BOLT PATTERN IS NOT COMPATIBLE WITH PTR A ADAPTER, DRILL NEW HOLES IN ADAPTER TO ALLOW USE OF EXISTING GALVANIZED LAG BOLTS. DRILL PILOT HOLES IN TOP OF TANK MANWAY FOR LAG BOLTS.
3. PTR A ADAPTER DOES NOT HAVE TO BE CENTERED OVER TANK MANWAY; FIELD FIT ADAPTER TO PROVIDE BEST FIT FOR BOLTING ADAPTER TO TANK, WHILE MAINTAINING FULL CIRCLE OF TANK MANWAY OPENING VISIBLE.
4. INSTALL FULL RING OF RAM-NEK ADHESIVE AROUND BASE OF ADAPTER BEFORE BOLTING TO TANK.
5. USE EXISTING GALVANIZED LAG BOLTS TO SECURE ADAPTER TO TOP OF TANK MANWAY.
6. INSTALL ALL COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
7. IF MANUFACTURER OTHER THAN ORENCO IS USED THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL TANK AND APPURTANCE DETAILS FOR APPROVAL.

5 TANK RISER CONFIGURATION
 SCALE: NOT TO SCALE

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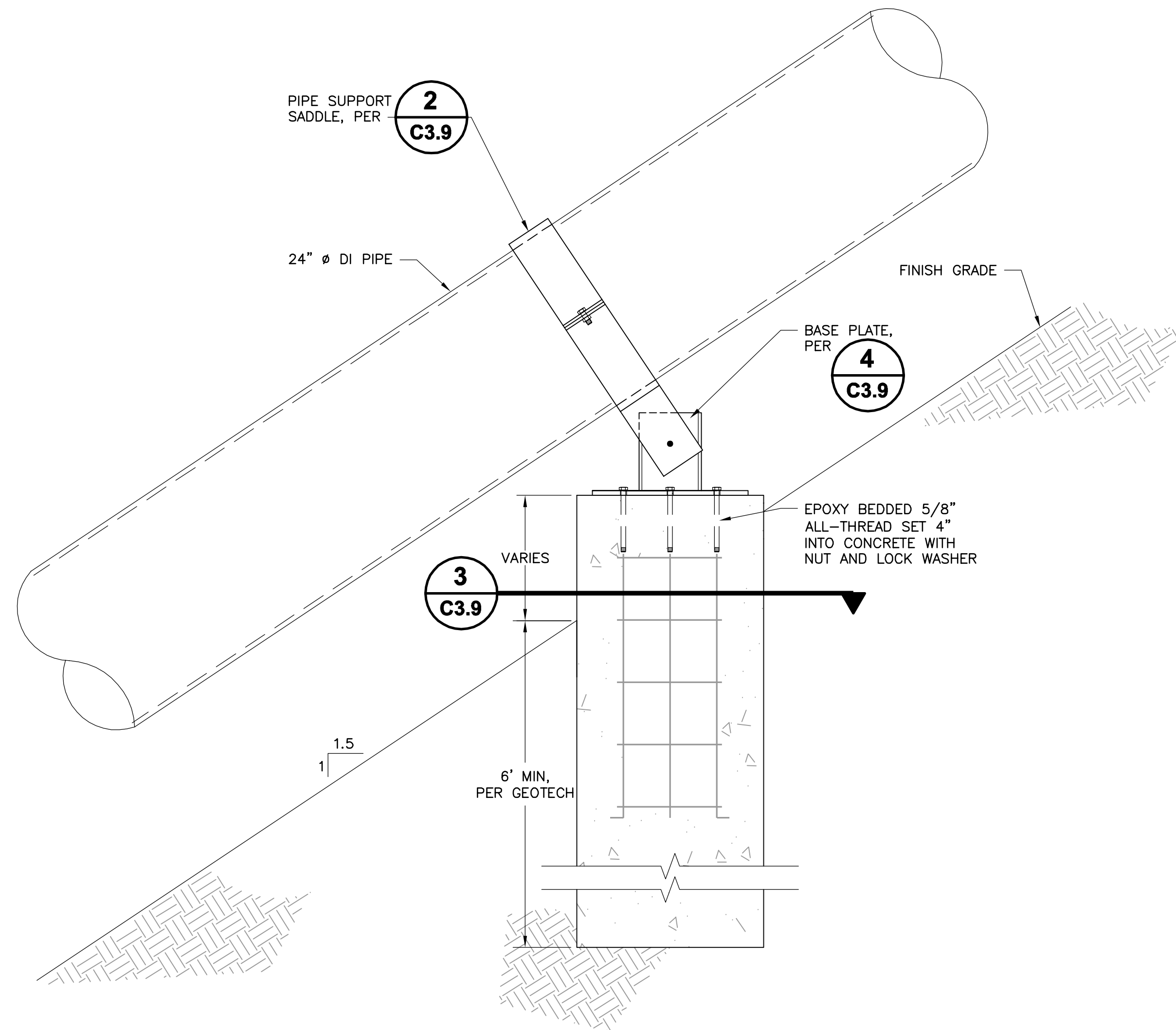
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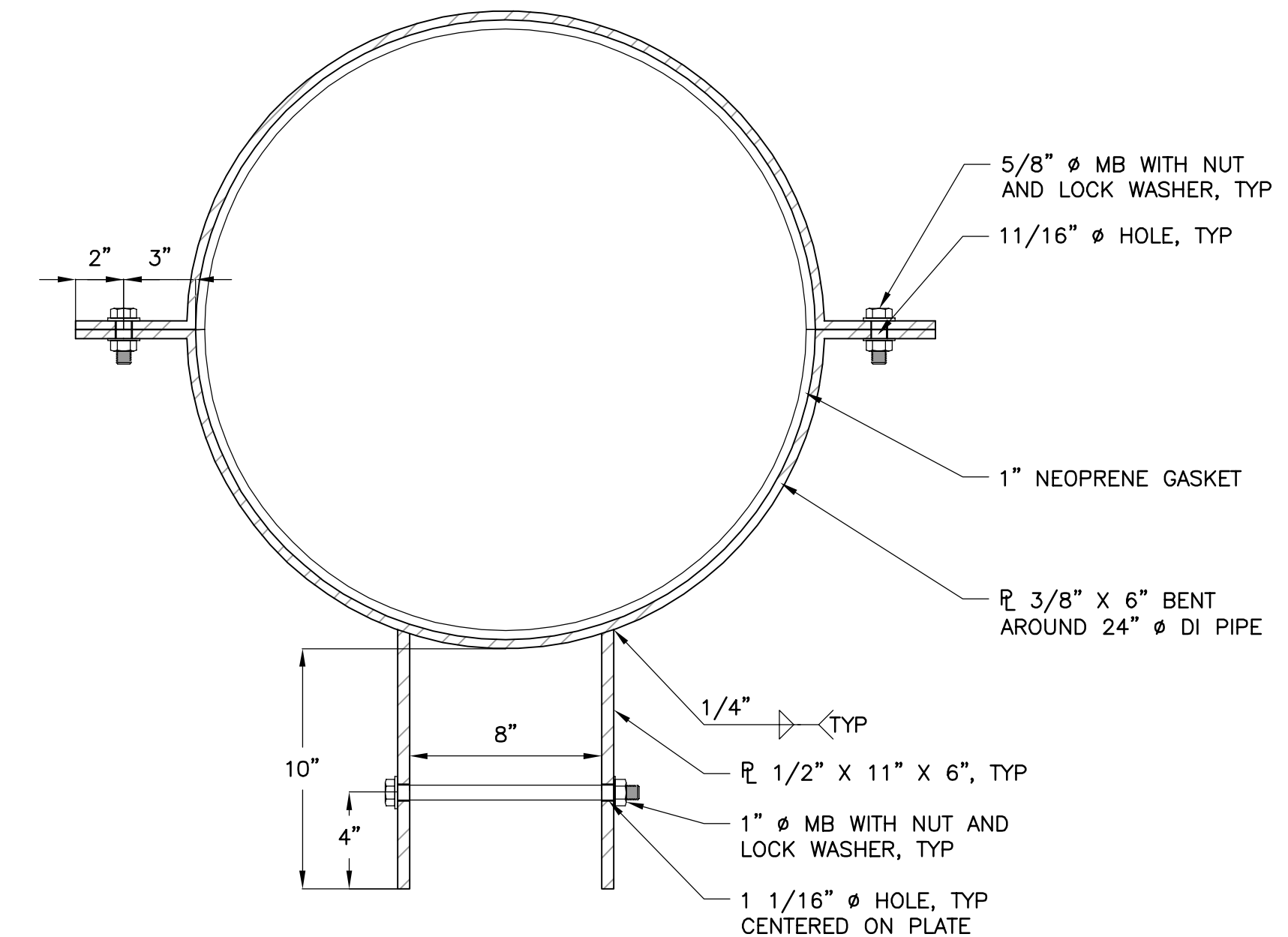
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SEPTIC DRAINFIELD
 DETAILS

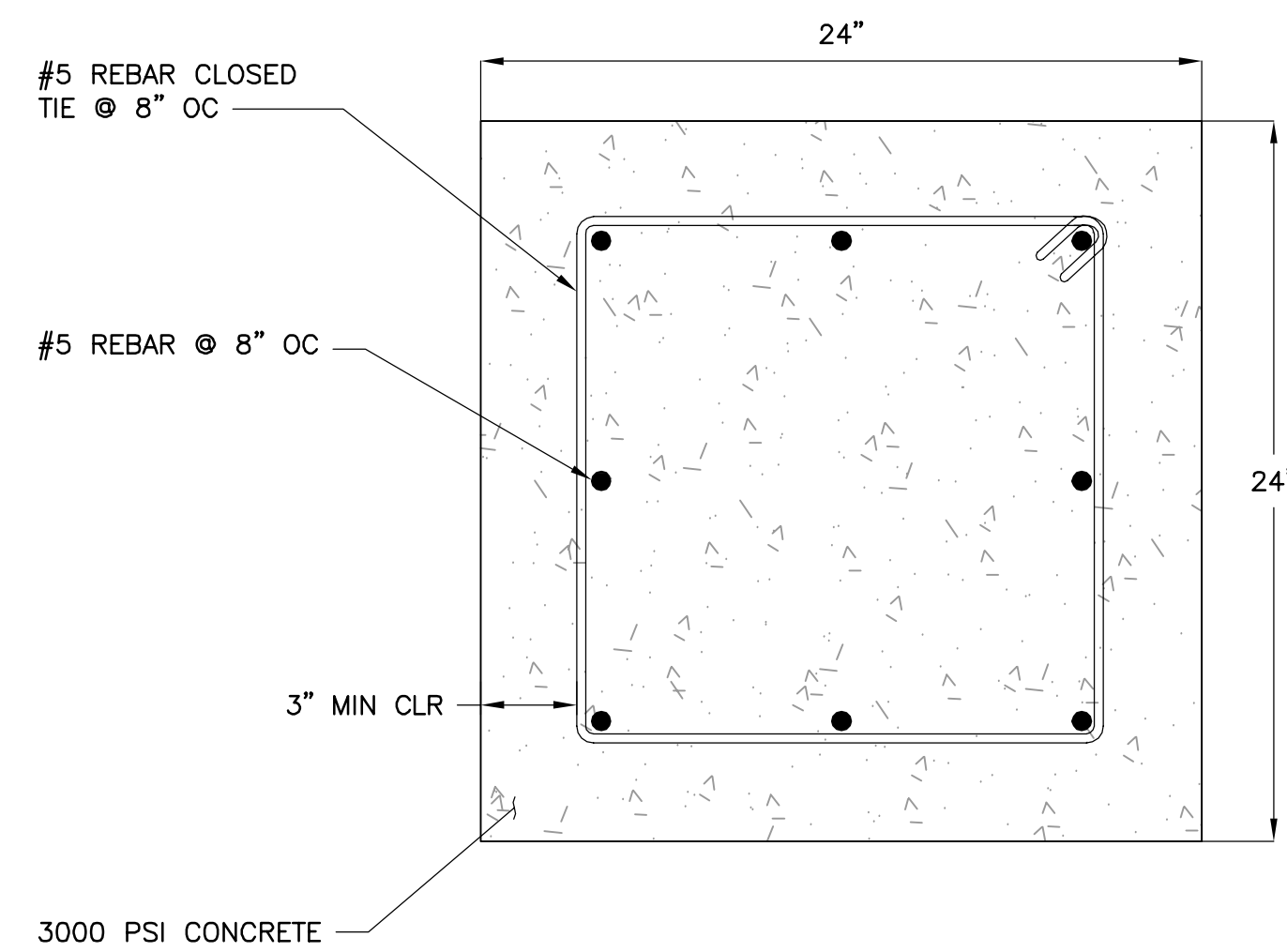
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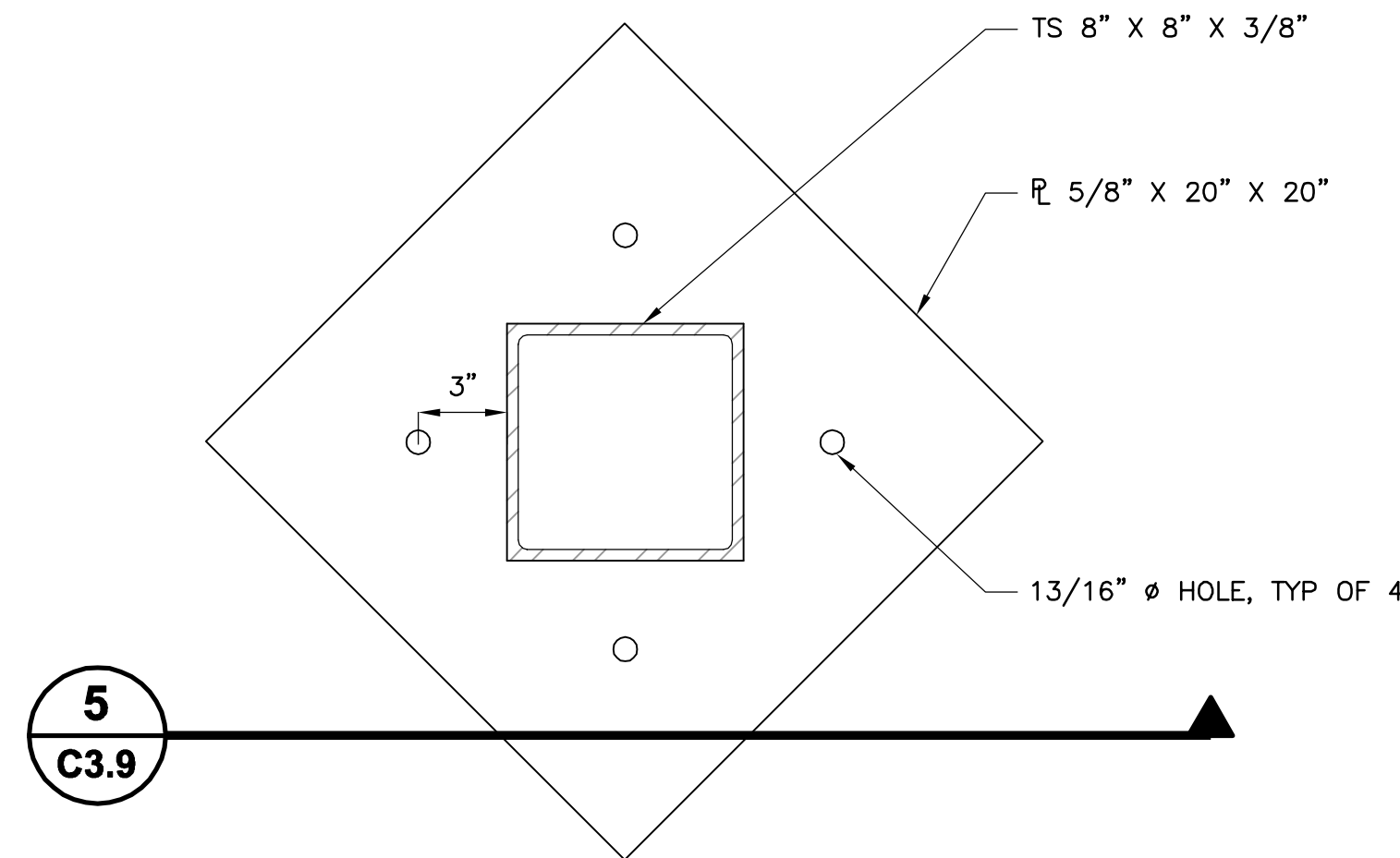
1 PIPE SUPPORT DETAIL
C3.9 SCALE: 1" = 1'



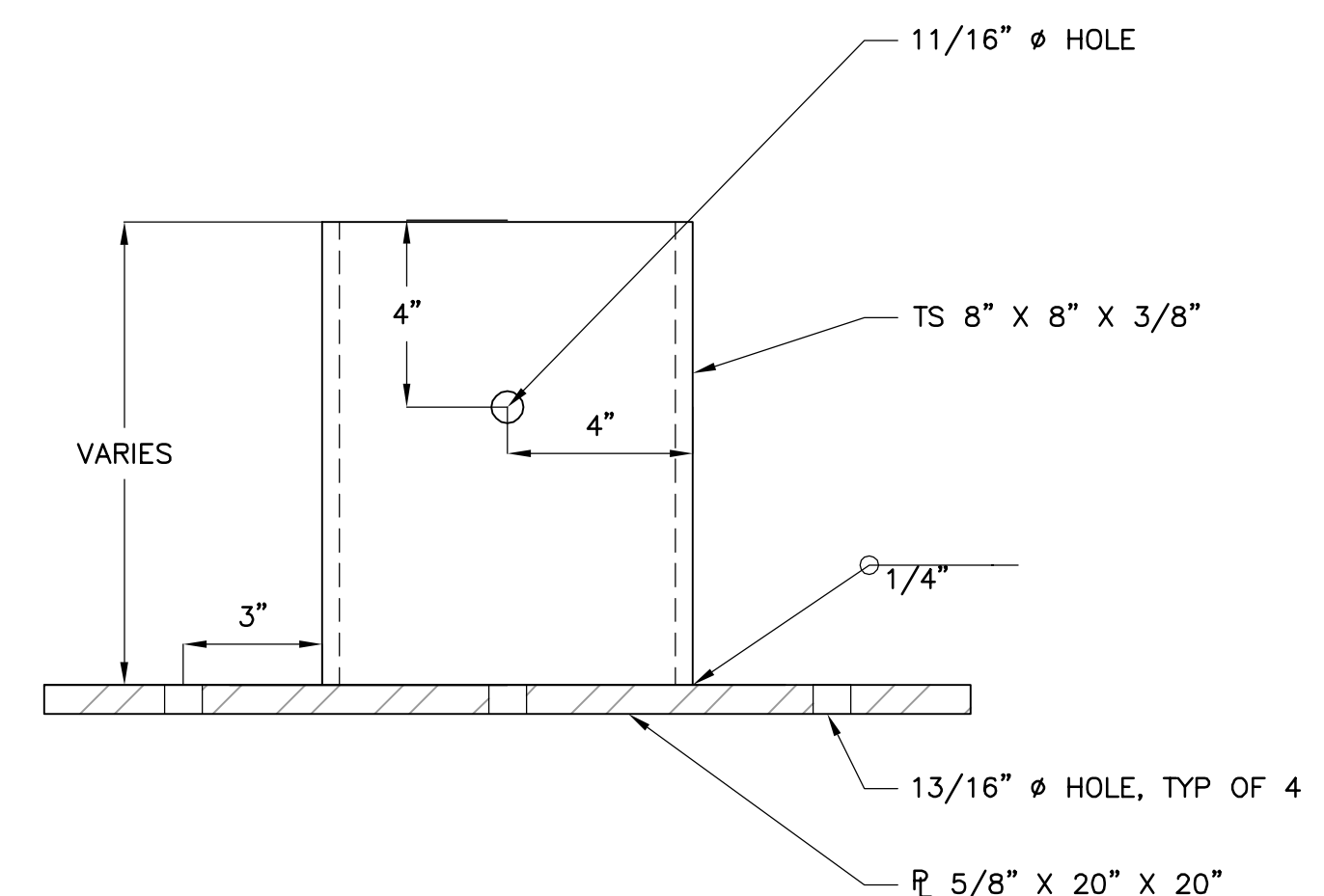
2 PIPE SUPPORT SADDLE
C3.9 SCALE: 2" = 1'



3 PIPE SUPPORT FOUNDATION
C3.9 SCALE: 2" = 1'



4 BASE PLATE
C3.9 SCALE: 2" = 1'



5 BASE PLATE SECTION
C3.9 SCALE: 3" = 1'

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 PIPE SUPPORT
 DETAILS

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PROCESS DESCRIPTION (CONT'D)

5.4 CHLORINE INJECTION

WATER IS DRAWN FROM THE PROCESS STREAM THROUGH A TWO-INCH FEED LINE, PUMPED INTO THE CHLORINE ROOM, INJECTED WITH CHLORINE GAS, AND RETURNED TO THE PROCESS BAY WHERE IT IS RE-INJECTED INTO THE MAIN.

REDUNDANT CHLORINE INJECTION SYSTEMS ARE PROVIDED WITH FOUR PROCESS FLOW RANGES: 200-940 GPM, 300-1,875 GPM, 400-3,750 GPM AND 1,000-6,250 GPM. IF NECESSARY FOR HIGH FLOWS, TWO OR MORE PARALLEL SYSTEMS CAN BE RUN SIMULTANEOUSLY. CHLORINE SYSTEM PUMPS, PRESSURE GAUGES, AND INLINE STRAINERS ARE LOCATED IN THE PROCESS BAY, ALLOWING OPERATORS TO SERVICE AND ADJUST PUMPS AND VALVES WITHOUT ENTERING THE CHLORINE ROOM. PIPING IS STAINLESS STEEL IN THE PROCESS BAY AND KYNAR IN THE CHLORINE ROOM. SILENT CHECK VALVES PREVENT BACKFLOW.

THE CHLORINATION SYSTEM DELIVERS A CONCENTRATED HYPOCHLOROUS SOLUTION TO THE PROCESS STREAM THROUGH KYNAR PIPING AND A KYNAR DIFFUSER (DIF1), FOLLOWED BY AN INLINE KOMAX 3-ELEMENT STATIC MIXER TO ENSURE THOROUGH MIXING.

CHLORINE INJECTION INTO THE PROCESS STREAM IS FLOW PACED.

5.5 FLOW MONITORING

PROCESS STREAM FLOW IS CONTINUOUSLY MEASURED WITH A ROSEMOUNT 8750 MAGNETIC FLOW METER WITH THE RESULTS TRANSMITTED TO THE PLC. ACCURATE FLOW DATA ARE NECESSARY TO FACILITATE PLANT OPERATIONS, CONTROL UV REACTORS, PACE CHLORINE INJECTION, ENSURE REGULATORY COMPLIANCE, ASSIST TROUBLESHOOTING, CALCULATE UNIT COSTS, AND SERVE A VARIETY OF PLANT AND WATER SYSTEM PLANNING FUNCTIONS.

THE SAME MODEL FLOW METERS WILL BE INSTALLED IN THE TANK OUTLET LINE AND THE BYPASS LINE. THESE WILL MONITOR WATER DEMAND/USAGE AND WATER THAT IS FLUSHED FROM THE SYSTEM THROUGH THE BYPASS LINE.

5.6 BACKFLOW PREVENTION

PROCESS STREAM BACKFLOW IS PREVENTED BY A DANFOSS MODEL 92LW SWING-CHECK VALVE LOCATED NEAR THE PLANT OUTLET.

5.7 AIR RELEASE VALVES

FOUR AIR RELEASE VALVES (V131A/B, V132, V137) ARE INSTALLED AT HIGH POINTS IN THE PROCESS MAIN AND ATOP THE UV REACTORS. DESIGNED TO DISPEL AIR WHILE LINES ARE RE-FILLED WITH WATER, V131A/B WILL NOT FUNCTION UNDER SYSTEM PRESSURE. HOWEVER, EITHER UV UNIT (WITH ITS AIR RELEASE VALVE) CAN BE ISOLATED, DRAINED, REPAIRED, AND RE-FILLED WHILE THE OTHER IS KEPT IN OPERATION. VALVES V132 AND V137 WILL DISPEL AIR CONTINUOUSLY DURING PLANT OPERATIONS.

5.8 PROCESS MONITORING

WATER QUALITY MONITORING AT ICR AND IN THE WTP WILL GENERATE AUTOMATED ALARM AND CONTROL SIGNALS FROM THE PLC. THESE FUNCTIONS CAN, AT OPERATOR DISCRETION, BE OVERRIDDEN. REASONS FOR OVERRIDING AN ALARM OR CONTROL MAY INCLUDE:

- KNOWN PROBLEMS WITH THE CONTROLLING INSTRUMENTATION
- ONGOING MAINTENANCE ON AN INSTRUMENT
- WATER QUALITY, WATER HANDLING, OR OTHER EMERGENCY
- PERSONNEL OR PUBLIC SAFETY

CONTINUOUS READINGS FROM THE THREE UVT METERS (ICR HEADWORKS, WTP INLET, AND UV REACTOR INLET) CAN BE COMPARED FOR CONSISTENCY. TURBIDITY IS ALSO MEASURED AT FOUR LOCATIONS (ICR HEADWORKS, WTP INLET, UV REACTOR INLET, CT TANK OUTLET), LIKEWISE ALLOWING OPERATORS TO COMPARE AND CHECK ON INSTRUMENT RELIABILITY. THE TURBIDIMETER AT THE UV REACTOR INLET IS THE ONE USED FOR REGULATORY REPORTING.

CHLORINE CONCENTRATION IS ANALYZED IN TREATED WATER EXITING THE WTP. READINGS FROM A HACH CL17 FREE CHLORINE RESIDUAL ANALYZER ARE CONTINUOUSLY TRANSMITTED TO THE PLC WHICH USES THE DATA TO INFORM OPERATORS, AND GENERATE REPORTS. A SECOND HACH CL17 MONITORS FREE CHLORINE CONCENTRATION IN FINISH WATER LEAVING THE CONTACT TANK, SENDING ITS RESULTS TO THE PLC. FINISH WATER CHLORINE CONCENTRATIONS ARE USED TO ESTABLISH REGULATORY COMPLIANCE. THEY CAN ALSO BE

COMPARED WITH TREATED WATER READINGS AS AN INDICATOR OF WATER QUALITY CONDITIONS IN THE TANK.

PRESSURE IS MONITORED, BOTH WITH IN-LINE PRESSURE TRANSDUCERS AND PRESSURE GAUGES MOUNTED ADJACENT TO THE TRANSDUCERS, AT THE FOLLOWING PAIRED LOCATIONS. GAUGES WILL BE PLACED TO BE VIEWABLE FROM BOTH SIDES OF THE PROCESS MAIN.

- INLET TEE BEFORE THE STRAINERS
- OUTLET TEE AFTER THE STRAINERS
- INLET TO EACH UV REACTOR LINE
- OUTLET FROM EACH UV REACTOR LINE
- INLET BEFORE THE CLA-VAL FLOW CONTROL VALVES
- OUTLET AFTER THE CLA-VAL FLOW CONTROL VALVES

COMPARISON OF PRESSURE ACROSS STRAINERS, REACTORS, AND FLOW CONTROL VALVES PROVIDES AN INDICATION OF FLOW CONDITIONS AND HEADLOSS ACROSS EACH UNIT.


5.9 UPS CONNECTIONS

THE UNINTERRUPTIBLE POWER SUPPLY (UPS) IS DESIGNED TO KEEP ALL PROCESS AND CONTROL EQUIPMENT IN OPERATION DURING A POWER FAILURE UNTIL BACK-UP GENERATION IS ONLINE. EQUIPMENT CONNECTED TO THE UPS INCLUDES (BUT IS NOT LIMITED TO) THE FOLLOWING.

- UV REACTORS
- ALL PRESSURE TRANSDUCERS
- CLA-VAL FLOW CONTROL VALVES
- CHLORINATION EQUIPMENT
- FLOW METERS (M101 AND M102)
- ALL SCADA EQUIPMENT
- ALL MONITORING INSTRUMENTATION INCLUDING THE INLET TURBIDIMETER (TURB-2), THE TREATED WATER TURBIDIMETER (TURB-3), THE INLET UVT METER (UVT-2), THE UV REACTOR UVT METER (UVT-3), THE TREATED WATER CHLORINE RESIDUAL ANALYZER (CL17-1), AND THE FINISHED WATER CHLORINE RESIDUAL (CL17-2, LEAVING THE TANK).
- CHLORINE ROOM PUMPS (PMP101A/B, PMP102A/B).
- ALL CHLORINE ROOM VALVING AND EQUIPMENT.
- NORMAL PLANT SHUTDOWN WILL OCCUR WHEN COMMANDED BY THE PLC AS A RESULT OF ACTIVATING THE PLANT E-STOP BUTTON, A VIRTUAL E-STOP THROUGH THE SCADA SYSTEM OR WHEN UTILITY POWER IS LOST AND THE GENERATOR FAILS TO START. NORMAL PLANT SHUTDOWN WILL BE PROGRAMMED INTO THE MAIN CONTROL PLC BASED ON A SEQUENCE OF OPERATIONS PROVIDED BY THE PROCESS ENGINEER, AND WILL INCLUDE BUT NOT LIMITED TO THE FOLLOWING: CLOSING OF VALVES IN THE PROPER SEQUENCE (USING PROPER CLOSING RATES), SHUTDOWN OF THE CHLORINATION SYSTEM AND SHUTDOWN OF THE UV SYSTEM. SHUTDOWN AS A RESULT OF UTILITY POWER FAILURE WILL INCLUDE A TIME DELAY BASED ON FAILURE OF THE GENERATOR TO START WITHIN A PRESET TIME. THE PRESET TIME DELAY WILL BE BASED ON AN ALLOWANCE OF SUFFICIENT TIME TO COMPLETE THE PLANT SHUTDOWN BEFORE THE UPS RUNS OUT OF STORED ENERGY. ADDITIONALLY, THE FLOW CONTROL VALVES ARE TO BE EQUIPPED WITH NORMALLY OPEN SOLENOIDS THAT WILL SHUT THE VALVE UPON LOSS OF POWER. ADDITIONAL DETAILS OF THE SHUTDOWN SEQUENCE, INCLUDING TIME DELAYS, WILL BE INCLUDED IN THE O&M MANUAL.
- MANUAL OPERATION OF THE PLANT IS POSSIBLE WITH LOSS OF PLC CONTROL. HOWEVER, POWER IS REQUIRED TO OPERATE THE UV AND THE CHLORINATION SYSTEMS. MANUAL SAMPLING AND RECORD KEEPING FUNCTIONS WOULD BE REQUIRED TO MEET DEC REGULATIONS. IT WILL BE POSSIBLE TO OPERATE THE VALVES MANUALLY TO ALLOW FLOW THROUGH THE SYSTEM UTILIZING HAND WHEELS ON THE ACTUATED VALVES. OPERATING IN THIS MANNER WILL REQUIRE AROUND THE CLOCK OPERATOR SUPERVISION IN ORDER TO ADJUST VALVES AND TO CONDUCT REQUIRED SAMPLING ACTIVITIES. DETAILS OF THE MANUAL PROCEDURES WILL BE PROVIDED IN THE O&M MANUAL.
- SEMI-AUTOMATED OPERATION OF THE SYSTEM WILL BE POSSIBLE IF THE PLC IS FUNCTIONING, BY OVER-RIDING PRESET PARAMETERS SUCH AS FLOW RATES, ETC. DETAILS OF THE USE OF THE SCADA SYSTEM FOR PLANT OPERATION WILL BE PROVIDED IN THE O&M MANUAL.



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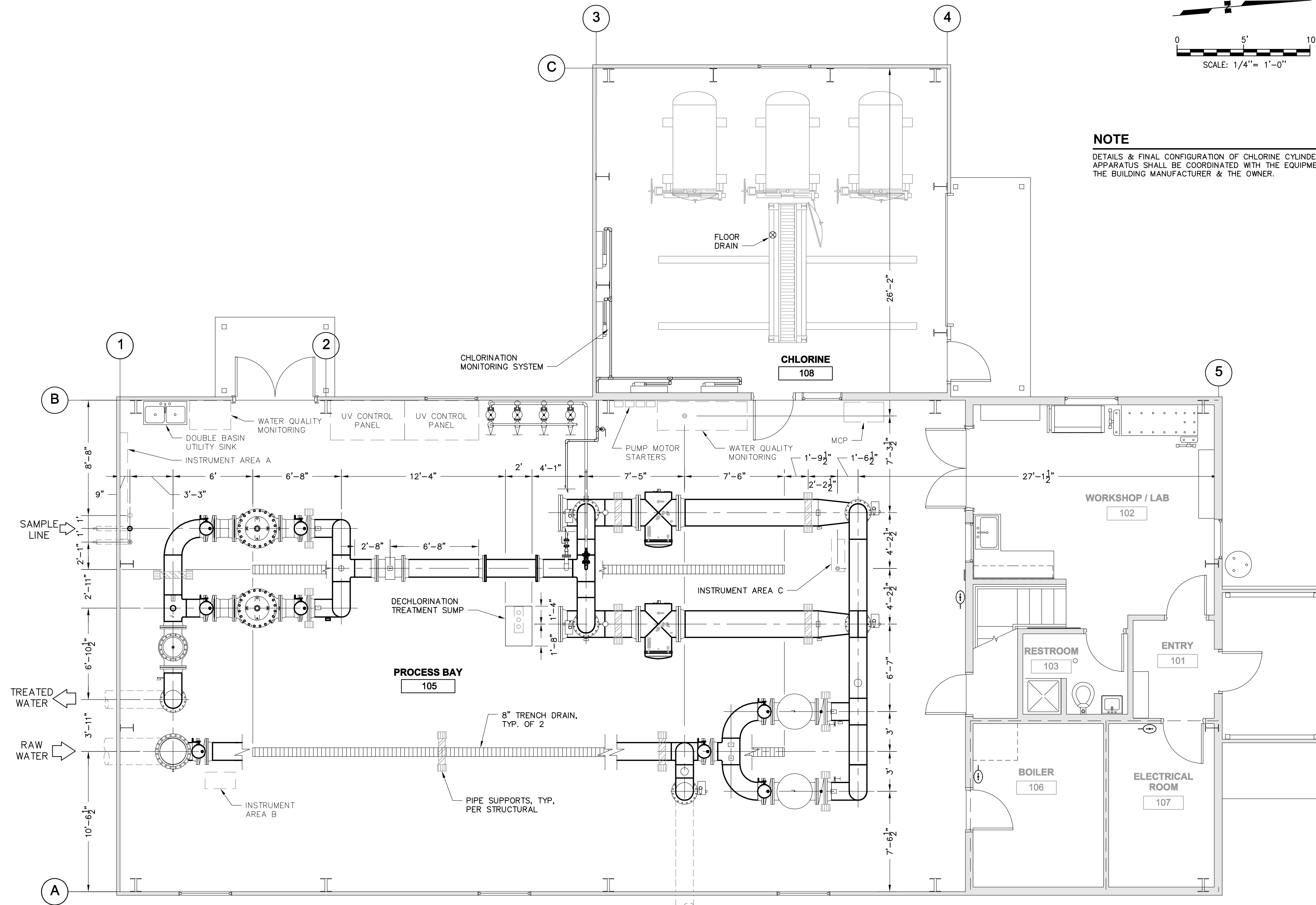
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NOTE
 DETAILS & FINAL CONFIGURATION OF CHLORINE CYLINDER LOADING APPARATUS SHALL BE COORDINATED WITH THE EQUIPMENT SUPPLIER, THE BUILDING MANUFACTURER & THE OWNER.

PROCESS FLOOR PLAN
 SCALE: 1/4" = 1'-0"



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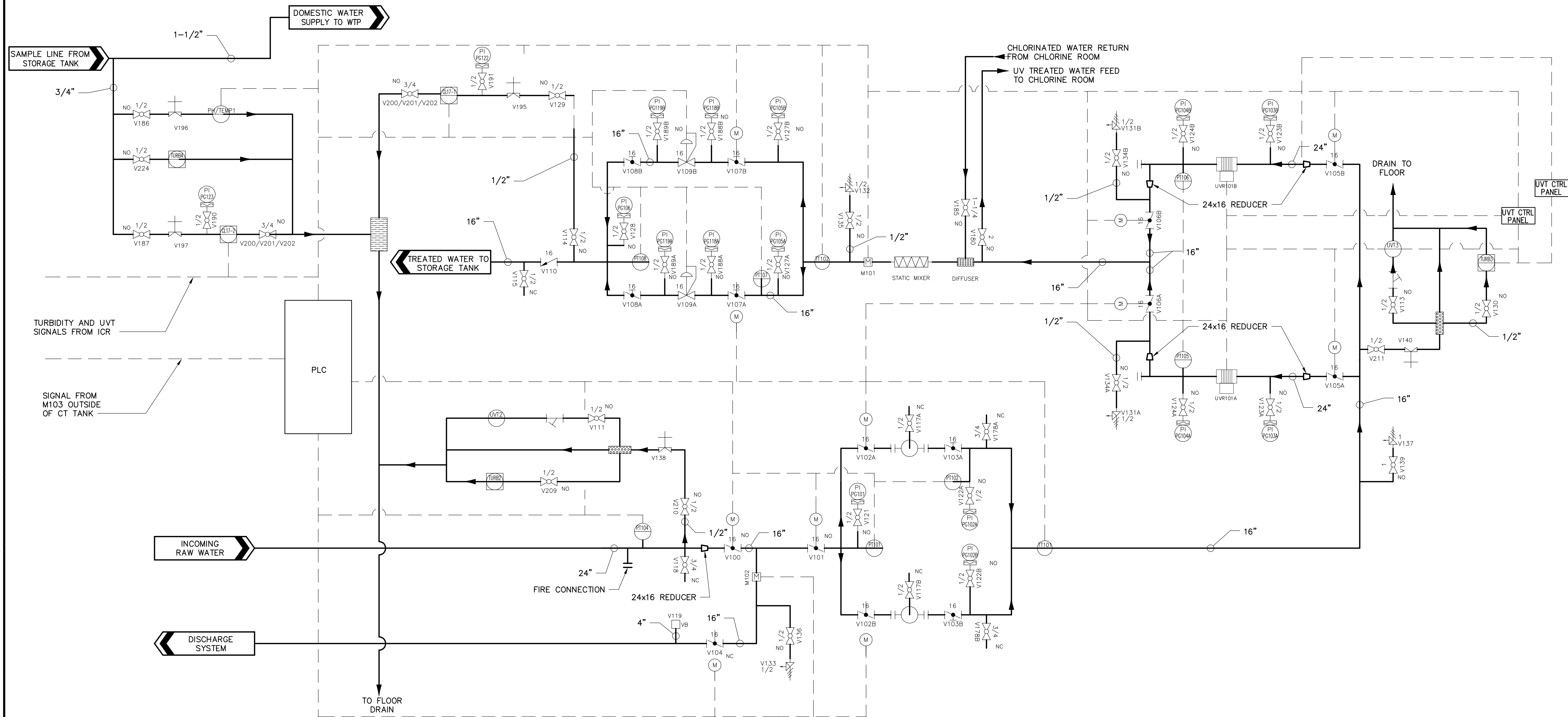
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 PROCESS FLOOR PLAN**

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P&ID LEGEND									
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PROCESS FLOW		BLIND FLANGE		PRESSURE TRANSDUCER		HACH CL-17 CHLORINE ANALYZER		AUTOMATIC BUTTERFLY VALVE
	CONTROL SIGNAL LINE		UV REACTOR		UV TRANSMITTANCE MONITOR		MANUAL BUTTERFLY VALVE		HACH DPD1P1 PH TEMPERATURE SENSOR
	FLOW DIRECTION		STRAINER		CHECK VALVE		AIR RELIEF VALVE		DIAPHRAGM VALVE
	PIPE REDUCER		BALL VALVE NO-NORMALLY OPEN NC-NORMALLY CLOSED		DIFFUSER		PRESSURE GAUGE WITH ISOLATION VALVE		ALTITUDE FLOW CONTROL VALVE
	STATIC MIXER		CHEMTRAC CHLORINE MONITOR		STRAINER		TEMPERATURE SENSOR		VACUUM BREAKER
	MAGNETIC FLOW METER		TURBIDIMETER		ACTIVATED CARBON FILTER				BUBBLE TRAP



FLOW PROCESS & INSTRUMENTATION DIAGRAM
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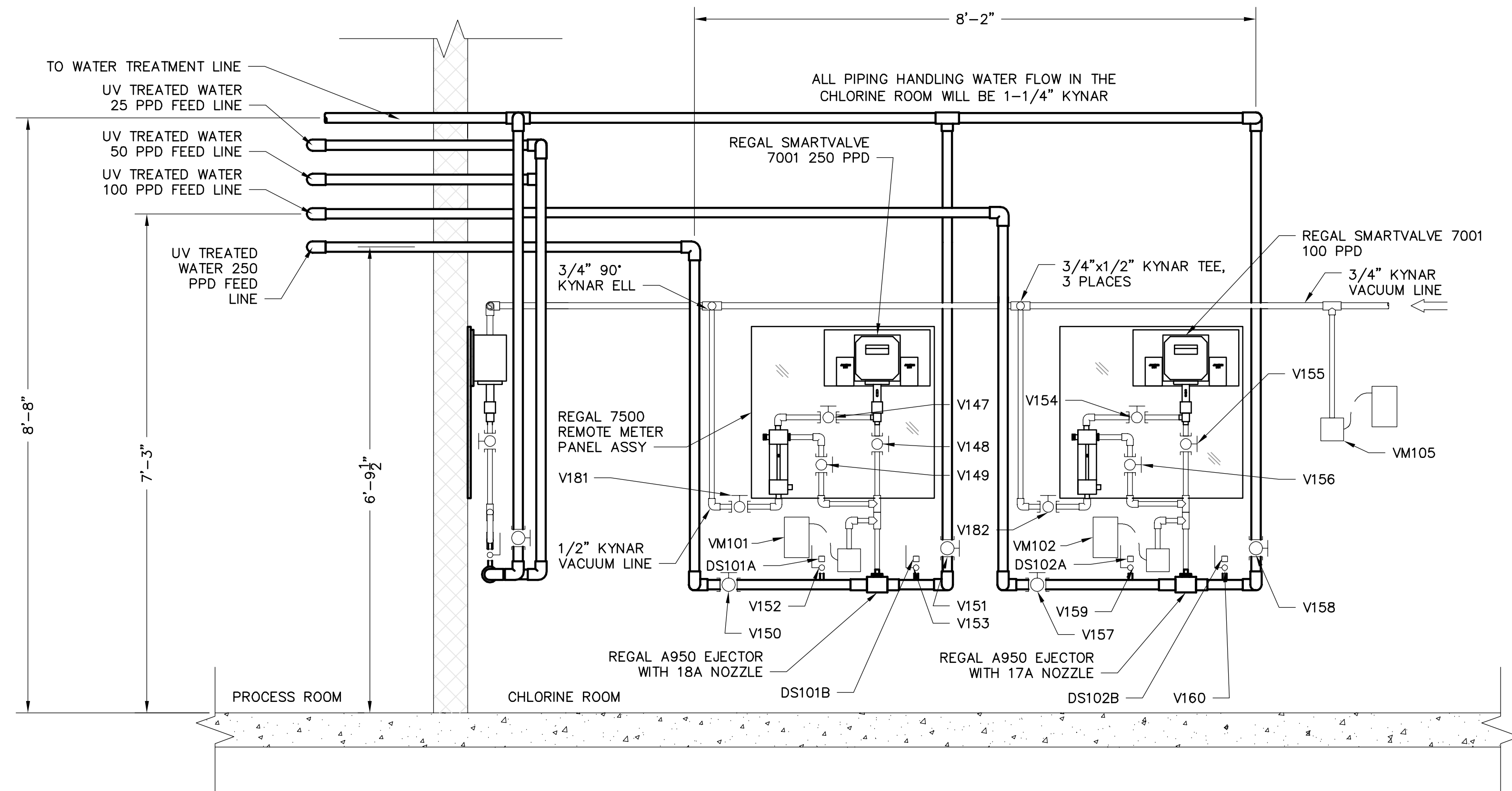
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FLOW PROCESS AND
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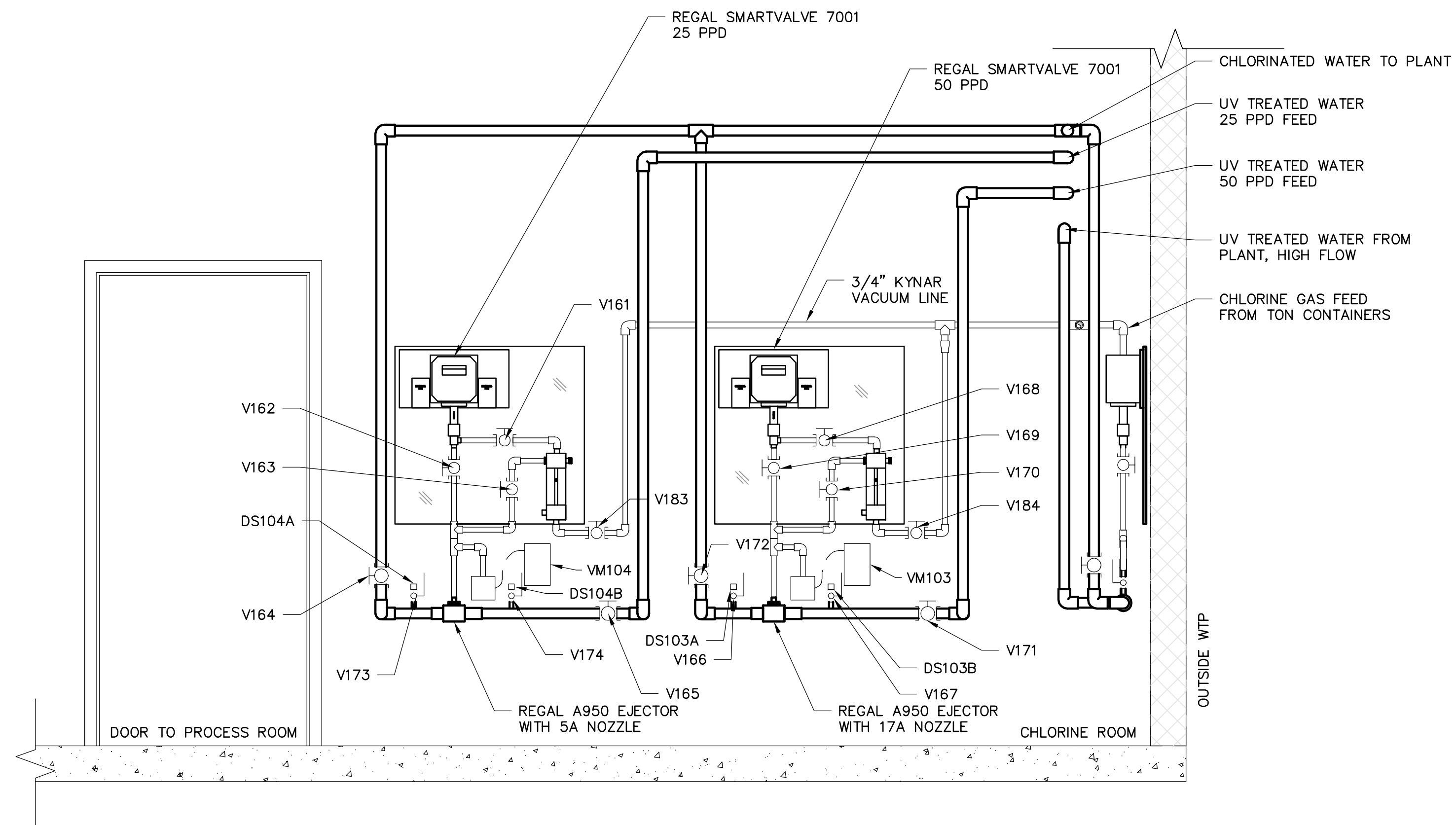
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CHLORINATION ELEVATION SOUTH WALL

SCALE: 3/4" = 1'-0"

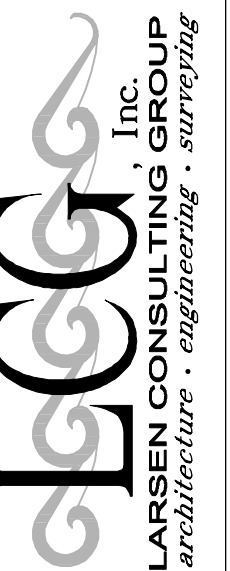


CHLORINATION ELEVATION EAST WALL

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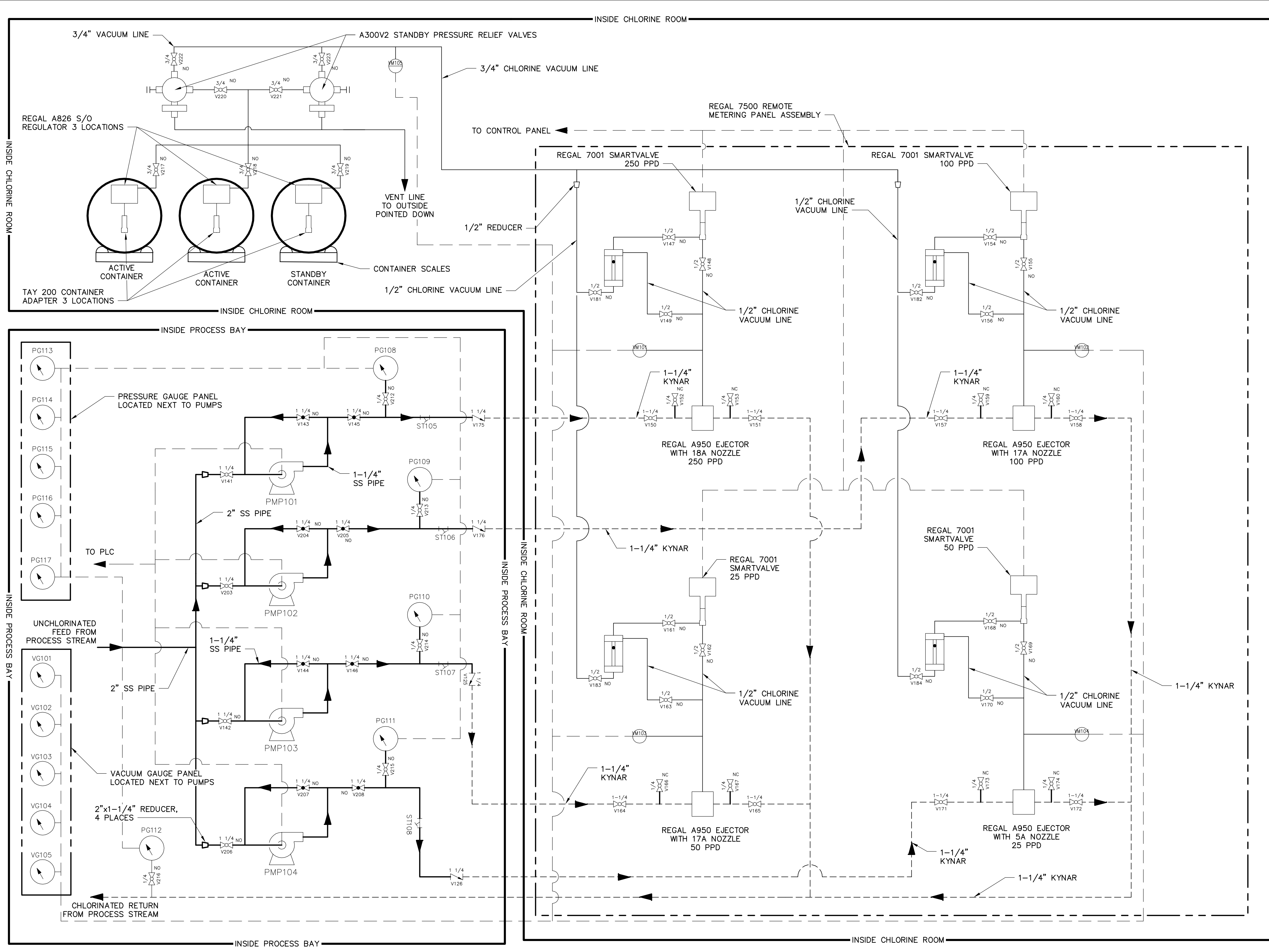
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**CHLORINATION PROCESS AND
 INSTRUMENTATION DIAGRAM**

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LEGEND	
SYMBOL	DESCRIPTION
	REGAL SMARTVALVE
	FLOWMETER
	BALL VALVE
	GLOBE VALVE
	CHLORINE EJECTOR
	STANDBY PRESSURE RELIEF VALVE
	TAY 200 ADAPTER
	PUMP
	Y-STRAINER
	CHECK VALVE
	KYNAR PIPING
	KYNAR VACUUM LINE
	REMOTE METERING PANEL ASSEMBLY
	SS PIPING
	CONTROL SIGNAL LINE
	PRESSURE GAUGE
	CHLORINE REGULATOR



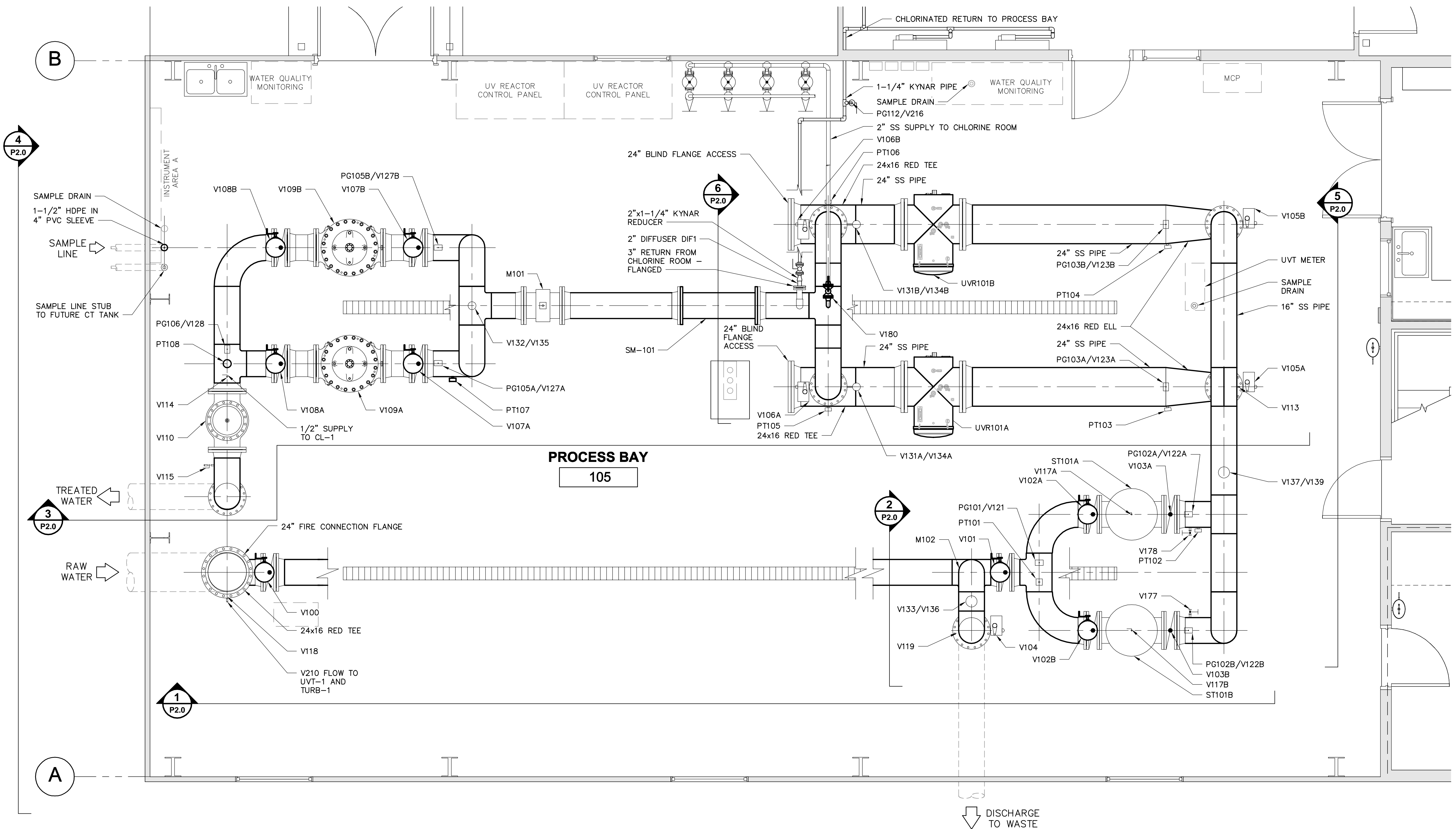
CHLORINATION PROCESS & INSTRUMENTATION DIAGRAM
 SCALE: NOT TO SCALE

Plotted By: Curtis
 Date: Dec 02, 2013 10:35 am
 Date Time: 10:35:00
 File Name: F:\Civil Projects\850.01_Unalaska_WTP.dwg\850.01_DSL_Piping_Unalaska.dwg



NOTES

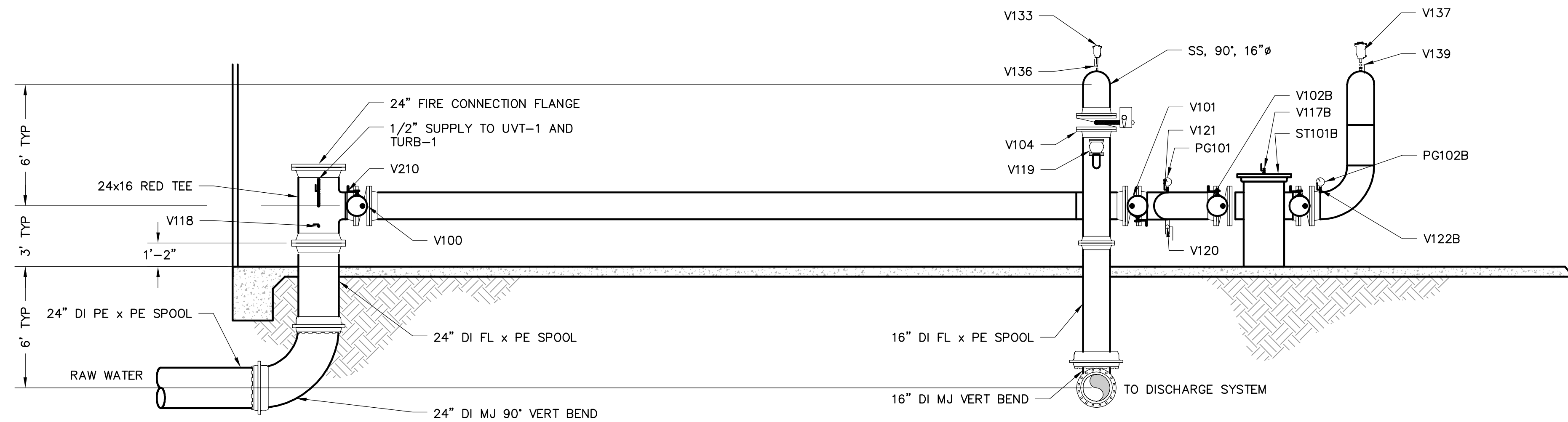
1. ALL PROCESS STREAM PIPING IN THE PROCESS BAY SHALL BE 16-INCH DIAMETER STAINLESS STEEL, UNLESS CALLED OUT OTHERWISE.
2. FOR THE PROCESS STREAM PIPE SUPPORTS, SEE STRUCTURAL. FOR FIRE LINE PIPE SUPPORTS, SEE MECHANICAL. FOR THE OTHER PIPING, COORDINATE WITH BUILDING MANUFACTURER AND PROVIDE PIPE SUPPORTS AS NECESSARY PER THE PIPE MANUFACTURER'S RECOMMENDATIONS.
3. WALL SUPPORT FOR MONITORING, PANELS, PUMPS, PIPING, AND APPURTENANT EQUIPMENT SHALL BE IN ACCORDANCE WITH BUILDING AND EQUIPMENT MANUFACTURER RECOMMENDATIONS.



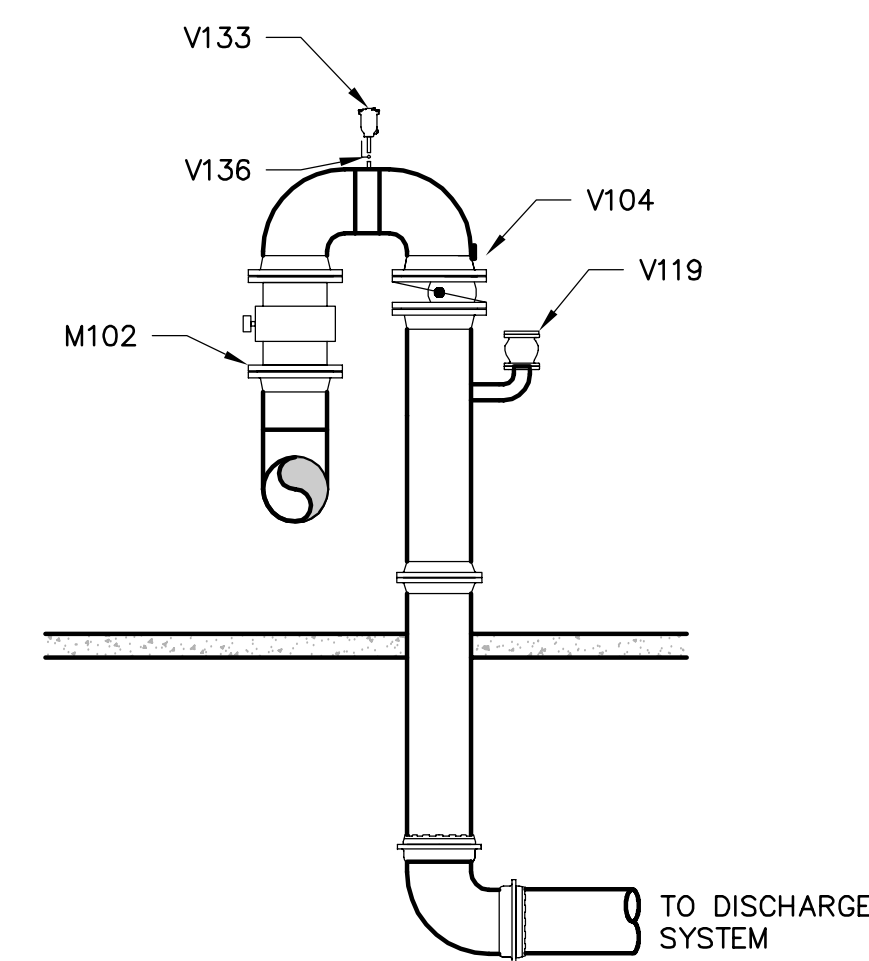
PIPING PLAN
SCALE: 3/8" = 1'-0"

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 Date/Time: 02 Dec 2013 10:35 am
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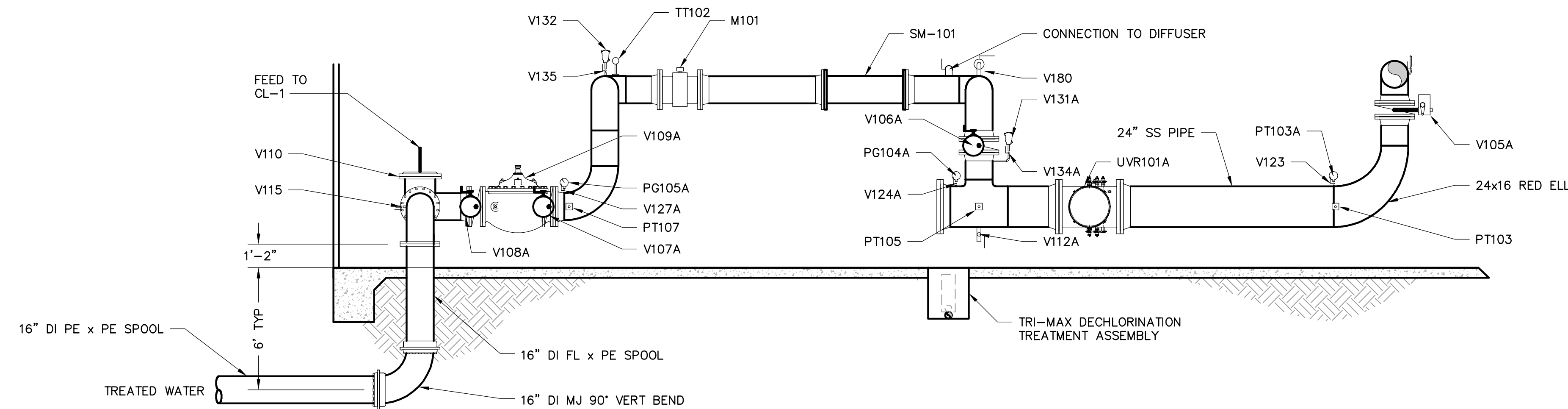
<p>3710 Woodland Dr. Suite 2100 Anchorage, AK 99517 (907) 543-8985</p> <p>LCC LARSEN CONSULTING GROUP <i>architecture • engineering • surveying</i></p>	<p>CITY OF UNALASKA</p>																				
<p>PYRAMID WTP UNALASKA, ALASKA PIPING PLAN</p>																					
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1 SECTION
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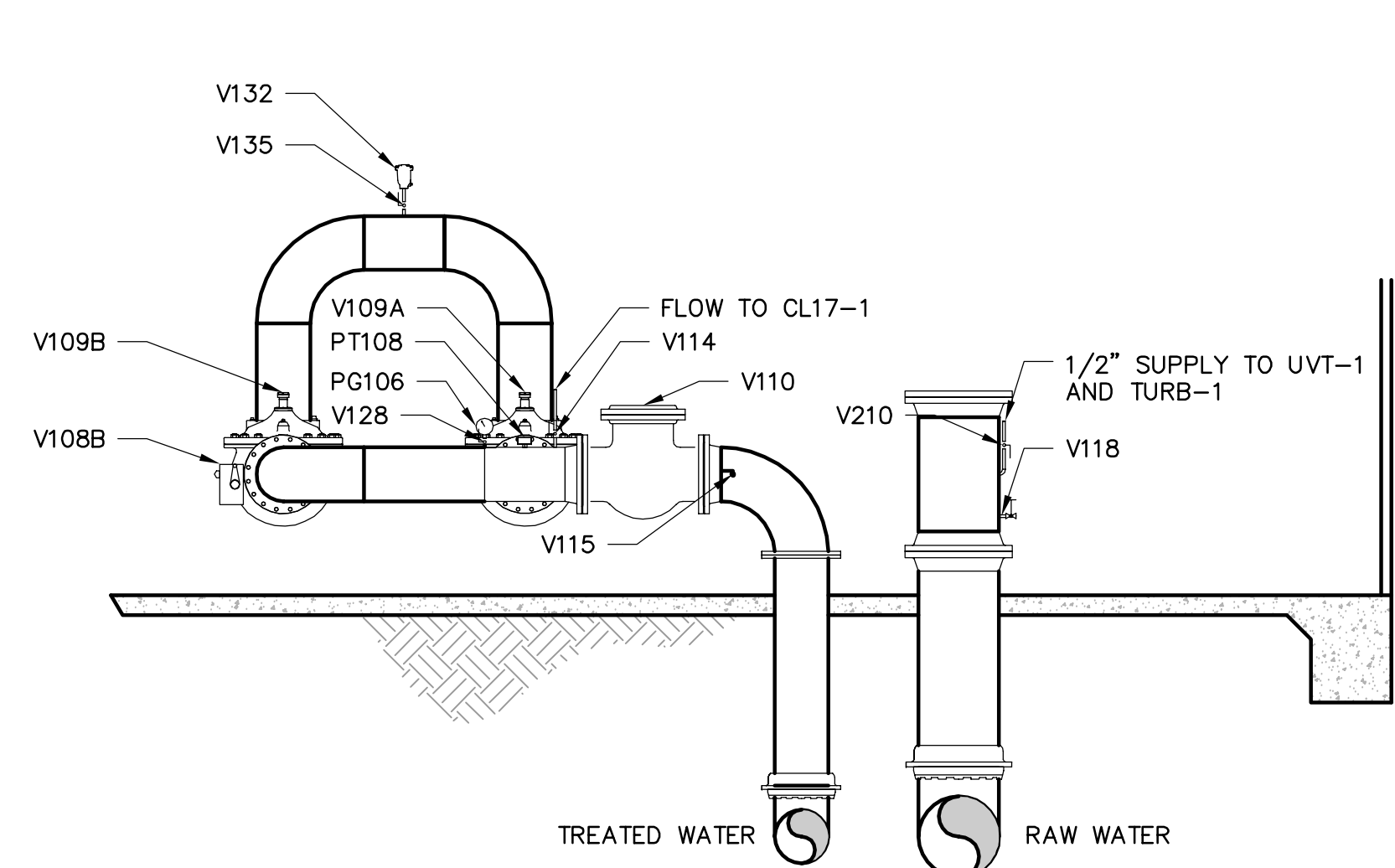


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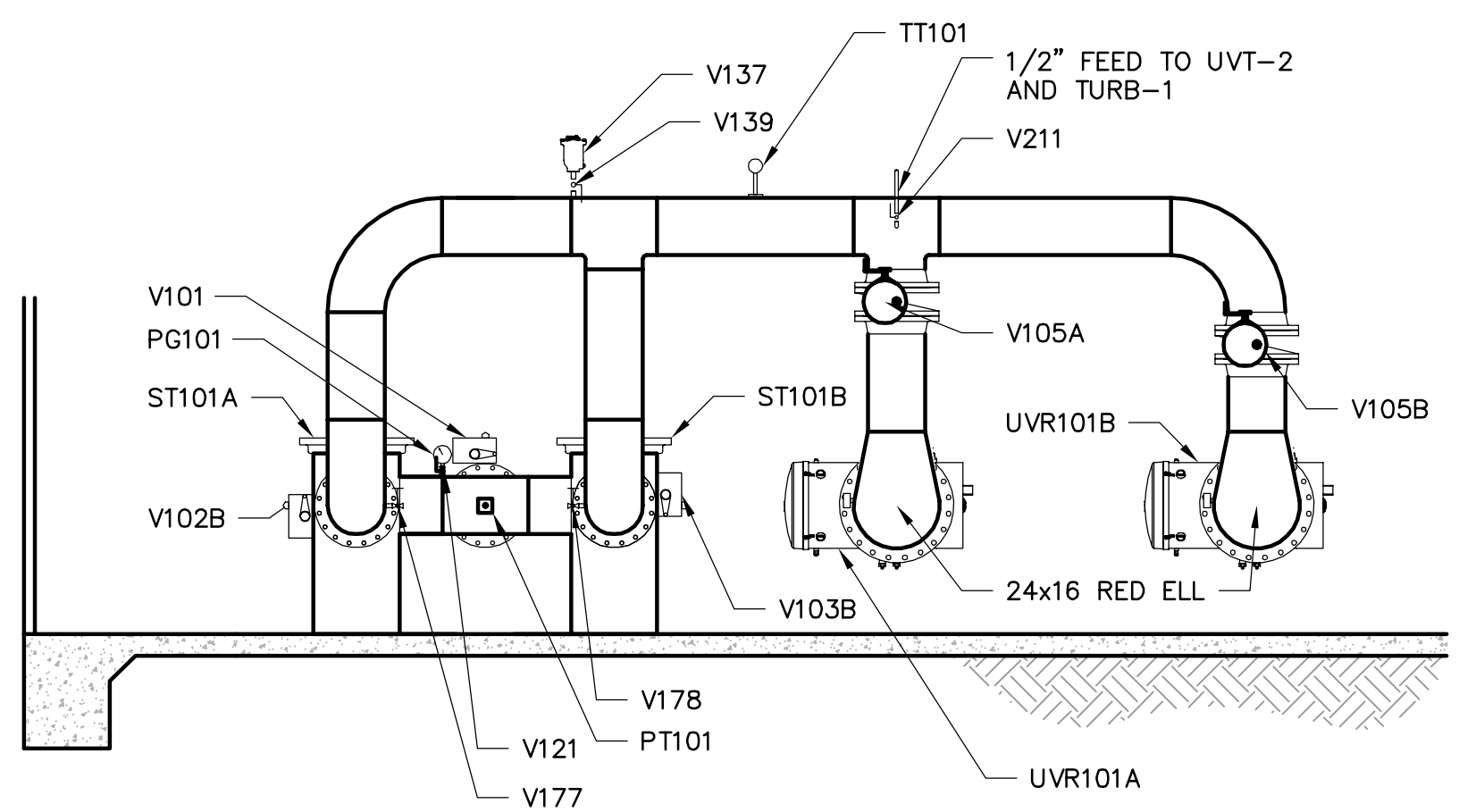


NOTE
SEE STRUCTURAL FOR PROCESS PIPE SUPPORT LOCATIONS AND DETAILS.

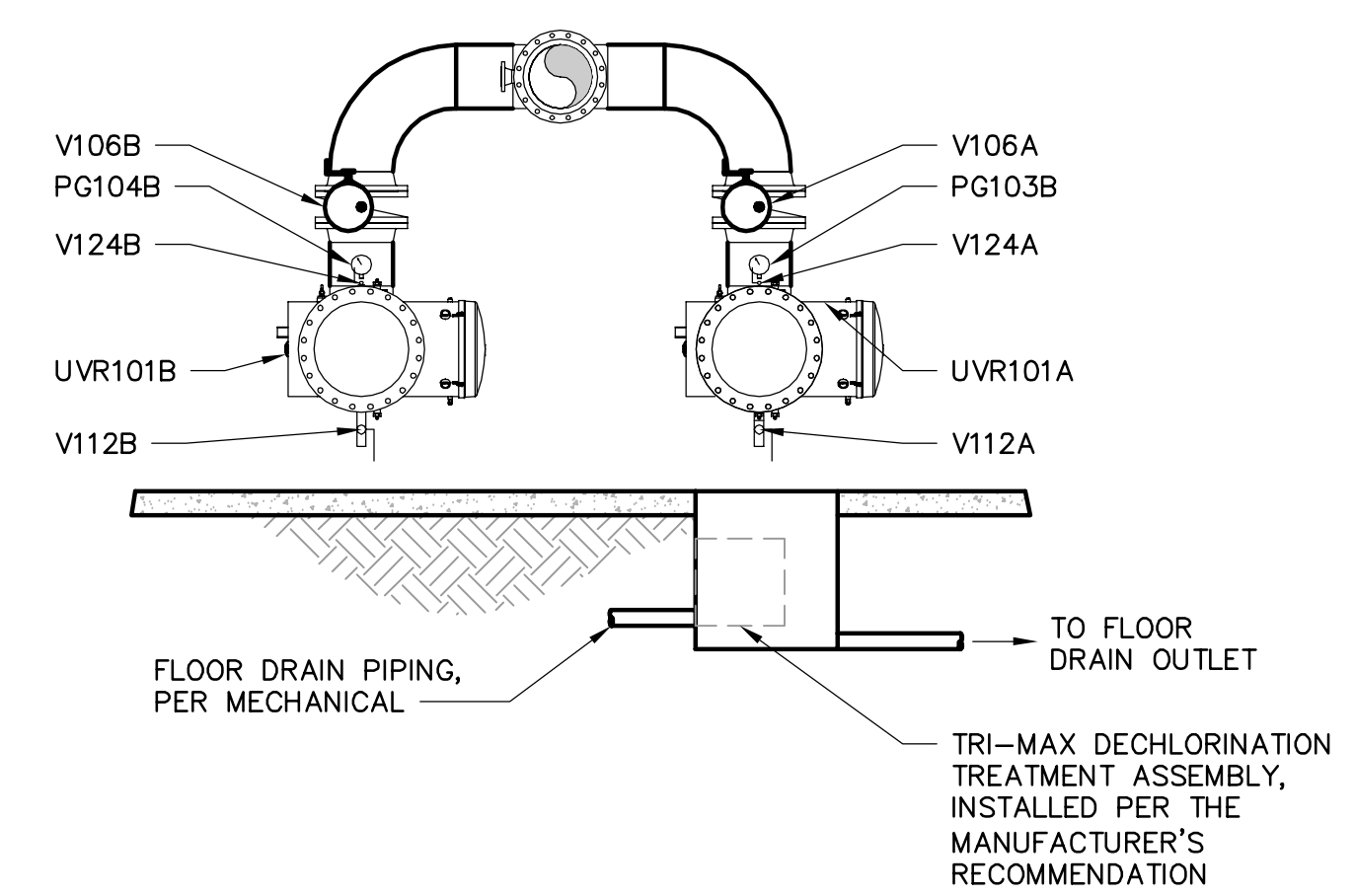
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P2.0 SCALE: 1/4" = 1'-0"



4 SECTION
P2.0 SCALE: 1/4" = 1'-0"



5 SECTION
P2.0 SCALE: 1/4" = 1'-0"



6 SECTION
P2.0 SCALE: 1/4" = 1'-0"

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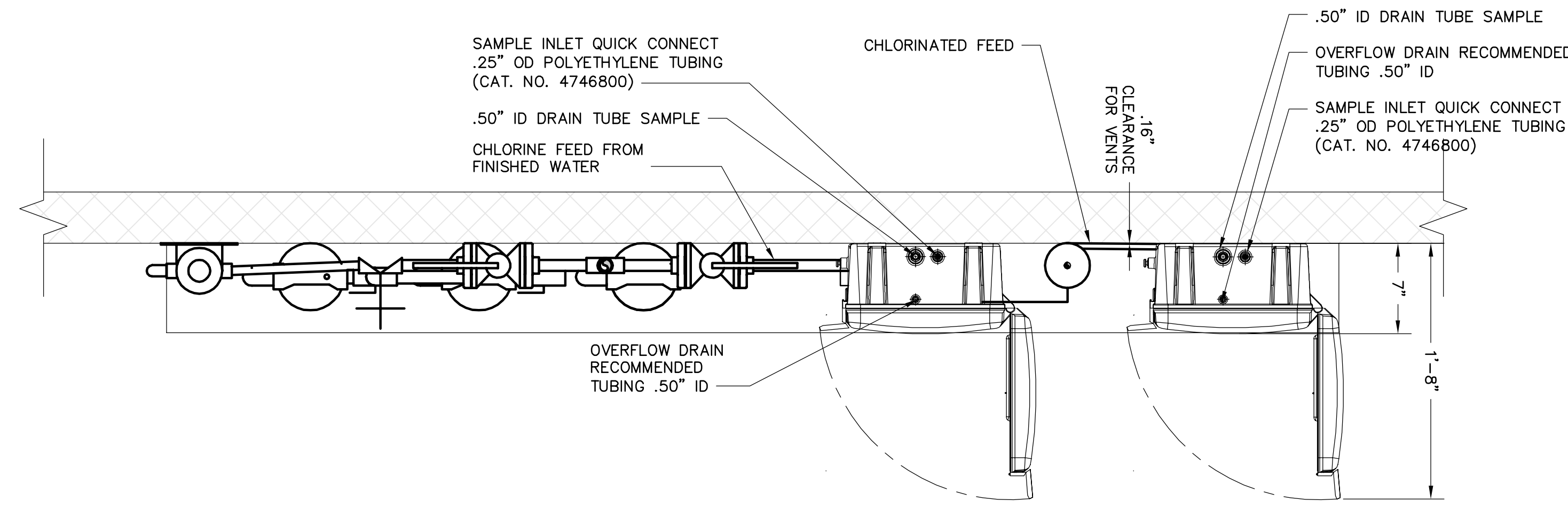
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**PYRAMID WTP
UNALASKA, ALASKA
PIPE SECTIONS**

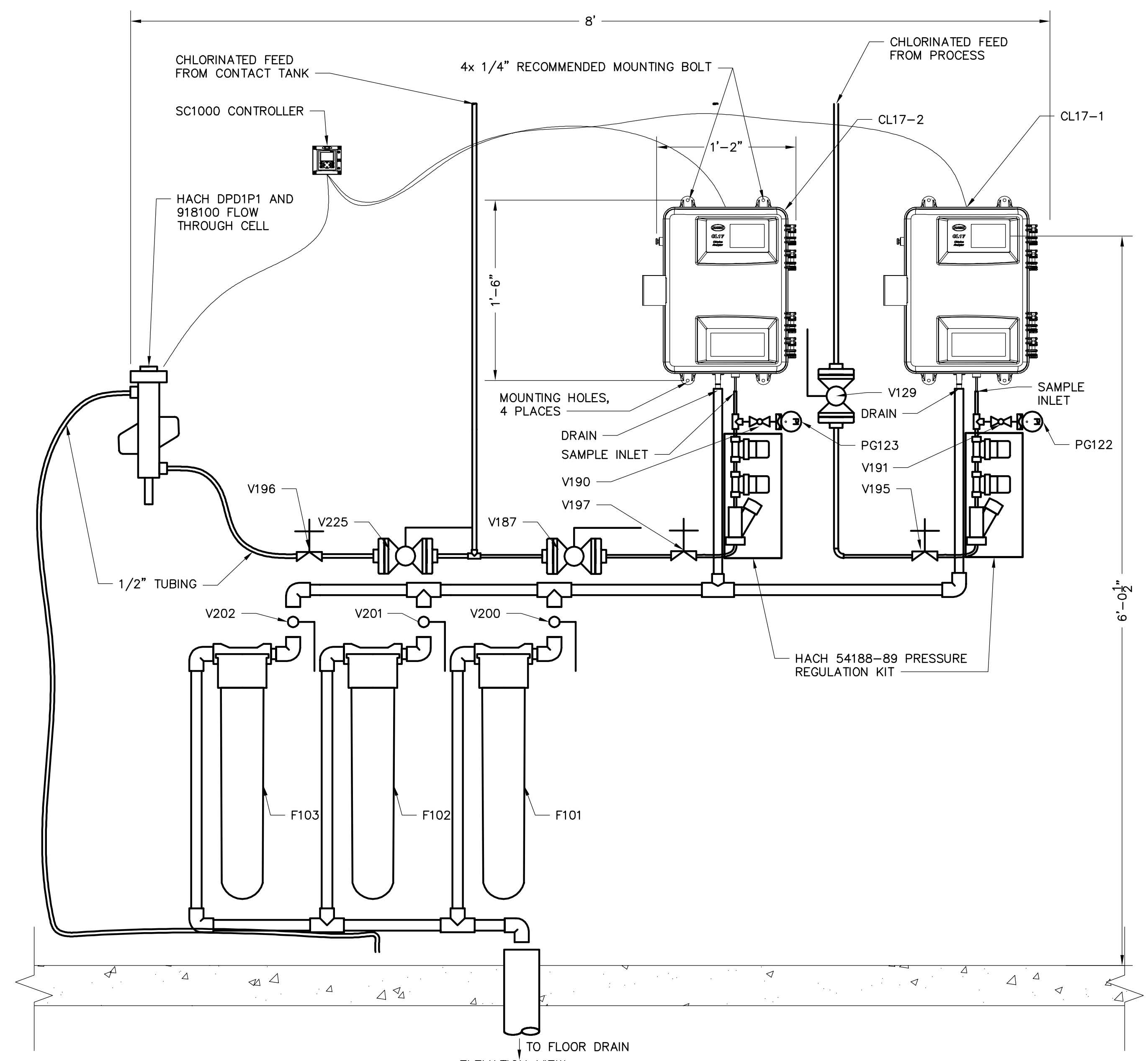
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FILE NO. 850.01

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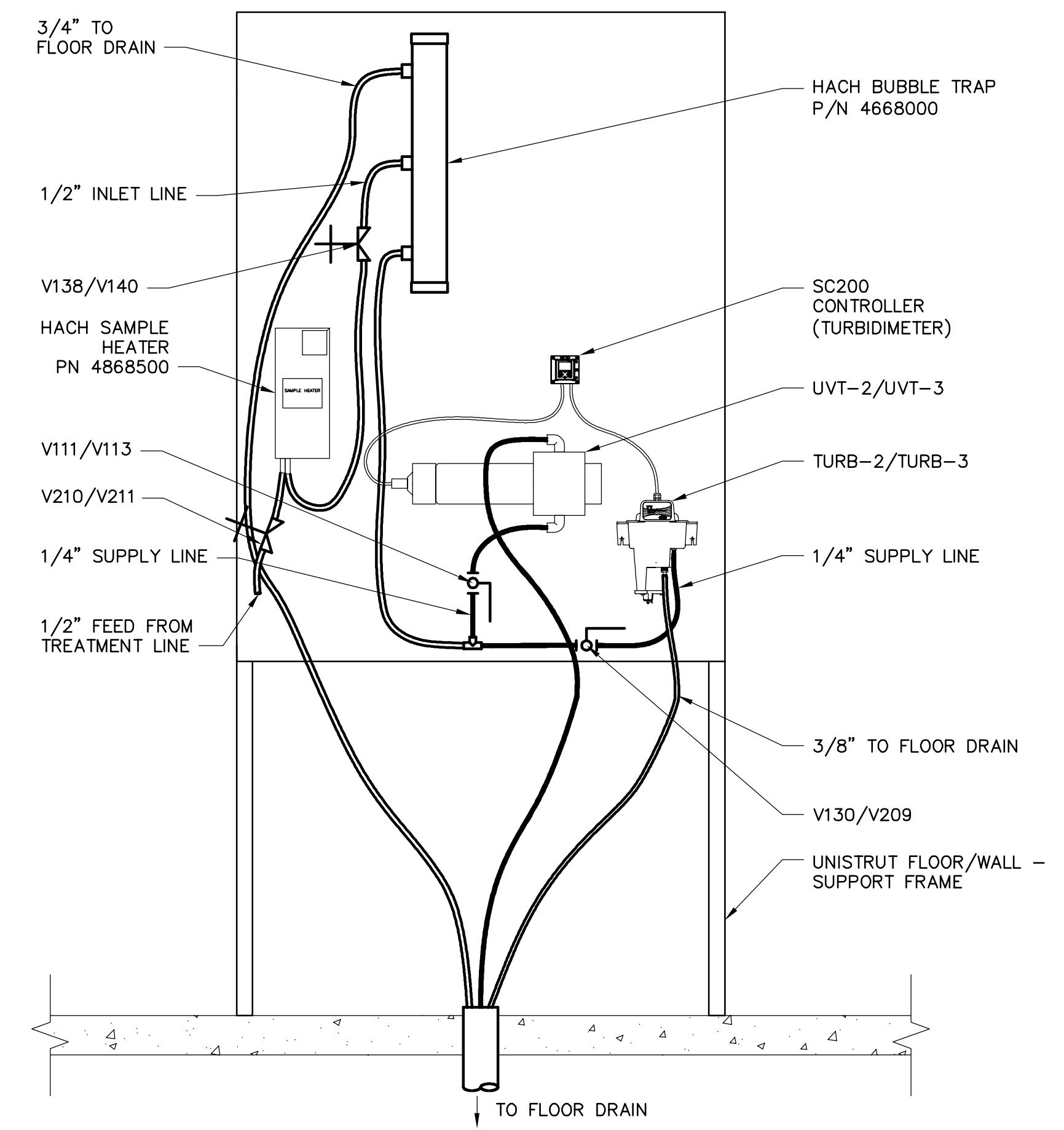
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PLAN VIEW



INSTRUMENT AREA A ARRANGEMENT
SCALE: 1-1/2" = 1'-0"



INSTRUMENT AREA B AND C ARRANGEMENT
SCALE: 1" = 1'-0"

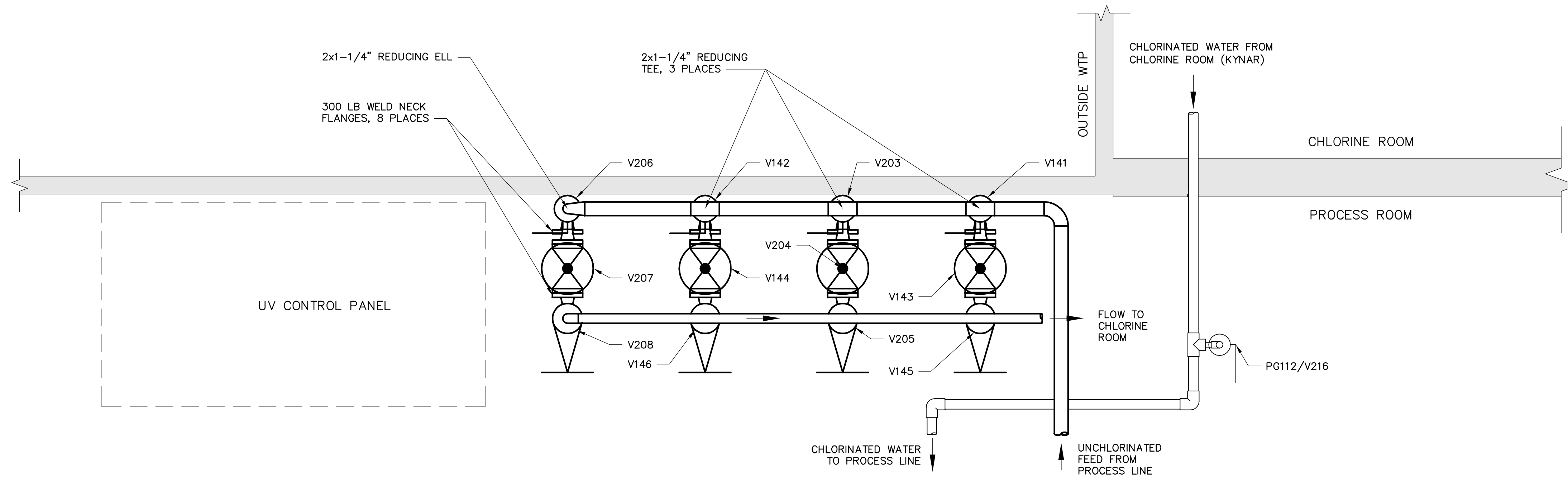
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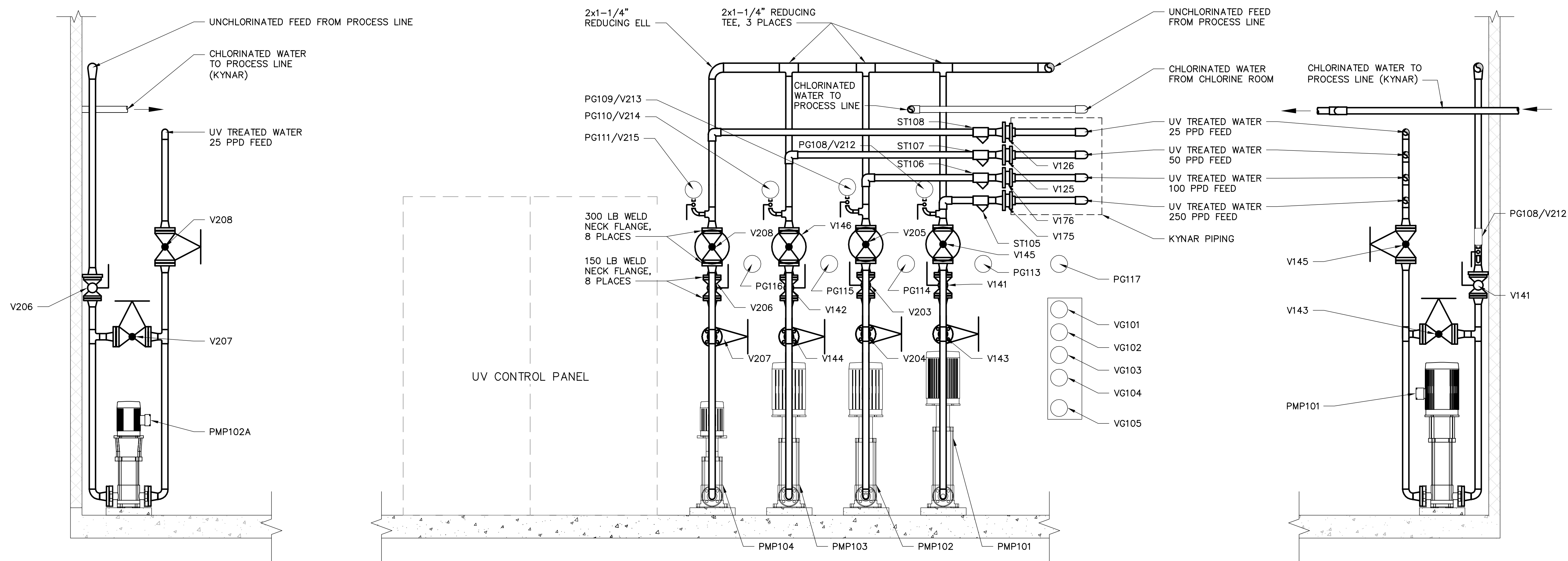
PYRAMID WTP
UNALASKA, ALASKA
INSTRUMENT DETAILS

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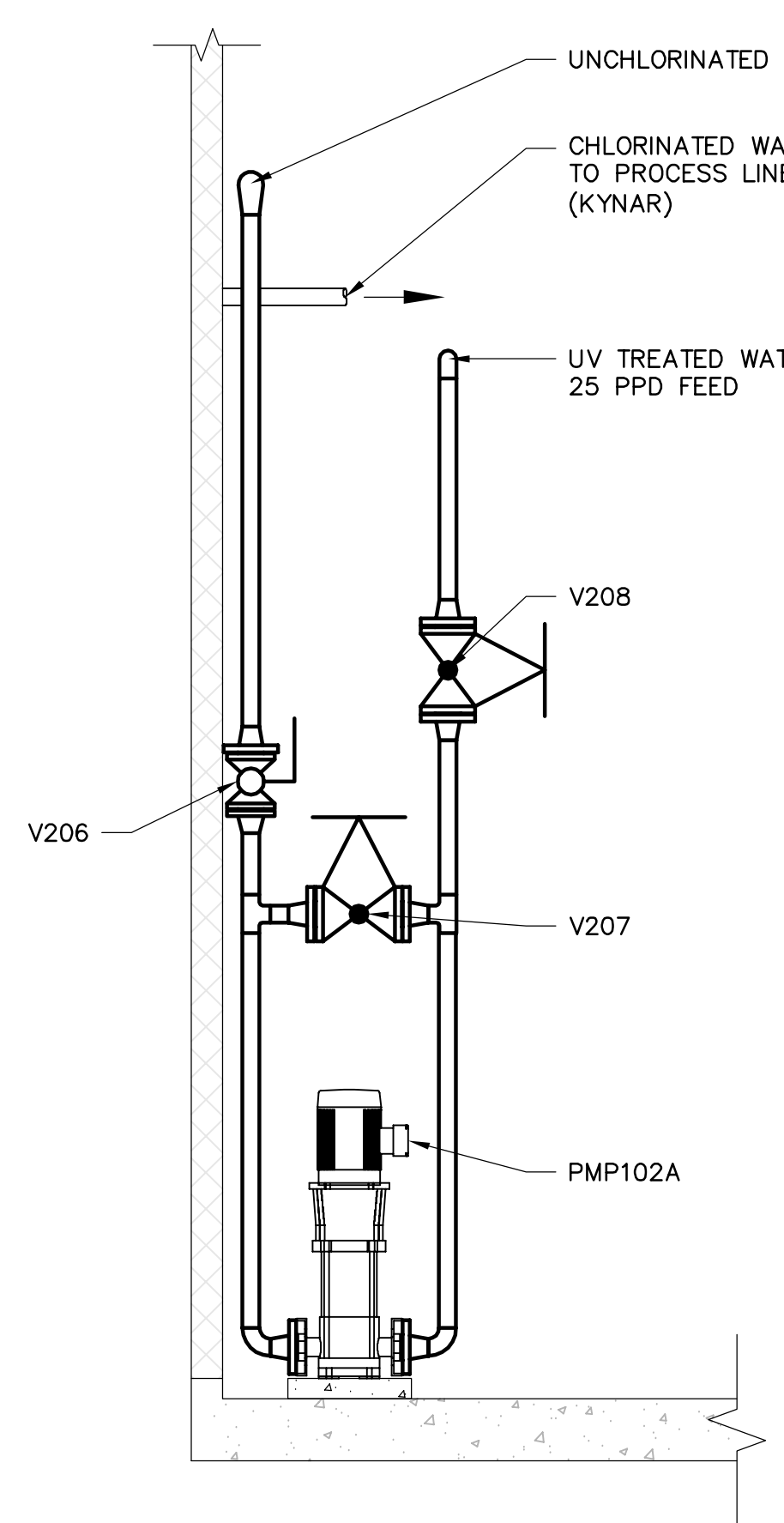
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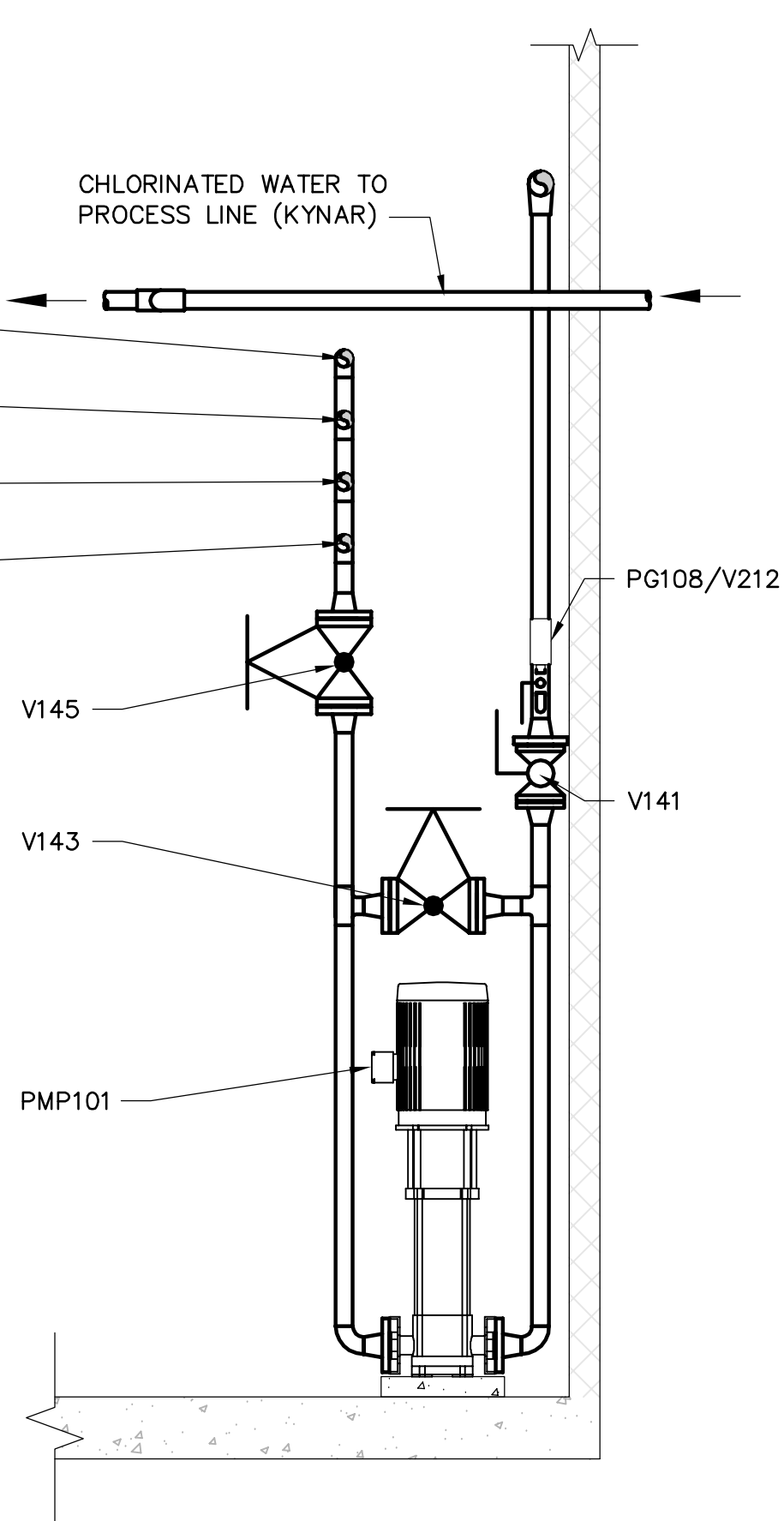
CHLORINE PUMPS PLAN
SCALE: 1" = 1'-0"



CHLORINE PUMPS FRONT ELEVATION
SCALE: 3/4" = 1'-0"



CHLORINE PUMPS LEFT ELEVATION
SCALE: 3/4" = 1'-0"



CHLORINE PUMPS RIGHT ELEVATION
SCALE: 3/4" = 1'-0"

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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 CHLORINE ROOM PUMPS

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UNALASKA VALVE AND CONTROL SCHEDULE



TAG NO.	ITEM	Operati on	FUNCTION	SIZE	MANUFACTUR ER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
CL17-1	DPD CHLORINE ONLINE TEST	-	MONITOR TREATED WATER INITIAL CHLORINE LEVEL	-	HACH	CL17	-	N/A	
CL17-2	DPD CHLORINE ONLINE TEST	-	MONITOR CHLORINE LEVEL ON EFFLUENT FROM STORAGE	-	HACH	CL17	-	N/A	
DIF1	DIFFUSER	-	INJECT CHLORINATED WATER INTO THE PROCESS FLOW	2	INYO PROCESS	CS200S8F	-	N/A	
DS101A	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS101B	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS102A	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS102B	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS103A	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS103B	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS104A	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
DS104B	DIAPHRAGM SEAL	-	PREVENT HIGHLY CHLORINATED WATER FROM ENTERING GAUGE	1/2	ASHCROFT	100-50YKY04TCG	-	N/A	
EJCT1	EJECTOR NOZZLE	-	VENTURI TO EJECT CHLORINE INTO WATER - 250 PPD	-	REGAL	950/18A NOZZLE	-	N/A	
EJCT2	EJECTOR NOZZLE	-	VENTURI TO EJECT CHLORINE INTO WATER - 100 PPD	-	REGAL	950/17A NOZZLE	-	N/A	
EJCT3	EJECTOR NOZZLE	-	VENTURI TO EJECT CHLORINE INTO WATER - 50 PPD	-	REGAL	950/17A NOZZLE	-	N/A	
EJCT4	EJECTOR NOZZLE	-	VENTURI TO EJECT CHLORINE INTO WATER - 25 PPD	-	REGAL	950/5A NOZZLE	-	N/A	
F101	JOHNSON FILTER HOUSING	-	REMOVE DPD FROM CL-17 EFFLUENT	-	JOHNSON FILTER	JPH130R	-	-	
F102	JOHNSON FILTER HOUSING	-	REMOVE DPD FROM CL-17 EFFLUENT	-	JOHNSON FILTER	JPH130R	-	-	
F103	JOHNSON FILTER HOUSING	-	REMOVE DPD FROM CL-17 EFFLUENT	-	JOHNSON FILTER	JPH130R	-	-	
M101	MAGNETIC FLOWMETER	-	MONITOR TREATED WATER FLOW	16	ROSEMOUNT 8750WA	8750WA 32ES T 1 A 1 F T S A 160 S A1 DA1 L1 DW	REMOTE MOUNTED TRANSMITTER	N/A	
M102	MAGNETIC FLOWMETER - BYPASS LINE	-	MONITOR WATER ROUTED THROUGH THE BYPASS LINE	16	ROSEMOUNT 8750WA	8750WA 32ES T 1 A 1 F T S A 160 S A1 DA1 L1 DW	REMOTE MOUNTED TRANSMITTER	N/A	
PG101	PRESSURE GAUGE	-	PRESSURE GAUGE AT STRAINER INLET	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG102A	PRESSURE GAUGE	-	PRESSURE GAUGE AT STRAINER OUTLET ST101A	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG102B	PRESSURE GAUGE	-	PRESSURE GAUGE AT STRAINER OUTLET ST101B	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG103A	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO UV REACTOR 101A	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG103B	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET UV REACTOR 101B	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG104A	PRESSURE GAUGE	-	PRESSURE GAUGE AT OUTLET TO UV REACTOR 101A	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG104B	PRESSURE GAUGE	-	PRESSURE GAUGE AT OUTLET TO UV REACTOR 101B	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG105A	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO CLA-VAL VALVE V109A	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG105B	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO CLA-VAL VALVE V109B	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG106	PRESSURE GAUGE	-	PRESSURE GAUGE AT OUTLET OF CLA-VAL VALVE	-	ASHCROFT	45-1279SL04LMF0/160	1279	N/A	
PG107A	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO EJECTOR NOZZLE	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	DO NOT INSTALL
PG107B	PRESSURE GAUGE	-	PRESSURE GAUGE AT OUTLET TO EJECTOR NOZZLE	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	DO NOT INSTALL
PG108	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO 250 PPD EJECTOR	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG109	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO 100 PPD EJECTOR	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG110	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO 50 PPD EJECTOR	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG111	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET TO 25 PPD EJECTOR	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG112	PRESSURE GAUGE	-	PRESSURE GAUGE ON OUTLET LINE FROM EJECTORS	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG113	PRESSURE GAUGE	-	REMOTE GAUGE CORRESPONDING TO PG108, 250 PPD EJECTOR	-	PRECISION DIGITAL	PD765-6R2-00	N/A	N/A	
PG114	PRESSURE GAUGE	-	REMOTE GAUGE CORRESPONDING TO PG109, 100 PPD EJECTOR	-	PRECISION DIGITAL	PD765-6R2-00	N/A	N/A	
PG115	PRESSURE GAUGE	-	REMOTE GAUGE CORRESPONDING TO PG110, 50 PPD EJECTOR	-	PRECISION DIGITAL	PD765-6R2-00	N/A	N/A	
PG116	PRESSURE GAUGE	-	REMOTE GAUGE CORRESPONDING TO PG111, 25 PPD EJECTOR	-	PRECISION DIGITAL	PD765-6R2-00	N/A	N/A	
PG117	PRESSURE GAUGE	-	REMOTE GAUGE CORRESPONDING TO PG112, RETURN LINE	-	PRECISION DIGITAL	PD765-6R2-00	N/A	N/A	
PG118A	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET OF V109A	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG118B	PRESSURE GAUGE	-	PRESSURE GAUGE AT INLET OF V109B	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG119A	PRESSURE GAUGE	-	PRESSURE GAUGE AT OUTLET OF V109A	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	
PG119B	PRESSURE GAUGE	-	PRESSURE GAUGE AT OUTLET OF V109B	1/2	ASHCROFT	45-2279S04LMF0/300	2279	N/A	

TAG NO.	ITEM	Operati on	FUNCTION	SIZE	MANUFACTUR ER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
PG120	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
PG121	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
PG122	LOW RANGE PRESSURE GAUGE, 0 - 5 PSI	-	MONITOR PRESSURE AT INLET TO CL17-1	1/4	WIKA 611.10	9851933	-	N/A	
PG123	LOW RANGE PRESSURE GAUGE, 0 - 5 PSI	-	MONITOR PRESSURE AT INLET TO CL17-2	1/4	WIKA 611.10	9851933	-	N/A	
PH/TEMP1	PH/TEMPERATURE MEASUREMENT	-	MEASURE PH & TEMPERATURE	-	HACH	DPD1P1/ 9180100	-	-	
PT101	PRESSURE TRANSDUCER	-	MONITOR INLET PRESSURE	-	ROSEMOUNT	3051TG2A2B21J	-	-	
PT102	PRESSURE TRANSDUCER	-	MONITOR PRESSURE AFTER STRAINERS	-	ROSEMOUNT	3051TG2A2B21J	-	-	
PT103	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
PT104	PRESSURE TRANSDUCER	-	MONITOR INLET PRESSURE	-	ROSEMOUNT	3051TG2A2B21J	-	-	
PT105	PRESSURE TRANSDUCER	-	MONITOR PRESSURE - OUTLET TO UV REACTOR 101A	-	ROSEMOUNT	3051TG2A2B21J	-	-	
PT106	PRESSURE TRANSDUCER	-	MONITOR PRESSURE - OUTLET TO UV REACTOR 101B	-	ROSEMOUNT	3051TG2A2B21J	-	-	
PT107	PRESSURE TRANSDUCER	-	MONITOR PRESSURE AT INLET OF FLOW CONTROL VALVES V109A/B	-	ROSEMOUNT	3051TG2A2B21J	-	-	
PT108	PRESSURE TRANSDUCER	-	MONITOR PRESSURE AT OUTLET OF FLOW CONTROL VALVES V109A/B	-	ROSEMOUNT	3051TG2A2B21J	-	-	
DP101	DIFFERENTIAL PRESSURE GAUGE	-	MEASURE DIFFERENTIAL PRESSURE ACROSS STRAINERS	-	ASHCROFT	60-1132-SS-25S-L-X V2-8PSI	-	-	
SM101	STATIC MIXER	-	MIX CHLORINE INTO TREATED WATER STREAM	16	KOMAX	60270	-	-	
ST101A	BASKET STRAINER	-	REMOVE DEBRIS FROM INCOMING WATER	16	KECKLEY	FBQ-150-16	-	-	
ST101B	BASKET STRAINER	-	REMOVE DEBRIS FROM INCOMING WATER	16	KECKLEY	FBQ-150-16	-	-	
ST103	IN LINE STRAINER	-	REMOVE DEBRIS FROM INCOMING WATER (UVT1)	1/2	EATON	85Y	Y STRAINER	-	
ST104	IN LINE STRAINER	-	REMOVE DEBRIS FROM INCOMING WATER (UVT2)	1/2	EATON	85Y	Y STRAINER	-	
ST105	IN LINE STRAINER	-	REMOVE DEBRIS FROM WATER TO CHLORINATION ROOM	1 1/4	EATON	85Y	Y STRAINER	-	
ST106	IN LINE STRAINER	-	REMOVE DEBRIS FROM WATER TO CHLORINATION ROOM	1 1/4	EATON	85Y	Y STRAINER	-	
ST107	IN LINE STRAINER	-	REMOVE DEBRIS FROM WATER TO CHLORINATION ROOM	1 1/4	EATON	85Y	Y STRAINER	-	
ST108	IN LINE STRAINER	-	REMOVE DEBRIS FROM WATER TO CHLORINATION ROOM	1 1/4	EATON	85Y	Y STRAINER	-	
TT101	TEMPERATURE TRANSMITTER	-	MEASURE TEMPERATURE OF PROCESS WATER	-	ROSEMOUNT	3144PD1A1NAM5X A	-	-	
	TEMPERATURE SENSOR	-		-	ROSEMOUNT	0068N21N00A060T 26XA	-	-	
TT102	TEMPERATURE TRANSMITTER	-	MEASURE TEMPERATURE OF PROCESS WATER	-	ROSEMOUNT	3144PD1A1NAM5X A	-	-	
	TEMPERATURE SENSOR	-		-	ROSEMOUNT	0068N21N00A060T 26XA	-	-	
TURB-2	TURBIDIMETER	-	MONITOR INCOMING WATER TURBIDITY	-	HACH	1720E	-	-	
TURB-3	TURBIDIMETER	-	MONITOR INCOMING WATER TURBIDITY	-	HACH	1720E	-	-	
TURB-4	TURBIDIMETER	-	MONITOR TURBIDITY IN WATER FROM CT TANK	-	HACH	1720E	-	-	
UVR-101A	UV REACTOR	-	DISINFECTION	24	CALGON	5X10	-	-	
UVR-101B	UV REACTOR	-	DISINFECTION	25	CALGON	5X10	-	-	
UVT-2	UV TRANSMITTANCE METER	-	MEASURE UVT IN WATER	-	HACH	UVAS SC	-	-	
UVT-3	UV TRANSMITTANCE METER	-	MEASURE UVT IN WATER	-	HACH	UVAS SC	-	-	
V100	ELECTRICALLY OPERATED BUTTERFLY VALVE	MANUAL	PRIMARY INLET CONTROL	16	PRATT	HP250	OP/CL	MANUAL	
V101	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	TREATMENT INLET CONTROL	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V102A	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	INLET CONTROL INTO STRAINER ST101A	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V102B	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	INLET CONTROL INTO STRAINER ST101B	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V103A	MANUALLY OPERATED BUTTERFLY VALVE	MANUAL	OUTLET CONTROL FROM STRAINER ST101A	16	PRATT	HP250	OP/CL	N/A	
V103B	MANUALLY OPERATED BUTTERFLY VALVE	MANUAL	OUTLET CONTROL FROM STRAINER ST101B	16	PRATT	HP250	OP/CL	N/A	
V104	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	DISCHARGE CONTROL VALVE	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	

Plotted By: CJ Dec 2013 10:35 am
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 CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 VALVE AND CONTROL SCHEDULE 1 / 3
 SCALE: AS SHOWN
 DESIGNED BY: JM
 DRAWN BY: CRS
 CHECKED BY: GWF
 DATE: 12/2/13
 FILE NO: 850.01
 SHEET NUMBER
P3.0 OF

UNALASKA VALVE AND CONTROL SCHEDULE -CONT'D

TAG NO.	ITEM	Operati on	FUNCTION	SIZE	MANUFACTUR ER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
V105A	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	INLET CONTROL INTO UV REACTOR UVR101A	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V105B	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	INLET CONTROL INTO UV REACTOR UVR101B	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V106A	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	OUTLET CONTROL FROM UV REACTOR UVR101A	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V106B	ELECTRICALLY OPERATED BUTTERFLY VALVE	AUTOMATED	OUTLET CONTROL FROM UV REACTOR UVR101B	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V107A	ELECTRICALLY OPERATED BUTTERFLY VALVE	MANUAL	INLET ISOLATION VALVE FOR CLA-VAL CONTROL VALVE V109A	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V107B	ELECTRICALLY OPERATED BUTTERFLY VALVE	MANUAL	INLET ISOLATION VALVE FOR CLA-VAL CONTROL VALVE V109B	16	PRATT	HP250	OP/CL	Auma SA07.6-54B/GS100.3 /VZ4.3/AM01.2	
V108A	MANUALLY OPERATED BUTTERFLY VALVE	MANUAL	OUTLET ISOLATION VALVE FOR CLA-VAL CONTROL VALVE V109A	16	PRATT	HP250	OP/CL	N/A	
V108B	MANUALLY OPERATED BUTTERFLY VALVE	MANUAL	OUTLET ISOLATION VALVE FOR CLA-VAL CONTROL VALVE V109B	16	PRATT	HP250	OP/CL	N/A	
V109A	FLOW CONTROL VALVE	AUTOMATED	FLOW CONTROL	16	CLA-VAL	631G-36BCSY	MODULATING	N/A	
V109B	FLOW CONTROL VALVE	AUTOMATED	FLOW CONTROL	16	CLA-VAL	631G-36BCSY	MODULATING	N/A	
V110	CHECK VALVE - SWING	AUTOMATED	BACKFLOW PREVENTION	16	FLOWMATIC	92LW	OP/CL	N/A	
V111	BALL VALVE	MANUAL	ISOLATION OF UV-1	1/2	-	-	OP/CL	N/A	
V112A	BALL VALVE	MANUAL	DRAIN UVR101A REACTOR LINE	2	-	-	OP/CL	N/A	
V112B	BALL VALVE	MANUAL	DRAIN UVR101B REACTOR LINE	2	-	-	OP/CL	N/A	
V113	BALL VALVE	MANUAL	ISOLATION OF UV-2	1/2	-	-	OP/CL	N/A	
V114	BALL VALVE	MANUAL	ISOLATION OF CL17 AND HACH 1720E	1/2	-	-	OP/CL	N/A	
V115	BALL VALVE	MANUAL	SAMPLE	1/2	-	-	OP/CL	N/A	
V116	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V117A	BALL VALVE	MANUAL	VENT ON STRAINER ST101A	1/2	-	-	OP/CL	N/A	
V117B	BALL VALVE	MANUAL	VENT ON STRAINER ST101B	1/2	-	-	OP/CL	N/A	
V118	HOSE BIBB	MANUAL	SAMPLE	3/4	-	-	MODULATING	N/A	
V119	VACUUM BREAKER	AUTOMATIC	PREVENTS NEGATIVE PRESSURE IN DISCHARGE LINE	4	VALMATIC	1854VB	AUTOMATIC	N/A	
V120	BALL VALVE	MANUAL	DRAIN AT INLET TO STRAINERS	2	-	-	OP/CL	N/A	
V121	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG101	1/2	-	-	OP/CL	N/A	
V122A	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG102A	1/2	-	-	OP/CL	N/A	
V122B	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG102B	1/2	-	-	OP/CL	N/A	
V123A	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG103A	1/2	-	-	OP/CL	N/A	
V123B	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG103B	1/2	-	-	OP/CL	N/A	
V124A	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG104A	1/2	-	-	OP/CL	N/A	
V124B	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG104B	1/2	-	-	OP/CL	N/A	
V125	STAINLESS STEEL CHECK VALVE	-	CHECK VALVE, PREVENT BACKFLOW TO CHLORINE PUMPS	1-1/4	FLOWMATIC	812X - 2423X	-	-	
V126	STAINLESS STEEL CHECK VALVE	-	CHECK VALVE, PREVENT BACKFLOW TO CHLORINE PUMPS	1-1/4	FLOWMATIC	812X - 2423X	-	-	
V127A	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG105A	1/2	-	-	OP/CL	N/A	
V127B	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG105B	1/2	-	-	OP/CL	N/A	
V128	BALL VALVE	MANUAL	ISOLATION VALVE FOR PRESSURE GAUGE PG106	1/2	-	-	OP/CL	N/A	
V129	BALL VALVE	MANUAL	ISOLATION VALVE FOR CL17-1	-	-	-	-	-	
V130	BALL VALVE	MANUAL	ISOLATION VALVE FOR TURB-2	1/2	-	-	OP/CL	N/A	
V131A	AIR/VACUUM RELEASE VALVE	AUTOMATIC	RELEASE AIR FROM UV REACTOR LINE A (DURING FILLING/START UP)	1/2	VALMATIC	VMC-100S	AUTOMATIC	N/A	
V131B	AIR/VACUUM RELEASE VALVE	AUTOMATIC	RELEASE AIR FROM UV REACTOR LINE B (DURING FILLING/START UP)	1/2	VALMATIC	VMC-100S	AUTOMATIC	N/A	
V132	AIR/VACUUM RELEASE VALVE	AUTOMATIC	RELEASE AIR FROM ELEVATED METER LINE (DURING FILLING/START UP)	1/2	VALMATIC	VMC-100S	AUTOMATIC	N/A	
V133	AIR/VACUUM RELEASE VALVE	AUTOMATIC	RELEASE AIR FROM ELEVATED METER LINE (DURING FILLING/START UP)	1/2	VALMATIC	VMC-100S	AUTOMATIC	-	
V134A	BALL VALVE	MANUAL	ISOLATION VALVE FOR V131A AIR/VACUUM RELEASE	1/2	-	-	OP/CL	N/A	
V134B	BALL VALVE	MANUAL	ISOLATION VALVE FOR V131B AIR/VACUUM RELEASE	1/2	-	-	OP/CL	N/A	
V135	BALL VALVE	MANUAL	ISOLATION VALVE FOR V132 AIR/VACUUM RELEASE	1/2	-	-	OP/CL	N/A	

TAG NO.	ITEM	Operati on	FUNCTION	SIZE	MANUFACTUR ER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
V136	BALL VALVE	MANUAL	ISOLATION VALVE FOR V133 AIR/VACUUM RELEASE	1/2	-	-	OP/CL	N/A	
V137	AIR RELEASE VALVE	AUTOMATIC	RELEASE AIR COLLECTED BETWEEN STRAINERS AND UV REACTORS (DURING OPERATION)	1	VALMATIC	VMC-38	AUTOMATIC	N/A	
V138	DIAPHRAGM VALVE	MANUAL	FLOW CONTROL THROUGH TURB-1	3/8	GEMU	TYPE 611	MANUAL	N/A	
V139	BALL VALVE	MANUAL	ISOLATION VALVE FOR V137 AIR RELEASE	1	-	-	MANUAL	N/A	
V140	DIAPHRAGM VALVE	MANUAL	FLOW CONTROL THROUGH TURB-1	3/8	GEMU	TYPE 611	MANUAL	N/A	
V141	BALL VALVE 150 LB	MANUAL	INLET TO PUMP PMP101	1 1/4	-	-	MANUAL	N/A	
V142	BALL VALVE 150 LB	MANUAL	INLET TO PUMP PMP103	1 1/4	-	-	MANUAL	N/A	
V143	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	THROTTLING VALVE ON CHLORINE RETURN, 250 PPD	1 1/4	-	-	MANUAL	N/A	
V144	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	THROTTLING VALVE ON CHLORINE RETURN, 50 PPD	1 1/4	-	-	MANUAL	N/A	
V145	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	OUTLET FROM PUMP PMP101 (250 PPD)	1 1/4	-	-	MANUAL	N/A	
V146	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	OUTLET FROM PUMP PMP103 (50 PPD)	1 1/4	-	-	MANUAL	N/A	
V147	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #1, 250 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V148	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #2, 250 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V149	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #3, 250 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V150	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 250 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V151	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 250 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V152	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V153	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V154	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #1, 100 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V155	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #2, 100 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V156	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #3, 100 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V157	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 100 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V158	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 100 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V159	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V160	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V161	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #1, 50 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V162	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #2, 50 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V163	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #3, 50 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V164	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 50 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V165	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 50 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V166	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V167	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V168	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #1, 25 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V169	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #2, 25 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V170	KYNAR BALL VALVE	MANUAL	CHLORINE CONTROL #3, 25 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V171	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 25 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V172	KYNAR BALL VALVE	MANUAL	FLOW CONTROL, 25 PPD SYSTEM	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V173	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V174	KYNAR BALL VALVE	MANUAL	PRESSURE GAUGE ISOLATION	1/4	MILLER PLASTICS	-	MANUAL	N/A	
V175	STAINLESS STEEL CHECK VALVE	-	PREVENT BACKFLOW TO CHLORINE PUMPS	1-1/4	FLOWMATIC	812X - 2423X	-	-	
V176	STAINLESS STEEL CHECK VALVE	-	PREVENT BACKFLOW TO CHLORINE PUMPS	1-1/4	FLOWMATIC	812X - 2423X	-	-	
V177	HOSE BIBB	MANUAL	SAMPLE EFFLUENT FROM ST101A	3/4	-	-	MANUAL	N/A	
V178	HOSE BIBB	MANUAL	SAMPLE EFFLUENT FROM ST101B	3/4	-	-	MANUAL	N/A	
V179	REMOVED FROM SYSTEM	-	-	-	-	-	MANUAL	N/A	
V180	BALL VALVE	MANUAL	ISOLATION FOR WATER TO CHLORINE PUMPS	2	-	-	MANUAL	N/A	
V181	KYNAR BALL VALVE	MANUAL	CHLORINE GAS FEED TO 250 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V182	KYNAR BALL VALVE	MANUAL	CHLORINE GAS FEED TO 100 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V183	KYNAR BALL VALVE	MANUAL	CHLORINE GAS FEED TO 50 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V184	KYNAR BALL VALVE	MANUAL	CHLORINE GAS FEED TO 25 PPD SYSTEM	1/2	MILLER PLASTICS	-	MANUAL	N/A	
V185	KYNAR BALL VALVE	MANUAL	ISOLATION VALVE ON CHLORINE RETURN LINE	1-1/4	MILLER PLASTICS	-	MANUAL	N/A	
V186	PVC BALL VALVE	MANUAL	ISOLATION VALVE FOR PH/TEMP INSTRUMENT	1/2	GEORGE FISHER	514	MANUAL	N/A	
V187	PVC BALL VALVE	MANUAL	ISOLATION VALVE FOR CL17-2	1/2	-	-	MANUAL	N/A	
V188A	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG118A	1/2	-	-	MANUAL	N/A	
V188B	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG118B	1/2	-	-	MANUAL	N/A	
V189A	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG119A	1/2	-	-	MANUAL	N/A	
V189B	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG119B	1/2	-	-	MANUAL	N/A	
V190	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG123	1/2	-	-	MANUAL	N/A	
V191	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG122	1/2	-	-	MANUAL	N/A	
V192	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	



NO.	DATE	BY	REVISION
	12/2/13	JM	ISSUED FOR BID

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Suite 2100
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**PYRAMID WTP
UNALASKA, ALASKA
VALVE AND CONTROL SCHEDULE 2/3**

SCALE:	AS SHOWN
DESIGNED BY:	JM
DRAWN BY:	CRS
CHECKED BY:	GW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	P3.1 OF

Plotted By: OZ
Date/Time: 12/13/13 10:35 am
File Name: F:\Civil Projects\850.01_Unalaska_WTP.dwg\850.01_DSJ_Piping_Unalaska.dwg

UNALASKA VALVE AND CONTROL SCHEDULE -CONT'D

TAG NO.	ITEM	Operati on	FUNCTION	SIZE	MANUFACTUR ER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
V193	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V194	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V195	DIAPHRAGM VALVE	MANUAL	FLOW CONTROL THROUGH CL17-1	3/8	GEMU	TYPE 611	MANUAL	N/A	
V196	DIAPHRAGM VALVE	MANUAL	FLOW CONTROL THROUGH PH/TEMP	3/8	GEMU	TYPE 611	MANUAL	N/A	
V197	DIAPHRAGM VALVE	MANUAL	FLOW CONTROL THROUGH CL17-2	3/8	GEMU	TYPE 611	MANUAL	N/A	
V198	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V199	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V200	BALL VALVE	MANUAL	ISOLATION VALVE FOR CARBON FILTER	3/4	-	-	MANUAL	N/A	
V201	BALL VALVE	MANUAL	ISOLATION VALVE FOR CARBON FILTER	3/4	-	-	MANUAL	N/A	
V202	BALL VALVE	MANUAL	ISOLATION VALVE FOR CARBON FILTER	3/4	-	-	MANUAL	N/A	
V203	BALL VALVE 150 LB	MANUAL	INLET TO PUMP PMP102	1 1/4	-	-	MANUAL	N/A	
V204	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	THROTTLING VALVE ON CHLORINE RETURN, 100 PPD	1 1/4	-	-	MANUAL	N/A	
V205	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	OUTLET FROM PUMP PMP102 (100 PPD)	1 1/4	-	-	MANUAL	N/A	
V206	BALL VALVE 150 LB	MANUAL	INLET TO PUMP PMP104	1 1/4	-	-	MANUAL	N/A	
V207	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	THROTTLING VALVE ON CHLORINE RETURN, 25 PPD	1 1/4	-	-	MANUAL	N/A	
V208	STAINLESS STEEL GLOBE VALVE 300 LB	MANUAL	OUTLET FROM PUMP PMP104 (25 PPD)	1 1/4	-	-	MANUAL	N/A	
V209	BALL VALVE	MANUAL	ISOLATION VALVE FOR TURB-3	1/2	-	-	OP/CL	N/A	
V210	BALL VALVE	MANUAL	ISOLATION VALVE FOR INSTRUMENT FLOW	1/2	-	-	OP/CL	N/A	
V211	BALL VALVE	MANUAL	ISOLATION VALVE FOR INSTRUMENT FLOW	1/2	-	-	OP/CL	N/A	
V212	BALL VALVE	MANUAL	ISOLATION OF PG108	1/4	-	-	OP/CL	N/A	
V213	BALL VALVE	MANUAL	ISOLATION OF PG109	1/4	-	-	OP/CL	N/A	
V214	BALL VALVE	MANUAL	ISOLATION OF PG110	1/4	-	-	OP/CL	N/A	
V215	BALL VALVE	MANUAL	ISOLATION OF PG111	1/4	-	-	OP/CL	N/A	
V216	BALL VALVE	MANUAL	ISOLATION OF PG112	1/4	-	-	OP/CL	N/A	
V217	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V218	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V219	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V220	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V221	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V222	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V223	KYNAR BALL VALVE	MANUAL	CHLORINE SYSTEM ISOLATION	3/4	MILLER PLASTICS	-	MANUAL	N/A	
V224	BALL VALVE	MANUAL	ISOLATION VALVE FOR TURB-4	1/2	-	-	OP/CL	N/A	
V225	ISOLATION VALVE	MANUAL	ISOLATION OF PRESSURE GAUGE TO PH/TEMP INSTRUMENT	1/4	-	-	MANUAL		
VG101	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 250 PPD SYSTEM	-	ASHCROFT	DM61-D	-	N/A	
VG102	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 100 PPD SYSTEM	-	ASHCROFT	DM61-D	-	N/A	
VG103	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 50 PPD SYSTEM	-	ASHCROFT	DM61-D	-	N/A	
VG104	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 25 PPD SYSTEM	-	ASHCROFT	DM61-D	-	N/A	
VG105	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 25 PPD SYSTEM	-	ASHCROFT	DM61-D	-	N/A	
VM101	VACUUM MONITOR	-	MONITOR VACUUM IN CHLORINE SYSTEM	-	REGAL	VAC 1000	AUTOMATIC	N/A	

UNALASKA PUMP SCHEDULE

PUMP NO.	NOMINAL FLOW			REQ'D HEAD		MANUF ACT	PROD UCT LINE	RPM	NO OF STAGES	CONFIG OPTION	HP RATING		POLE/HZ/ PHASE	VOLAGE		ENCLOSURE		MODEL NO
	GPM	M3/H R	CALLO UT	PSI	FT						HP RATING	CALLOUT		VOLTAGE	CALLOUT	TYPE	CALLOUT	
PMP 101	29.1	6.61	5	195	450	GOULD	SV	3500	15	ROUND 304	5		2/60/3	208-230	F	TEFC	2	5SV15FG4 F60
PMP 102	24.0	5.45	5	185	427	GOULD	SV	3500	13	ROUND 304	5		2/60/3	208-230	F	TEFC	2	5SV13FG4 F60
PMP 103	23.7	5.38	5	182	420	GOULD	SV	3500	13	ROUND 304	5		2/60/3	208-230	F	TEFC	2	5SV13FG4 F60
PMP 104	14.4	3.27	5	153	353	GOULD	SV	3500		ROUND 304	5		2/60/3	208-230	F	TEFC	2	3SV11FF4 C60

Plotted By: Curt
Date: Dec 2013 10:35 am
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NO.	DATE	BY	REVISION
1	12/2/13	JM	ISSUED FOR BID


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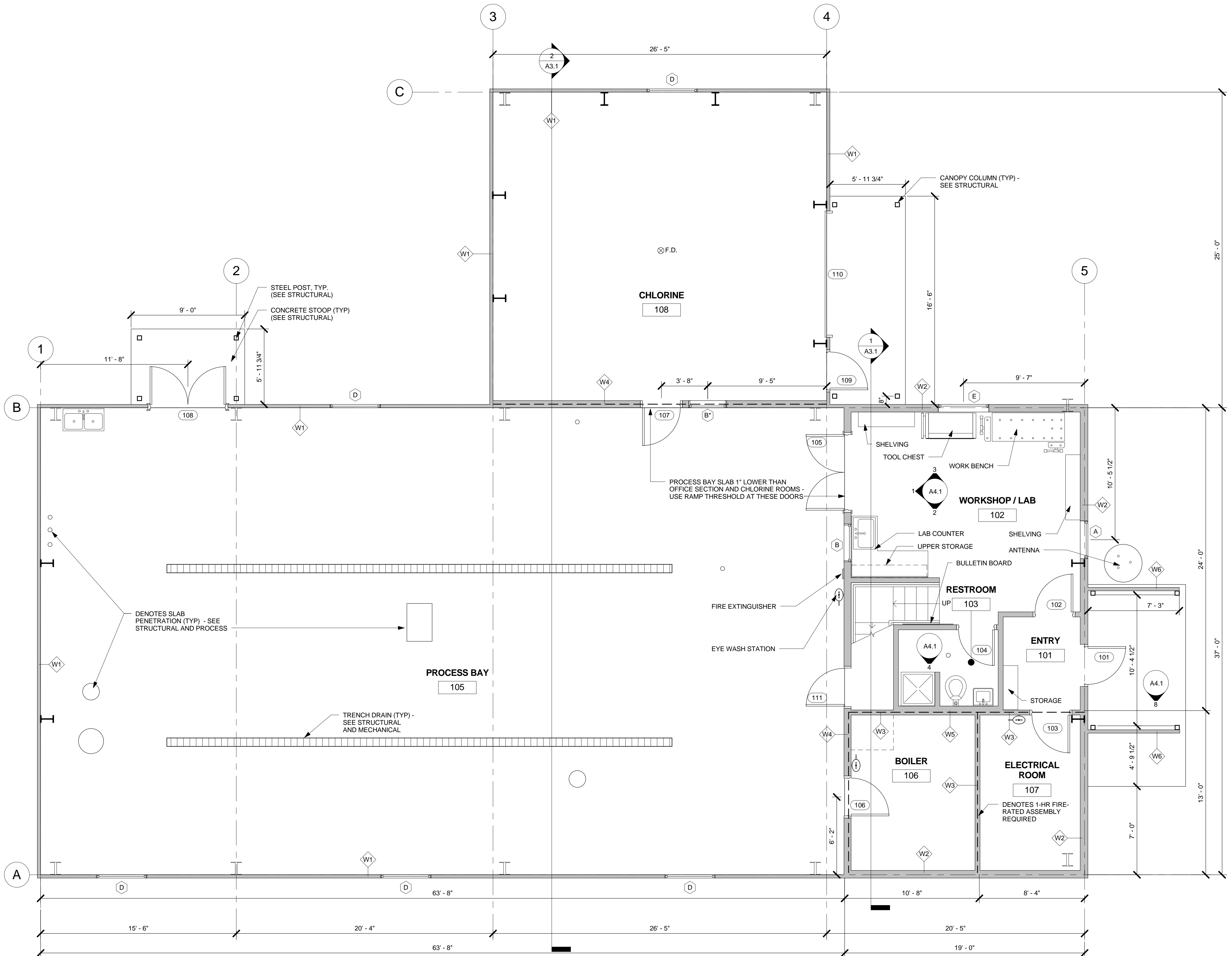
CITY OF UNALASKA

PYRAMID WTP
UNALASKA, ALASKA
 VALVE AND CONTROL SCHEDULE 3/3

SCALE:	AS SHOWN
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	OF

PROJECT SCOPE AND GENERAL NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BUILDING PERMITS, LETTERS OF NON-OBJECTION, UTILITY SERVICES AND APPLICATIONS AS REQUIRED.
- CONTRACTOR TO BE RESPONSIBLE FOR ALL REQUIRED SAFETY PRECAUTIONS, METHODS AND TECHNIQUES.
- THE ORGANIZATION OF THESE DRAWINGS IS NOT INTENDED TO CONTROL THE DIVISION OF WORK AMONG SUB-CONTRACTORS. THE DIVISION OF THE WORK SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO COMPLETE ALL WORK AS SHOWN OR AS IMPLIED ON THESE DRAWINGS.
- VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION. IF A CONDITION NOT COVERED IN THE DRAWINGS IS ENCOUNTERED, OR IF A DIMENSIONAL ERROR IS FOUND, NOTIFY THE AUTHORITY BEFORE COMMENCING WITH THAT PORTION OF THE WORK.
- DIMENSIONS TO FACE OF STUD OR CENTERLINE OF STRUCTURAL STEEL UNLESS OTHERWISE NOTED.
- DO NOT BLOCK OR OBSTRUCT ACCESS, REQUIRED PARKING AREAS, OR REQUIRED EGRESS FROM NEIGHBORING FACILITIES. PROVIDE TEMPORARY BARRICADES OR OTHER FORMS OF PROTECTION TO PROTECT EMPLOYEES, RESIDENTS, AND VISITORS FROM INJURIES DURING CONSTRUCTION ACTIVITIES.
- ALL EXPOSED SURFACES OF NEW WORK TO BE PAINTED, GALVANIZED, OR SHALL HAVE A FACTORY FINISH. PRIOR TO INSTALLATION OF WALL OR ROOF PANELS, EXISTING STEEL FRAMING TO BE PRESSURE WASHED WITH DEGREASER, PRIMED, AND PAINTED - SEE MATERIAL SCHEDULE. IF DURING DEMOLITION OR CLEANING, EXISTING STRUCTURAL MEMBERS ARE DETERMINED TO BE DAMAGED OR UNSUITABLE FOR USE, NOTIFY THE AUTHORITY.
- FURNISH A COMPLETE PACKAGE OF SIDING AND ROOFING FOR BUILDING SHOWN TO INCLUDE ALL TRIM, FLASHING, AND FASTENERS. EXTERIOR SIDING AND ROOFING SYSTEM (INCLUDING FASTENERS) TO THE DESIGN CRITERIA LISTED ON S 1.0. ALL EXTERIOR FASTENERS TO BE CORROSION RESISTANT STAINLESS STEEL OR ALUMINUM. EXPANSION FASTENERS FOR WALL PANELS TO BE FAB-LOK FASTENERS (OR EQUAL).
- IN ADDITION TO SIDING AND ROOFING PACKAGE, FURNISH INFILL OR ADDITIONAL Z-GIRTS AND C-CHANNELS IF REQUIRED TO COMPLETE SIDING, DOOR AND WINDOW INSTALLATION.
- SIDING AND ROOFING SUPPLIER TO PROVIDE COMPLETE SHOP DRAWINGS INDICATING ALL DETAILS OF INSTALLATION.
- INSTALL ALL EXTERIOR SIDING, ROOFING, FLASHING AND TRIM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PRIOR TO INSTALLATION OF NEW ROOF, INSTALL MECHANICAL SUPPORT BEAMS, SEE MECHANICAL.
- CAULK ALL JOINTS, PROVIDE BACKER ROD AS NEEDED, AND PROVIDE FLASHING & COUNTER FLASHING AS NEEDED TO PROVIDE COMPLETE WEATHER PROOF INSTALLATION.
- PROVIDE SAFETY GLAZING AT ALL DOORS AND HAZARDOUS LOCATIONS AS REQUIRED BY CODE AND LOCAL STANDARDS.
- ALL WOOD TO BE INSTALLED IN CONTACT WITH CONCRETE MUST BE PRESSURE TREATED LUMBER.
- REMOVE ALL RUBBISH AND DEBRIS RESULTING FROM CONSTRUCTION.



1 MAIN LEVEL FLOOR PLAN
A1.1 1/4" = 1'-0"



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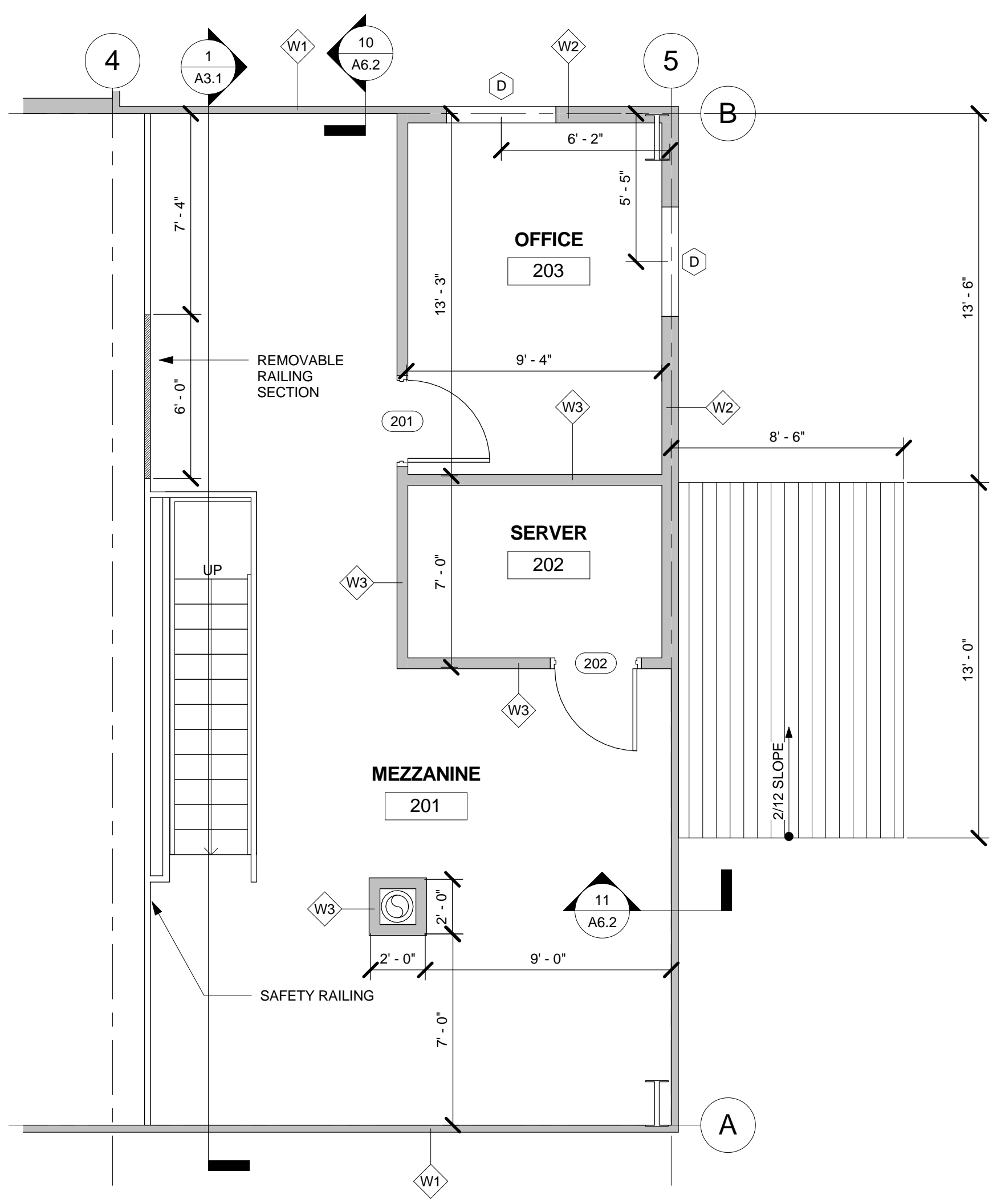
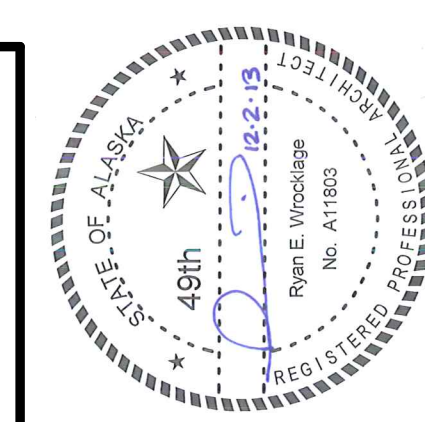
CITY OF UNALASKA

PYRAMID WTP
UNALASKA, ALASKA

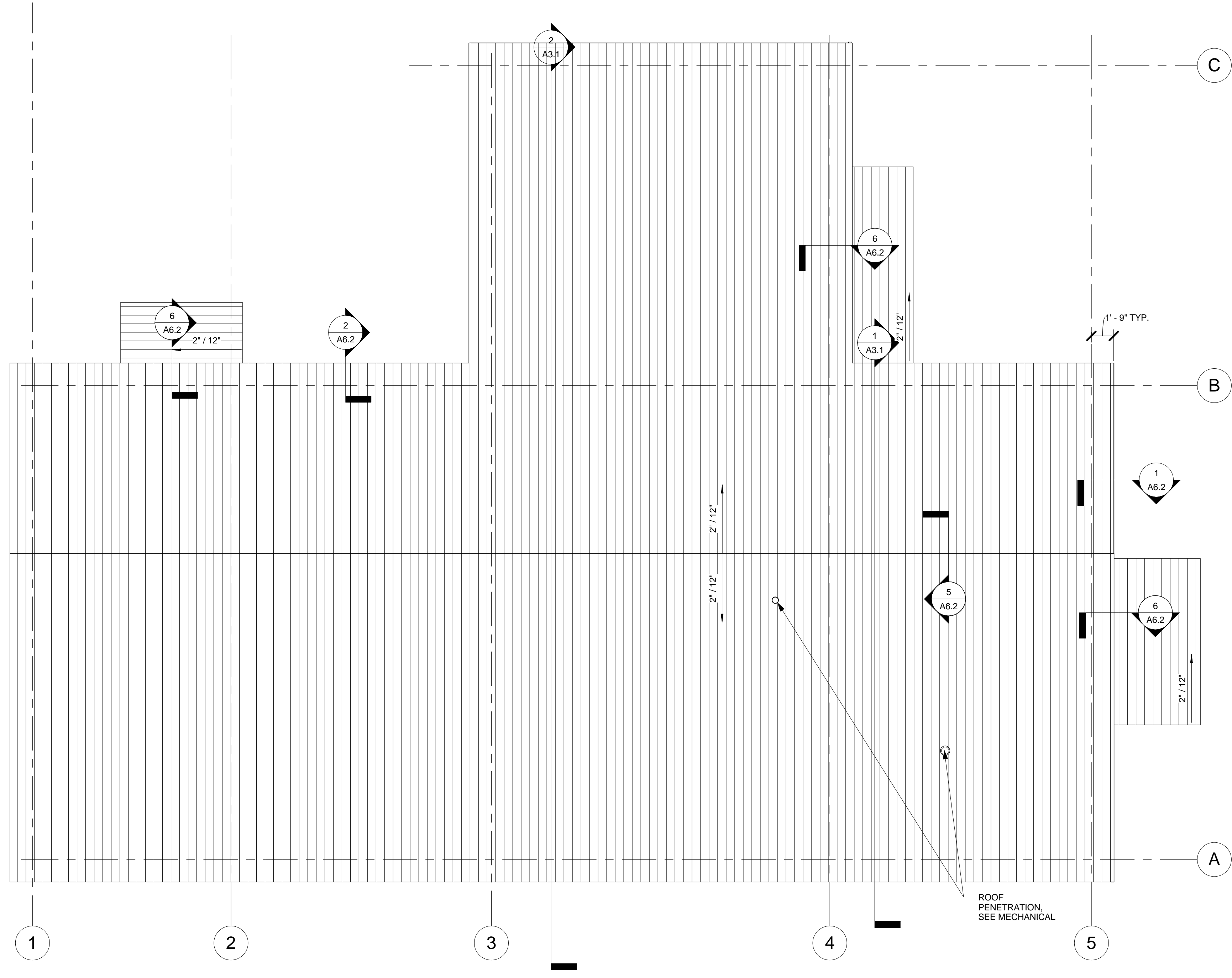
ARCHITECTURAL GENERAL NOTES
MAIN LEVEL FLOOR PLAN

SCALE:	1/4" = 1'-0"
DESIGNED BY:	WS
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CHECKED BY:	WS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	A1.1 OF 8

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 Layout: A1
 Filename: P:\Architectural Projects\850.01 Unalaska Pyramid WTP\850.01 Unalaska WTP.rvt



1 MEZZANINE PLAN
A1.2 1/4" = 1'-0"



2 ROOF PLAN
A1.2 3/16" = 1'-0"

Plotted By: 12/4/2013 5:35:21 PM
Date/Time: 12/4/2013 5:35:21 PM
Layout: A1.2
Filename: P:\Architectural Projects\850.01 Unalaska Pyramid WTP\850.01 Unalaska WTP.rvt

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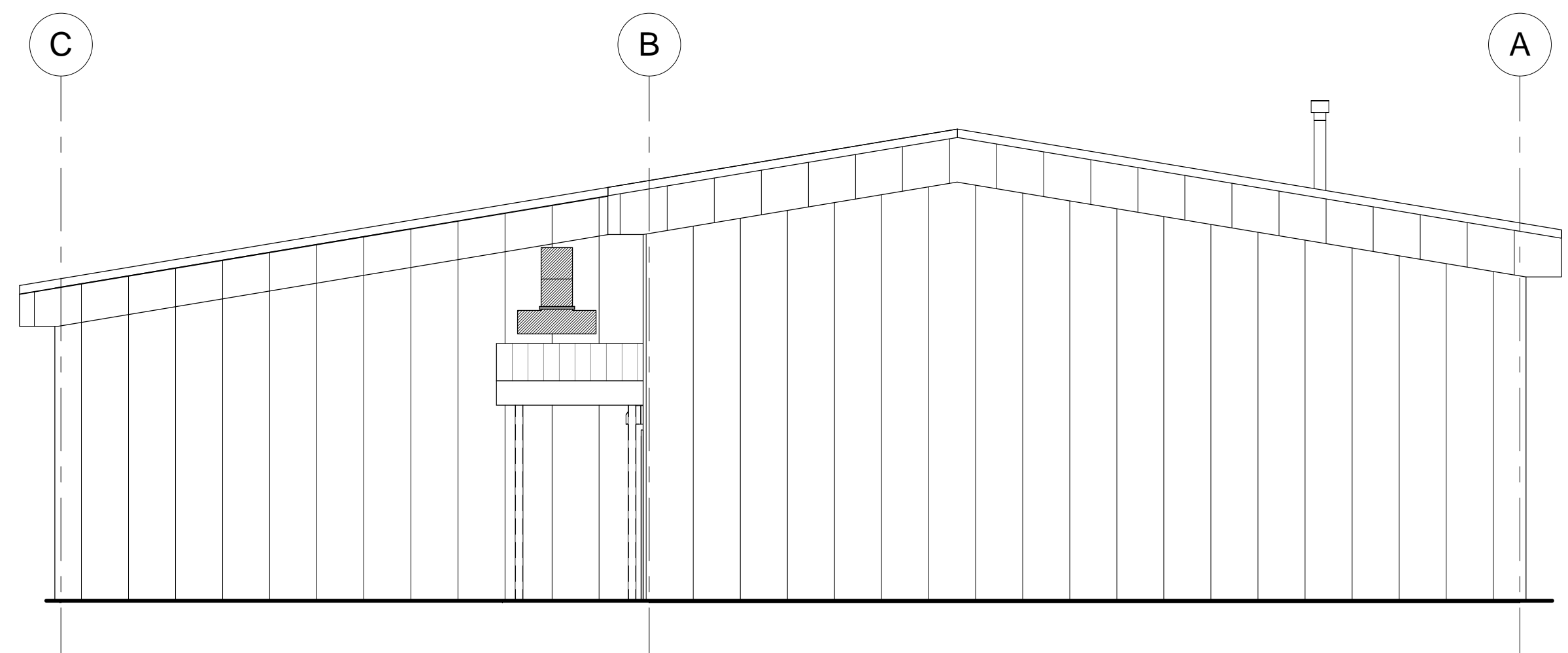
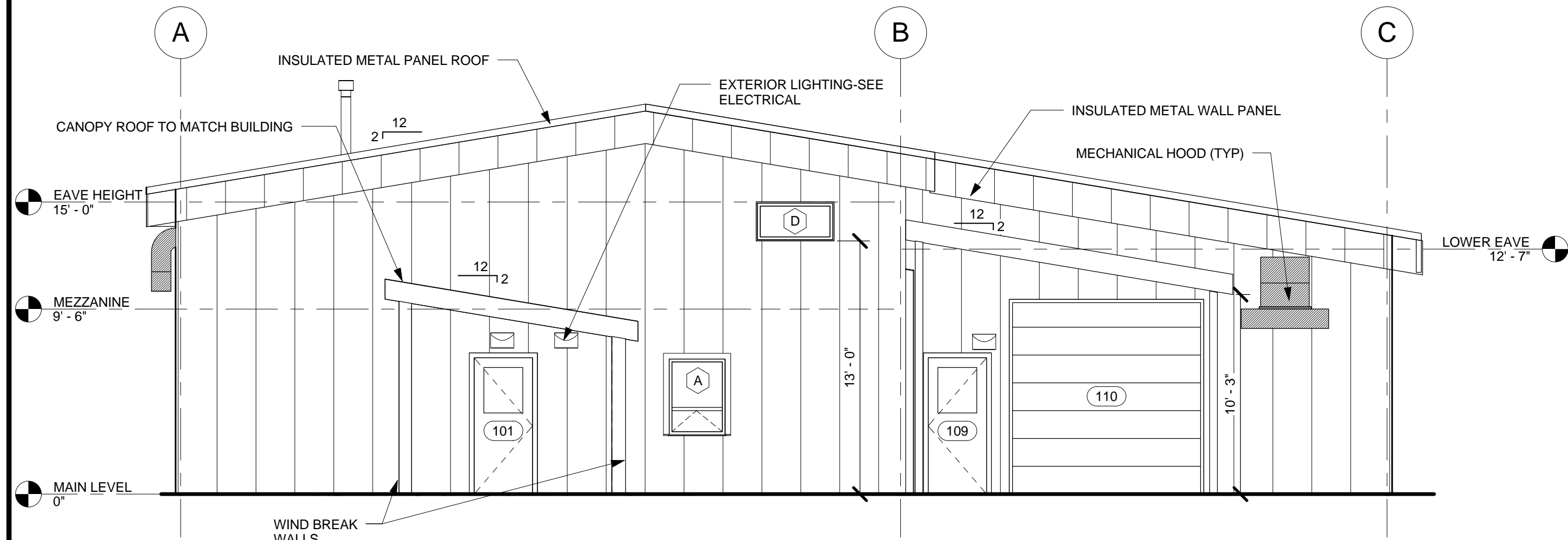
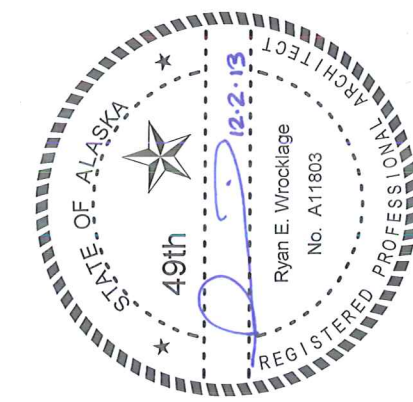
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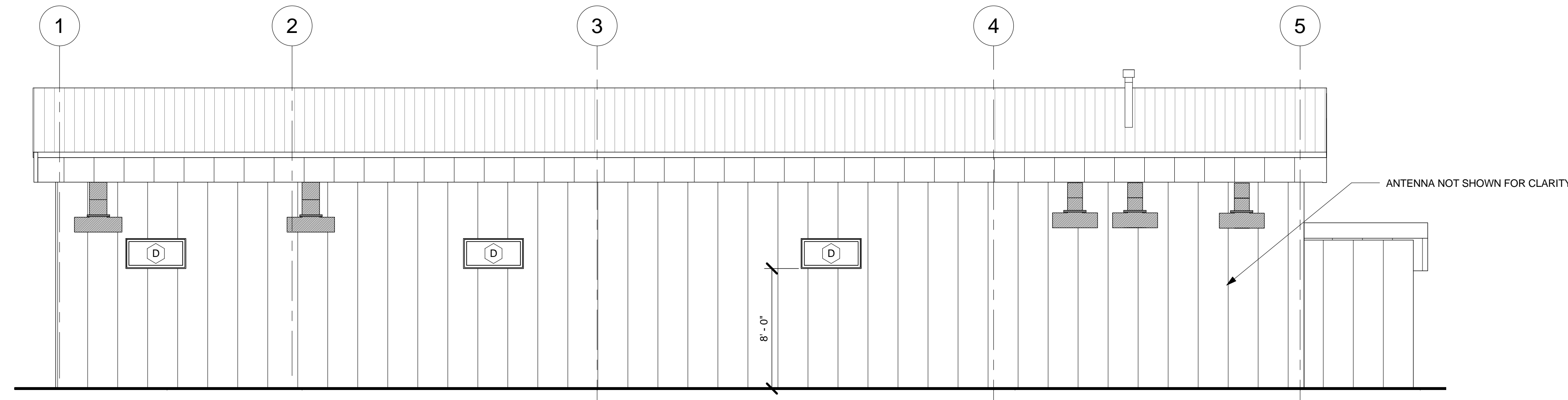
**PYRAMID WTP
UNALASKA, ALASKA
MEZZANINE FLOOR PLAN
ROOF PLAN**

SCALE:	As indicated
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DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	A1.2 OF 8

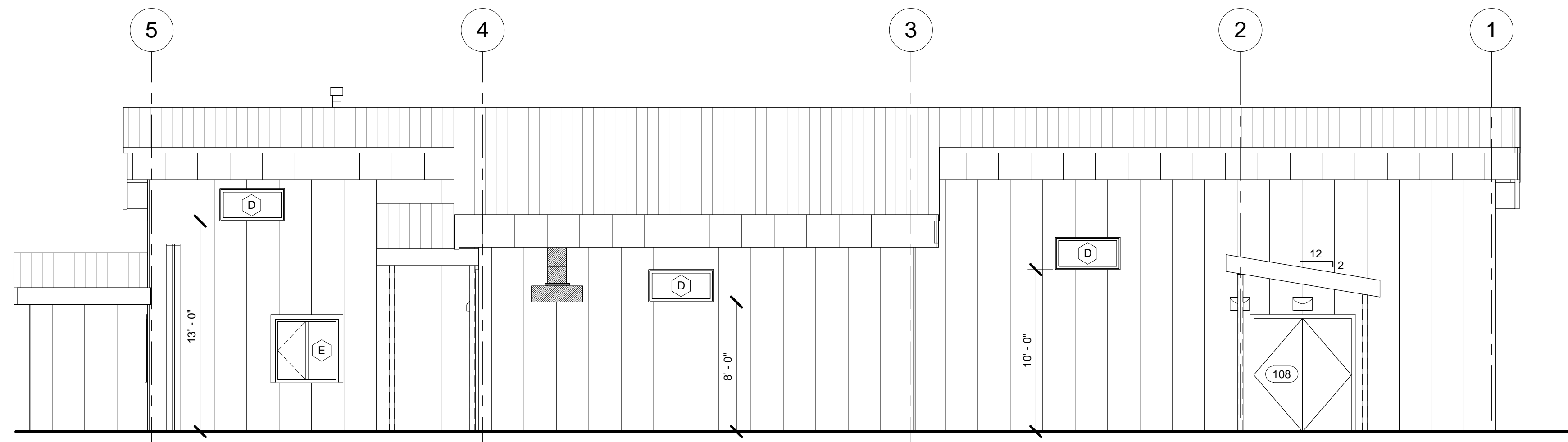


1 NORTH ELEVATION
A2.1 3/16" = 1'-0"

2 SOUTH ELEVATION
A2.1 3/16" = 1'-0"



3 EAST ELEVATION
A2.1 3/16" = 1'-0"



4 WEST ELEVATION
A2.1 3/16" = 1'-0"

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Date/Time: 12/4/2013 5:35:22 PM
Layout: A2.1
Filename: P:\Architectural Projects\850.01 Unalaska Pyramid WTP\850.01 Unalaska WTP.rvt

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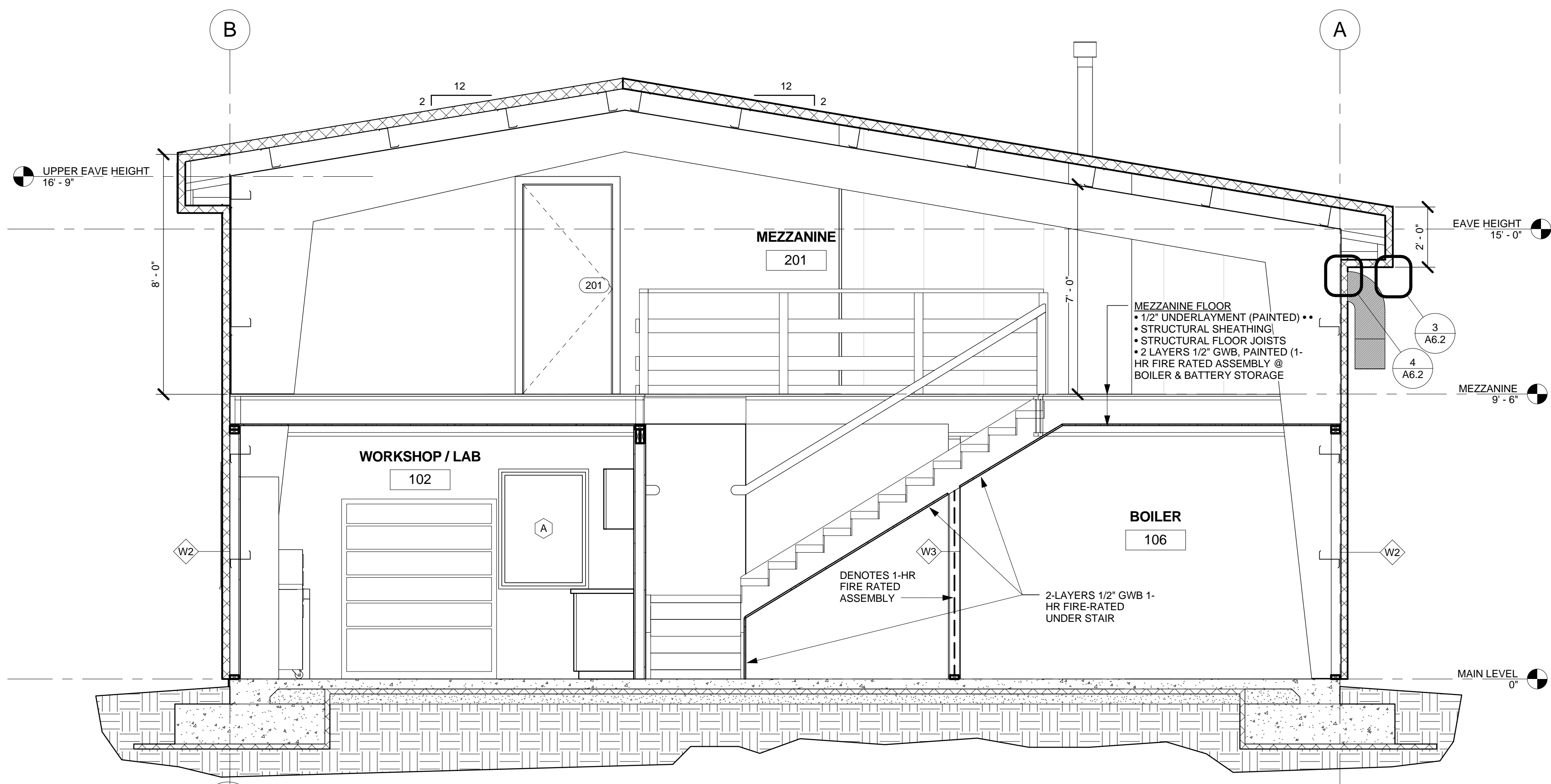
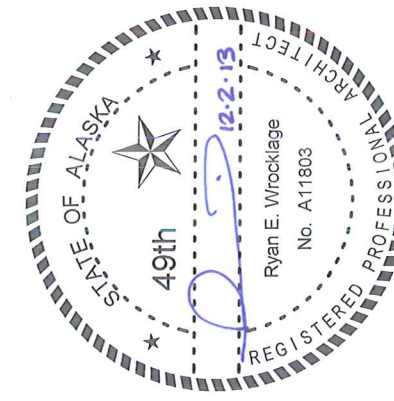
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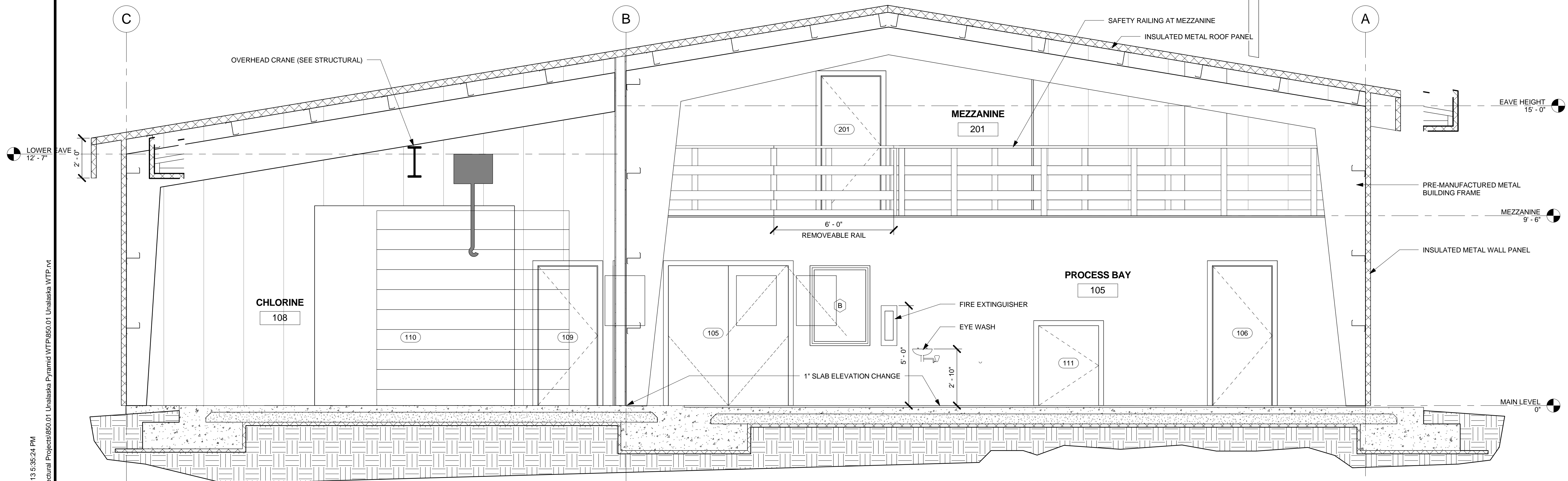
**PYRAMID WTP
UNALASKA, ALASKA**

EXTERIOR ELEVATIONS

SCALE:	3/16" = 1'-0"
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CHECKED BY:	WS
DATE:	12/2/13
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SHEET NUMBER	A2.1 OF 8



1 OFFICE BUILDING SECTION
A3.1 3/8" = 1'-0"



2 PROCESS BUILDING SECTION
A3.1 3/8" = 1'-0"

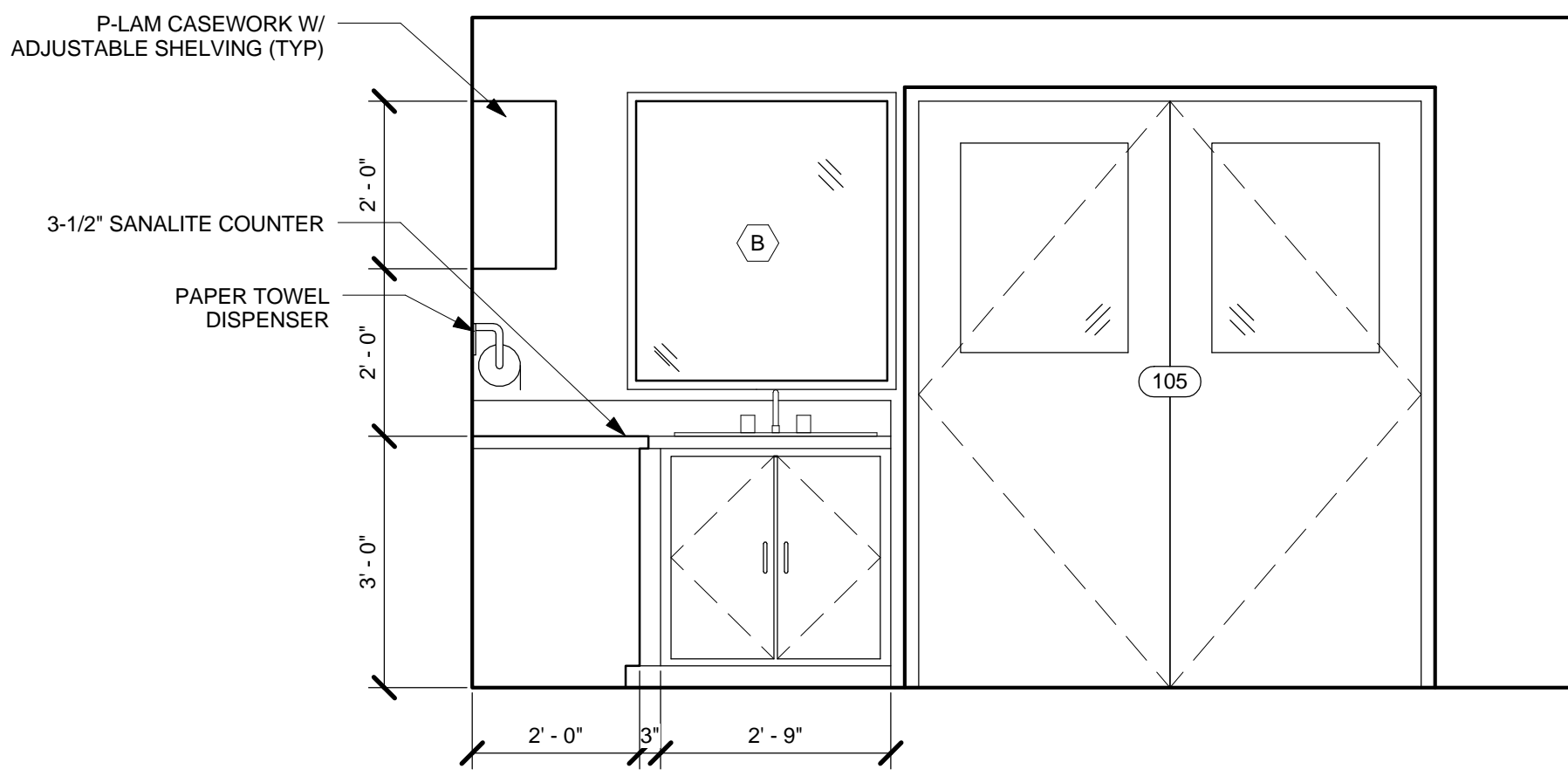
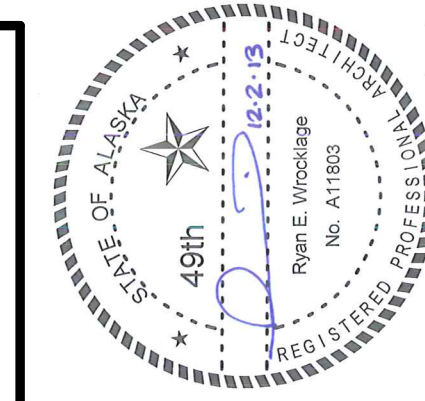
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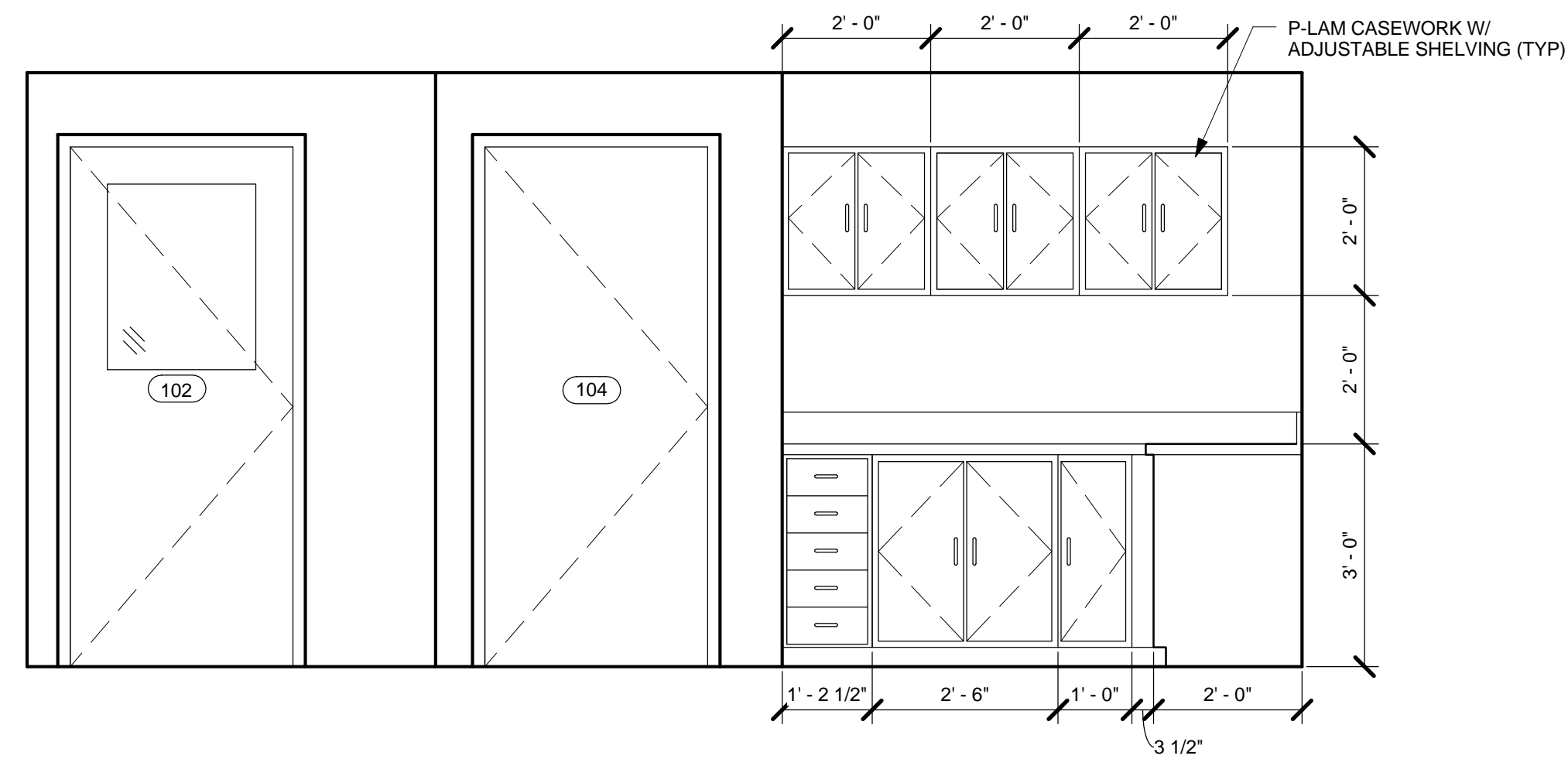
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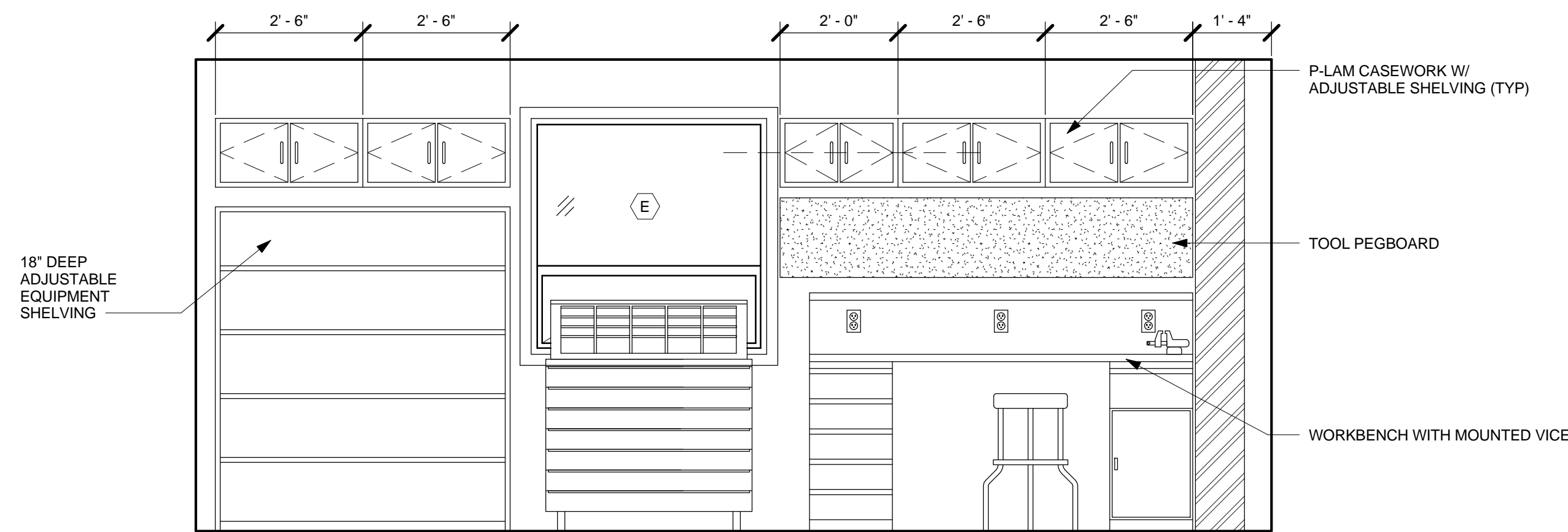
PYRAMID WTP UNALASKA, ALASKA	
BUILDING SECTIONS	
SCALE:	3/8" = 1'-0"
DESIGNED BY:	WS
DRAWN BY:	RW
CHECKED BY:	WS
DATE:	12/2/13
FILE NO.:	850.01
SHEET NUMBER	
A3.1	OF 8



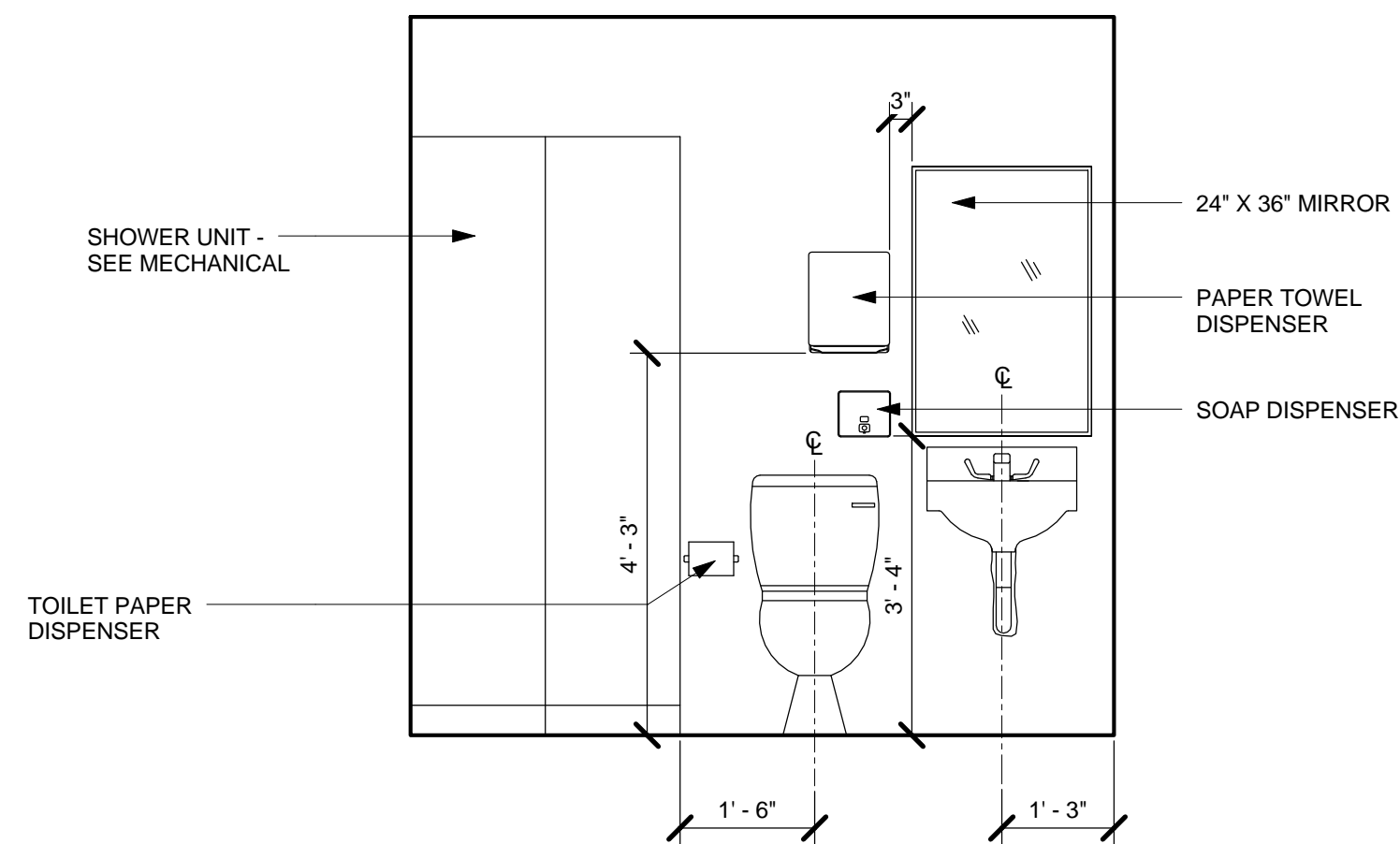
1 SINK ELEVATION
A4.1 1/2" = 1'-0"



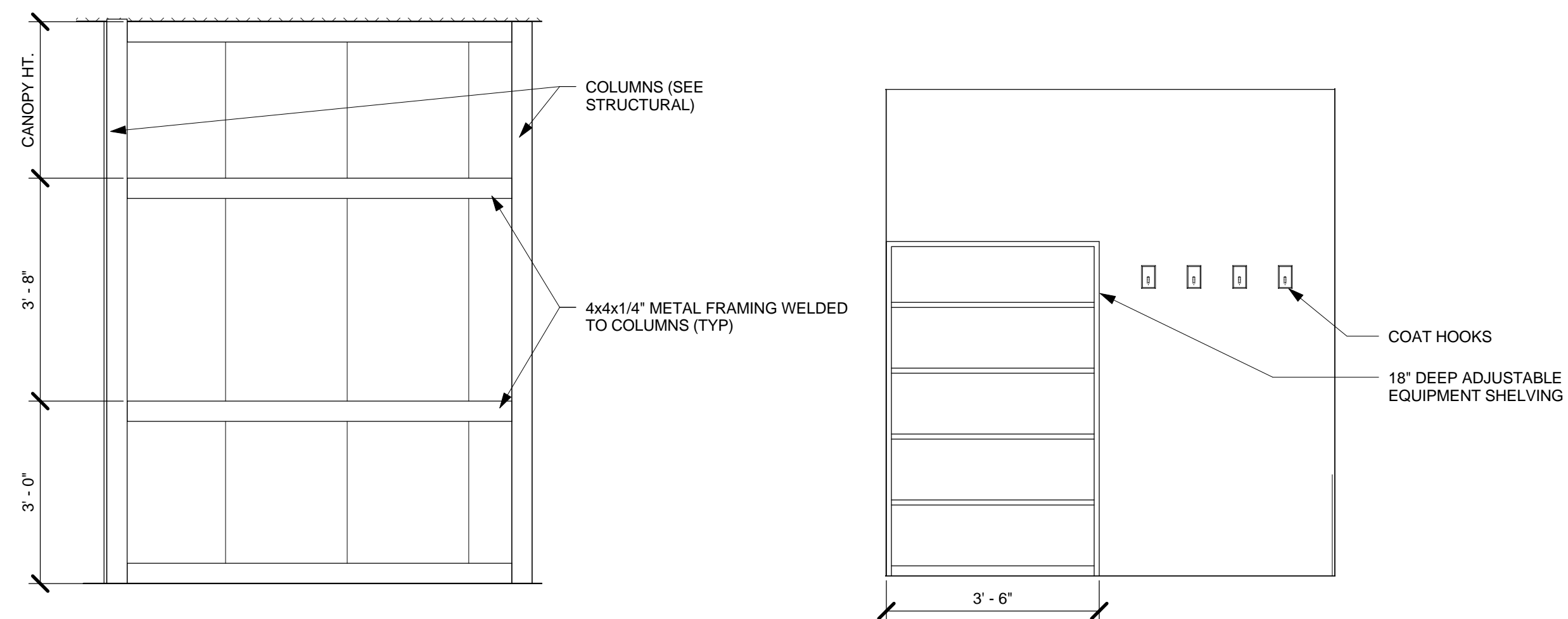
2 STORAGE ELEVATION
A4.1 1/2" = 1'-0"



3 WORKBENCH ELEVATION
A4.1 1/2" = 1'-0"

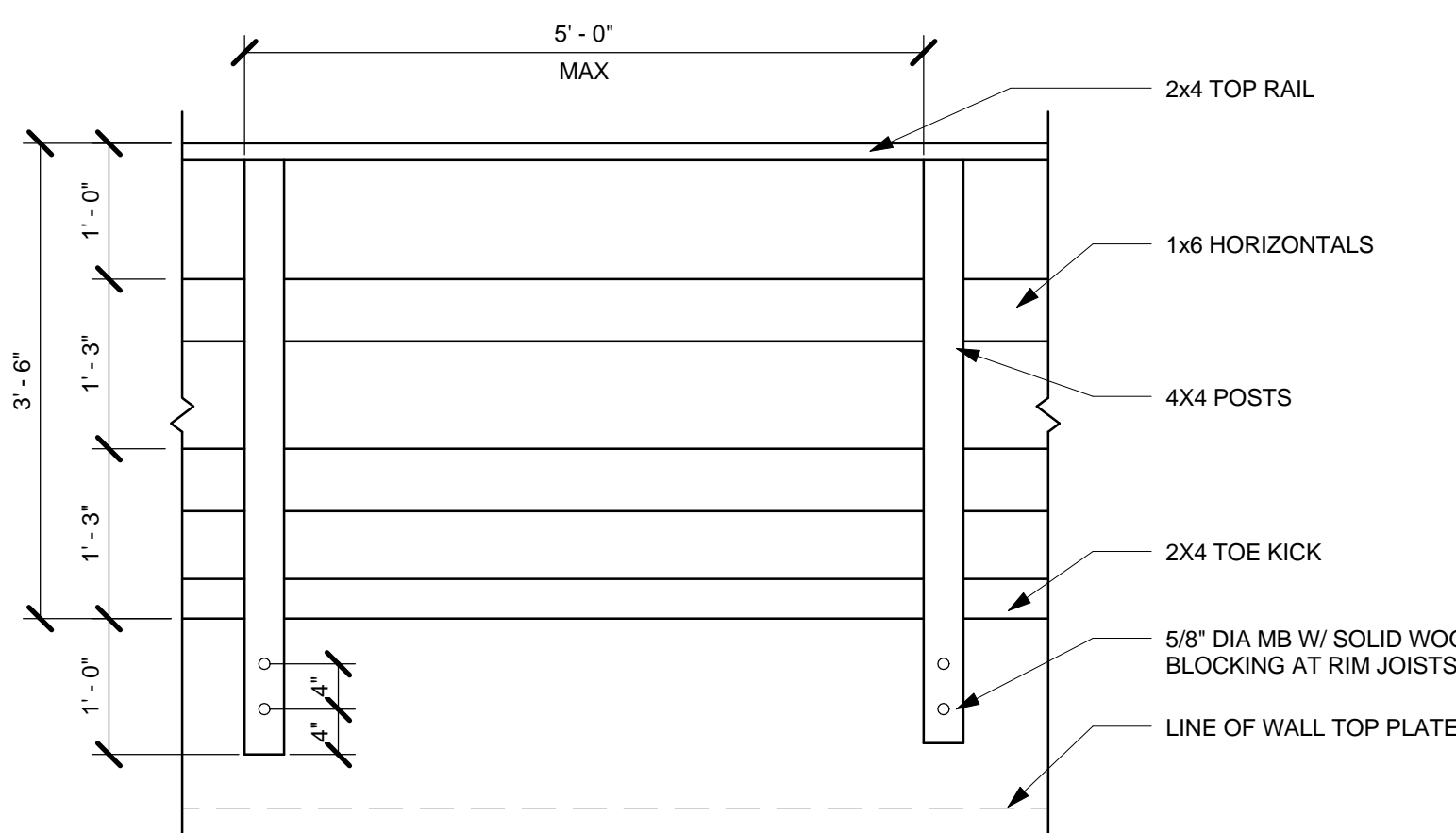


4 RESTROOM ELEVATION
A4.1 1/2" = 1'-0"

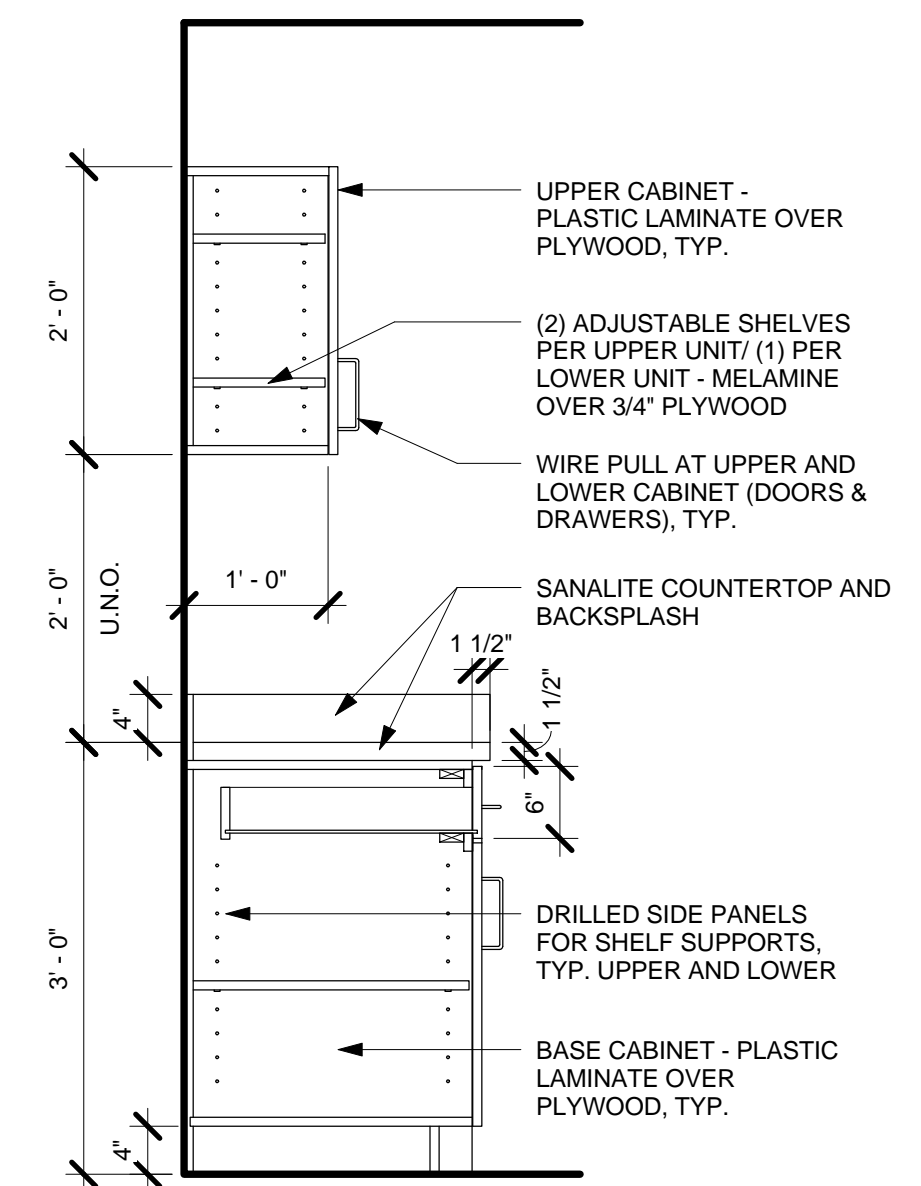


8 EXTERIOR ENTRY WALL (TYP)
A4.1 1/2" = 1'-0"

6 ENTRY ELEVATION
A4.1 1/2" = 1'-0"



5 SAFETY RAIL ELEVATION
A4.1 3/4" = 1'-0"



7 CASEWORK SECTION (TYP)
A4.1 3/4" = 1'-0"

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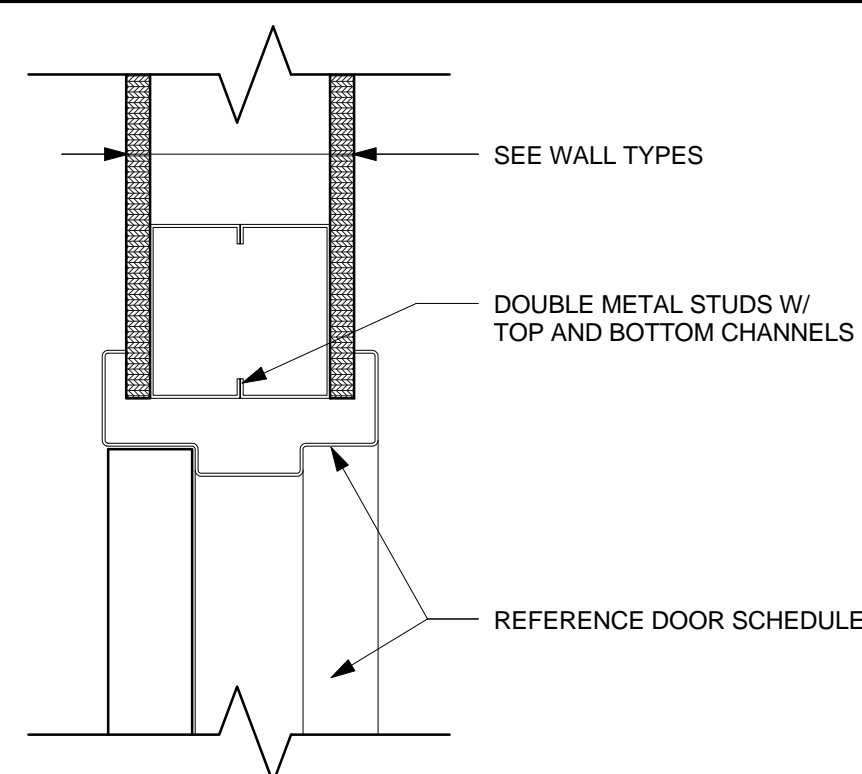
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PYRAMID WTP
UNALASKA, ALASKA
INTERIOR ELEVATIONS

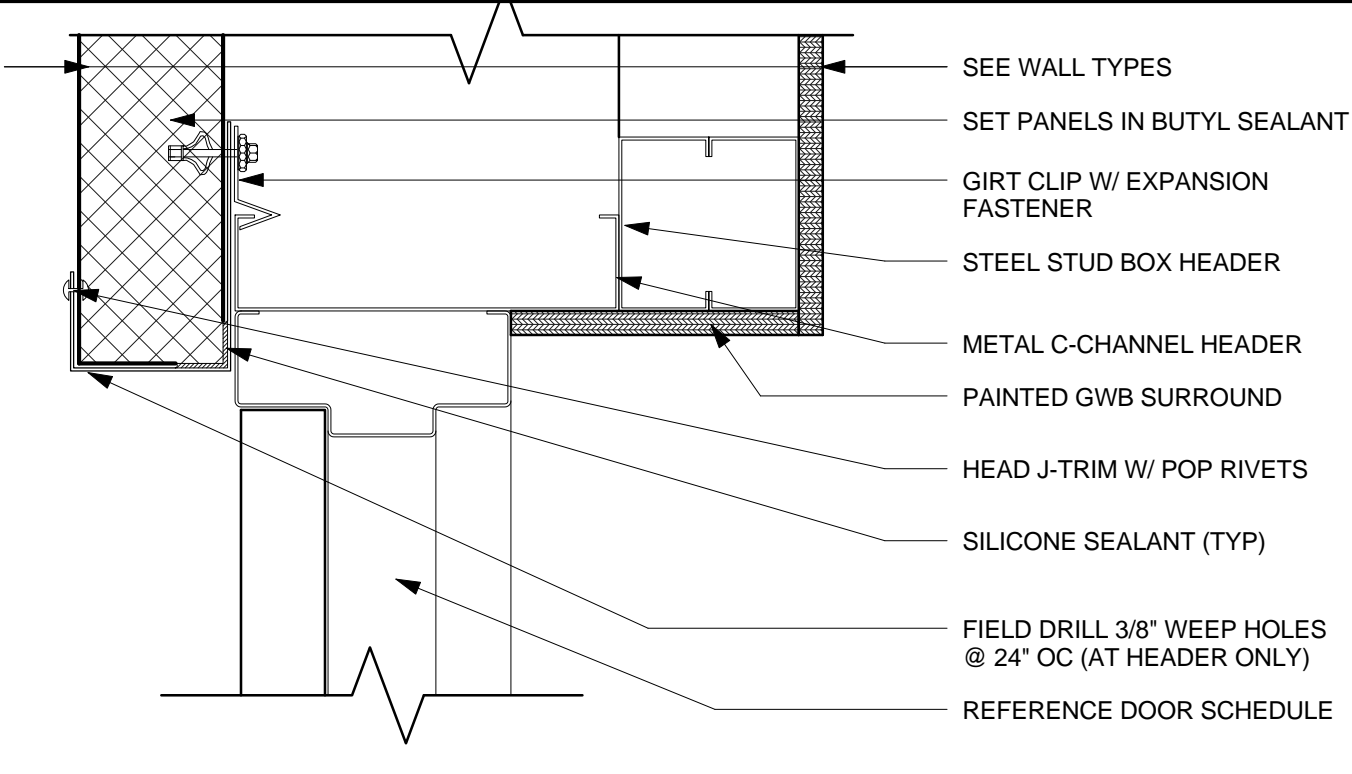
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DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	A4.1 OF 8

DOOR SCHEDULE														DOOR SCHEDULE LEGEND	
DOOR #	DOOR						FRAME			HARDWARE				LEGEND	
	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	GLASS	RATING	TYPE	MATERIAL	FINISH	GROUP	FINISH	FF	FACTORY FINISH
101	3'-0"	7'-0"	1 3/4"	H	FG	FF	1/4" INS		P	FG	FF	HW-1	US32D	FG	FIBERGLASS
102	3'-0"	7'-0"	1 3/4"	H	FG	FF	1/4" LAM		P	FG	FF	HW-3	US32D	FR	FROSTED
103	3'-0"	7'-0"	1 3/4"	F	FG	FF		45 MIN	P	FG	FF	HW-2	US32D	KI	KABA ILCO HARDWARE
104	2'-10"	7'-0"	1 3/4"	F	FG	FF			P	FG	FF	HW-4	US32D	KICKPLATE	TR : KO050 x 10"
105	6'-0"	7'-0"	1 3/4"	H (2)	FG	FF	1/4" LAM		P	FG	FF	HW-5D	US32D	LAM	LAMINATED
106	3'-0"	7'-0"	1 3/4"	F	FG	FF		45 MIN	P	FG	FF	HW-5	US32D	MC	McKINNEY HARDWARE
107	3'-0"	7'-0"	1 3/4"	H	FG	FF	1/4" LAM	45 MIN	P	FG	FF	HW-6	US32D	NO	NORTON HARDWARE
108	6'-0"	7'-0"	1 3/4"	F (2)	FG	FF	1/4" INS		P	FG	FF	HW-1D	US32D	PE	PEMCO HARDWARE
109	3'-0"	7'-0"	1 3/4"	F	FG	FF			P	FG	FF	HW-1	US32D	SC	SCHLAGE HARDWARE
110	10'-0"	10'-0"	1 1/2"	(2) I	STL	FF			-	-	-	(none)	US32D	STL	STEEL
111	3'-0"	4'-0"	1 3/4"	F	FG	FF			P	FG	FF	HW-5	US32D	TR	TRIMCO HARDWARE
201	3'-0"	7'-0"	1 3/4"	F	FG	FF	1/4" LAM		P	FG	FF	HW-7	US32D	US32D	DULL STAINLESS STEEL
202	3'-0"	7'-0"	1 3/4"	F	FG	FF			P	FG	FF	HW-2	US32D	VD	VON DUPRIN HARDWARE

GROUP	HINGE	EXIT DEVICE	LOCKSET	CLOSER	MULLION	DOOR STOP	JAMB SEAL	HEAD SEAL	DOOR BOTTOM	THRESHOLD	SMOKE SEALS	SILENCERS	KICKPLATES
HW-1	MC : T4A3386 5x4.5 NRP	VD : 99EOF	KI : LP1000	NO : 7500		TR : 1201	PE : 290 AS	PE : 2891 AS	PE : 18137 CNB	PE : 252 x 3 AFG			1
HW-1D	MC : T4A3386 5x4.5 NRP	VD : 99EOF	KI : LP1000	NO : 7500	REMOVABLE	TR : 1201	PE : 290 AS	PE : 2891 AS	PE : 18137 CNB	PE : 252 x 3 AFG	PE : PK55		2
HW-2	MC : T4A3386 5x4.5 NRP		SC : ND66PD	NO : 7500		TR : 1270 CX	PE : 290 AS	PE : 2891 AS	PE : 18137 CNB	PE : 252 x 3 AFG	PE : PK55		2
HW-3	MC : T4A3386 5x4.5 NRP		SC : ND10S	NO : 7500		TR : 1270 CX	PE : 290 AS	PE : 2891 AS	PE : 18137 CNB	PE : 156A	PE : PK55	Yes	2
HW-4	MC : T2314 4.5x4.5 NRP		SC : ND40S			TR : 1270 CX					PE : PK55	Yes	2
HW-5	MC : T4A3386 5x4.5 NRP		SC : ND10S			TR : 1270 CX					PE : PK55	Yes	2
HW-5D	MC : T4A3386 5x4.5 NRP		SC : ND10S		ASTRAGAL	TR : 1270 CX				PE : 156A	PE : PK55	Yes	4
HW-6	MC : T4A3386 5x4.5 NRP	VD : 99		NO : 7500		TR : 1270 CX	PE : 290 AS	PE : 2891 AS	PE : 18137 CNB	PE : 156A	PE : PK55		2
HW-7	MC : T2314 4.5x4.5 NRP		SC : ND10S			TR : 1270 CX					Yes		0



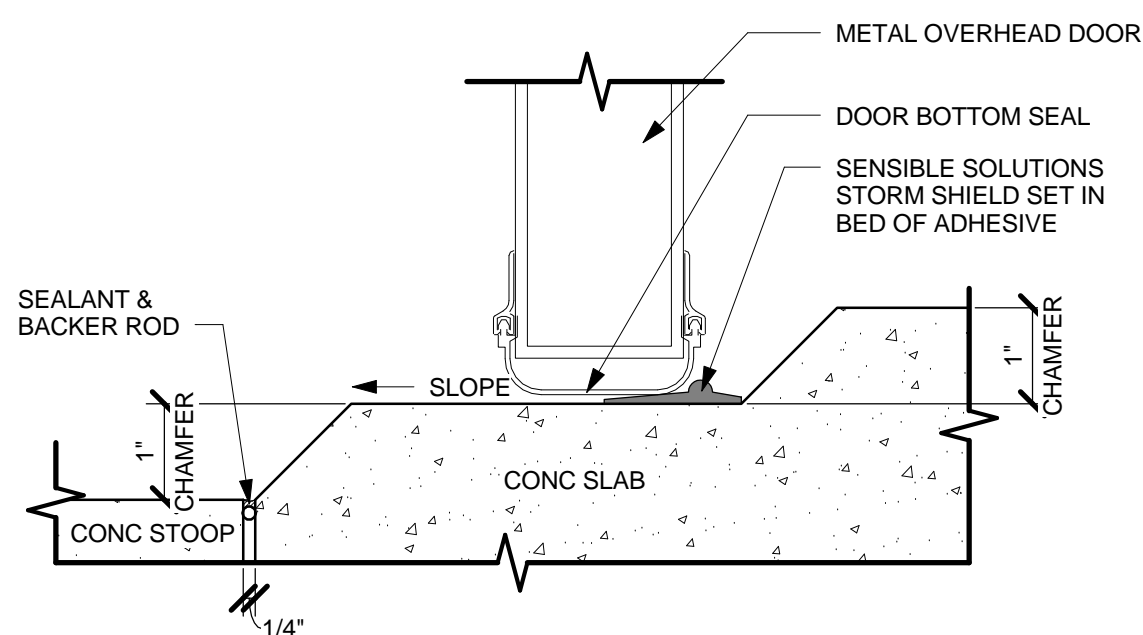
(DOOR JAMB, WINDOW HEAD, JAMB & SILL SIMILAR)



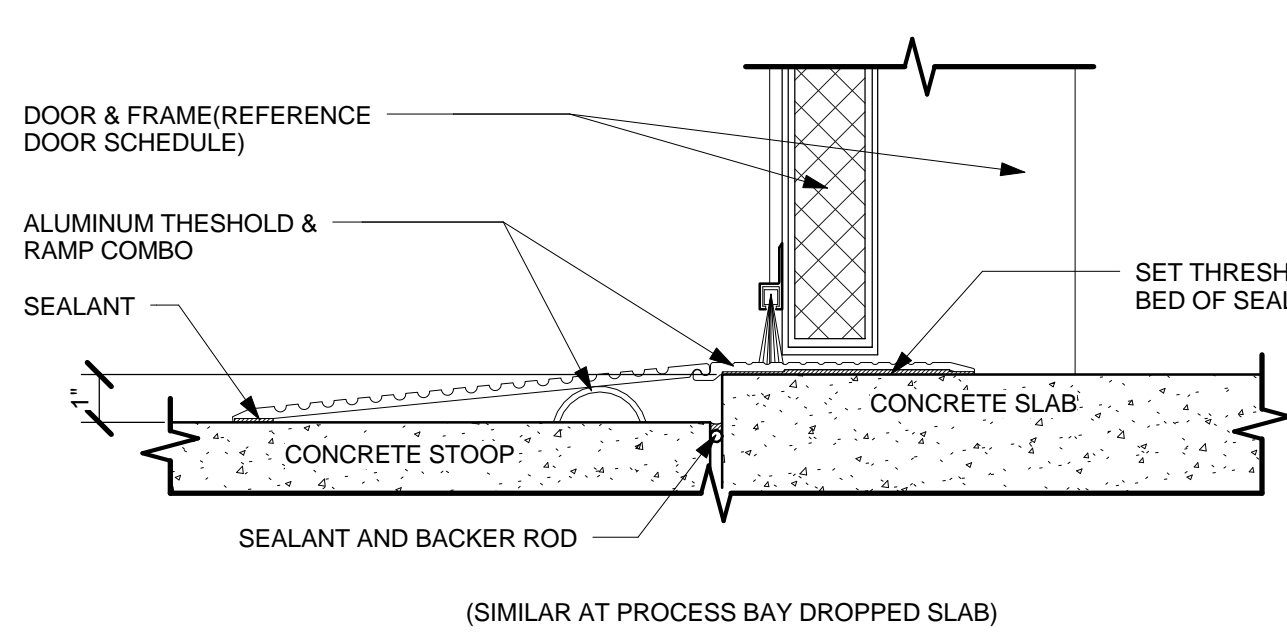
(DOOR JAMB, WINDOW HEAD & WINDOW JAMB SIMILAR)

1 INTERIOR DOOR HEAD
A6.1 3" = 1'-0"

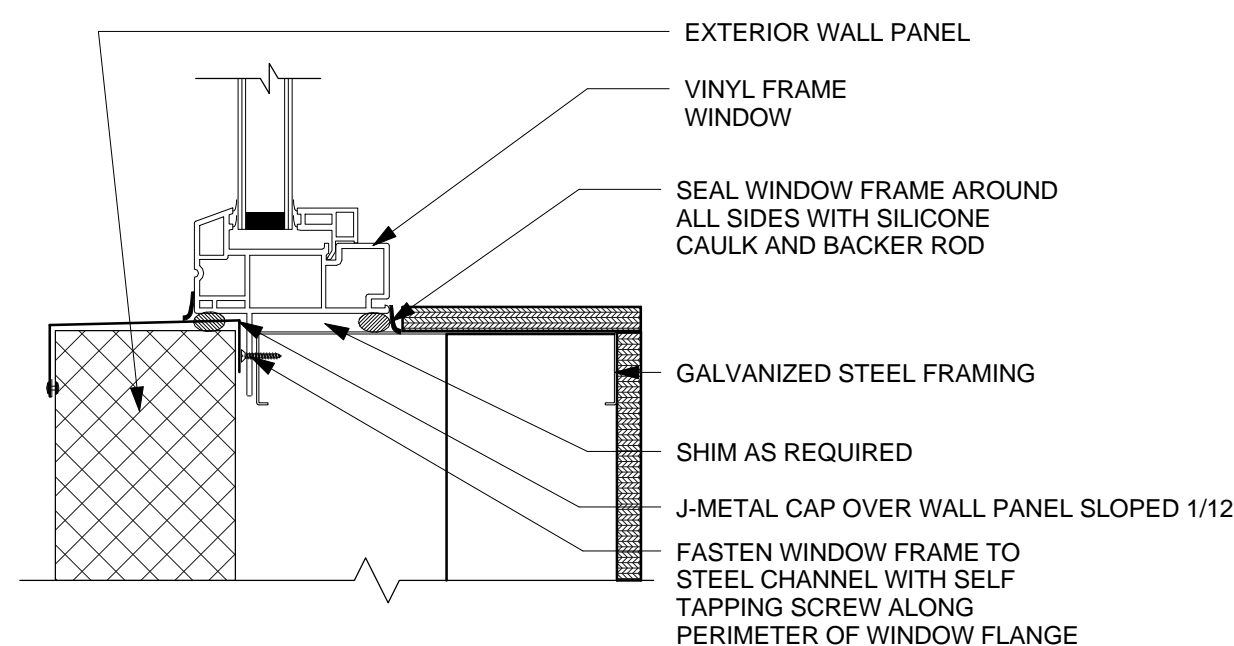
2 EXTERIOR DOOR HEAD
A6.1 3" = 1'-0"



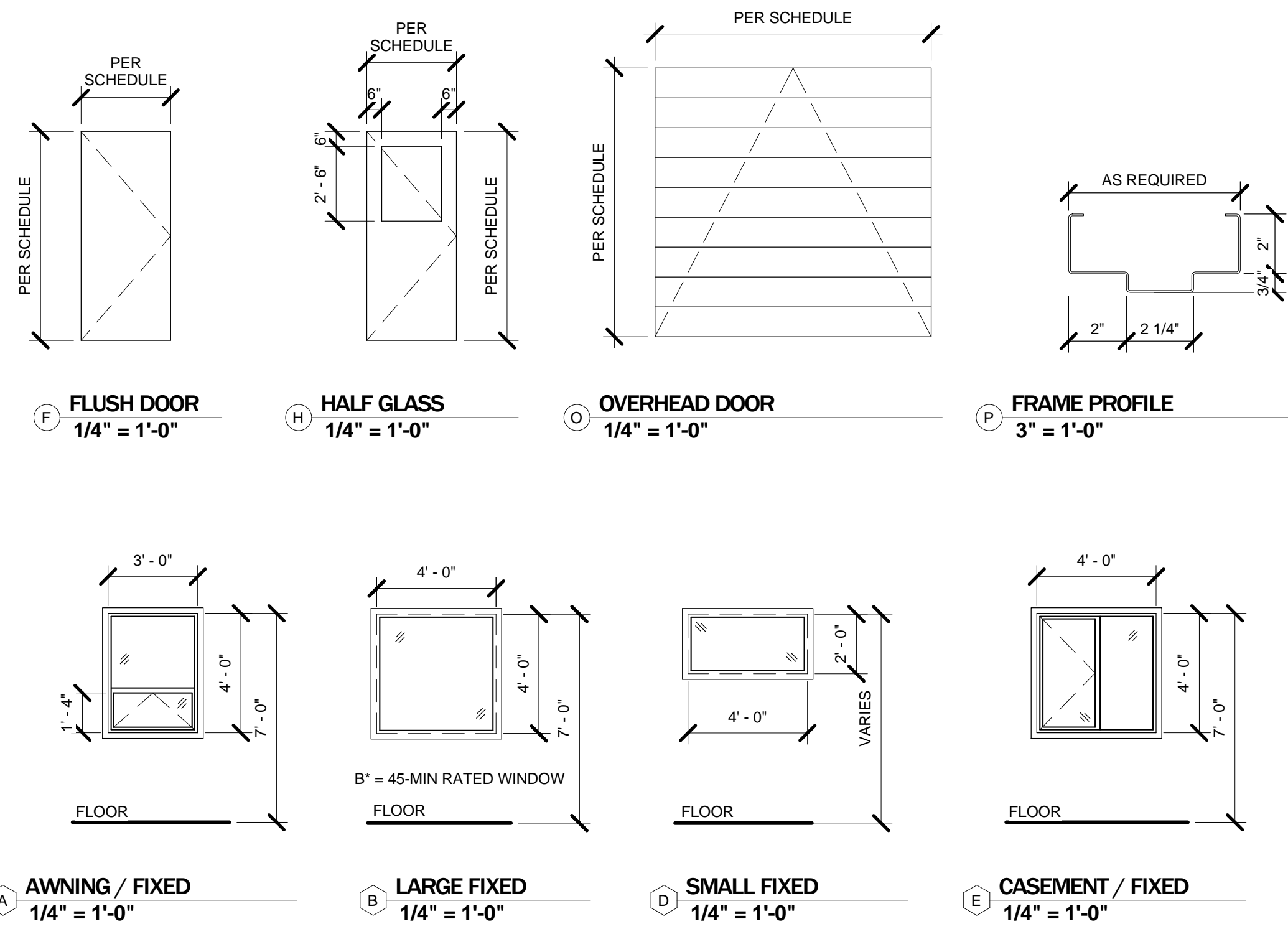
3 OH DOOR THRESHOLD
A6.1 6" = 1'-0"



4 SLOPED MAN-DOOR THRESHOLD
A6.1 3" = 1'-0"

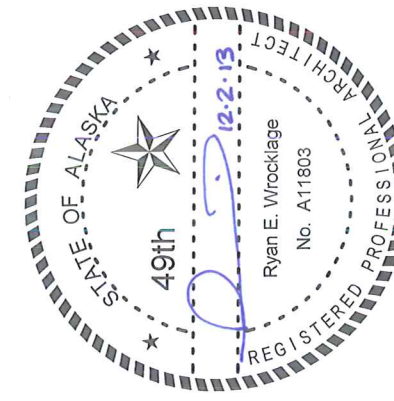


5 EXTERIOR WINDOW SILL
A6.1 3" = 1'-0"



F FLUSH DOOR 1/4" = 1'-0"
H HALF GLASS 1/4" = 1'-0"
O OVERHEAD DOOR 1/4" = 1'-0"
P FRAME PROFILE 3" = 1'-0"
A AWNING / FIXED 1/4" = 1'-0"
B LARGE FIXED 1/4" = 1'-0"
D SMALL FIXED 1/4" = 1'-0"
E CASEMENT / FIXED 1/4" = 1'-0"

MATERIALS AND COLORS			
LOCATION	MANUFACTURER	PRODUCT	COLOR
FLOORS	SHERWIN-WILLIAMS	EPO-FLEX MER II	#56 SILVER GRAY
PROCESS/CHLORINE FLOORS	L&M CONSTRUCTION CHEMICALS	SEAL HARD	
WALLS	SHERWIN-WILLIAMS	SANIFLEX	#62 PARCHMENT
FRAMED GWB WALLS	SHERWIN-WILLIAMS	SANIFLEX	#62 PARCHMENT
CEILINGS	SHERWIN-WILLIAMS	SANIFLEX	#71 PEWTER
DOORS	OVERLY DOOR COMPANY	TIGER DOOR FRP	MIST GREY
DOOR FRAMES	OVERLY DOOR COMPANY	TIGER DOOR FRP	MIST GREY
COVE WALL BASE	ROPPE	700 SERIES	#193 BLACK BROWN
INSULATED WALL PANEL	METLSPAN	CFR MESA WAVE 4" THICK	DESERT BEIGE (EXT) / POLAR WHITE (INT)
INSULATED ROOF PANEL	METLSPAN	CRF MESA WAVE 4" THICK	DARK BRONZE (EXT) / POLAR WHITE (INT)



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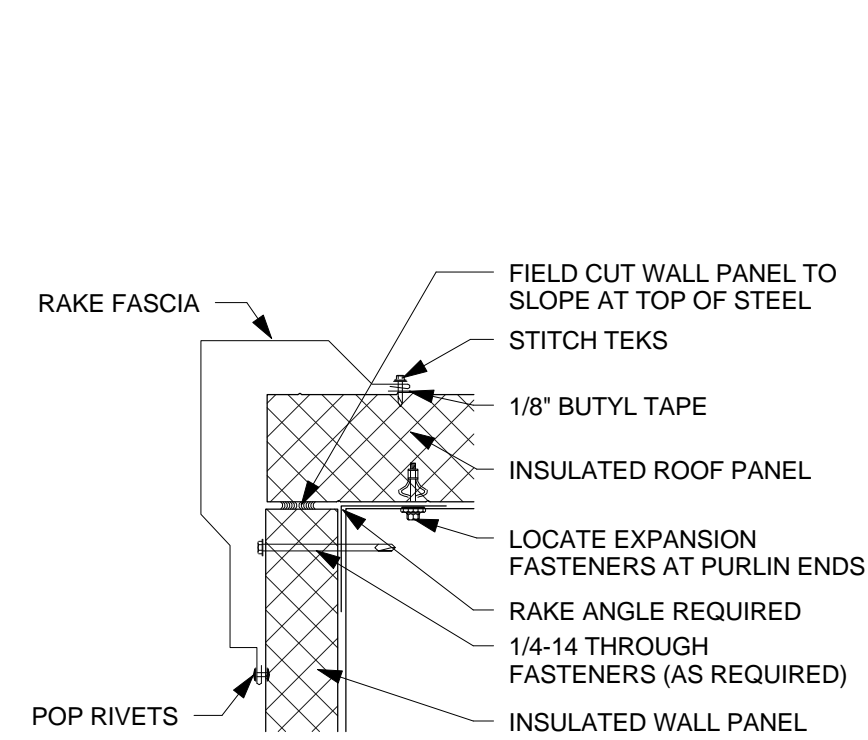
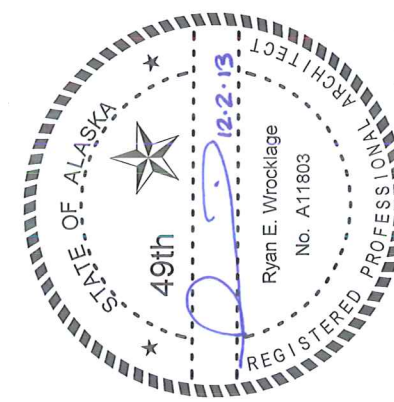
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PYRAMID WTP
UNALASKA, ALASKA
DOOR AND WINDOW DETAILS
DOOR AND FINISH SCHEDULES

SCALE: As indicated
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A6.1 OF **8**

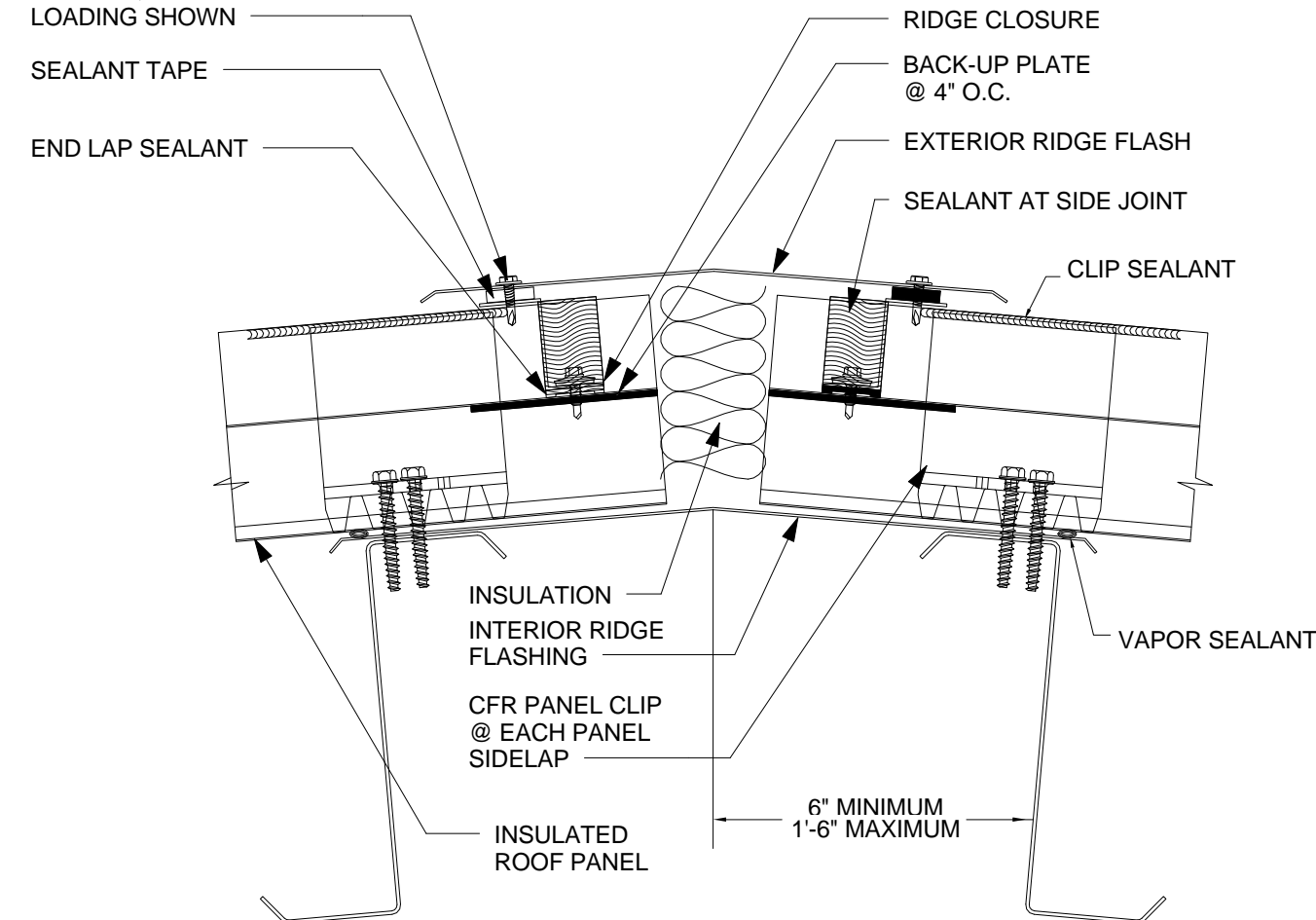
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1 RAKE DETAIL

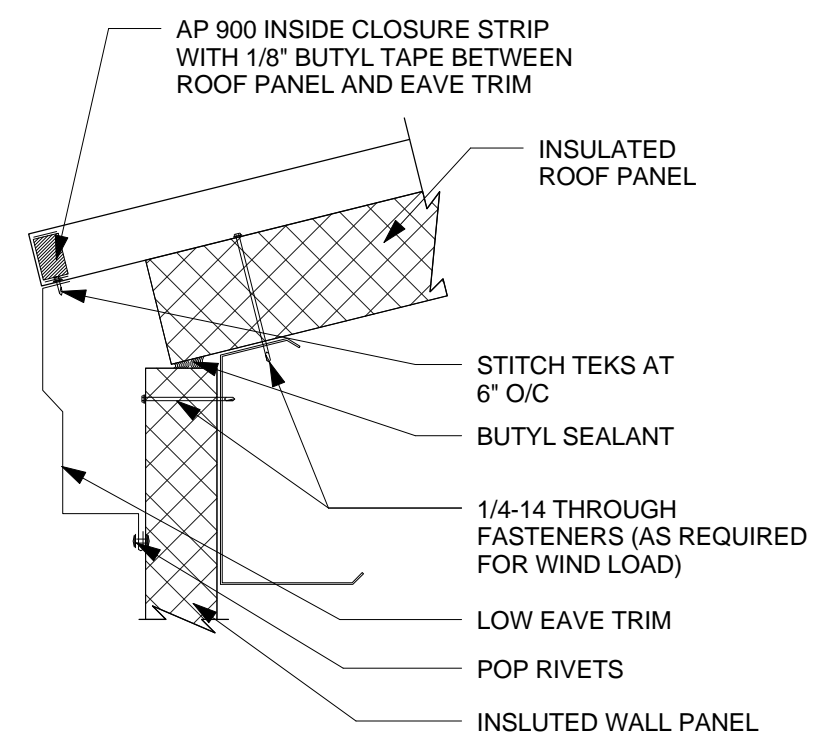
A6.2 3" = 1'-0"

FASTENERS PER ROOFING MFG REQUIREMENTS FOR LOADING SHOWN



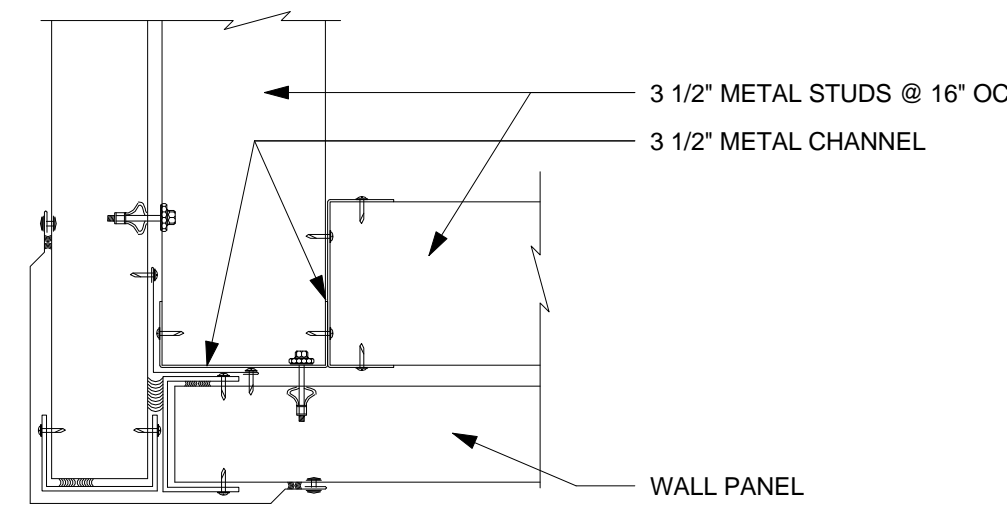
5 RIDGE DETAIL

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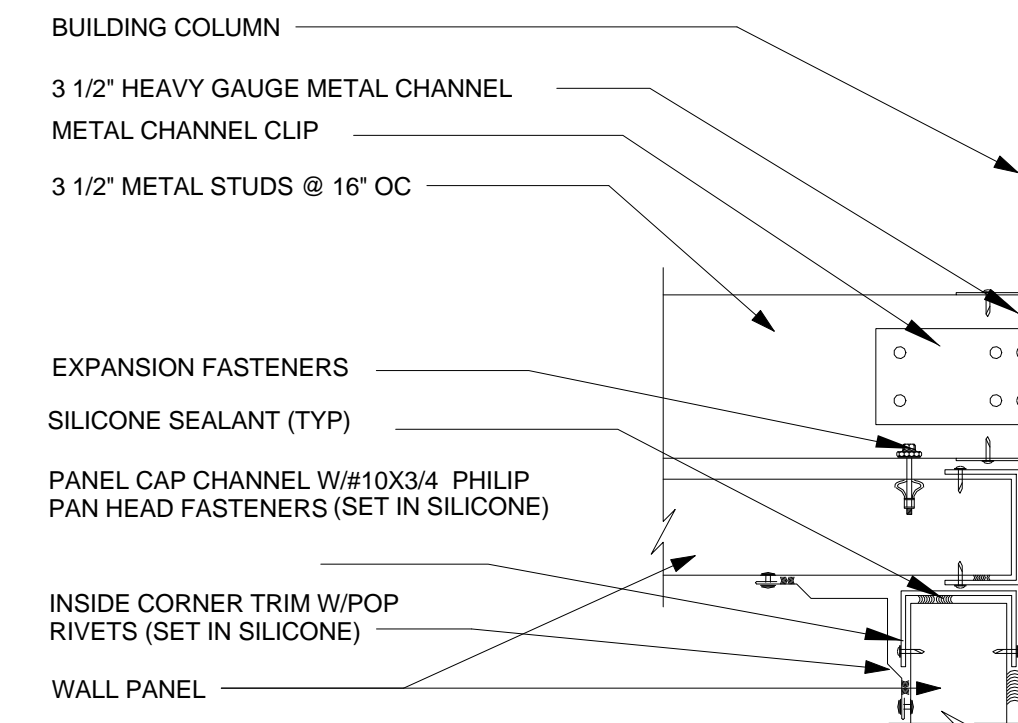
2 EAVE DETAIL

A6.2 3" = 1'-0"



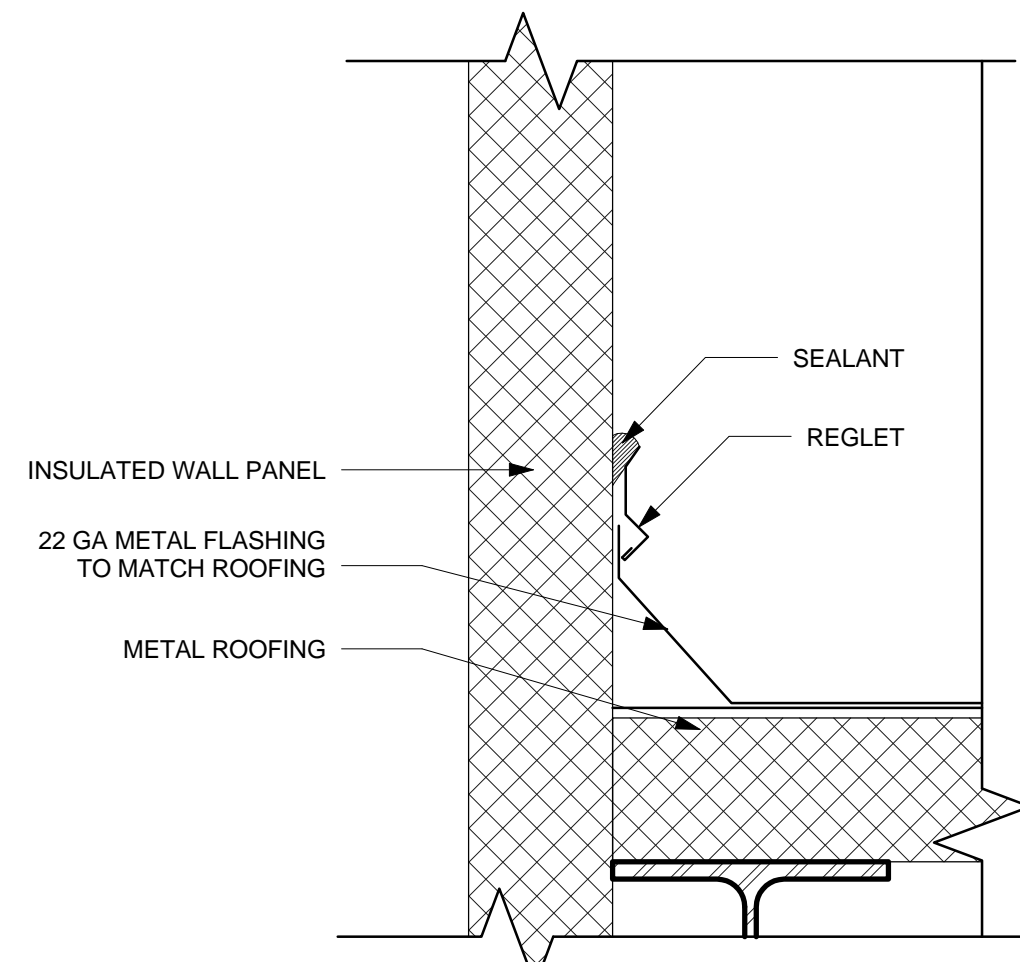
3 OVERHANG DETAIL

A6.2 3" = 1'-0"



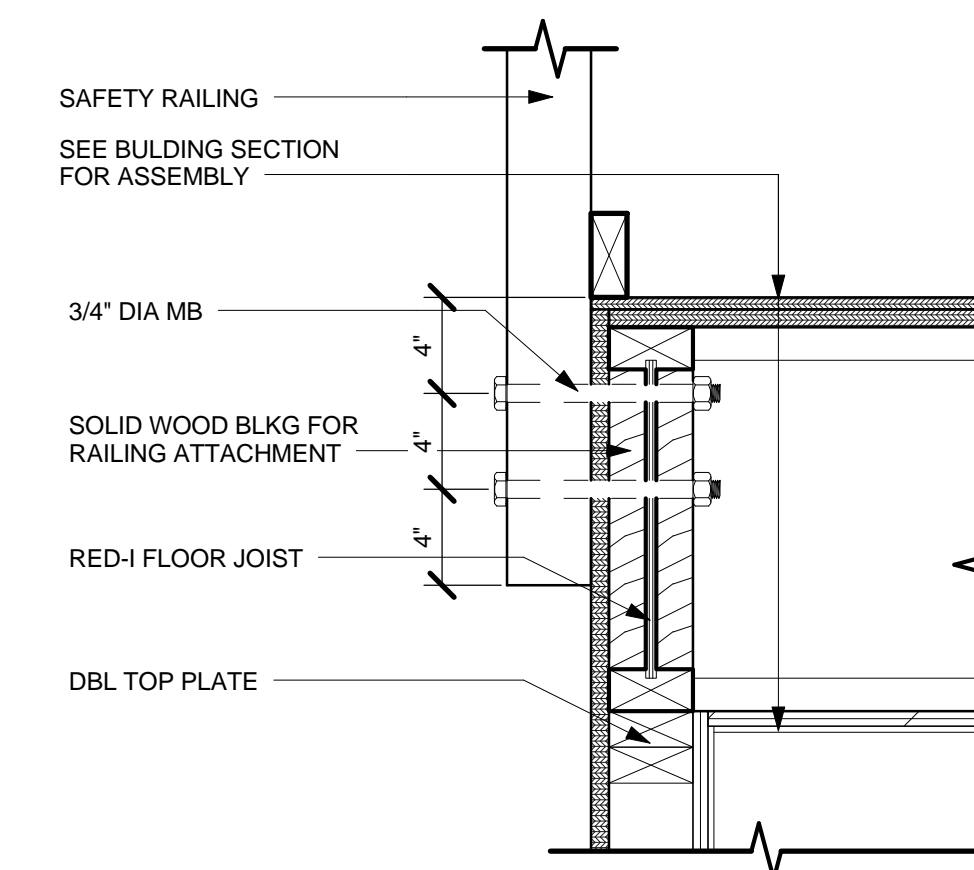
4 OVERHANG AT WALL

A6.2 3" = 1'-0"



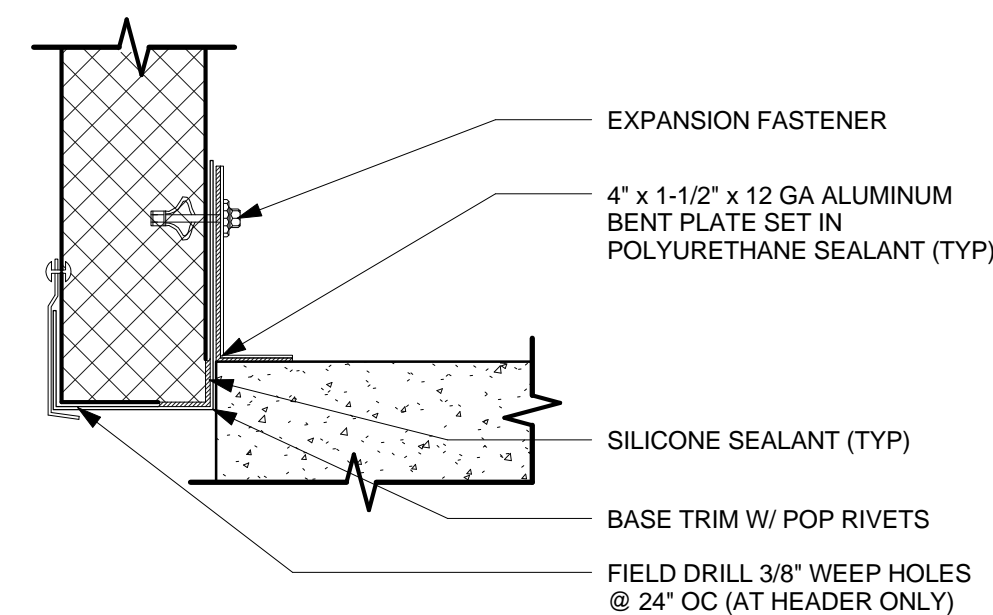
6 WALL TO CANOPY CONNECTION

A6.2 3" = 1'-0"



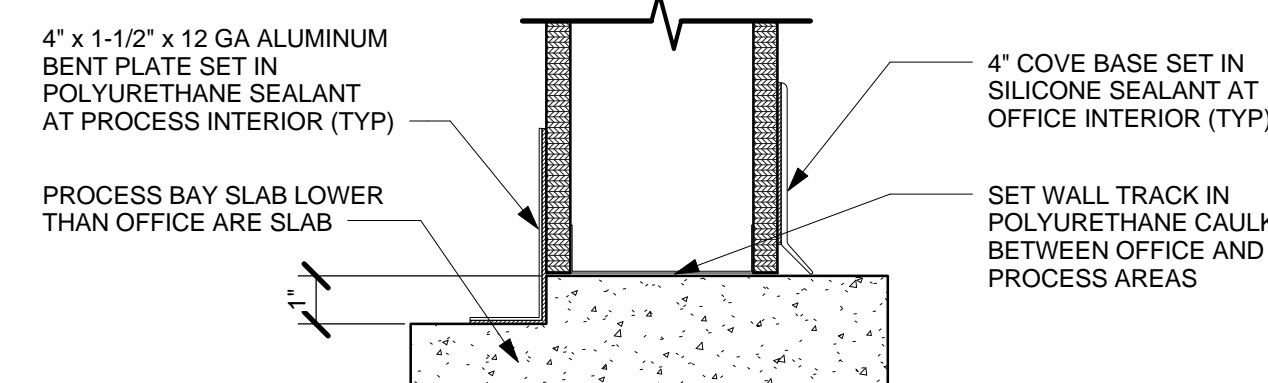
12 MEZZANINE FLOOR AT RAILING

A6.2 1 1/2" = 1'-0"



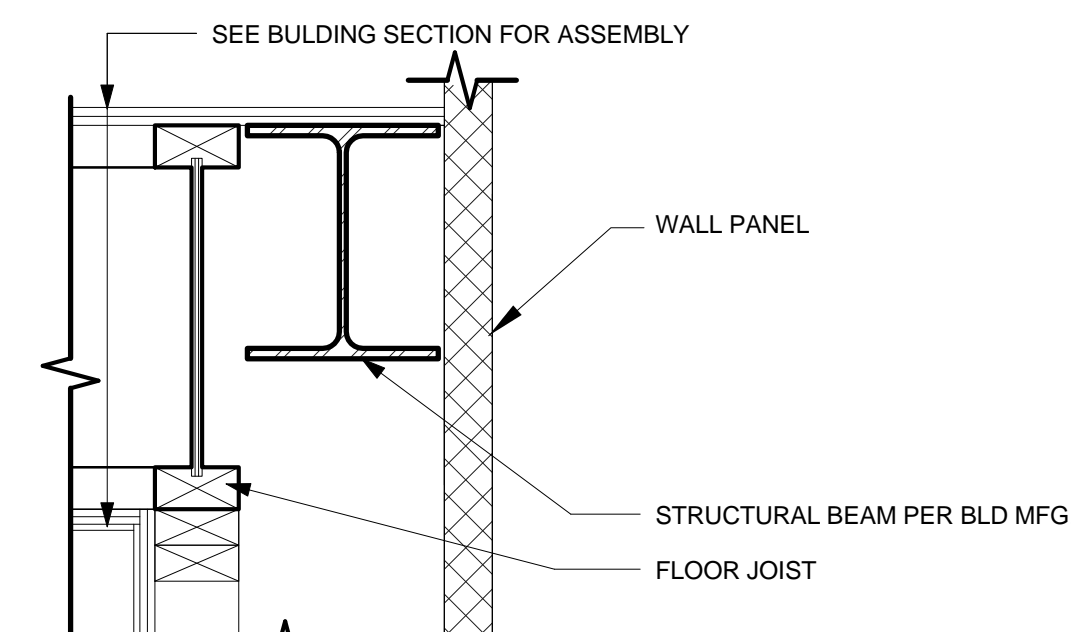
8 EXTERIOR WALL BASE

A6.2 3" = 1'-0"



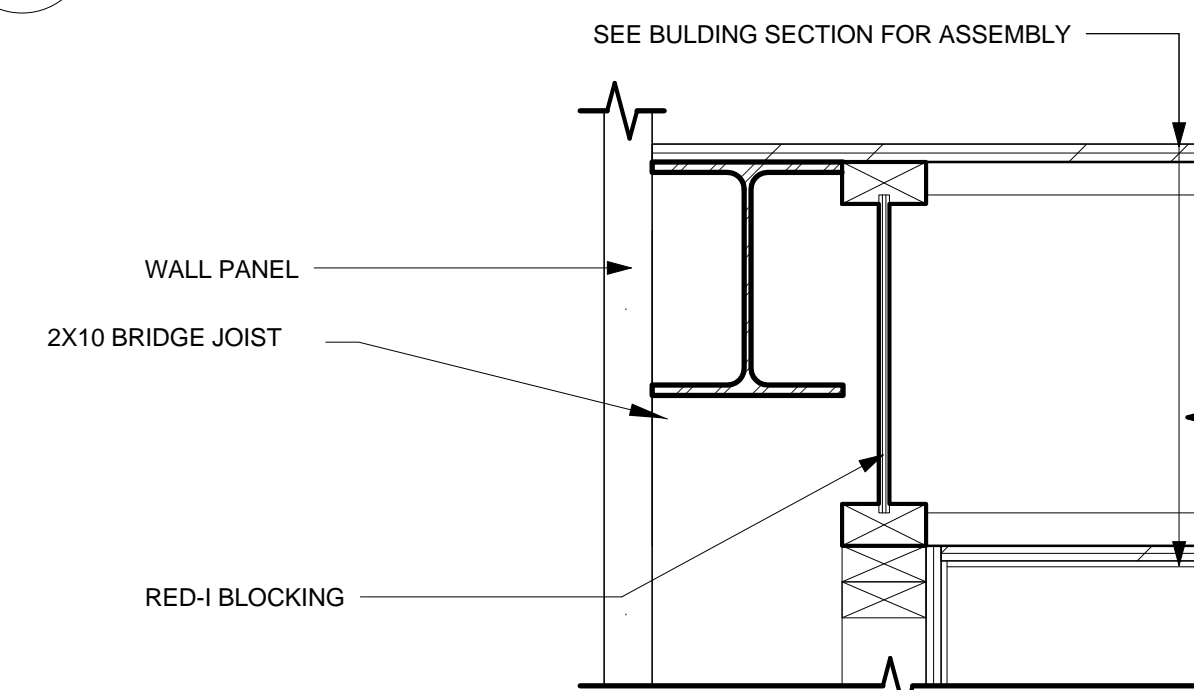
9 INTERIOR WALL BASE

A6.2 3" = 1'-0"



10 MEZZANINE FLOOR EXTENSION

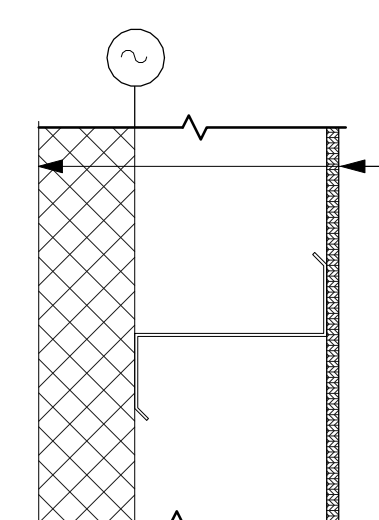
A6.2 1 1/2" = 1'-0"



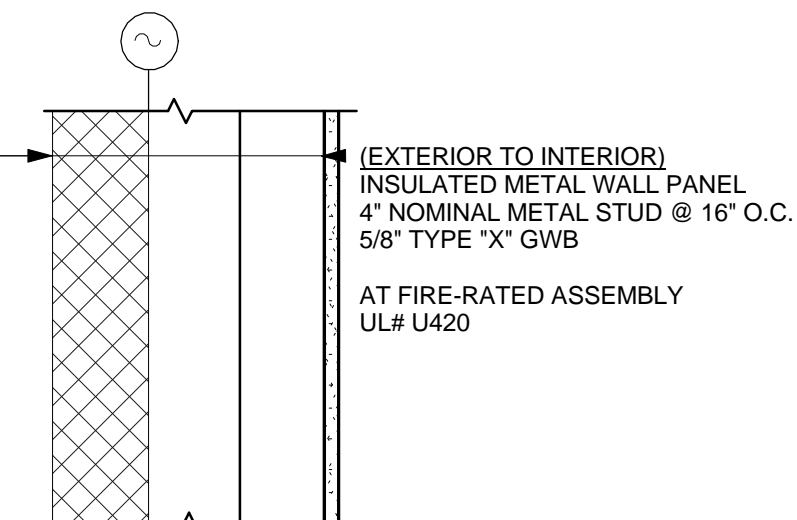
11 MEZZANINE FLOOR OVERHANG

A6.2 1 1/2" = 1'-0"

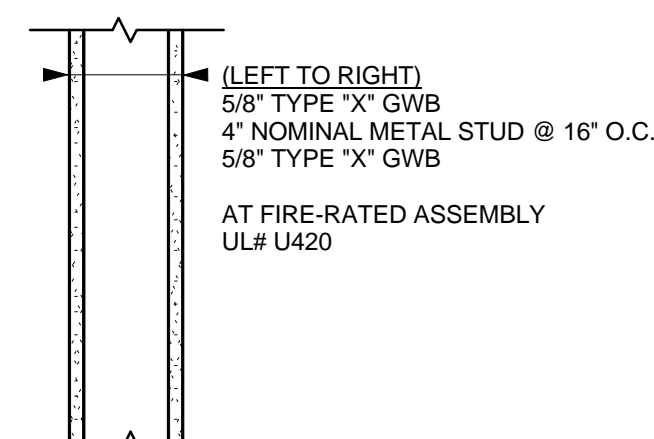
WALL ASSEMBLIES



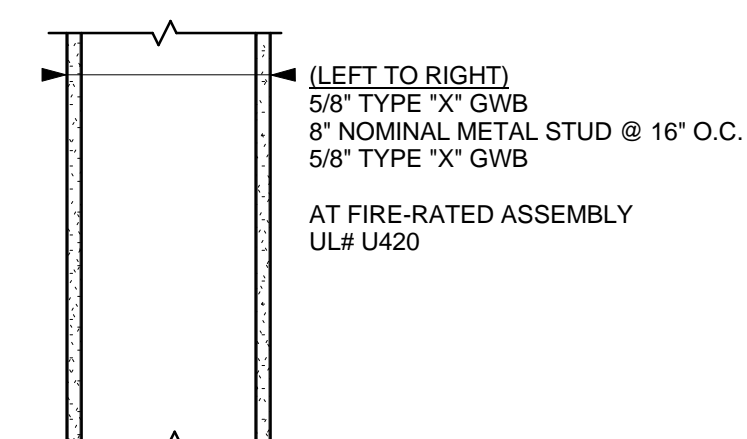
W1 EXTERIOR WALL
1 1/2" = 1'-0"



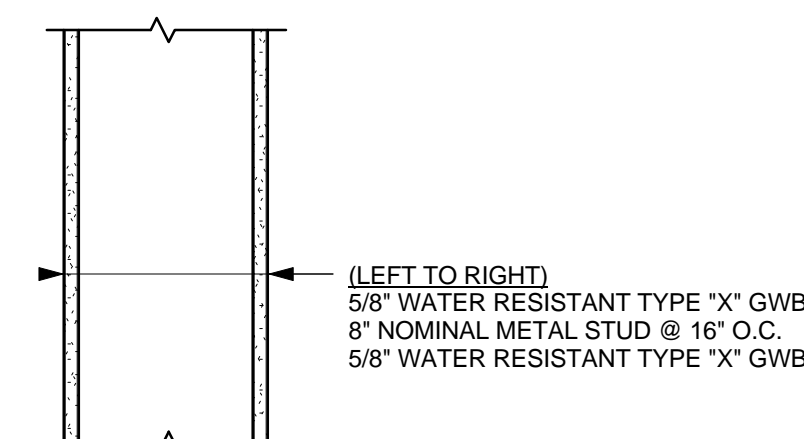
W2 EXTERIOR WALL @ MAIN OFFICE
1 1/2" = 1'-0"



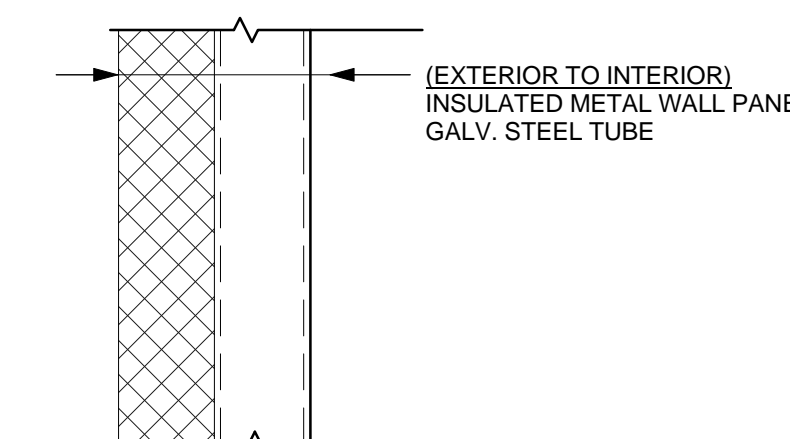
W3 2x4 INTERIOR WALL
1 1/2" = 1'-0"



W4 2x8 INTERIOR WALL
1 1/2" = 1'-0"



W5 TYPICAL PLUMBING WALL
1 1/2" = 1'-0"



W6 WIND BREAK WALL
1 1/2" = 1'-0"

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 Layout: A6.2
 Filename: P:\Architectural Projects\850.01 Unalaska Pyramid WTP\850.01 Unalaska WTP.rvt

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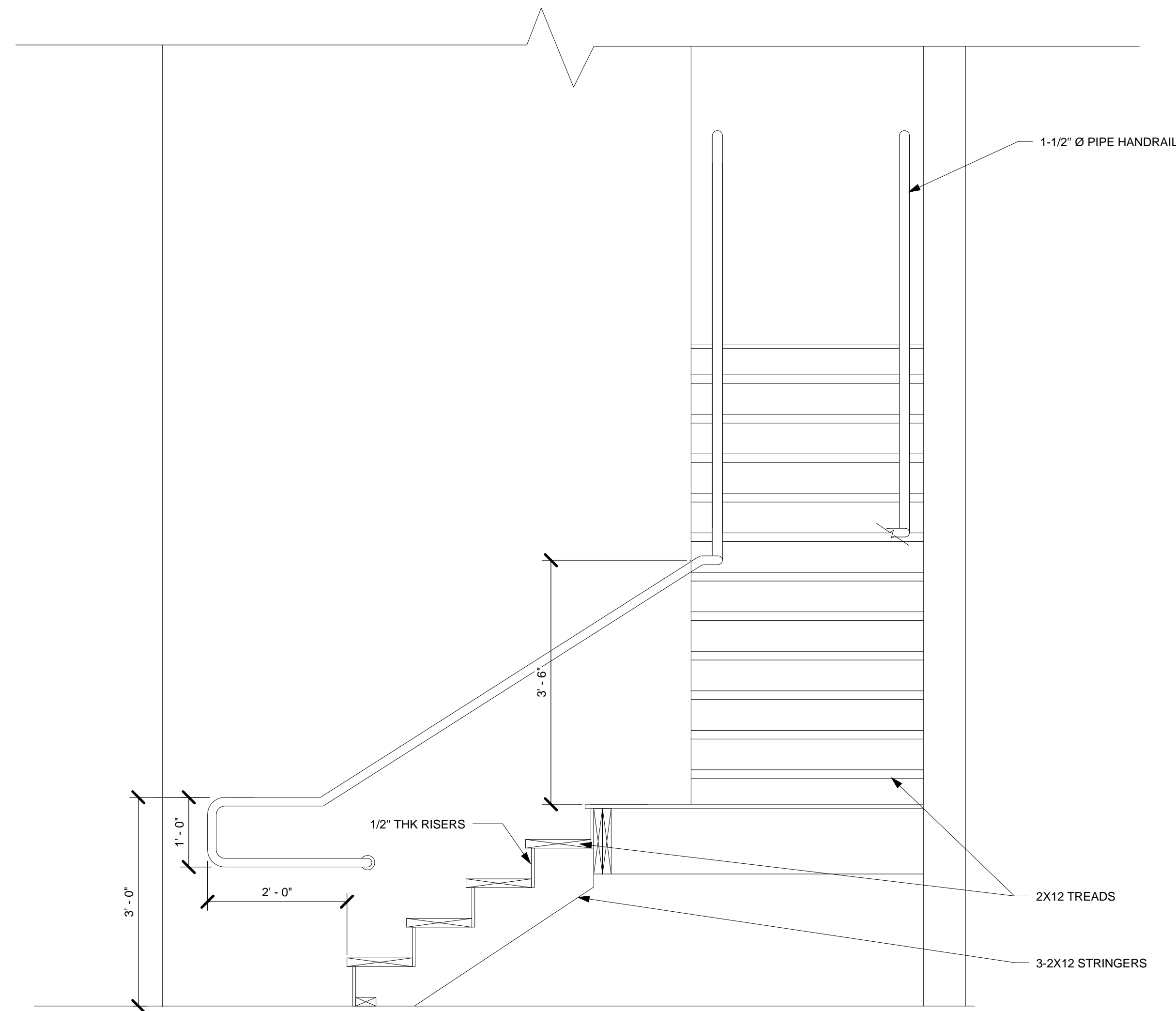
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PYRAMID WTP
UNALASKA, ALASKA
BUILDING ASSEMBLIES
WALL, ROOF AND CANOPY DETAILS

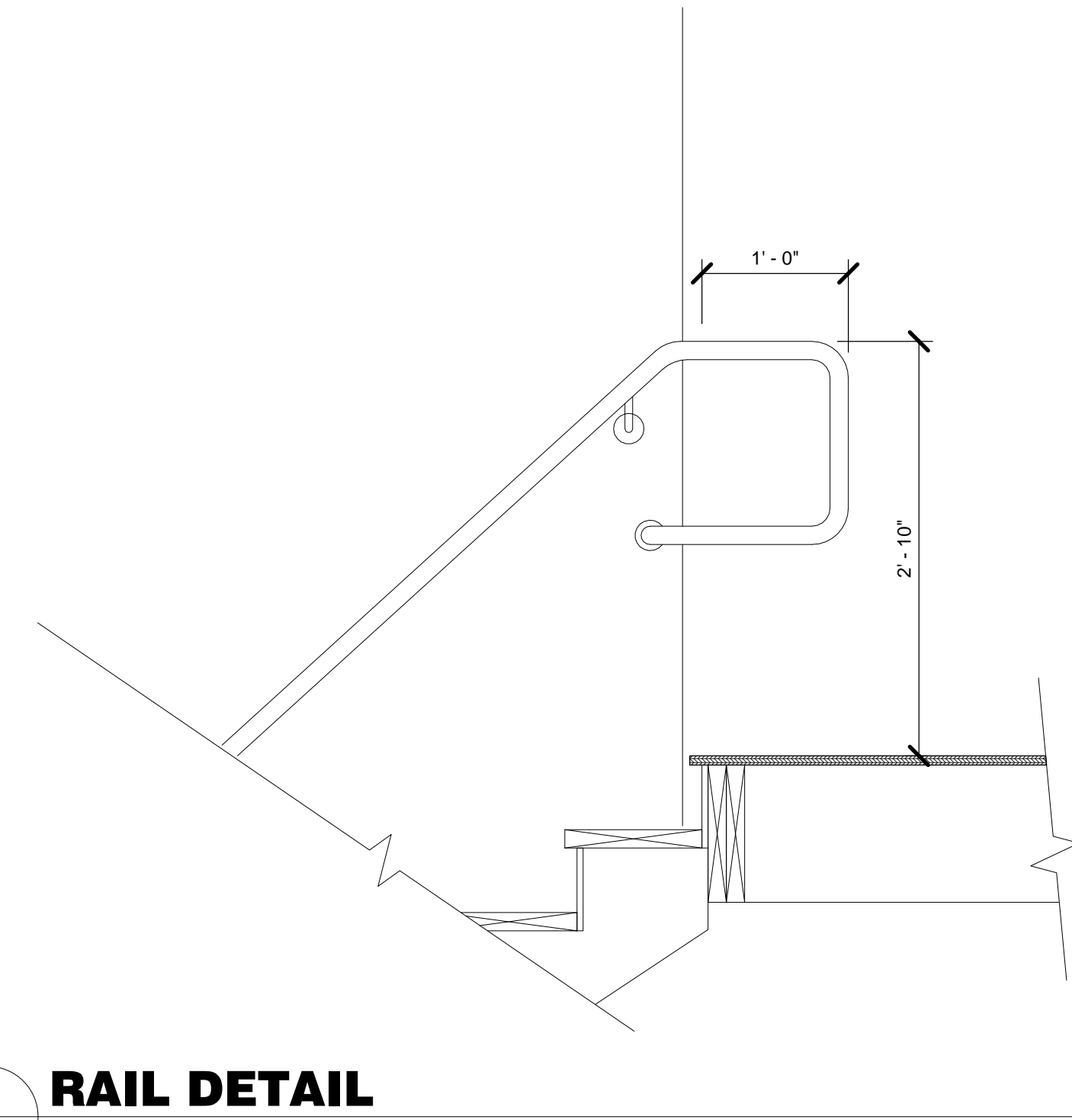
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FILE NO.	850.01
SHEET NUMBER	A6.2 OF 8

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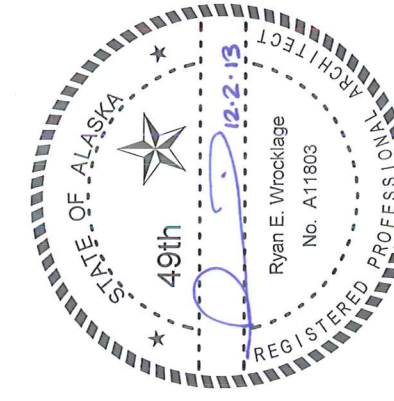
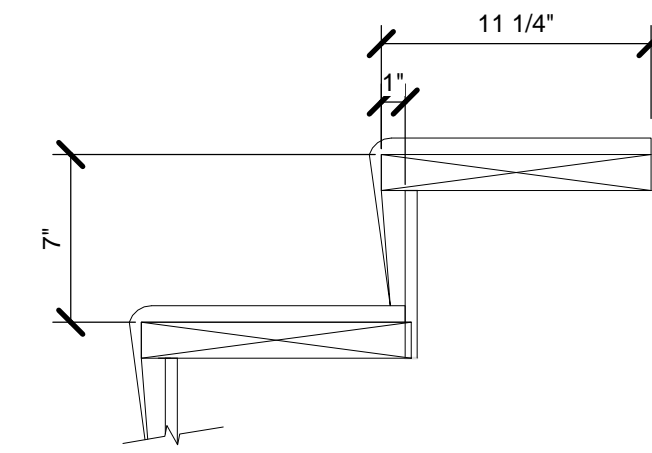
2 RAILING DETAIL
 A6.3 3/4" = 1'-0"



3 RAIL DETAIL
 A6.3 1" = 1'-0"



1 TREAD DETAIL
 A6.3 1 1/2" = 1'-0"



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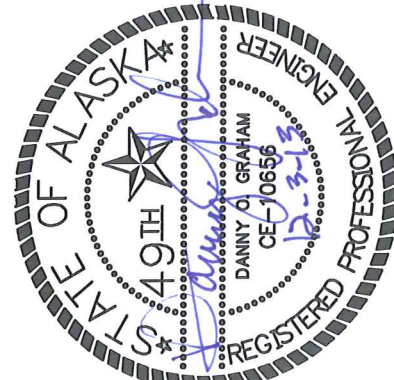
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**PYRAMID WTP
 UNALASKA, ALASKA**

STAIR AND RAILING DETAILS

SCALE:	As indicated
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CHECKED BY:	RW
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	A6.3 OF 8

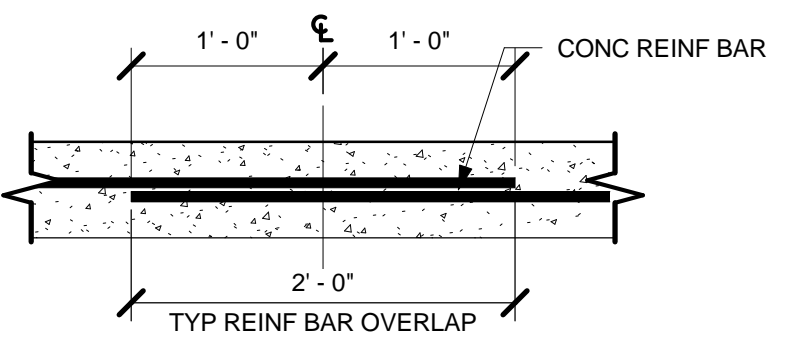


ABBREVIATIONS

AB	ANCHOR BOLT	MIN	MINIMUM
BLKG	BLOCKING	MTL	METAL
BN	BOUNDARY NAIL	(n)	NEW
BTM	BOTTOM	NTS	NOT TO SCALE
BTWN	BETWEEN	OC	ON CENTER
CS	CENTER TO CENTER	OH	OPPOSITE HAND
CJ	CONSTRUCTION JOINT	pc	PIECES
CLR	CLEAR	PP	PARTIAL PENETRATION
COL	COLUMN	PRE-ENG	PRE-ENGINEERED
CONC	CONCRETE	PT	PRESSURE TREATED
CONT	CONTINUOUS	RWD	REDWOOD
CP	COMPLETE PENETRATION	REF	REFERENCE
CSK	CONTERSINK	REINF	REINFORCING
CTJ	CONTROL JOINT	SC	SHEAR CONNECTOR
DF	DOUGLAS FIR	SDSTS	SELF DRILLING SELF TAPPING SCREW
DIA	DIAMETER	SHTG	SHEATHING
DL	DEAD LOAD	SIM	SIMILAR
do	DITTO	SP	STRUCTURAL PLYWOOD
(e)	EXISTING	SPAC	SPACING
EA	EACH	SPEN	STRUCTURAL PLYWOOD EDGE NAILING
EJ	EXPANSION JOINT	STFNR	STIFFENER
EN	EDGE NAIL	STGGRD	STAGGERED
EXIST	EXISTING	STL	STEEL
FB	FACE OF BLOCK	STRUCT	STRUCTURAL
FC	FACE OF CONCRETE	T & B	TOP AND BOTTOM
FF	FINISH FLOOR	T & G	TONGUE AND GROVE
FLR	FLOOR	TN	TOE NAIL
FRMG	FRAMING	TOF	TOP OF FRAMING
FS	FACE OF STUD	TOS	TOP OF STEEL
FTG	FOOTING	TYP	TYPICAL
GA	GAUGE	UNO	UNLESS OTHERWISE NOTED
GALV	GALVANIZED	VERT	VERTICAL
GLB	GLU-LAM BEAM	VIF	VERIFY IN FIELD
HDR	HEADER	W	WITH
HGR	HANGER	W/O	WITHOUT
HORIZ	HORIZONTAL	WD	WOOD
HSB	HIGH STRENGTH BOLT	WP	WORK POINT
HT	HEIGHT	WS	WOOD SCREW
JH	JOIST HANGER (SIMPSON)	WWF	WELDED WIRE FABRIC
LL	LIVE LOAD	C	CENTERLINE
LS	LAG SCREW	#	NUMBER OR POUNDS
LT WT	LIGHT WEIGHT	R	PLATE
MB	MACHINE BOLT	o	ROUND OR DIAMETER
MFR	MANUFACTURER		CONTINUOUS PLATE IN SECTION
MI	MALLEABLE IRON		WOOD BLOCKING IN SECTION

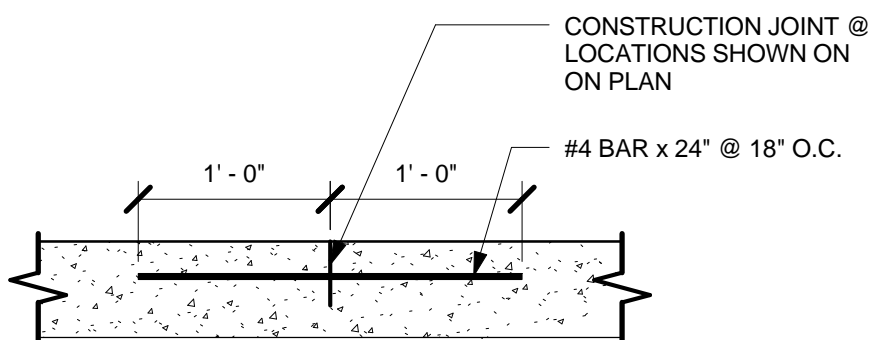
1 TYP. REINFORCING OVERLAP

S1.0 1" = 1'-0"



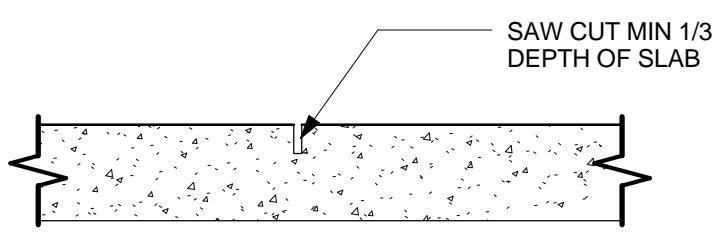
2 TYP. CONSTRUCTION JOINT

S1.0 1" = 1'-0"



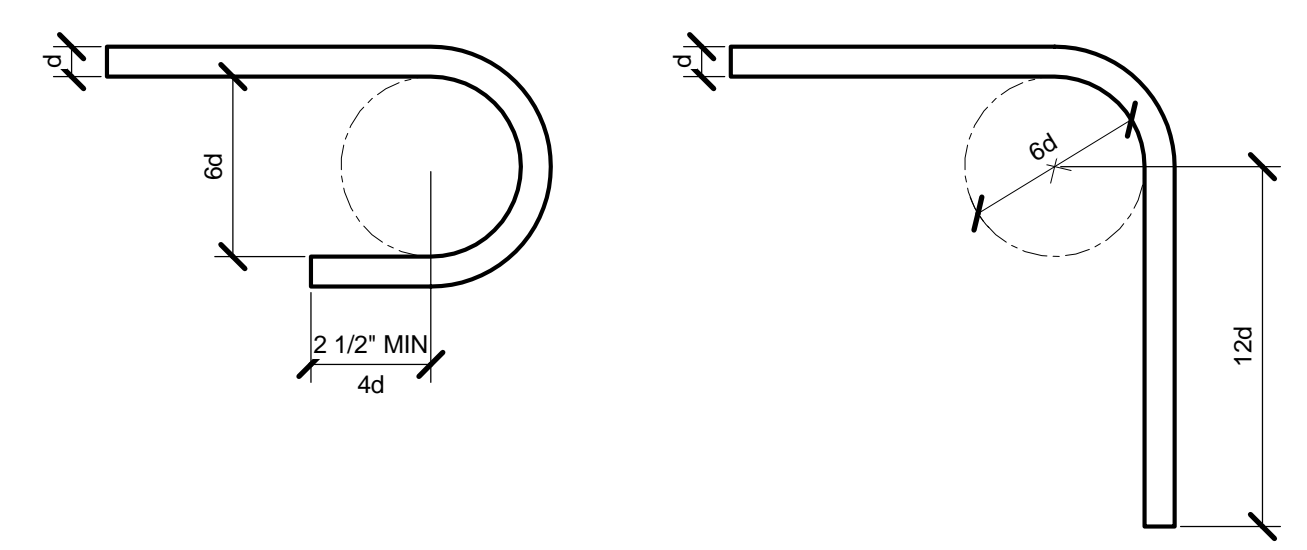
3 TYP. CONTROL JOINT

S1.0 1" = 1'-0"



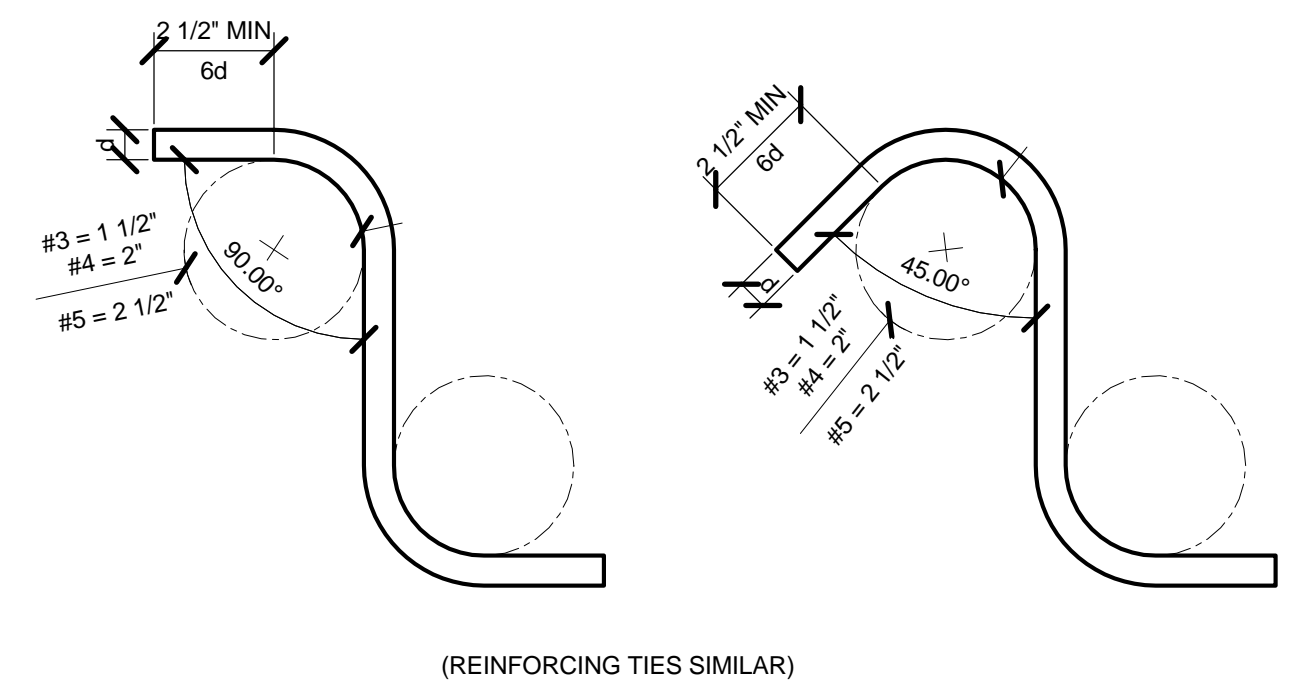
4 REINFORCING HOOKS

S1.0 3" = 1'-0"



5 REINFORCING STIRRUPS

S1.0 3" = 1'-0"



(REINFORCING TIES SIMILAR)

DESIGN CRITERIA

CODES AND STANDARDS PER INTERNATIONAL BUILDING CODE (IBC) 2006 IN ADDITION TO DEAD LOADS, THE FOLLOWING MINIMUM LIVE LOADS APPLY TO THE CONSTRUCTION OF ALL BUILDINGS AND FACILITIES SHOWN UNLESS OTHER-WISE NOTED.

FLOOR LOADINGS:	50 PSF OFFICE 15 PSF PARTITION
ROOF LIVE LOAD:	50 PSF SNOW, FLAT ROOF
WIND LOADS:	150 MPH, 3 SECOND GUST
BASIC WIND SPEED	1.15
IMPORTANCE FACTOR	1.0
EXPOSURE	TABLE 1609.6.2.1(3) BY AREA
COMPONENTS AND CLADDING	
SEISMIC DESIGN GROUP	"D"
SPECTRAL RESPONSE COEFFICIENT	Sds=1.0 Sd1=0.55
SITE CLASS	"D"
BASIC FORCE SYSTEM	STEEL MOMENT FRAME, R = 3.5
DESIGN BASE SHEAR	27,000 LBS
METHOD OF ANALYSIS	EQUIVALENT LATERAL FORCE

	ENGINEERED FILL
	WASHED SAND
	POURED CONCRETE
	RIGID INSULATION

HATCH LEGEND

1 1/2" = 1'-0"

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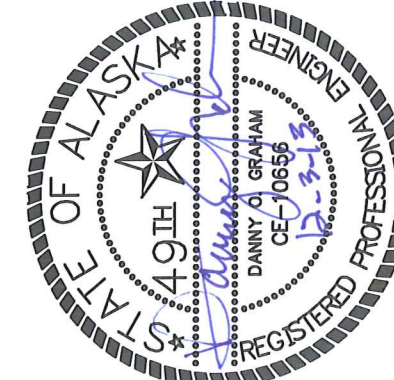
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 UNALASKA, ALASKA**

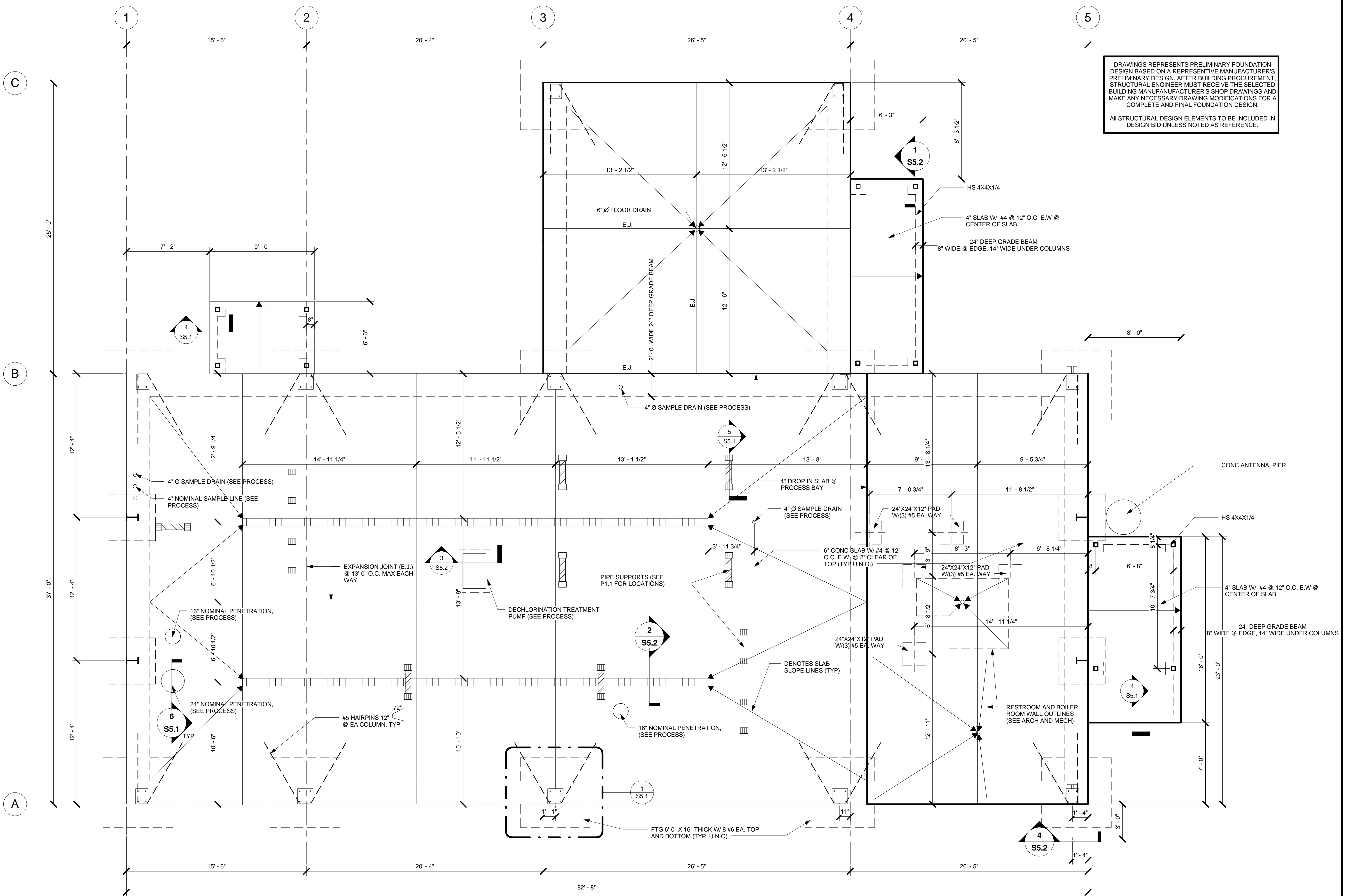
GENERAL NOTES & DETAILS

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DESIGNED BY:	DOG
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DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	S1.0 OF 6



DRAWINGS REPRESENTS PRELIMINARY FOUNDATION DESIGN BASED ON A REPRESENTATIVE MANUFACTURER'S PRELIMINARY DESIGN. AFTER BUILDING PROCUREMENT, STRUCTURAL ENGINEER MUST RECEIVE THE SELECTED BUILDING MANUFACTURER'S SHOP DRAWINGS AND MAKE ANY NECESSARY DRAWING MODIFICATIONS FOR A COMPLETE AND FINAL FOUNDATION DESIGN.

ALL STRUCTURAL DESIGN ELEMENTS TO BE INCLUDED IN DESIGN BID UNLESS NOTED AS REFERENCE.



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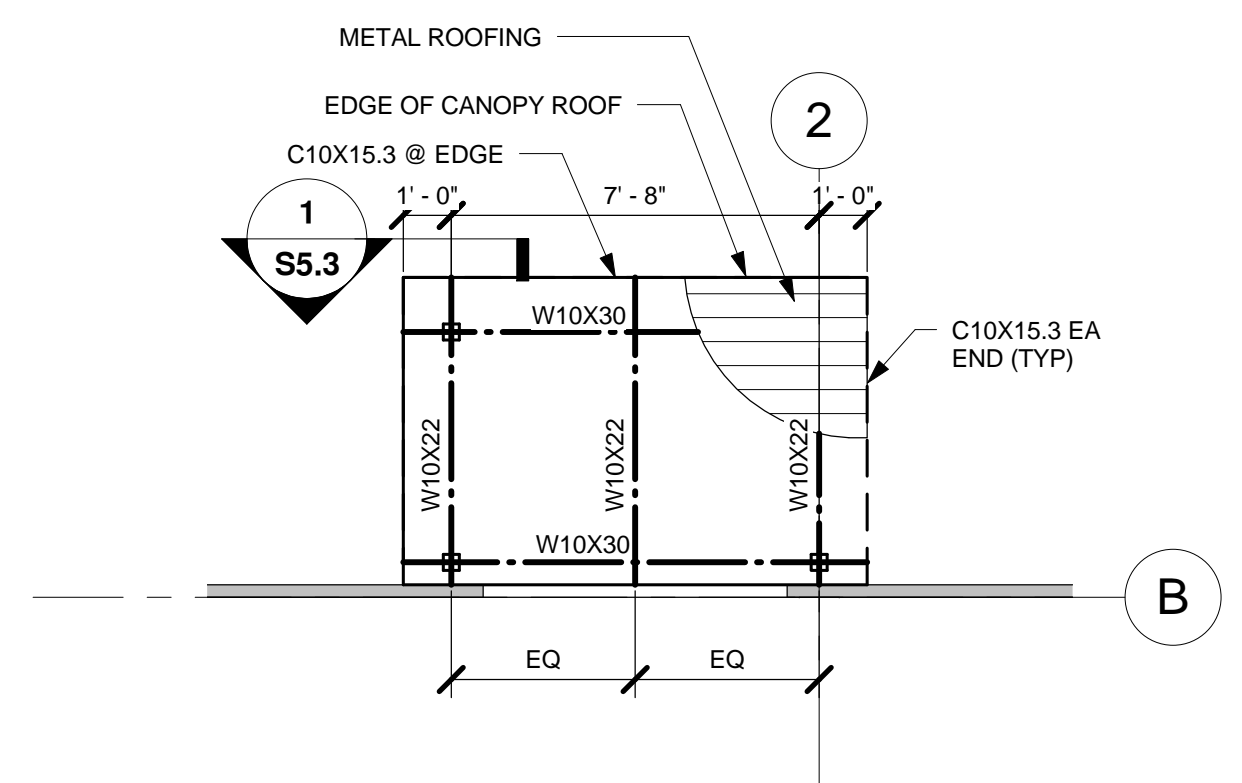
**PYRAMID WTP
UNALASKA, ALASKA**

CONCRETE SLAB AND FOUNDATION PLAN

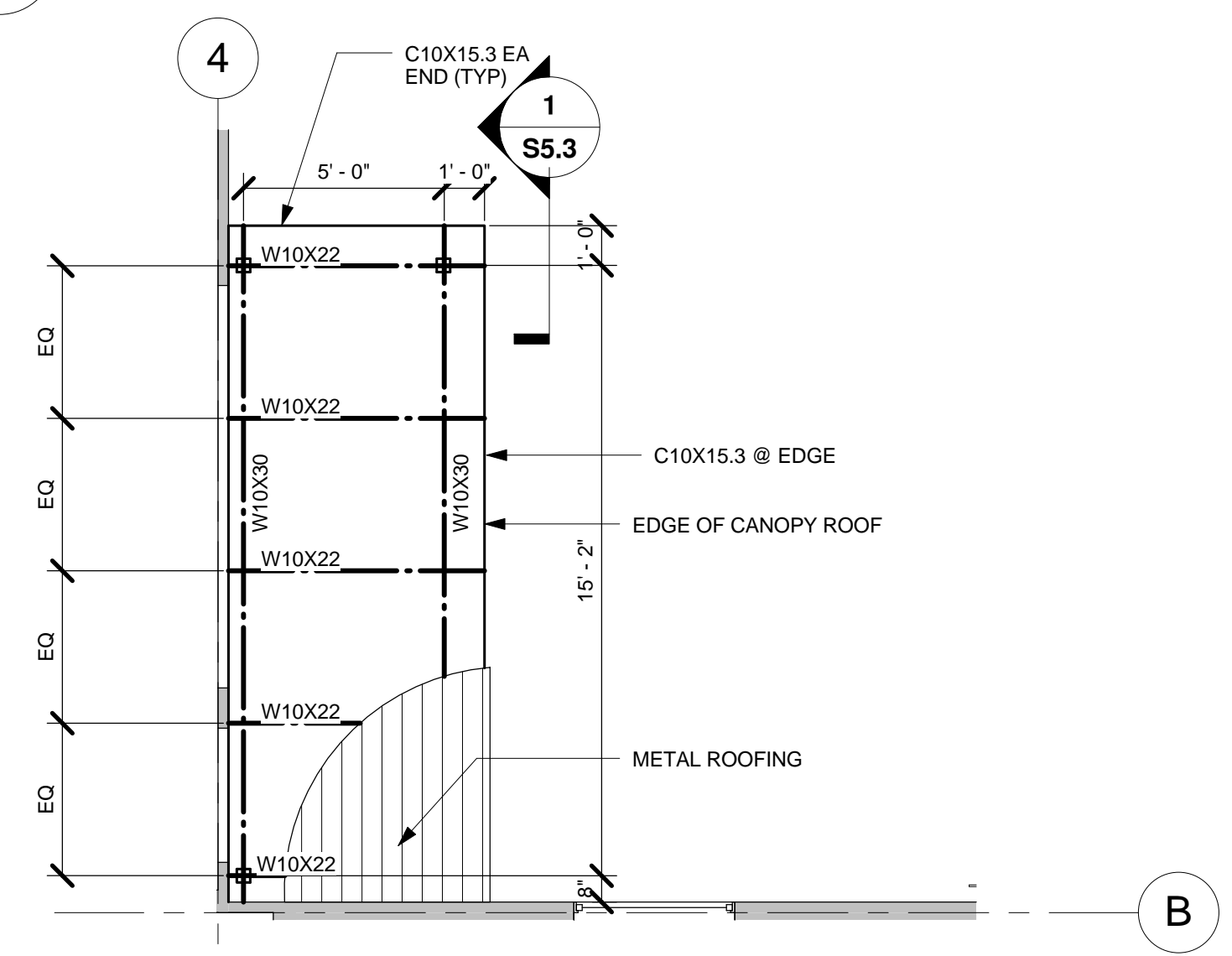
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DESIGNED BY:	DOG
DRAWN BY:	RW
CHECKED BY:	DOG
DATE:	12/2/13
FILE NO.:	850.01
SHEET NUMBER	
S1.1	OF 6

1 CONCRETE SLAB AND FOUNDATION PLAN
S1.1 1/4" = 1'-0"

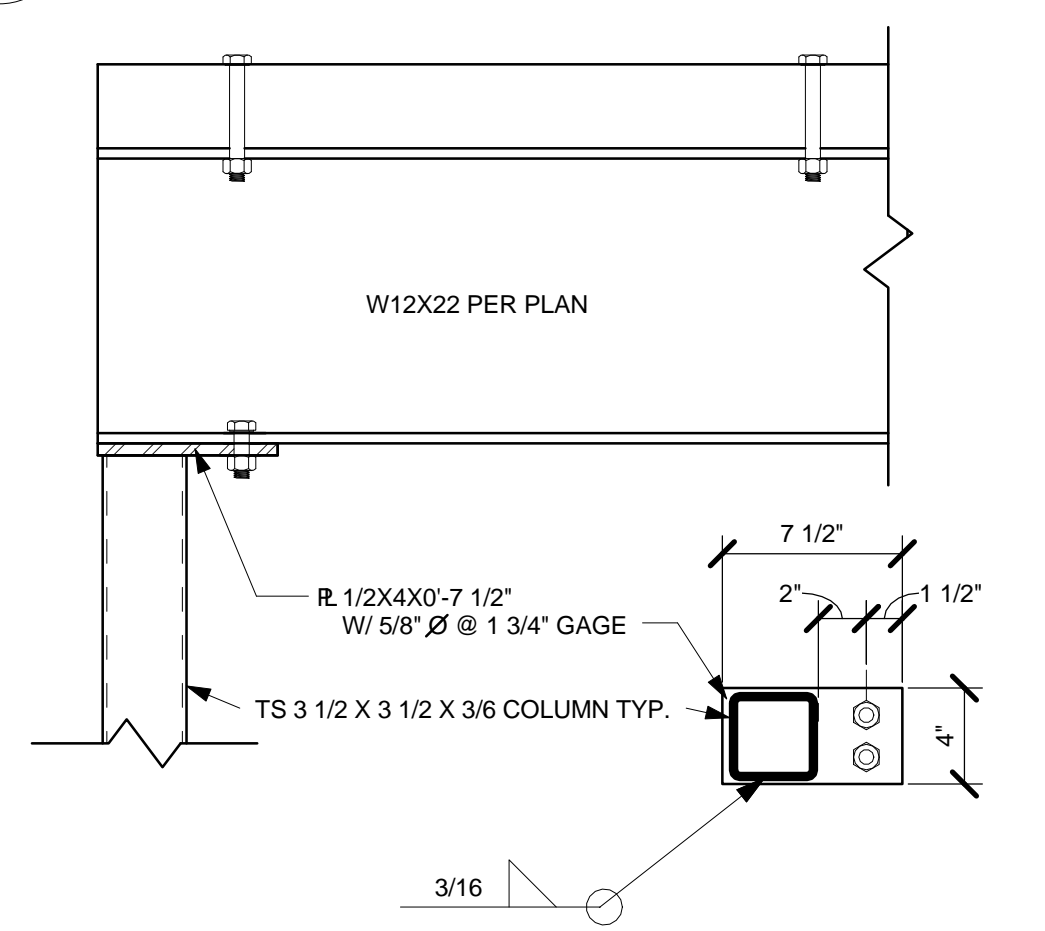
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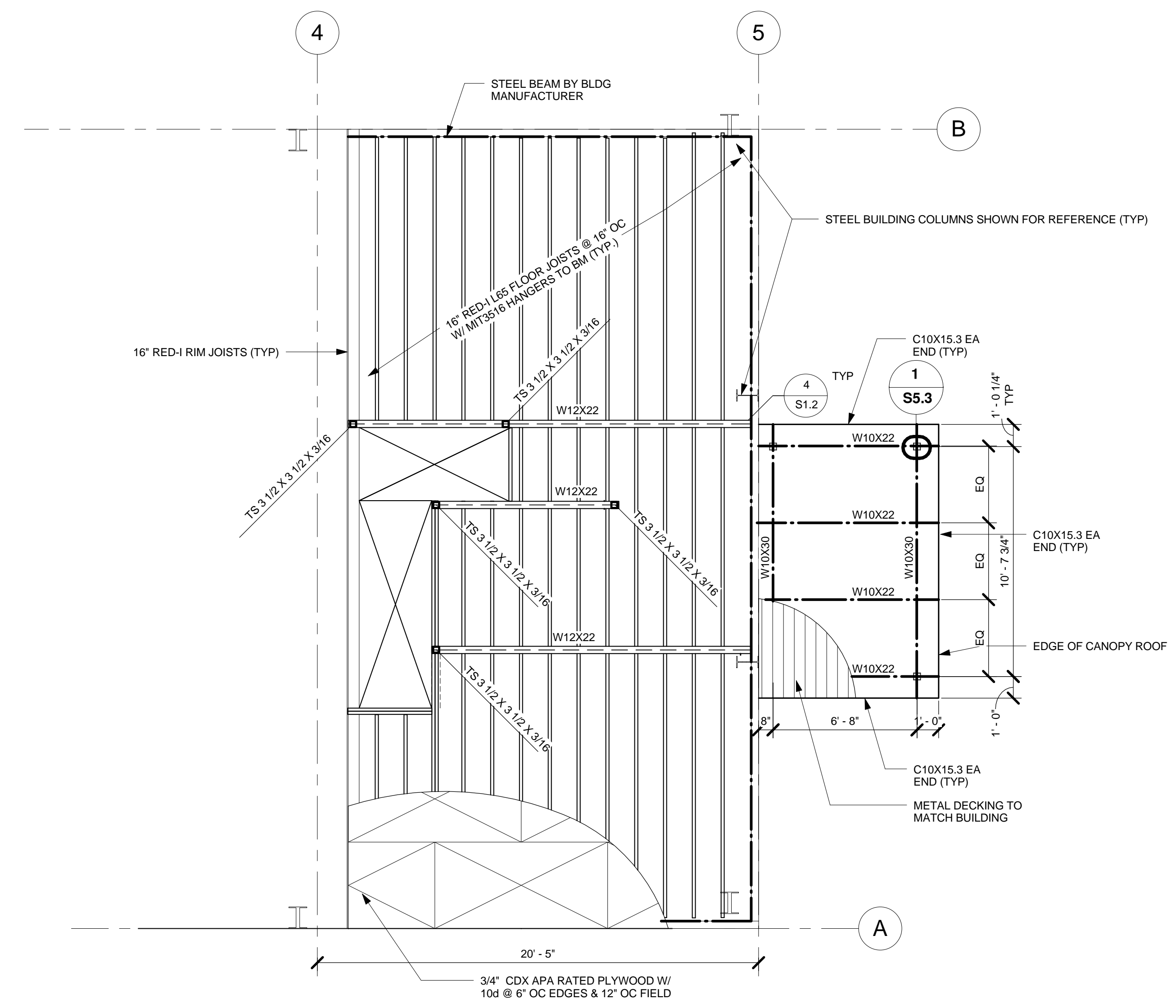
2 PROCESS BAY CANOPY FRAMING PLAN
S1.2 1/4" = 1'-0"



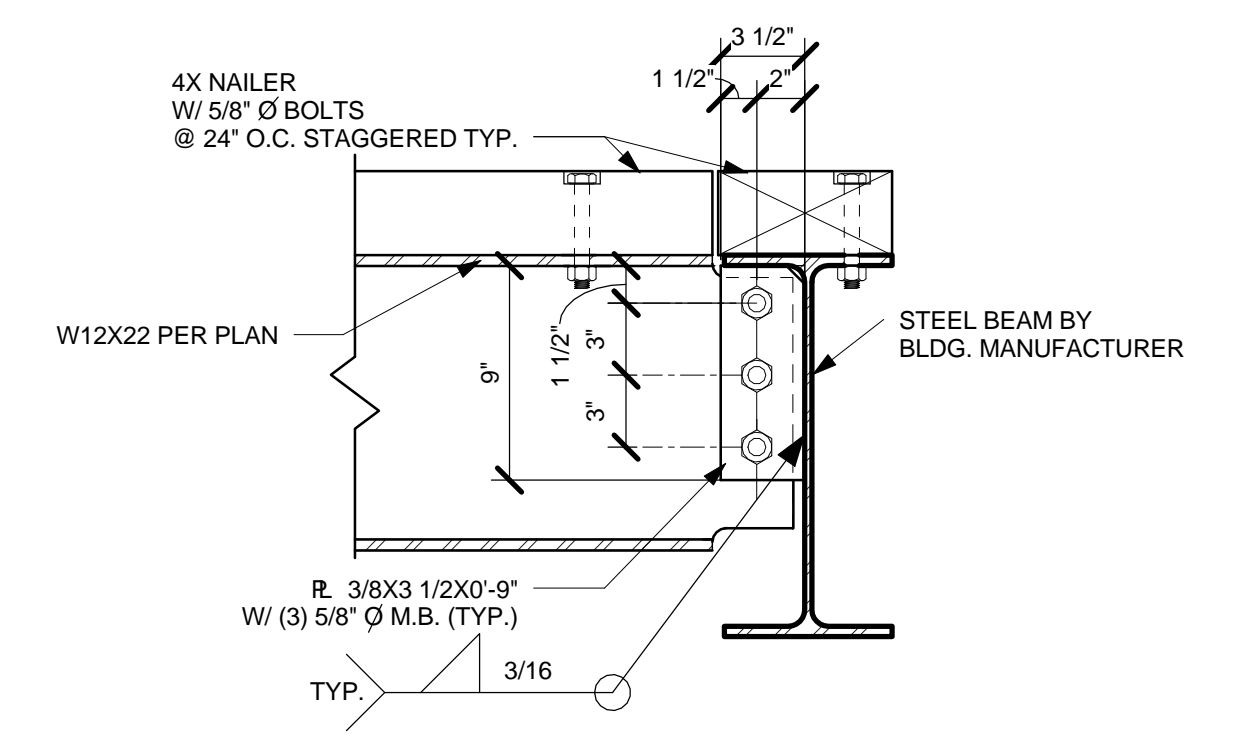
3 CHLORINE CANOPY FRAMING PLAN
S1.2 1/4" = 1'-0"



5 COLUMN TO BEAM CONNECTION
S1.2 1 1/2" = 1'-0"



1 MEZZANINE FLOOR & ENTRY CANOPY FRAMING PLAN
S1.2 1/4" = 1'-0"



4 CONNECTOR PLATE DETAIL
S1.2 1 1/2" = 1'-0"

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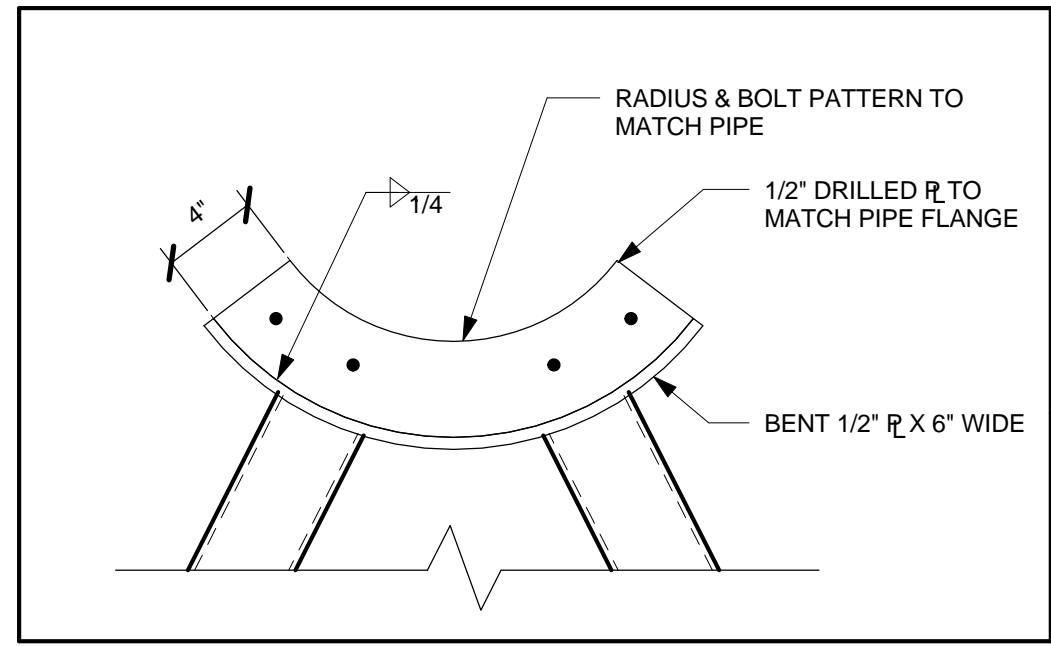
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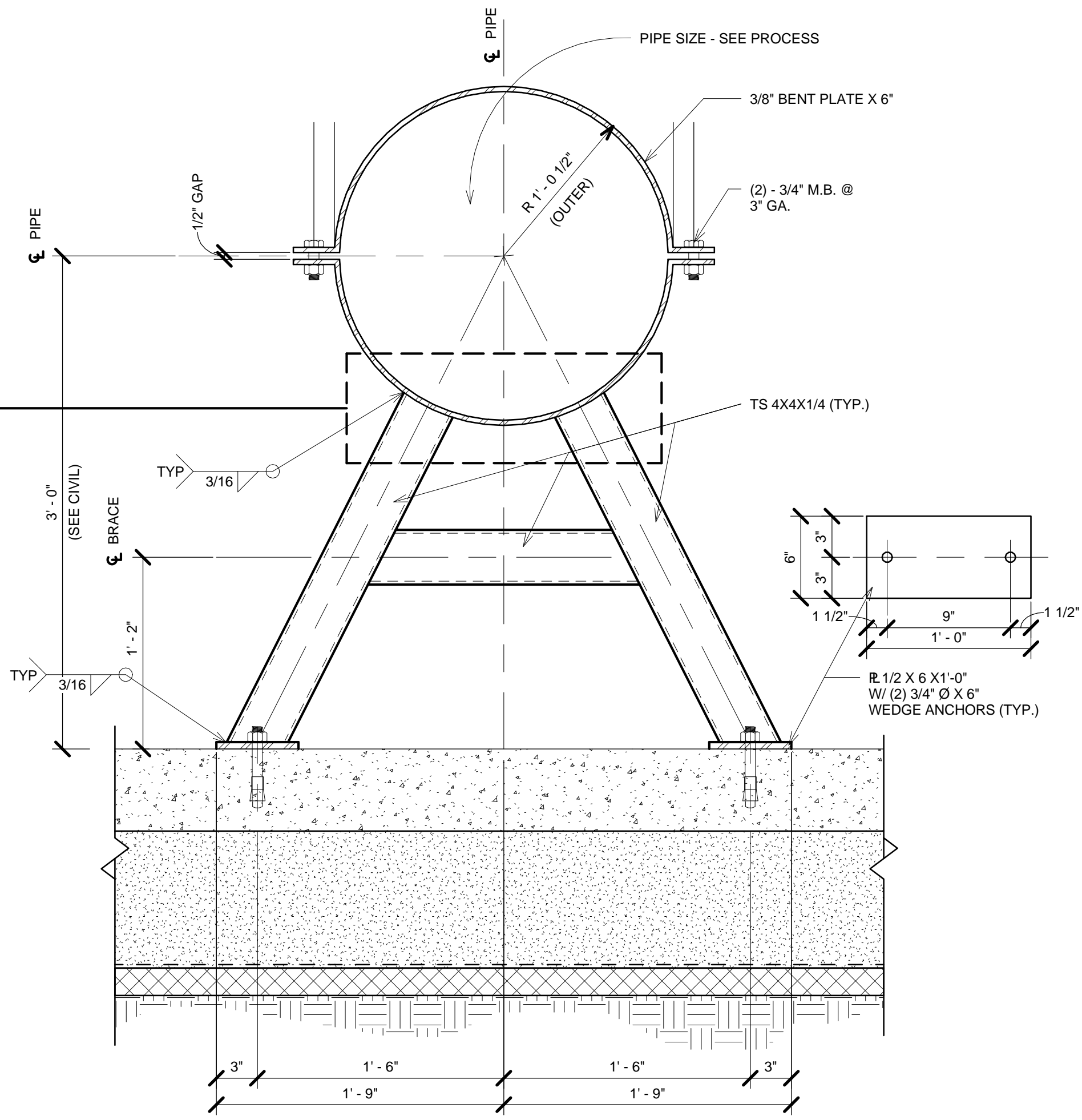
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PYRAMID WTP UNALASKA, ALASKA	
MEZZANINE FLOOR FRAMING PLAN CANOPY ROOF FRAMING PLANS	
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DRAWN BY:	HNM
CHECKED BY:	DOG
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	
S1.2	OF 6

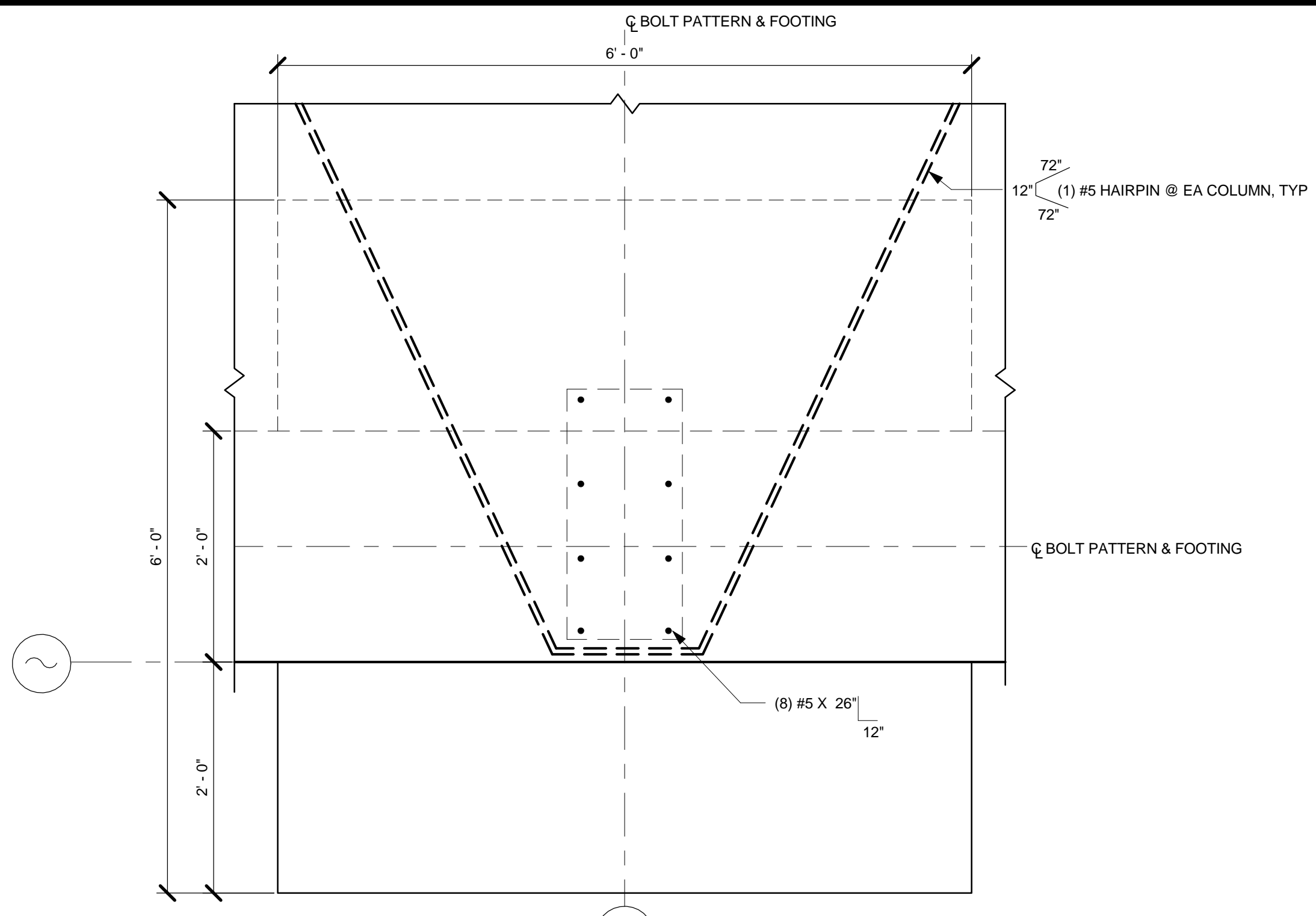


CONDITION @ PIPE FLANGE SUPPORT

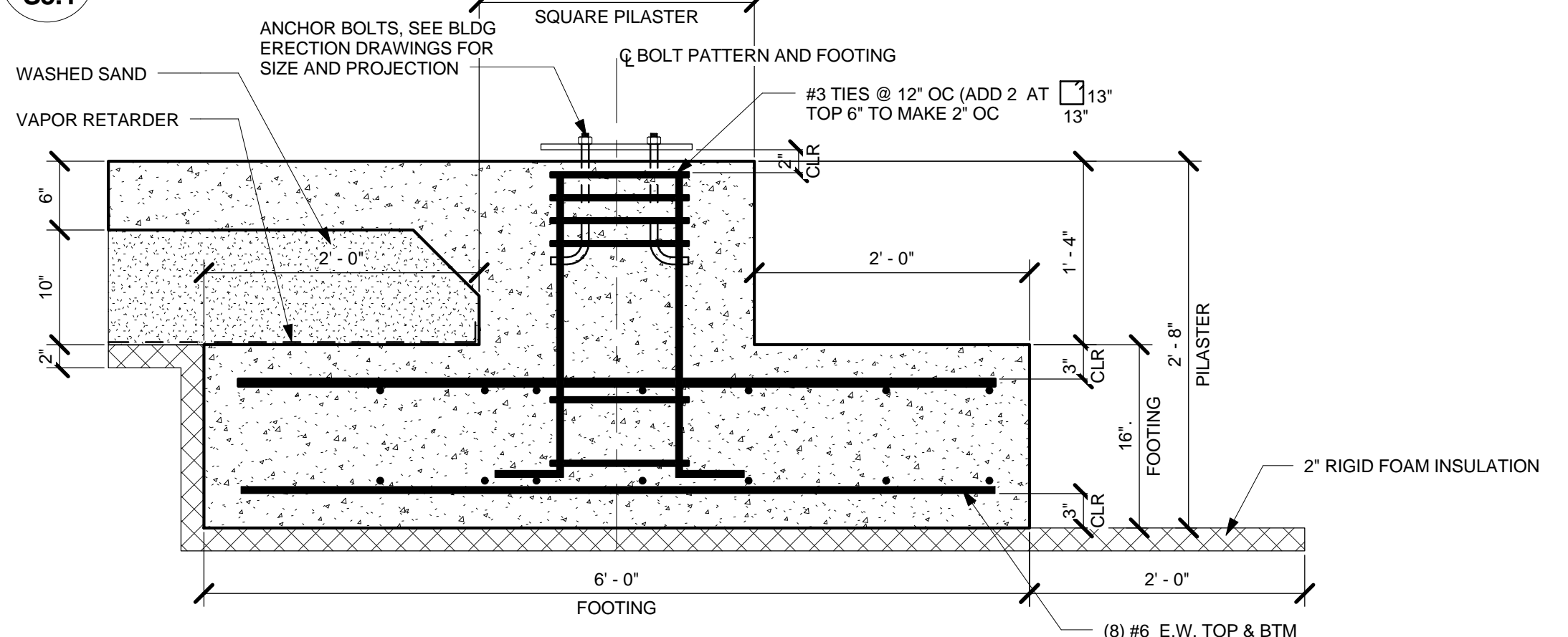
NOTE: PIPE SUPPORTS IN THE PROCESS BAY TO BE STAINLESS STEEL



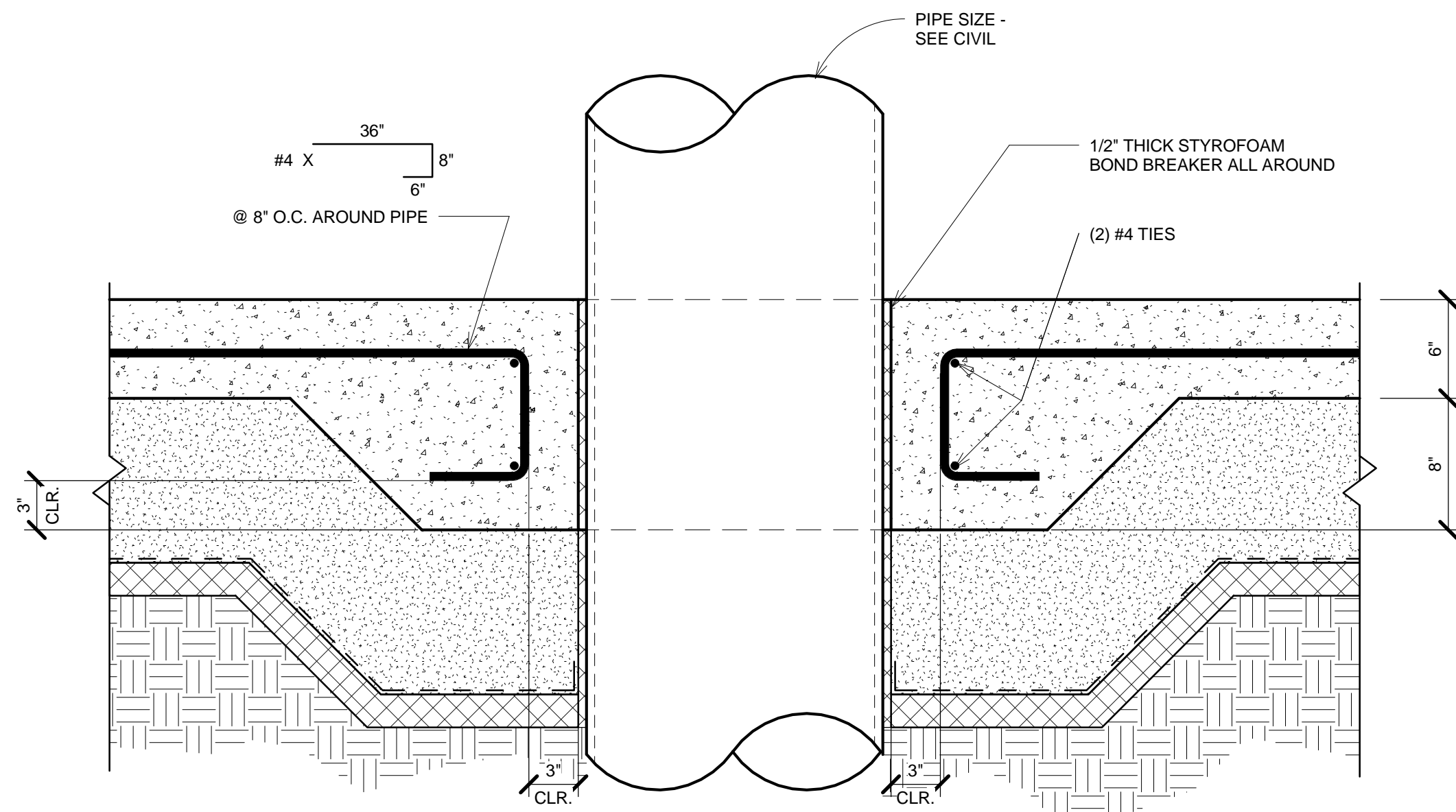
5 PIPE SUPPORT
S5.1 1 1/2" = 1'-0"



1 TYP PILASTER
S5.1 1" = 1'-0"

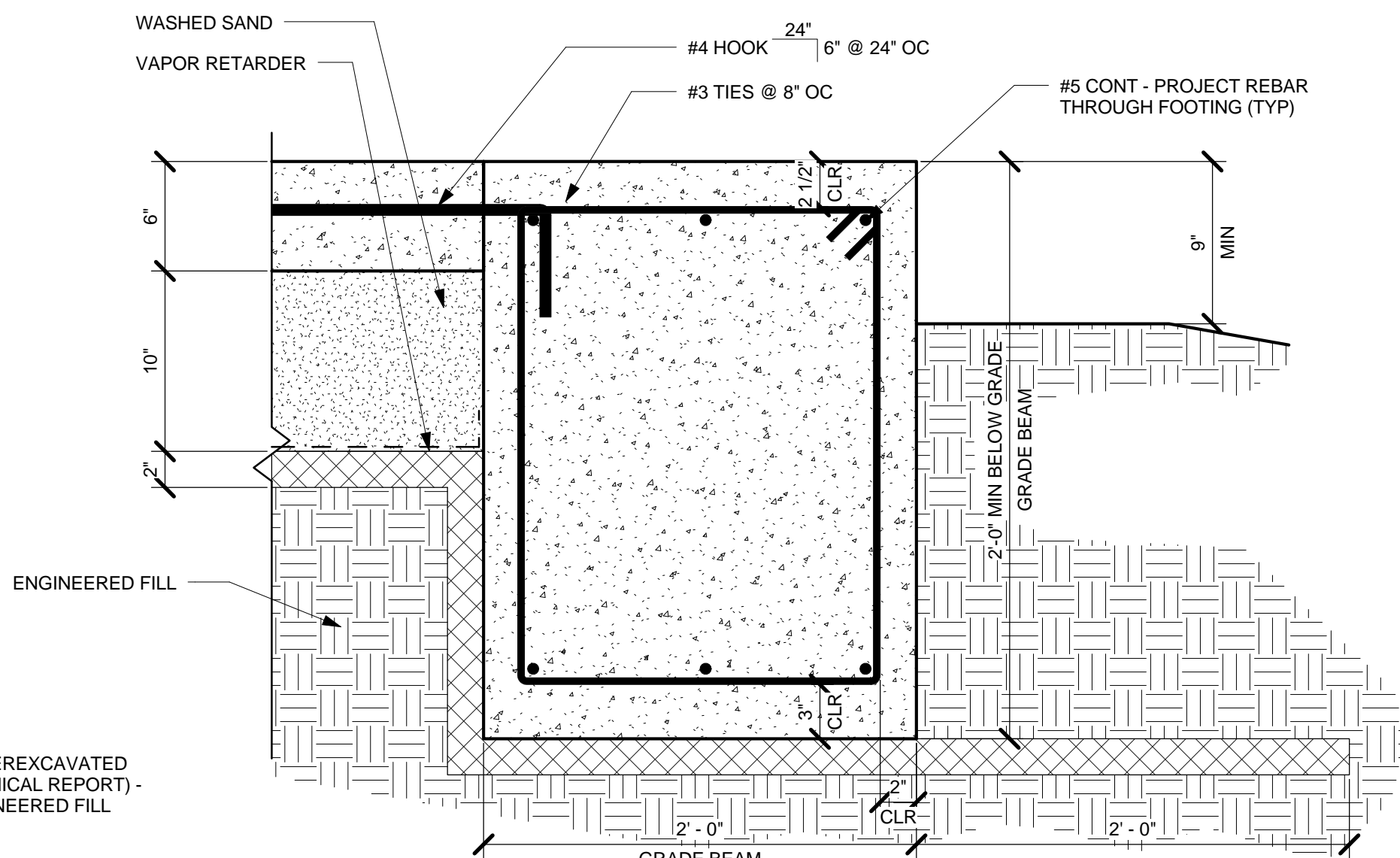


2 PILASTER SECTION
S5.1 1" = 1'-0"

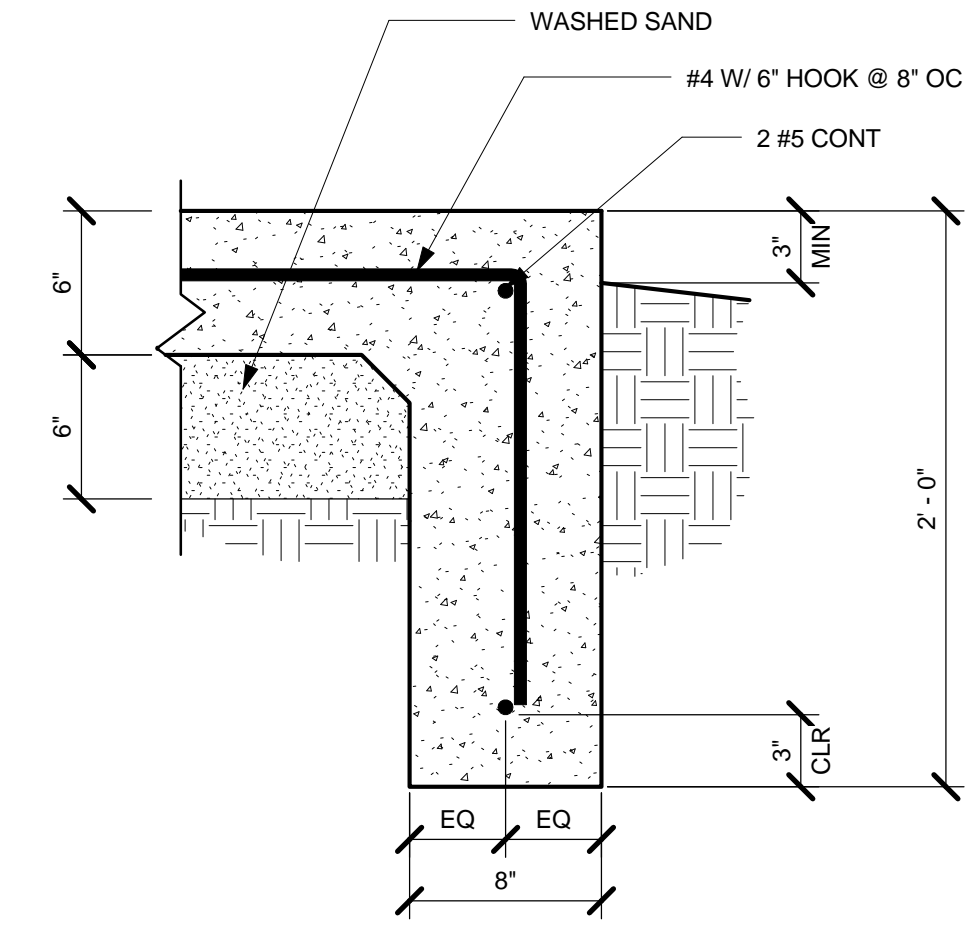


6 SLAB PIPE PENETRATIONS
S5.1 1 1/2" = 1'-0"

ENTIRE PAD TO BE OVEREXCAVATED (REFERENCE GEOTECHNICAL REPORT) - REPLACE WITH ENGINEERED FILL



3 TYP GRADE BEAM
S5.1 1 1/2" = 1'-0"

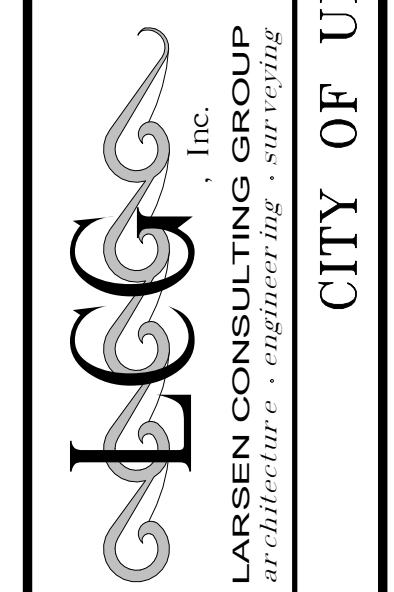


4 TYP STOOP EDGE
S5.1 1 1/2" = 1'-0"

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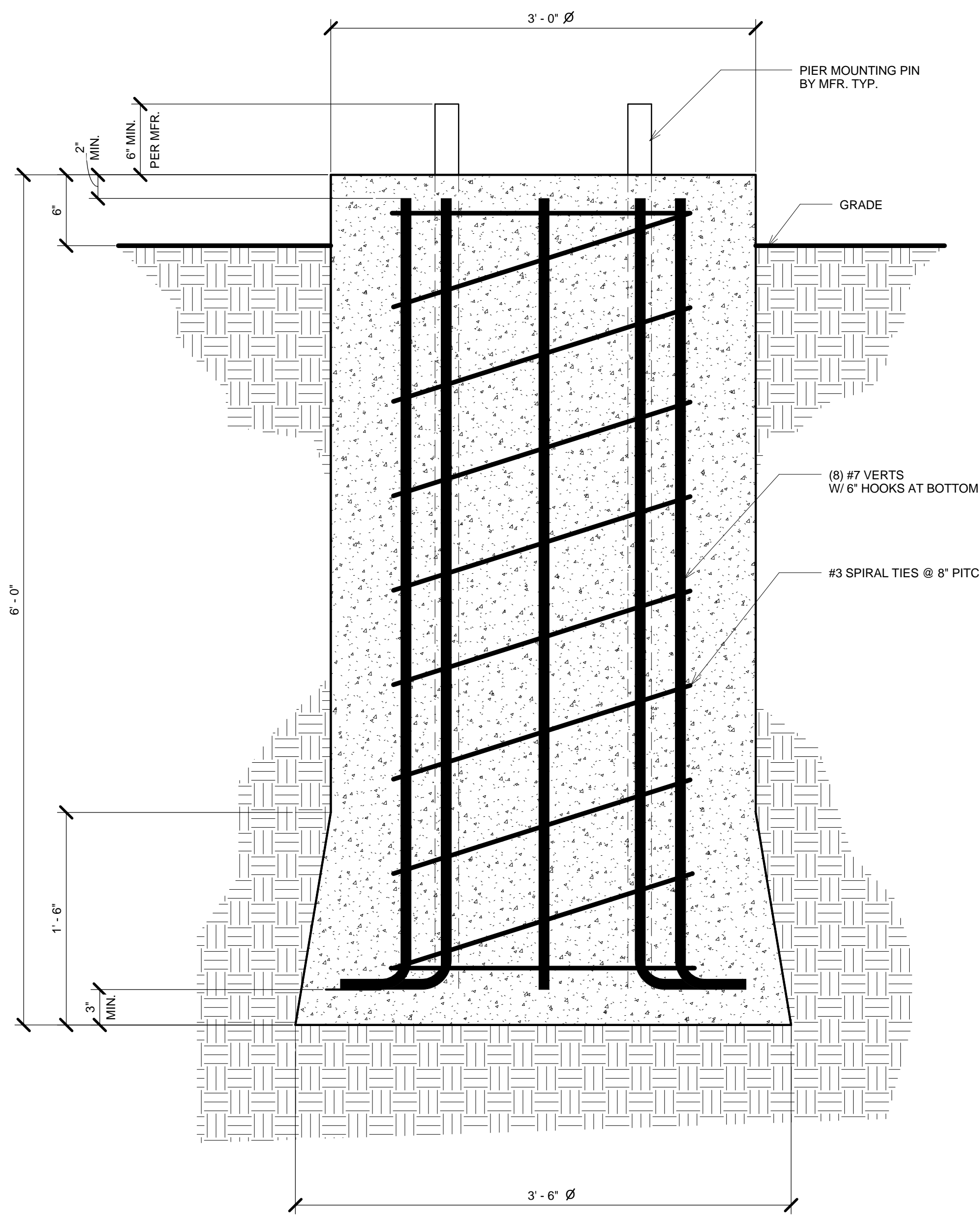
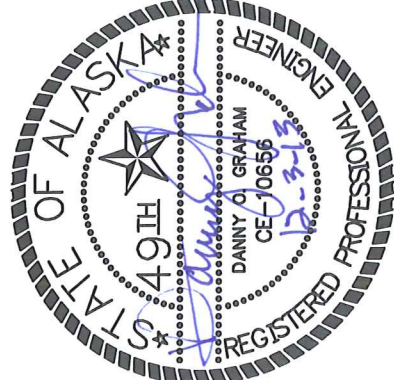
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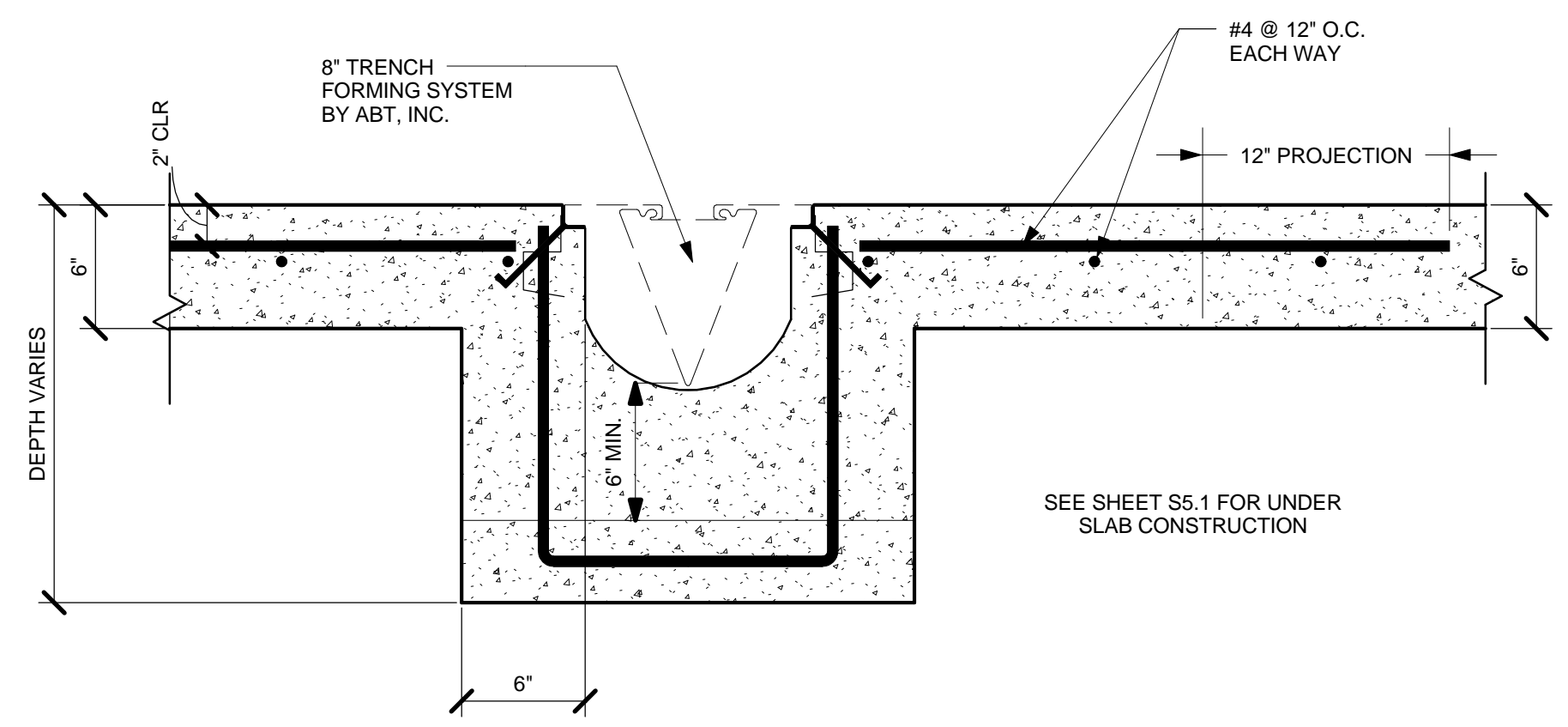


PYRAMID WTP
UNALASKA, ALASKA
STRUCTURAL DETAILS

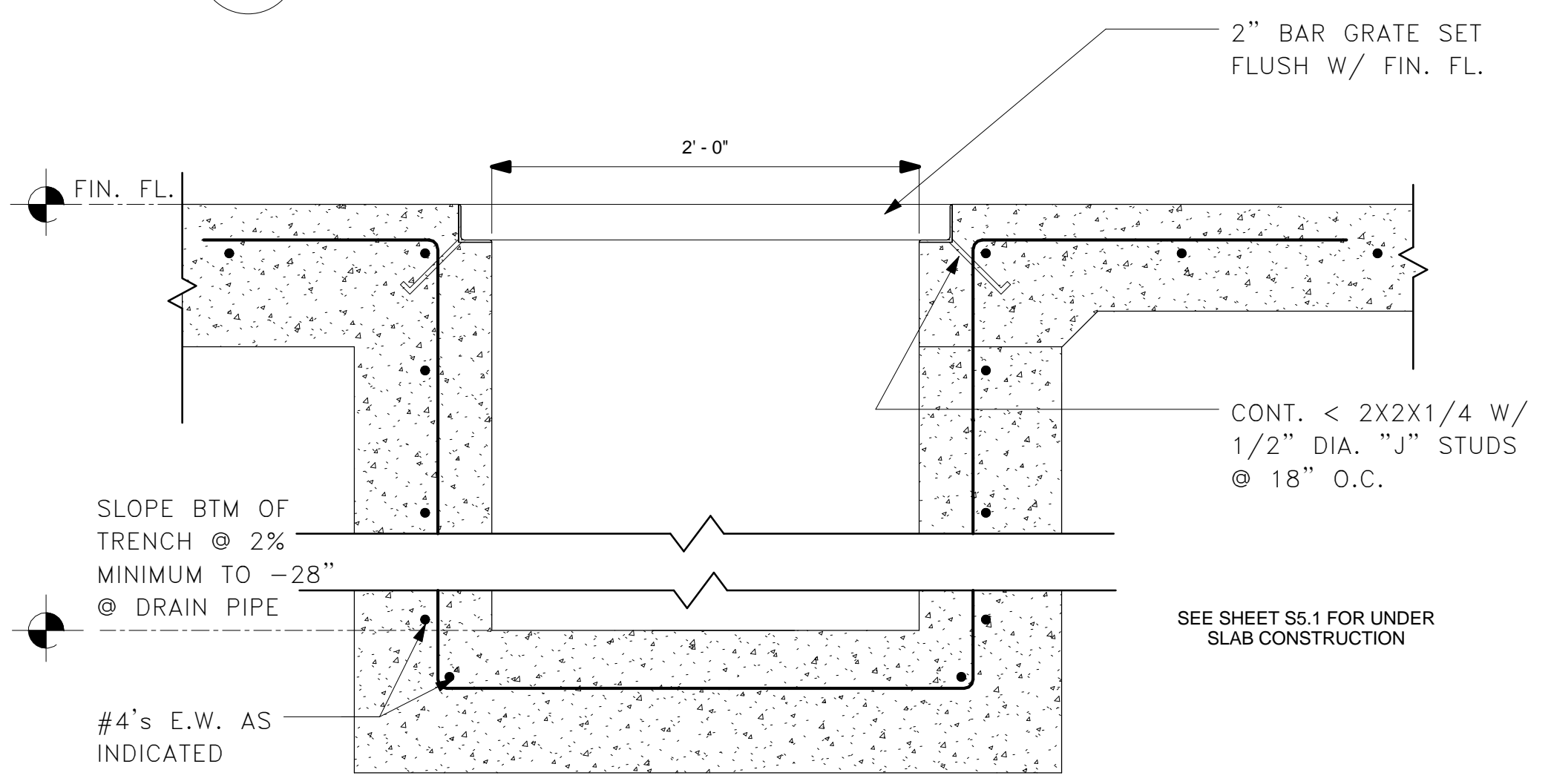
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SHEET NUMBER	S5.1 OF 6



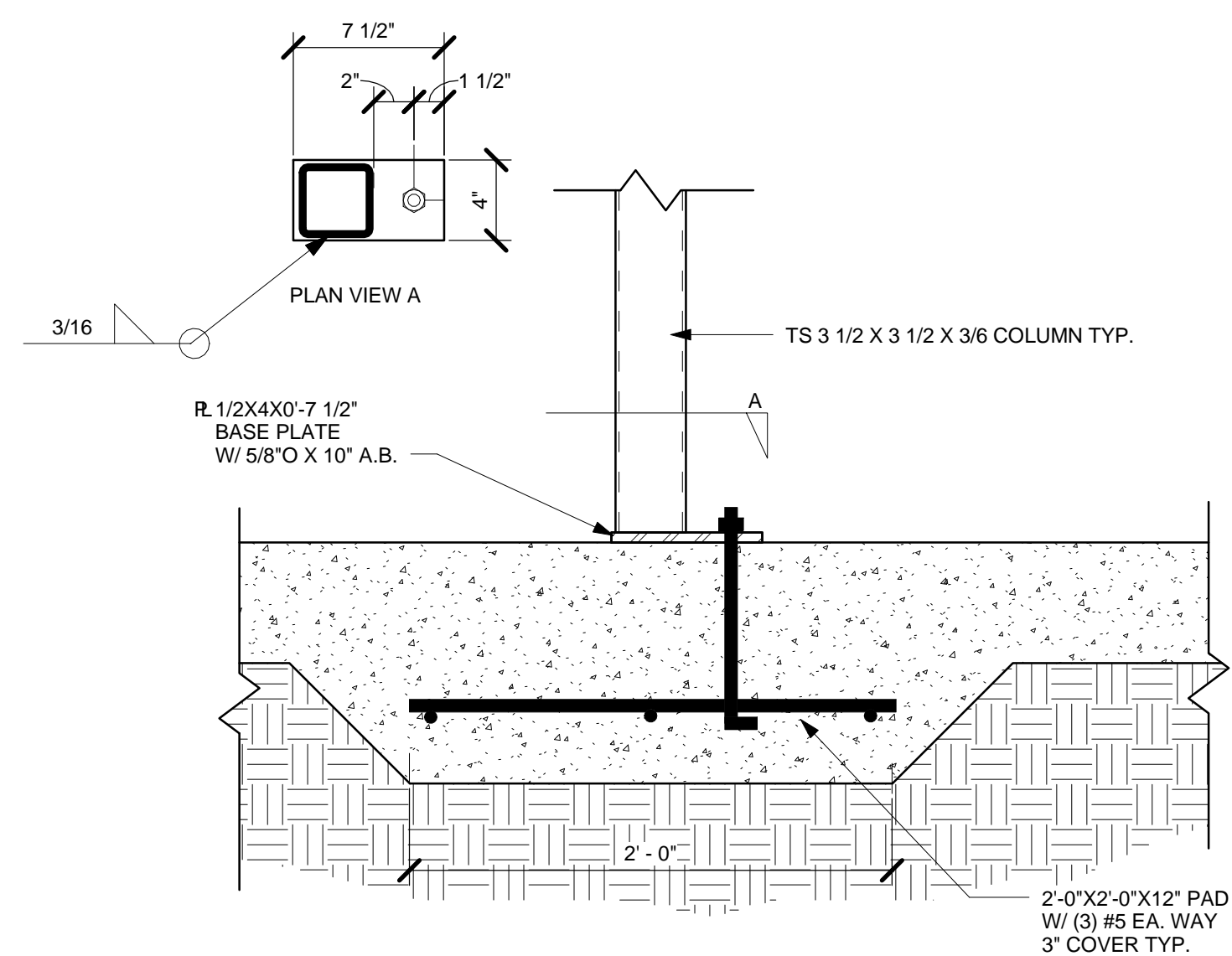
4 ANTENNA BASE FOOTING
S5.2 1 1/2" = 1'-0"



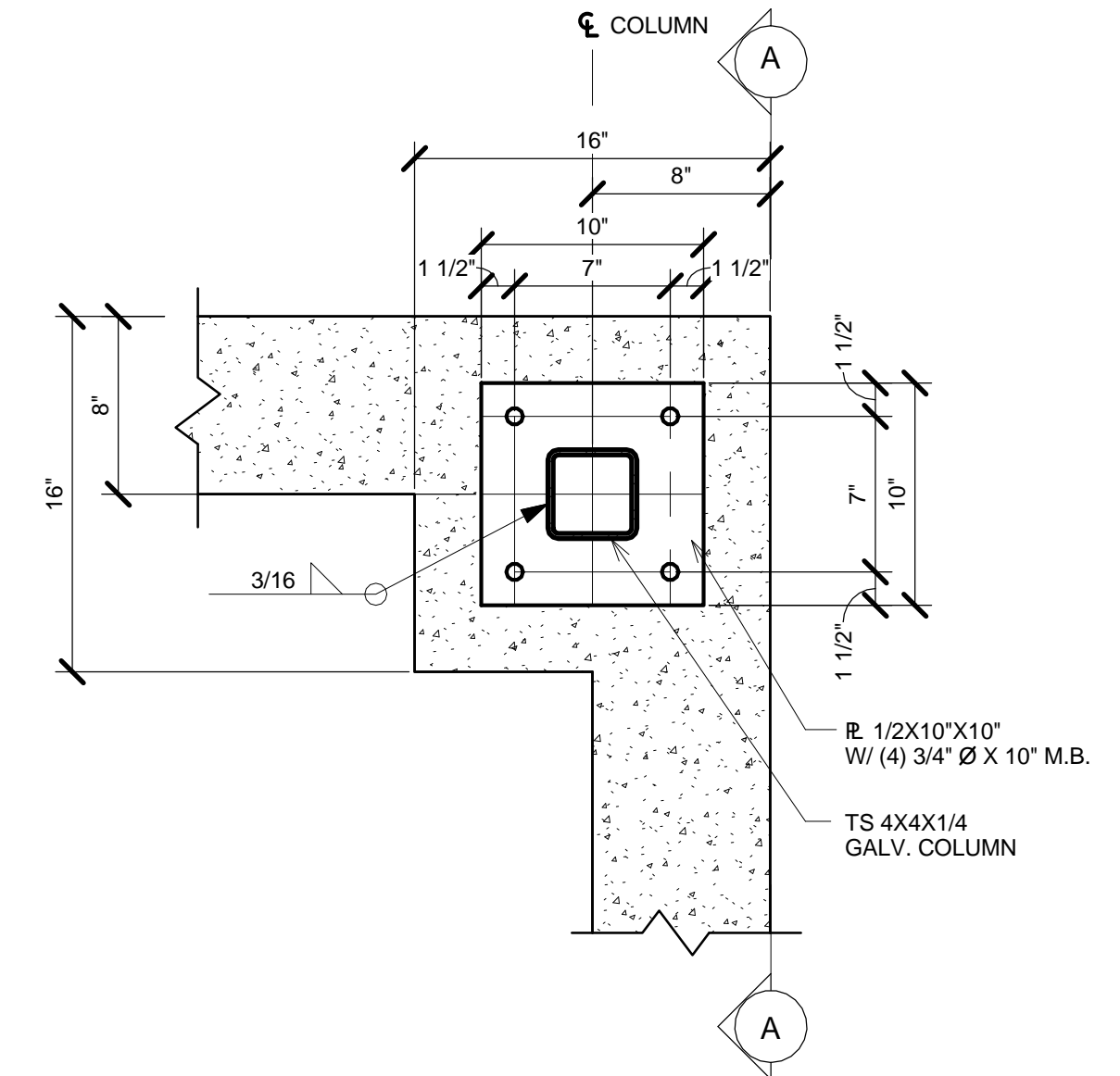
2 SLAB AND TRENCH DETAIL
S5.2 1 1/2" = 1'-0"



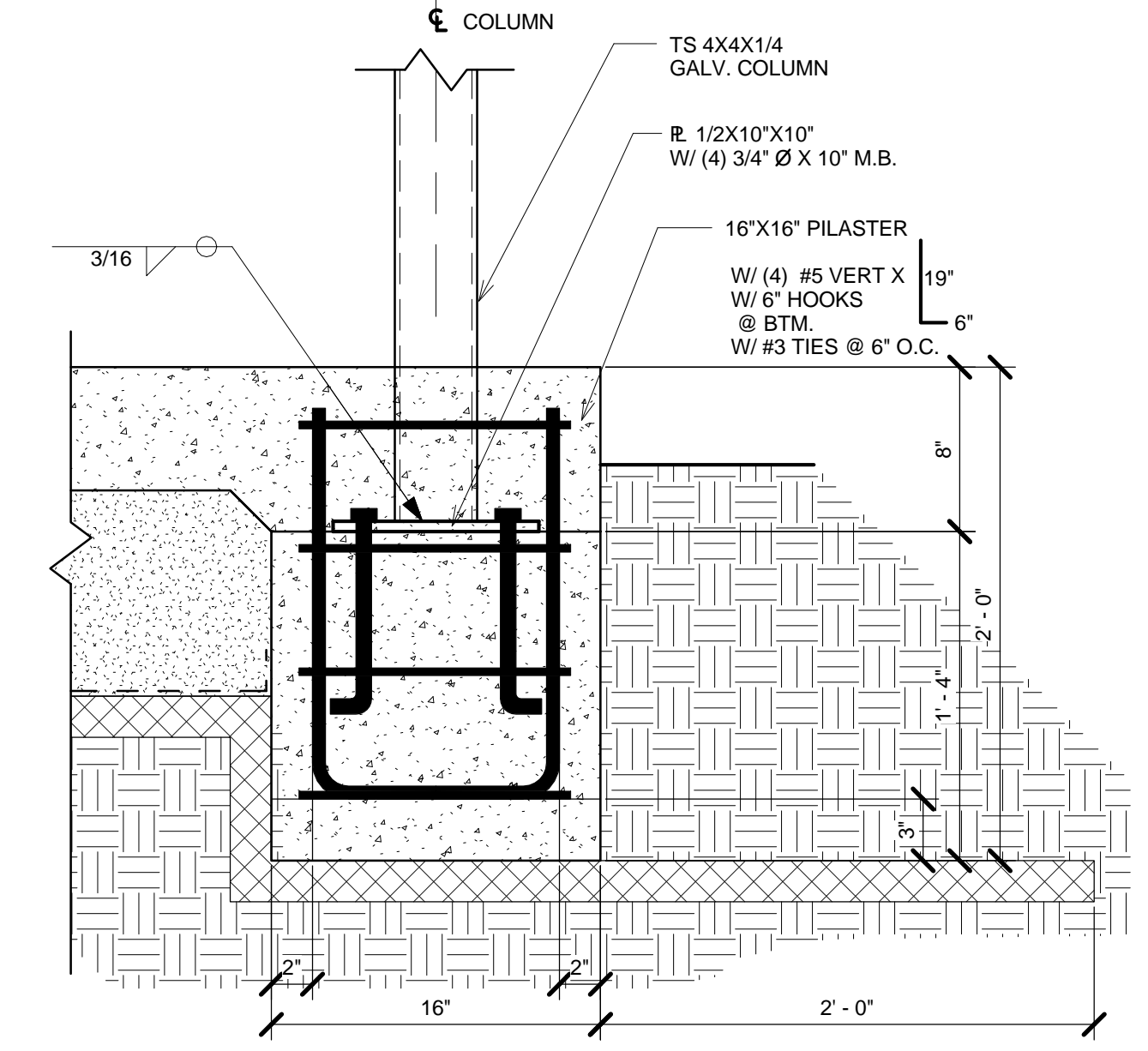
3 DE-CHLORINATION SUMP DETAIL
S5.2 1 1/2" = 1'-0"



5 BASE PLATE TO PAD DETAIL
S5.2 1 1/2" = 1'-0"



PILASTER AND PLATE / COLUMN PLAN VIEW



PILASTER AND PLATE / COLUMN SECTION VIEW

1 PILASTER DETAIL
S5.2 1 1/2" = 1'-0"

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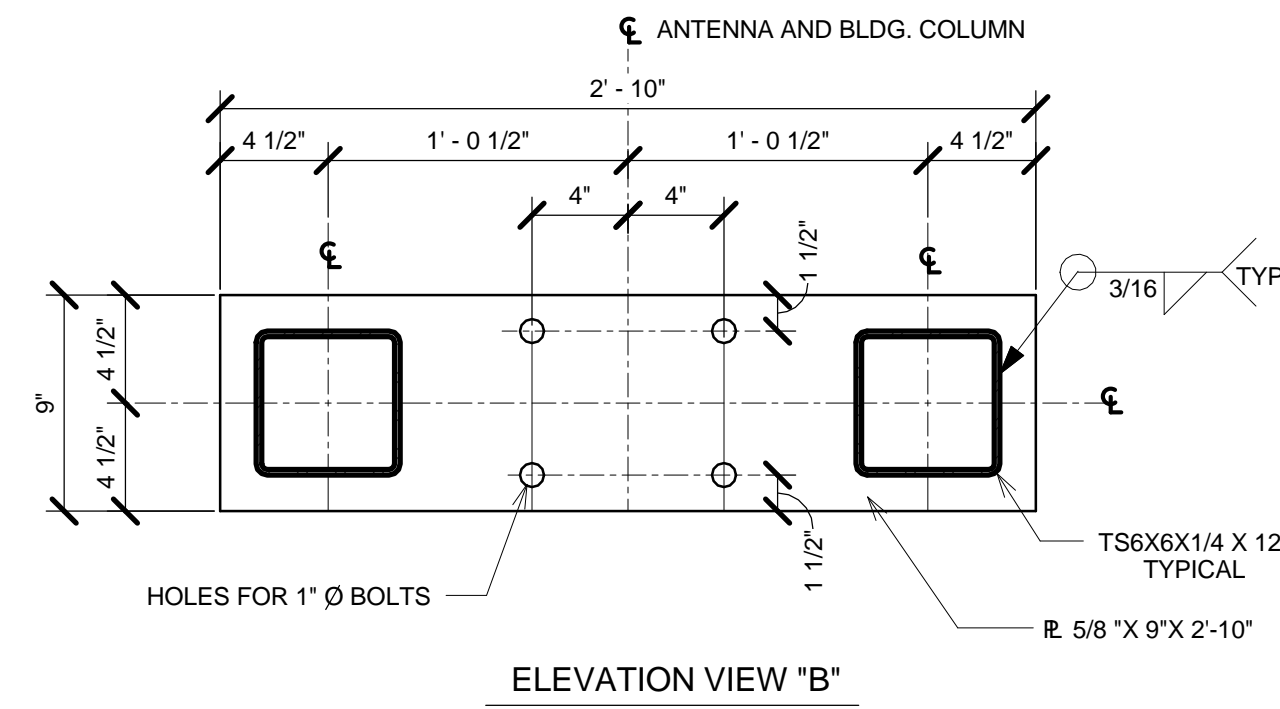
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PYRAMID WTP
UNALASKA, ALASKA
STRUCTURAL DETAILS II

SCALE:	1 1/2" = 1'-0"
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CHECKED BY:	DOG
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SHEET NUMBER	S5.2 OF 6

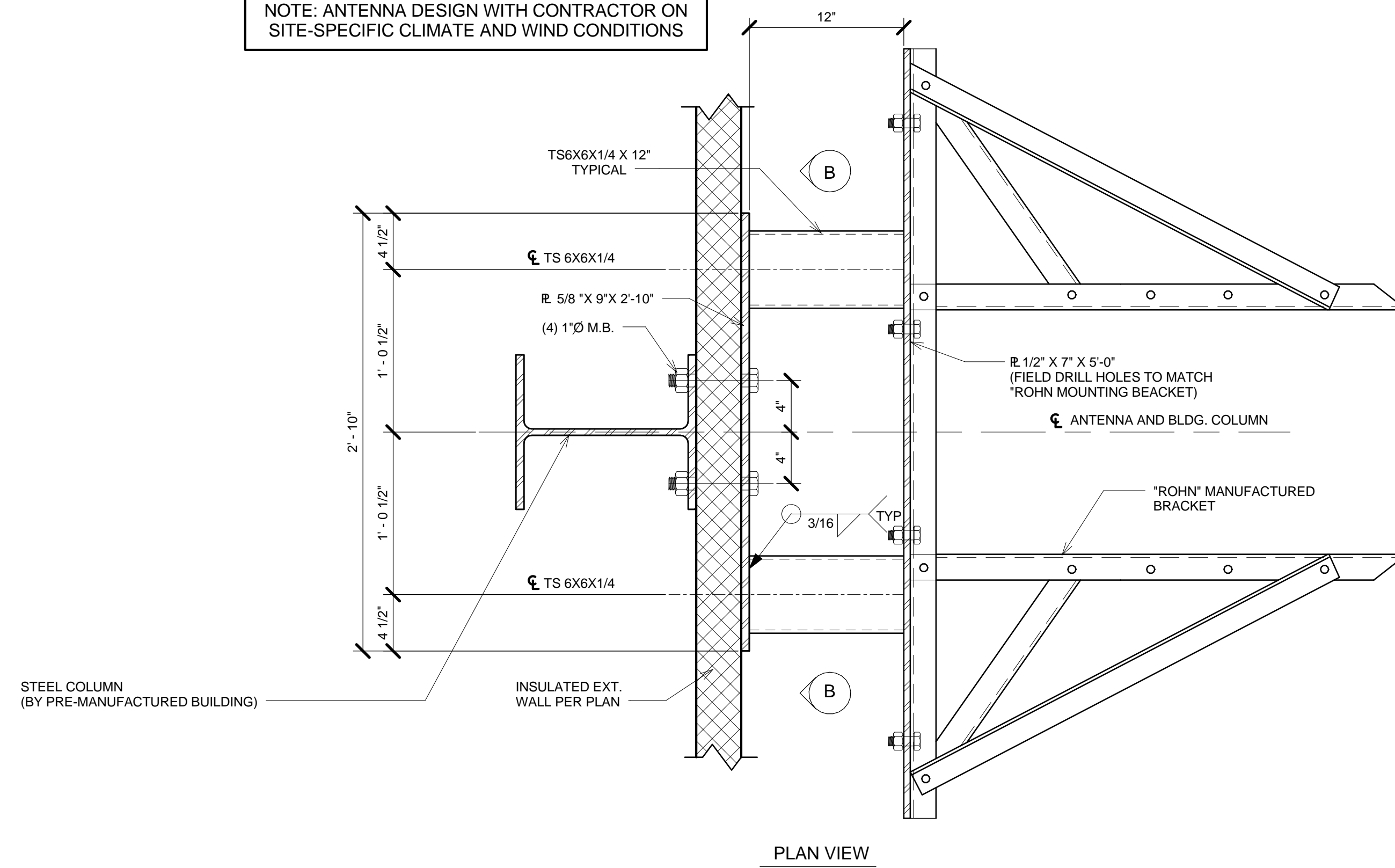


NOTE: ALL EXTERIOR STEEL TO BE HOT-DIP GALVANIZED



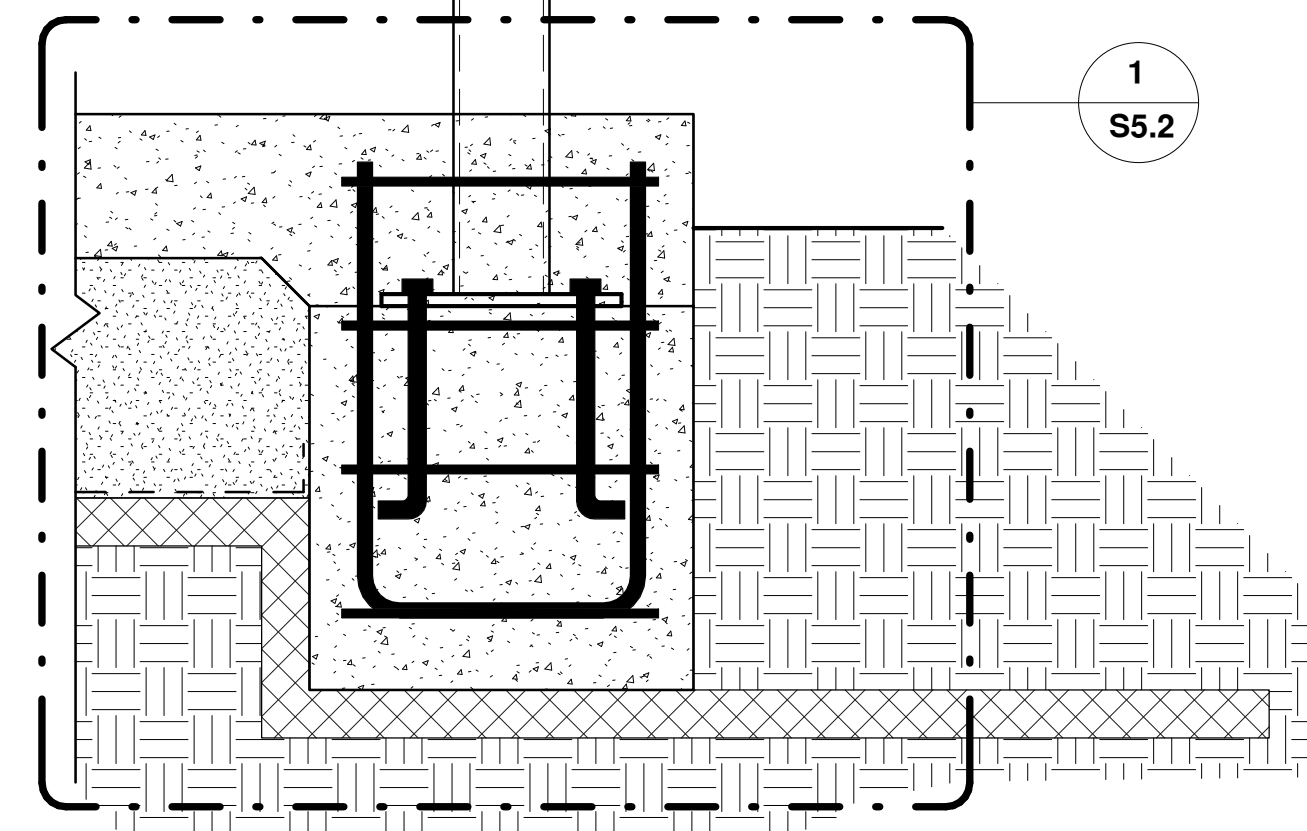
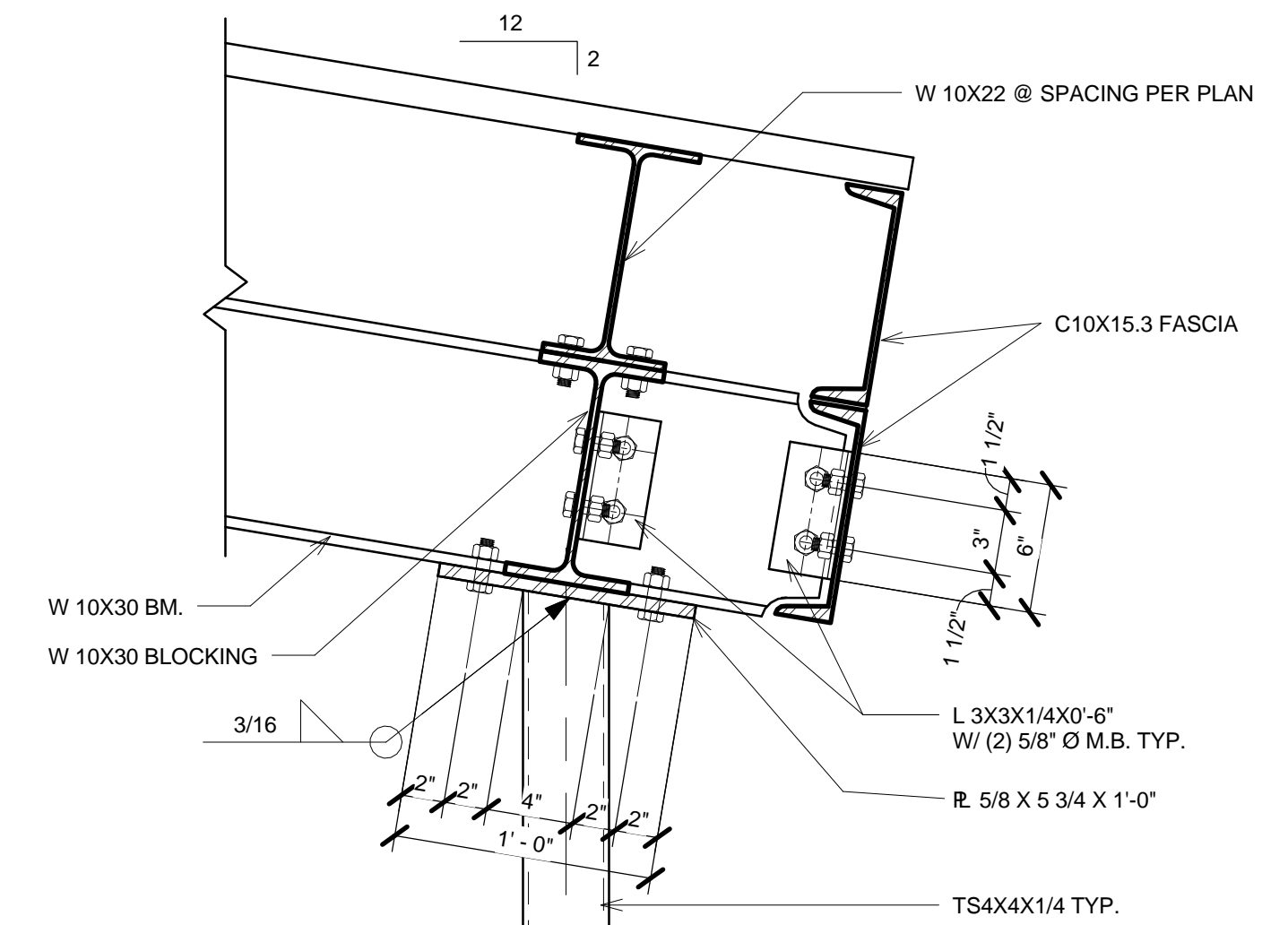
ELEVATION VIEW "B"

NOTE: ANTENNA DESIGN WITH CONTRACTOR ON SITE-SPECIFIC CLIMATE AND WIND CONDITIONS



PLAN VIEW

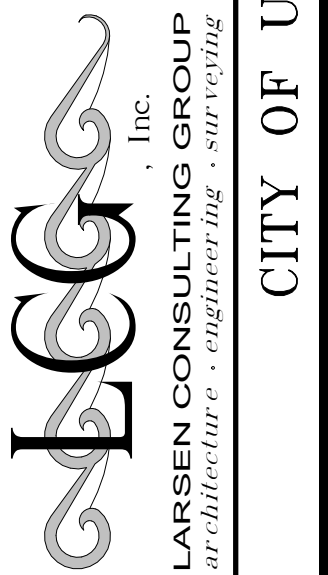
2 ANTENNA BRACKET DETAIL
S5.3 1 1/2" = 1'-0"



1 TYPICAL CANOPY COLUMN
S5.3 1 1/2" = 1'-0"

NO.	DATE	BY	ISSUED FOR	REVISION
A	12/02/13	RW	ISSUED FOR BID	

3710 Woodland Dr.
Suite 2100 AK. 99517
Anchorage, AK. 99517
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CITY OF UNALASKA

PYRAMID WTP
UNALASKA, ALASKA
STRUCTURAL DETAILS III

SCALE:	1 1/2" = 1'-0"
DESIGNED BY:	DOG
DRAWN BY:	JR
CHECKED BY:	DOG
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	S5.3 OF 6



ABBREVIATIONS

A	COMPRESSED AIR	HOA	HAND-OFF-AUTO
AAV	AUTOMATIC AIR VENT	HW	HOT WATER
ABV	ABOVE	HWC	HOT WATER CIRCULATED
ACC-X	AIR COOLED CHILLER DESIGNATOR	HP	HORSEPOWER
ADA	AMERICAN WITH DISABILITIES ACT GUIDELINES	ID	INSIDE DAMPER
AD	ACCESS DOOR	IN	INCHES
AF	AIR FOIL	IBC	INTERNATIONAL BUILDING CODE
AFF	ABOVE FINISHED FLOOR	IFC	INTERNATIONAL FIRE CODE
AFG	ABOVE FINISHED GRADE	IFGC	INTERNATIONAL FUEL GAS CODE
AHAP	AS HIGH AS POSSIBLE	IW	IRRIGATION WATER
AHU-X	AIR HANDLING UNIT DESIGNATOR	LAT	LEAVING AIR TEMPERATURE
AL	ALUMINUM	LAV	LAVATORY
AMPS	AMPERES	LDC	LEAK DETECTION CABLE
APD	AIR PRESSURE DROP	LF	LINEAL FEET
ARCH	ARCHITECTURAL	LWT	LEAVING WATER TEMPERATURE
BB-X	BASEBOARD RADIATION DESIGNATOR	MA	MEDICAL AIR
BDD	BACKDRAFT DAMPER	MAX	MAXIMUM
BDS-X	BLOWDOWN SEPARATOR DESIGNATOR	MBH	THOUSAND BTUH
BLDG	BUILDING	MFR	MANUFACTURER
BOD	BOTTOM OF DUCT	M/A	MAKEUP AIR
BTUH	BRITISH THERMAL UNIT/HOUR	MIN	MINIMUM
C	CONDENSATE	MOD	MOTOR OPERATED DAMPER
CAP	CAPACITY	MTD	MOUNTED
CF-X	CARBON FILTER DESIGNATOR	NC	NOISE CRITERIA
CFM	CUBIC FEET PER MINUTE	N.C.	NORMALLY CLOSED
CGR	COOLING GLYCOL RETURN	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CGS	COOLING GLYCOL SUPPLY	NO.	NUMBER
CIRC	CIRCULATING	N.O.	NORMALLY OPEN
CLG	CEILING	NT-X	NEUTRALIZING TANK DESIGNATOR
CONT	CONTINUED	NTS	NOT TO SCALE
C.O./CO	CLEANOUT	OC	ON CENTER
CONN	CONNECTION	O/A	OUTSIDE AIR
CP-X	CIRCULATION PUMP DESIGNATOR	OD	OUTSIDE DAMPER
CUH-X	CABINET UNIT HEATER DESIGNATOR	OD-X	OVERFLOW DRAIN DESIGNATOR
CU	COPPER	OSV	OIL SAFETY VALVE
CW	COLD WATER	P-X	PLUMBING FIXTURE DESIGNATOR
DCO	DOUBLE WYE CLEANOUT	PD	PRESSURE DROP
DIA	DIAMETER	PF-X	PRE-FILTER DESIGNATOR
dB	DECIBELS	PG	PROPYLENE GLYCOL
DEG	DEGREE	PH	PHASE
DIM	DIMENSION	PSI	POUND PER SQUARE INCH
DN	DOWN	PSIG	POUNDS PER SQUARE INCH GAUGE
DPSIG	DIFFERENTIAL POUNDS PER SQUARE INCH, GAUGE	R/A	RETURN AIR
DT-X	DAY TANK DESIGNATOR	RP-X	RADIANT CEILING PANEL DESIGNATOR
DWG	DRAWING	RPM	REVOLUTIONS PER MINUTE
E/A	EXHAUST AIR	RD-X	ROOF DRAIN DESIGNATOR
EAT	ENTERING AIR TEMPERATURE	RL	RAIN LEADER
EFF	EFFICIENCY	S/A	SUPPLY AIR
EF-X	EXHAUST FAN DESIGNATOR	SCFM	STANDARD CUBIC FEET PER MINUTE
ET-X	EXPANSION TANK DESIGNATOR	SD	SMOKE DAMPER
EX-X	EXHAUST HOOD DESIGNATOR	SGS	SNOWMELT GLYCOL SUPPLY
EXH	EXHAUST	SGR	SNOWMELT GLYCOL RETURN
EWT	ENTERING WATER TEMPERATURE	SM-X	SNOWMELT MANIFOLD DESIGNATOR
ESP	EXTERNAL STATIC PRESSURE	SMP-X	SNOWMELT PUMP DESIGNATOR
EGT	ENTERING GLYCOL TEMPERATURE	SP	STATIC PRESSURE
ENT	ENTERING	SPD	SUMP PUMP DISCHARGE
EXIST	EXISTING	SQ	SQUARE
FT	FEET	ST-X	SOUND TRAP DESIGNATOR
FT-X	FINNED TUBE RADIATION DESIGNATOR	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TOD	TOP OF DUCT
FPF	FINS PER FOOT	TSP	TOTAL STATIC PRESSURE
FC	FORWARD CURVE	T*STAT	THERMOSTAT
FF-X	FINAL FILTER DESIGNATOR	TTL	TOTAL
F	FAHRENHEIT	TV-X	TEMPERING VALVE DESIGNATOR
FCO	FLOOR CLEAN OUT	TW	TEMPERED WATER
FD	FIRE DAMPER	TWC	TEMPERED WATER CIRCULATED
FD-X	FLOOR DRAIN DESIGNATOR	TYP	TYPICAL
FIN	FINISHED	UH-X	UNIT HEATER DESIGNATOR
FLR	FLOOR	UPC	UNIFORM PLUMBING CODE
FM	FORCED MAIN	V	VENT
FOS	FUEL OIL SUPPLY	VAC	VOLT-AC
FOR	FUEL OIL RETURN	VDC	VOLT-DC
FS	FIRE SPRINKLER	VEL	VELOCITY
FS-X	FLOOR SINK DESIGNATOR	VF-X	VENTILATION FAN DESIGNATOR
FSD	FIRE SMOKE DAMPER	VTR	VENT THRU ROOF
FST-X	FUEL STORAGE TANK DESIGNATOR	W/	WITH
FTU	FAN TERMINAL UNIT	W/O	WITHOUT
GA	GAUGE	W	WASTE
GALV	GALVANIZED	WC	WATER COLUMN
GPH	GALLONS PER HOUR	WCO	WALL CLEAN OUT
GAL	GALLONS	WF	WATER FEATURE WATER
GPM	GALLONS PER MINUTE	WG	WATER GAUGE
HB-X	HOSE BIBB DESIGNATOR	WHA	WATER HAMMER ARRESTOR
HC-X	HEATING COIL DESIGNATOR	WPD	WATER PRESSURE DROP
HD	HEAD		

PIPING (SINGLE LINE)

	WASTE		WATER HAMMER ARRESTOR
	SEE ABBREVIATIONS		PUMP
	VENT PIPING		VALVED AND CAPPED HOSE THREAD
	DOMESTIC COLD WATER		WALL CLEANOUT
	DOMESTIC HOT WATER		FILTER
	HOT WATER RECIRCULATING		METER
	PIPE UP		THERMOMETER
	PIPE DOWN		PRESSURE GAUGE WITH ISOLATION COCK
	TEE UP		AUTOMATIC AIR VENT WITH ISOLATION VALVE
	TEE DOWN		STRAINER W/ BLOWDOWN
	CAP		FLOOR CLEANOUT
	UNION		FLOOR DRAIN
	DIRECTION OF FLOW		FLOOR SINK
	BALL VALVE		
	BUTTERFLY VALVE		
	OS&Y GATE VALVE		
	2-WAY CONTROL VALVE		
	CHECK VALVE		
	BALANCE/SHUT-OFF VALVE		
	PRESSURE REDUCING VALVE		
	PRESSURE/TEMPERATURE RELIEF VALVE		
	HOSE BIBB		

LOGIC

	POINT OF CONNECTION
	DETAIL NUMBER
	SHEET LOCATED ON
	DIRECTION OF VIEW
	SECTION NUMBER
	SHEET LOCATED ON
	SHEET NOTES
	CONNECTION
	NECK SIZE
	CFM
	DIFFUSER OR GRILLE TYPE

HVAC LEGEND

	THERMOSTAT		VOLUME DAMPER
	CLOSE-ON-RISE THERMOSTAT		MOTORIZED CONTROL DAMPER
	SENSOR		ACOUSTIC LINED DUCTWORK
	THERMOSTAT OR DDC SENSOR WITH CLEAR PLASTIC LOCKING GUARD.		DUCT SIZE
	EMERGENCY SHUT-OFF SWITCH		EXTERNALLY INSULATED DUCT
	VARIABLE SPEED CONTROLLER		TURNING VANES
	PILOT LIGHT SWITCH		FLEXIBLE DUCT CONNECTION
	SUPPLY AIR UP & DOWN		FLEXIBLE DUCT
	RETURN AIR UP & DOWN		ACCESS DOOR
	EXHAUST AIR UP & DOWN		
	ROUND DUCT UP & DOWN		

NOTE: THE MECHANICAL LEGEND AND ABBREVIATIONS ON THIS DRAWING IS A STANDARDIZED VERSION. ALL SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT BE USED ON DRAWINGS.

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CITY of UNALASKA			
PYRAMID WTP UNALASKA, ALASKA MECHANICAL LEGENDS AND ABBREVIATIONS			
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FILE NO.:	L0109.00		
SHEET NUMBER			
M0.1	OF 13		



PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MOUNTING	CW	HW	WASTE	VENT	TRAP	BASIS OF DESIGN	MODEL	COLOR/FINISH	TRIM/REMARKS
P-1	WATER CLOSET	FLOOR	1/2	—	4	2	—	KOHLER	K-3427-HIGHLINE	WHITE	OPEN FRONT SEAT LESS COVER, FLUSH TANK 1.6 GPF TOILET, ELONGATED BOWL.
P-2	LAVATORY	WALL	1/2	1/2	1-1/2	1-1/4	1-1/4	KOHLER	K-2005 KINGSTON	WHITE	SINGLE HANDLE FAUCET WITH METAL GRID STRAINER.
P-3	AQUA GLASS	FLOOR	1/2	1/2	2	1-1/2	2	AQUAGLASS	613636	—	DELTA FAUCET T13H162, PRESSURE BALANCED, ADJUSTABLE STOPS, VANDAL RESISTANT WALL MOUNT SHOWER HEAD, 1" S.S. CURTAIN ROD W/ COMMERCIAL GRADE VINYL, SHOWER CURTAIN.
P-4	LAB SINK	COUNTER	1/2	1/2	2	1-1/2	2	FIAT	DL-1	WHITE	FIAT A-1 DECK FAUCET, PROVIDE WATTS SERIES 8 HOSE CONNECTION VACUUM BREAKER.
P-5	EYE WASH	WALL	1/2	1/2	2	1-1/2	1-1/2	HAWS	7360BT-7460BT	STAINLESS	EYE/FACE WASH; SINGLE ACTION SWING DOWN, PROVIDE WITH TEMPERED WATER BLENDING VALVE (HAWS #9201EF)
P-6	SINK - DOUBLE	WALL	1/2	1/2	2	1-1/2	1-1/2	FIAT	LTD 11	WHITE	FIAT A-1 DECK FAUCET.
FD-1	FLOOR DRAIN	FLOOR	—	—	2	1-1/2	—	ZURN	Z415B-P	—	ROUND TOP, 1/2" TRAP PRIMER CONNECTION.
FD-2	FLOOR DRAIN	FLOOR	—	—	4	2	—	ZURN	Z415-P-4	—	ROUND TOP, 1/2" TRAP PRIMER CONNECTION.
FD-3	HUB DRAIN	FLOOR	—	—	4	2	—	ZURN	Z211-S	—	NO-HUB OUTLET, 1/2" TRAP PRIMER CONNECTION.
HB-1	HOSE BIBB-EXTERIOR	WALL	3/4	—	—	—	—	WOODFORD	65	—	SELF DRAINING, FROST PROOF, VACUUM BREAKER, PROVIDE ISOLATION VALVE.
HB-2	HOSE BIBB-INTERIOR	WALL	3/4	—	—	—	—	WOODFORD	24	—	PROVIDE ISOLATION VALVE, WHEEL HANDLE.
TD-1	TRENCH DRAIN	FLOOR	—	—	4	—	—	ZURN	Z882-HDS-RFS-DB	—	PROVIDE WITH STAINLESS STEEL SLOTTED GRATE, BOTTOM DOME STRAINER, AND 4" BOTTOM OUTLET.

BOILER SCHEDULE

SYMBOL	MFGR/MODEL	HEATED MEDIUM	FUEL	INPUT GPH	GROSS OUTPUT	AFUE	REMARKS
B-1,2	WEIL-MCLAIN/WGO-5	50% PG	FUEL OIL #2	1.45	175 MBH	85%	BECKETT BURNER, 6" DIA. FLUE. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

PUMP SCHEDULE

SYMBOL	MFGR/MODEL	FUNCTION	MEDIUM	GPM	FT.	HP	POWER	REMARKS
CP-1,2	GRUNDFOS/UPS 32-80/2	BOILER CIRC.	50% PG	21	12	1/2	120/60/1	FINAL SPEED SET BY BALANCING CONTRACTOR.
CP-3,4	GRUNDFOS/UPS 32-160/2	BUILDING CIRC.	50% PG	40	30	3/4	120/60/1	FINAL SPEED SET BY BALANCING CONTRACTOR.
CP-5	GRUNDFOS/UP 26-96F	HWG-1 CIRC.	50% PG	13	10	1/12	120/60/1	
CP-6	GRUNDFOS/UPS 15-35-SFC	HOT WATER CIRC.	WATER	2	10	1/12	120/60/1	STAINLESS STEEL CONSTRUCTION SUITABLE FOR OPEN SYSTEMS, INTEGRAL CHECK VALVE, FLANGED CONNECTIONS.
SMP-1	GRUNDFOS/UP 15-42F	SNOWMELT #1	50% PG	1.5	12	1/25	120/60/1	
SMP-2	GRUNDFOS/UP 15-42F	SNOWMELT #2	50% PG	2	12	1/25	120/60/1	

DOMESTIC WATER BOOSTER PUMP SCHEDULE

SYMBOL	MFGR/MODEL	FLUID	FLOW	HEAD	HP	POWER	REMARKS
WBP-1	GRUNDFOS/MQ3-45	WATER	10.0 GPM	103 FEET		120/60/1	PACKAGED BOOSTER SYSTEM COMPLETE WITH CONTROLS, DRY-RUN PROTECTION, ANTI-CYCLING PROTECTION.

AIR / DIRT SEPARATOR SCHEDULE

SYMBOL	MFGR/MODEL	SIZE	CONNECTION	MATERIAL	FLUID	REMARKS
AS-1	SPIROTHERM/VDN-200	2"	FLANGED	STEEL	50% PG	COMBINATION AIR AND DIRT SEPARATOR, REMOVEABLE HEAD, 1 FT PRESSURE DROP, INTEGRATED HIGH CAPACITY AIR VENT.

TANK SCHEDULE

SYMBOL	MFGR/MODEL	FUNCTION	MEDIUM	MATERIAL	TANK VOL. (GAL)	DIMENSIONS	REMARKS
DT-1	SIMPLEX RELIANT/SRS-50	DAY TANK	#1 OR #2 FUEL OIL	STEEL	50	26"W x 29"H	15A/120/1 POWER, SOLENOID VALVE, RUPTURE BASIN, COMPOUND GAUGE, BASIN DRAIN VALVE, PUMP CONTROLLER, VENT FLOAT SWITCH, CHECK VALVE, HAND PUMP, 1/3 HP SUPPLY AND RETURN PUMPS.
ET-1	AMTROL/AX-40V	HEATING EXPANSION	50% PG	STEEL/BUTYL	21.7	17"DIA x 36"H	MAX ACCEPTANCE 11.3 GALLONS. PRE CHARGE TO 12 PSI.
ET-2	AMTROL/ST-12	WATER EXPANSION	DOM.WATER	STEEL	4.4	11"DIA x 15"H	CHARGE TO WATER PRESSURE, MAX. ACCEPT VOLUME 3.2 GAL.
ET-3	YOUNG ENG./1.OBET-17NR	EXPANSION CONTROL	#2 FUEL OIL	STEEL/BUNA-N	1.0	8-5/8"DIA x 14"H	175 PSI WORKING PRESSURE.
GT-1	AXIOM/MF-300	GLYCOL TANK	50% PG	PLASTIC	17	12"W x 12L x 36"H	0.7A/120/1 ELECTRICAL, PACKAGED GLYCOL CHARGING SYSTEM WITH INTEGRAL CHECK VALVE, PRESSURE SWITCH.

FUEL STORAGE TANK SCHEDULE

SYMBOL	BASIS OF DESIGN	CAPACITY		DIMENSIONS		SHIPPING WEIGHT	LABEL	REMARKS
		NOMINAL	ACTUAL	LENGTH	DIAMETER			
FOT-1	ANCHORAGE TANK	5,000	5,261	204"	96"	10,826 LBS	UL 142	DOUBLE WALL, SKID MOUNTED, STEEL STORAGE TANK, APPURTENANCES PER SPECIFICATIONS AND AS INDICATED, REFER TO 3/M5.1

HYDRONIC UNIT HEATER SCHEDULE

SYMBOL	MFGR/MODEL	CAPACITY MBH	GPM	MEDIUM	EGT DEG F	LGT DEG F	WPD FT HD	CFM	RPM	HP	POWER	REMARKS
UH-1	MODINE/HC-86	46.9	5.2	50% PG	180	160	1.0	1340	1550	1/8	120/60/1	CEILING MOUNTED.
UH-2	MODINE/HC-18	18.0	1.3	50% PG	180	160	0.5	340	1550	1/60	120/60/1	CEILING MOUNTED.

RADIATION SCHEDULE

SYMBOL	MFGR/MODEL	# ROWS	ELEMENT	FPF	ENCLOSURE	GPM	MEDIUM	EGT DEG F	LGT DEG F	EAT DEG F	BTUH/LF	REMARKS
FT-1	STERLING/JVA-S	1	C3/4-35, 3-1/4"SQ.	50	SLOPE TOP "S", 14" HIGH	0.10/FT	50% PG	180	160	65	880	
FT-2	STERLING/JVB-SS	2	C435, 4-1/4"x3-5/8", 2 AT 6" CENTERS	50	DOUBLE SLOPE "SS", 29.5" HIGH	0.17/FT	50% PG	180	160	65	1,530	STAINLESS STEEL ENCLOSURE, ELEMENTS WITH PHENOLIC EPOXY FINISH.

TEMPERING VALVE SCHEDULE

SYMBOL	BASIS OF DESIGN	MODEL	MEDIUM	MIN FLOW GPM	FLOW @ 20 PSI GPM	MATERIAL	REMARKS
TV-1	LAWLER	805 UNIT 86108	WATER	0.5	133	BRONZE	HIGH/LOW THERMOSTATIC MIXING VALVE, UNION END STOP AND CHECK INLETS, DIAL THERMOMETER, SET DISCHARGE TEMPERATURE TO 120 DEG F.

HOT WATER GENERATOR SCHEDULE

SYMBOL	MFGR/MODEL	MEDIUM	DOMESTIC HOT WATER				HEATING WATER						REMARKS
			RECOVERY GPH	CAPACITY GAL	EWT DEG F	LWT DEG F	MEDIUM	FLOW GPM	PD FT HD	EGT DEG F	LGT DEG F	LABEL	
HWG-1	BRADFORD WHITE/DW-2-40-L	WATER	123	38	40	140	50% PG	8.0	2.4	180	160	IAPMO	DOUBLE WALL COIL.

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Pyramid WTP
UNALASKA, ALASKA
MECHANICAL SCHEDULES

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CITY of UNALASKA

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AIR INLET/OUTLET SCHEDULE

SYMBOL	MFGR/MODEL	TYPE	USE	MATERIAL	FINISH	CFM	FACE SIZE (IN)	NC	THROW	REMARKS
A	TITUS/300RL	SIDEWALL	S/A	STEEL	WHITE	PER PLANS	—	<30	—	3/4" SPACING, SURFACE MOUNT SIDEWALL GRILLE.
B	TITUS/350RL	SIDEWALL	R/A	STEEL	WHITE	PER PLANS	PER PLANS	<30	—	SURFACE MOUNT SIDEWALL GRILLE.
C	TITUS/50F	EGGCRATE	E/A	ALUMINUM	WHITE	PER PLANS	PER PLANS	<30	—	1/2"x1/2"x1/2" GRILLE, FRAME TYPE AS REQUIRED.

FAN SCHEDULE

SYMBOL	MFGR/MODEL	TYPE	DRIVE	SERVICE	CFM	ESP IN W.C.	FAN RPM	MOTOR DATA		SONES	REMARKS
								HP	POWER		
EF-1	COOK/GN-144	CEILING	DIRECT	TOILET ROOM EXHAUST	75	0.375	846	0.7 A	120/60/1	1.2	PROVIDE BACKDRAFT DAMPER, ALUMINUM WALL CAP, PRE-WIRED FAN SPEED CONTROLLER.
EF-2	COOK/90SQ10D	INLINE	DIRECT	BATTERY RM. EXHAUST	200	0.375	1,075	1/6	120/60/1	4.3	PROVIDE MOTORIZED DAMPER, PRE-WIRED FAN SPEED CONTROLLER, AND PHENOLIC EPOXY FINISH.
EF-3	COOK/150SQ17D	INLINE	DIRECT	CHLORINE RM. EXHAUST	2,200	1.0	1,725	1	460/60/3	23.0	PROVIDE VARIABLE FREQUENCY DRIVE AND PHENOLIC EPOXY FINISH.
SF-1	COOK/90SQ15D	INLINE	DIRECT	CHLORINE RM. SUPPLY	600	0.5	1,489	1/6	120/60/1	7.5	PROVIDE PRE-WIRED FAN SPEED CONTROLLER, MOTORIZED DAMPER, AND PHENOLIC EPOXY FINISH.
SF-2	COOK/GN-620	INLINE	DIRECT	BOILER RM. COOLING	400	0.20	940	4.9 A	120/60/1	1.2	PROVIDE PRE-WIRED FAN SPEED CONTROLLER.
CF-1	ZOO/H30	CEILING/MUFFIN	DIRECT	APPARATUS BAY	670	N/A	—	46 W	120/60/1	—	PROVIDE MODEL VS-5A SPEED CONTROLLER, CORD AND PLUG CONNECTION.

HEAT RECOVERY VENTILATOR SCHEDULE

SYMBOL	MFGR/MODEL	AREA SERVED	COIL TAG	CFM	ESP IN W.C.	MOTOR DATA		REMARKS
						HP/VOLT/PH		
HRV-1	ALDES/HRV 700SDD	PROCESS BAY	HC-2	500	0.5	1/10HP/120/1	(EACH MOTOR)	DUAL CORE, 2 MOTORS, DEFROST CYCLE, SUSPEND FROM CEILING.

HEATING COIL SCHEDULE

SYMBOL	MFGR/MODEL	LOCATION	SIZE	CFM	AIR P.D. IN. WC.	FACE VEL. FPM	EAT DEG F	LAT DEG F	CAPACITY MBH	GPM	MEDIUM	EGT DEG F	LGT DEG F	WPD FT HD	REMARKS
HC-1	USA COIL	SF-1	16"x12"	600	0.15	450	45.0	75.0	19.5	2.2	50% PG	180	160	<2.0	PROVIDE COIL WITH PHENOLIC EPOXY COATING.
HC-2	USA COIL	HRV-1	14"x12"	500	0.15	450	0	75.0	40.7	4.5	50% PG	180	160	<2.0	PROVIDE COIL WITH PHENOLIC EPOXY COATING.

DAMPER SCHEDULE

SYMBOL	MFGR/MODEL	SERVICE	MATERIAL	SIZE (IN.)	APD ("W.G.)	REMARKS	NOTES
D-3,6,8	RUSKIN/CDTI-50	EXHAUST	ALUMINUM	12"x12"	—	LOW-TEMPERATURE, FOAM INJECTED, THERMALLY ISOLATED DAMPER.	1, 2
D-1,2,4,5,7	RUSKIN/CDTI-50	INTAKE	ALUMINUM	12"x12"	—	LOW-TEMPERATURE, FOAM INJECTED, THERMALLY ISOLATED DAMPER.	1, 2

NOTES:

- PROVIDE 24 VOLT, SPRING CLOSED ELECTRIC ACTUATOR FOR DAMPER.
- PROVIDE AUXILIARY LIMIT SWITCH TO INDICATE DAMPER POSITION.

AIR CONDITIONING UNIT SCHEDULE - EVAPORATOR

SYMBOL	BASIS OF DESIGN	MODEL	SERVICE	NOMINAL TONS	COOLING NET CAPACITY	REFR. TYPE	FAN CFM HIGH/LOW	ELECTRICAL DATA		SOUND LEVEL (dBA)	REMARKS	
								FLA	MCA			
AC-1	MITSUBISHI	PKAA24FA	COMM 120	2.0	24,000 BTU	R410A	705/530	0.43	1.0	208/60/1	45	INTEGRAL CONDENSATE PUMP, PROVIDE WITH PAR-M21AA WIRED REMOTE CONTROLLER.

AIR CONDITIONING UNIT SCHEDULE - CONDENSING UNIT

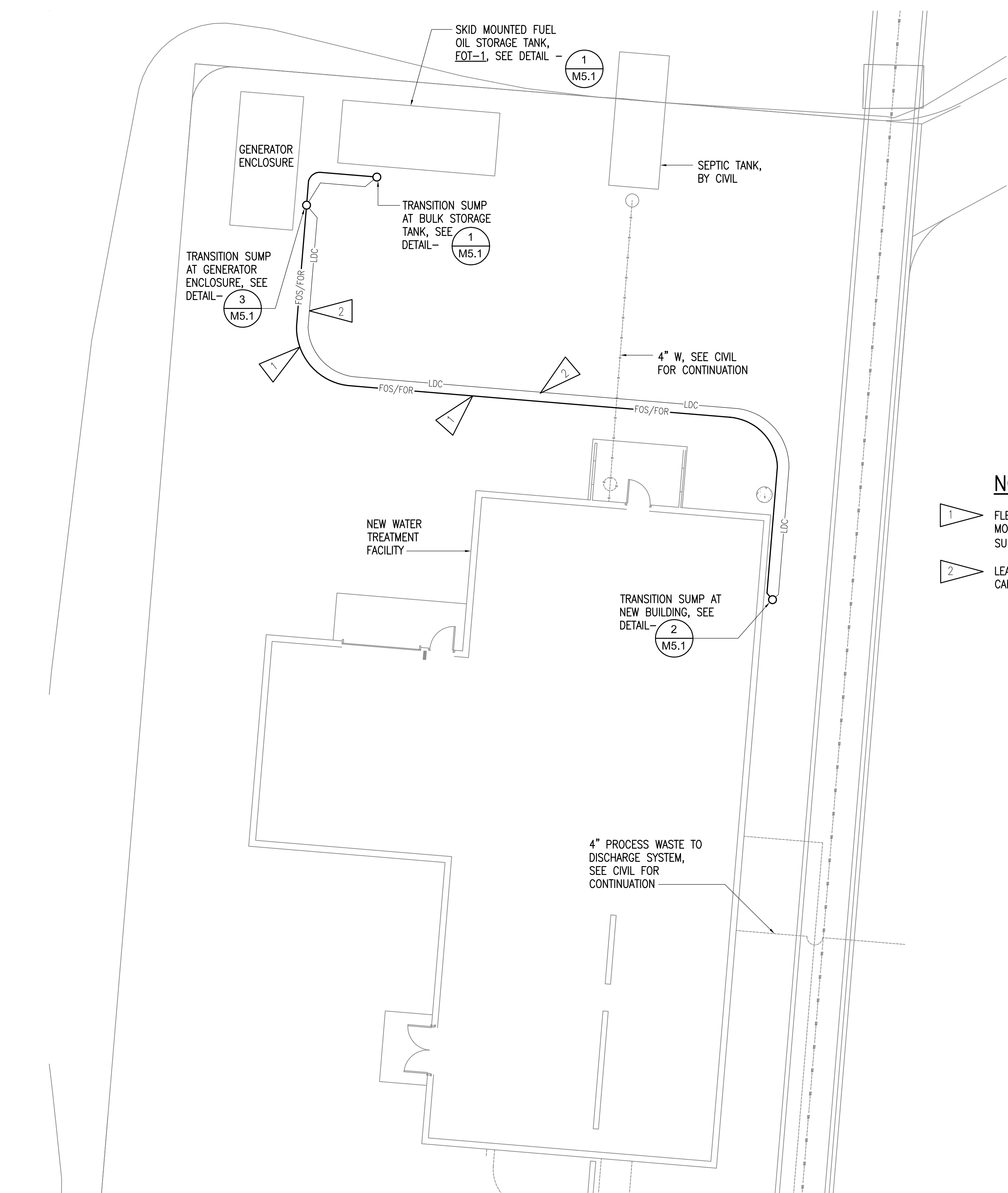
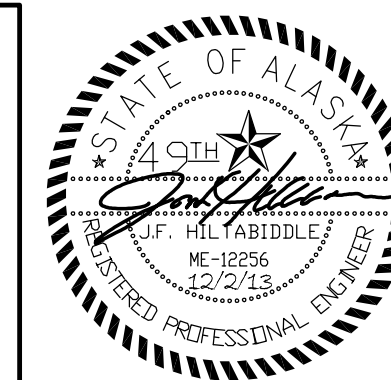
SYMBOL	BASIS OF DESIGN	MODEL	LOCATION	ELECTRICAL DATA		REFR. TYPE	SOUND LEVEL (dBA)	REMARKS
				MCA	POWER			
CU-1	MITSUBISHI	PUYA24NHA	ROOF	18	208/60/1	R410A	48	DC INVERTER/TWIN ROTARY COMPRESSOR, WEIGHT 90 LBS

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CITY of UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MECHANICAL SCHEDULES CONTINUED

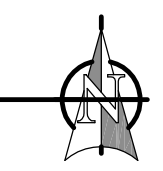
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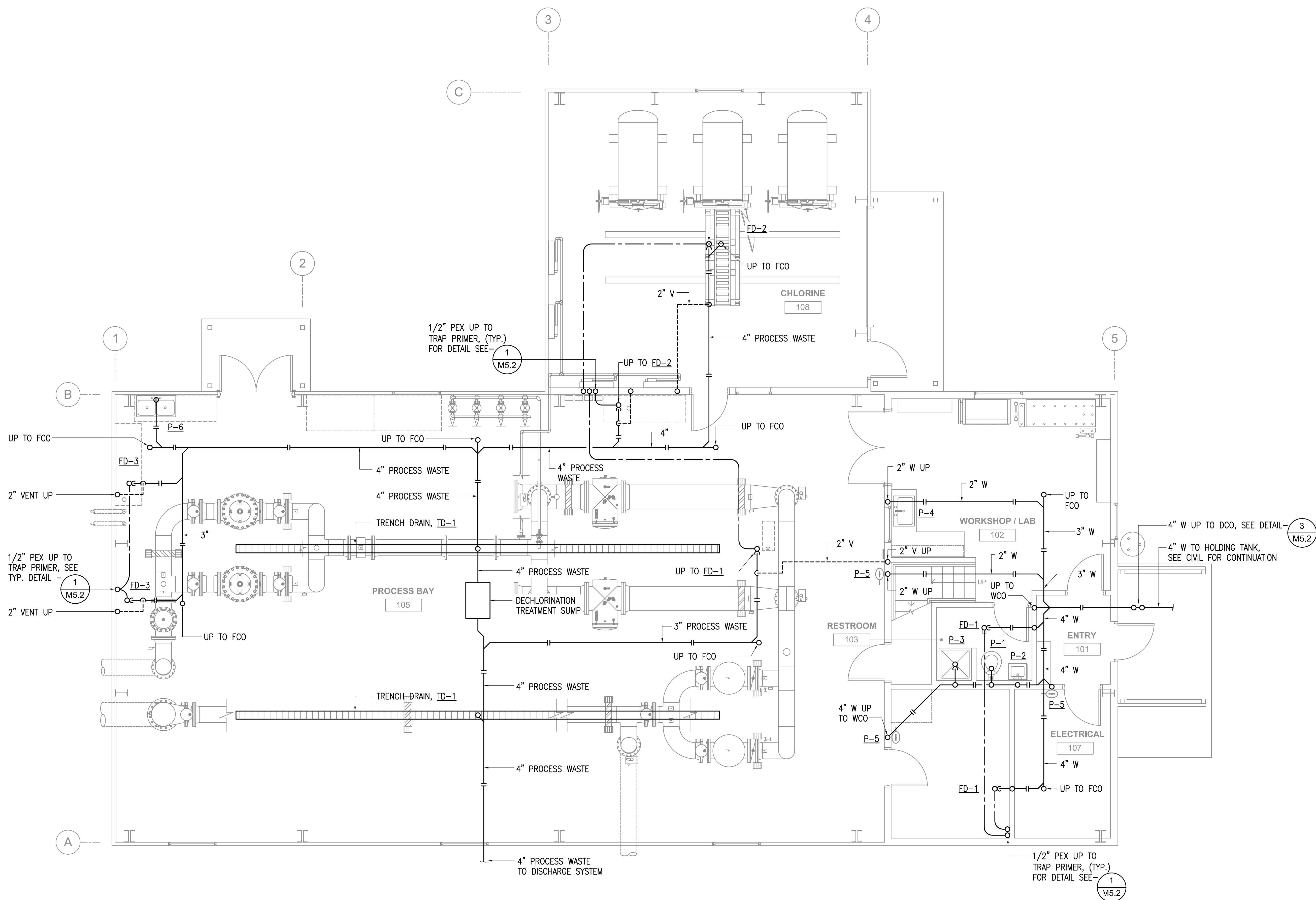
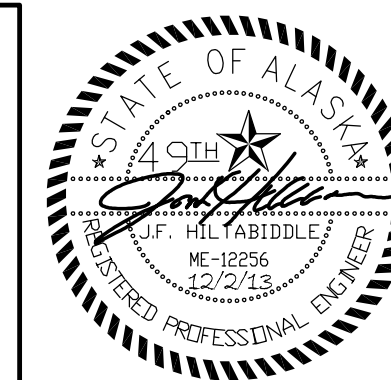
NOTES:

- 1 FLEXWORKS MODEL C075 DOUBLE-WALL FUEL OIL SUPPLY PIPING AND FLEXWORKS MODEL C10 DOUBLE-WALL FUEL OIL RETURN PIPING ROUTED BETWEEN TRANSITION SUMPS IN FLEXWORKS MODEL AXP40 4" DOUBLE LAYER ACCESS PIPE. SEE DETAIL - (6) M5.2
- 2 LEAK DETECTION CABLE (LDC) ROUTED IN CONDUIT BELOW GRADE. LEAK DETECTION CABLING SHALL CONNECT TO TANK MONITORING PANEL.

1 MECHANICAL SITE PLAN
1/8" = 1'-0"



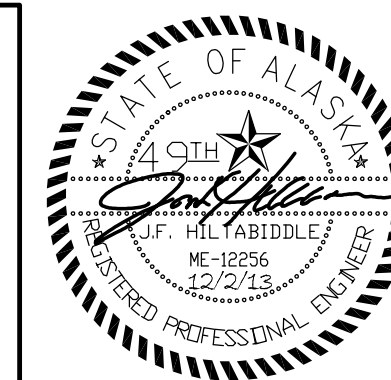
RS&A Engineering, Inc. MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS 191 E. Swanson Avenue, Suite 101 Wasilla, Alaska 99654 (907) 357-1521 Anchorage, AK 99503 (907) 276-0821		CITY of UNALASKA	
		ISSUED FOR BID	REVISION
NO.	DATE	BY	
1	12/2/13	JFH	
PYRAMID WTP UNALASKA, ALASKA MECHANICAL SITE PLAN		SCALE: AS NOTED DESIGNED BY: JFH DRAWN BY: DM CHECKED BY: JFH DATE: 12/2/13 FILE NO: L0109.00 SHEET NUMBER M1.0 OF 13	



1 PLUMBING PLAN - UNDER FLOOR
 1/4" = 1'-0"



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		PYRAMID WTP UNALASKA, ALASKA PLUMBING PLAN - UNDER FLOOR	SHEET NUMBER M1.1 OF 13
SCALE:	AS NOTED	DESIGNED BY:	JFH
DRAWN BY:	DM	CHECKED BY:	JFH
DATE:	12/2/13	FILE NO.:	L0109.00
12/2/13 DATE JFH BY ISSUED FOR BID			

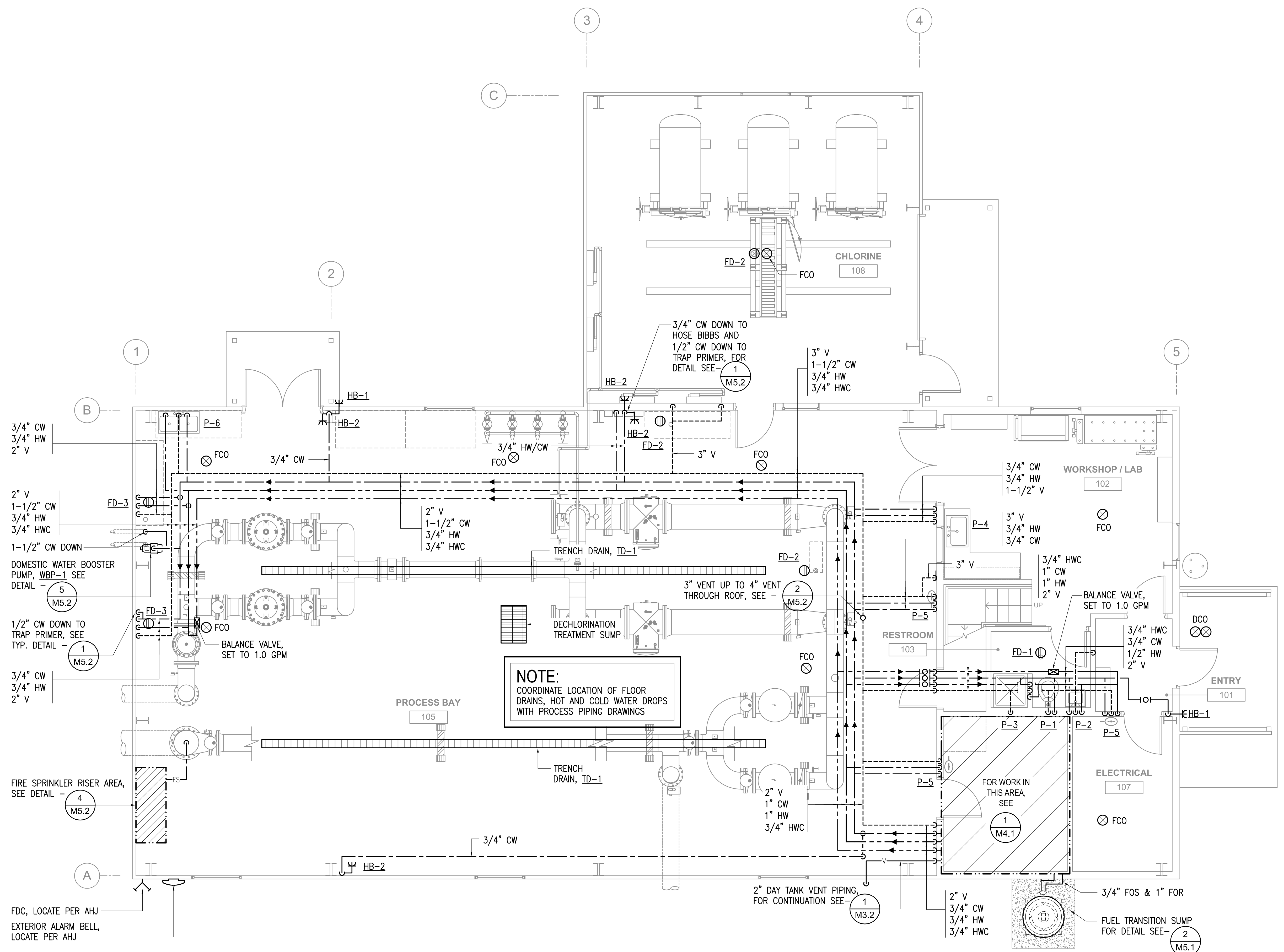


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**PYRAMID WTP
 UNALASKA, ALASKA**
 PLUMBING PLAN - ABOVE FLOOR

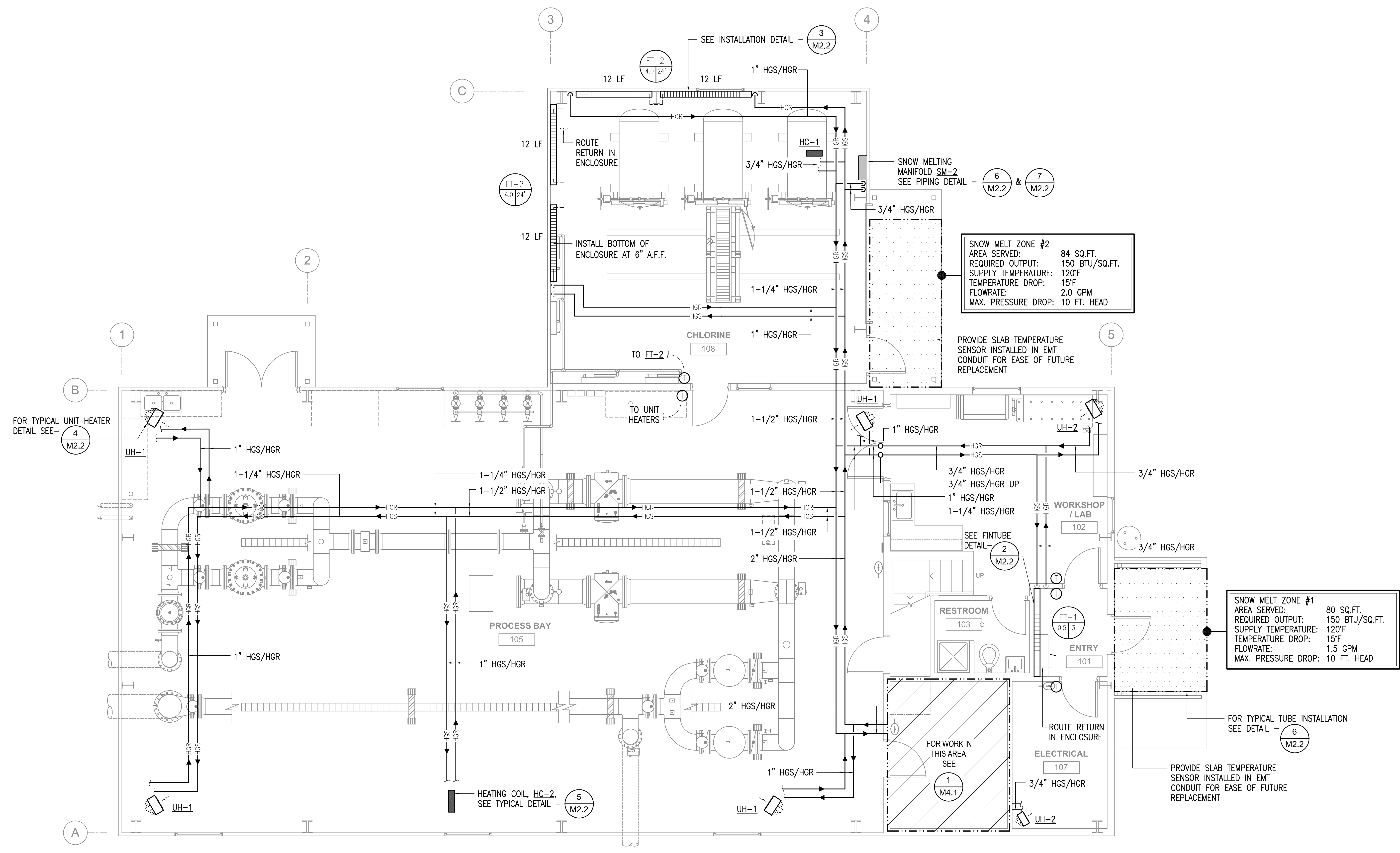
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DESIGNED BY:	JFH
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SHEET NUMBER	M1.2 OF 13



NOTE:
 COORDINATE LOCATION OF FLOOR
 DRAINS, HOT AND COLD WATER DROPS
 WITH PROCESS PIPING DRAWINGS

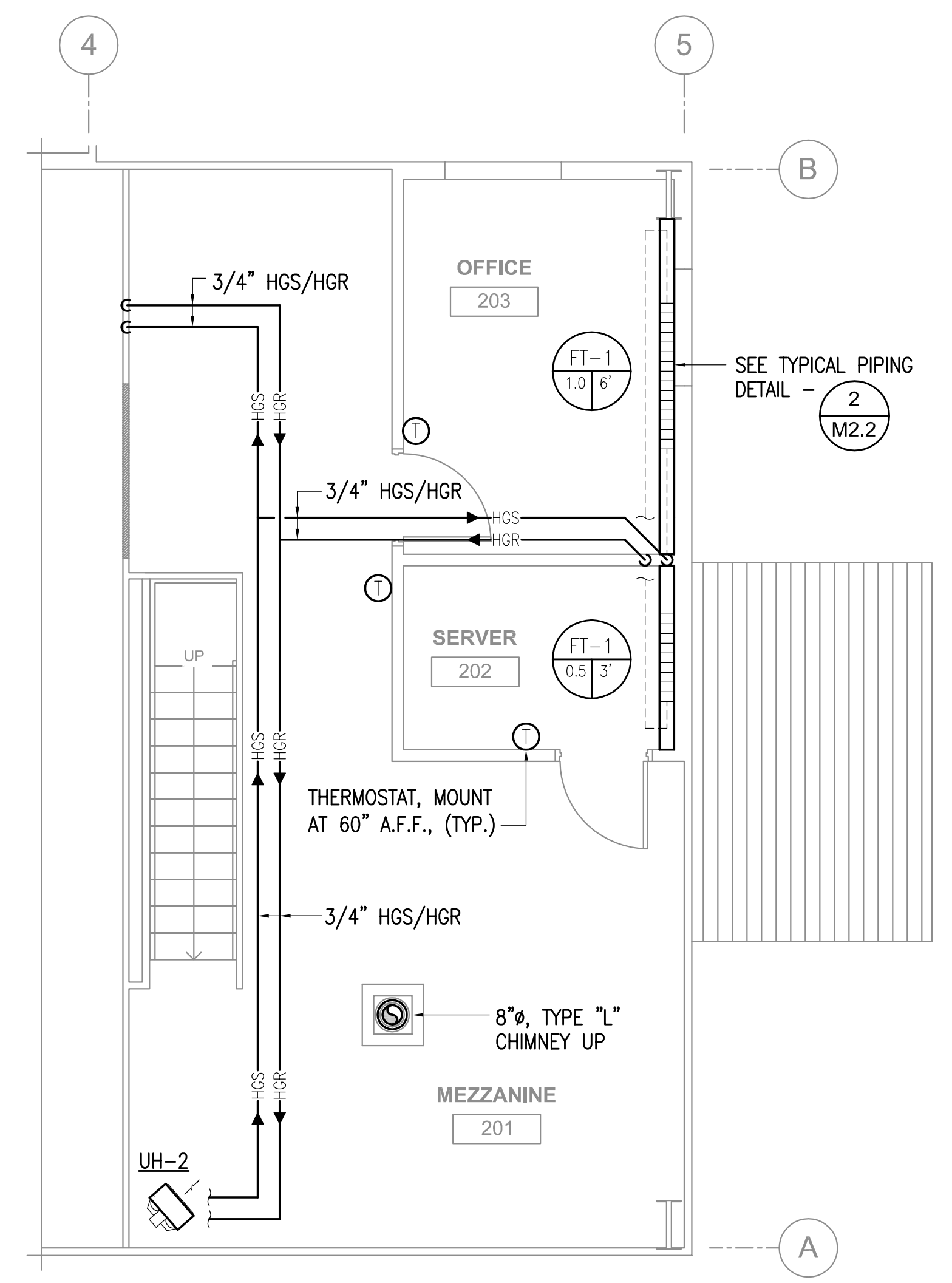
1 PLUMBING PLAN - ABOVE FLOOR
 1/4" = 1'-0"



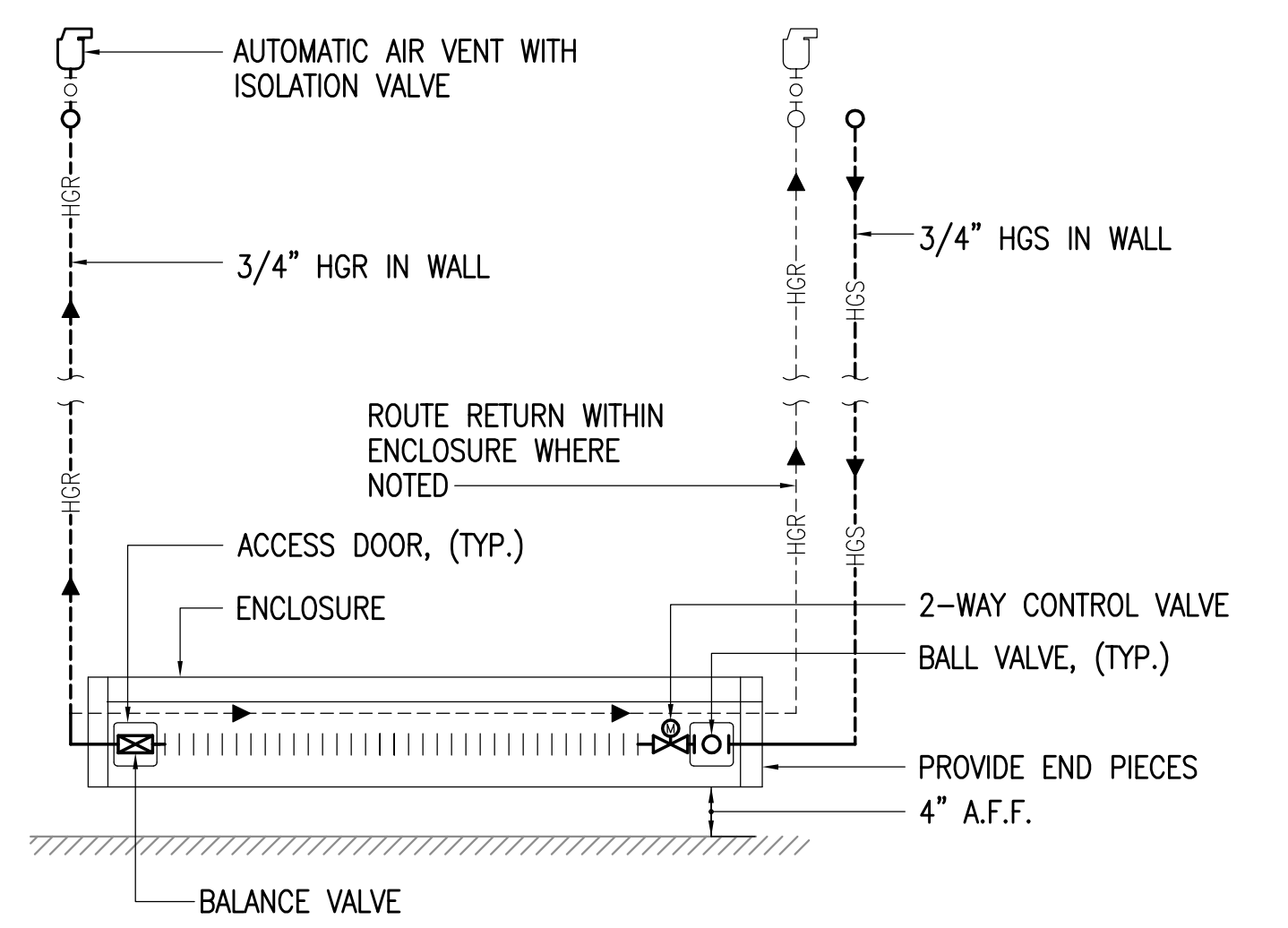


1 HEATING PLAN
1/4" = 1'-0"

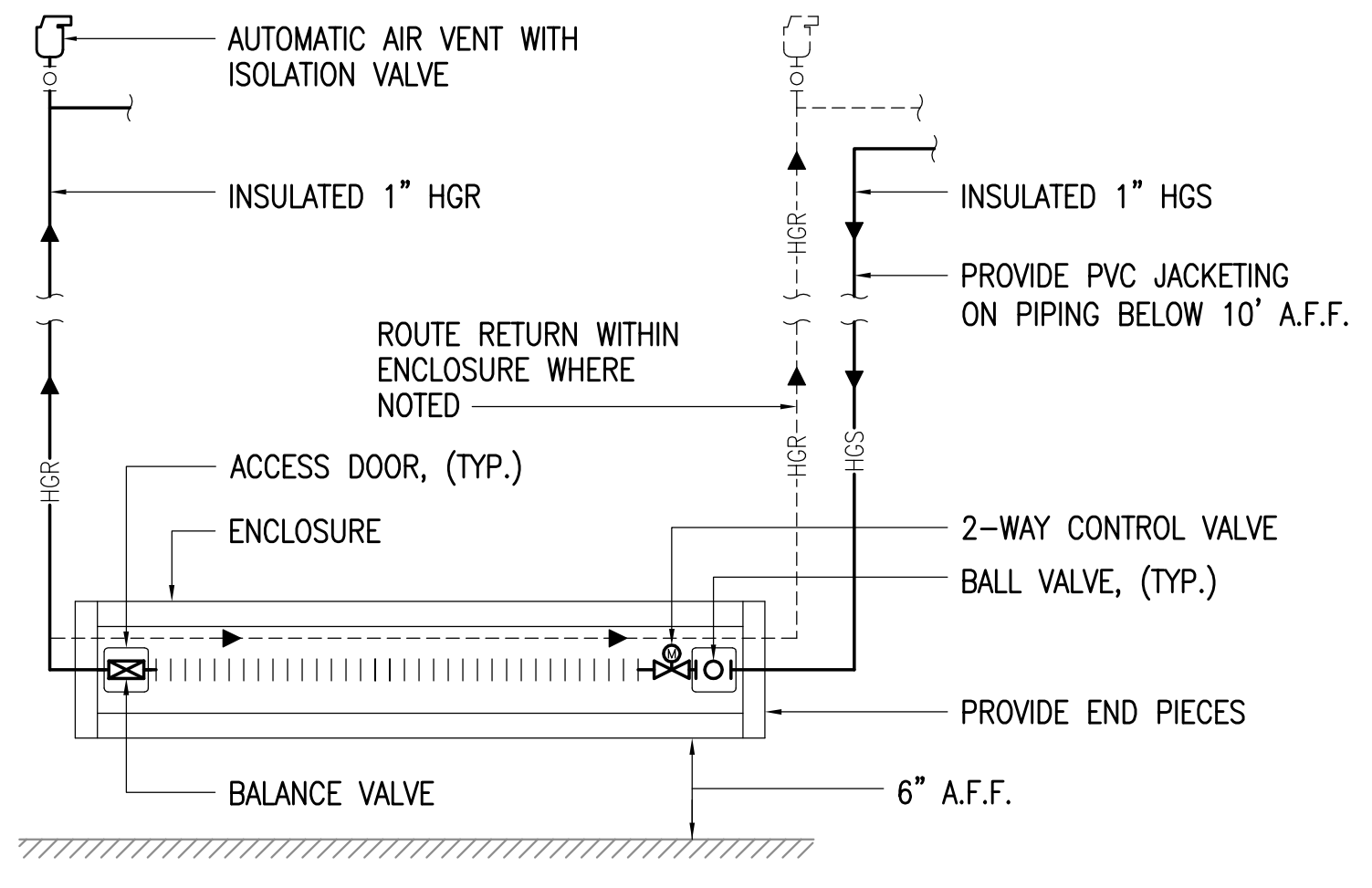
RSA Engineering, Inc. MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS 2522 Arctic Boulevard, Suite 200 Anchorage, AK 99503 (907) 276-0821		CITY of UNALASKA 1ST FLOOR HEATING PLAN
PYRAMID WTP UNALASKA, ALASKA	12/2/13 JFH DM JFH 12/2/13 L0109.00	ISSUED FOR BID BY JFH DATE 12/2/13 NO.
SCALE: AS NOTED DESIGNED BY: JFH DRAWN BY: DM CHECKED BY: JFH DATE: 12/2/13 FILE NO: L0109.00 SHEET NUMBER M2.1 OF 13		



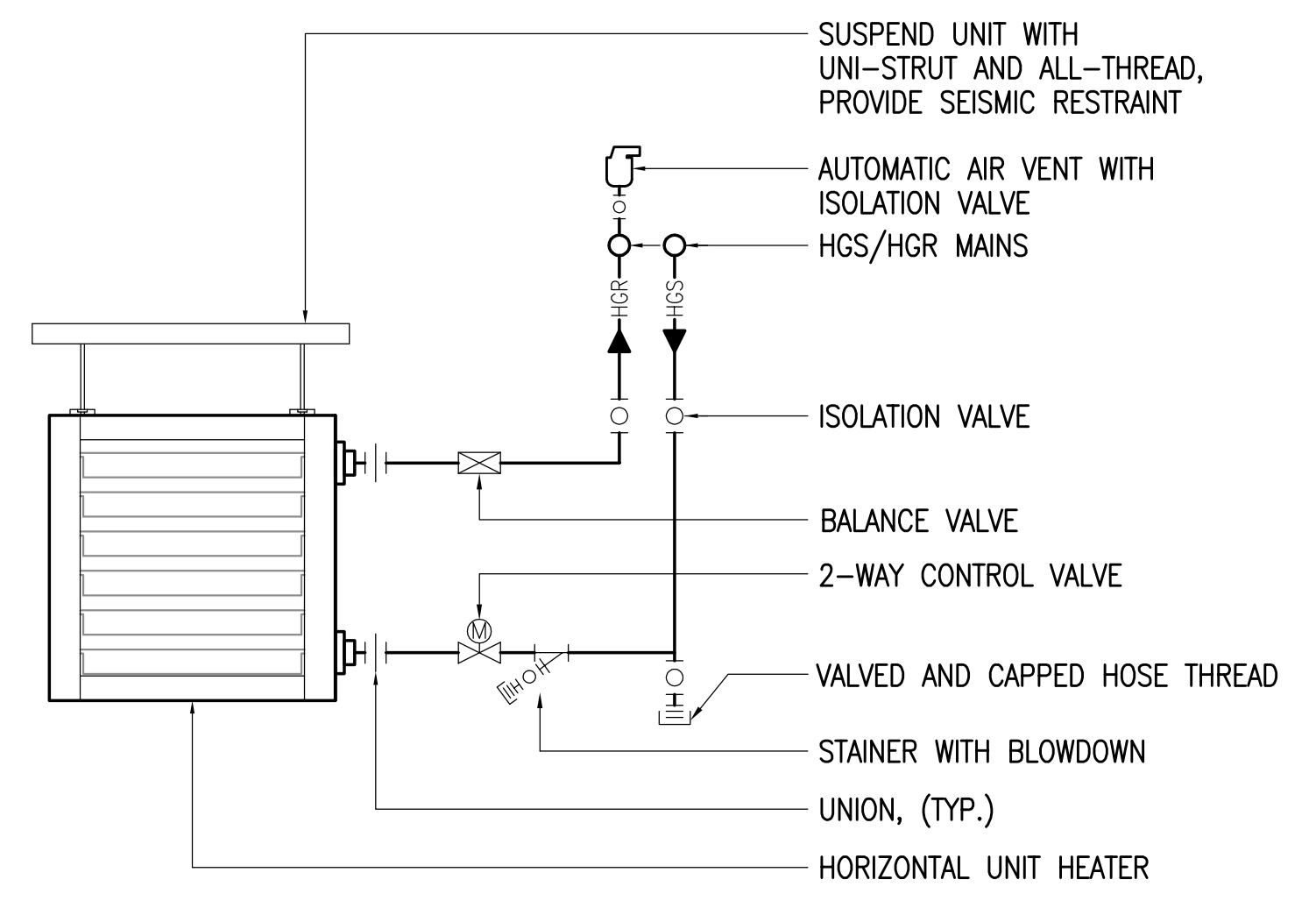
1 MEZZANINE HEATING PLAN
1/4" = 1'-0"



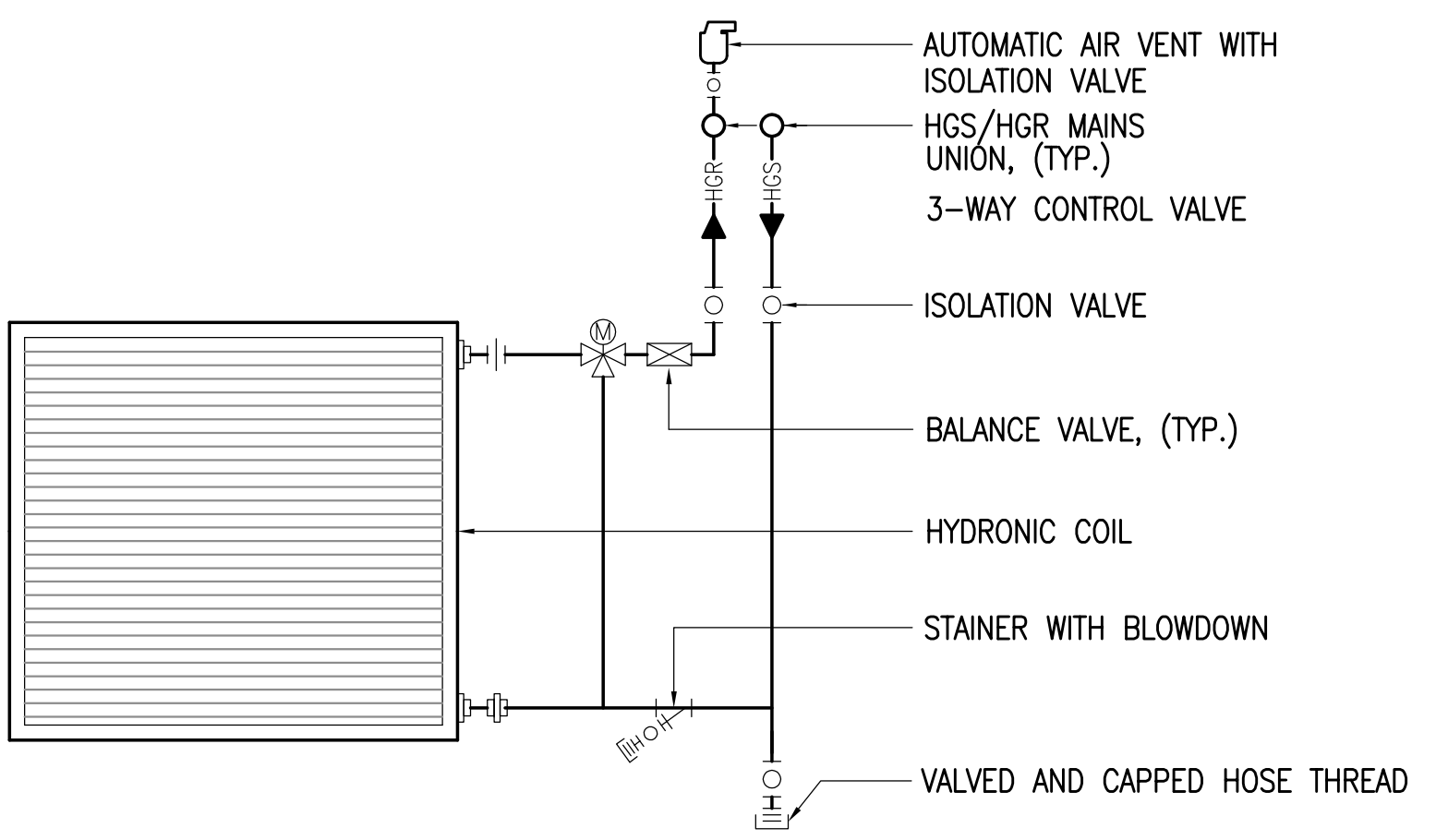
2 FINTUBE RADIATION - FT-1
NO SCALE



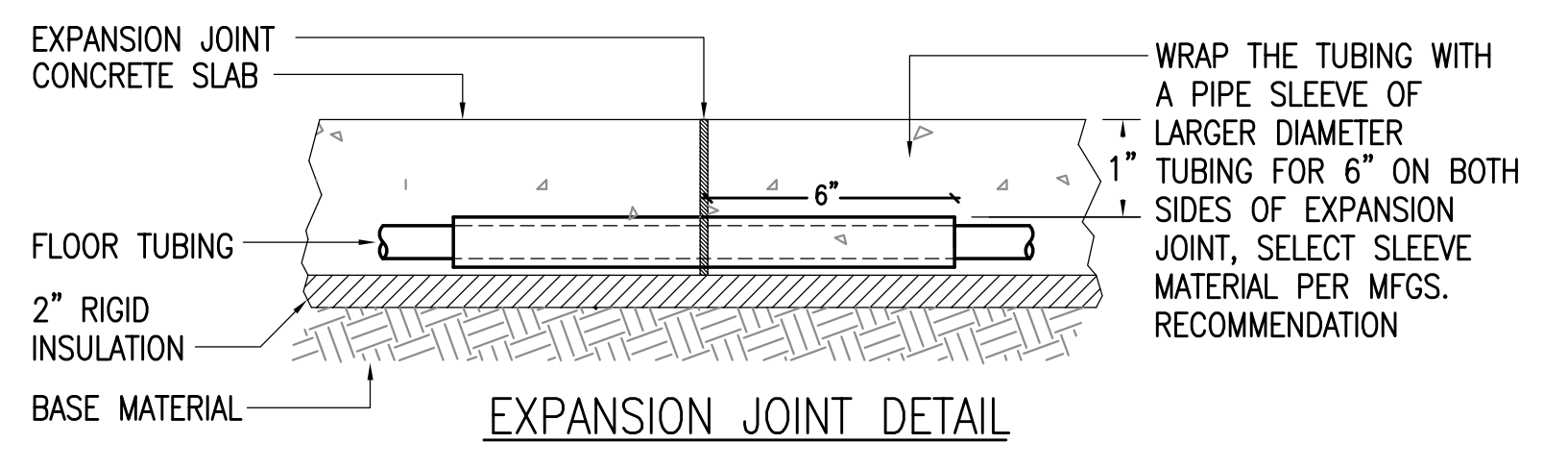
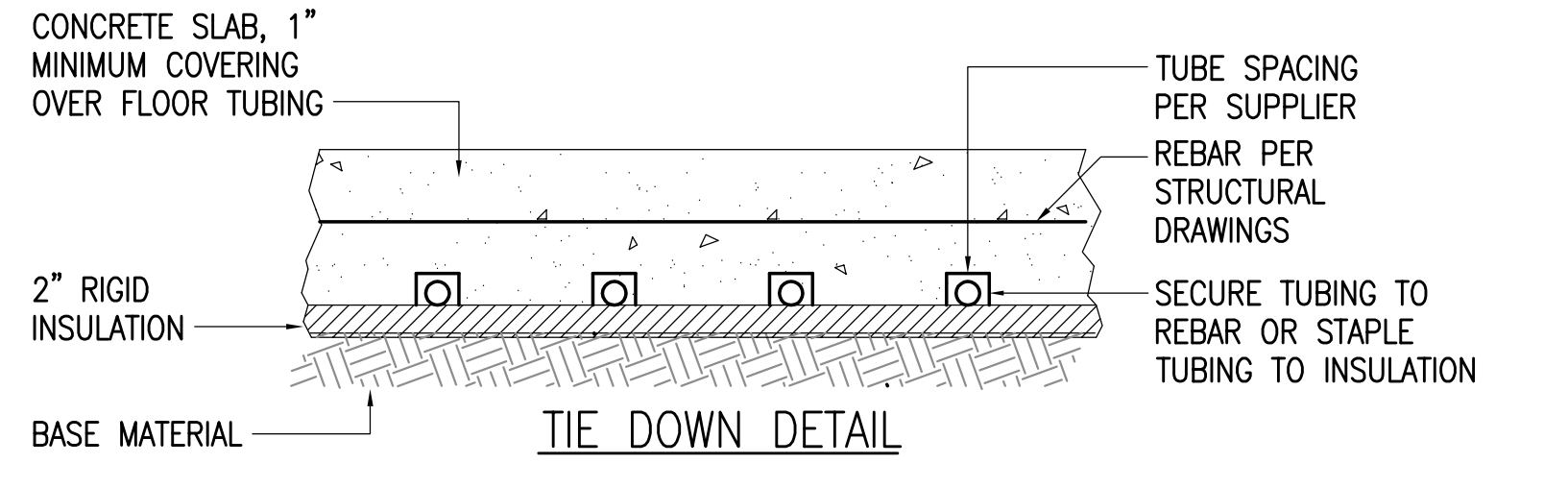
3 FINTUBE RADIATION - FT-2
NO SCALE



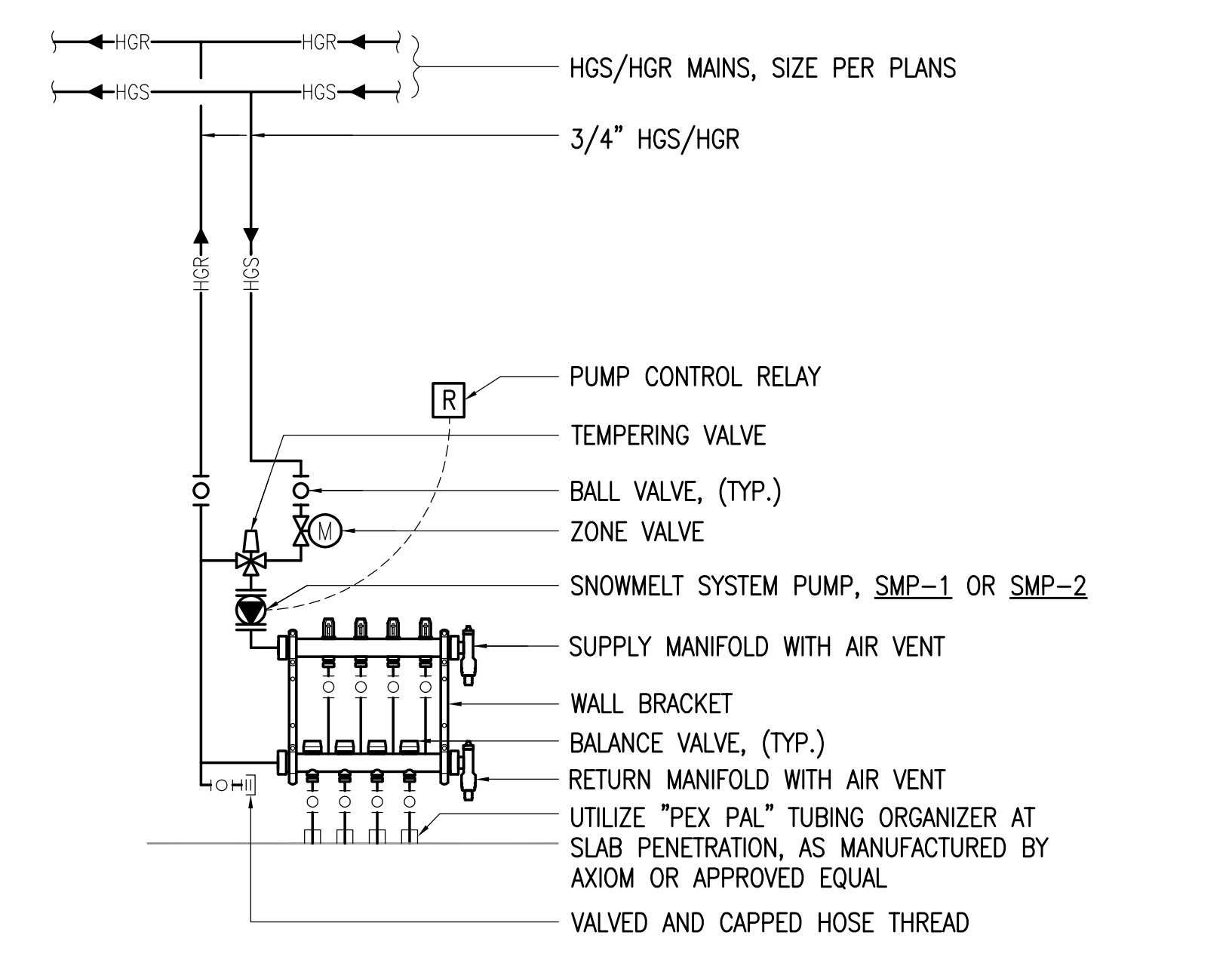
4 HORIZONTAL UNIT HEATER - UH-1 AND UH-2
NO SCALE



5 HYDRONIC COIL
NO SCALE



6 SNOW MELT TUBING DETAIL
NO SCALE



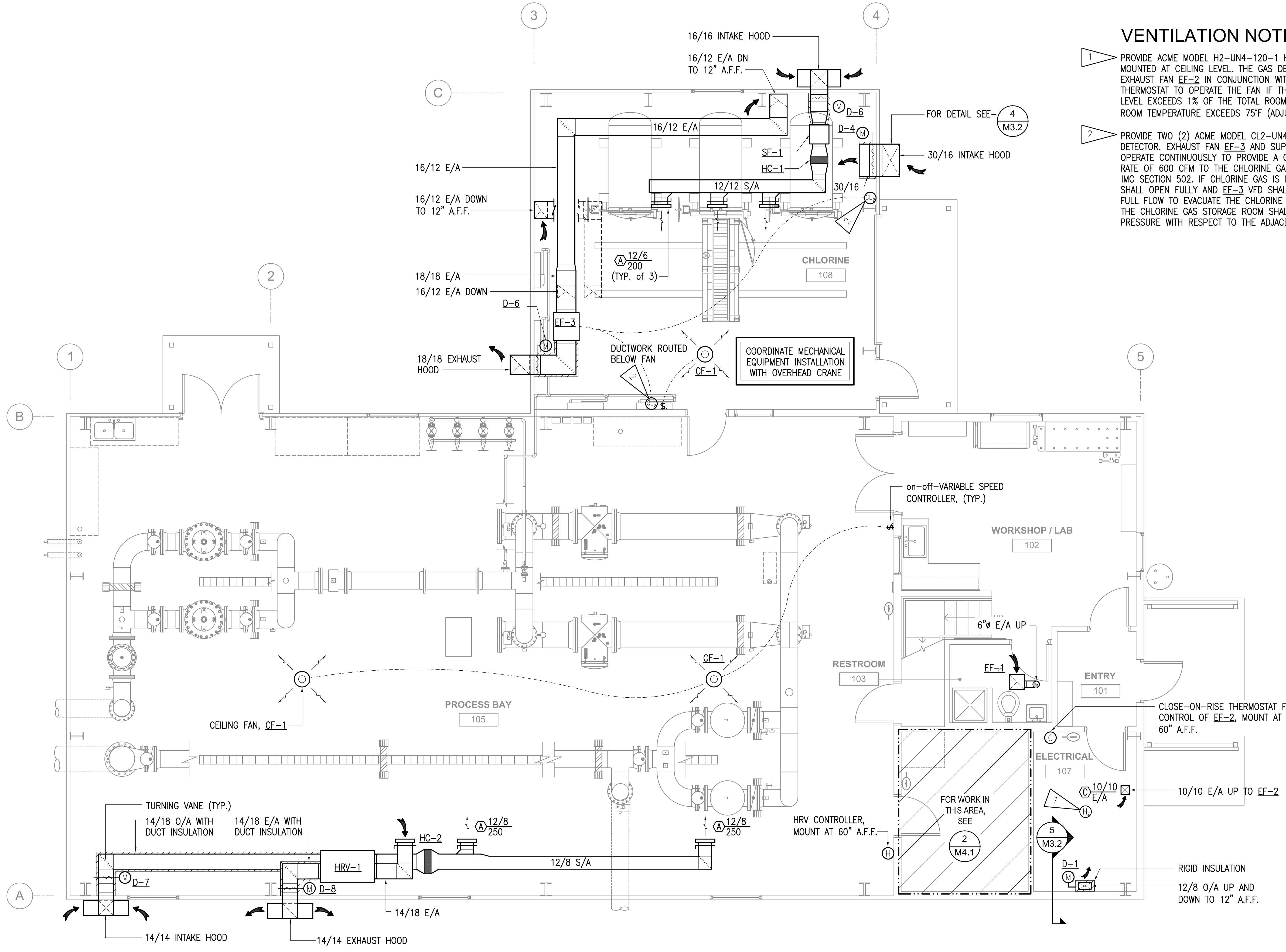
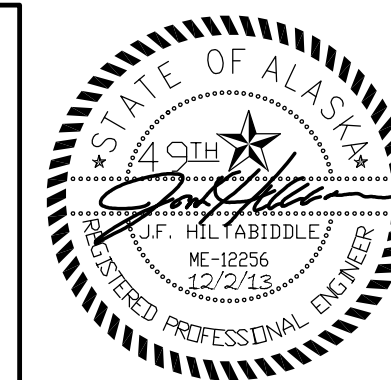
7 TYPICAL SNOWMELT MANIFOLD PIPING
NO SCALE

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PYRAMID WTP
UNALASKA, ALASKA
2ND FLOOR HEATING PLAN AND DETAILS

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FILE NO.	L0109.00
SHEET NUMBER	M2.2 OF 13



VENTILATION NOTES:

- 1 PROVIDE ACME MODEL H2-UN4-120-1 HYDROGEN GAS DETECTOR MOUNTED AT CEILING LEVEL. THE GAS DETECTOR SHALL OPERATE EXHAUST FAN EF-2 IN CONJUNCTION WITH THE WALL MOUNTED THERMOSTAT TO OPERATE THE FAN IF THE ROOM HYDROGEN GAS LEVEL EXCEEDS 1% OF THE TOTAL ROOM VOLUME OR IF THE ROOM TEMPERATURE EXCEEDS 75°F (ADJUSTABLE).
- 2 PROVIDE TWO (2) ACME MODEL CL2-UN4-120-1 CHLORINE GAS DETECTOR. EXHAUST FAN EF-3 AND SUPPLY FAN SF-1 SHALL OPERATE CONTINUOUSLY TO PROVIDE A CONSTANT VENTILATION RATE OF 600 CFM TO THE CHLORINE GAS ROOM AS REQUIRED BY IMC SECTION 502. IF CHLORINE GAS IS DETECTED, DAMPER D-4 SHALL OPEN FULLY AND EF-3 VFD SHALL MODULATE THE FAN TO FULL FLOW TO EVACUATE THE CHLORINE GAS FROM THE SPACE. THE CHLORINE GAS STORAGE ROOM SHALL REMAIN AT A NEGATIVE PRESSURE WITH RESPECT TO THE ADJACENT PROCESS BAY.

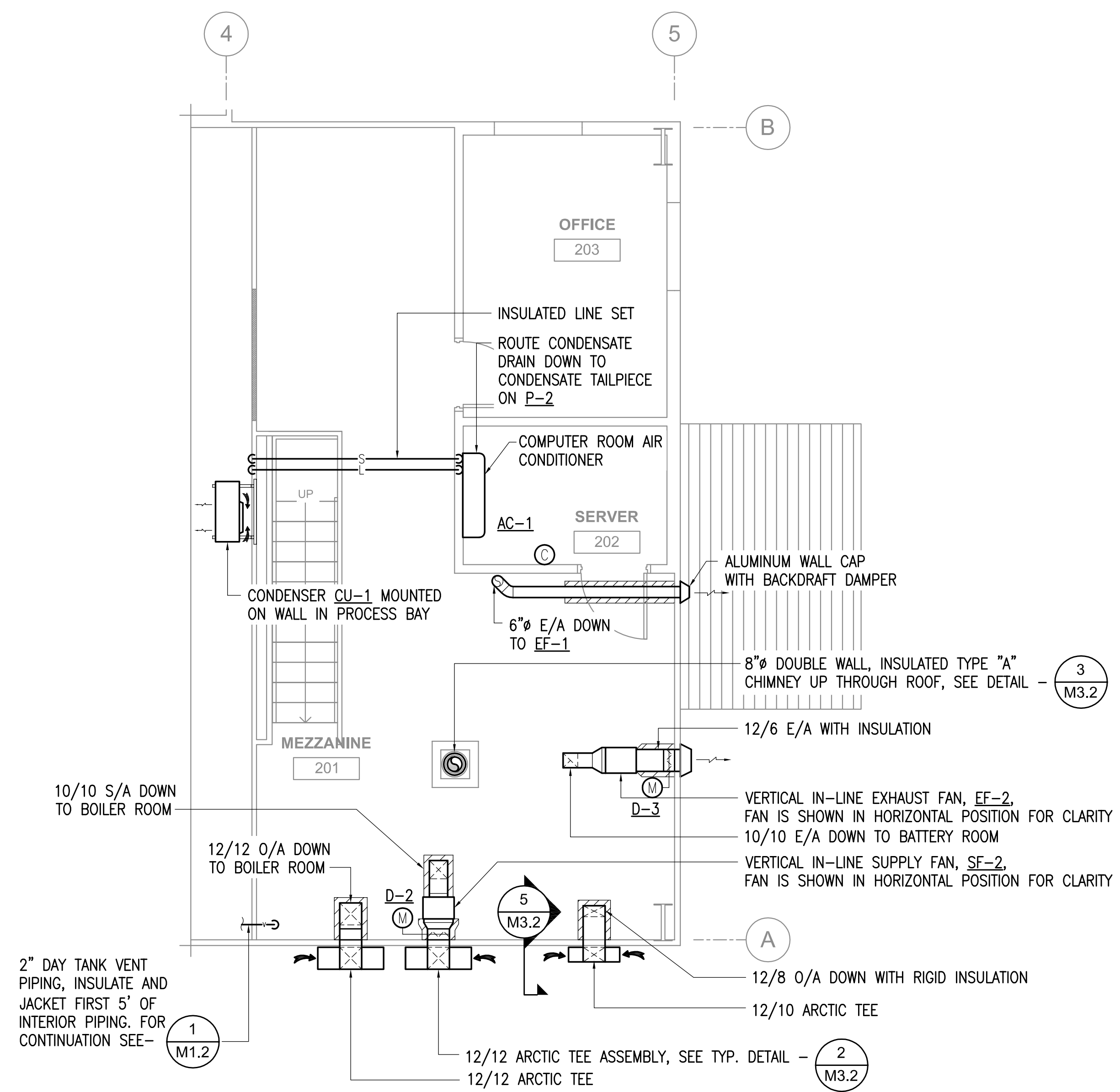
1 VENTILATION PLAN
1/4" = 1'-0"

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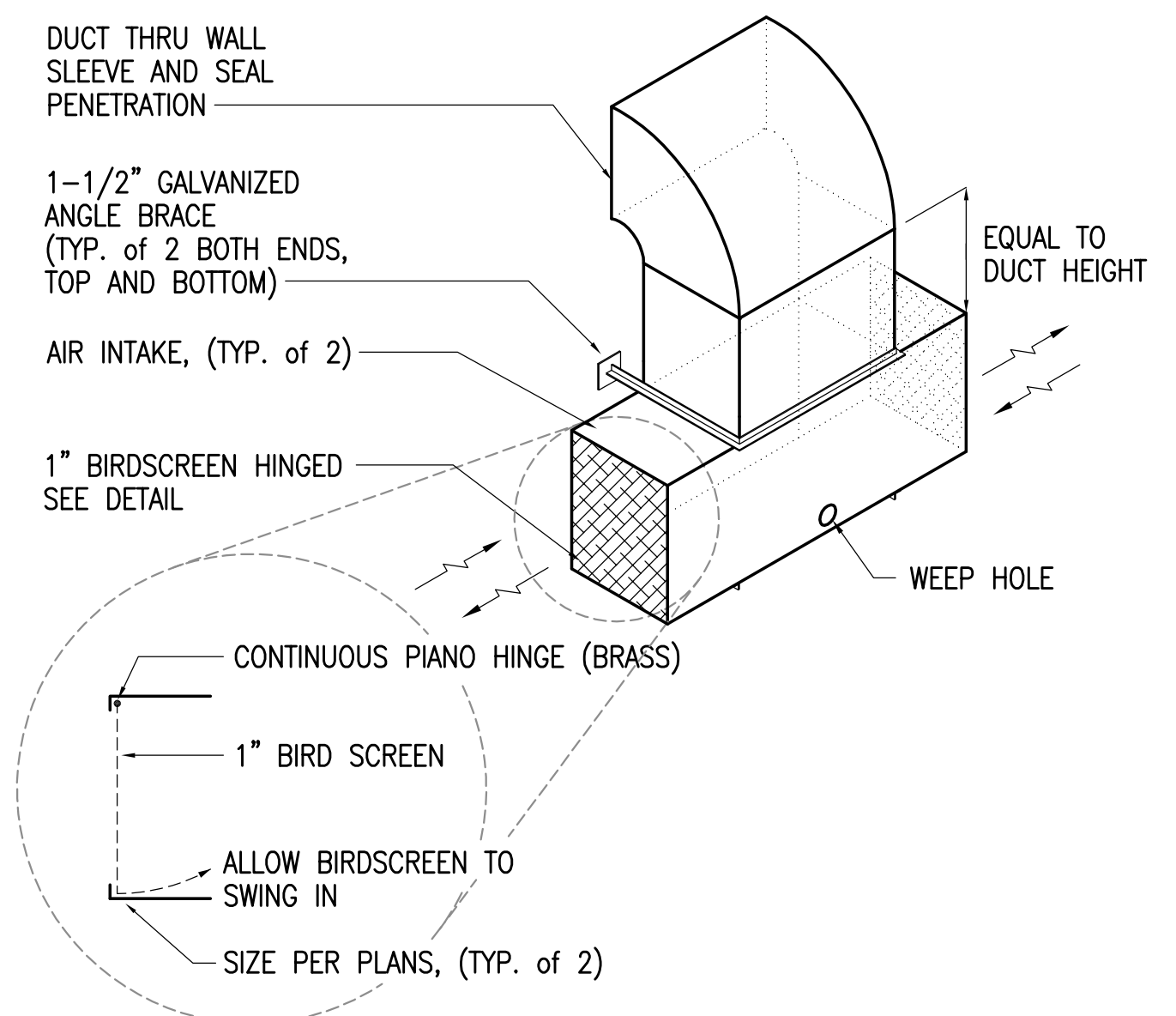
PYRAMID WTP
UNALASKA, ALASKA
1ST FLOOR VENTILATION PLAN

SCALE:	AS NOTED
DESIGNED BY:	JFH
DRAWN BY:	DM
CHECKED BY:	JFH
DATE:	12/2/13
FILE NO.:	L0109.00
SHEET NUMBER	M3.1 OF 13

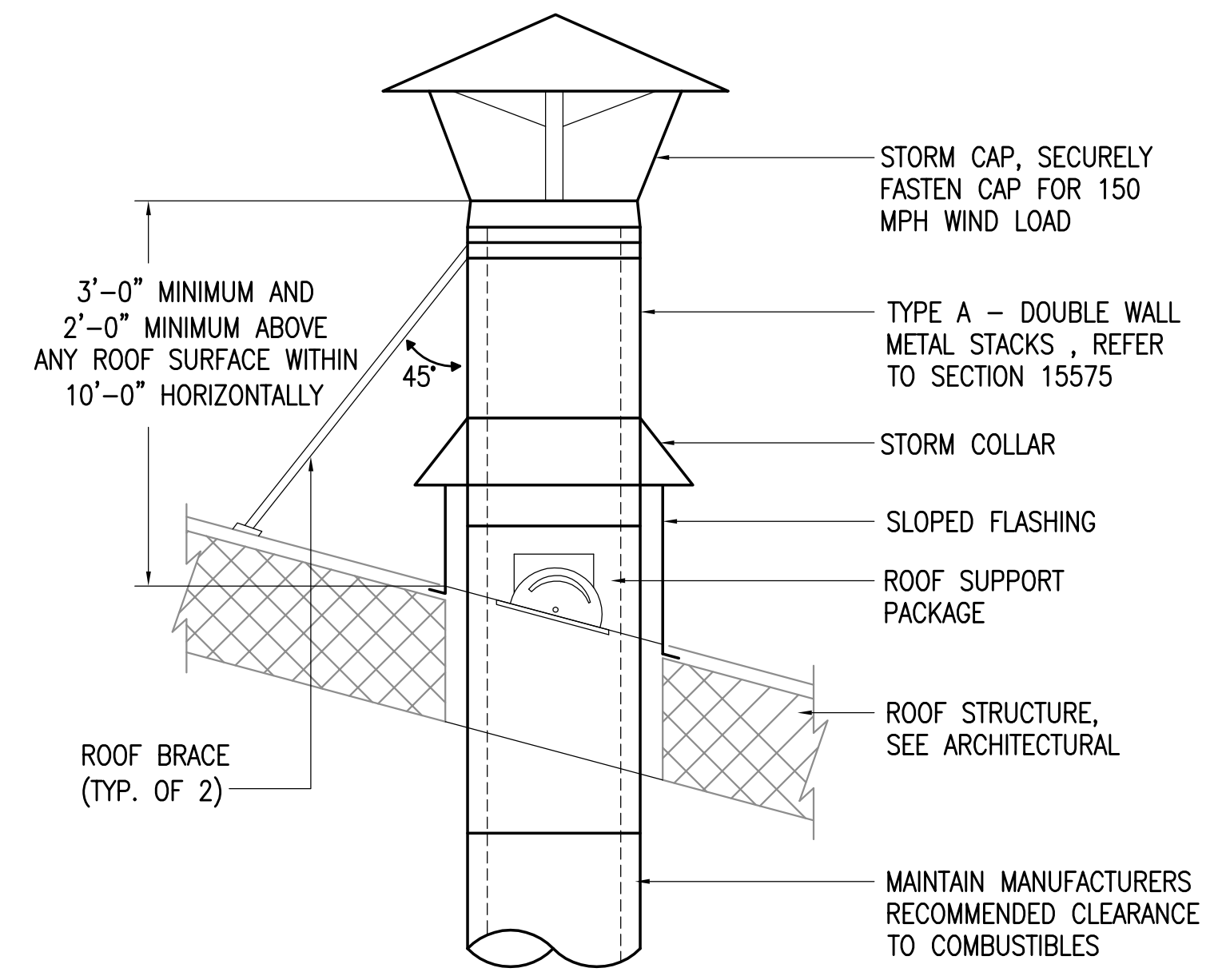
NO.	DATE	BY	REVISION
1	12/2/13	JFH	ISSUED FOR BID



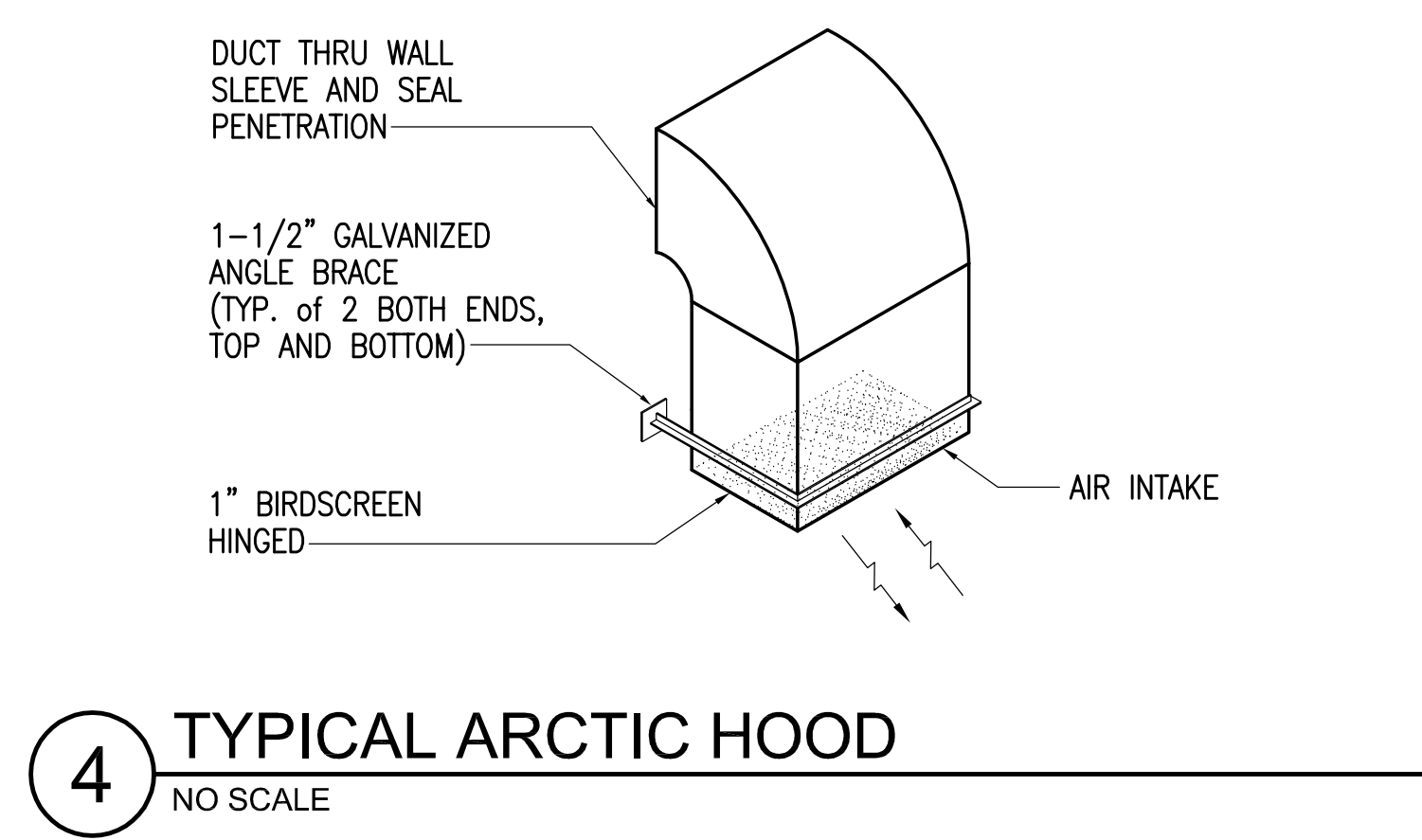
1 MEZZANINE VENTILATION PLAN
1/4" = 1'-0"



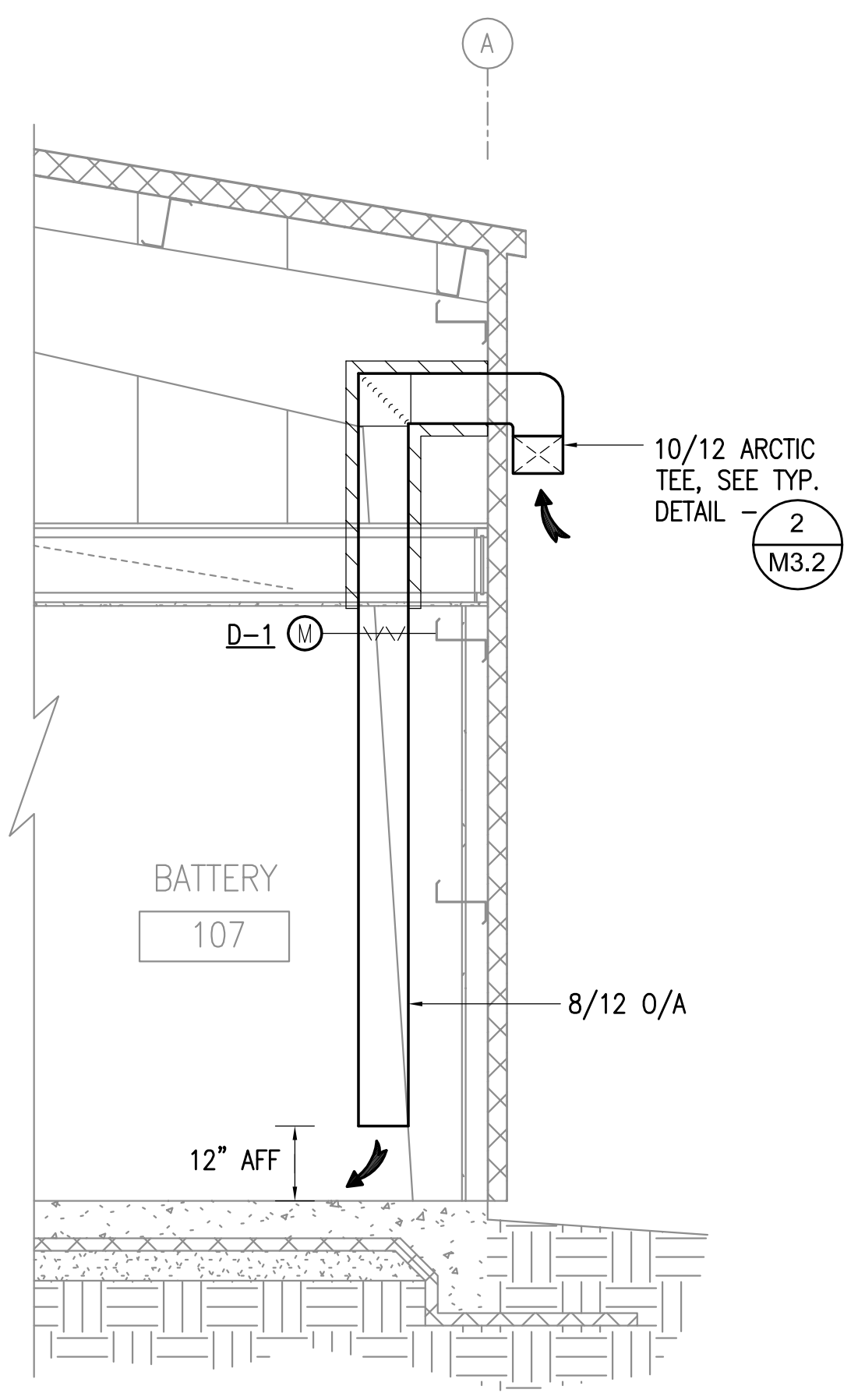
2 TYPICAL ARCTIC TEE
NO SCALE



3 ROOF VENT
NO SCALE



4 TYPICAL ARCTIC HOOD
NO SCALE



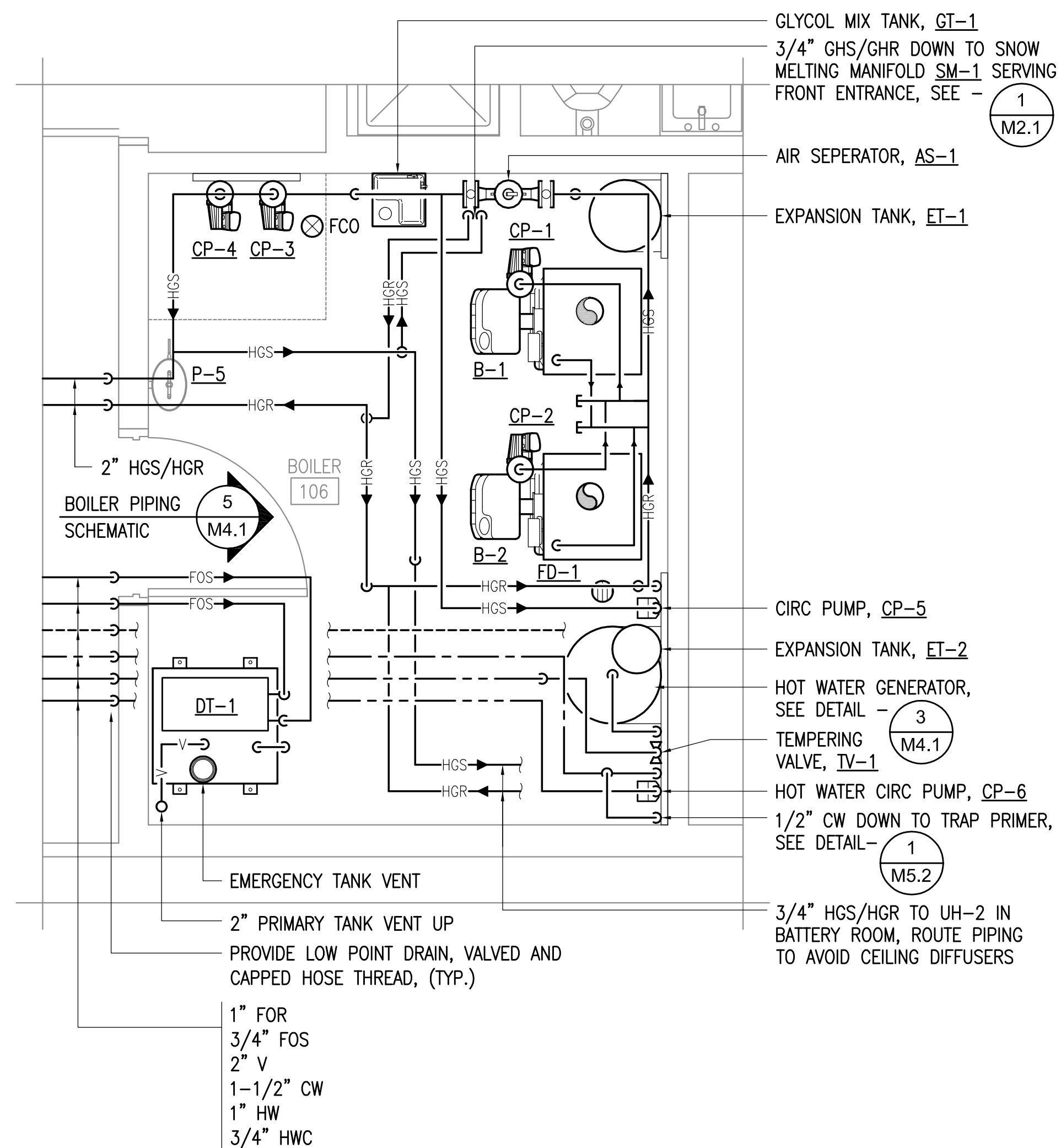
5 SECTION AT BATTERY 107
NO SCALE

ISSUED FOR BID	BY	JFH
DATE	12/2/13	
NO.		

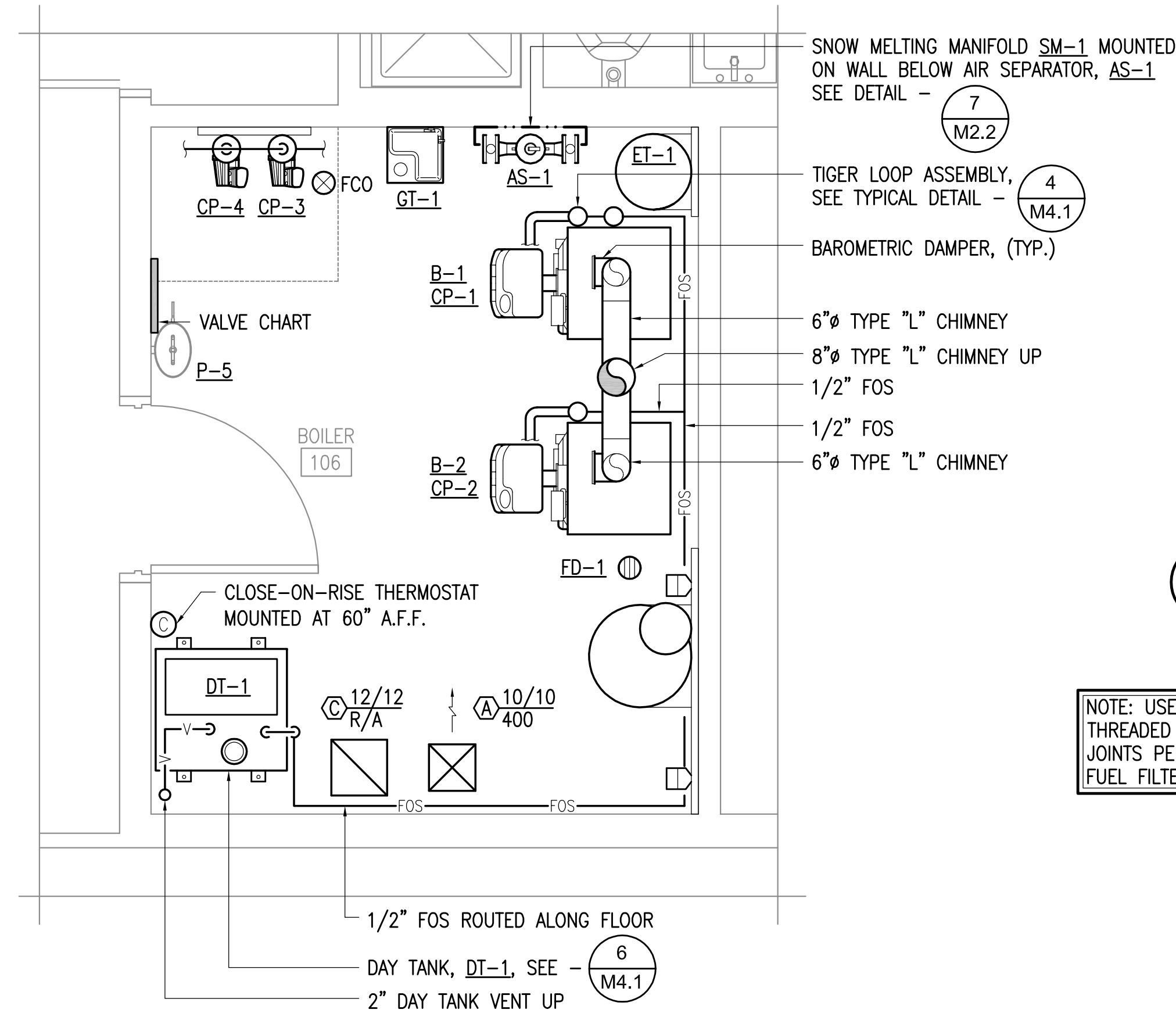
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CITY of UNALASKA

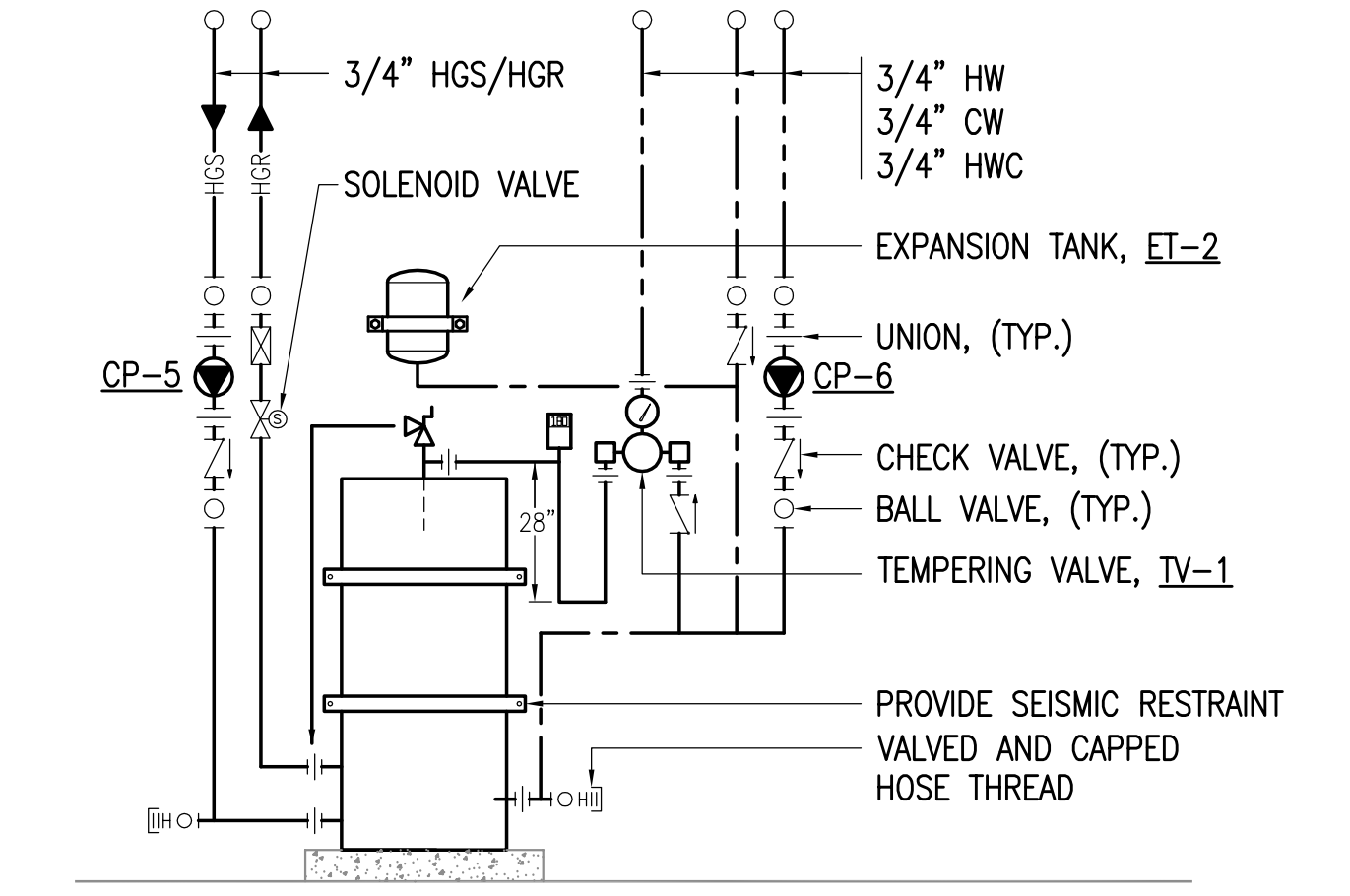
PYRAMID WTP UNALASKA, ALASKA	
2ND FLOOR VENTILATION PLAN AND DETAILS	
SCALE:	AS NOTED
DESIGNED BY:	JFH
DRAWN BY:	DM
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DATE:	12/2/13
FILE NO.:	L0109.00
SHEET NUMBER	M3.2 OF 13



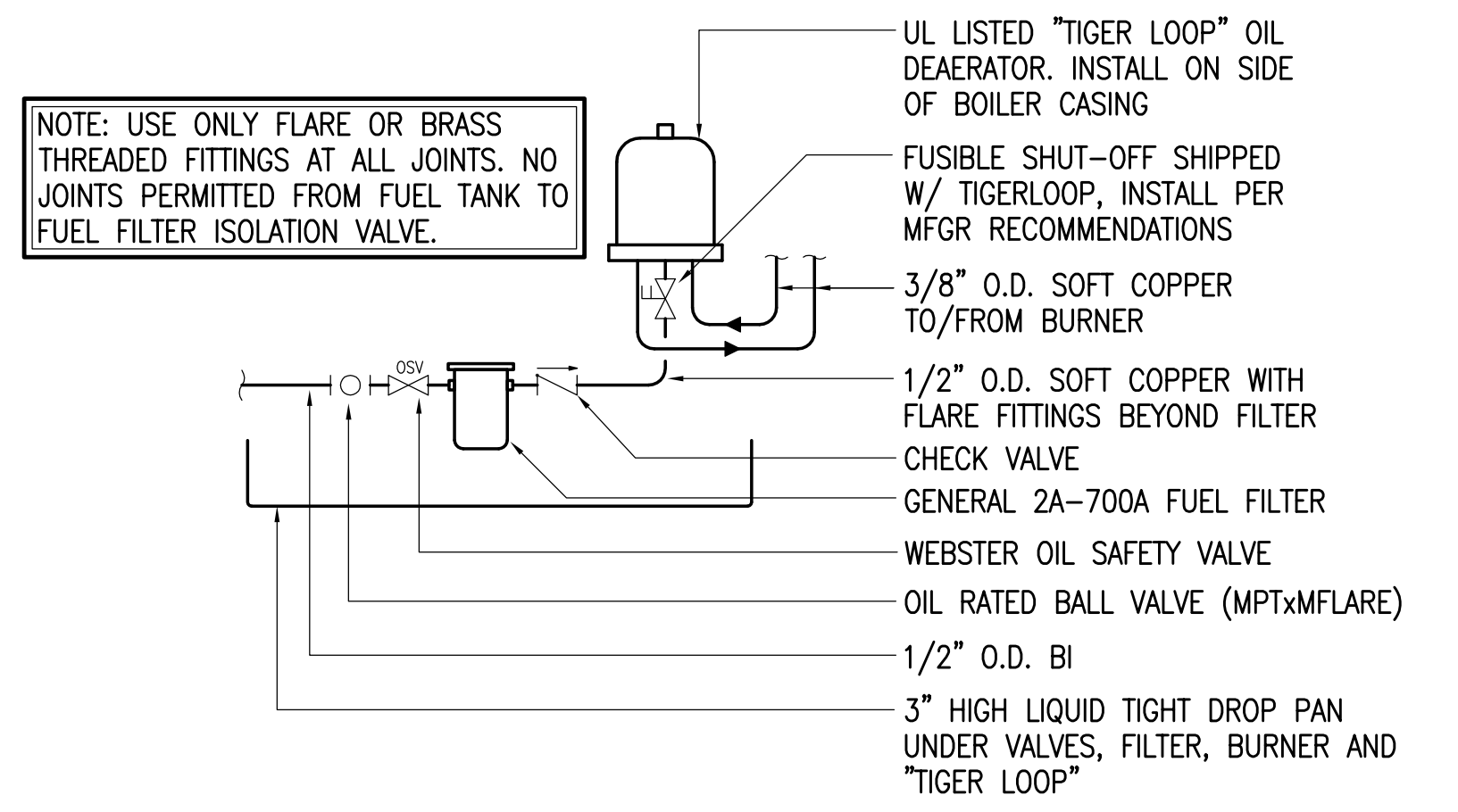
1 BOILER ROOM PIPING PLAN
 1/2" = 1'-0"



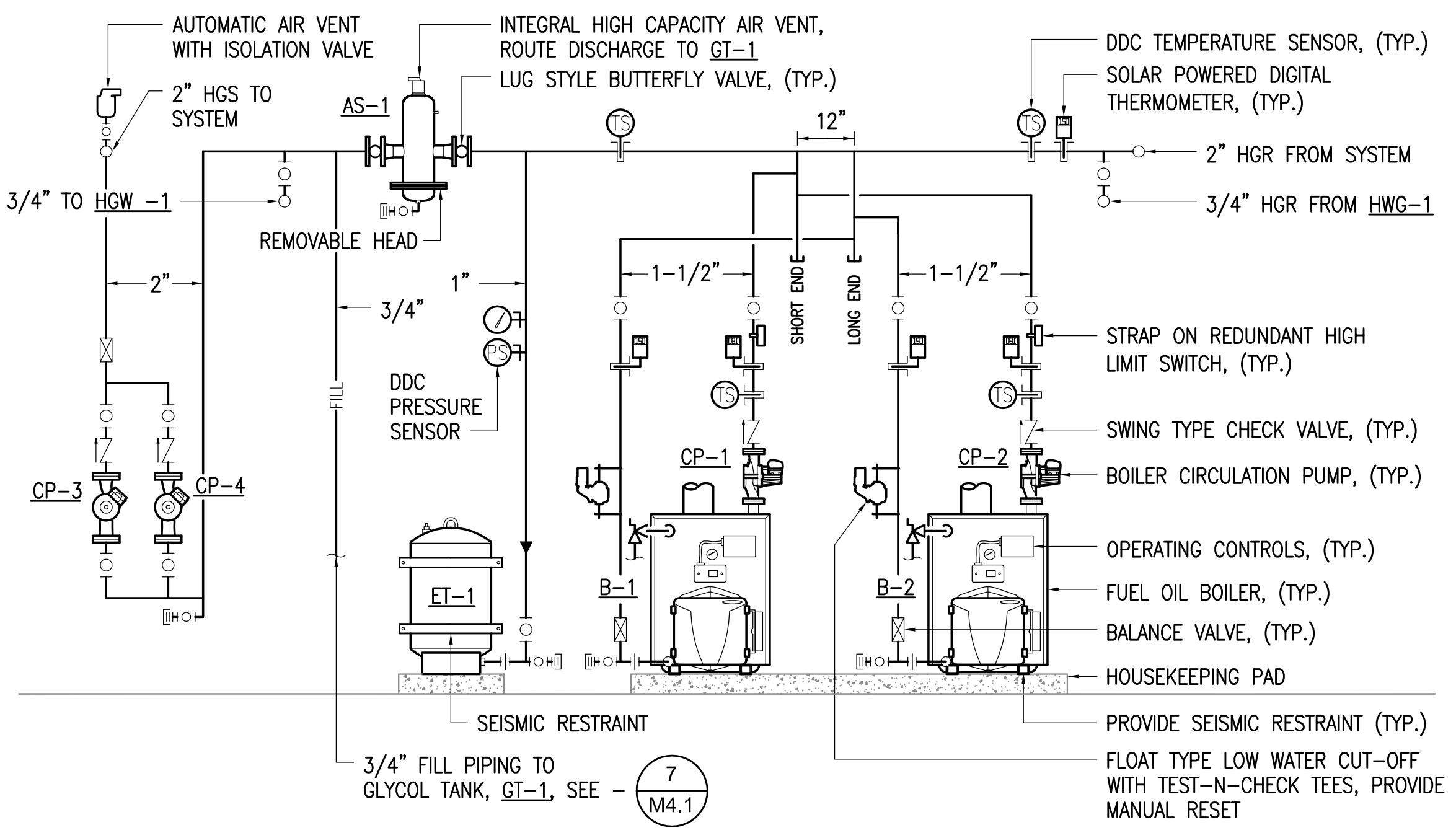
2 BOILER ROOM VENTILATION PLAN
 1/2" = 1'-0"



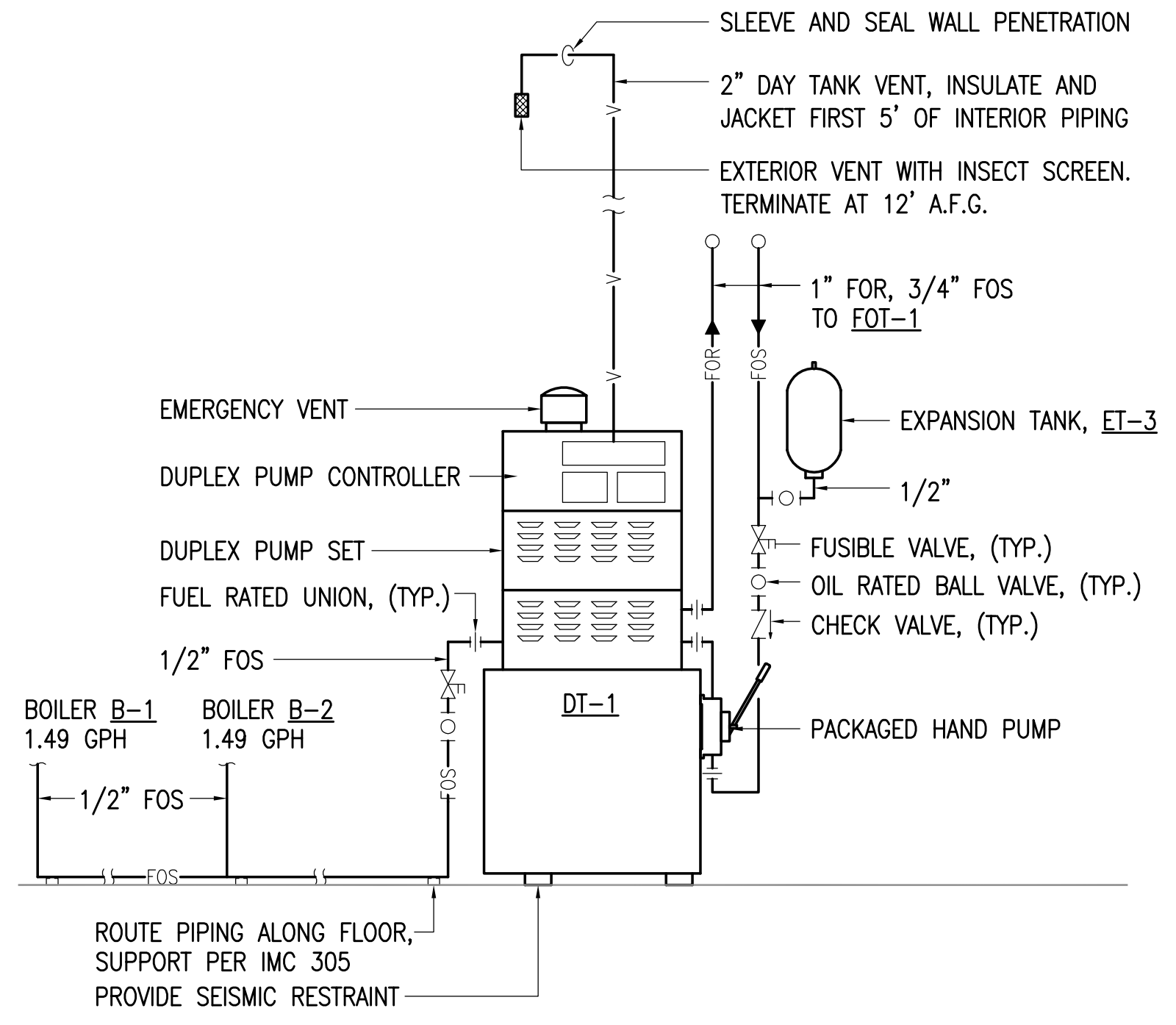
3 HOT WATER GENERATOR
 NO SCALE



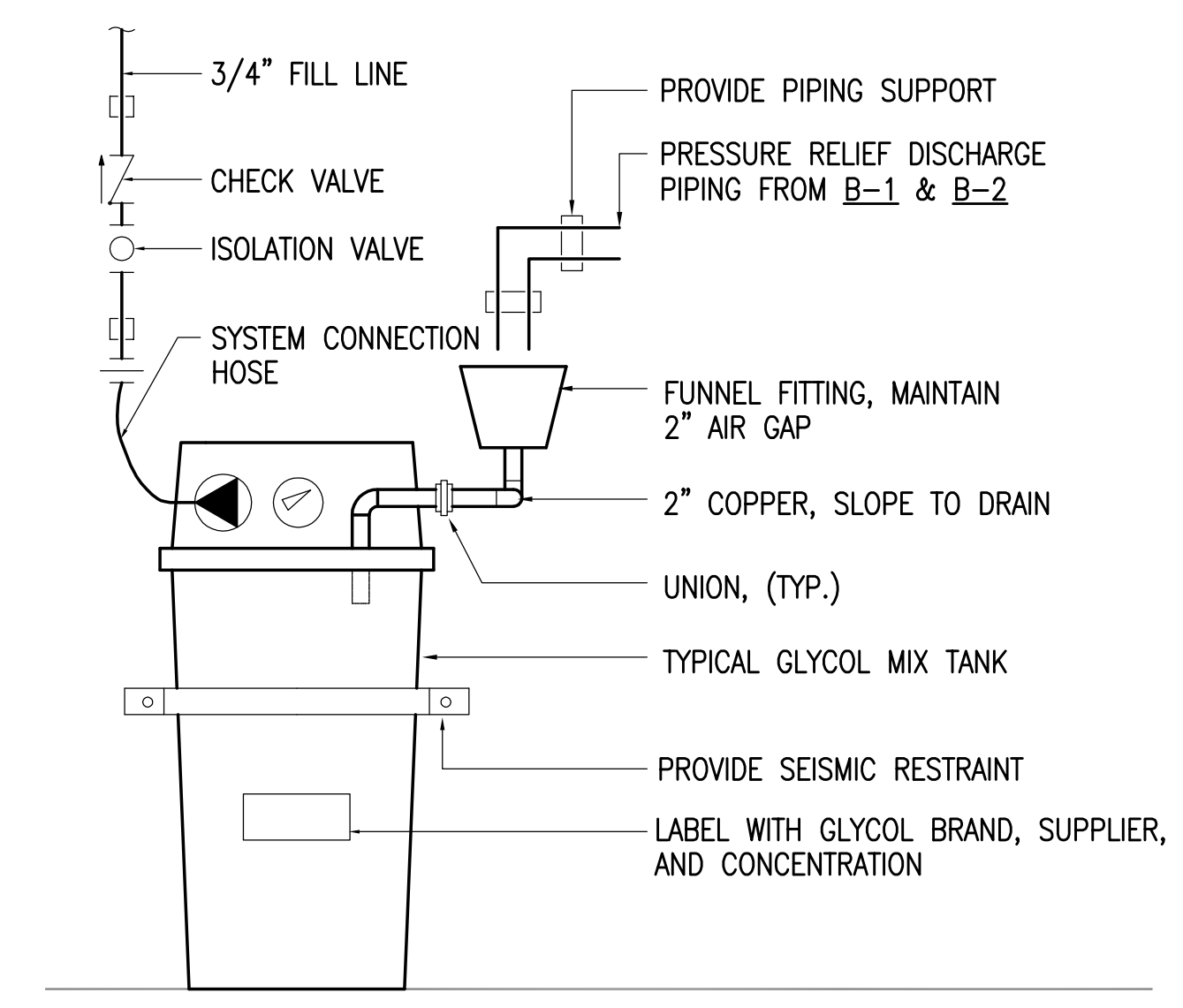
4 TIGER LOOP DETAIL
 NO SCALE



5 BOILER PIPING SCHEMATIC
 NO SCALE



6 FUEL OIL DAY TANK
 NO SCALE



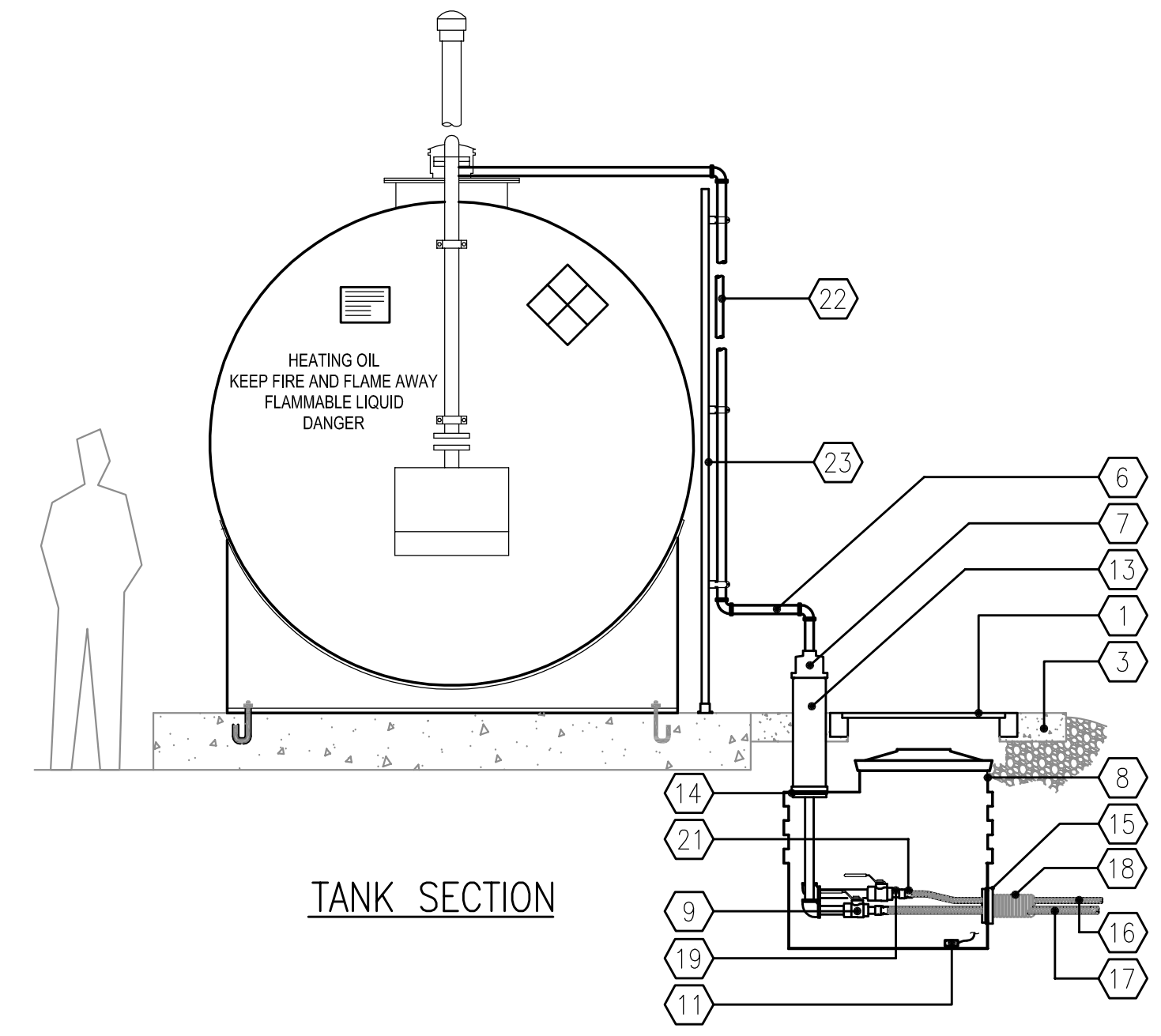
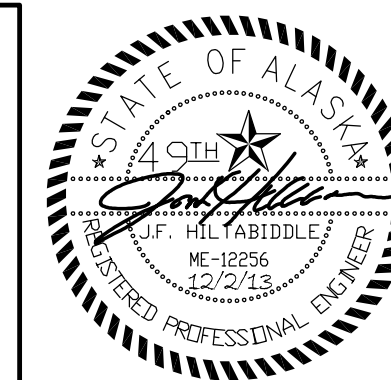
7 GLYCOL TANK - GT-1
 NO SCALE

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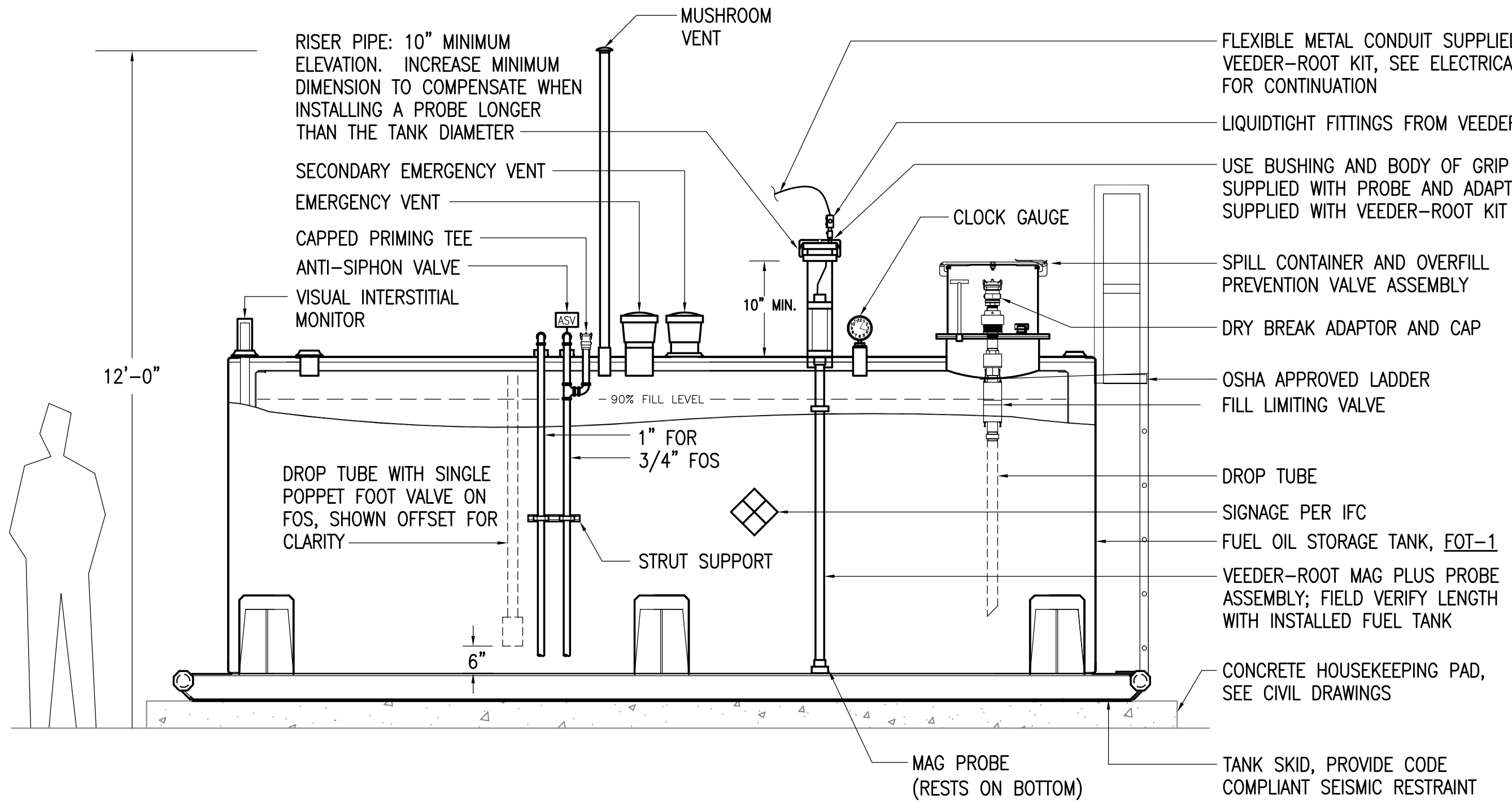
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PYRAMID WTP
UNALASKA, ALASKA
 BOILER ROOM PLANS AND DETAILS

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DATE:	12/2/13
FILE NO.	L0109.00
SHEET NUMBER	M4.1 OF 13



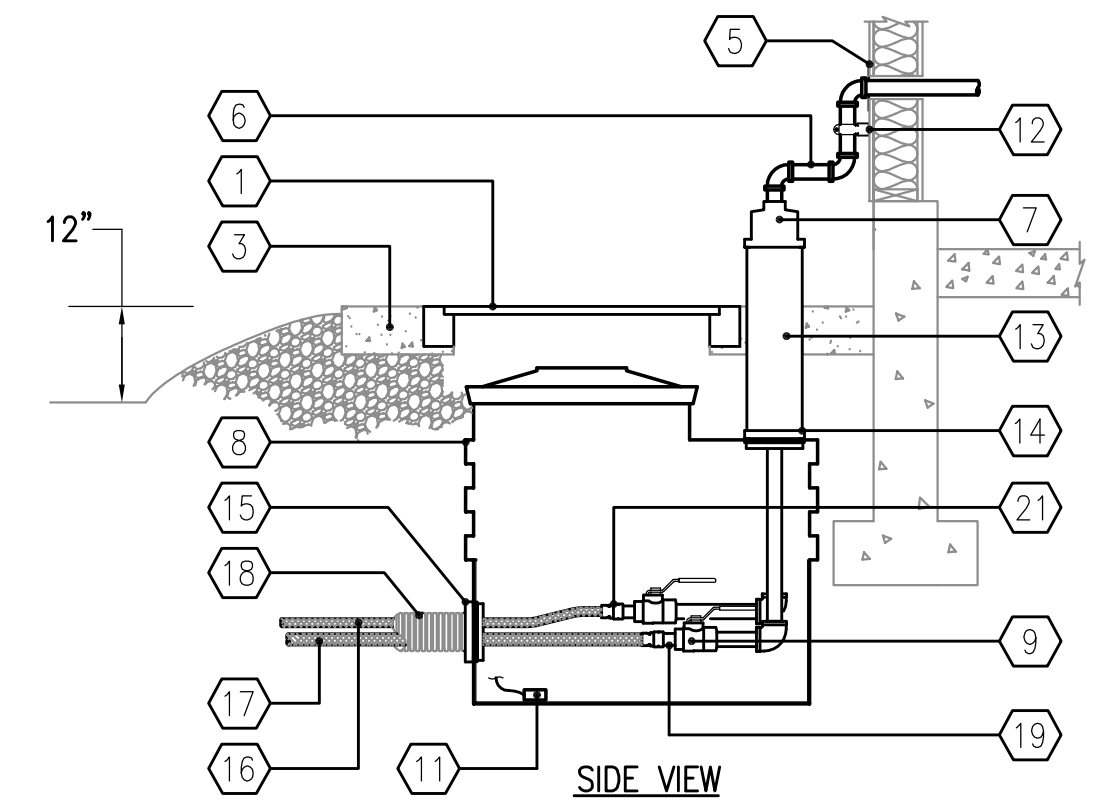
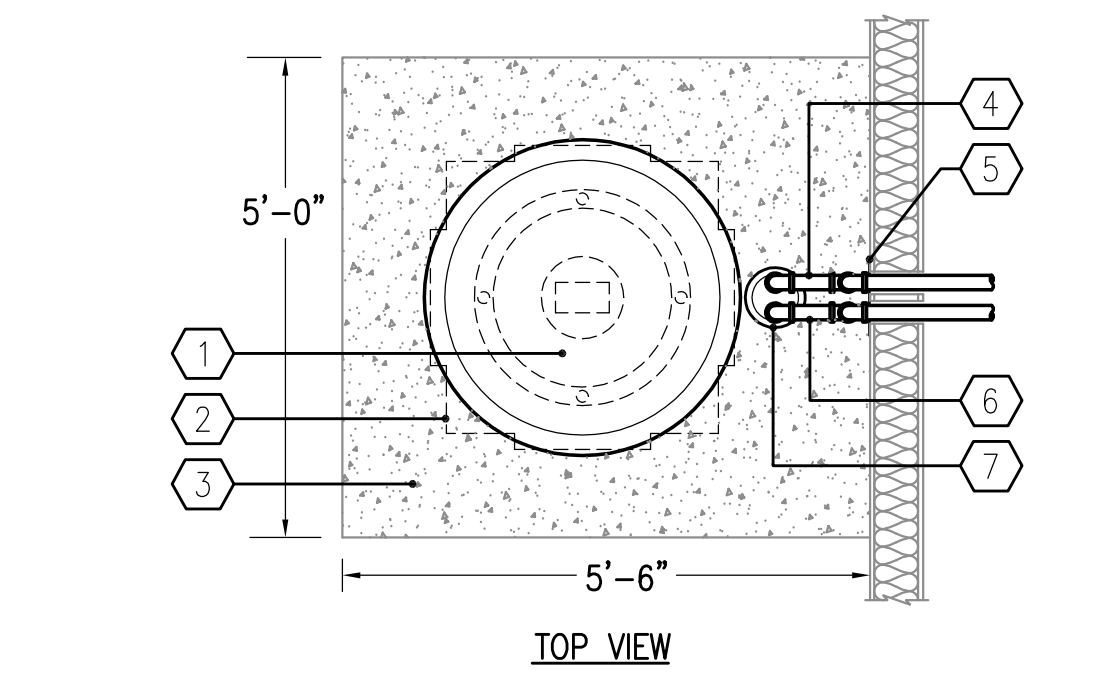
TANK SECTION



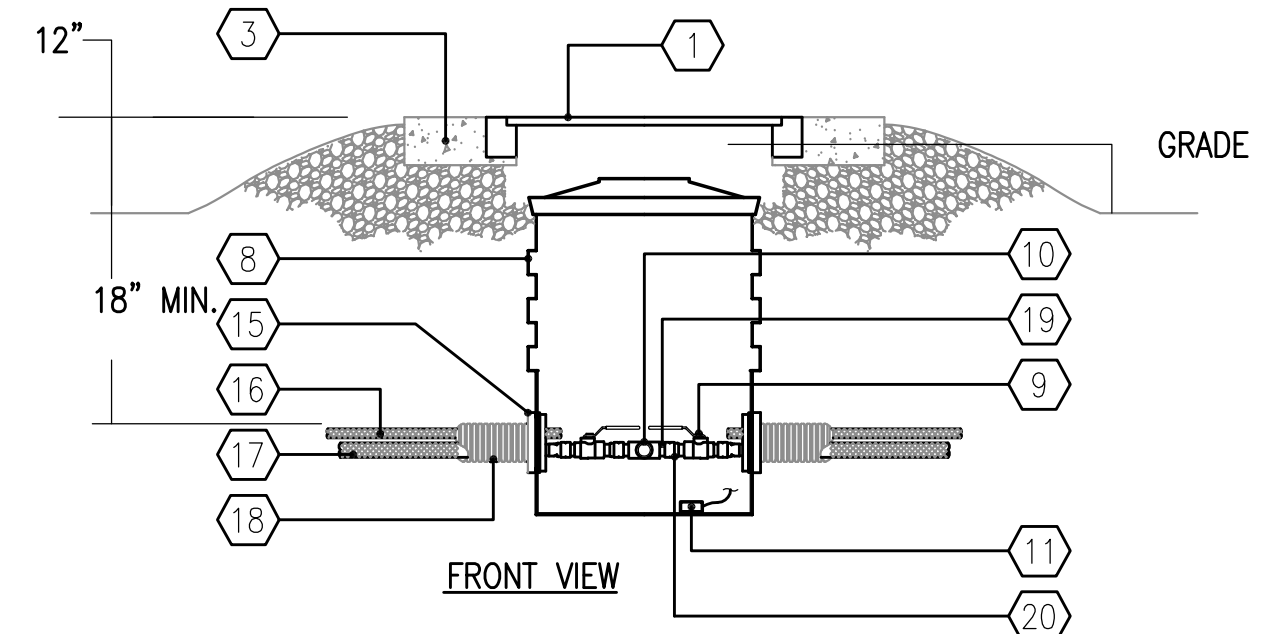
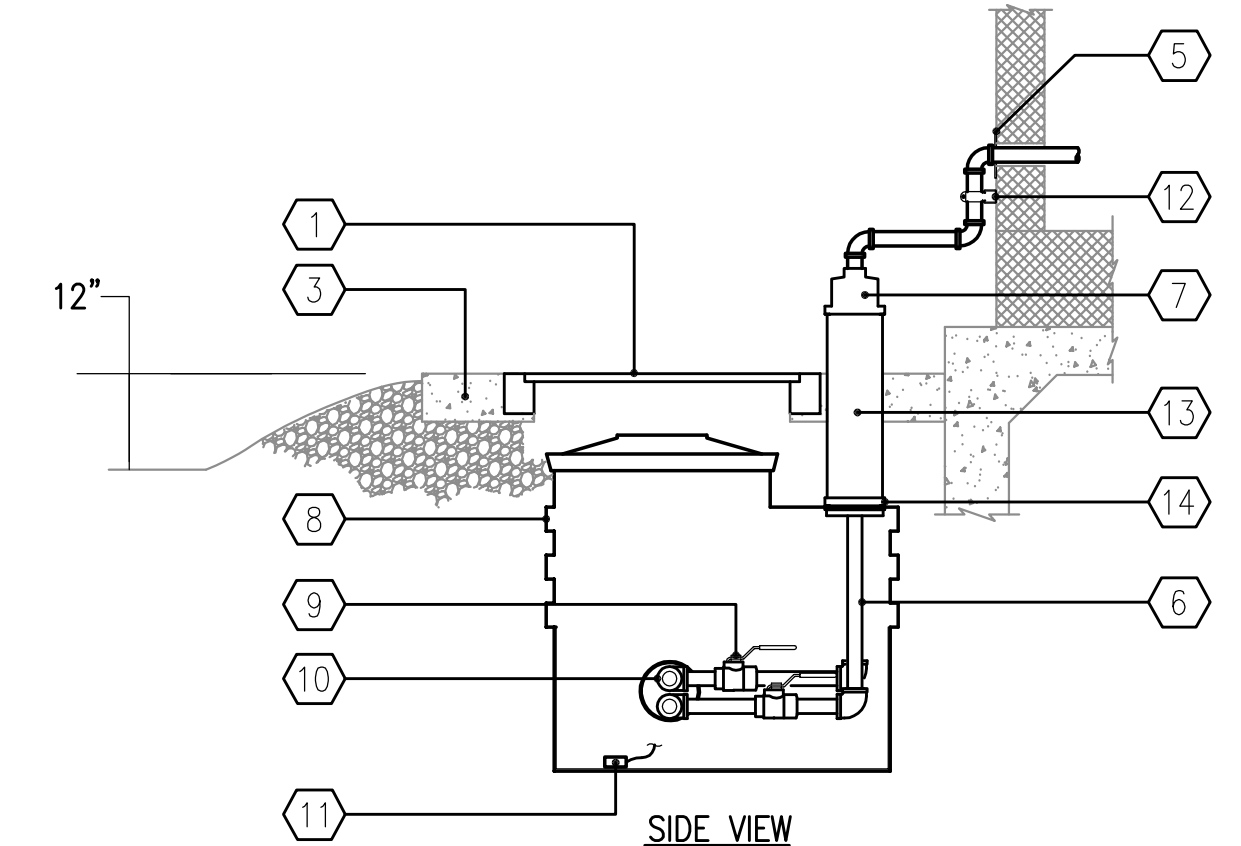
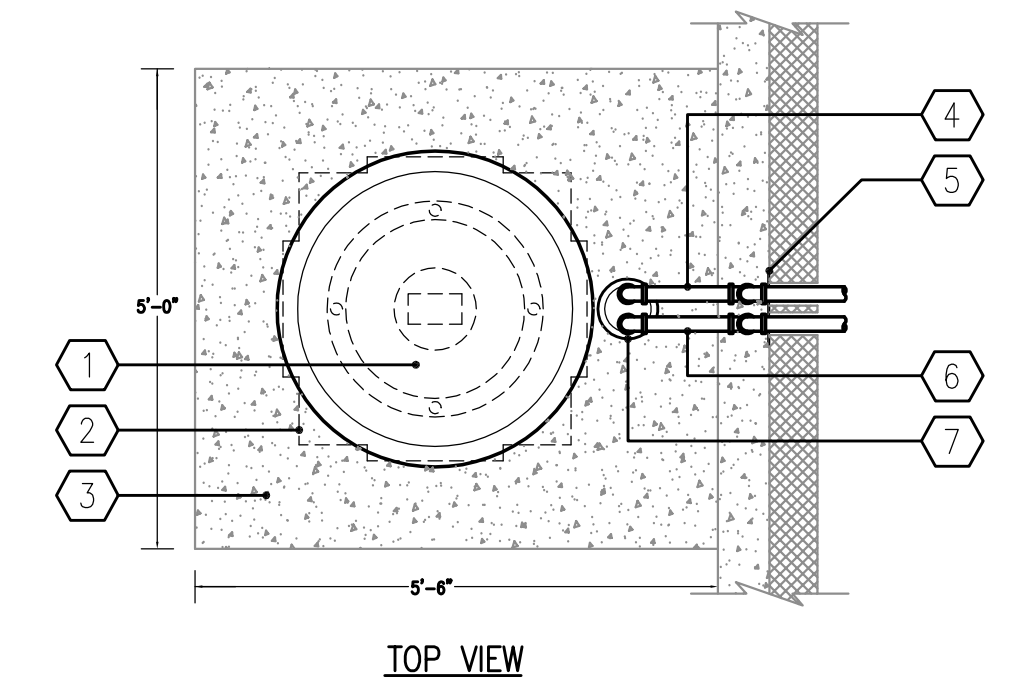
1 FUEL OIL STORAGE TANK FOT-1
NO SCALE

EQUIPMENT KEY:

- 1 MANHOLE COVER.
- 2 MANHOLE FRAME.
- 3 5'x5.5'x4" CONCRETE SLAB. REFERENCE STRUCTURAL FOR FURTHER DETAIL FOR SUMP CONCRETE PAD DESIGN.
- 4 3/4" STEEL FUEL OIL SUPPLY PIPING W/ WELDED JOINTS.
- 5 SEAL WALL PENETRATION AND PROVIDE CLOSE-FITTING GALVANIZED ESCUTCHEON.
- 6 1" STEEL FUEL OIL RETURN PIPING W/ WELDED JOINTS.
- 7 FLEXWORKS MODEL PTA-4175 4" X 1" X 3/4" TRANSITION ASSEMBLY.
- 8 FLEXWORKS MODEL PST-4630 TRANSITION SUMP.
- 9 STAINLESS STEEL, 1/4 TURN, FULL PORT BALL VALVE (TYP).
- 10 FLEXWORKS STAINLESS STEEL TEE (TYP).
- 11 TYPICAL SUMP DETECTOR. LOCATE DETECTOR AT LOWEST POINT IN SUMP PIPING SYSTEM, FIELD COORDINATE. WIRING FOR SENSOR SHALL BE ROUTED IN CONDUIT TO THE PUMP BUILDING. ALL PENETRATION INTO SUMP SHALL BE MADE WITH FLEXWORKS MODEL PBFN-751 CONDUIT ENTRY FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 12 PIPING SUPPORT.
- 13 4" RIGID RISER PIPE.
- 14 FLEXWORKS MODEL EBF-0400 ENTRY BOOT FITTING FOR 4" RIGID PIPE.
- 15 DIRECT BURY COAXIAL PIPE FLANGE, FLEXWORKS MODEL PBFB-400AXP.
- 16 FLEXWORKS 3/4" DOUBLE-WALL FLEXIBLE PIPING.
- 17 FLEXWORKS 1" DOUBLE-WALL FLEXIBLE PIPING.
- 18 FLEXWORKS MODEL AXP40 4" DOUBLE-WALL ACCESS PIPE.
- 19 STAINLESS STEEL PIPE NIPPLE AS REQUIRED.
- 20 STAINLESS STEEL MALE TO FEMALE ADAPTER.
- 21 FLEXWORKS FLEXIBLE PIPE TO STEEL PIPE ADAPTER.
- 22 1" FUEL OIL RETURN TO TANK.
- 23 HOT-DIPPED GALVANIZED STRUT PIPING SUPPORT. PROVIDE LATERAL IN TWO DIRECTIONS. UTILIZE UNI-STRUT POST BASE MODEL P2072A. ALL EXTERIOR HARDWARE SHALL BE HOT-DIPPED GALVANIZED.



2 SUMP AT BUILDING DETAIL
NO SCALE



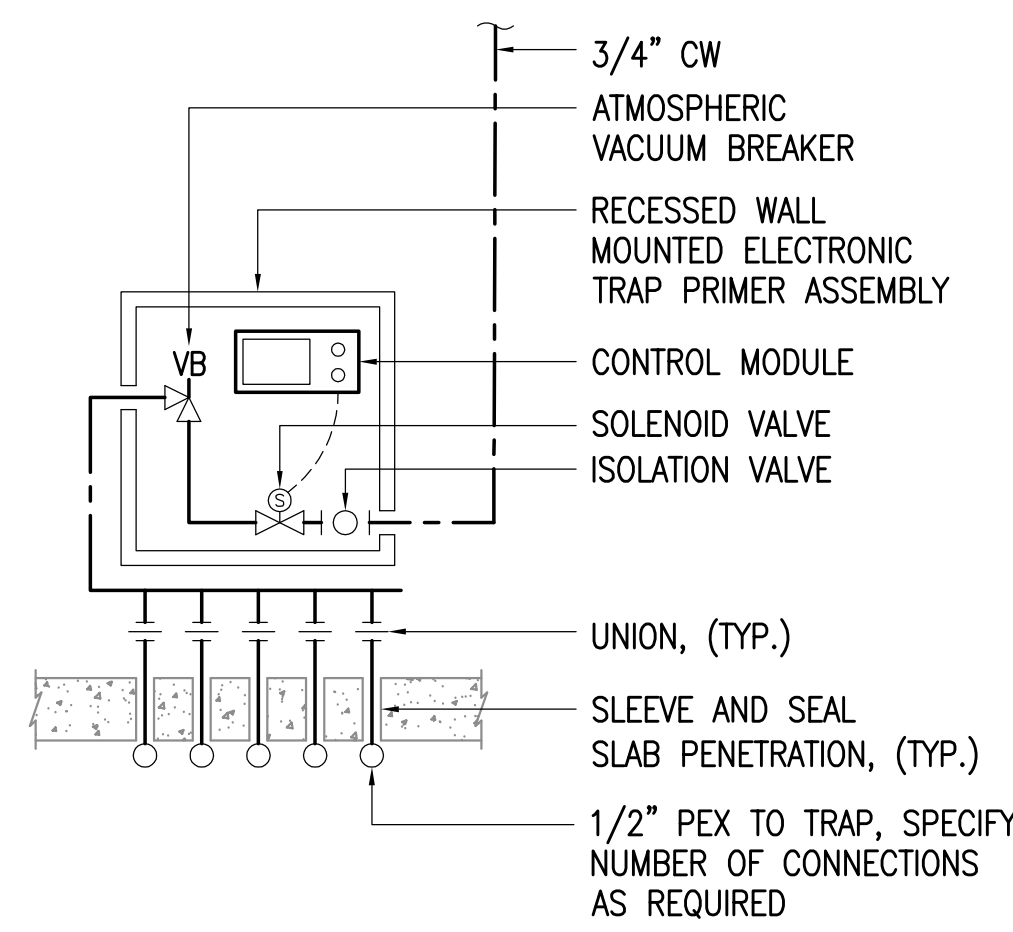
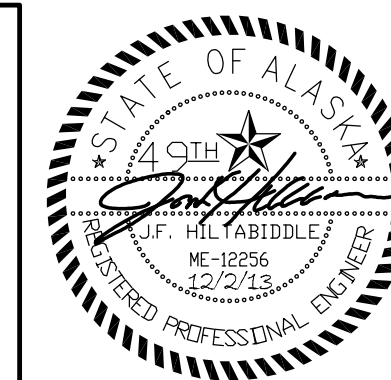
3 SUMP AT GENERATOR DETAIL
NO SCALE

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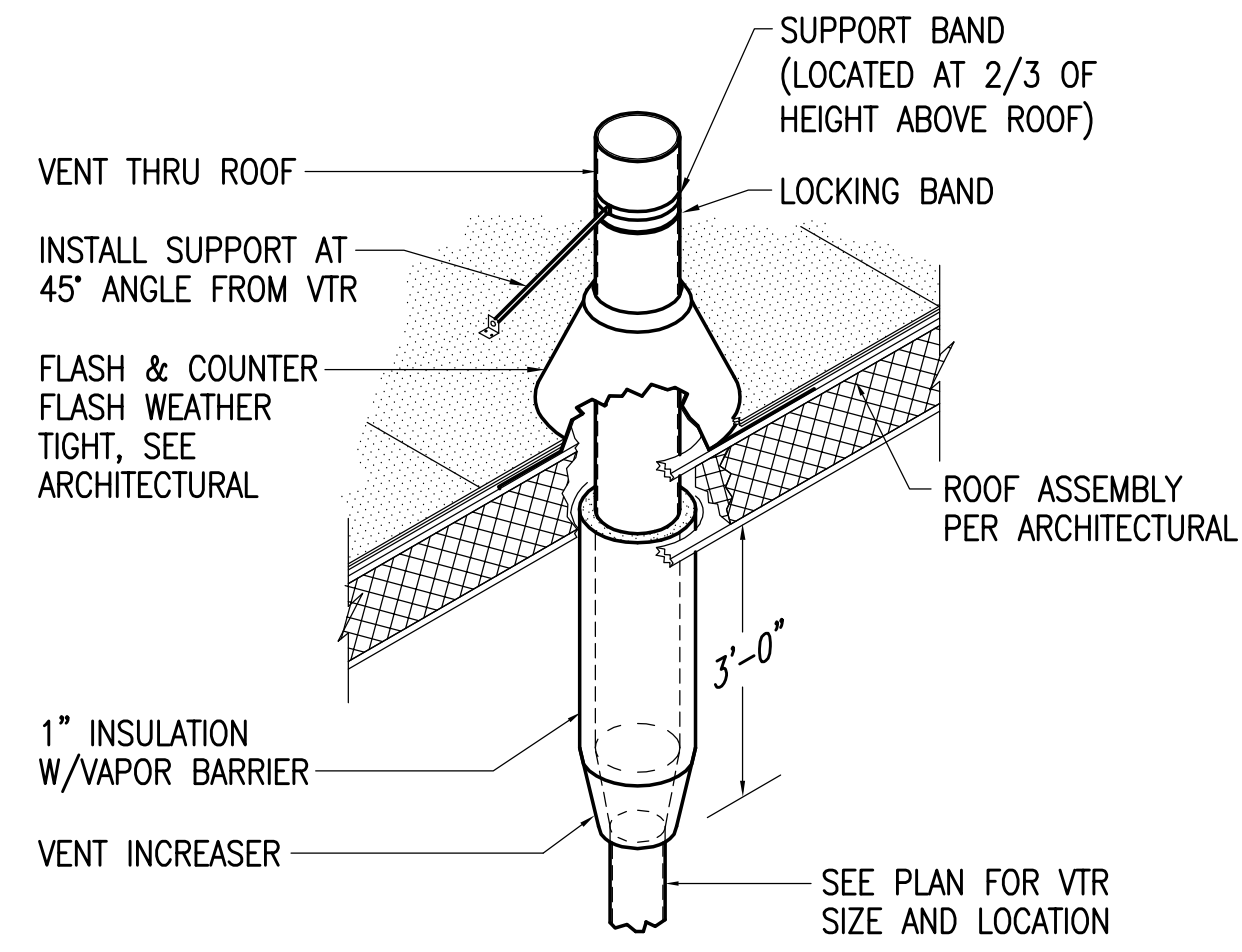
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PYRAMID WTP
UNALASKA, ALASKA
DETAILS

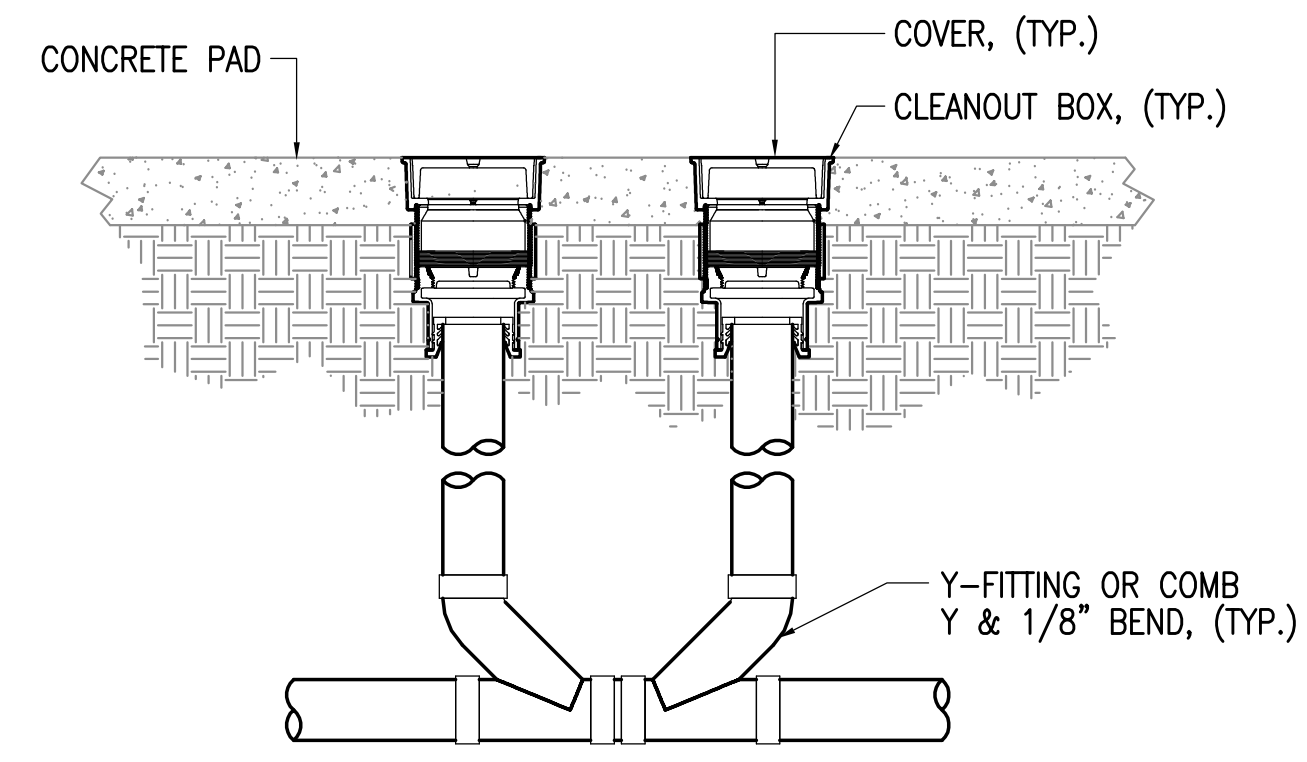
SCALE:	AS NOTED
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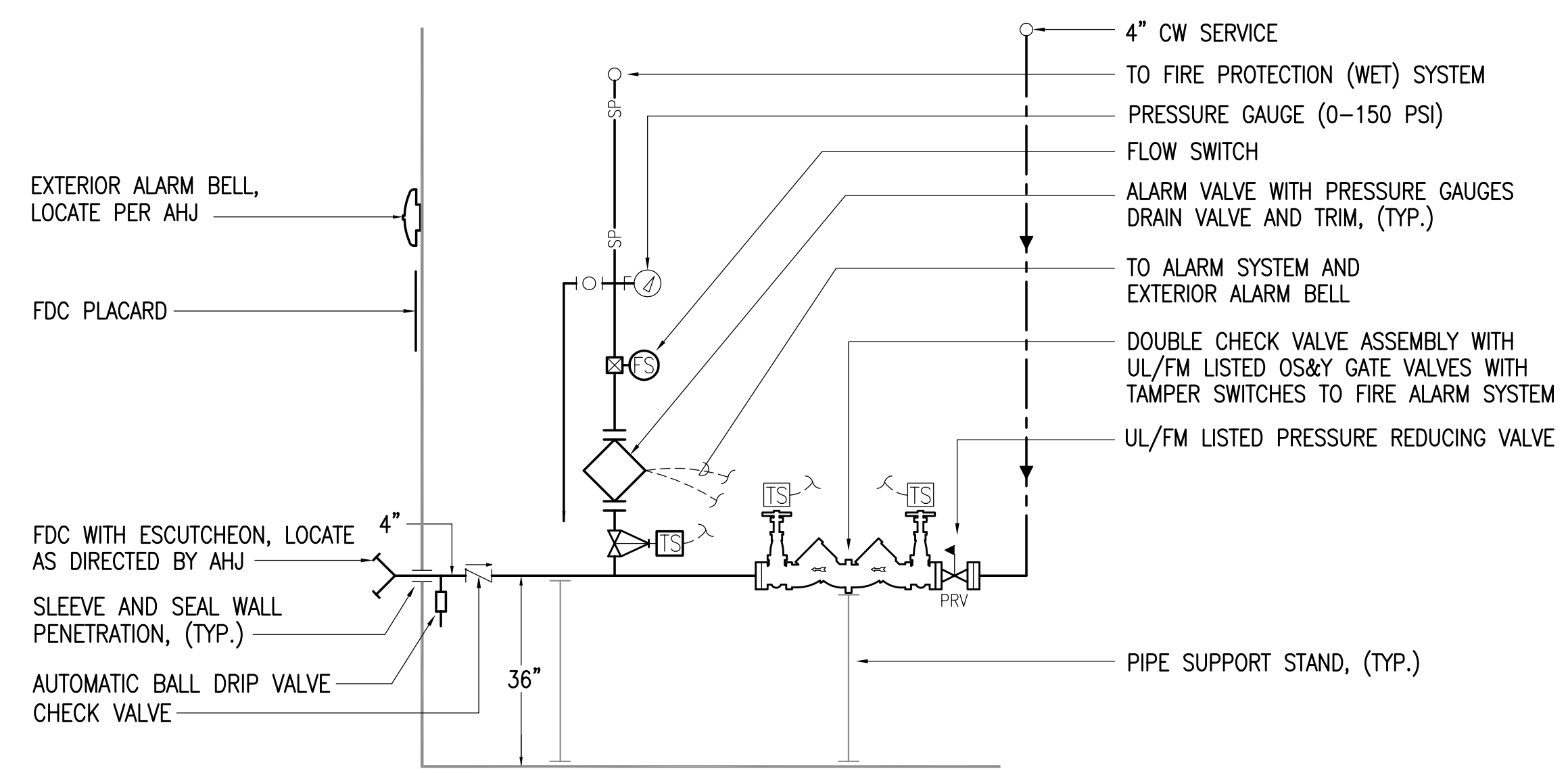
1 ELECTRONIC TRAP PRIMER
NO SCALE



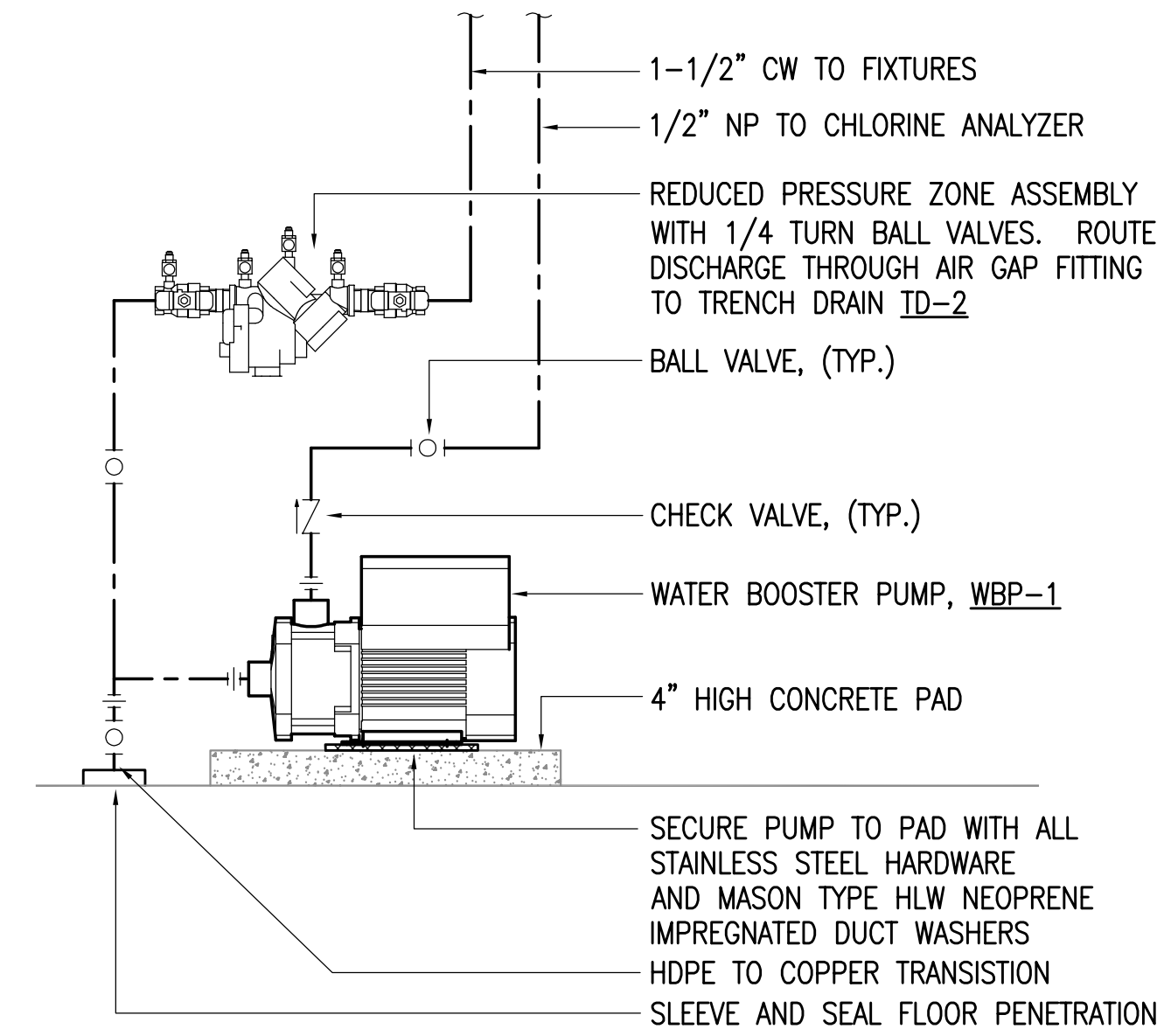
2 VENT THROUGH ROOF DETAIL WITH ROOF BRACE KIT
NO SCALE



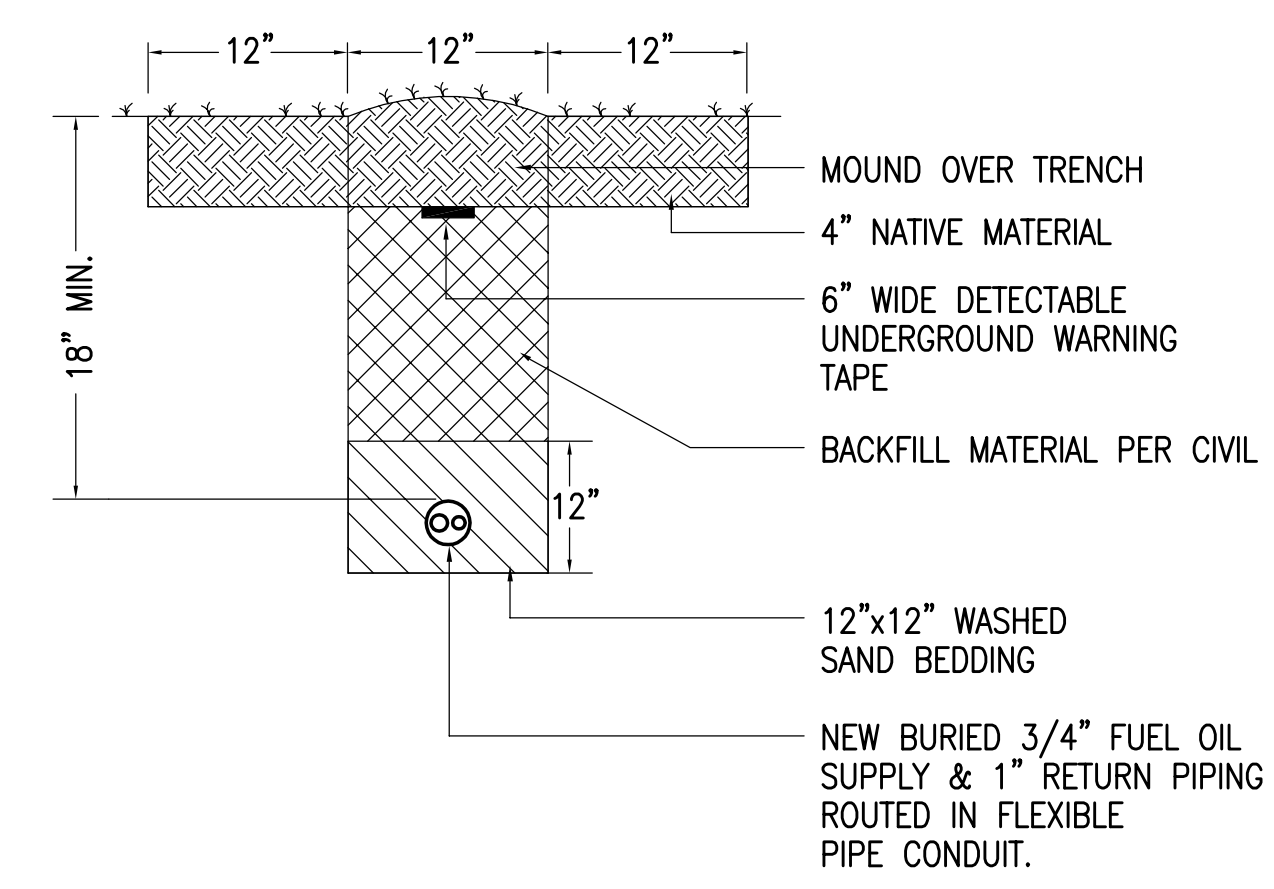
3 DOUBLE WYE CLEANOUT DETAIL
NO SCALE



4 WATER SERVICE ENTRANCE PIPING SCHEMATIC
NO SCALE



5 DOMESTIC WATER PUMP
NO SCALE



6 TRENCHING DETAIL
NO SCALE

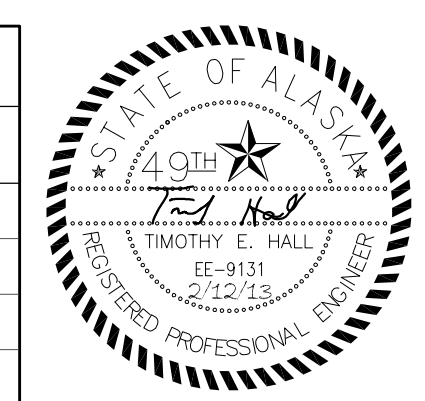
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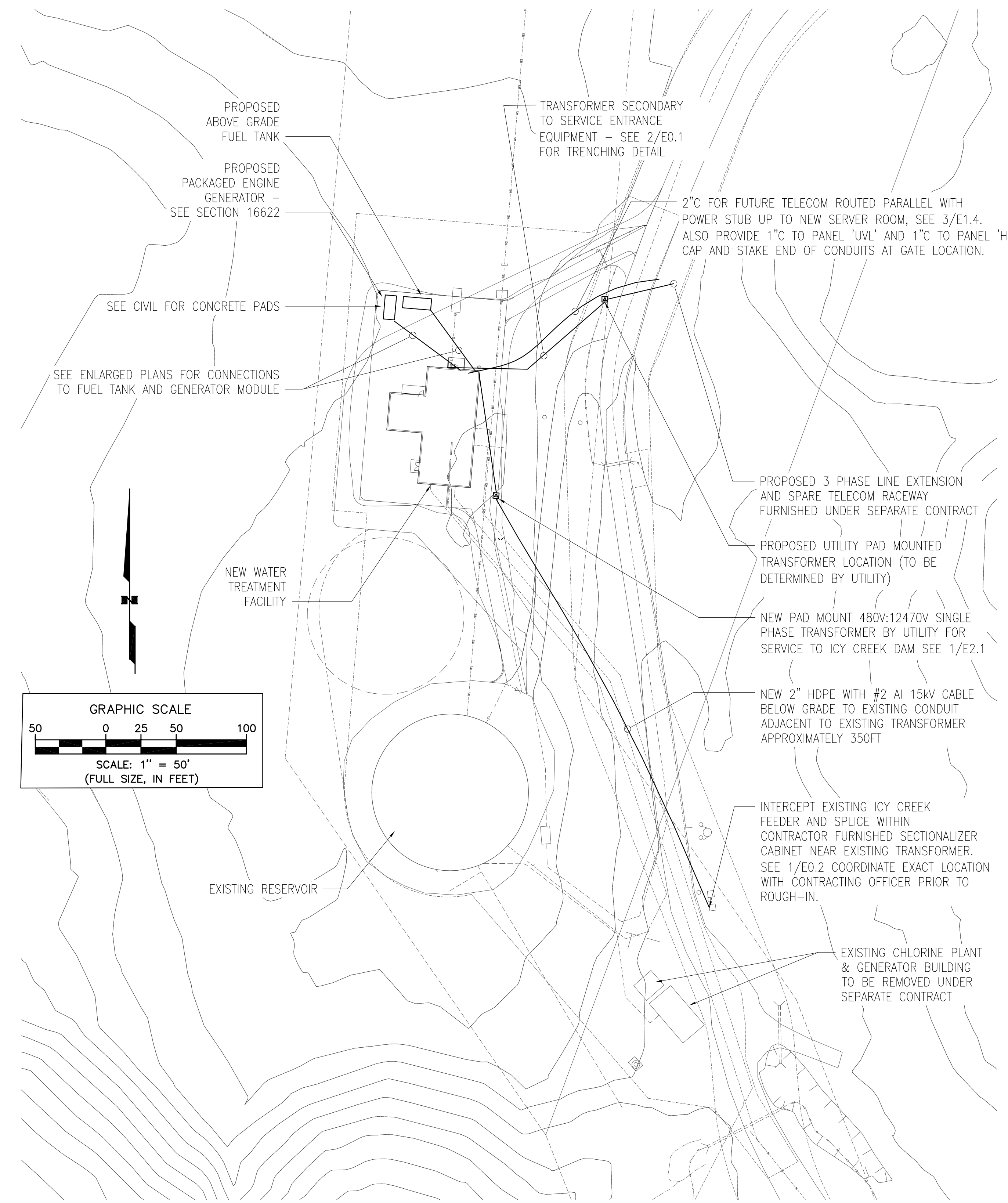
PYRAMID WTP
UNALASKA, ALASKA
DETAILS

SCALE:	AS NOTED
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SHEET NUMBER	M5.2 OF 13

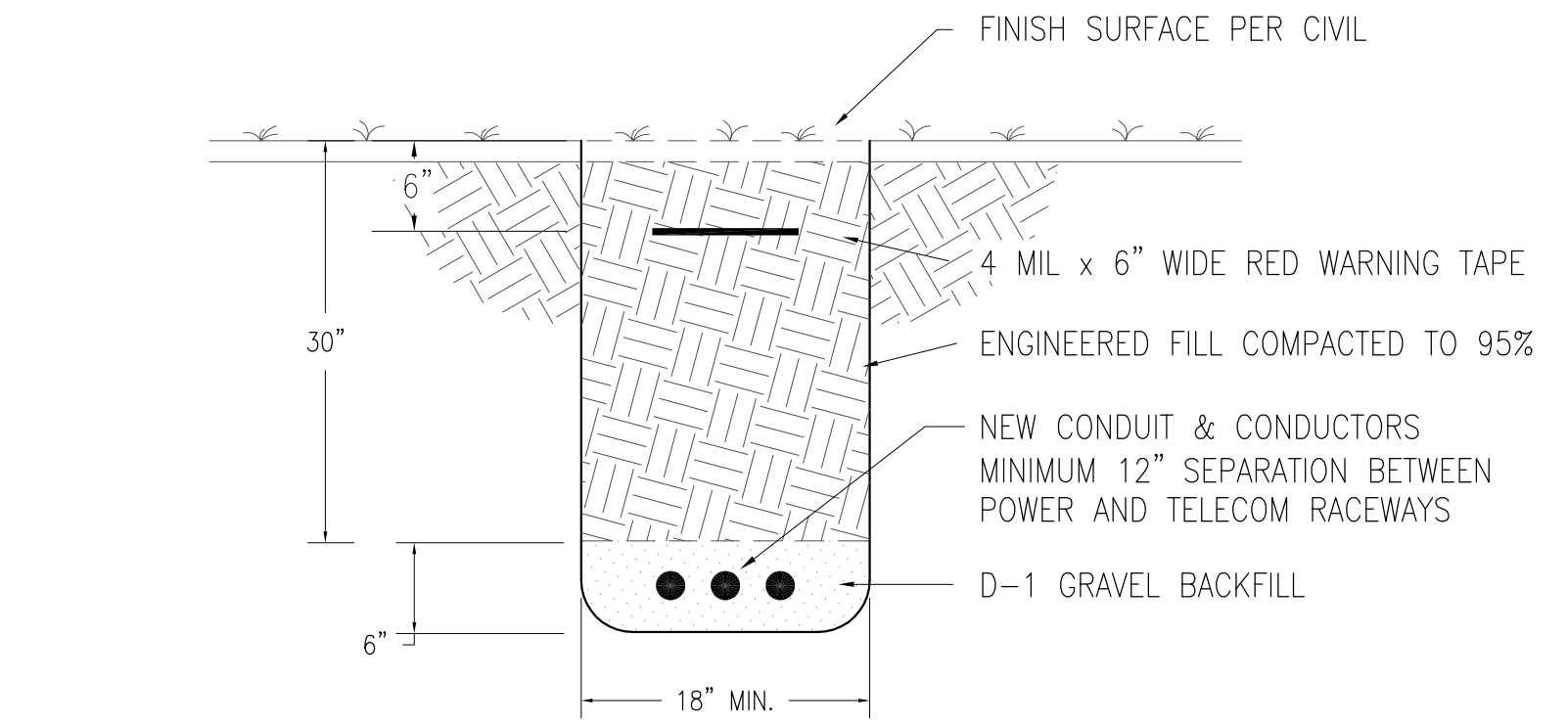


LUMINAIRE SCHEDULE						
DESIGNATION	MFR. MODEL NO. OR APPROVED EQ.	PRODUCT DESCRIPTION	LAMP QTY.	WATTS	TYPE	MOUNTING
A	COLUMBIA # LUN4-254-EPU	1X4 ENCLOSED AND GASKETED SURFACE FLUORESCENT, FIBERGLASS HOUSING, CLEAR ACRYLIC LENS, UNIVERSAL VOLTAGE ELECTRONIC BALLAST, WET LOCATION LISTED.	2	54	T5HO 5000K	SURFACE CEILING
B	FAIL-SAFE # CFS-24-454-UNV-93-EB51-SSN-SHN	2X4 CLEANROOM FLUORESCENT, STAINLESS STEEL HOUSING/DOOR/HARDWARE, PRISMATIC TEMPERED GLASS LENS, UNIV. VOLTAGE ELECTRONIC BALLAST.	4	54	T5HO 5000K	SURFACE CEILING
C	COOPER # LDWP-PL-4A-ED-DP	LED WALL BRACKET, DIE CAST HOUSING, POLYCARBONATE LENS, UNIVERSAL VOLTAGE ELECTRONIC DRIVER MODULE, DARK PLATINUM FINISH.	MULTI	40	LED 5000K	SURFACE WALL ABOVE DOOR
D	MCGRAW EDISON # CNC-A02-LED-E1-GL4-BZ-SM	CANOPY SQUARE LED SURFACE MOUNT, TYPE IV DISTRIBUTION W/GLARE CONTROL, ELECTRONIC DRIVER MODULE, DARK BRONZE FINISH.	20	53	LED 4600K	SURFACE CANOPY
EM	DUAL-LITE # N4X7-12VI	HARSH ENVIRONMENT DUAL HEAD EMERGENCY LIGHTING UNIT, GREY POLYCARBONATE HOUSING, SEALED BEAM LAMPS, SELF-DIAGNOSTICS.	2	9	HAL BI-PIN	WALL 7'-6" AFF
ER	DUAL-LITE # PGZ-HTR	EXTERIOR LED EMERGENCY LIGHTING UNIT, DIE-CAST HOUSING, NICKEL-CADMIUM BATTERY W/AUTOMATIC CHARGER, STRIP HEATER ACCESSORY.	MULTI	15	LED 6350K	EXIT DISCHARGE AREAS 7'-6" AFG
F	HUBBELL # NV2FG42XHG	FLUORESCENT NON-METALLIC VAPORITE, TEMPERED GLASS GLOBE AND GUARD, COMPACT FLUORESCENT LAMP.	1	42	TRT 3000K	UNDER STAIR
G	COLUMBIA # XTS4-254-M4R-EPU	4FT SEVERE ENVIRONMENT FLUORESCENT PENDANT, 7" DIA. ACRYLIC ENCLOSURE, STAINLESS STEEL END CAPS, UNIVERSAL VOLTAGE ELECTRONIC BALLAST, NSF CERTIFIED AND NEMA 4X RATED.	2	54	T5HO 5000K	PENDANT 12'-0" AFF
X	DUAL-LITE # LN4XRWEI	CORROSION RESISTANT LED EXIT SIGN, POLYCARBONATE HOUSING, RED STENCIL FACE, NI-CAD BATTERY, SELF-DIAGNOSTICS.	MULTI	3.8	RED LED	PATH OF EGRESS ABOVE DOORS

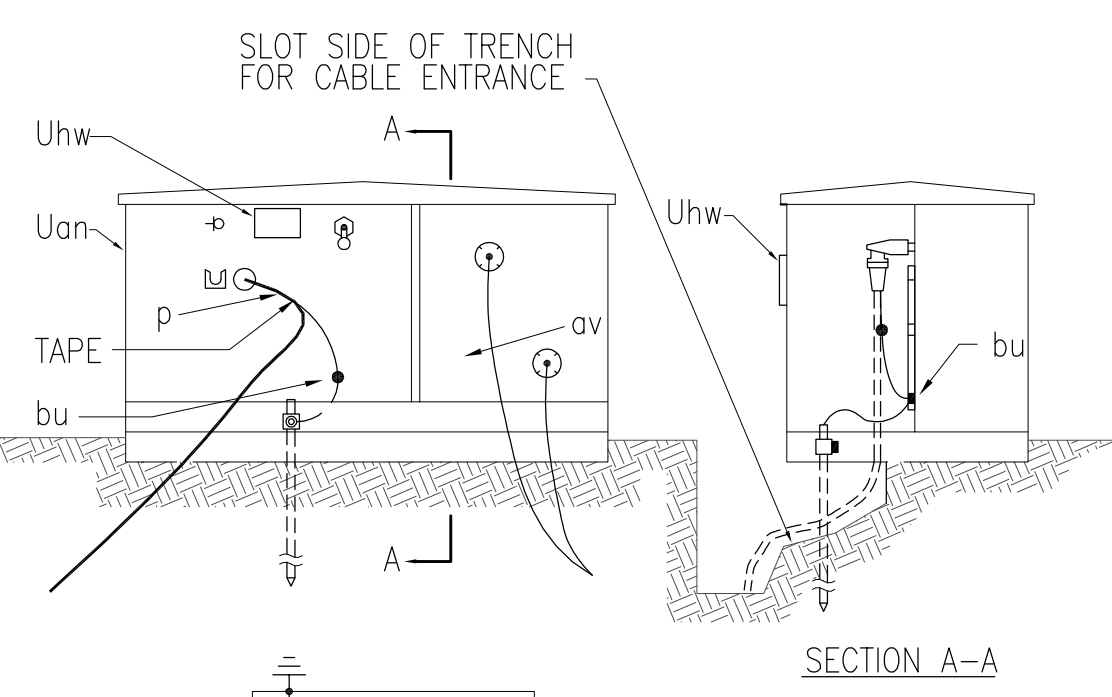
LEGEND	
	LIGHT FIXTURE - SURFACE MTD ON CLG
	LIGHT FIXTURE - SURFACE MTD ON WALL
	LIGHT FIXTURE - RECESS MTD
	EMERGENCY EXIT LIGHT - SURFACE MTD CLG
	EMERGENCY LIGHT
	EMERGENCY FIXTURE - FLUORESCENT
	FLUORESCENT FIXTURE - RECESS MTD
	FLUORESCENT FIXTURE - SURFACE MTD
	FLUORESCENT FIXTURE - WALL MTD
	FLUORESCENT FIXTURE STRIP - SURFACE MTD CLG
	AREA LIGHT - OUTDOORS, WEATHERPROOF
	FLOODLIGHT - OUTDOORS, WEATHERPROOF
	FIXTURE TAG (LETTER INDICATES TYPE)
	PHOTOCELL
	MOTOR (SIZED AS NOTED)
	DISCONNECT SWITCH
	DISCONNECT SWITCH (FUSED)
	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER
	FRACTIONAL HORSEPOWER MOTOR STARTER
	SINGLE POLE SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	KEY OPERATED SWITCH
	PILOT LIGHT SWITCH
	CONDUIT, CONCEALED
	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)
	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)
	PANEL
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER
	QUADRAPLEX RECEPTACLE
	QUADRAPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER
	SPECIAL PURPOSE OUTLET
	TELEPHONE OUTLET
	TELECOMMUNICATIONS OUTLET (COMBINATION TELEPHONE & DATA)
	JUNCTION BOX
	SECURITY ALARM PANEL/KEYPAD
	REMOTE GENERATOR ANNUNCIATOR PANEL
	SECURITY DEVICES: DOOR CONTACT, GLASS BREAK SENSOR, MOTION DET.
	FIRE ALARM PULL STATION
	FIRE ALARM BELL
	FIRE ALARM HORN
	FIRE ALARM HORN AND STROBE LIGHT
	FIRE ALARM STROBE LIGHT
	HEAT DETECTOR 135°F & RATE OF RISE
	SMOKE DETECTOR
	FIRE ALARM CONTROL PANEL
	SPRINKLER TAMPER, FLOW, AND CONTROL MODULE
	CHLORINE ALARM (NO. INDICATES NOTE)
	CHLORINE ALARM WEATHERPROOF HORN/STROBE
	MULTI-GAS DETECTION PANEL
	CHLORINE GAS SENSOR/TRANSMITTER
	HYDROGEN GAS SENSOR/TRANSMITTER
	ABOVE FINISHED FLOOR
	ABOVE FINISHED GRADE
	CONDUIT
	CONDUIT ONLY
	DENOTES EXISTING ITEM
	DENOTES EMERGENCY POWER
	GALVANIZED RIGID STEEL CONDUIT
	NIGHT LIGHT
	WEATHERPROOF
	WEATHER RESISTANT
	UNLESS OTHERWISE NOTED



1 ELECTRICAL SITE PLAN
E0.1 SCALE: 1" = 50'-0"



2 CONDUIT TRENCHING DETAIL
E0.1 SCALE: NONE



- NOTES:
- PROVIDE SUFFICIENT PRIMARY NEUTRAL PIGTAIL AND CABLE SLACK TO PERMIT READY DISCONNECTION OF ELBOW AND MOUNTING ON PARKING STAND. TRAIN CABLES AS SHOWN.
 - INSTALL WITH UNIT UM48-1 OR OTHER GROUNDING UNIT TO BE SPECIFIED SEPARATELY.
 - SPECIFY PAD OR SLEEVE SEPARATELY.
 - INSTALL "DANGER" SIGN ON TRANSFORMER INSIDE ENCLOSURE. INSTALL "WARNING" SIGN ON OUTSIDE SURFACE OF ENCLOSURE.

ITEM	QTY.	MATERIAL
p		CONNECTORS, AS REQUIRED
av		JUMPERS, COPPER AS REQUIRED
Uan	1	TRANSFORMER, PAD MOUNTED, SINGLE PRIMARY LOAD BREAK BUSHING AND INTERNAL FUSE (UG6 & UG6B)
Uhw	2	SIGNS, 'DANGER' AND 'CAUTION'
bu	2	CONNECTOR, EQUIPMENT GROUND
		GROUND WIRE (SEE NOTE #3)
		TAPE AS REQUIRED

3 PAD MOUNTED TRANSFORMER DETAIL
E0.1 SCALE: NONE

BEFORE YOU DIG CALL FOR FREE UNDERGROUND LOCATION

Locate Call Center of Alaska
Anchorage Area.....278-3121
Statewide.....800-478-3121
who will notify subscribed utilities only.
Other utilities need to be contacted individually.

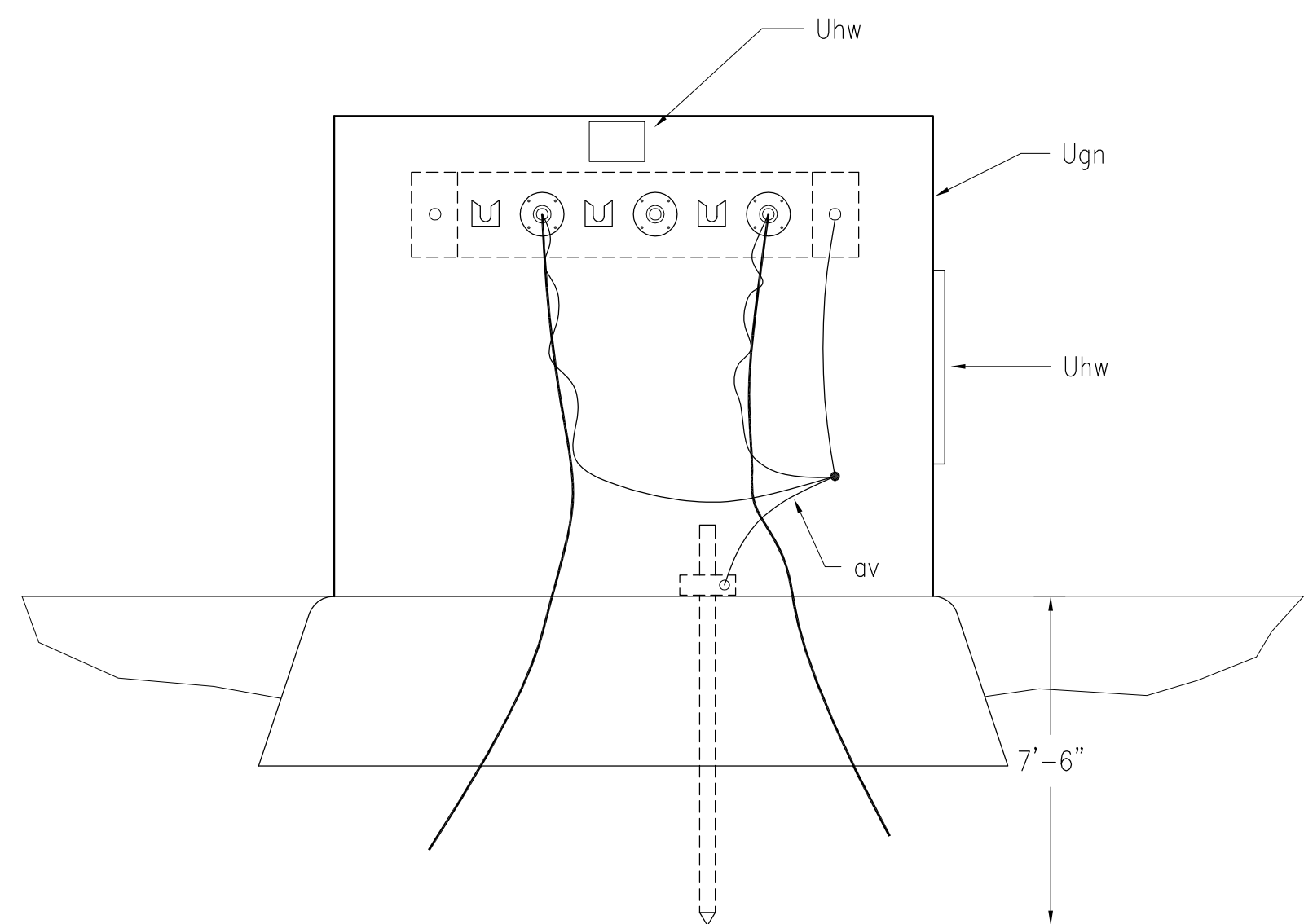
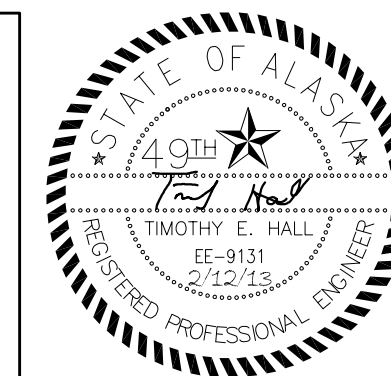
RSA Engineering, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
191 E. Swanson Avenue, Suite 101
Wasilla, Alaska 99654 (907) 357-1921
Anchorage, AK 99503 (907) 276-0821

CITY of UNALASKA

PYRAMID WTP UNALASKA, ALASKA
ELECTRICAL LEGEND, SCHEDULES, SITE PLAN AND DETAILS

ISSUED FOR BID	NO.	DATE	BY
	12/2/13		

SCALE: AS SHOWN
DESIGNED BY: JHE
DRAWN BY: JHE
CHECKED BY: DAO/TEH
DATE: 12/2/13
FILE NO.
SHEET NUMBER
E0.1 OF 10

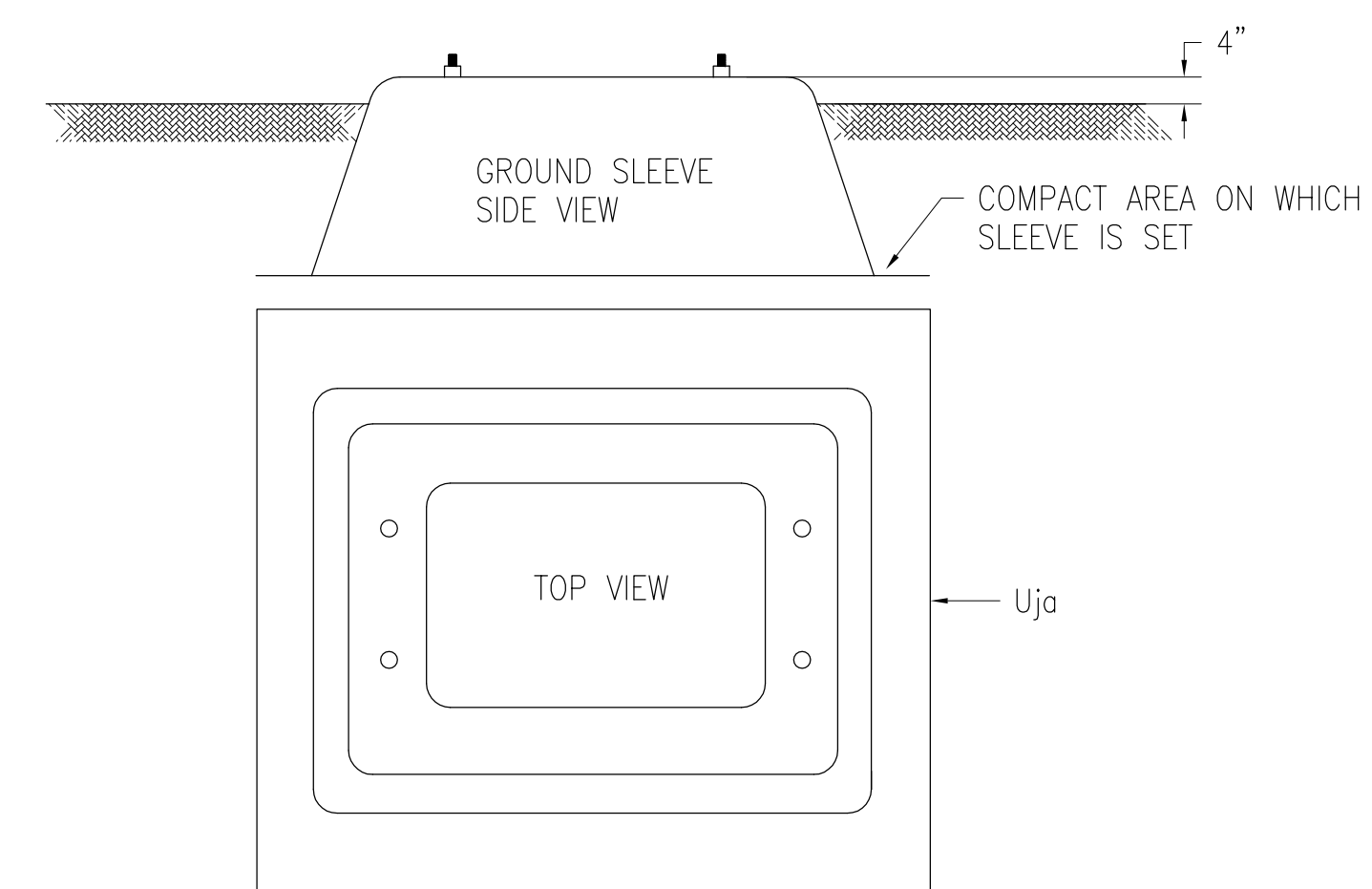


UM3-14

ITEM NO.	QTY.	MATERIAL
p		CONNECTORS, AS REQUIRED
av		JUMPERS, AS REQUIRED
Ugn	1	ENCLOSURE, STAINLESS STEEL
Uhw	2	SIGNS, "DANGER" AND "CAUTION"

- NOTES:**
- THE FOLLOWING UNITS/ASSEMBLIES ARE NOT PART OF THIS UNIT. SPECIFY SEPARATELY:
 - MULTIPOINT TERMINATION AND OTHER ACCESSORIES
 - FUSED OR NON-FUSED LOADBREAK ELBOWS
 - GROUNDING ASSEMBLY UM48-1 OR OTHER
 - PAD OR SLEEVE (IF REQUIRED)
 - SPECIFY CONDUIT OR U-GUARD AS NEEDED TO EXTEND AT LEAST ONE FOOT BELOW GRADE.
 - INSTALL "CAUTION" SIGN ON OUTSIDE SURFACE OF ENCLOSURE AND "DANGER" SIGN INSIDE ENCLOSURE.

1 SINGLE PHASE SECTIONALIZING ENCLOSURE DETAIL
E0.2 NTS

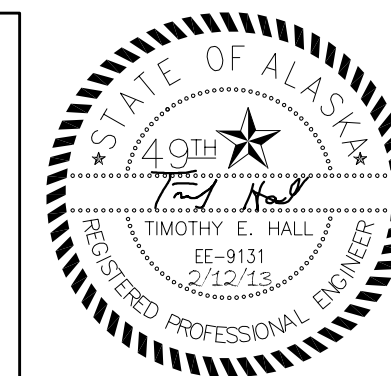


NOTE:
THIS MAY CONSIST OF A ONE PIECE UNIT OR 4 SEPARATE WALL SECTIONS

UNIT DESIGNATIONS:
UM1-7C CONCRETE
UM1-ZNC NON-CONCRETE

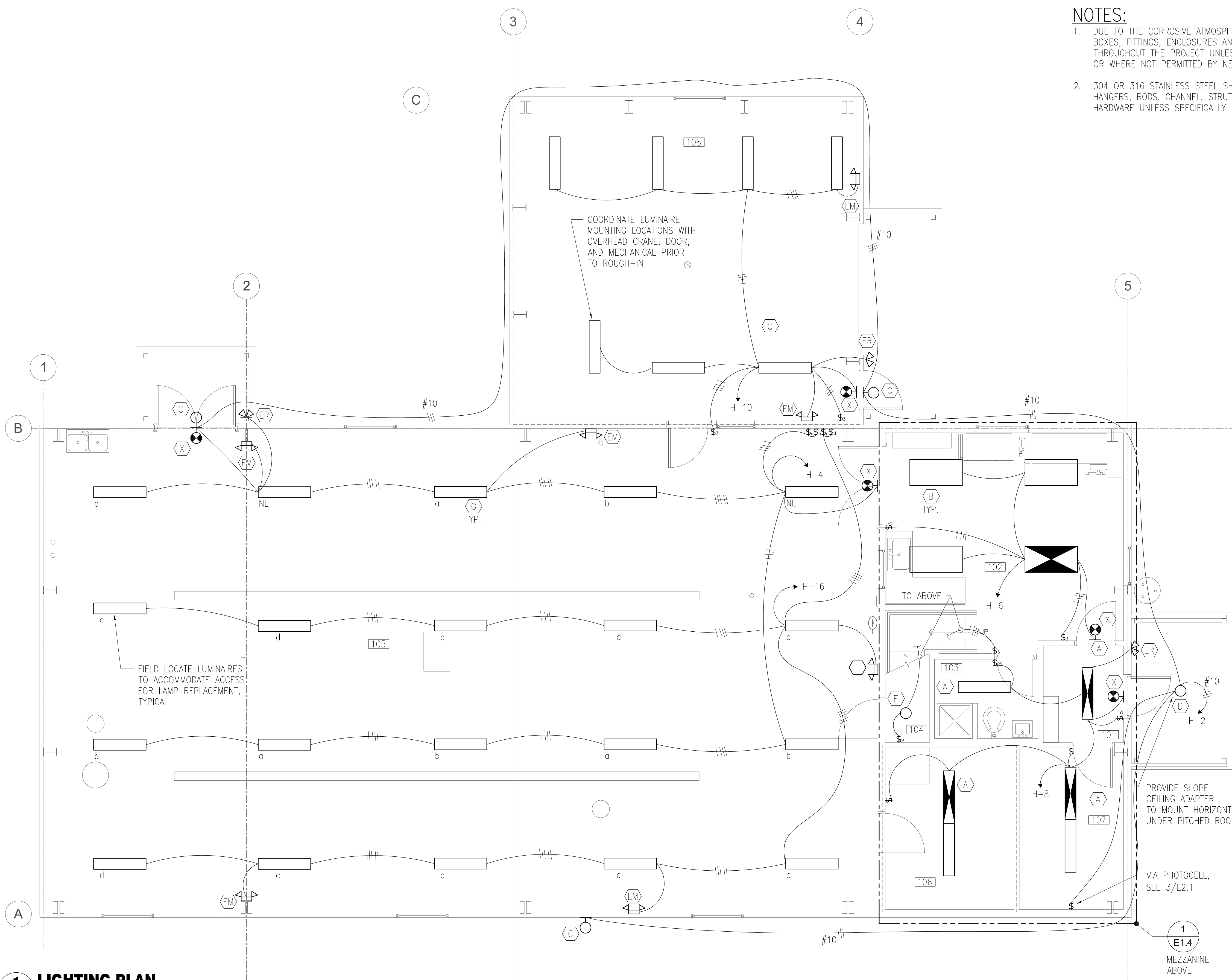
2 GROUND SLEEVE ASSEMBLY
E0.2 SCALE: NONE

ISSUED FOR BID	BY	REVISION
12/2/13	DATE	
NO.		
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CITY of UNALASKA		
PYRAMID WTP UNALASKA, ALASKA ELECTRICAL DETAILS		
SCALE:	AS SHOWN	
DESIGNED BY:	JHE	
DRAWN BY:	JHE	
CHECKED BY:	DAO/TEH	
DATE:	12/2/13	
FILE NO.		
SHEET NUMBER	E0.2 OF 10	



NOTES:

1. DUE TO THE CORROSIVE ATMOSPHERE, NON-METALLIC RACEWAY, BOXES, FITTINGS, ENCLOSURES AND ACCESSORIES SHALL BE USED THROUGHOUT THE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE OR WHERE NOT PERMITTED BY NEC ARTICLE 352.
2. 304 OR 316 STAINLESS STEEL SHALL BE USED FOR ALL FASTENERS, HANGERS, RODS, CHANNEL, STRUTS, AND OTHER MOUNTING HARDWARE UNLESS SPECIFICALLY NOTED OTHERWISE.



ROOM LIST

101	ENTRY
102	OFFICE/LAB
103	RESTROOM
104	STORAGE
105	PROCESS BAY
106	BOILER
107	ELECTRICAL
108	CHLORINE

1 LIGHTING PLAN
E1.1 1/4" = 1'-0"

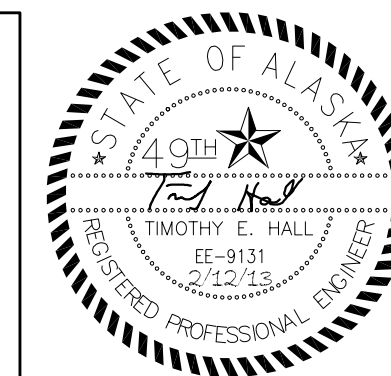
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Anchorage, AK 99503 (907) 276-0821

**PYRAMID WTP
UNALASKA, ALASKA
LIGHTING PLANS**

SCALE:	AS SHOWN
DESIGNED BY:	JHE
DRAWN BY:	JHE
CHECKED BY:	DAO/TEH
DATE:	12/2/13
FILE NO.	
SHEET NUMBER	E1.1 OF 10

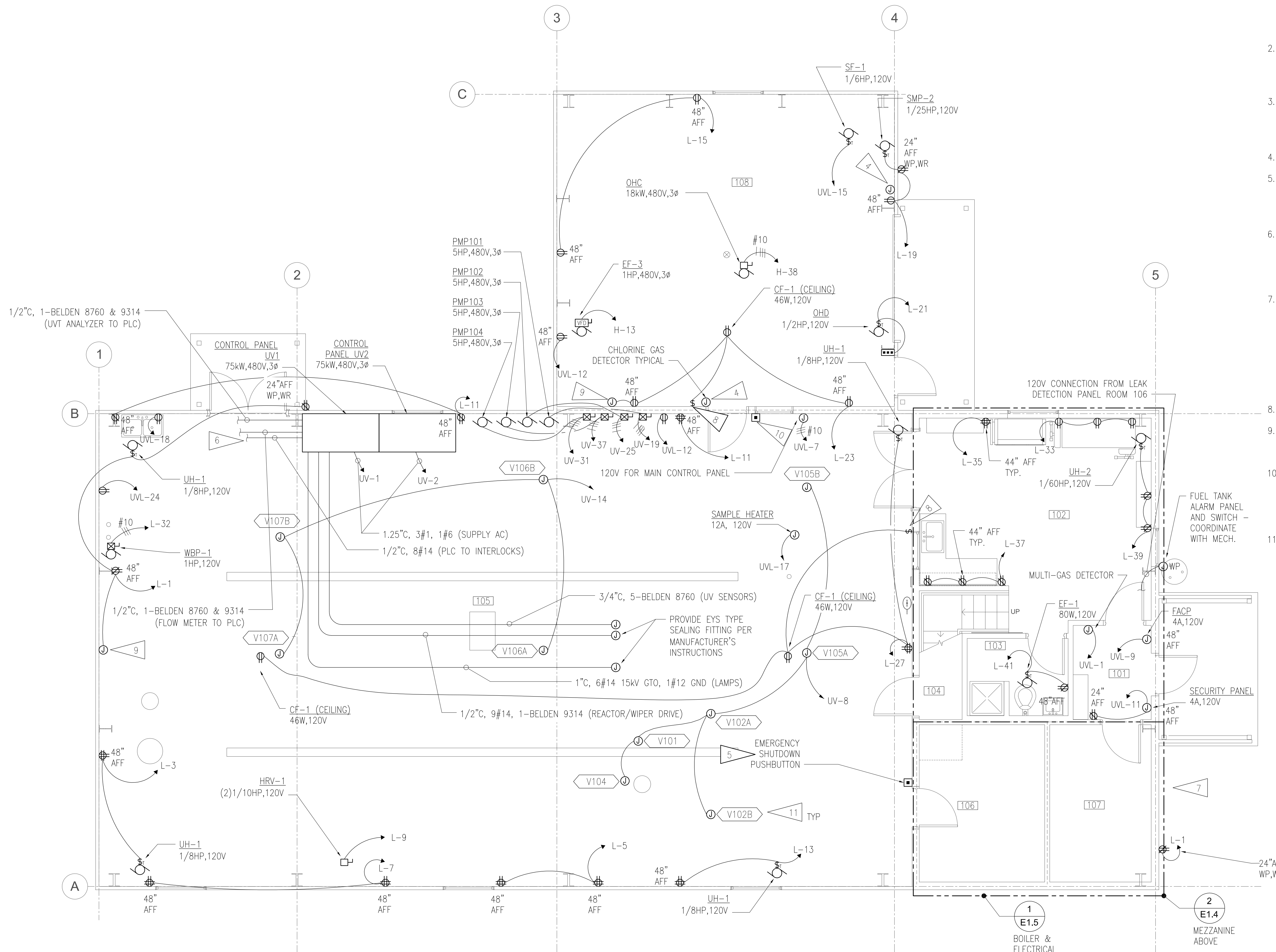
ISSUED FOR BID	BY	REVISION
12/2/13	DATE	
	NO.	

CITY of UNALASKA



NOTES:

1. DUE TO THE CORROSIVE ATMOSPHERE, NON-METALLIC RACEWAY, BOXES, FITTINGS, AND ACCESSORIES SHALL BE USED THROUGHOUT THE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.
2. 304 OR 316 STAINLESS STEEL SHALL BE USED FOR ALL FASTENERS, HANGERS, RODS, CHANNEL, STRUTS, AND OTHER MOUNTING HARDWARE UNLESS SPECIFICALLY NOTED OTHERWISE.
3. ALL RECEPTACLES AND SWITCHES IN PROCESS BAY AND CHLORINE ROOM SHALL BE CORROSION RESISTANT AND LOCATED AT 48" AFF UNLESS NOTED OTHERWISE. SEE SPECIFICATION SECTION 1614.1.
4. SEE 5/E1.4 FOR GAS DETECTION WIRING DIAGRAM.
5. ROUTE BOILER CIRCUITS VIA CONTACTOR WITH PUSHBUTTON OPERATOR TO DISCONNECT POWER FOR BURNERS WHEN ACTIVATED. SEE 4/E1.4 FOR WIRING DIAGRAM.
6. MANUFACTURER'S RECOMMENDED FIELD WIRING INDICATED FOR ONE REACTOR ONLY FOR CLARITY. REACTOR #2 WIRING IS IDENTICAL. SEE PROCESS AND INSTRUMENTATION DRAWINGS FOR ADDITIONAL INFORMATION.
7. SERVICE ENTRANCE EQUIPMENT LOCATION, SEE 1/E1.5. PROVIDE SIGNAGE TO INDICATE TYPE AND LOCATION OF ALL STANDBY SOURCES AT MAIN DISCONNECT PER NEC 701.7. ENGRAVED PLACARD SHALL READ "MAIN DISCONNECT AND GENERATOR DISCONNECT IS LOCATED WITHIN AUTOMATIC TRANSFER SWITCH. UPS DISCONNECT IS LOCATED ON UNIT IN ELECTRICAL ROOM BEHIND SERVICE EQUIPMENT".
8. CONTROLLER FURNISHED WITH FAN.
9. CONNECTION FOR TRAP PRIMER SOLENOID. COORDINATE LOCATION WITH MECHANICAL PRIOR TO ROUGH-IN.
10. MANUAL MULTIPOLE PUSHBUTTON SHUTOFF CONTROL FOR EXHAUST FAN EF-3 AND SF-1. PROVIDE ENGRAVED LABEL TO READ "VENTILATION SYSTEM EMERGENCY SHUTOFF" PER 2009 IMC SECTION 502.8.1.1.
11. PROCESS VALVES AND EQUIPMENT SHOWN ON ELECTRICAL PLANS REQUIRE EXTERNAL POWER SOURCE FOR EQUIPMENT POWERED THROUGH MCP, CONTROL AND INSTRUMENTATION WIRING SEE P AND EC DRAWINGS.



ROOM LIST

101	ENTRY
102	OFFICE/LAB
103	RESTROOM
104	STORAGE
105	PROCESS BAY
106	BOILER
107	ELECTRICAL
108	CHLORINE

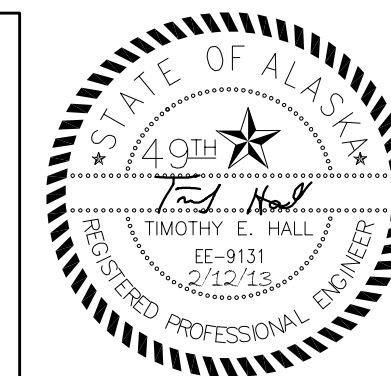
1 POWER PLAN
E1.2 1/4" = 1'-0"

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PYRAMID WTP
UNALASKA, ALASKA
POWER PLANS

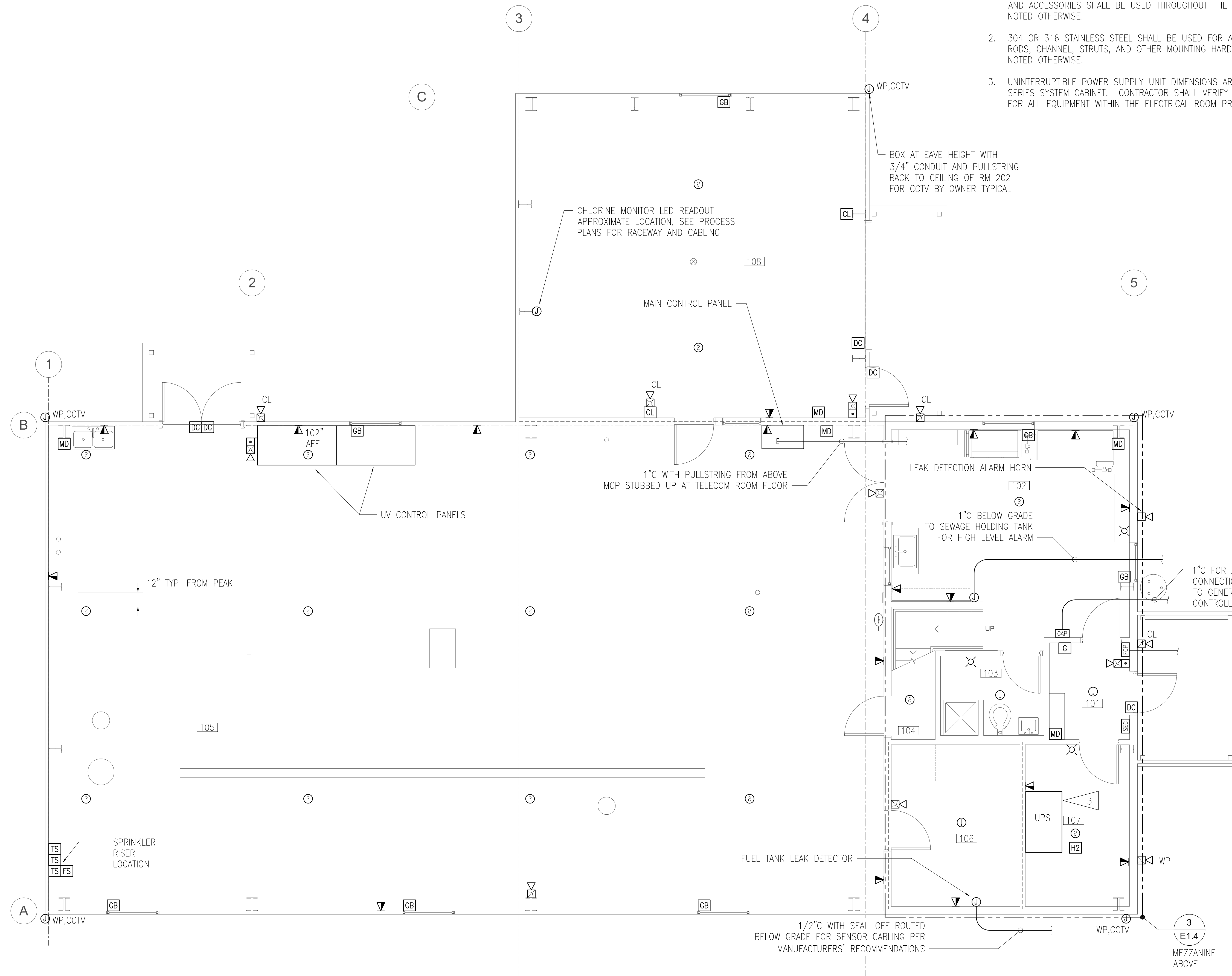
SCALE:	AS SHOWN
DESIGNED BY:	JHE
DRAWN BY:	JHE
CHECKED BY:	DAO/TEH
DATE:	12/2/13
FILE NO.:	
SHEET NUMBER	E1.2 OF 10

NO.	DATE	BY	REVISION
1	12/2/13		ISSUED FOR BID



NOTES:

1. DUE TO THE CORROSIVE ATMOSPHERE, NON-METALLIC RACEWAY, BOXES, FITTINGS, AND ACCESSORIES SHALL BE USED THROUGHOUT THE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.
2. 304 OR 316 STAINLESS STEEL SHALL BE USED FOR ALL FASTENERS, HANGERS, RODS, CHANNEL, STRUTS, AND OTHER MOUNTING HARDWARE UNLESS SPECIFICALLY NOTED OTHERWISE.
3. UNINTERRUPTIBLE POWER SUPPLY UNIT DIMENSIONS ARE BASED ON THE EATON 9315 SERIES SYSTEM CABINET. CONTRACTOR SHALL VERIFY MINIMUM WORKING CLEARANCES FOR ALL EQUIPMENT WITHIN THE ELECTRICAL ROOM PRIOR TO ROUGH-IN.



ROOM LIST

101	ENTRY
102	OFFICE/LAB
103	RESTROOM
104	STORAGE
105	PROCESS BAY
106	BOILER
107	ELECTRICAL
108	CHLORINE

1 SPECIAL SYSTEMS PLAN
 E1.3 1/4" = 1'-0"

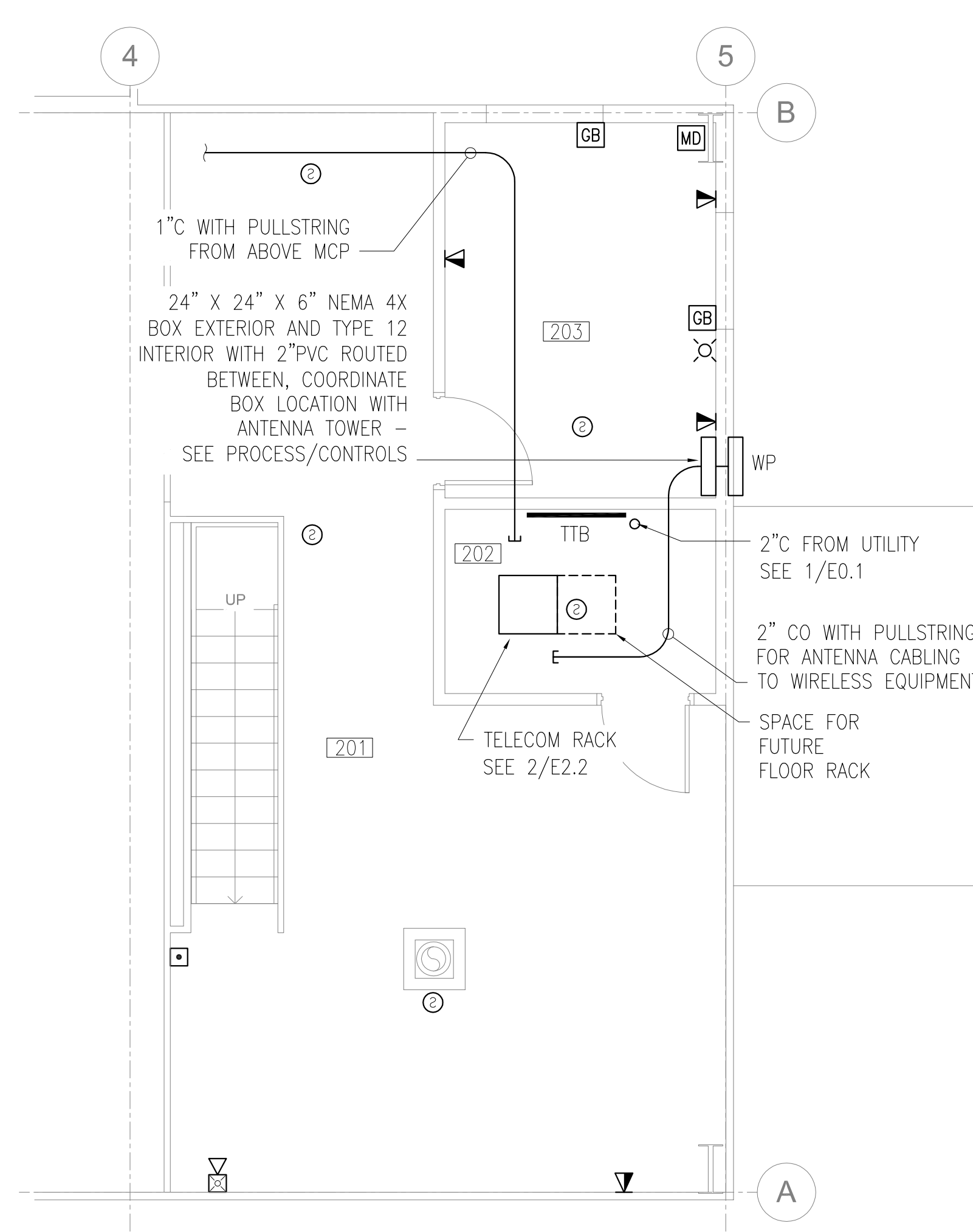
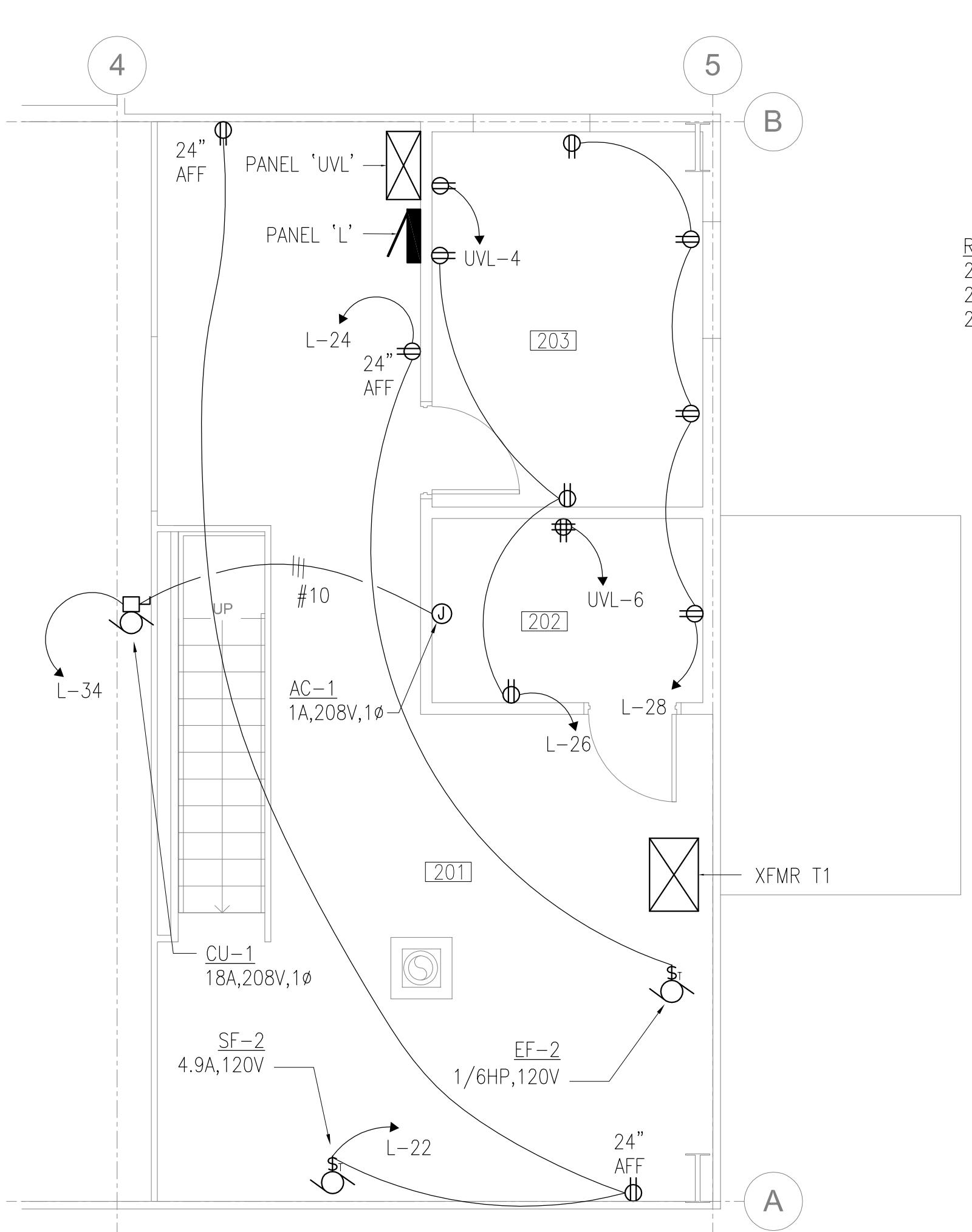
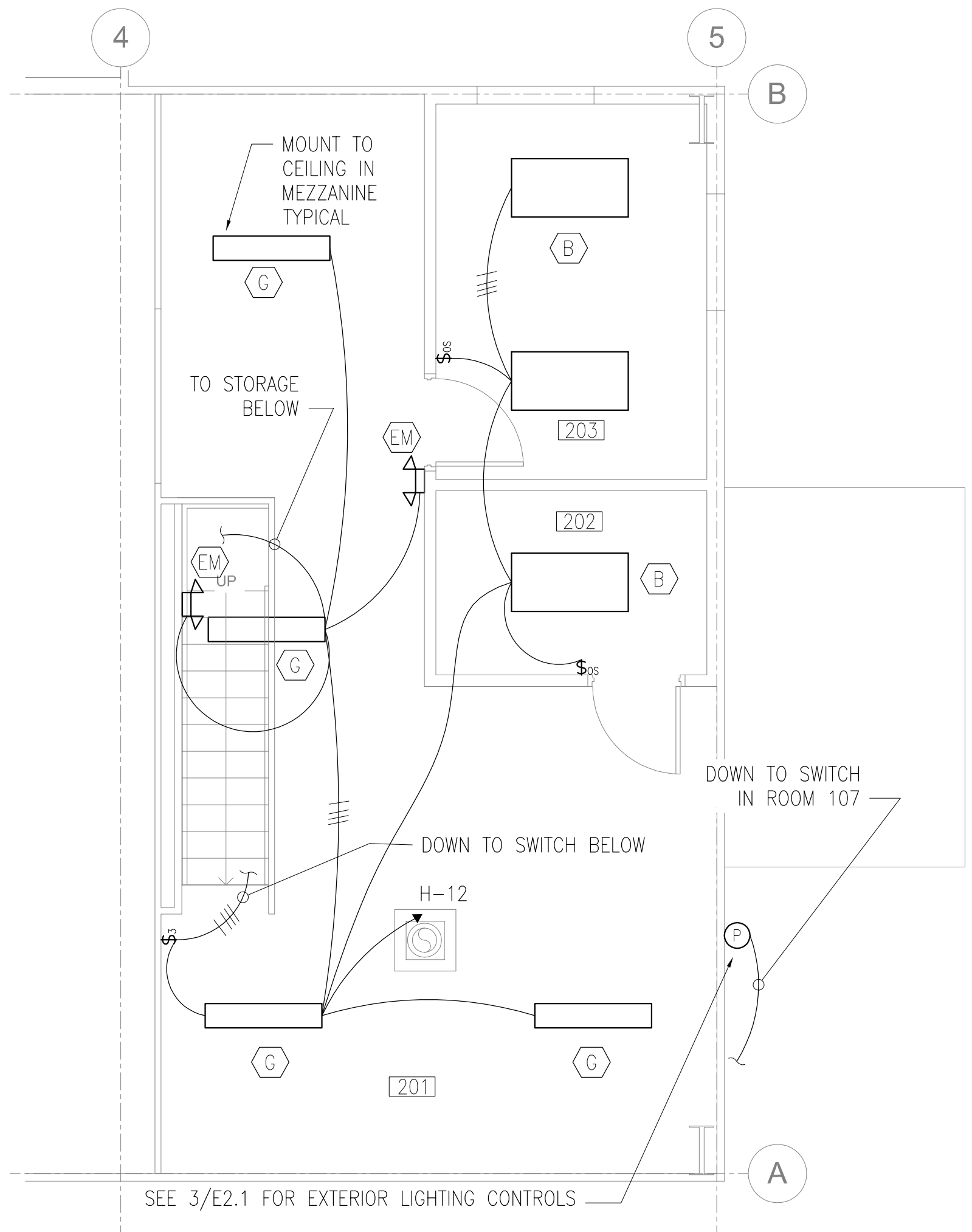
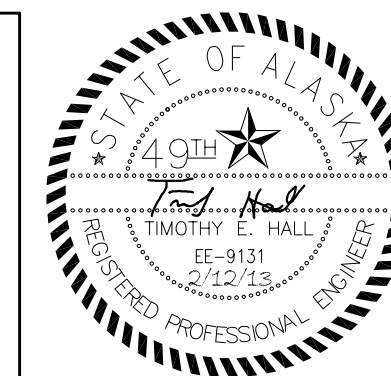
RSA Engineering, Inc.
 MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
 191 E. Swanson Avenue, Suite 101
 Wasilla, Alaska 99654 (907) 357-1921
 Anchorage, AK 99503 (907) 276-0821

**PYRAMID WTP
 UNALASKA, ALASKA**
 SPECIAL ELECTRICAL SYSTEMS PLAN

SCALE:	AS SHOWN
DESIGNED BY:	JHE
DRAWN BY:	JHE
CHECKED BY:	DAO/TEH
DATE:	12/2/13
FILE NO.	
SHEET NUMBER	E1.3 OF 10

ISSUED FOR BID	BY	REVISION
12/2/13	DATE	
	NO.	

CITY of UNALASKA

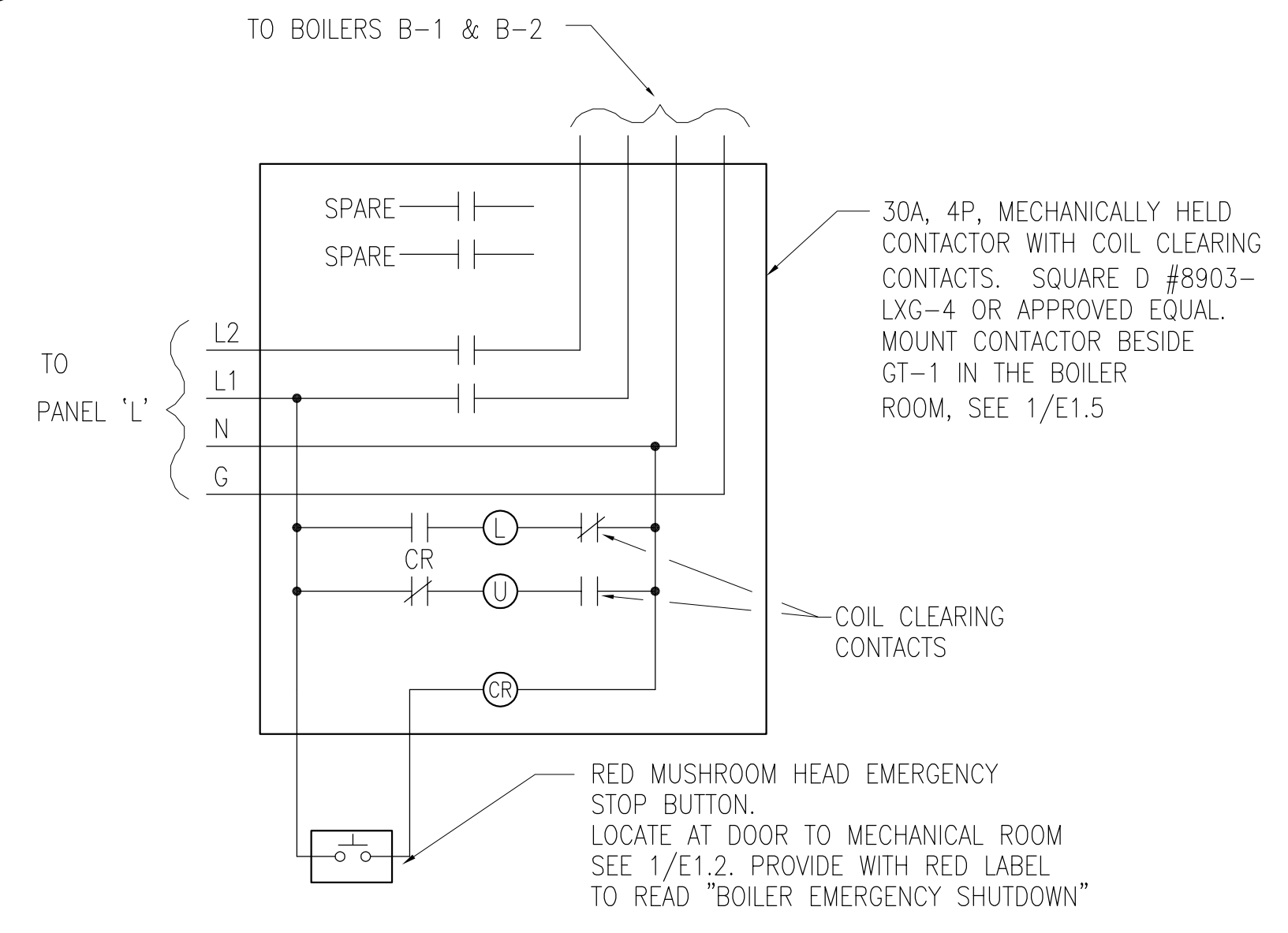


ROOM LIST
 201 MEZZANINE
 202 SERVER
 203 OFFICE

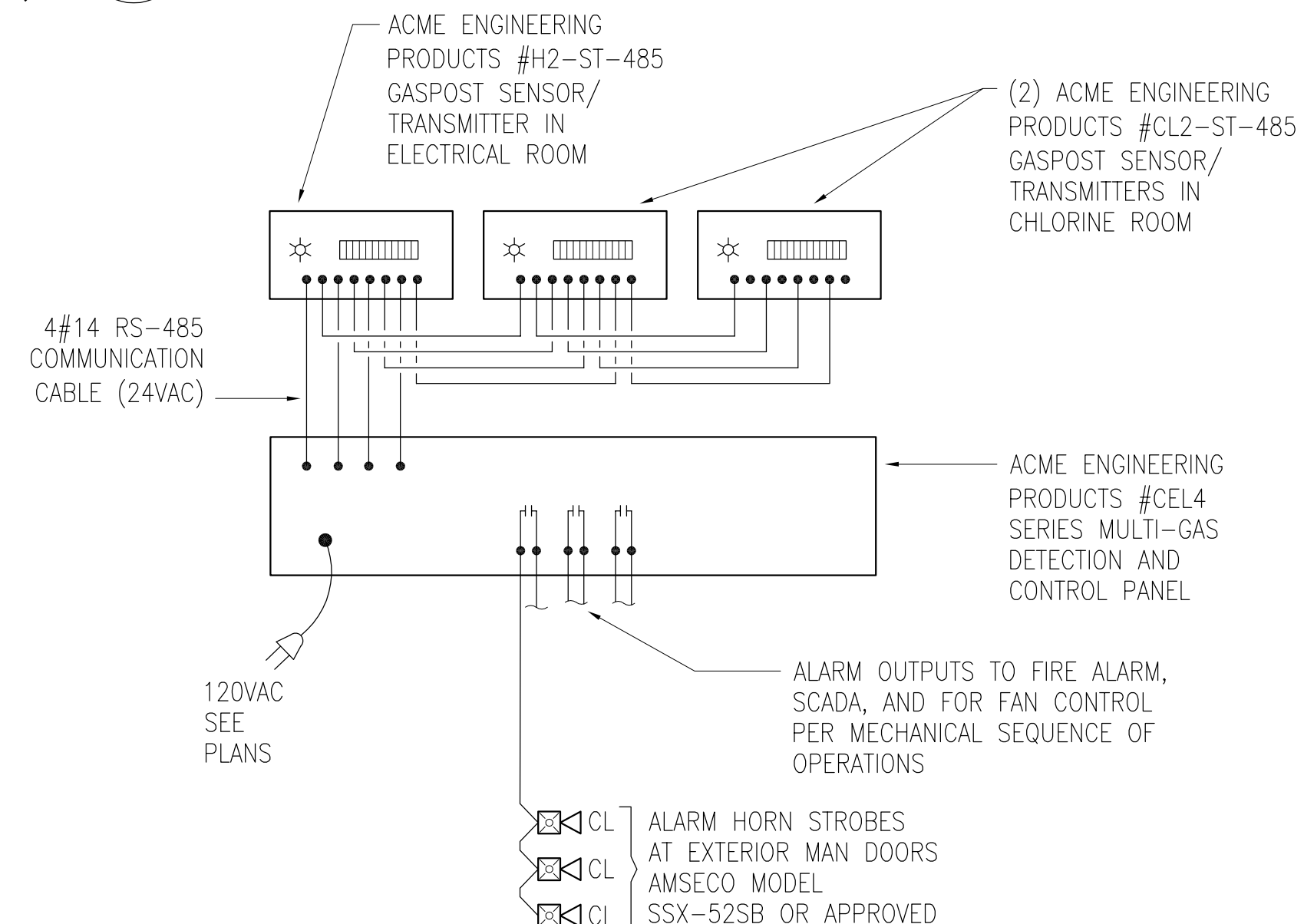
1 LIGHTING PLAN - MEZZANINE
 E1.4 1/4" = 1'-0"

2 POWER PLAN - MEZZANINE
 E1.4 1/4" = 1'-0"

3 SPECIAL SYSTEMS PLAN - MEZZANINE
 E1.4 1/4" = 1'-0"



4 BOILER EMERGENCY SHUTDOWN WIRING DIAGRAM
 E1.4 NTS

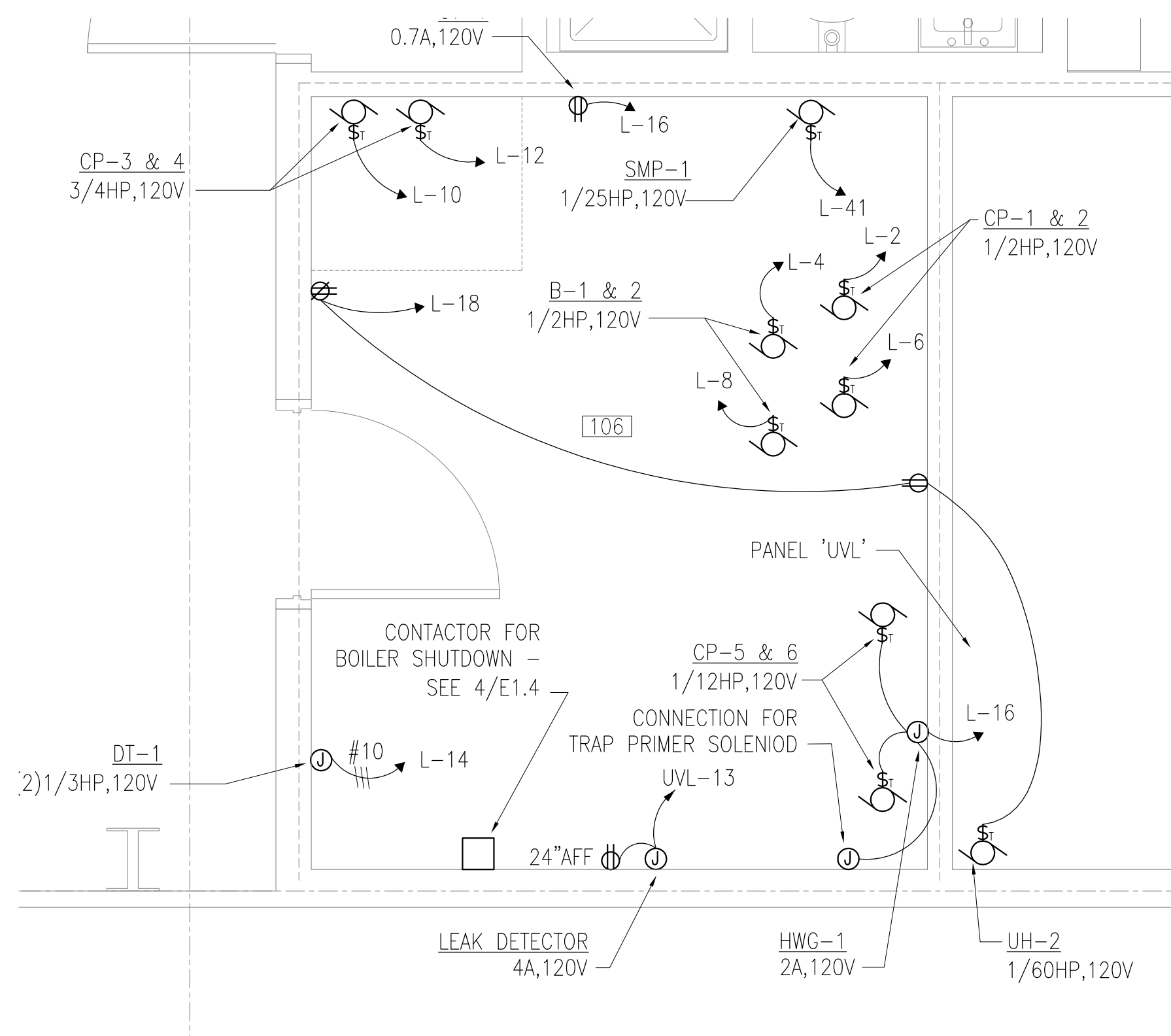
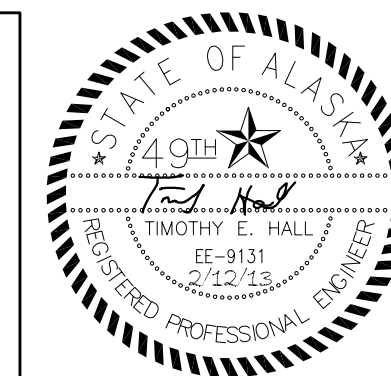


5 GAS ALARM WIRING DIAGRAM
 E1.4 NTS

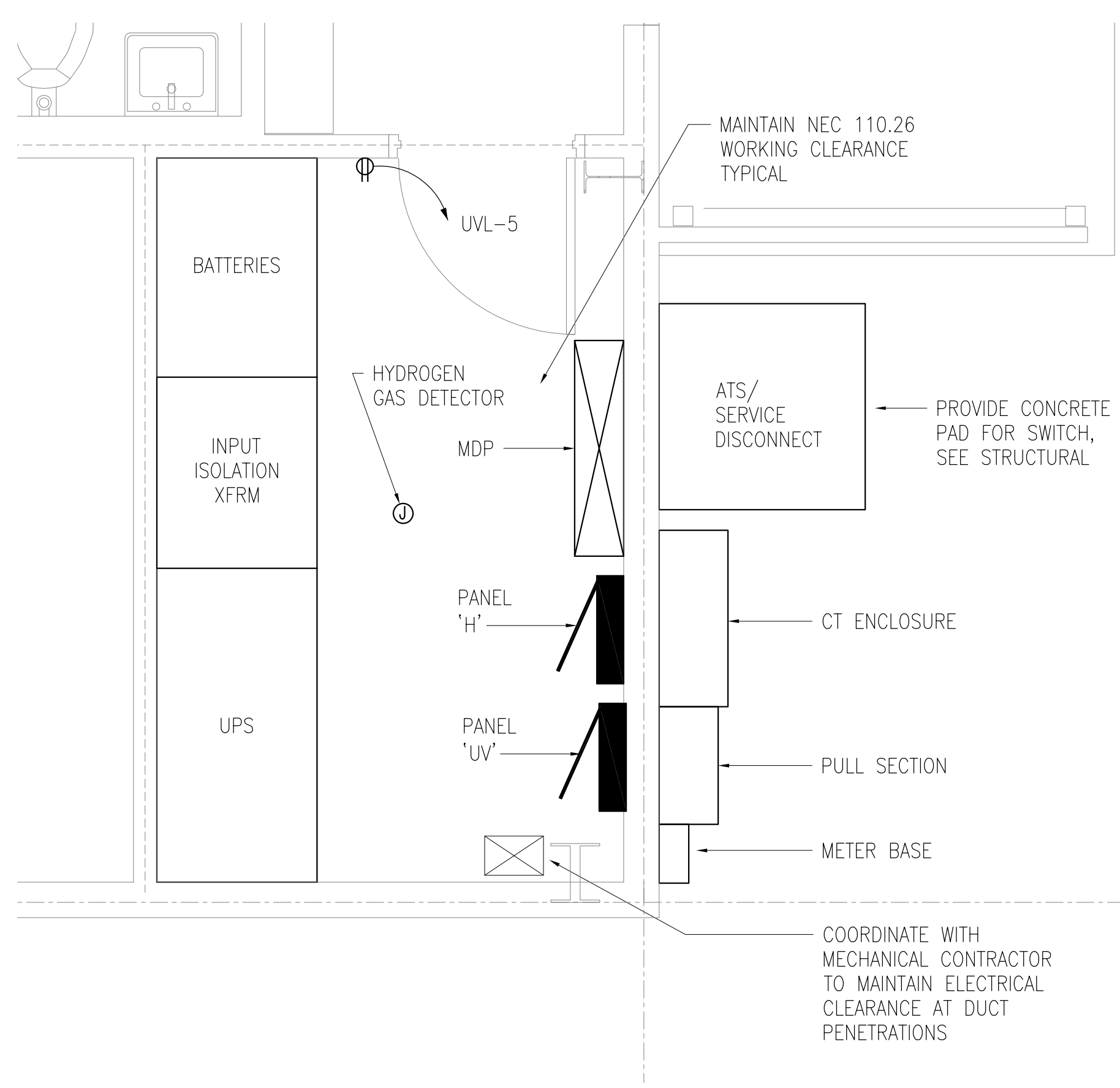
NOTES:

1. DUE TO THE CORROSIVE ATMOSPHERE, NON-METALLIC RACEWAY, BOXES, FITTINGS, AND ACCESSORIES SHALL BE USED THROUGHOUT THE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.
2. 304 OR 316 STAINLESS STEEL SHALL BE USED FOR ALL FACEPLATES, FASTENERS, HANGERS, RODS, CHANNEL, STRUTS, AND OTHER MOUNTING HARDWARE UNLESS SPECIFICALLY NOTED OTHERWISE.
3. ALL RECEPTACLES AND SWITCHES SHALL BE WEATHER RESISTANT AND LOCATED AT 48" AFF UNLESS NOTED OTHERWISE. SEE SPECIFICATION SECTION 16141.

RSA Engineering, Inc. MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS 2522 Arctic Boulevard, Suite 200 Anchorage, AK 99503 (907) 276-0821		12/2/13 DATE	BY REVISION
CITY of UNALASKA		12/2/13 DATE	BY REVISION
MEZZANINE ELECTRICAL PLANS			
SCALE: AS SHOWN			
DESIGNED BY: JHE			
DRAWN BY: JHE			
CHECKED BY: DAO/TEH			
DATE: 12/2/13			
FILE NO.			
SHEET NUMBER			
E1.4		OF 10	



1 ENLARGED POWER PLANS - BOILER ROOM
 E1.5 1/2" = 1'-0"

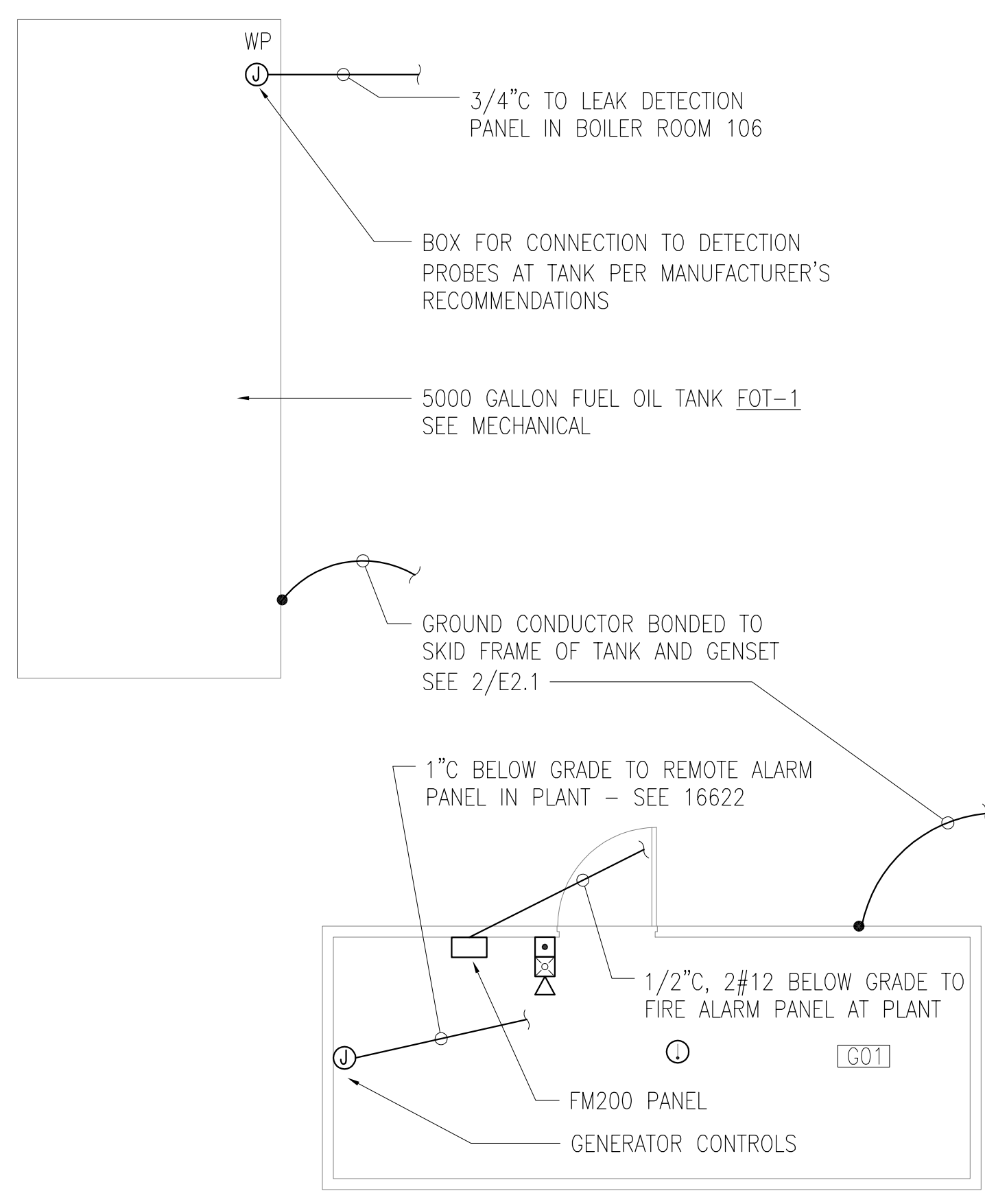


3 ENLARGED POWER PLANS - ELECTRICAL ROOM
 E1.5 1/2" = 1'-0"

NOTES:

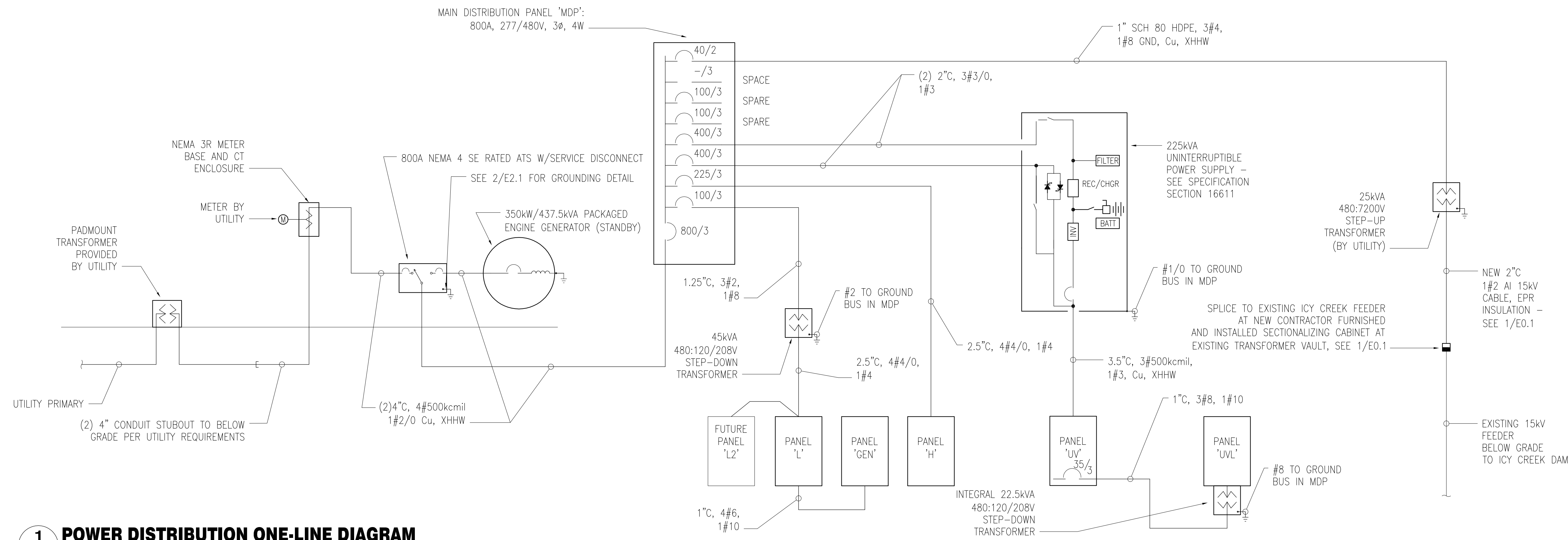
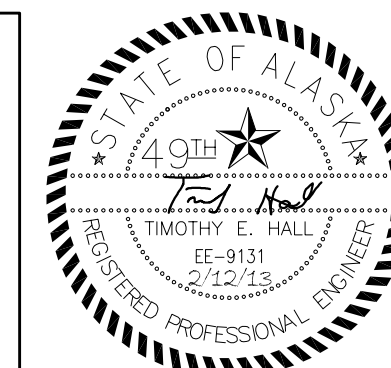
- 304 OR 316 STAINLESS STEEL SHALL BE USED FOR ALL FACEPLATES, FASTENERS, HANGERS, RODS, CHANNEL, STRUTS, AND OTHER MOUNTING HARDWARE UNLESS SPECIFICALLY NOTED OTHERWISE.
- SEE 1/E2.1 FOR ONE LINE DIAGRAM AND 2/E2.1 FOR GROUNDING DETAIL.

ROOM LIST
 106 BOILER
 107 ELECTRICAL
 G01 GENERATOR

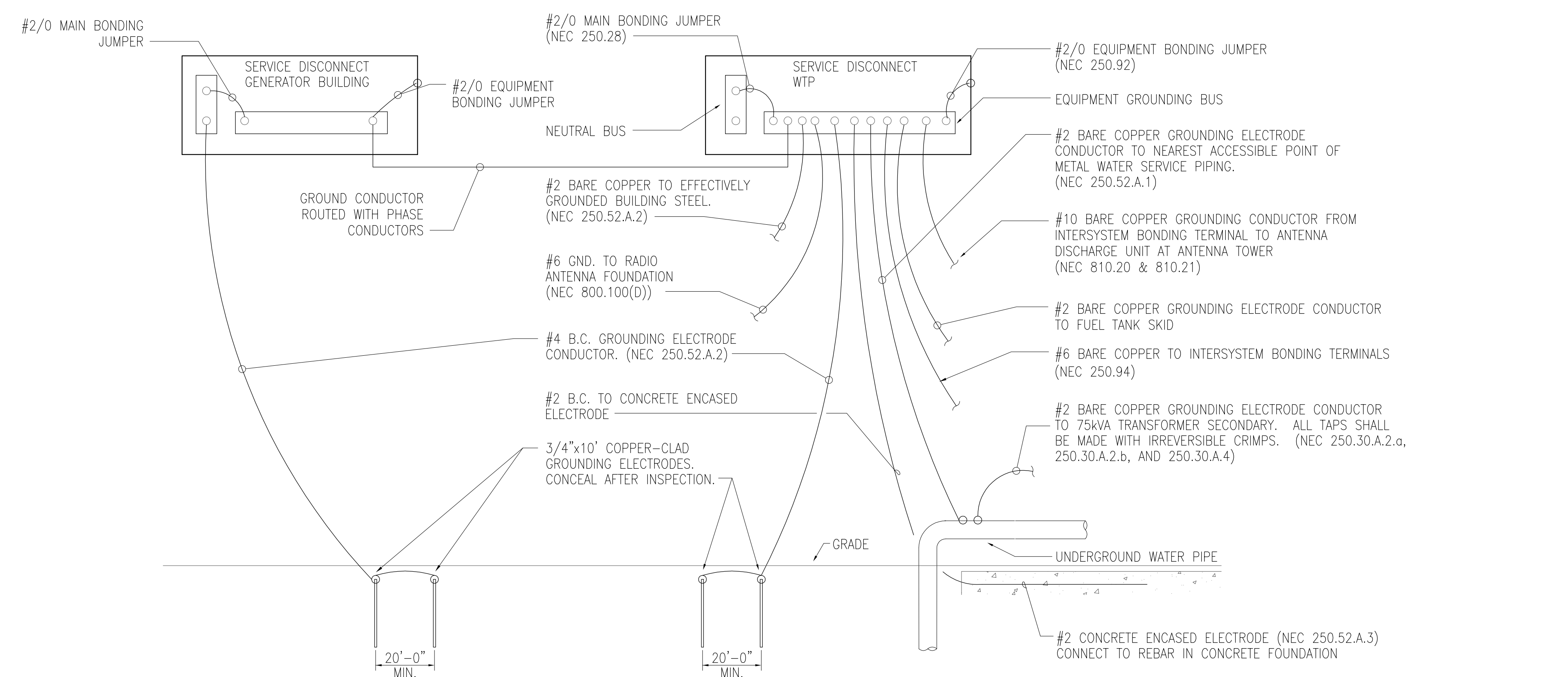


2 SPECIAL SYSTEMS PLAN - GENERATOR & FUEL TANK
 E1.5 1/4" = 1'-0"

ISSUED FOR BID		BY	REVISION
12/2/13		DATE	
NO.			
City of UNALASKA Generator Electrical Plans			
RS&A Engineering, Inc. MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS 191 E. Swanson Avenue, Suite 101 Wasilla, Alaska 99654 (907) 357-1521 Anchorage, AK 99503 (907) 276-0821			
PYRAMID WTP UNALASKA, ALASKA GENERATOR ELECTRICAL PLANS			
SCALE:	AS SHOWN		
DESIGNED BY:	JHE		
DRAWN BY:	JHE		
CHECKED BY:	DAO/TEH		
DATE:	12/2/13		
FILE NO.			
SHEET NUMBER	E1.5 OF 10		



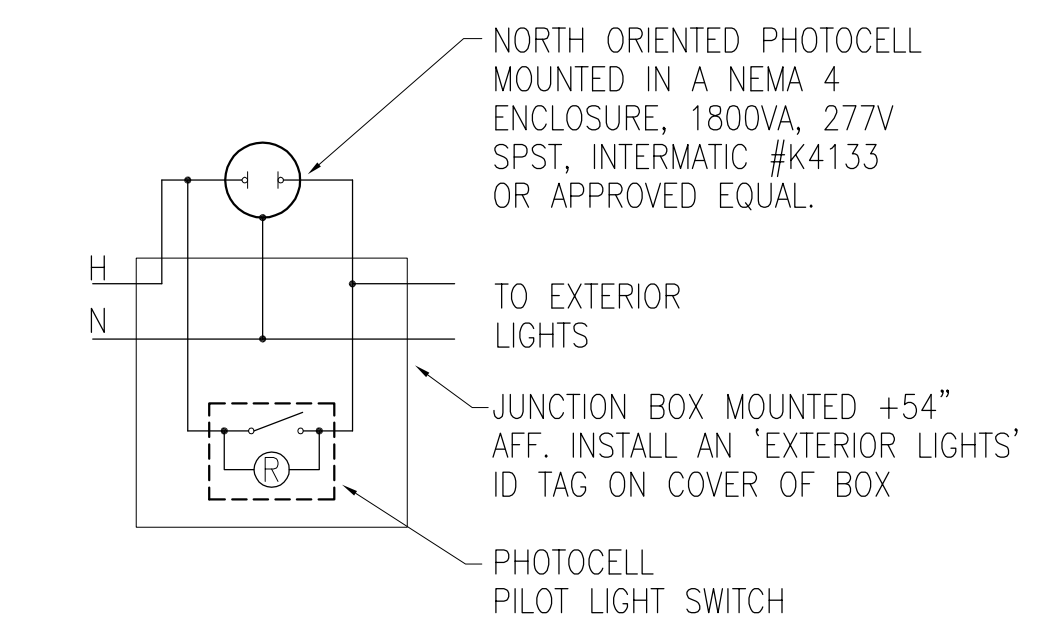
1 POWER DISTRIBUTION ONE-LINE DIAGRAM
E2.1 SCALE: NTS



2 SERVICE GROUNDING DETAILS
E2.1 SCALE: NTS

NOTES:

- ALL FEEDER AND SERVICE CONDUCTORS SHALL BE COPPER XHHW UNLESS OTHERWISE NOTED.



3 EXTERIOR LIGHTING CONTROL DIAGRAM
E2.1 SCALE: NTS

ISSUED FOR BID		BY	REVISION
NO.	DATE		
12/2/13			
CITY of UNALASKA			
Pyramid WTP UNALASKA, ALASKA			
ELECTRICAL DETAILS			
SCALE:	AS SHOWN		
DESIGNED BY:	JHE		
DRAWN BY:	JHE		
CHECKED BY:	DAO/TEH		
DATE:	12/2/13		
FILE NO.			
SHEET NUMBER	E2.1 OF 9		

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Anchorage, AK 99503 (907) 276-0821



Electrical Load Calculations

RSA Engineering, Inc.

Job Name: PYRAMID WTP - UNALASKA
 Job Number: L0109
 Building Area: 4,513 Sq. Ft.
 Date:

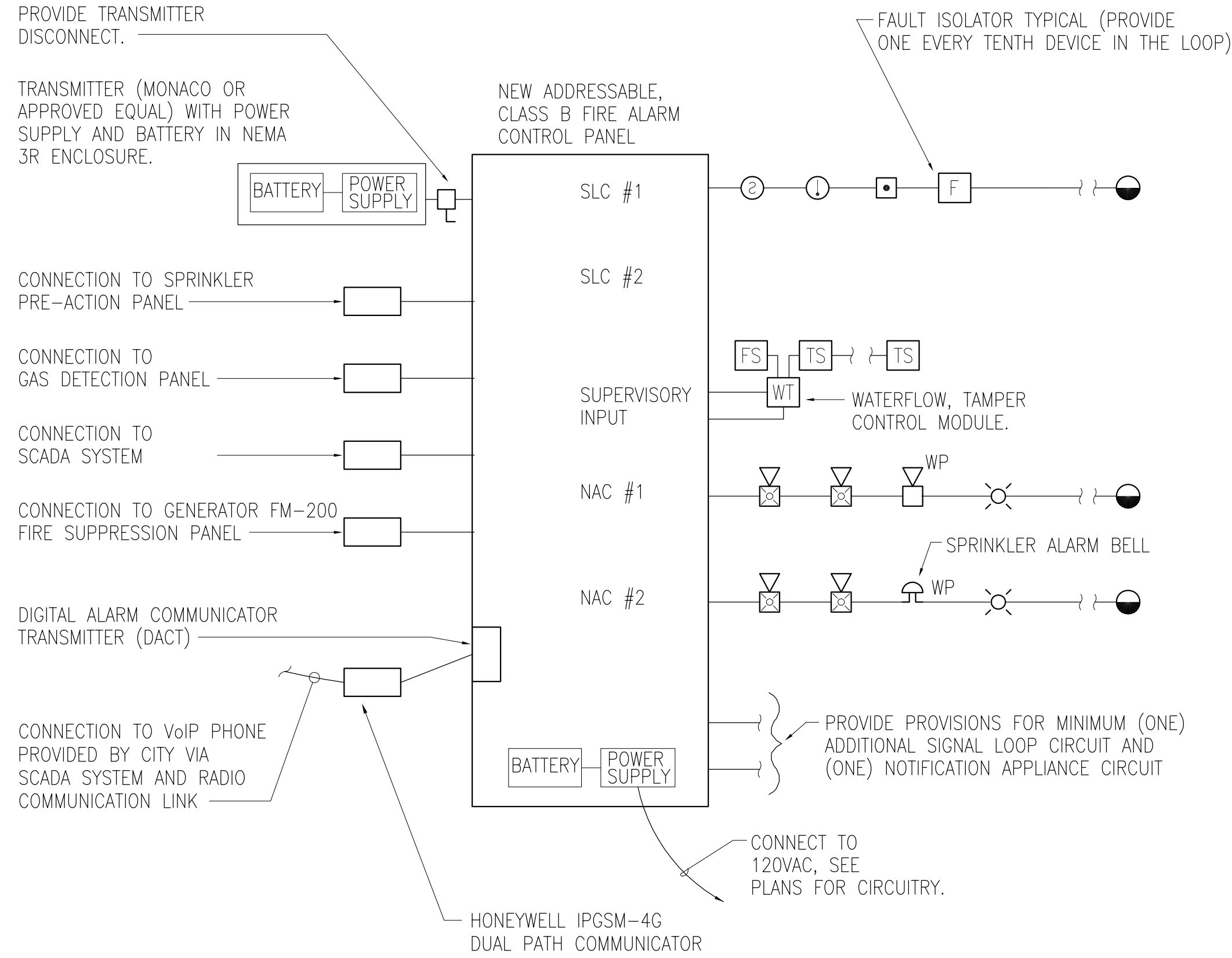
	Load per SF/ Unit (VA)	Area/ Quantity	Connected Load (KVA)	Demand Factor	Demand Load (KVA)	Enter X
Lighting						
Interior Lighting	4,954.0	1	4.95	1.25	6.19	
Exterior Lighting	186.0	1	0.19	1.25	0.23	
UV Reactors	75,000	2	150.00	1.25	187.50	X

	Load per SF/ Unit (VA)	Area/ Quantity	Connected Load (KVA)	Demand Factor	Demand Load (KVA)	Enter X
Outlets						
First 10kVA Receptacles	6,900	1	6.90	1.00	6.90	
Special Outlets	1	0	0.00	1.00	0.00	

	Load per SF/ Unit (VA)	Area/ Quantity	Connected Load (KVA)	Demand Factor	Demand Load (KVA)	Enter X
Mechanical						
B-1 & B-2	1,176	2	2.35	1.00	2.35	
CP-1 THRU 4	1,656	4	6.62	1.00	6.62	
AC-1/CU-1	3,952	1	3.95	1.00	3.95	
EF-3	1,746	1	1.75	1.00	1.75	X
SF-1/HRV-1	1,140	1	1.14	1.00	1.14	
WBP-1	1,920	1	1.92	1.00	1.92	
GT-1/WH-1/CP-5 & 6	448	1	0.45	1.00	0.45	
DT-1	1,728	1	1.73	1.00	1.73	
PMP101A/B, 102A/B	6,318	4	25.27	1.00	25.27	X
EF-1/SF-2/EF-2	956	1	0.96	1.00	0.96	
CF-1/SMP-1 & 2	237	1	0.24	1.00	0.24	
25% largest motor	6,318	1		0.25	1.58	

	Load per SF/ Unit (VA)	Area/ Quantity	Connected Load (KVA)	Demand Factor	Demand Load (KVA)	Enter X
Miscellaneous						
FACP	500	1	0.50	1.00	0.50	
Controls	500	1	0.50	1.00	0.50	
Security Panel	500	1	0.50	1.00	0.50	
Tank Monitor	500	1	0.50	1.00	0.50	
Battery Charger/EUH	2,700	1	2.70	1.00	2.70	
Battery Heater/Controls	1,000	1	1.00	1.00	1.00	
Jacket Heater	1,500	1	1.50	1.00	1.50	
OHD Operator	1,176	1	1.18	1.00	1.18	
UPS	34,086	1	34.09	1.00	34.09	X
OHC	22,500	1	22.50	1.00	22.50	X

Total Service Load	480 Volts	273 KVA	314 KVA
Service Voltage:	480 Volts	329 Amps	377 Amps
Phase:	3 Phase	60.6 VA/Sq. Ft.	69.5 VA/Sq. Ft.
Total 480 Volt Load:	314 KVA		
	377 Amps		
Suggested Main OCPD:	800 Amp		
Main OCPD Used:	800 Amp		



1 FIRE ALARM RISER DIAGRAM
 E2.2 SCALE: NTS

- DETAIL NOTES:**
1. SEE POWER AND SIGNAL SHEETS FOR EXACT NUMBER AND LOCATION OF ALL FIRE ALARM EQUIPMENT, DEVICES, ETC.
 2. SIZE CONDUIT AND WIRES IN ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS AND SPECIFICATIONS.
 3. COORDINATE INSTALLATION OF SMOKE DETECTORS WITH AIR SUPPLY AND RETURN DIFFUSERS TO MAINTAIN MINIMUM 36" SEPARATION PER NFPA 72 REQUIREMENTS.
 4. EXACT NUMBER OF FLOW AND TAMPER SWITCHES TO BE DETERMINED BY SPRINKLER SUPPLIER. FIELD COORDINATE WITH SPRINKLER INSTALLER PRIOR TO BIDDING FOR NUMBER AND LOCATION OF TAMPER AND FLOW SWITCHES.

NOTE		CIRC	POLE	AMPS	SERVICE	TYPE	VOLT-AMPS			MTG:	SURFACE		AMPS	POLE	CIRC	NOTE				
MFR/MODEL: SQUARE 'D' MPZB30T2FSS VOLTS: 120/208V,3PH,4W ENCLOSURE: NEMA 1 100 A																				
SERVICES																				
1	1	20			MULTI-GAS DETECTOR 101	MISC	180													
3	1	20			SPARE				1000			RECEP	TELECOM EQUIPMENT 203	20	1	4				
5	1	20			RECF 107	RECEP				180	360	RECEP	TTB 202	20	1	6				
7	1	30			PROCESS CONTROLS 105	MISC	2880						SPARE	20	1	8				
e	9	1	15		FACP 101	MISC			500				SPARE	20	1	10				
11	1	15			SECURITY PANEL 101	MISC				500	180	RECEP	RECEP 105 H2O QUALITY	20	1	12	b			
13	1	15			TANK MONITOR 106	MISC	250						SPACE	-	1	14				
15	1	15			SF-1 108	MOTR			528				SPACE	-	1	16				
17	1	15			SAMPLE HEATER	HEAT				1440	180	RECEP	RECEP 105 H2O QUALITY	20	1	18	b			
19	1	20			SPARE								SPACE	-	1	20				
21	1	20			SPARE								SPACE	-	1	22				
b	23	1	20		RECF 108	RECEP				180	180	RECEP	RECEP 105 H2O QUALITY	20	1	24	b			
TOTAL VA							3310	2028	3200			8,538 VA								
TOTAL AMPS							28	17	27			24 A								
A.I.C. RATING: 10,000																				
CONNECTED LOAD IN KVA (PANEL 'UVL')							0.00	2.26	0.53	0.13	4.31	0.00	1.44	0.00	8.5 KVA		24 A			
CONNECTED LOAD IN KVA (BRANCH PANELS)																	0.0 KVA		0 A	
TOTAL CONNECTED LOAD IN KVA:							0.00	2.26	0.53	0.13	4.31	0.00	1.44	0.00	8.5 KVA		24 A			
DEMAND LOAD IN KVA:							0.00	2.26	0.53	0.13	4.31	0.00	1.44	0.00	8.7 KVA		24 A			

PANEL NOTES:

a PROVIDE RED HANDLE BREAKER AND LOCK-ON DEVICE FOR LOAD INDICATED

b PROVIDE 5mA GFCI CIRCUIT BREAKER FOR LOAD INDICATED

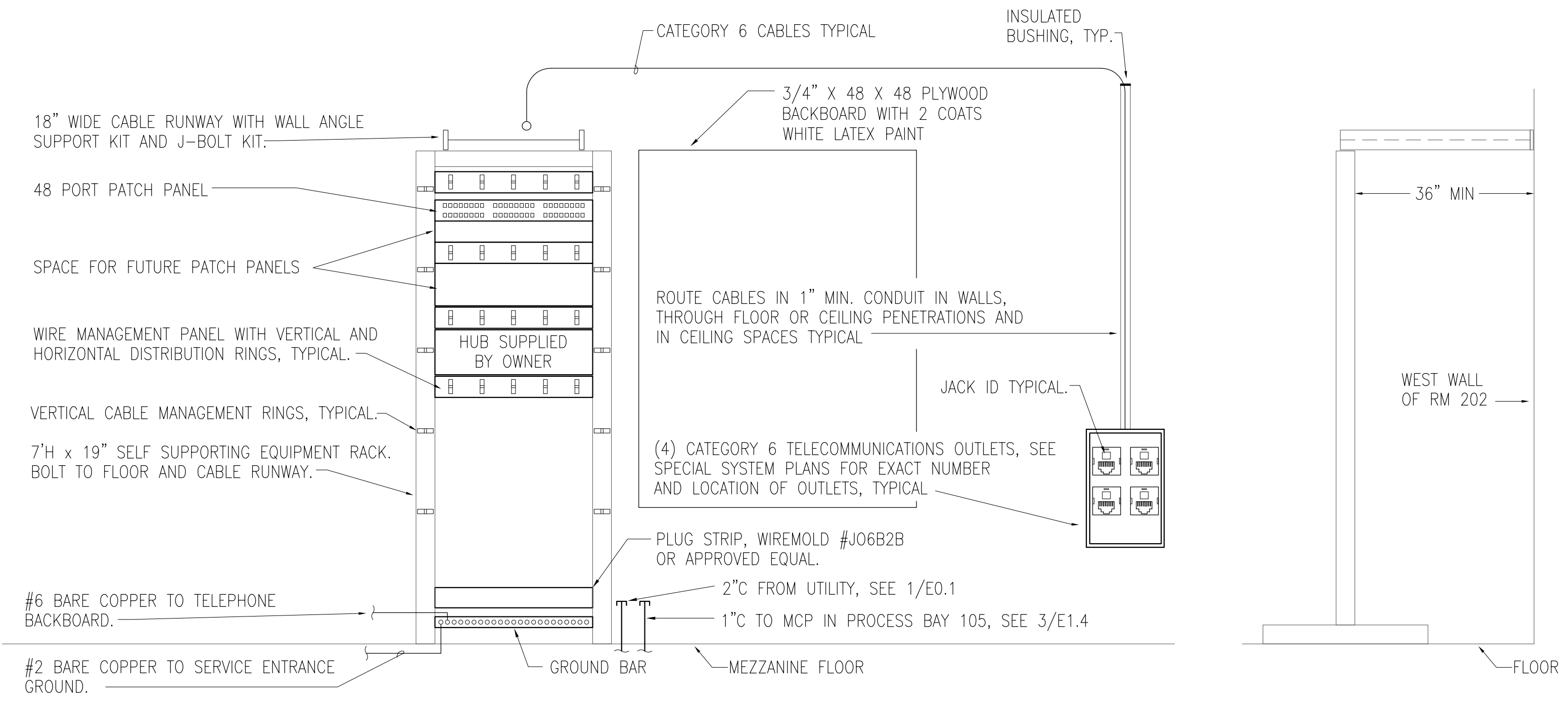
c

d

e

PANEL OPTIONS:

MAIN CIRCUIT BREAKER (SEE ONE-LINE FOR SIZE)



2 TELECOMMUNICATION SYSTEM DETAILS
 E2.2 SCALE: NTS

RSA Engineering, Inc.
 MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
 2522 Arctic Boulevard, Suite 200
 Anchorage, AK 99503 (907) 276-0821
 191 E. Swanson Avenue, Suite 101
 Wasilla, Alaska 99654 (907) 357-1521

CITY OF UNALASKA

ISSUED FOR BID

DATE: 12/2/13

NO.

REVISION

**PYRAMID WTP
 UNALASKA, ALASKA**

ELECTRICAL DETAILS

SCALE: AS SHOWN

DESIGNED BY: JHE

DRAWN BY: JHE

CHECKED BY: DAO/TEH

DATE: 12/2/13

FILE NO.

SHEET NUMBER

E2.2 OF 9



PANEL 'L'																					
MFR/MODEL: SQUARE 'D' TYPE NQOD					VOLTS: 120/208V,3PH,4W			ENCLOSURE: NEMA 1				225 A									
VOLT-AMPS					MTG: SURFACE																
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A	B	C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE							
	1	1	20	RECP - EXTERIOR, UH-1	RECP	600	1000		MOTR	B-1 106	20	1	2								
	3	1	20	RECP - 105 W, UH-1	RECP		780	1000		MOTR	B-2 106	20	1	4							
	5	1	20	RECP - 105 NW	RECP			720	1176		MOTR	CP-1 106	20	1	6						
	7	1	20	RECP - 105 S	RECP	720	1176		MOTR	CP-2 106	20	1	8								
	9	1	20	HRV-1 105	MOTR		612	1656		MOTR	CP-3 106	25	1	10							
	11	1	20	RECP - 105 N	RECP			720	1656		MOTR	CP-4 106	25	1	12						
	13	1	20	RECP - 105 SE, UH-1	RECP	780	1728		MOTR	DT-1 106	30	1	14								
	15	1	20	RECP - 108	RECP		360	448		MISC	GT-1, WH-1, CP-5&6 106	20	1	16							
	17	1	20	SPARE					RECP	RECP 106, UH-2 107	20	1	18								
	19	1	20	RECP - EXTERIOR, 108 NE	RECP	360				SPARE		20	1	20							
	21	1	20	OHD OPERATOR - 108	MOTR		1176	720		MISC	RECP, SF-2 MEZZANINE 201	20	1	22							
	23	1	20	RECP, SF-1 - 108 SE	MISC			708	708		MISC	RECP, EF-2 MEZZ. 201	20	1	24						
	25	1	20	SPARE			540			MISC	RECP - 202, 203	20	1	26							
	27	1	20	RECP, UH-1 108 NE, CF-1	RECP		872	720		MISC	RECP - 202, 203	20	1	28							
	29	1	20	SPARE						SPARE		20	1	30							
	31	1	20	SPARE			1920			MOTR	WBP-1	30	1	32							
	33	1	20	RECP - 102	RECP		540	1872		MOTR	AC-1/CU-1 MEZZANINE	30	2	34							
	35	1	20	RECP - 102	MISC			610	1872	MOTR	^^	30	2	36							
	37	1	20	RECP - 102	RECP	540	2200		FEDR	PANEL 'GEN' SUBFEED	60	3	38								
	39	1	20	RECP - 102, UH-2	MISC		420	1850	FEDR	^^	60	3	40								
	41	1	20	RECP, EF-1, SMP-1, UH-2	MISC			430	1860	FEDR	^^	60	3	42							
	TOTAL V-A						11564	13026	10916			35,506	VA								
	TOTAL AMPS						96	109	91			99	A								
	A.I.C. RATING: 10,000																				
					LTG	RECP	MOTR	LG.MT	MISC	KIT	HEAT	SPEC		TOTAL		AMPS					
					0.00	7.45	16.84	0.94	5.30	0.00	0.00	0.00		29.6 KVA		82 A					
					0.35	1.56	0.00	0.00	0.50	0.00	3.50	0.00		5.9 KVA		16 A					
					0.35	9.01	16.84	0.94	5.80	0.00	3.50	0.00		35.5 KVA		99 A					
					0.44	9.01	16.84	0.94	5.80	0.00	3.50	0.00		36.5 KVA		101 A					
	PANEL NOTES:					PANEL OPTIONS:															
	a PROVIDE LOCK-ON DEVICE AND RED COLORED BREAKER HANDLE					MAIN CIRCUIT BREAKER (SEE ONE-LINE FOR SIZE)															
	b					PROVIDE WITH FEED-THRU LUGS															
	c																				
	d																				
	e																				

PANEL 'GEN'																					
MFR/MODEL: SQUARE 'D' TYPE NQOD					VOLTS: 120/208V,3PH,4W			ENCLOSURE: NEMA 3R				100 A									
VOLT-AMPS					MTG: SURFACE																
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A	B	C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE							
	1	1	20	BATTERY CHARGER	RECP	1200				MAIN	60	3	2								
	3	1	20	ENGINE JACKET HEATER	HEAT		1500			^^	60	3	4								
	5	1	20	SERVICE RECEPTACLES	RECP			360		^^	60	3	6								
	7	1	20	CONTROLS	MISC	500				SPACE	-	1	8								
	9	1	20	LIGHTS	LTG		350			SPACE	-	1	10								
	11	1	20	UNIT HEATER	HEAT			1500		SPACE	-	1	12								
	13	1	20	BATTERY BLANKET	HEAT	500				SPACE	-	1	14								
	15	1	20	SPARE						SPACE	20	1	16								
	17	1	20	SPARE						SPACE	-	1	18								
	TOTAL V-A						2200	1850	1860			5,910	VA								
	TOTAL AMPS						18	15	16			16	A								
	A.I.C. RATING: 10,000																				
					LTG	RECP	MOTR	LG.MT	MISC	KIT	HEAT	SPEC		TOTAL		AMPS					
					0.35	1.56	0.00	0.00	0.50	0.00	3.50	0.00		5.9 KVA		16 A					
					0.35	1.56	0.00	0.00	0.50	0.00	3.50	0.00		0.0 KVA		0 A					
					0.35	1.56	0.00	0.00	0.50	0.00	3.50	0.00		5.9 KVA		16 A					
					0.44	1.56	0.00	0.00	0.50	0.00	3.50	0.00		6.0 KVA		17 A					
	PANEL NOTES:					PANEL OPTIONS:															
	a					MAIN BREAKER															
	b																				
	c																				
	d																				
	e																				

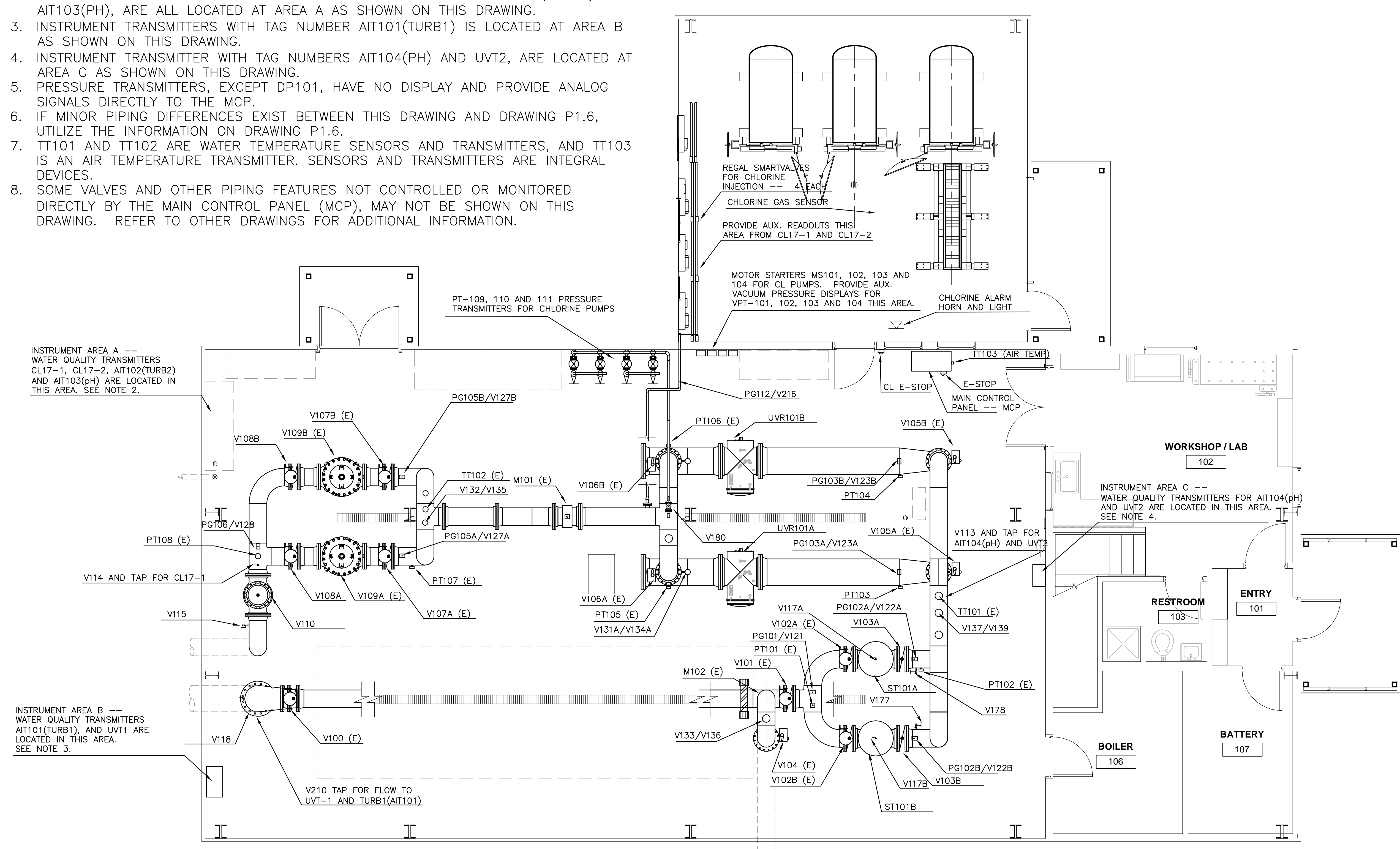
PANEL 'H'																					
MFR/MODEL: SQUARE 'D' TYPE NF					VOLTS: 277/480V,3PH,4W			ENCLOSURE: NEMA 1				225 A									
VOLT-AMPS					MTG: SURFACE																
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A	B	C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE							
	1	3	30	SPARE			173			LTG	EXTERIOR LIGHTS	20	1	2							
	3	3	30	^^						LTG	LTS - 105 PROCESS BAY	20	1	4							
	5	3	30	^^				1180		LTG	LTS - 102 OFCLAB	20	1	6							
	7	3	30	SPARE			718			LTG	LTS - 101, 103, 106, 107	20	1	8							
	9	3	30	^^				841		LTG	LTS - 108 CHLORINE	20	1	10							
	11	3	30	^^					1235	LTG	LTS - 201-203	20	1	12							
	13	3	15	EF-3	MOTR	582					SPARE	20	1	14							
	15	3	15	^^	MOTR		582	1180		LTG	LTS - 105 PROCESS BAY	20	1	16							
	17	3	15	^^	MOTR				582		SPARE	80	3	18							
	19	3	60	SPARE							^^	80	3	20							
	21	3	60	^^							^^	80	3	22							
	23	3	60	^^							SPARE	100	3	24							
	25	3	80	SPARE							^^	100	3	26							
	27	3	80	^^							^^	100	3	28							
	29	3	80	^^							SPACE	-	1	30							
	31	3	100	SPARE							SPACE	-	1	32							
	33	3	100	^^							SPACE	-	1	34							
	35	3	100	^^							SPACE	-	1	36							
	37	3	60	SPARE			6000			MOTR	OHC	50	3	38							
	39	3	60	^^				6000		MOTR	^^	50	3	40							
	41	3	60	^^					6000	MOTR	^^	50	3	42							
	TOTAL V-A						7473	9783	8767			26,023	VA								
	TOTAL AMPS						27	35	32			31	A								
	A.I.C. RATING: 18,000																				
					LTG	RECP	MOTR	LG.MT	MISC	KIT	HEAT	SPEC		TOTAL		AMPS					
					6.28	0.00	19.75	4.50	0.00	0.00	0.00	0.00		26.0 KVA		31 A					
					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.0 KVA		0 A					
					6.28	0.00	19.75	4.50	0.00	0.00	0.00	0.00		26.0 KVA		31 A					
					7.85	0.00	19.75	4.50	0.00	0.00	0.00	0.00		32.1 KVA		39 A					
	PANEL NOTES:					PANEL OPTIONS:															
	a					MAIN LUGS ONLY															
	b																				
	c																				
	d																				
	e																				

PANEL 'UV'																	
MFR/MODEL: SQUARE 'D' TYPE NF					VOLTS: 277/480V,3PH,4W			ENCLOSURE: NEMA 1				400 A					
VOLT-AMPS					MTG: SURFACE												
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A	B	C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE			
	1	3	125	REACTOR 1 (CALGON)	MISC	23545	23545			MISC	REACTOR 2 (CALGON)	125	3	2			
	3	3	125	^^	MISC		23545	23545		MISC	^^	125	3	4			
	5	3	125	^^	MISC			23545	23545	MISC	^^	125	3	6			
	7	1	-	SPACE			2500			MOTR	V101, V102(A)(B), V104, V105(A)(B)	20	3	8			
	9	1	-	SPACE				2500		MOTR	^^	20	3	10			
	11	1	-	SPACE					2500	MOTR	^^	20	3	12			
	13	1	-	SPACE			1700			MOTR	V106(A)(B), V107(A)(B)	15	3	14			
	15	1	-	SPACE				1700		MOTR	^^	15	3	16			
	17	1	-	SPACE					1700	MOTR	^^	15	3	18			
	19	3	15	PMP 101A	MOTR	2100					SPACE	-	1	20			
	21	3	15	^^	MOTR		2100				SPACE	-	1	22			
	23	3	15	^^	MOTR			2100			SPACE	-	1	24			
	25	3	15	PMP 101B	MOTR	2100					SPACE	-	1	26			
	27	3	15	^^	MOTR		2100				SPACE	-	1	28			
	29	3	15	^^	MOTR			2100			SPACE	-	1	30			
	31	3	15	PMP 102A	MOTR	2100					SPACE	-	1	32			
	33	3	15	^^	MOTR		2100				SPACE	-	1	34			
	35	3	15	^^	MOTR			2100			SPACE	-	1	36			
	37	3	15	PMP102B	MOTR	2100	3310			FEDR	PANEL 'UVL'	*	3	38			
	39	3	15	^^	MOTR		2100	2028		FEDR	^^	*	3	40			
	41	3	15	^^	MOTR			2100	3200	FEDR	^^	*	3	42			
	TOTAL V-A						63000	61718	62890			187,608	VA				



NOTES

1. VALVE OR SENSOR ID TAGS FOLLOWED BY AN (E) ARE ELECTRICALLY OPERATED OR MONITORED IN THE PLC.
2. INSTRUMENT TRANSMITTERS WITH TAG NUMBERS CL17-1, CL17-2, AIT102(TURB2) AND AIT103(PH), ARE ALL LOCATED AT AREA A AS SHOWN ON THIS DRAWING.
3. INSTRUMENT TRANSMITTERS WITH TAG NUMBER AIT101(TURB1) IS LOCATED AT AREA B AS SHOWN ON THIS DRAWING.
4. INSTRUMENT TRANSMITTER WITH TAG NUMBERS AIT104(PH) AND UVT2, ARE LOCATED AT AREA C AS SHOWN ON THIS DRAWING.
5. PRESSURE TRANSMITTERS, EXCEPT DP101, HAVE NO DISPLAY AND PROVIDE ANALOG SIGNALS DIRECTLY TO THE MCP.
6. IF MINOR PIPING DIFFERENCES EXIST BETWEEN THIS DRAWING AND DRAWING P1.6, UTILIZE THE INFORMATION ON DRAWING P1.6.
7. TT101 AND TT102 ARE WATER TEMPERATURE SENSORS AND TRANSMITTERS, AND TT103 IS AN AIR TEMPERATURE TRANSMITTER. SENSORS AND TRANSMITTERS ARE INTEGRAL DEVICES.
8. SOME VALVES AND OTHER PIPING FEATURES NOT CONTROLLED OR MONITORED DIRECTLY BY THE MAIN CONTROL PANEL (MCP), MAY NOT BE SHOWN ON THIS DRAWING. REFER TO OTHER DRAWINGS FOR ADDITIONAL INFORMATION.



FIELD DEVICE INPUTS TO MCP

TO UVL PANEL ← 100P: 3/4"C, 1-#12, 1-#12N, 1-#12 GND

PT-101 PRESSURE TRANSMITTER - INLET FROM RESERVOIR	1-#18 TSP 101J
PT-102 PRESSURE TRANSMITTER - AFTER STRAINERS	1-#18 TSP 102J
PT-105 PRESSURE TRANSMITTER - AFTER UVR101A	1-#18 TSP 103J
PT-106 PRESSURE TRANSMITTER - AFTER UVR101B	1-#18 TSP 104J
PT-107 PRESSURE TRANSMITTER - AFTER M101	1-#18 TSP 105J
PT-108 PRESSURE TRANSMITTER - AFTER V109A AND V109B FLOW CONTROL VALVES	1-#18 TSP 106J
M-101 MAGNETIC FLOW METER AFTER UV - TRANSMITTER	2-#14, 2-#18 TSP + GND 107P, 107J
M-102 MAGNETIC FLOW METER BYPASS UV - TRANSMITTER	2-#14, 2-#18 TSP + GND 108P, 108J
M-103 (FUTURE) MAGNETIC FLOW METER CT TANK - TRANSMITTER	2-#14, 2-#18 TSP + GND 121P, 121J
AIT-101 (TURB1) TURBIDITY TRANSMITTER - INLET FROM RESERVOIR	2-#14, 2-#18 TSP + GND 109P, 109J
AIT-102 (TURB2) - (FUTURE) TURBIDITY TRANSMITTER - FOLLOWING UV UNITS	2-#14, 2-#18 TSP + GND 110P, 110J
AIT-103 (FUTURE) pH TRANSMITTER - FINISHED WATER OUTLET	2-#14, 1-#18 TSP + GND 111P, 111J
AIT-104 pH TRANSMITTER - AFTER STRAINERS	2-#14, 1-#18 TSP + GND 112P, 112J
TT-101 TEMPERATURE TRANSMITTER - INLET WATER	1-#18 TSP 113J
TT-102 TEMPERATURE TRANSMITTER - FINISHED WATER	1-#18 TSP 114J
TT-103 AIR TEMPERATURE TRANSMITTER	1-#18 TSP 115J
CL17-2 (FUTURE) CHLORINE RESIDUAL TRANSMITTER - INLET FROM RESERVOIR	2-#14, 2-#18 TSP + GND 116P, 116J
CL17-1 CHLORINE RESIDUAL TRANSMITTER - TREATED WATER	2-#14, 2-#18 TSP + GND 117P, 117J
UVT-1 UV TRANSMITTANCE TRANSMITTER - INLET FROM RESERVOIR	2-#14, 2-#18 TSP + GND 118P, 118J
UVT-2 (FUTURE) UV TRANSMITTANCE TRANSMITTER - WATER ENTERING UV REACTORS	2-#14, 2-#18 TSP + GND 119P, 119J
NOT USED	1-#18 TSP 120J
FS-101 (FUTURE) FLOAT SWITCH - HI WATER LEVEL AT CONTACT TANK (CT)	2-#14 + GND 122C
FS-102 (FUTURE) FLOAT SWITCH - HI-HI WATER LEVEL AT CONTACT TANK (CT)	2-#14 + GND 123C

MCP CONTROL PANEL

2-#14 + GND 124C	EMERGENCY SHUTDOWN BUTTON
2-#14 + GND 125C	CHLORINE ALARM HORN AND LIGHT LOCATED IN CHLORINATION ROOM OUTPUT: DISCRETE SIGNAL
2-#14 + GND 126C	CHLORINE EMERGENCY BUTTON LOCATED OUTSIDE OF CHLORINATION ROOM
1-TSP #18 127J	RESIDUAL CHLORINE READOUT LOCATED IN CHLORINATION ROOM FROM CL17-1 OUTPUT: ANALOG RESIDUAL CHLORINE
1-TSP #18 128J	RESIDUAL CHLORINE READOUT LOCATED IN CHLORINATION ROOM FROM CL17-2 OUTPUT: ANALOG RESIDUAL CHLORINE
1-TSP #18 129J	VPT-101 VACUUM MONITOR PRESSURE - ROUTE INPUT SIGNAL FROM REGAL CL 101 THROUGH EXTRA READOUT NEXT TO CL PUMPS
1-TSP #18 130J	VPT-102 VACUUM MONITOR PRESSURE - ROUTE INPUT SIGNAL FROM REGAL CL 102 THROUGH EXTRA READOUT NEXT TO CL PUMPS
1-TSP #18 131J	VPT-103 VACUUM MONITOR PRESSURE - ROUTE INPUT SIGNAL FROM REGAL CL 103 THROUGH EXTRA READOUT NEXT TO CL PUMPS
1-TSP #18 132J	VPT-104 VACUUM MONITOR PRESSURE - ROUTE INPUT SIGNAL FROM REGAL CL 104 THROUGH EXTRA READOUT NEXT TO CL PUMPS
1-#18 TSP 133J	PT-109 PRESSURE TRANSMITTER - PMP-101
1-#18 TSP 134J	PT-110 PRESSURE TRANSMITTER - PMP-102
1-#18 TSP 135J	PT-111 PRESSURE TRANSMITTER - PMP-103/104
2-#14 + GND 136C	CHLORINE ALARM SIGNAL FROM CL DETECTOR IN CHLORINE ROOM
2-#14 + GND 137C	TROUBLE ALARM FROM REGAL CHLORINATORS - ONE SIGNAL CONNECT ALL FOUR UNITS IN PARALLEL
8-#14 + GND 138C	EMERGENCY GENERATOR - GEN RUNNING, GEN COMMAN ALARM, GEN BREAKER OPEN
6-#14 + GND 139C	TRANSFER SWITCH - POSITION NORMAL, EMERGENCY POSITION
2-#14 + GND 140C	UPS - ALARM SIGNAL
1-#18 #18 141J	CT TANK - (REMOTE) WATER LEVEL - ANALOG SIGNAL
2-#14 + GND 142C	SEWER TANK - (REMOTE) HI FLOAT
2-#14 + GND 143C	FUEL TANK - (REMOTE) LOW FLOAT
6-#14, 2-#18 TSP + GND 144C, 144J	CT TANK SPARE CONDUCTORS - (REMOTE) 2-DISCRETE INPUTS, 2-DISCRETE OUTPUTS, 1-ANALOG INPUTS 1-ANALOG OUTPUT
6-#14 + GND 145C	DDC SYSTEM TO PLC -- GLYCOL LOOP LOW TEMP PLUS FUTURE CHANNELS 3-DISCRETE INPUTS
10-#14 + GND 146C	FIRE/SECURITY PANEL TO PLC -- FIRE ALARM, FIRE PANEL TROUBLE, FIRE TAMPER, SPRINKLER FLOW, SECURITY ALARM, SECURITY TROUBLE 7-DISCRETE INPUTS

LEGEND

FOR CONDUIT IDENTIFICATION SUCH AS: XXXJ, S, P, C WHERE: XXX=CONDUIT NUMBER,
J=SHIELDED ANALOG SIGNAL CABLE, S= ETHERNET SIGNAL CABLE,
P=POWER CONDUCTOR, AND C=SHIELDED OR UNSHIELDED DISCRETE SIGNAL CONDUCTORS

NOTES

- INPUT AND OUTPUT NOTATIONS ARE REFERENCED TO THE PLC IN THE MCP
- NUMBERED CONDUITS OF LIKE TYPES MAY BE COMBINED IN A SINGLE CONDUIT. BUT CONDUIT FILL AREAS SHALL NOT EXCEED 30%.
- POWER AND DISCRETE SIGNAL CONDUCTORS MAY BE RUN IN THE SAME CONDUIT, BUT ANALOG SIGNAL CABLE AND ETHERNET CABLES SHALL NOT BE RUN IN THE SAME CONDUIT WITH POWER OR DISCRETE SIGNAL CONDUCTORS.

FIELD DEVICE INPUTS TO MCP



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NO.	DATE

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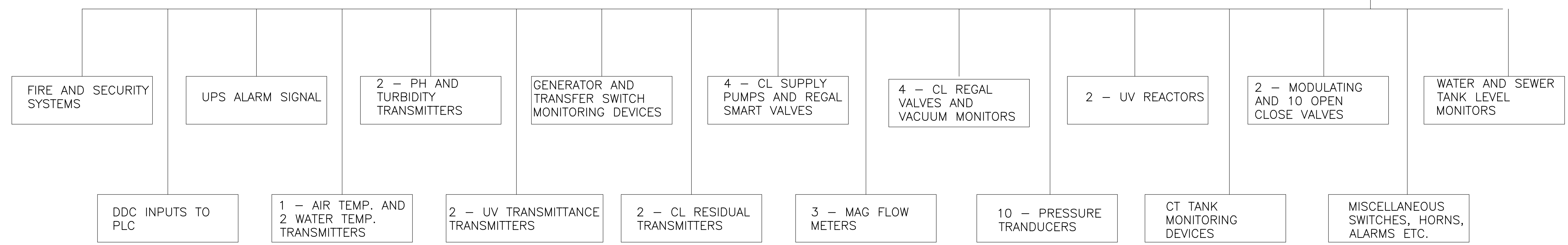
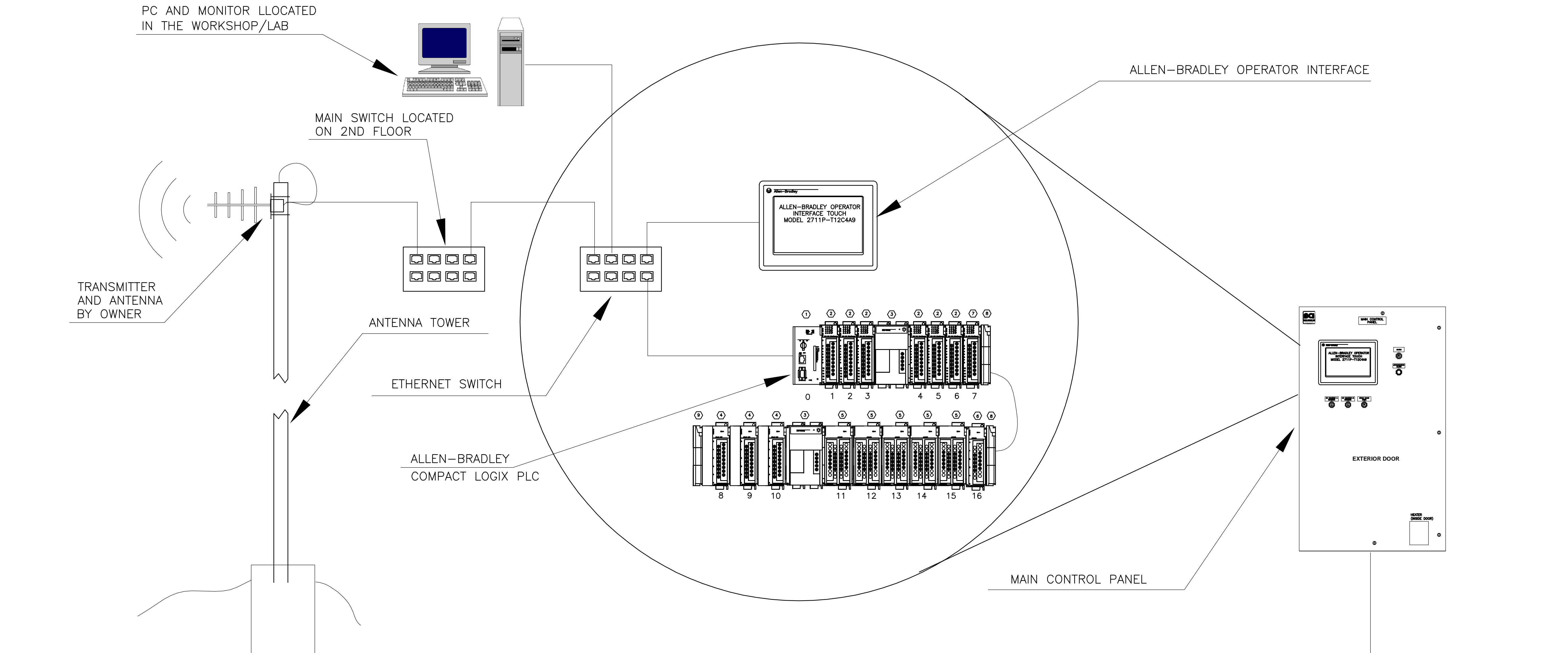
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CITY OF UNALASKA

PYRAMID WTP
UNALASKA, ALASKA
CONTROL RISER DIAGRAM
(1 OF 2)

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-02
OF	

Plotted By: Curtis
 Date/Time: Dec 02 2013 3:37 pm
 Layout: 1
 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From_Others\BCI\11-27-13\20204 EG-02 Control Riser Diagram 1.dwg



NETWORK DIAGRAM

Plotted By: Curtis
 Date/Time: 02 Dec 2013 3:38 pm
 Layout: L1
 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From Others\BCI\11-27-13\20204 EC-04 Network Diagram.dwg

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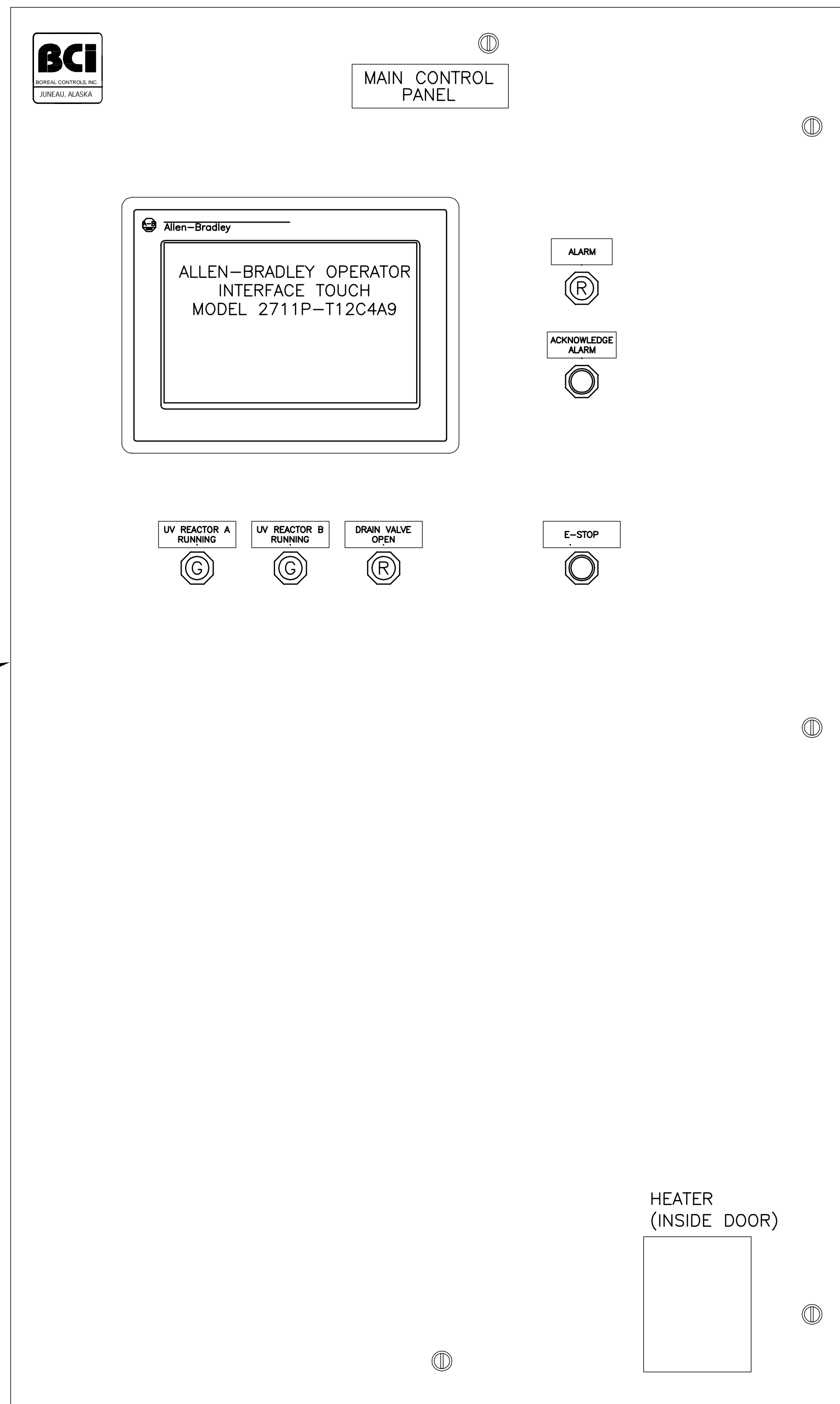
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PYRAMID WTP
 UNALASKA, ALASKA
 NETWORK DIAGRAM

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-04

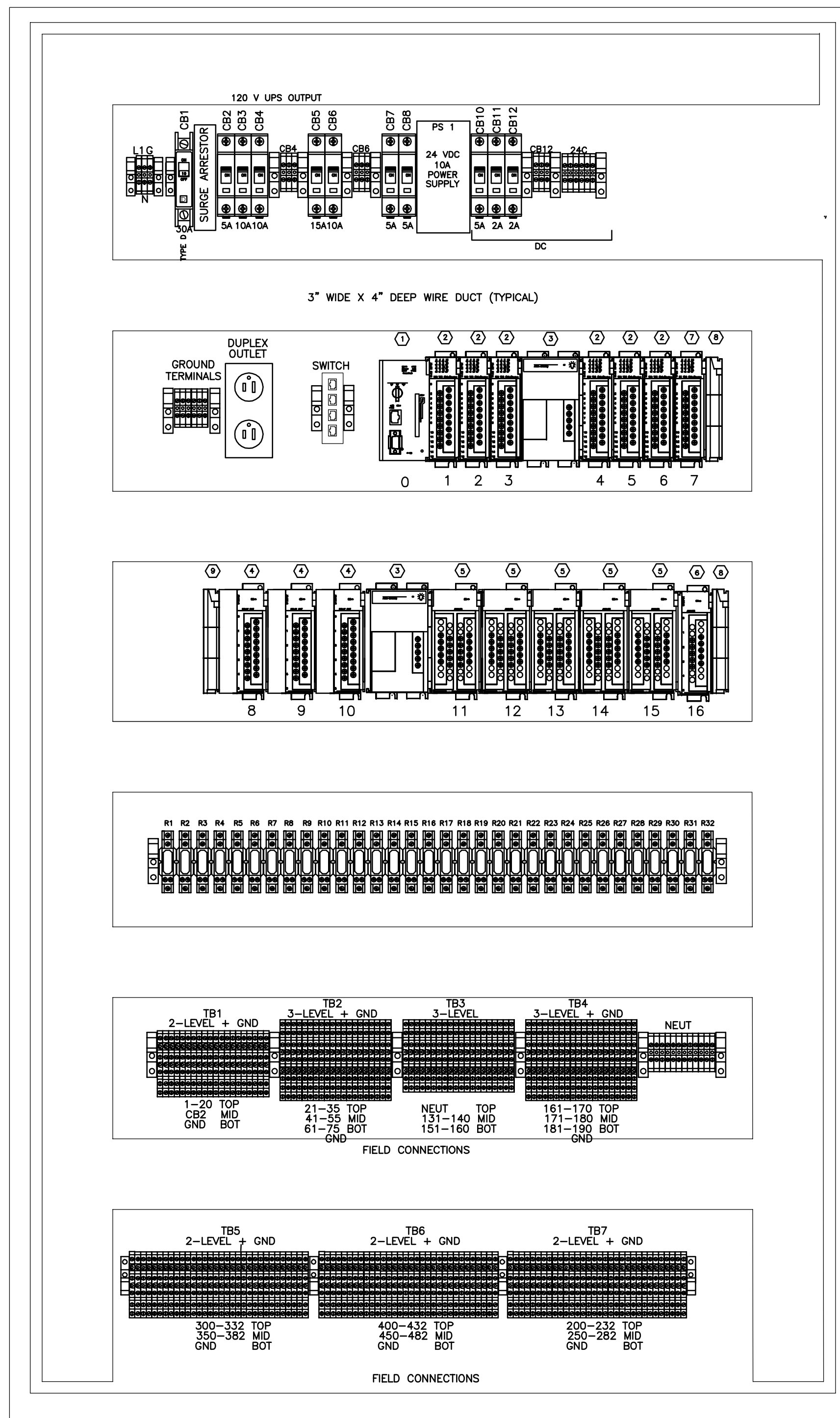
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 Date/Time: 02 Dec 2013 3:38 pm
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 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From Others\BCI\11-27-13\20204 EG-05 Control Panel Layout.dwg

EXTERIOR DOOR



HOFFMAN CONCEPT 60 X 36 X 12
 STAINLESS STEEL TYPE 4X ENCLOSURE
 MODEL CSD603612 SSR

HOFFMAN CONCEPT BACK PANEL - 58.2 X 34.2 INCH SIZE



COMPONENT	DESCRIPTION	MANUFACTURER	CATALOG NO.
1	COMPAC LOGIX PROCESSOR	ALLEN BRADLEY	1769-L36E
2	16 120VAC DISCRETE INPUT	ALLEN BRADLEY	1769-IA16
3	POWER SUPPLY	ALLEN BRADLEY	1769-PA4
4	16 RELAY OUTPUT DISCRETE	ALLEN BRADLEY	1769-OW16
5	8 ANALOG INPUT	ALLEN BRADLEY	1769-IF8
6	8 ANALOG OUTPUT	ALLEN BRADLEY	1769-OF8C
7	16 24VDC HIGH-SPEED DISCRETE INPUT	ALLEN BRADLEY	1769-IQ16F
8	EXPANSION CAP RIGHT SIDE	ALLEN BRADLEY	1769-CRR1
9	CAP LEFT SIDE	ALLEN BRADLEY	1769-ECL



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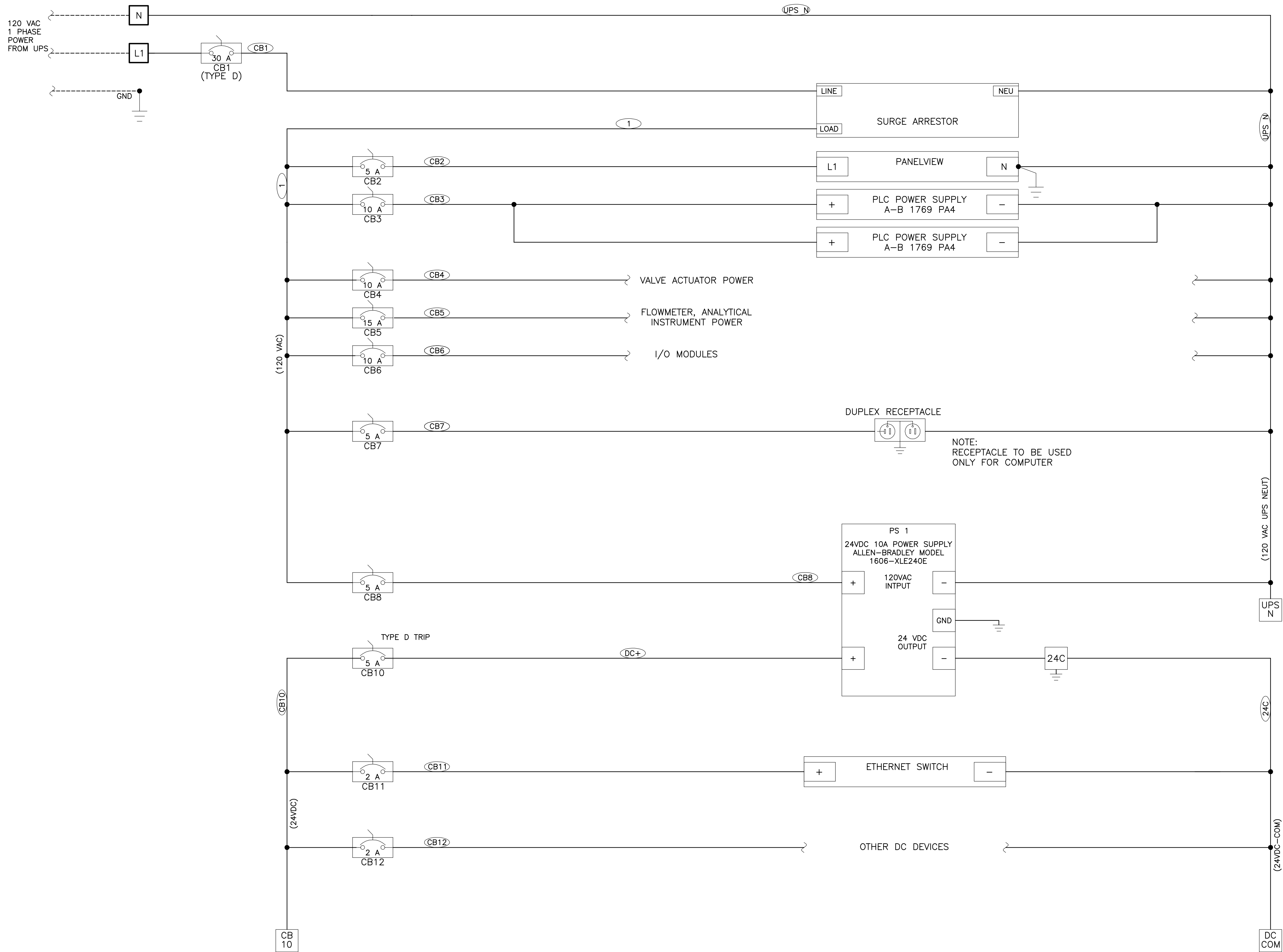
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 CONTROL PANEL LAYOUT

SCALE:	AS SHOWN
DESIGNED BY:	SRS
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CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-05
OF	05

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 Date/Time: Dec 02, 2013 3:38 pm
 Layout: 1
 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From_Others\BCI\11-27-13\20204_EC-06_MCP_Control_Power_Schematic.dwg



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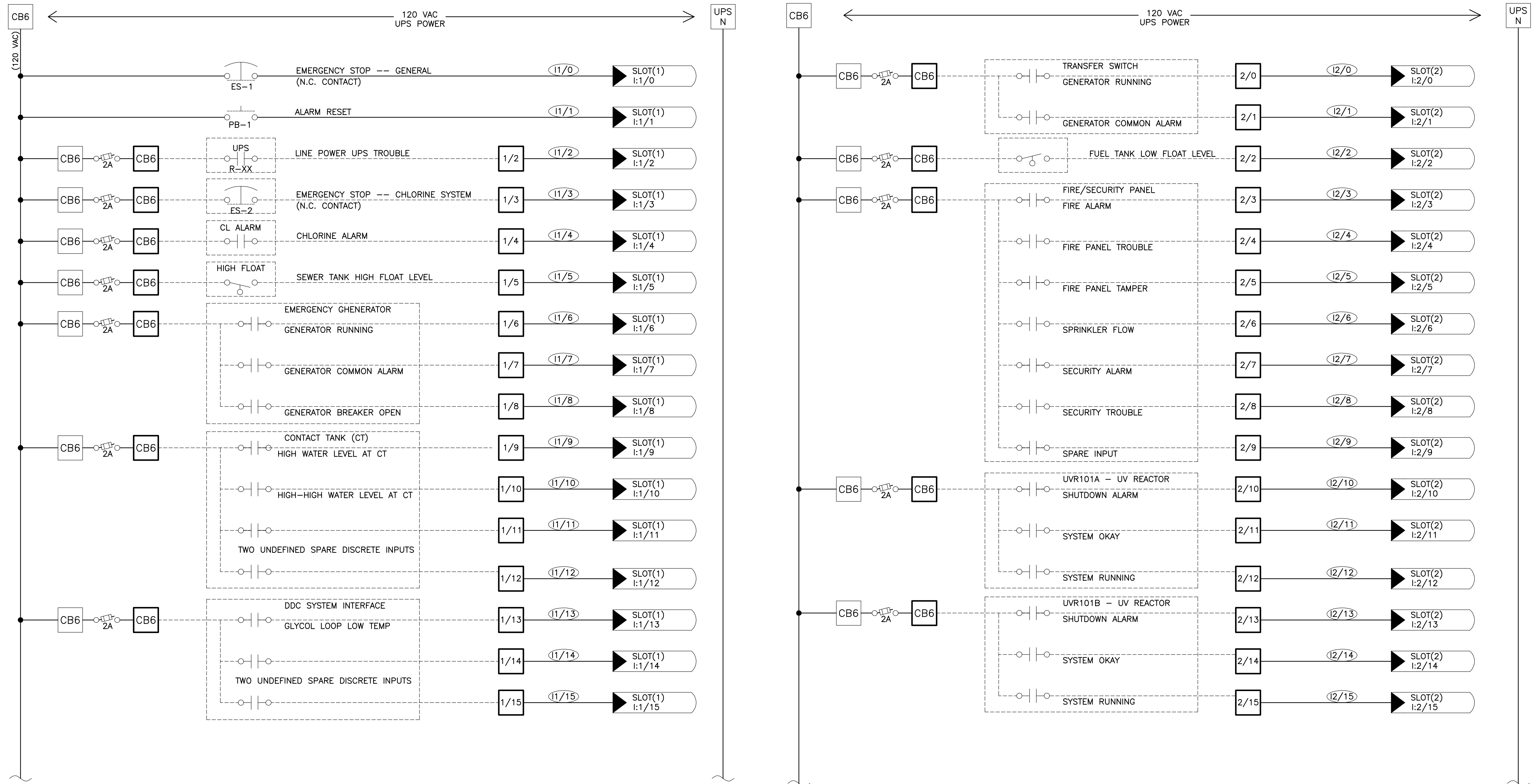
3100 Channel Dr., Ste. 210N
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 CONTROL PANEL SCHEMATIC

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-06
OF	06



NOTE:
 1. THESE I/O POINTS INCLUDE ONLY DISCRETE INPUT SIGNALS. REFER TO DISCRETE OUTPUT SCHEMATICS, ANALOG I/O SCHEMATICS AND MISCELLANEOUS WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.

Plotted By: Curtis
 Date: Dec 02, 2013 3:38 pm
 Layer: 11
 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From_Others\BCI\11-27-13\20204 EG-07 MCP Discrete Input Schem. 1.dwg

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 Phone: 907-586-8367
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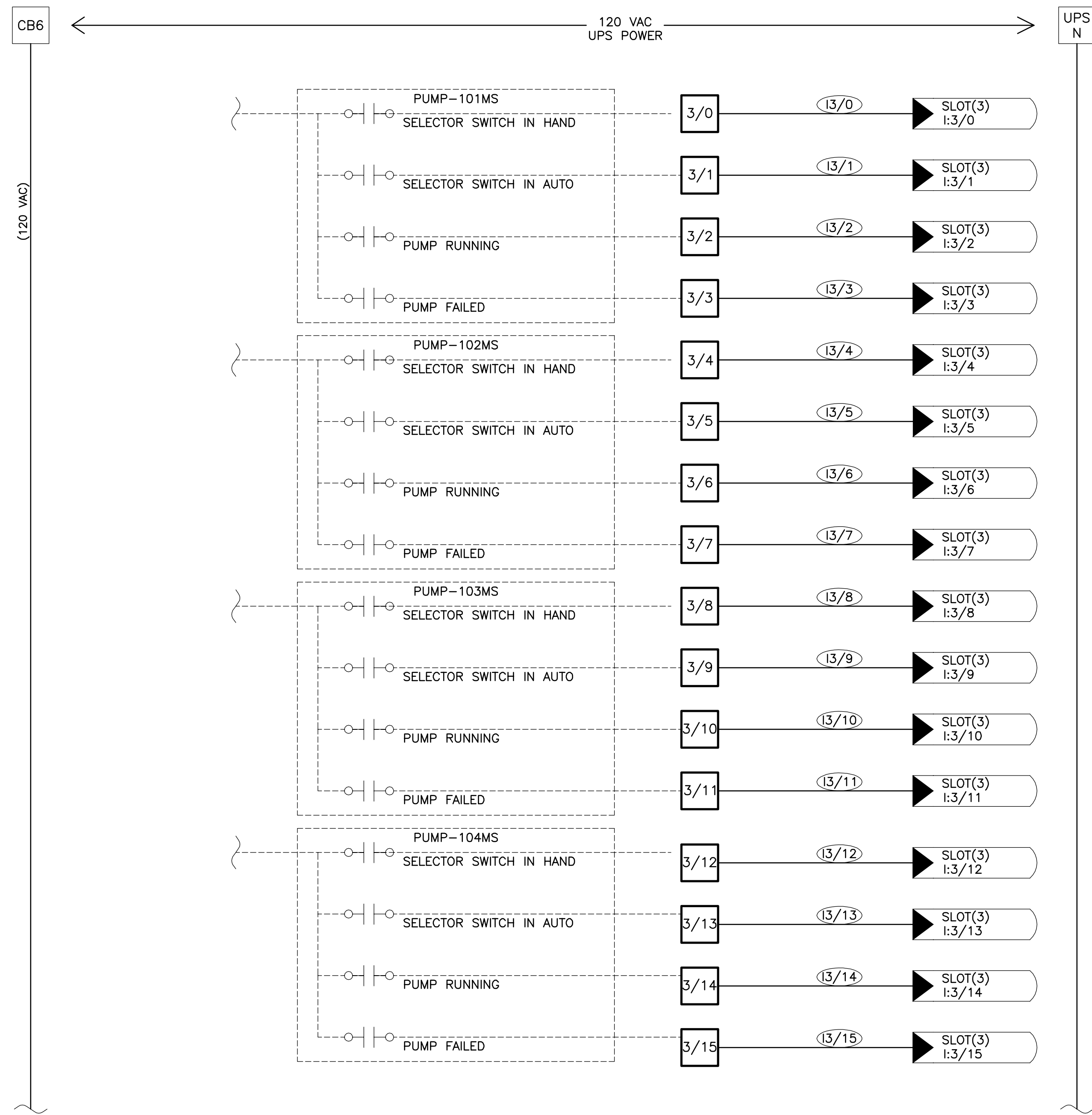
PYRAMID WTP
UNALASKA, ALASKA
 MAIN CONTROL PANEL
 DISCRETE 120VAC INPUT SCHEMATIC (1 OF 3)

SCALE:	AS SHOWN
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DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-07

NO.	DATE	BY	ISSUED FOR	REVISION
1	12/2/13	GSS	ISSUED FOR BID	

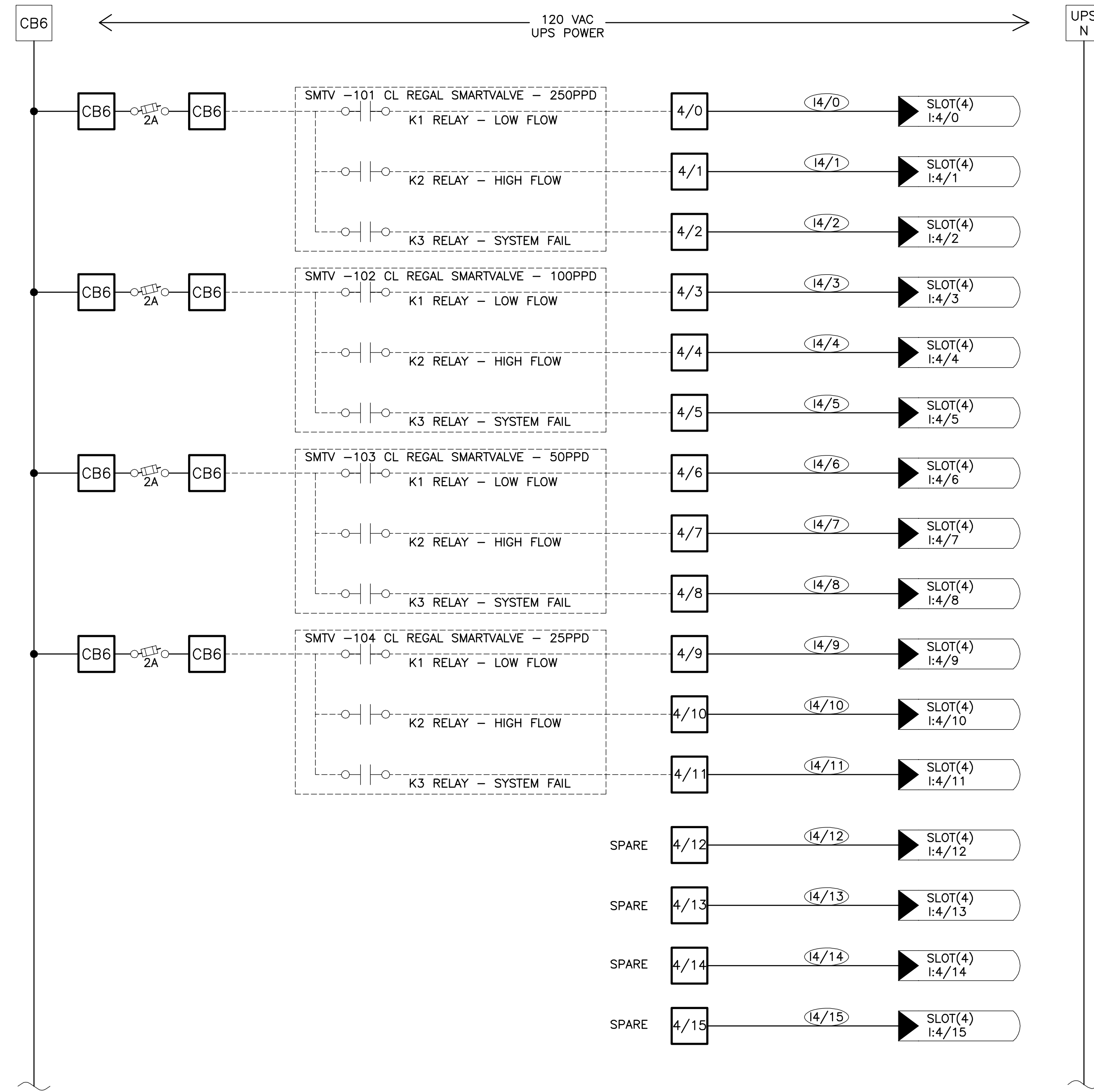
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Plotted By: Curtis
 Date: Dec 02, 2013 3:38 pm
 Layout: 1
 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From_Others\BCI\11-27-13\20204_EC-08_MCP_Discrete_Input_Schem_2.dwg



NOTE:

1. THESE I/O POINTS INCLUDE ONLY DISCRETE INPUT SIGNALS. REFER TO DISCRETE OUTPUT SCHEMATICS, ANALOG I/O SCHEMATICS AND MISCELLANEOUS WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.



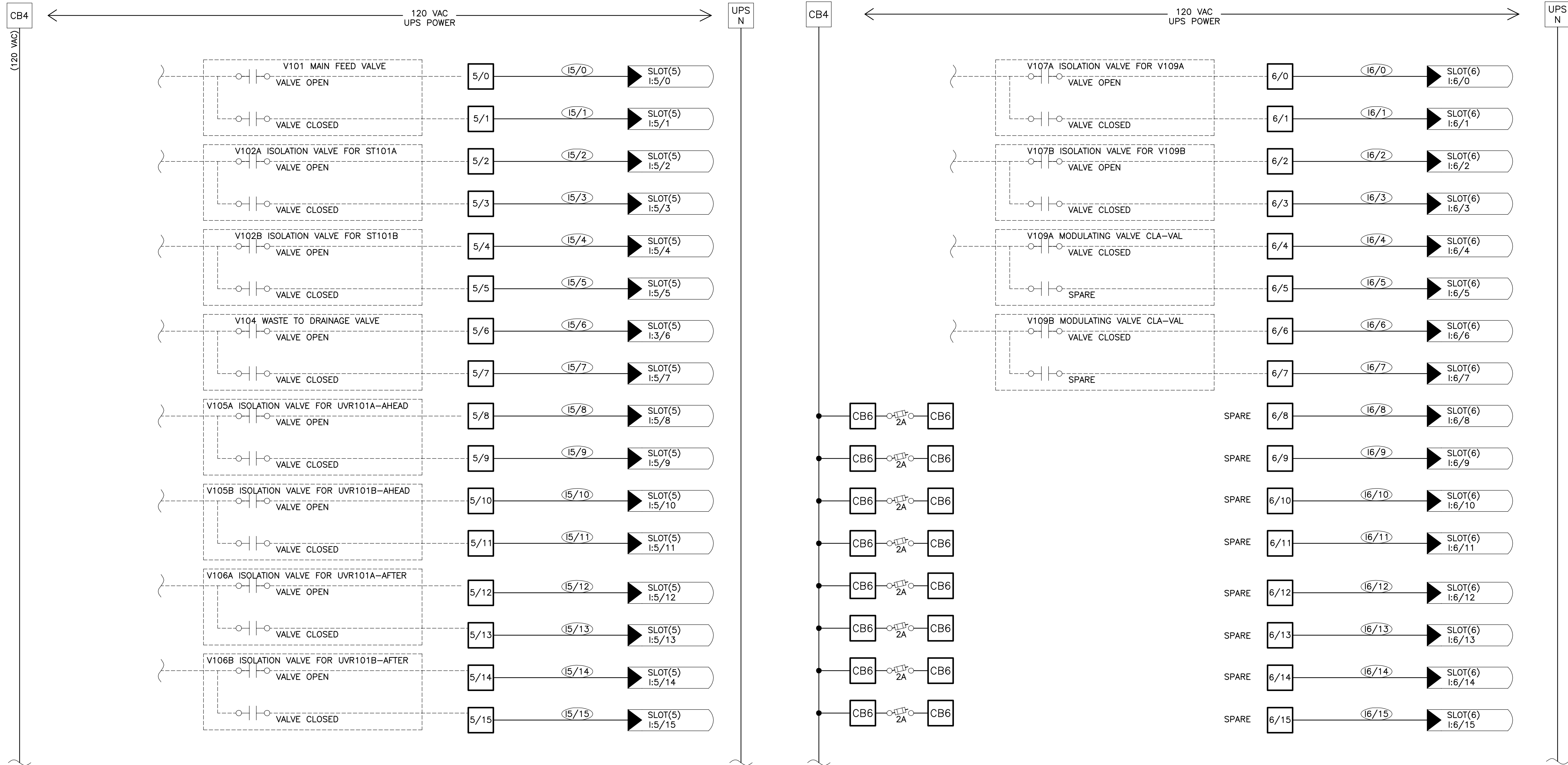
NO.	DATE	BY	REVISION
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PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 DISCRETE 120VAC INPUT SCHEMATIC (2 OF 3)

SCALE:	AS SHOWN
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DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-08
OF	08



NOTE:
 1. THESE I/O POINTS INCLUDE ONLY DISCRETE INPUT SIGNALS. REFER TO DISCRETE OUTPUT SCHEMATICS, ANALOG I/O SCHEMATICS AND MISCELLANEOUS WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.



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1	12/2/13	GSS	ISSUED FOR BID

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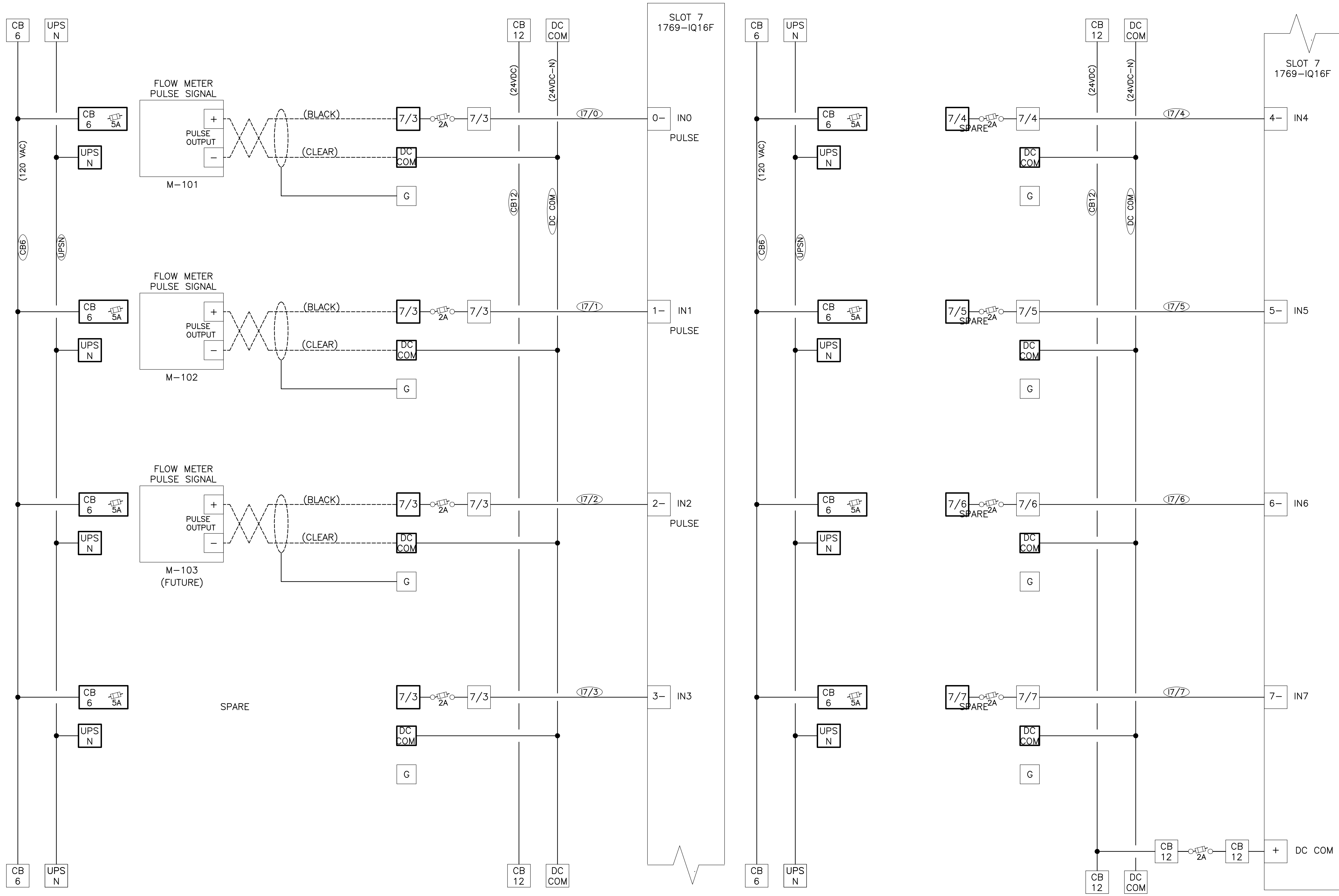


CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 DISCRETE 120VAC INPUT SCHEMATIC (3 OF 3)

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-09
OF	9

Plotted By: Curtis
 Date: Dec 02, 2013 3:38 pm
 Drawn By: Layout11
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1	12/2/13	GSS	ISSUED FOR BID	

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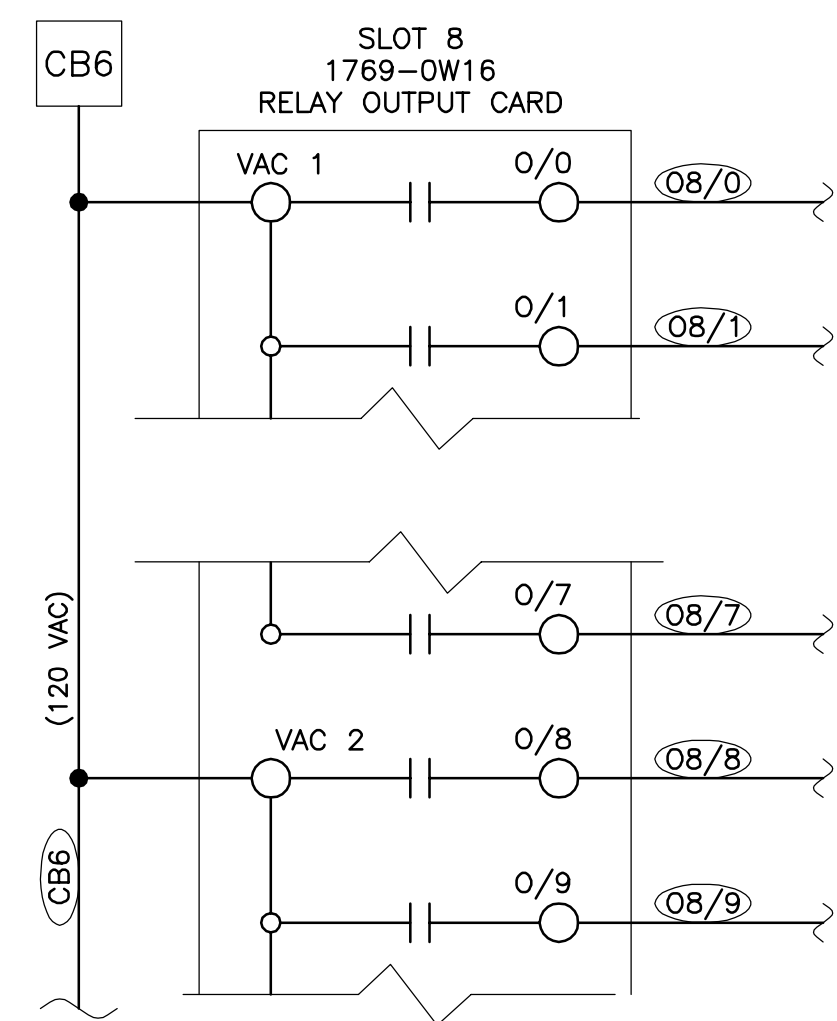
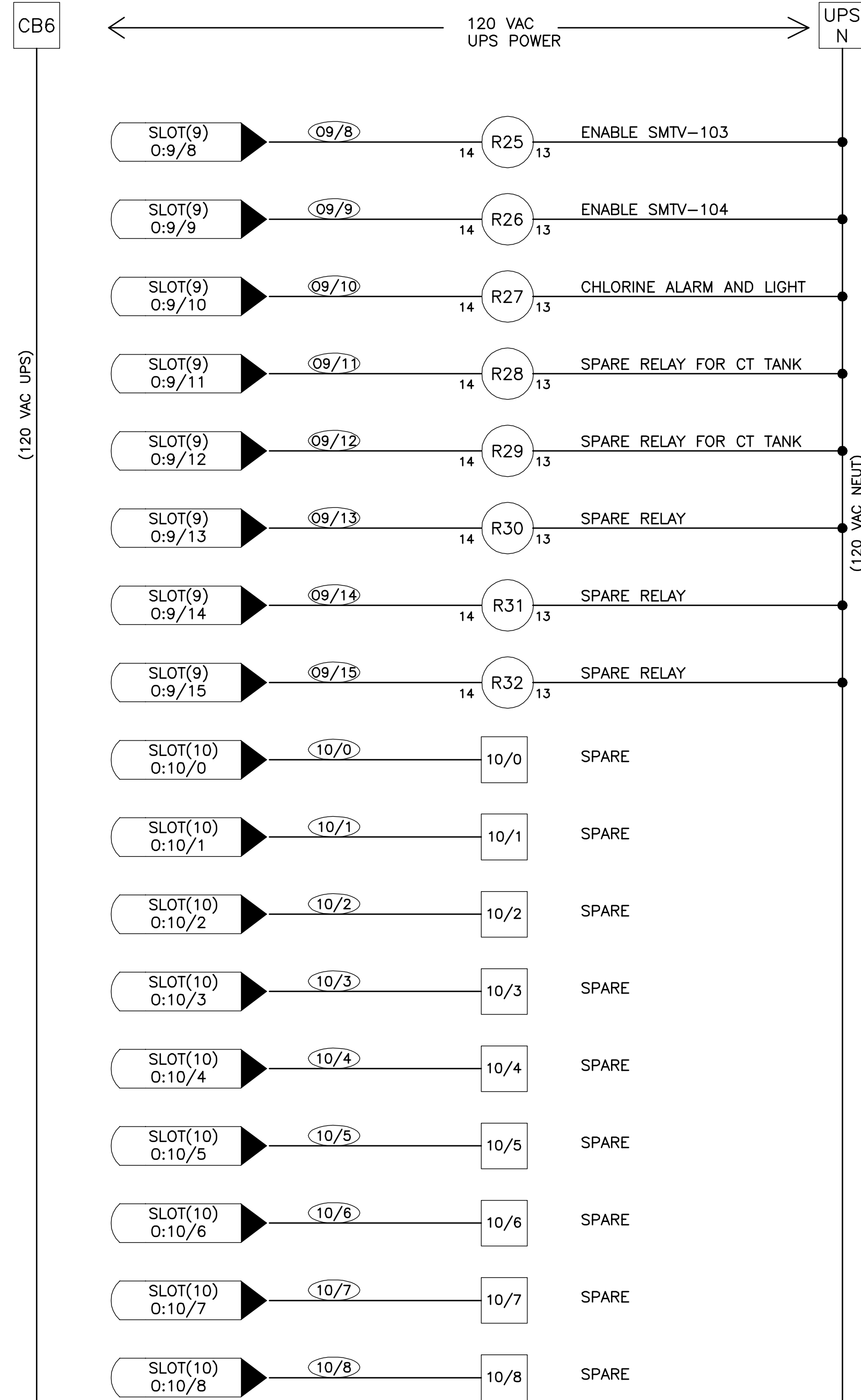
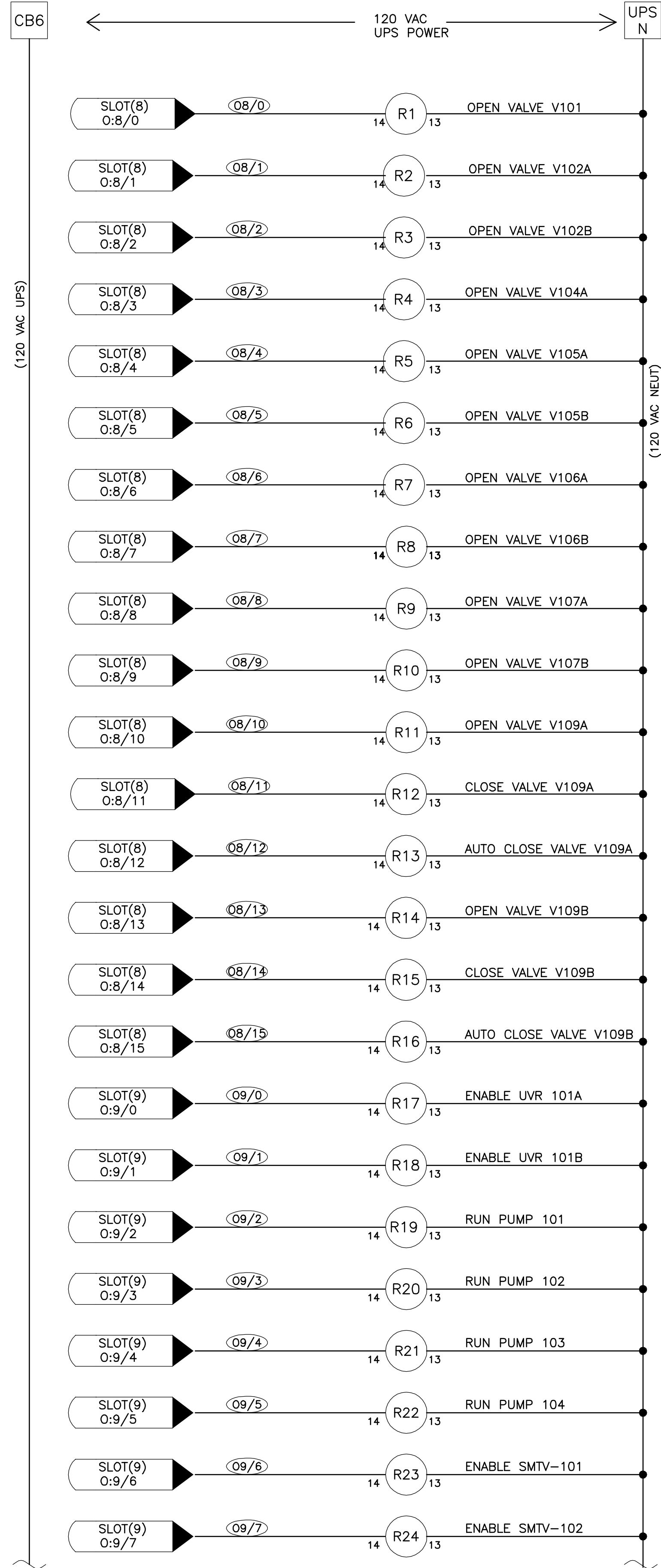
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CITY OF UNALASKA

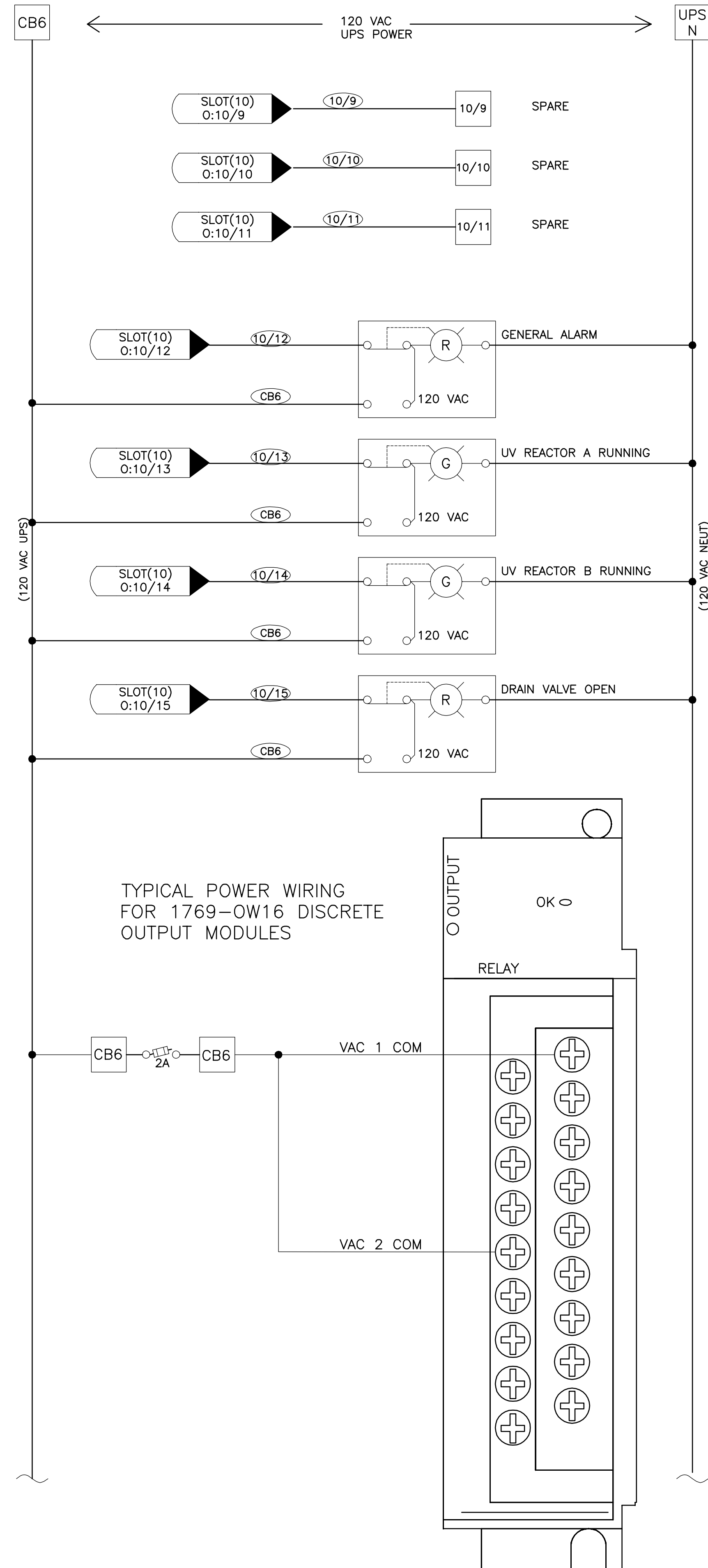
PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 DISCRETE HIGH SPEED DC INPUT SCHEMATIC

SCALE:	AS SHOWN
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DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
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Plotted By: Curtis
 Date: Dec 02, 2013 3:38 pm
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TYPICAL WIRING FOR ALL 1769-OW16 DISCRETE OUTPUT MODULES



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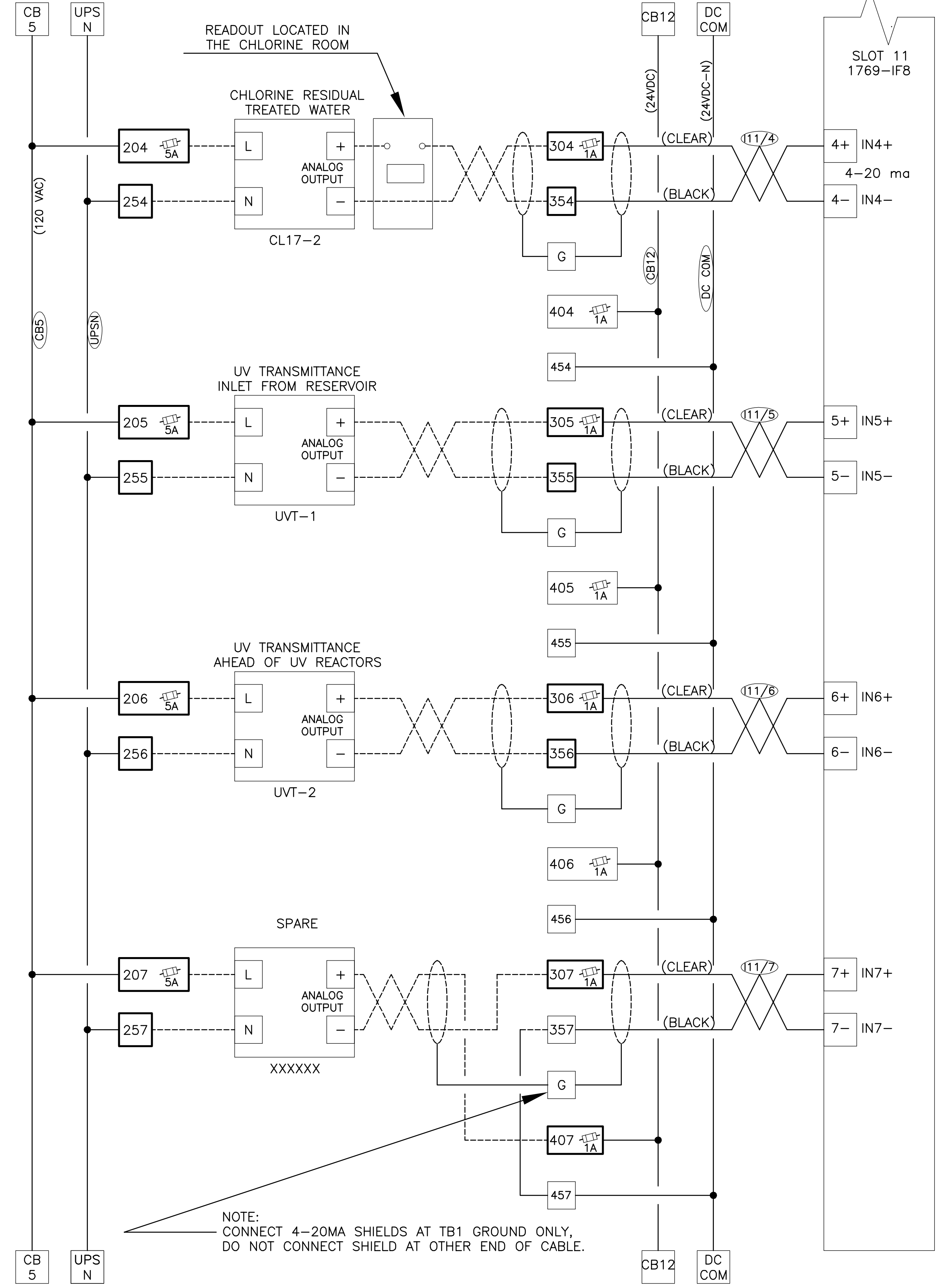
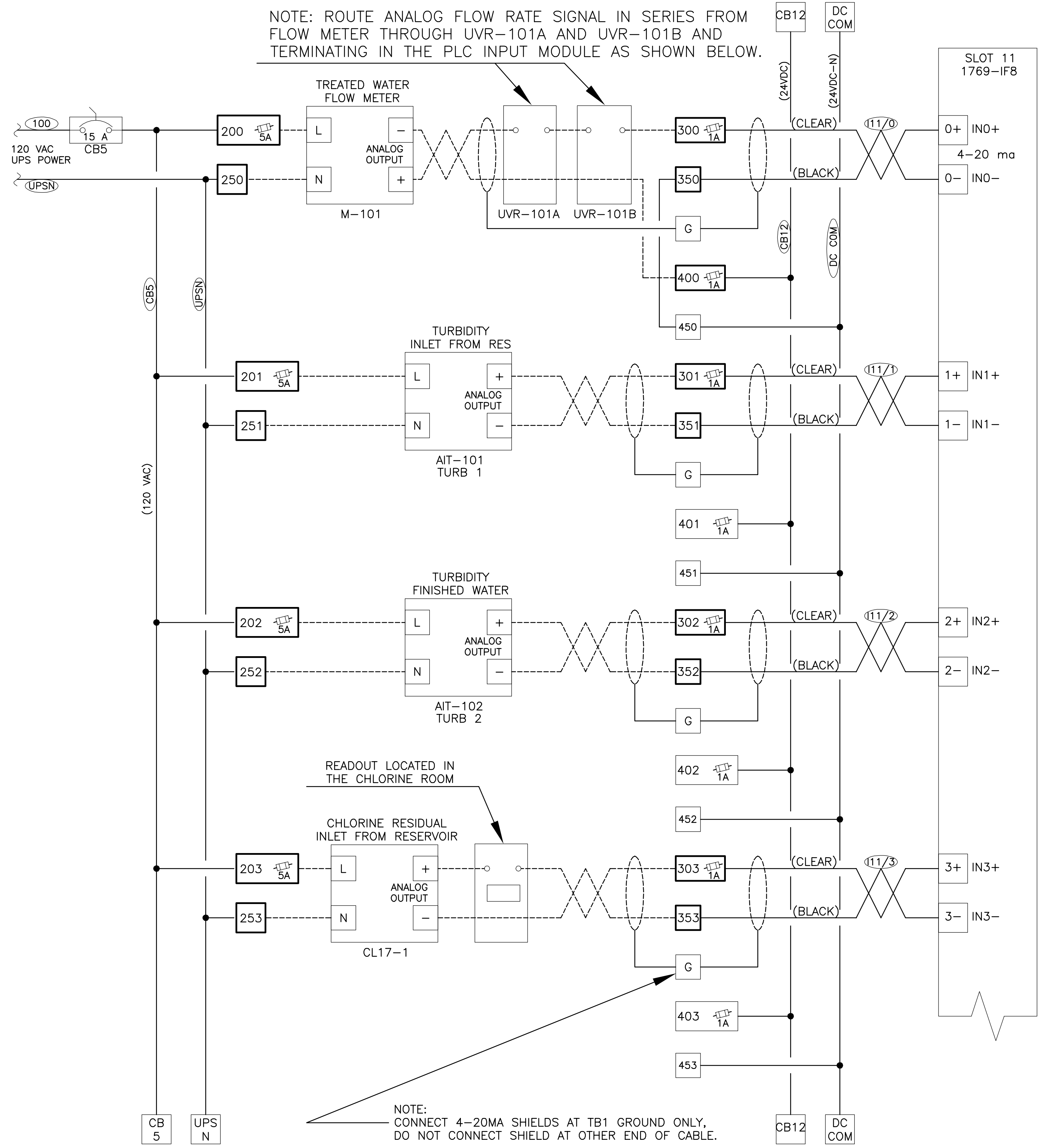


CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 DISCRETE OUTPUT SCHEMATIC

SCALE:	AS SHOWN
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Plotted By: Curtis
 Date: Dec 02, 2013 3:38 pm
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 FAX: 907-586-4010

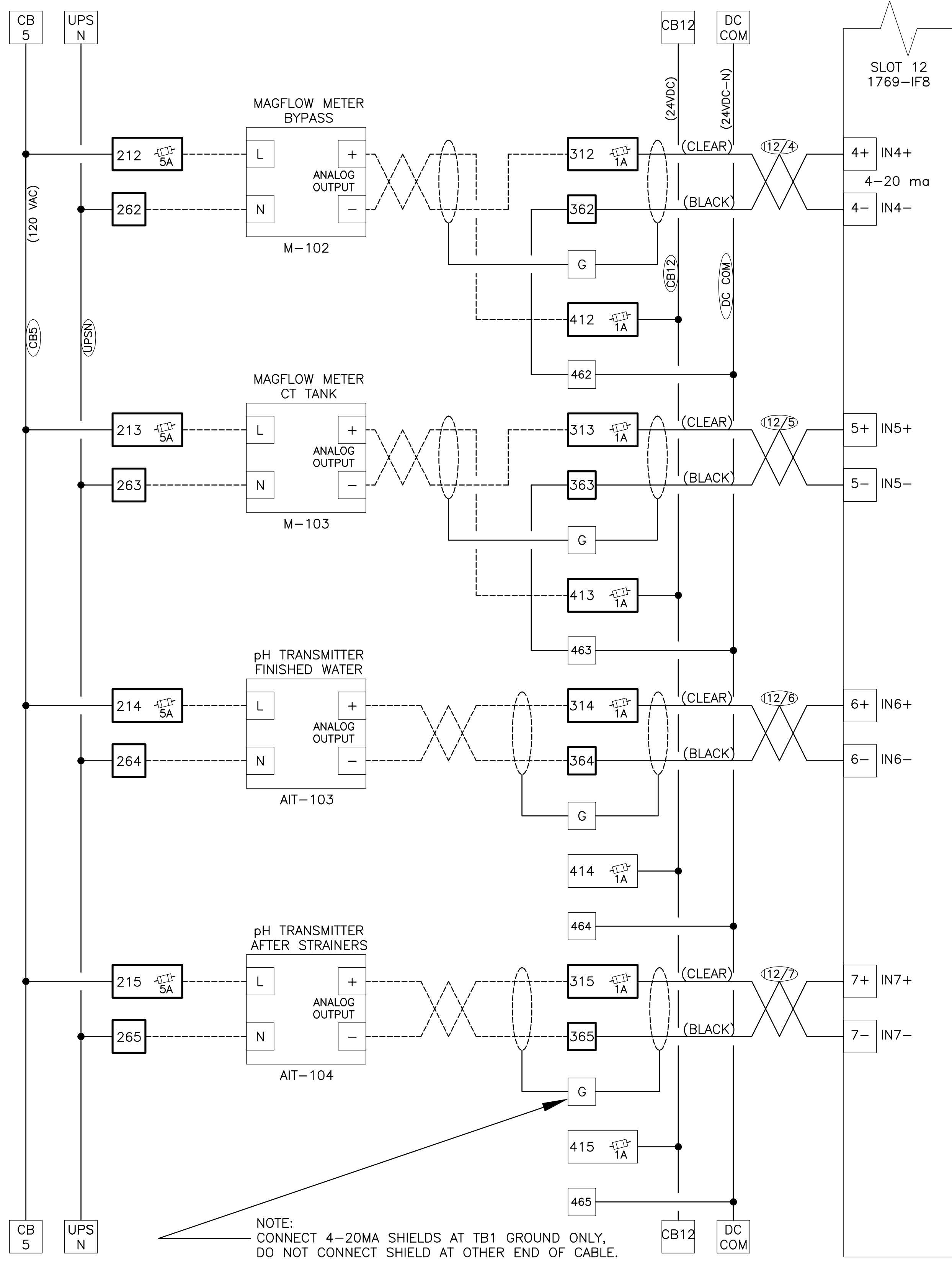
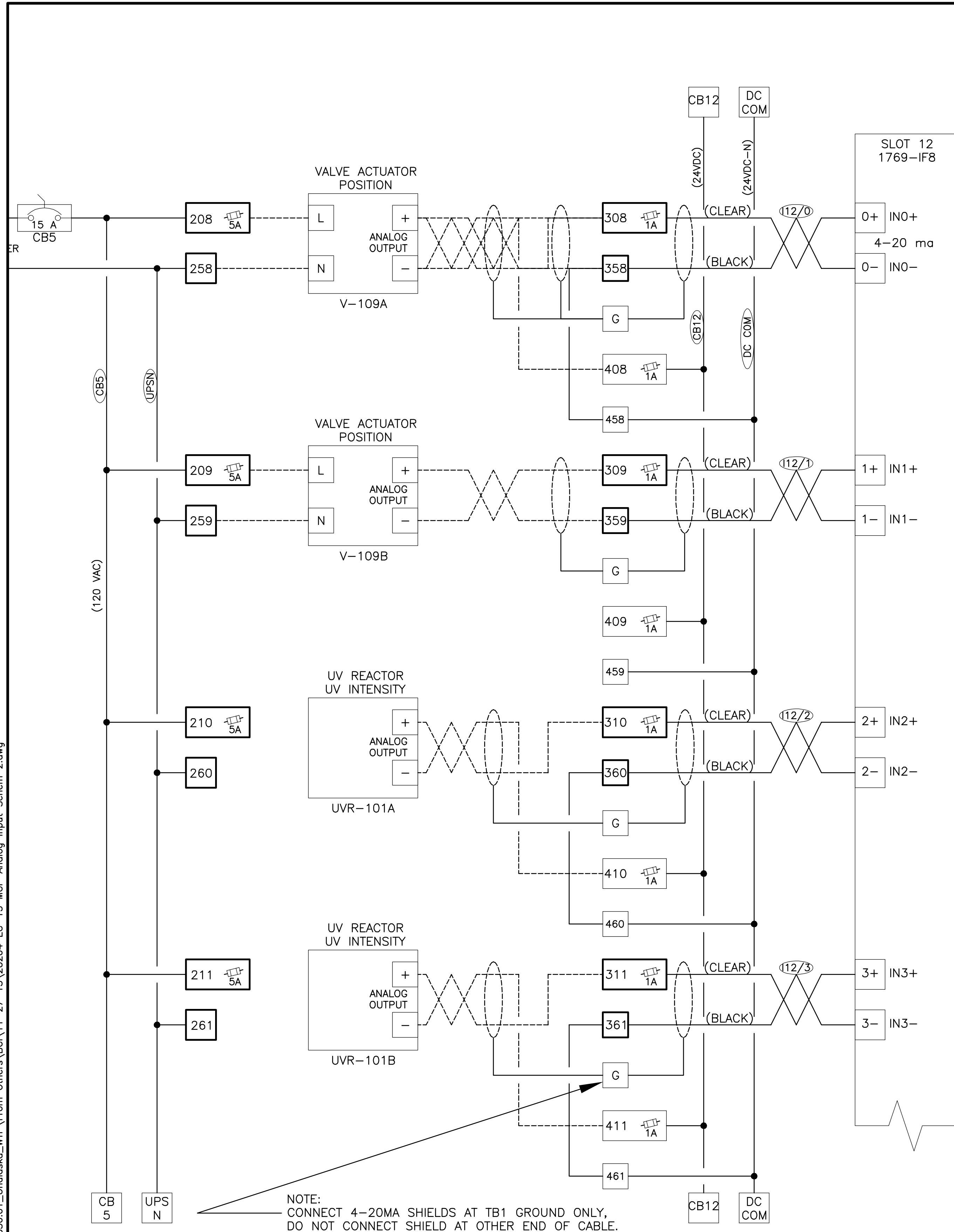
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PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 ANALOG INPUT SCHEMATIC (1 OF 5)

SCALE:	AS SHOWN
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DATE:	12/2/13
FILE NO.:	850.01
SHEET NUMBER	EC-12
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Plotted By: Curtis
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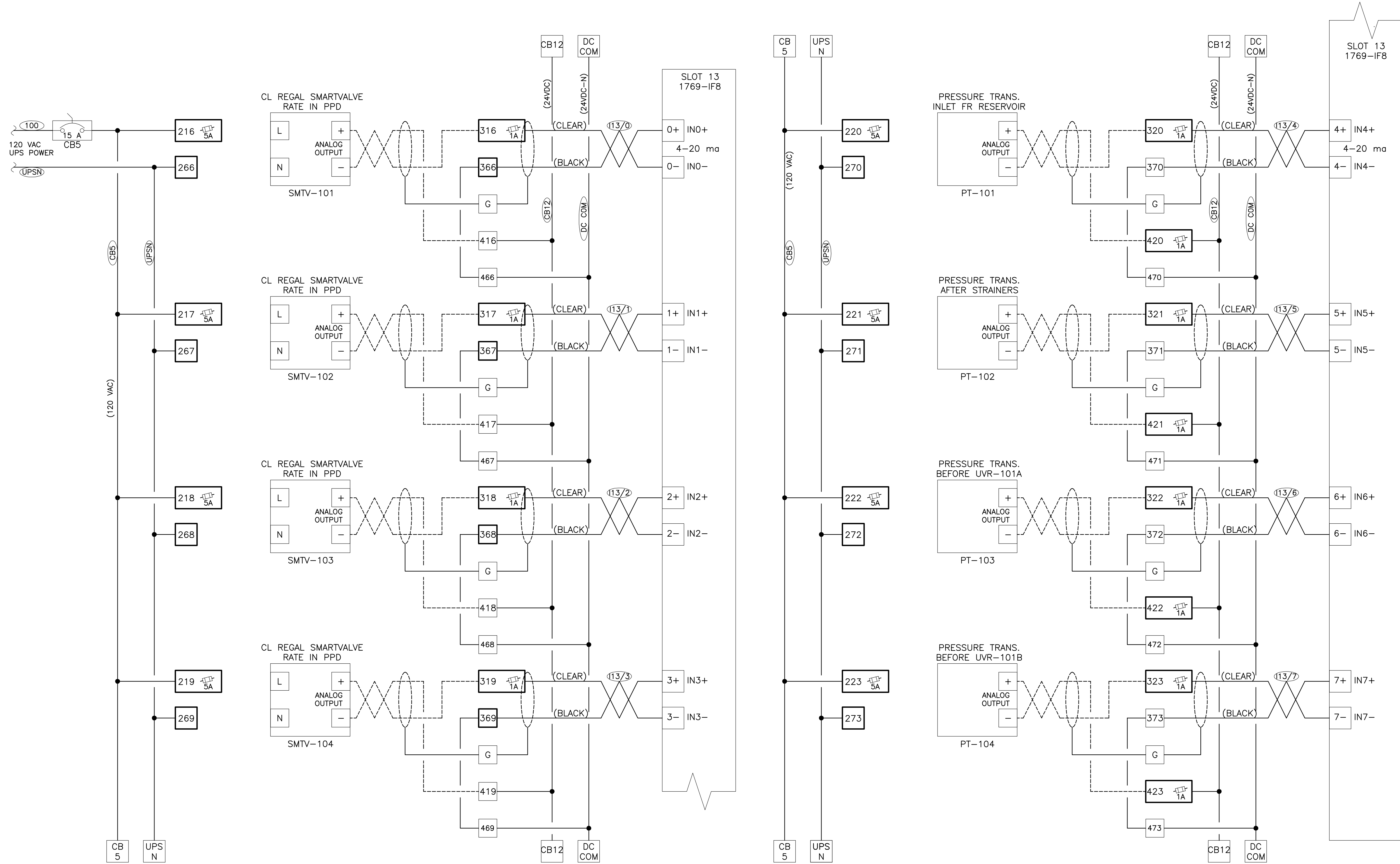


CITY OF UNALASKA

**PYRAMID WTP
UNALASKA, ALASKA**
 MAIN CONTROL PANEL
 ANALOG INPUT SCHEMATIC (2 OF 5)

SCALE:	AS SHOWN
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DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-13
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Plotted By: Curtis
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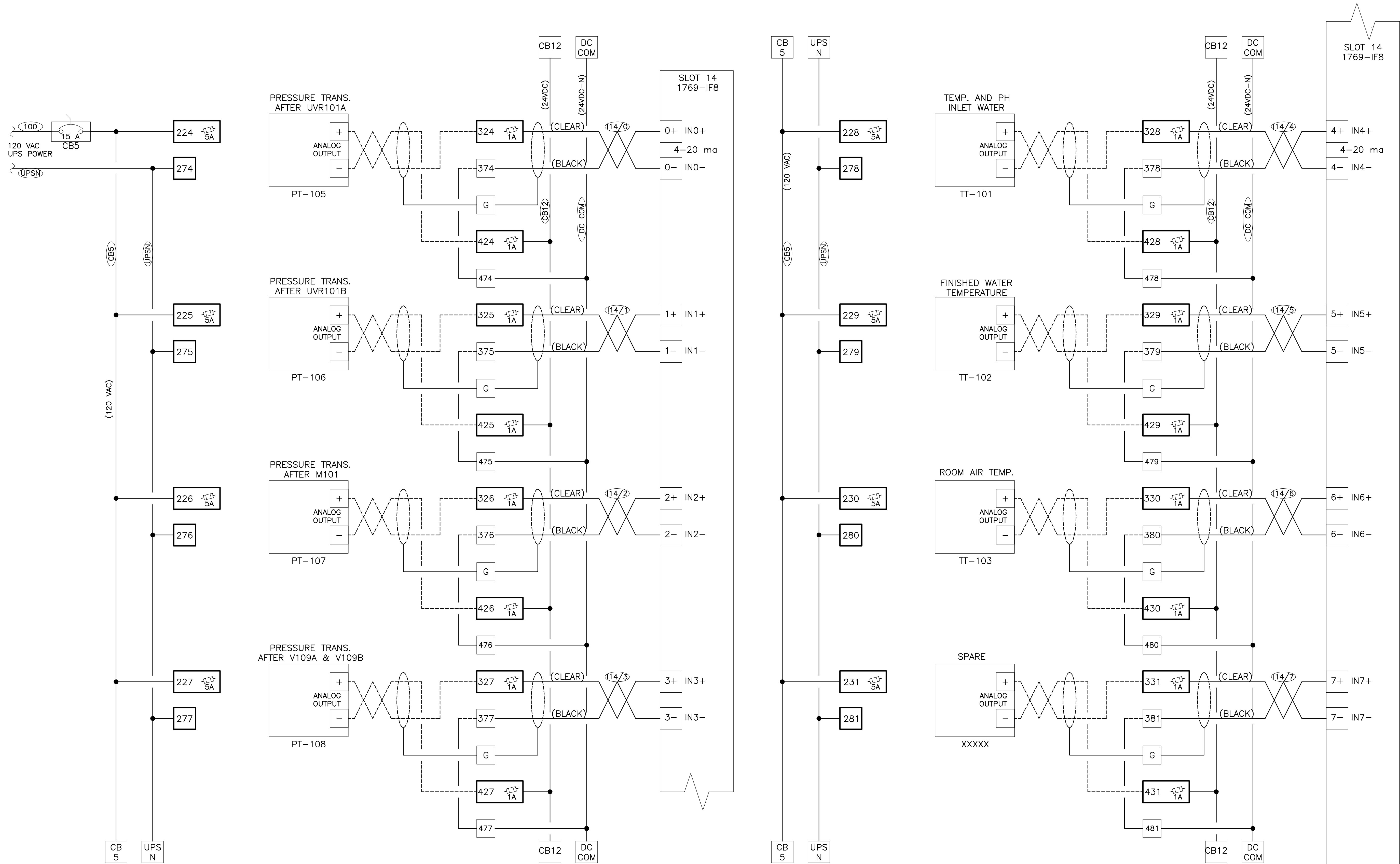
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 ANALOG INPUT SCHEMATIC (3 OF 5)

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-14
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Plotted By: Curtis
 Date/Time: 02 Dec 2013 3:38 pm
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 FAX: 907-586-4010

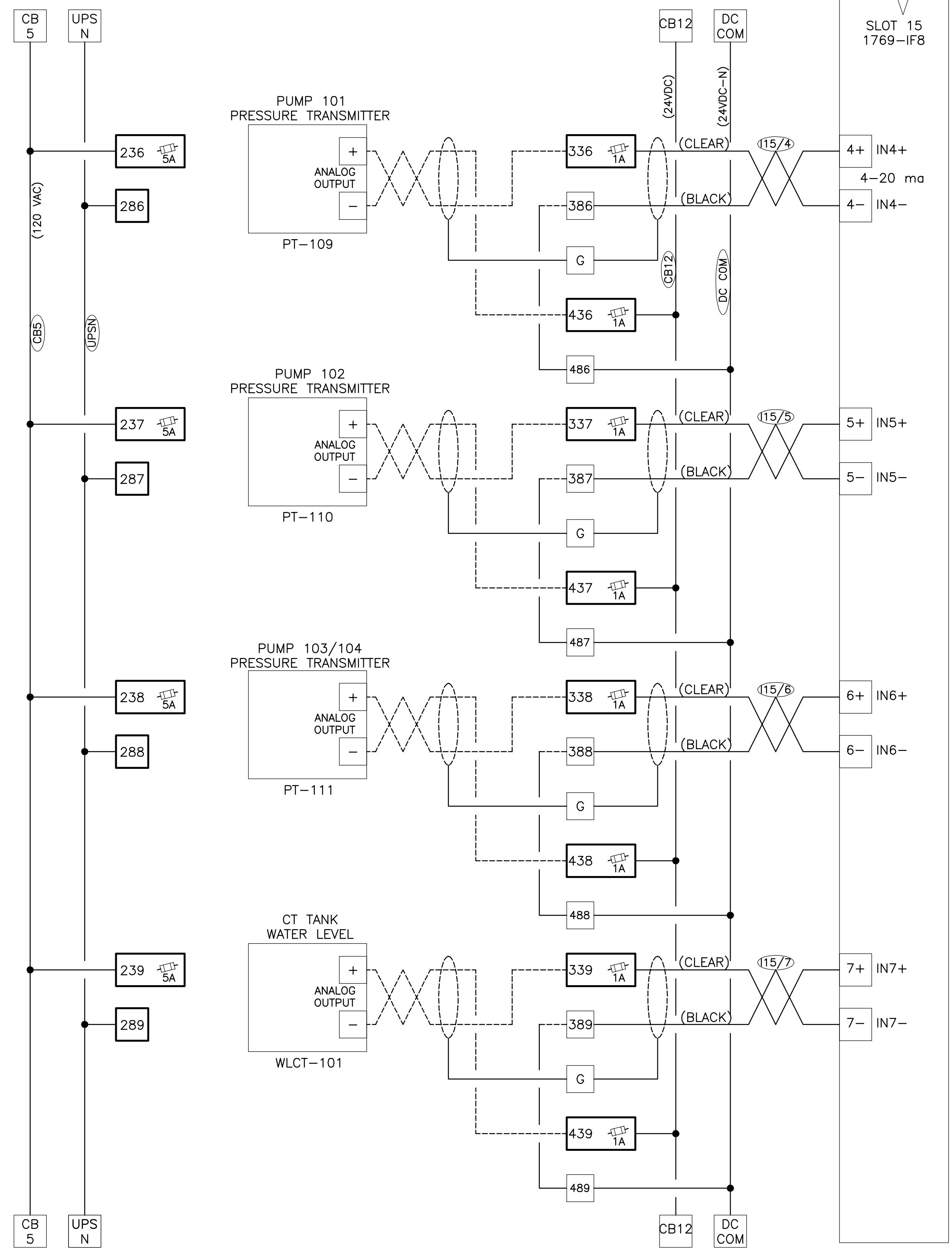
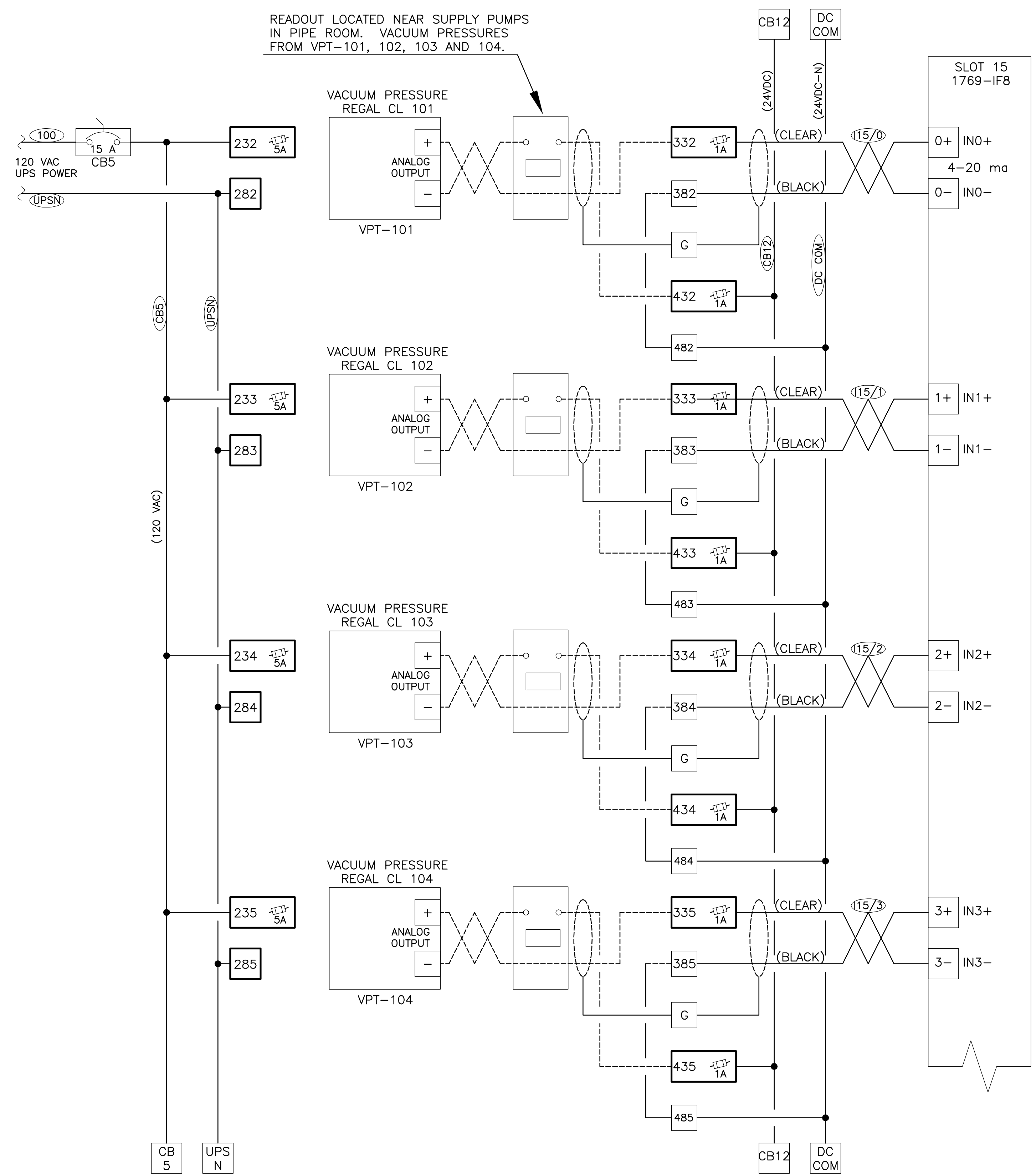
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 ANALOG INPUT SCHEMATIC (4 OF 5)

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-15
OF	5

Plotted By: Curtis
 Date/Time: 02 Dec 2013 3:39 pm
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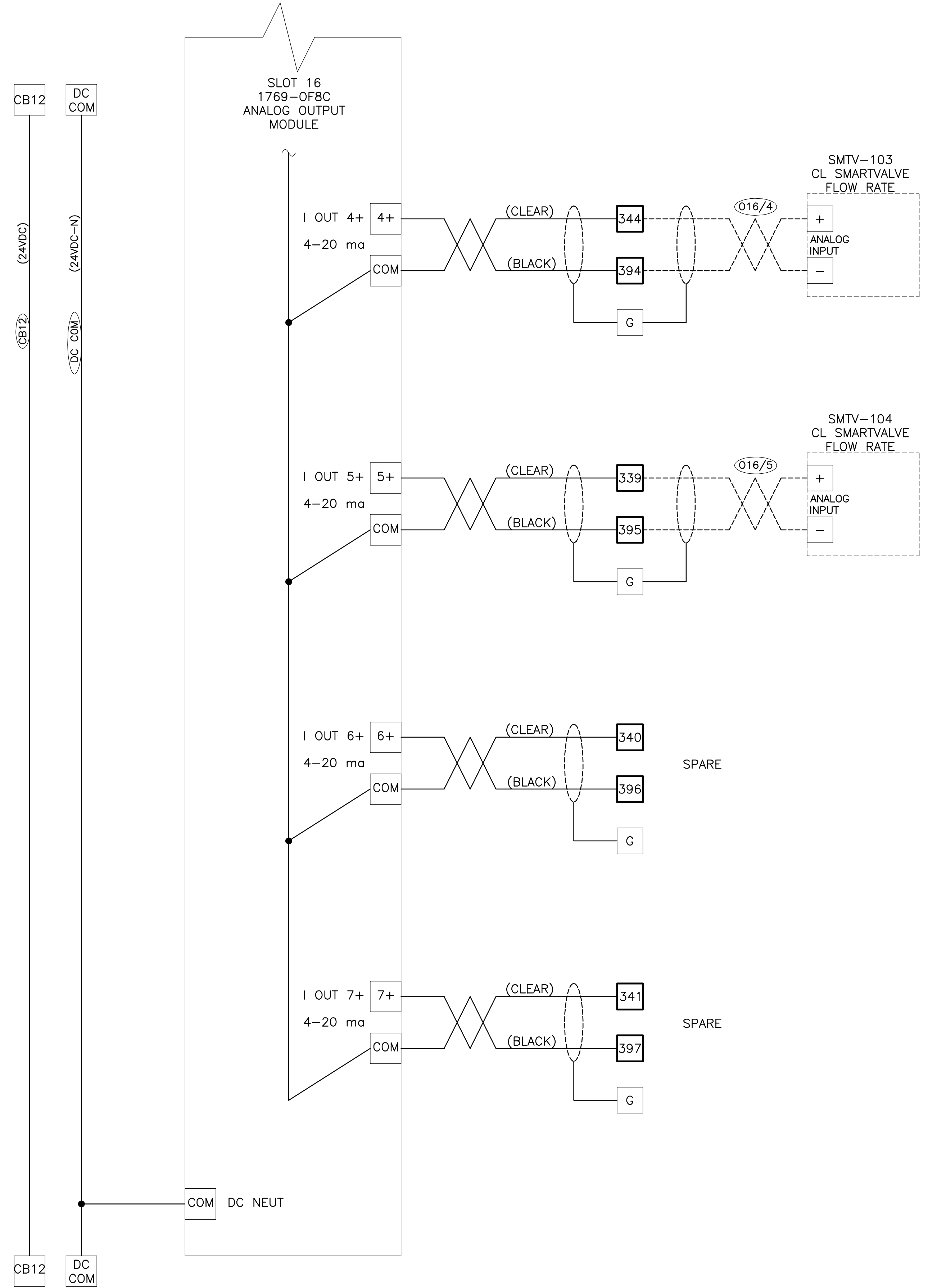
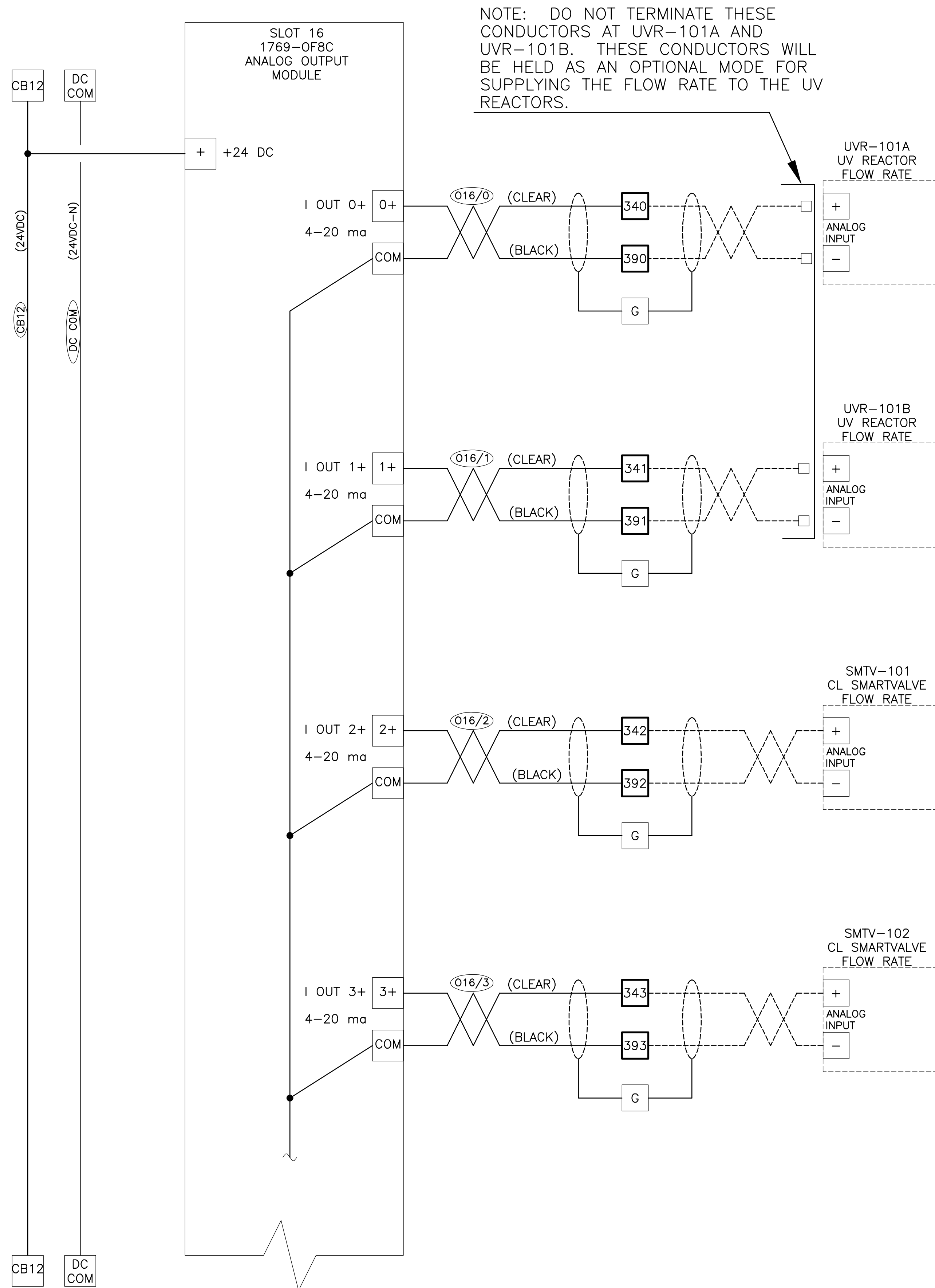
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 ANALOG INPUT SCHEMATIC (5 OF 5)

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-16
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Plotted By: Curtis
 Date/Time: 02 Dec 2013 3:39 pm
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NO.	DATE	BY	ISSUED FOR	REVISION
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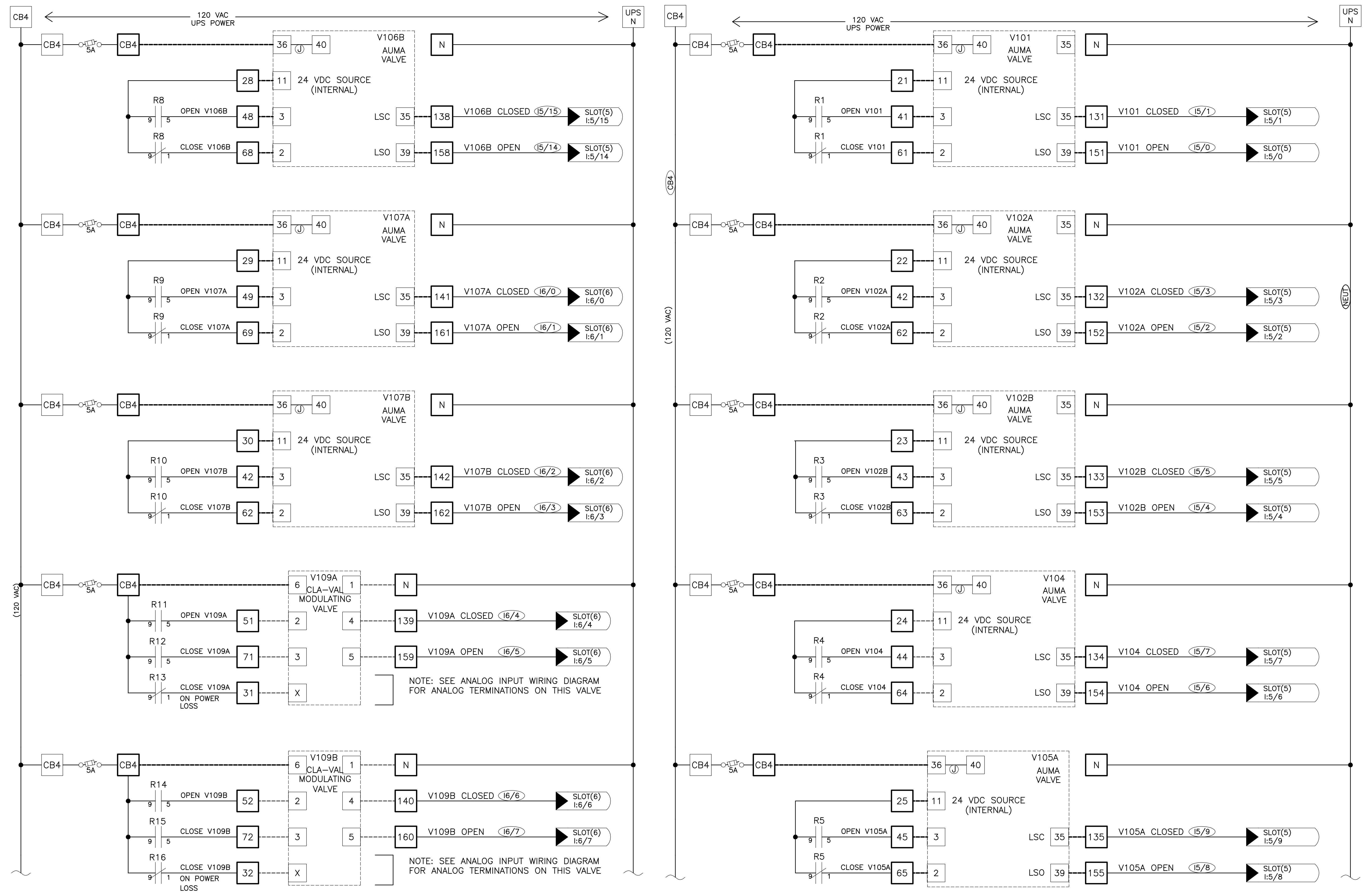
3100 Channel Dr., Ste. 210N
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 Phone: 907-586-8367
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 ANALOG OUTPUT SCHEMATIC

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-17
	OF



Plotted By: Curtis
 Date/Time: 02 Dec 2013 3:39 pm
 Layout: 1
 Filename: F:\Civil Projects\850.01_Unalaska_WTP\From_Others\BCI\11-27-13\20204_EC-18_MCP_Miscellaneous_Schem_1.dwg

NO.	DATE	BY	REVISION
1	12/2/13	GSS	ISSUED FOR BID

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 Juneau, AK 99801
 Phone: 907-586-8367
 FAX: 907-586-4010

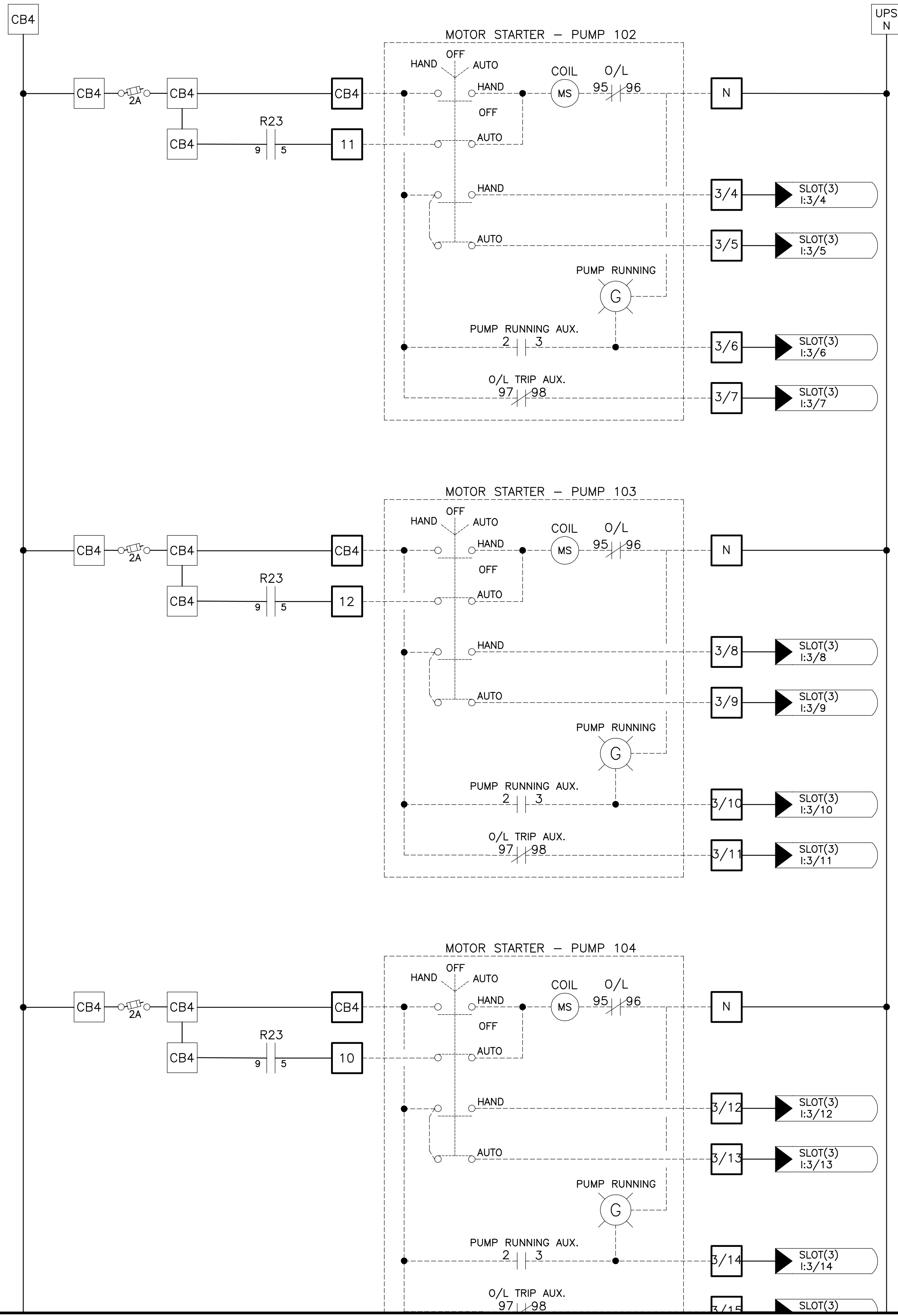
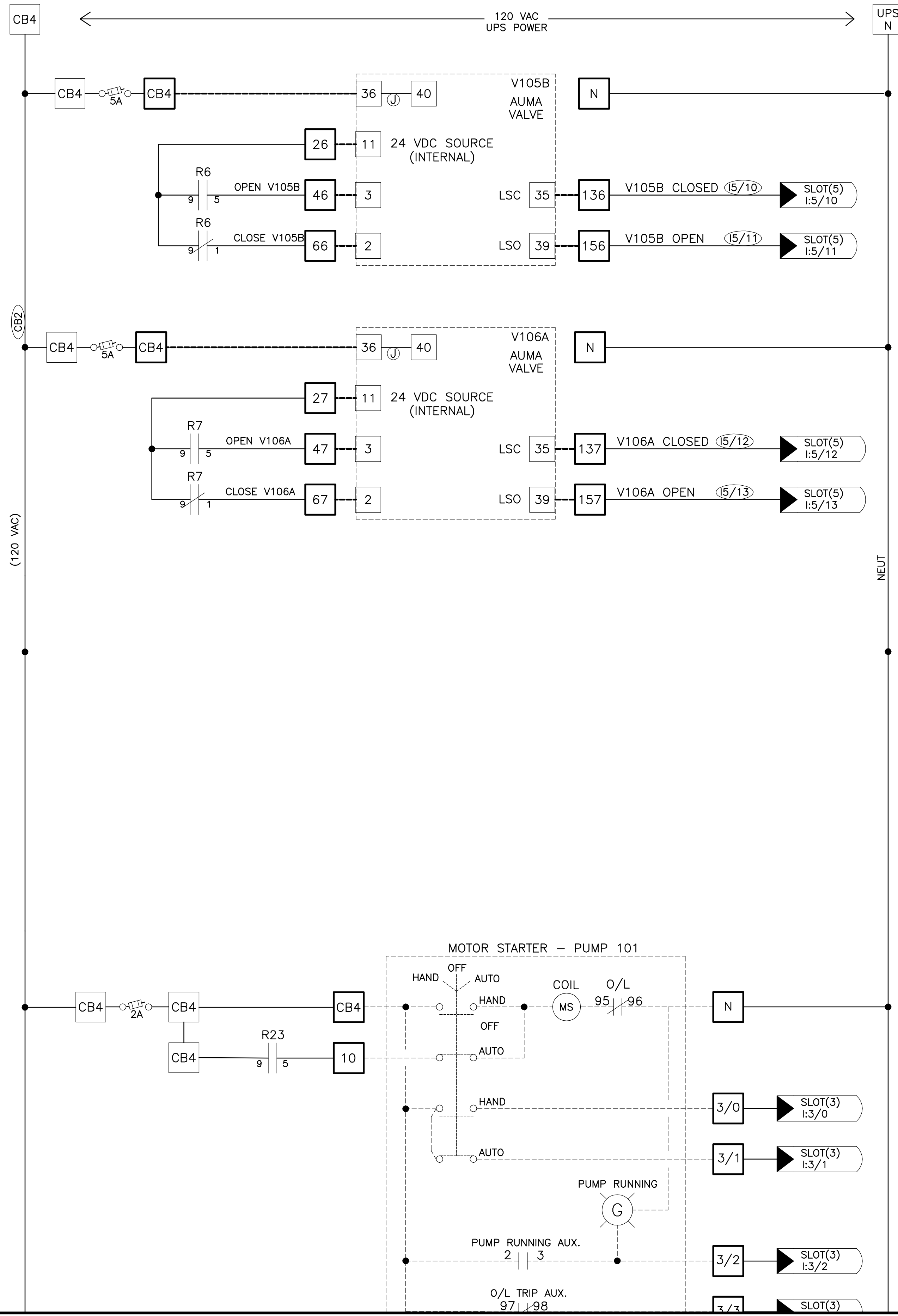
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 JUNEAU, ALASKA

CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 MAIN CONTROL PANEL
 MISCELLANEOUS DISCRETE I/O WIRING

SCALE:	AS SHOWN
DESIGNED BY:	SRS
DRAWN BY:	SRS
CHECKED BY:	GSS
DATE:	12/2/13
FILE NO.	850.01
SHEET NUMBER	EC-18
	OF

Plotted By: Curtis
 Date/time: 02 Dec 2013 3:39 pm
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 Phone: 907-586-8367
 FAX: 907-586-4010

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 JUNEAU, ALASKA

**PYRAMID WTP
 UNALASKA, ALASKA**

MAIN CONTROL PANEL
 MISCELLANEOUS WIRING DIAGRAMS

SCALE: AS SHOWN

DESIGNED BY: SRS

DRAWN BY: SRS

CHECKED BY: GSS

DATE: 12/2/13

FILE NO. 850.01

SHEET NUMBER
EC-19 OF

CITY OF UNALASKA

CONDUIT			FROM	TO	CONDUCTORS				NOTES
NO.	USE	SIZE			TYPE	NO.	SIZE	GND	
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101	J	3/4"	PT-101	MCP	TSP	1	18		
102	J	3/4"	PT-102	MCP	TSP	1	18		
103	J	3/4"	PT-105	MCP	TSP	1	18		
104	J	3/4"	PT-106	MCP	TSP	1	18		
105	J	3/4"	PT-107	MCP	TSP	1	18		
106	J	3/4"	PT-108	MCP	TSP	1	18		
107	J	3/4"	M-101 (TRANSMITTER)	MCP	TSP	2	18		
107	P	3/4"	M-101 (TRANSMITTER)	MCP	A	2	14	1	
107	M	3/4"	M-101 (SENSOR)	M-101 (TRANSMITTER)	M				
108	J	3/4"	M-102 (TRANSMITTER)	MCP	TSP	2	18		
108	P	3/4"	M-102 (TRANSMITTER)	MCP	TSP	2	18		
108	M	3/4"	M-102 (SENSOR)	M-102 (TRANSMITTER)	M				
109	P	3/4"	AIT-101	MCP	A	2	14	1	
109	J	3/4"	AIT-101	MCP	TSP	2	18		
110	P	3/4"	AIT-102	MCP	A	2	14	1	
110	J	3/4"	AIT-102	MCP	TSP	2	18		
111	P	3/4"	AIT-103	MCP	A	2	14	1	
111	J	3/4"	AIT-103	MCP	TSP	1	18		
112	P	3/4"	AIT-104	MCP	A	2	14	1	
112	J	3/4"	AIT-104	MCP	TSP	1	18		
113	J	3/4"	TT-101	MCP	TSP	1	18		
114	J	3/4"	TT-102	MCP	TSP	1	18		
115	J	3/4"	TT-103	MCP	TSP	1	18		
116	P	3/4"	CL17-2	MCP	A	2	14	1	
116	J	3/4"	CL17-2	MCP	TSP	2	18		
117	P	3/4"	CL17-1	MCP	A	2	14	1	
117	J	3/4"	CL17-1	MCP	TSP	2	18		
118	P	3/4"	UVT-1	MCP	A	2	14	1	
118	J	3/4"	UVT-1	MCP	TSP	2	18		
119	P	3/4"	UVT-2	MCP	A	2	14	1	
119	J	3/4"	UVT-2	MCP	TSP	2	18		
120			NOT USED	MCP	TSP	1	18		
121	J	3/4"	M-103 (TRANSMITTER)	MCP	TSP	2	18		
121	P	3/4"	M-103 (TRANSMITTER)	MCP	A	2	14	1	
121	M	3/4"	M-103 (SENSOR)	M-103 (TRANSMITTER)	M				
122	C	3/4"	FS-101						
123	C	3/4"		MCP	A	2	14	1	
124	C	3/4"	E-SHUTDOWN	MCP	A	2	14	1	
125	C	3/4"	CL ALARM/HORN	MCP	A	2	14	1	
126	C	3/4"	CL E-SHUTDOWN	MCP	A	2	14	1	
127	J	3/4"	CL READOUT CL17-1	MCP	TSP	1	18		SERIES FROM CL17-1 TO MCP
128	J	3/4"	CL READOUT CL17-2	MCP	TSP	1	18		SERIES FROM CL17-2 TO MCP
129	J	3/4"	VPT-101	MCP	TSP	1	18		ROUTE THRU READOUT NEAR PUMPS
130	J	3/4"	VPT-102	MCP	TSP	1	18		ROUTE THRU READOUT NEAR PUMPS
131	J	3/4"	VPT-103	MCP	TSP	1	18		ROUTE THRU READOUT NEAR PUMPS
132	J	3/4"	VPT-104	MCP	TSP	1	18		ROUTE THRU READOUT NEAR PUMPS
133	J	3/4"	PT-109	MCP	TSP	1	18		
134	J	3/4"	PT-110	MCP	TSP	1	18		
135	J	3/4"	PT-111	MCP	TSP	1	18		
136	C	3/4"	CL ALARM	MCP	A	2	14	1	
137	C	3/4"	TROUBLE - REGAL CL	MCP	A	2	14	1	
138	C	1"	GENERATOR	MCP	A	8	14	1	3 SEPARATE SIGNALS
139	C	3/4"	TRANSFER SWITCH	MCP	A	6	14	1	2 SEPARATE SIGNALS
140	C	3/4"	UPS ALARM	MCP	A	2	14	1	
141	J	3/4"	CT TANK WATER LEVEL	MCP	TSP	1	18		
142	C	3/4"	SEWER TANK - HIGH	MCP	A	2	14	1	
143	C	3/4"	FUEL TANK - LOW	MCP	A	2	14	1	
144	C	3/4"	CT TANK - SPARE	MCP	A	6	14	1	4 SEPARATE SIGNALS
144	J	3/4"	CT TANK - SPARE	MCP	TSP	2	18		
145	C	3/4"	DDC CONTROL PANEL	MCP	A	6	14	1	3 SEPARATE SIGNALS
146	C	1"	FIRE/SECURITY PANEL	MCP	A	10	14	1	7 SEPARATE SIGNALS

CONDUIT			FROM	TO	CONDUCTORS				NOTES
NO.	USE	SIZE			TYPE	NO.	SIZE	GND	
147	C	3/4"	V101	MCP	A	8	14	1	4 SIGNALS
147	P	3/4"	V101	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
148	C	3/4"	V102A	MCP	A	8	14	1	4 SIGNALS
148	P	3/4"	V102A	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
149	C	3/4"	V102B	MCP	A	8	14	1	4 SIGNALS
149	P	3/4"	V102B	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
150	C	3/4"	V104	MCP	A	8	14	1	4 SIGNALS
150	P	3/4"	V104	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
151	C	3/4"	V105A	MCP	A	8	14	1	4 SIGNALS
151	P	3/4"	V105A	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
152	C	3/4"	V105B	MCP	A	8	14	1	4 SIGNALS
152	P	3/4"	V105B	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
153	C	3/4"	V106A	MCP	A	8	14	1	4 SIGNALS
153	P	3/4"	V106A	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
154	C	3/4"	V106B	MCP	A	8	14	1	4 SIGNALS
154	P	3/4"	V106B	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
155	C	3/4"	V107A	MCP	A	8	14	1	4 SIGNALS
155	P	3/4"	V107A	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
156	C	3/4"	V107B	MCP	A	8	14	1	4 SIGNALS
156	P	3/4"	V107B	PANEL BOARD 3 PH	A	3	14	1	480 3PH POWER
157	C	3/4"	V109A	MCP	A	10	14	1	4 SIGNALS
157	J	3/4"	V109A	MCP	TSP	1	18		
158	C	3/4"	V109B	MCP	A	10	14	1	4 SIGNALS
158	J	3/4"	V109B	MCP	TSP	1	18		
159	C	3/4"	UVR-101A	MCP	A	8	14	1	3 SIGNALS
159	J	3/4"	UVR-101A	MCP	TSP	2	18		
160	C	3/4"	UVR-101B	MCP	A	8	14	1	3 SIGNALS
160	J	3/4"	UVR-101B	MCP	TSP	2	18		
161	C	3/4"	PMP-101	MCP	A	8	14	1	4 SIGNALS
162	C	3/4"	PMP-102	MCP	A	8	14	1	4 SIGNALS
163	C	3/4"	PMP-103	MCP	A	8	14	1	4 SIGNALS
164	C	3/4"	PMP-104	MCP	A	8	14	1	4 SIGNALS
165	C	3/4"	SMTV-101	MCP	A	6	14	1	4 SIGNALS
165	J	3/4"	SMTV-101	MCP	TSP	2	18		
166	C	3/4"	SMTV-102	MCP	A	6	14	1	4 SIGNALS
166	J	3/4"	SMTV-102	MCP	TSP	2	18		
167	C	3/4"	SMTV-103	MCP	A	6	14	1	4 SIGNALS
167	J	3/4"	SMTV-103	MCP	TSP	2	18		
167	C	3/4"	SMTV-104	MCP	A	6	14	1	4 SIGNALS
168	J	3/4"	SMTV-104	MCP	TSP	2	18		
169	J	3/4"	PT-103	MCP	TSP	1	18		
170	J	3/4"	PT-104	MCP	TSP	1	18		

LEGEND

CONDUIT TYPE

- P ~ POWER (SEE NOTE 1)
- C ~ CONTROL (DISCRETE SIGNALS ~ 24VDC or 120VAC)
- J ~ SIGNAL (ETHERNET OR ANALOG)

CONDUCTOR TYPE

- A ~ SINGLE CONDUCTORS (VARIOUS SIZES)
- E ~ ETHERNET CABLES (CAT 6)
- TSP ~ TWISTED SHIELDED PAIR OR OTHER MULTI-CONDUCTOR CABLE
- M ~ SPECIALIZED CABLE FURNISHED BY EQUIPMENT SUPPLIER

NOTES

- 1 ~ EXCEPT FOR POWER TO VALVES, THE ONLY POWER CONDUCTORS SHOWN IN THIS TABLE ARE THOSE WHERE THE POWER SOURCE IS IN THE MCP. OTHER POWER CONDUCTORS ARE SHOWN ON THE ELECTRICAL DRAWINGS AND ORIGINATE IN PANEL BOARDS OR OTHER POWER CENTERS. POWER FOR VALVE ACTUATORS WILL BE 480V 3PH AND ORIGINATES IN PANEL BOARDS.
- 2 ~ MINIMUM CONDUIT SIZE IS 3/4"
- 3 ~ MAXIMUM PERCENTAGE CONDUIT FILL IS 30%
- 4 ~ WHEN CONVENIENT, CONTRACTOR MAY COMBINE SEVERAL NAMED CONDUITS INTO A SINGLE CONDUIT OF THE SAME USE. CONTROL, POWER AND SIGNAL WIRES MAY NOT BE COMBINED IN THE SAME CONDUIT. THE 30% CONDUIT FILL REQUIREMENT MUST BE MAINTAINED.
- 5 ~ ALL CONDUITS SHALL BE IDENTIFIED IN THE FIELD AFTER INSTALLATION WITH TAPED LABELS. LETTERING SHALL BE BLACK ON WHITE AND 3/4" IN SIZE.



ISSUED FOR BID	REVISION
GSS	BY
12/2/13	DATE
INC.	NO.

3100 Channel Dr., Ste. 210N
 Juneau, AK 99801
 Phone: 907-586-8367
 FAX: 907-586-4010

BCI
 BOREAL CONTROLS, INC.
 JUNEAU, ALASKA

CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 CONDUIT SCHEDULE

SCALE: AS SHOWN
 DESIGNED BY: SRS
 DRAWN BY: SRS
 CHECKED BY: GSS
 DATE: 12/2/13
 FILE NO. 850.01
 SHEET NUMBER
 EC-20 OF