

ATTACHMENT C

Pyramid Water Treatment Plant As-builts

CITY OF UNALASKA

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CHRIS HLADICK	CITY MANAGER
NANCY PETERSON	PUBLIC WORKS, DIRECTOR
ROBERT LUND	PUBLIC WORKS, CITY ENGINEER
DAN WINTERS	PUBLIC UTILITIES, DIRECTOR
CLINT HULING	WATER DIVISION, SUPERVISOR
JEREMIAH KIRCHOFER	WATER DIVISION, OPERATOR



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PUBLIC UTILITIES
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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

LCGLANTECH, Inc
 250 H STREET
 ANCHORAGE, AK 99501
 (907) 243-8985

PROCESS

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

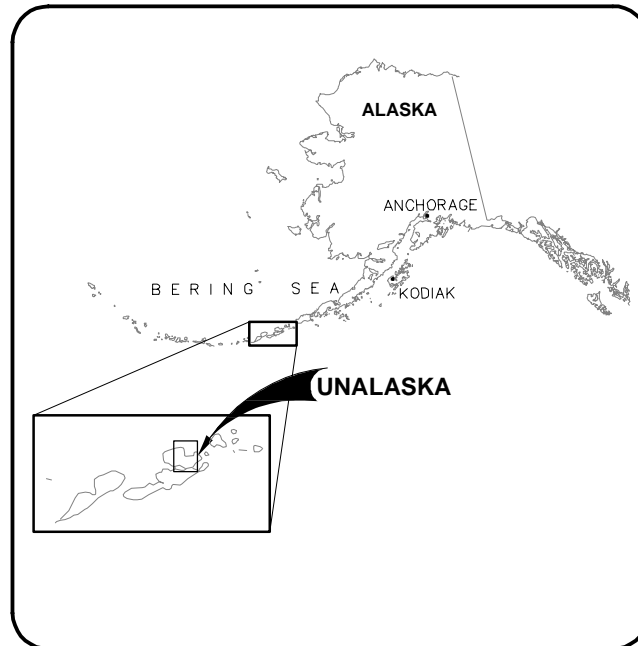
MECHANICAL, ELECTRICAL

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
RECORD DRAWINGS



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- G1.1 WATER SYSTEM OVERVIEW AND DIAGRAM
- V1.0 SITE CONTROL
- D1.0 DEMOLITION PLAN
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- ~~C1.4 ABOVE GROUND DISCHARGE WATER LINE PLAN AND PROFILE~~
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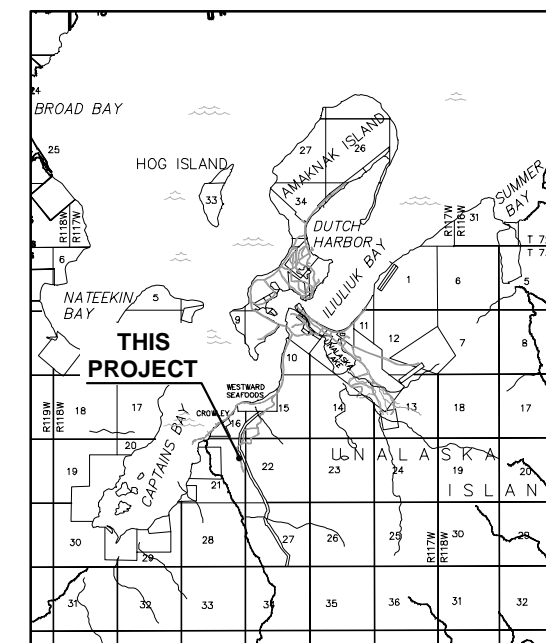
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VICINITY MAP

RECORD DRAWINGS
 THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INSPECTIONS, CONTRACTOR FURNISHED INFORMATION, AND BASED ON PERIODIC FIELD OBSERVATIONS BY THE ENGINEERS. THE CONTRACTOR PROVIDED INFORMATION APPEARS TO REPRESENT THE PROJECT AS CONSTRUCTED. ANY USE OF THESE DRAWINGS SUBSEQUENT TO THIS DATE SHALL BE FOR INFORMATION AND RECORD PURPOSES ONLY AND NOT FOR CONSTRUCTION.
 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



CITY OF UNALASKA UNALASKA, ALASKA

PYRAMID WATER TREATMENT PLANT

850.01

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.
- CONFINE 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% NORTRAN (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
		CONDUIT
		DISCHARGE WATER
		FINISH WATER
		RAW WATER
		SAMPLE WATER
		TANK OVERFLOW
		TREATED WATER
		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

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:

H-3 AREA

BASE AREA: 5,000 SF, ONE STORY
SPRINKLER INCREASE: 15,000 SF
FRONTAGE INCREASE: 2,800 SF
TOTAL ALLOWABLE 22,800 SF

F-1 AREA

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

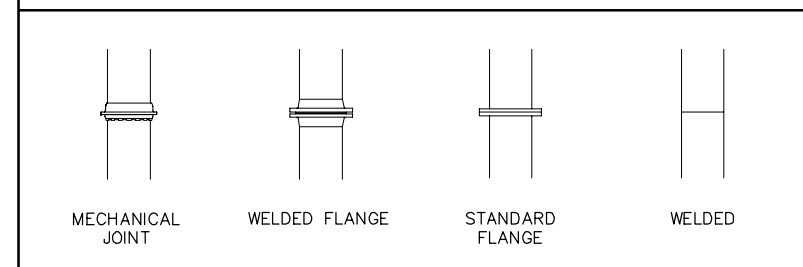
OCCUPANCY SEPARATION (TABLE 508.4): 1-HOUR FIRE BARRIER WALL REQUIRED WITH SPRINKLER SYSTEM (BOTH SIDES), 2-HOUR FIRE BARRIER WALL REQUIRED IF NOT SPRINKLERED.

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).

RECORD DRAWINGS

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BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

PIPE CONNECTION LEGEND



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RECORD DRAWINGS	TR	DM	DM	BY
CONFORMED DOCUMENTS	4/7/14	DM	12/2/13	DATE
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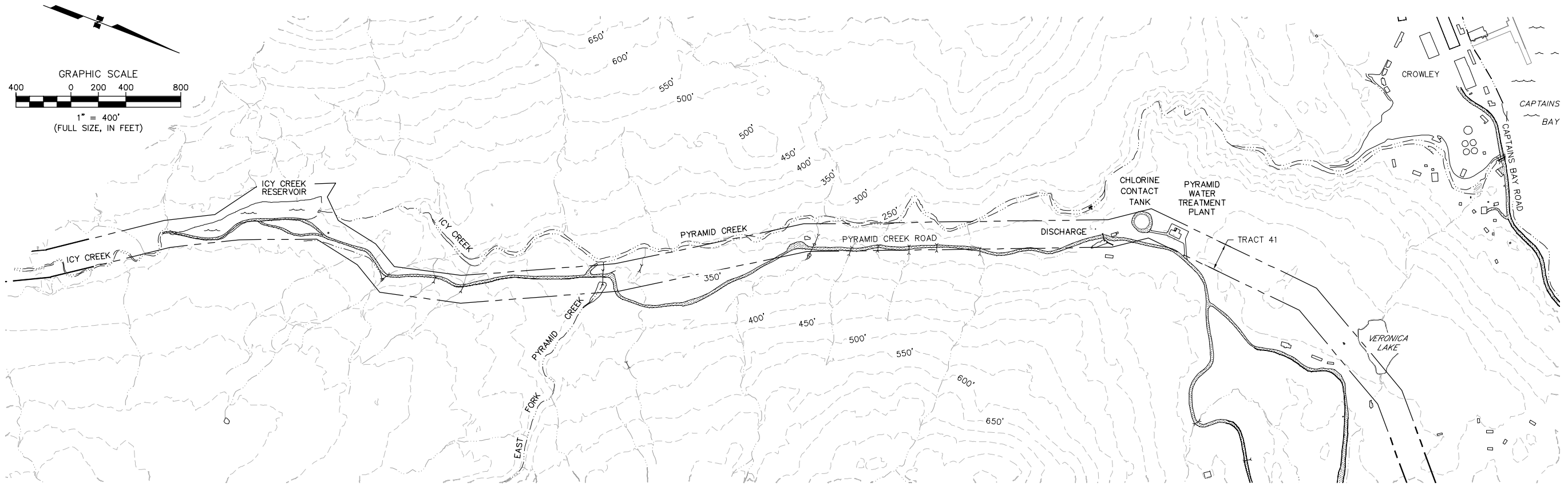
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CITY OF UNALASKA

**PYRAMID WTP
UNALASKA, ALASKA**

**LEGEND, ABBREVIATIONS,
NOTES**

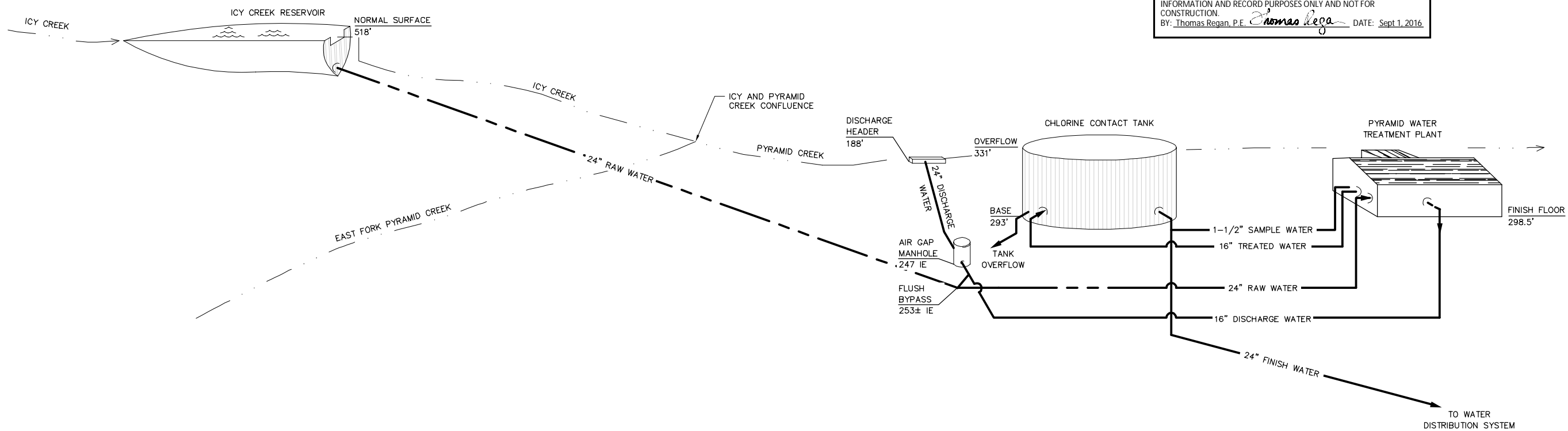
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OVERVIEW

SCALE: 1" = 400'

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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept. 1, 2016



SCHEMATIC

SCALE: NTS

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 Date/Time: Sep 2016 2:54 PM
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RECORD DRAWINGS	TR	DM	DM	BY
CONFORMED DOCUMENTS	9/2/16	4/7/14	12/2/13	DATE
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CITY OF UNALASKA

**PYRAMID WTP
 UNALASKA, ALASKA**

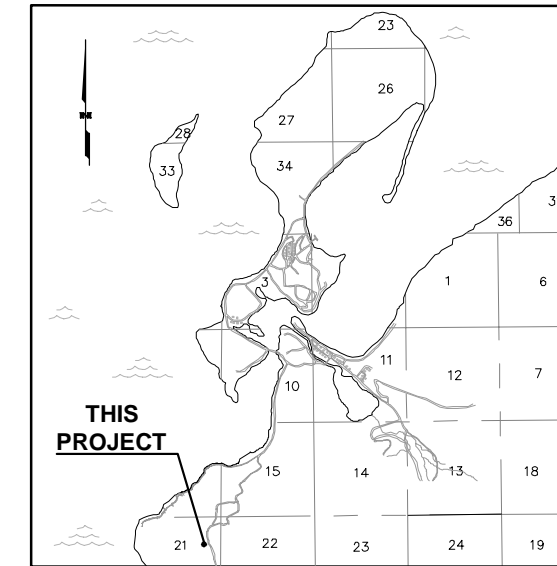
**WATER SYSTEM OVERVIEW
 AND DIAGRAM**

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	OF

SURVEY LEGEND

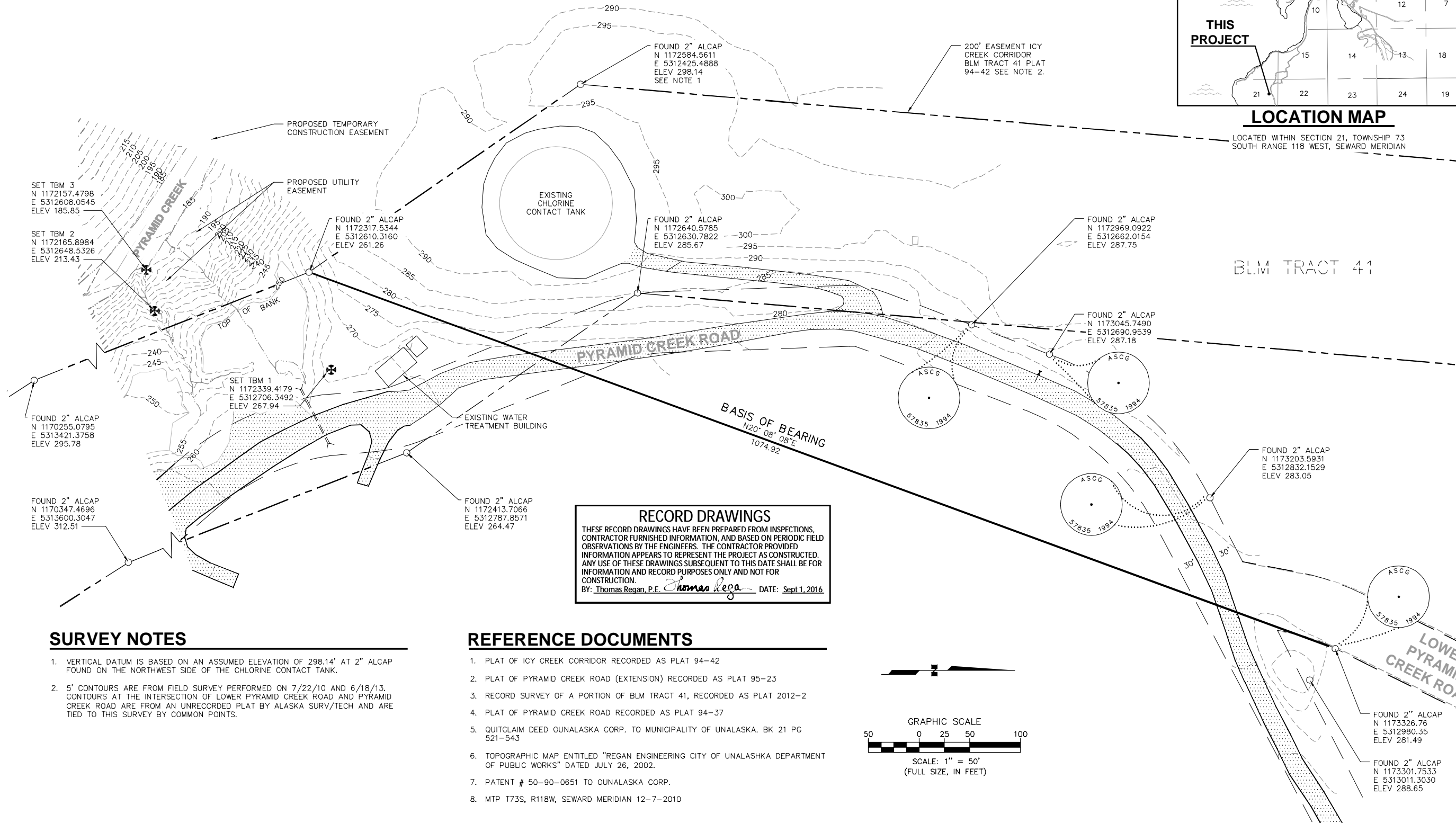
SYMBOL	DESCRIPTION
XXXX'XX"	MEASURED
--- 80 ---	CONTOUR
○	FOUND MONUMENT
⊕	SET TBM
---	RIGHT-OF-WAY BASED ON RECORD MONUMENTS
---	RECORD BLM TRACT 41
▨	GRAVEL ROAD

SECTION 21 TOWNSHIP 73
SOUTH, RANGE 118 WEST
SEWARD MERIDIAN



LOCATION MAP

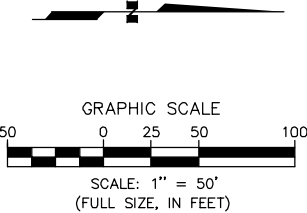
LOCATED WITHIN SECTION 21, TOWNSHIP 73
SOUTH RANGE 118 WEST, SEWARD MERIDIAN



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BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

REFERENCE DOCUMENTS

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



SURVEY NOTES

1. VERTICAL DATUM IS BASED ON AN ASSUMED ELEVATION OF 298.14' AT 2" ALCAP FOUND ON THE NORTHWEST SIDE OF THE CHLORINE CONTACT TANK.
2. 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.

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NO.	DATE	BY	REVISION
1	9/2/16	JR	RECORD DRAWINGS
2	4/7/14	JH	CONFORMED DOCUMENTS
3	12/2/13	JH	ISSUED FOR BID

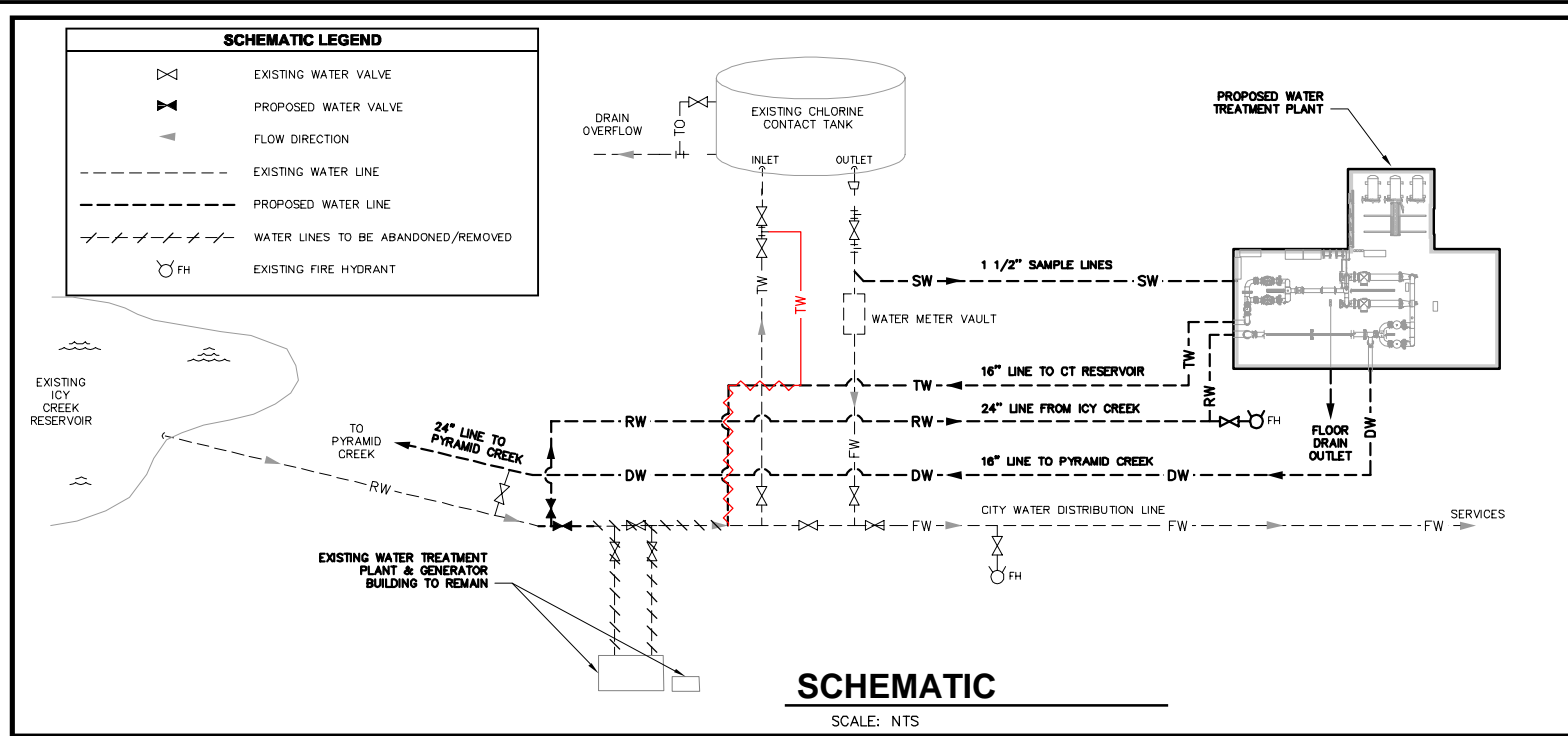
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CITY OF UNALASKA

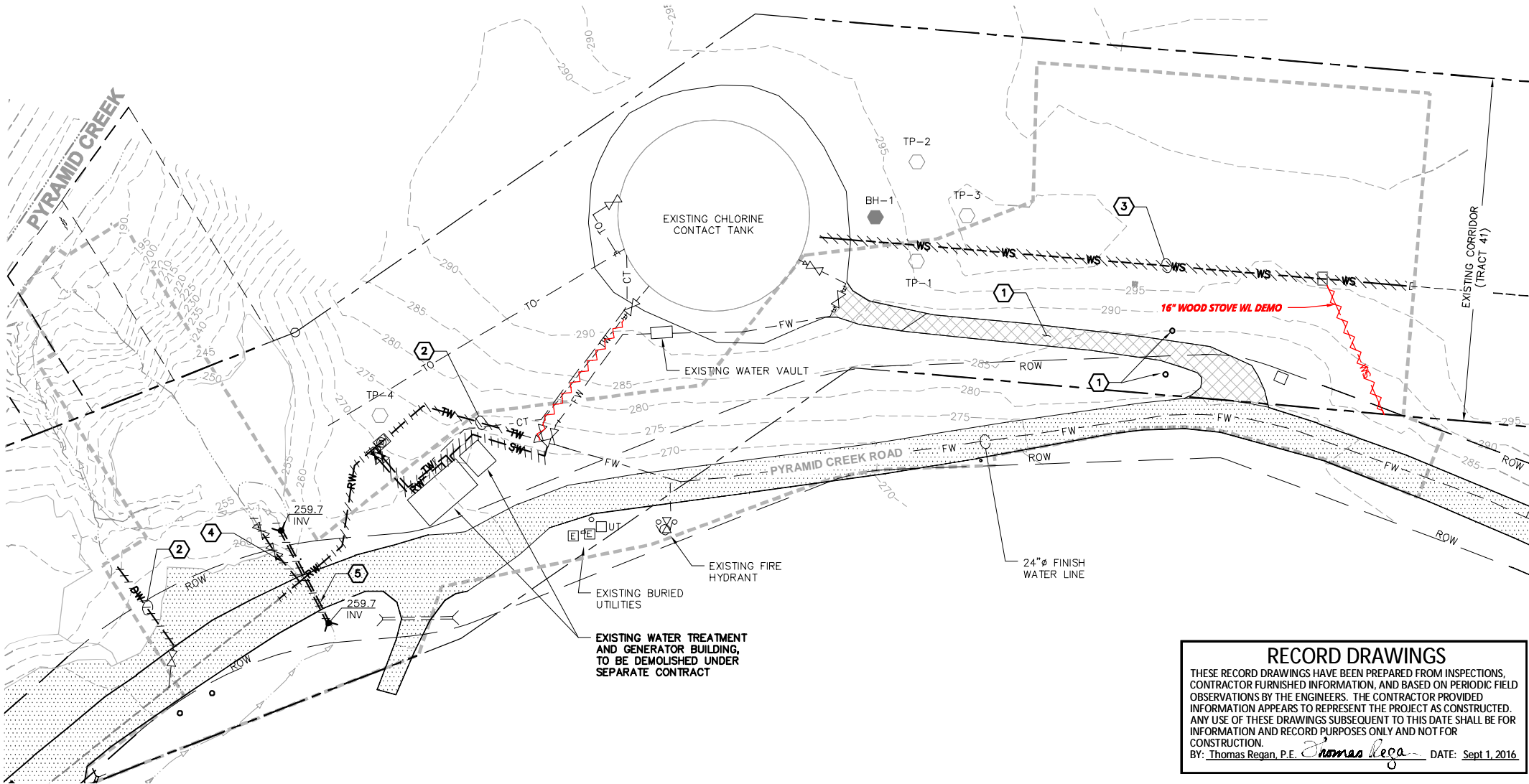
PYRAMID WTP UNALASKA, ALASKA	
SITE CONTROL	
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DRAWN BY:	CS
CHECKED BY:	JDH
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SCHEMATIC

SCALE: NTS



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

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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 EXISTING 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.

NO.	DATE	BY	REVISION
1	12/2/13	DM	ISSUED FOR BID
2	4/7/14	DM	CONFORMED DOCUMENTS
3	9/2/16	TR	RECORD DRAWINGS

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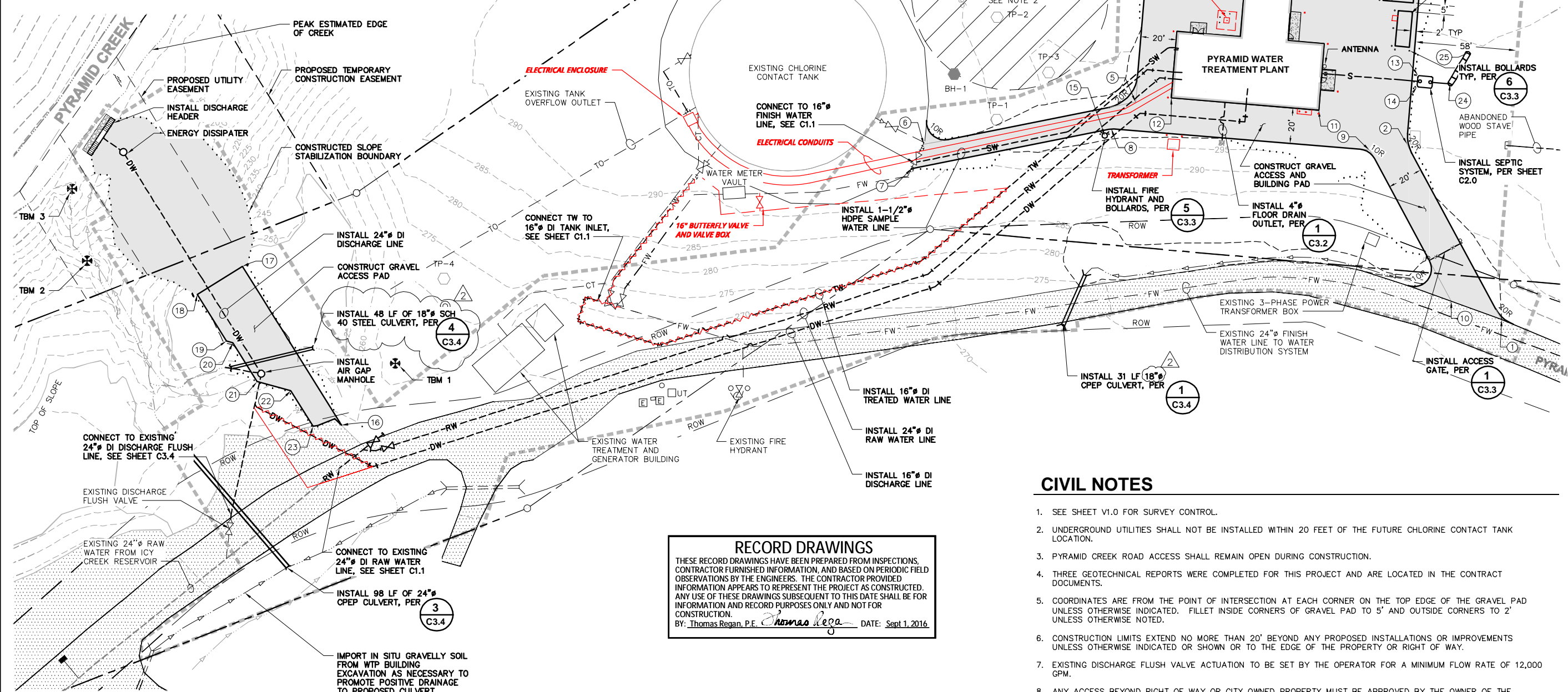
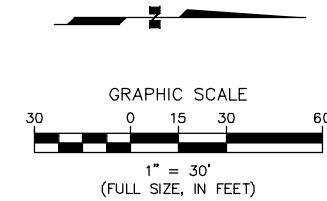
CITY OF UNALASKA

**PYRAMID WTP
 UNALASKA, ALASKA
 DEMOLITION PLAN**

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

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



RECORD DRAWINGS
 THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INSPECTIONS, CONTRACTOR FURNISHED INFORMATION, AND BASED ON PERIODIC FIELD OBSERVATIONS BY THE ENGINEERS. THE CONTRACTOR PROVIDED INFORMATION APPEARS TO REPRESENT THE PROJECT AS CONSTRUCTED. ANY USE OF THESE DRAWINGS SUBSEQUENT TO THIS DATE SHALL BE FOR INFORMATION AND RECORD PURPOSES ONLY AND NOT FOR CONSTRUCTION.
 BY: *Thomas Regan, P.E.* DATE: Sept 1, 2016

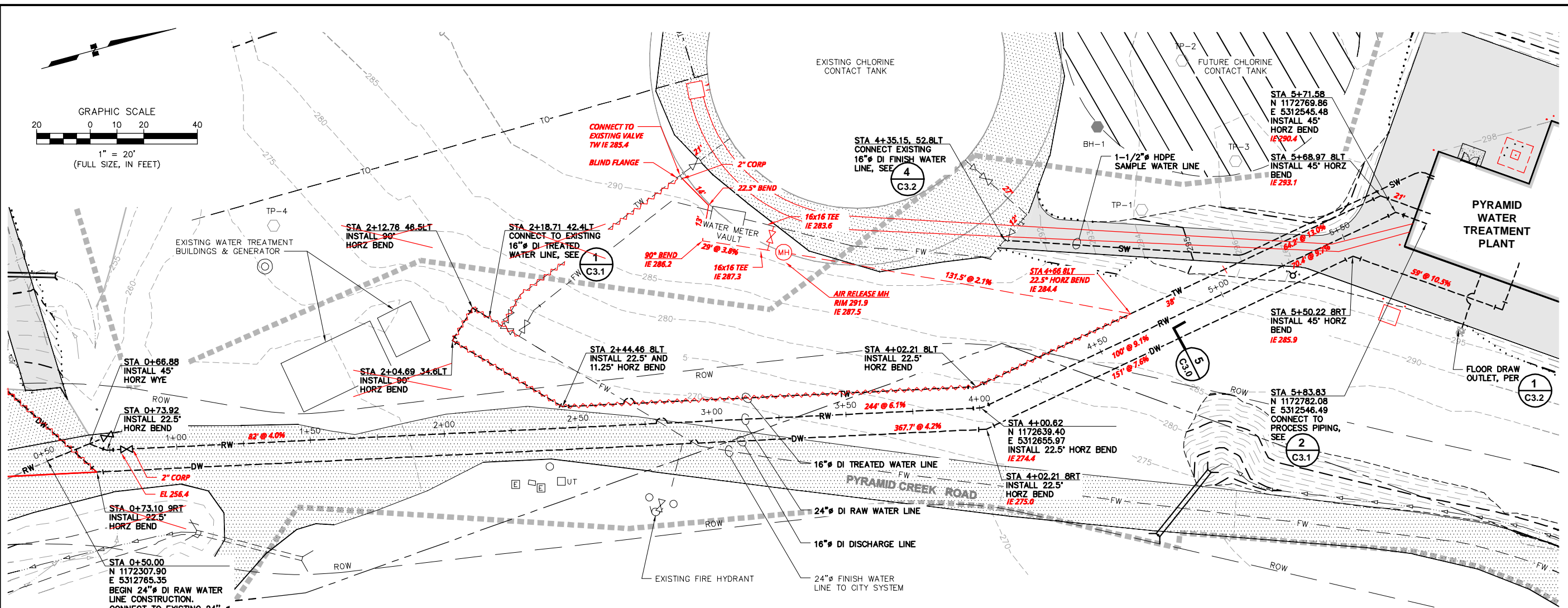
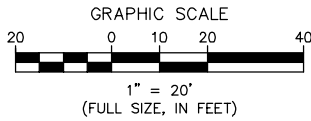
CIVIL NOTES

- 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.
- AT A SUFFICIENT DISTANCE PRIOR TO ENCOUNTERING A KNOWN OBSTACLE OR TIE INTO AN EXISTING PIPE, CONTRACTOR SHALL EXPOSE AND VERIFY THE EXACT LOCATION SO THE ALIGNMENT, CROSSINGS, AND/OR GRADE CAN BE MADE BEFORE PIPE SECTIONS OR OTHER ITEMS ARE LAID AND/OR BACKFILLED. NO EXTRA PAYMENT WILL BE MADE FOR REWORK OF NEWLY INSTALLED UTILITIES REQUIRED BY FAILURE TO EXPOSE OBSTACLES AND CONNECTING UTILITIES.

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

Plotted By: Curtis
 Date/Time: Sep 2016 2:54 pm
 C:\0 SITE
 Filename: P:\800-850\850 Unalaska\850.05 Pyramid WTP Construction_Support\Civil\dwg_As-Built\850.01_DSL_Unalaska.dwg

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PYRAMID WTP UNALASKA, ALASKA		WATER TREATMENT PLANT SITE PLAN	
SCALE:	AS SHOWN	DESIGNED BY:	DM
DRAWN BY:	CS	CHECKED BY:	GMF
DATE:	12/2/13	FILE NO.:	850.01
SHEET NUMBER		C1.0 OF	
RECORD DRAWINGS	TR	9/2/16	DM
CONFORMED DOCUMENTS	DM	4/7/14	DM
ISSUED FOR BID	DM	12/2/13	DM
REVISION	BY	DATE	NO.

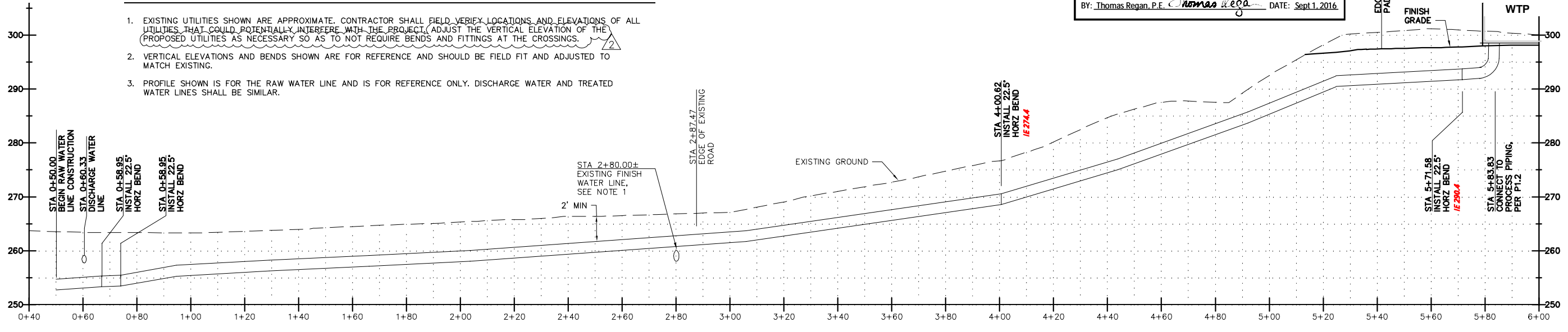


WATER LINE PLAN
SCALE: 1" = 20'

RECORD DRAWINGS
THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INSPECTIONS, CONTRACTOR FURNISHED INFORMATION, AND BASED ON PERIODIC FIELD OBSERVATIONS BY THE ENGINEERS. THE CONTRACTOR PROVIDED INFORMATION APPEARS TO REPRESENT THE PROJECT AS CONSTRUCTED. ANY USE OF THESE DRAWINGS SUBSEQUENT TO THIS DATE SHALL BE FOR INFORMATION AND RECORD PURPOSES ONLY AND NOT FOR CONSTRUCTION.
BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

NOTES

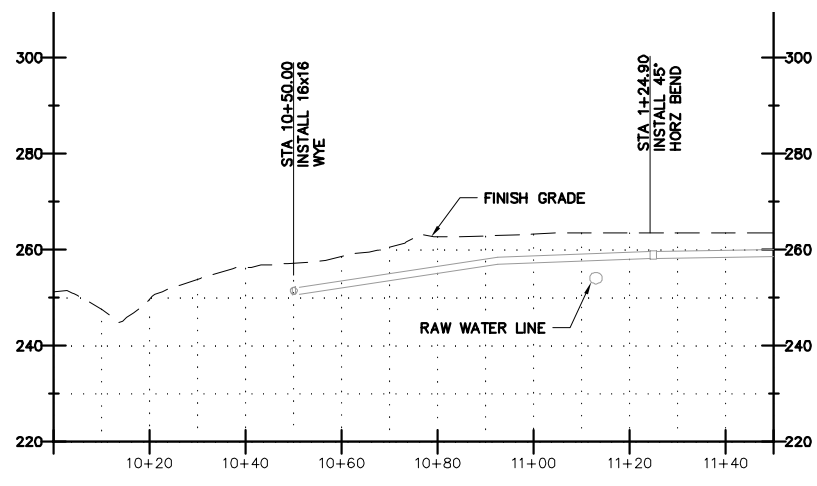
- EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF ALL UTILITIES THAT COULD POTENTIALLY INTERFERE WITH THE PROJECT (ADJUST THE VERTICAL ELEVATION OF THE PROPOSED UTILITIES AS NECESSARY SO AS TO NOT REQUIRE BENDS AND FITTINGS AT THE CROSSINGS).
- VERTICAL 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.



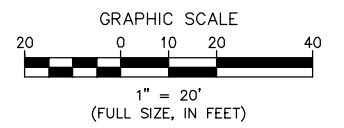
WATER LINE PROFILE
SCALE: 1" = 20' (HORIZONTAL)
SCALE: 1" = 10' (VERTICAL)

Plotted By: Andres
Date/Time: 2016 9-20 am
C:\1 SUPPLY LINE P&P
Filename: P:\800-850\850 Unalaska\850.05 Pyramid WTP Construction_Support\Civil\dwg\As-Built\To Others\CT Calc Pipe Lengths.dwg

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

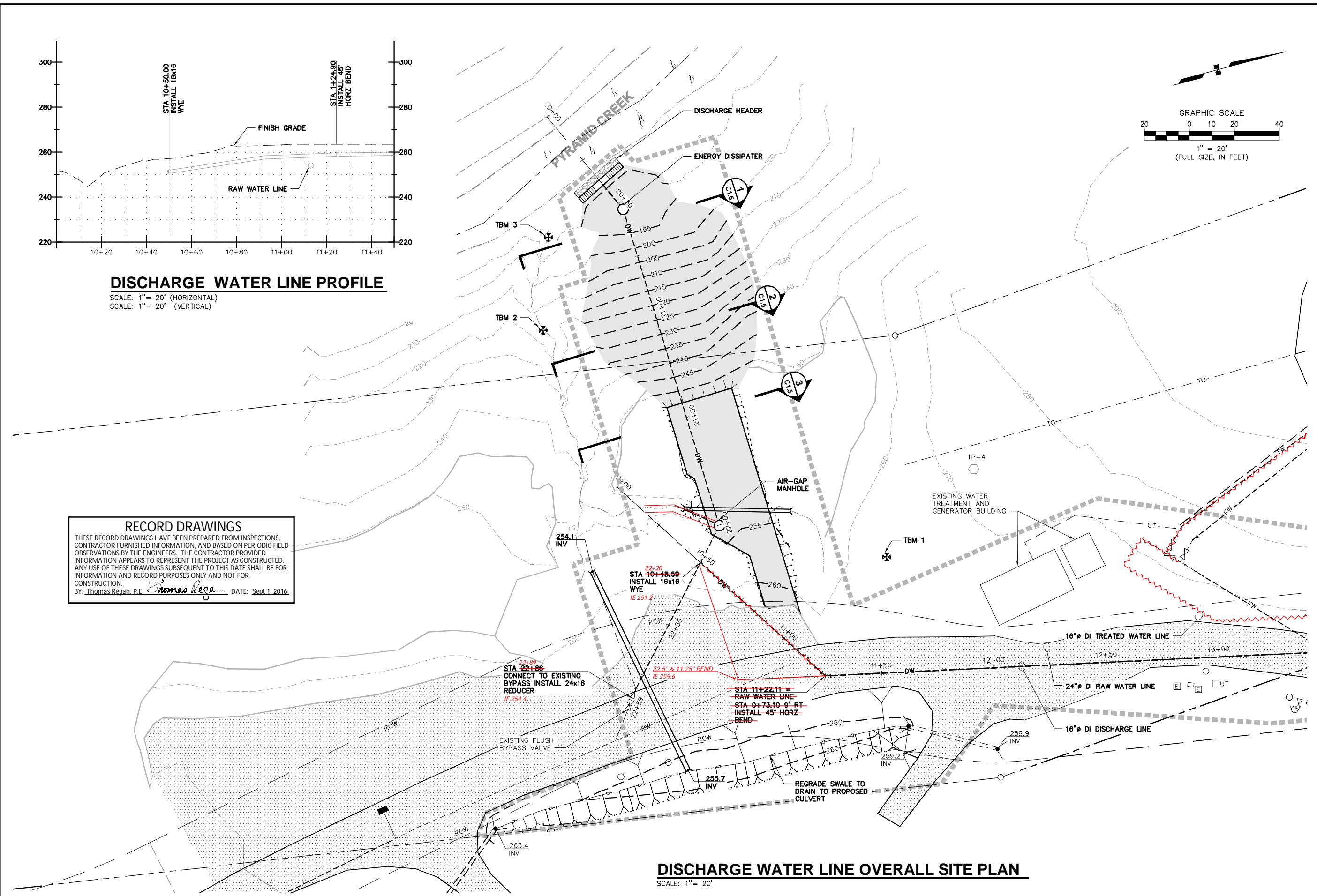


DISCHARGE WATER LINE PROFILE
 SCALE: 1" = 20' (HORIZONTAL)
 SCALE: 1" = 20' (VERTICAL)



RECORD DRAWINGS
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

Plotted By: Curtis
 Date/Time: 01 Sep 2016 2:54 pm
 File Name: P:\800-850\850 Unalaska\850.05 Pyramid WTP Construction_Support\Civil\dwg\As-Built\850.04_DSL_Discharge_Design.dwg



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

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2	4/7/14	DM	CONFORMED DOCUMENTS
3	12/2/13	DM	ISSUED FOR BID

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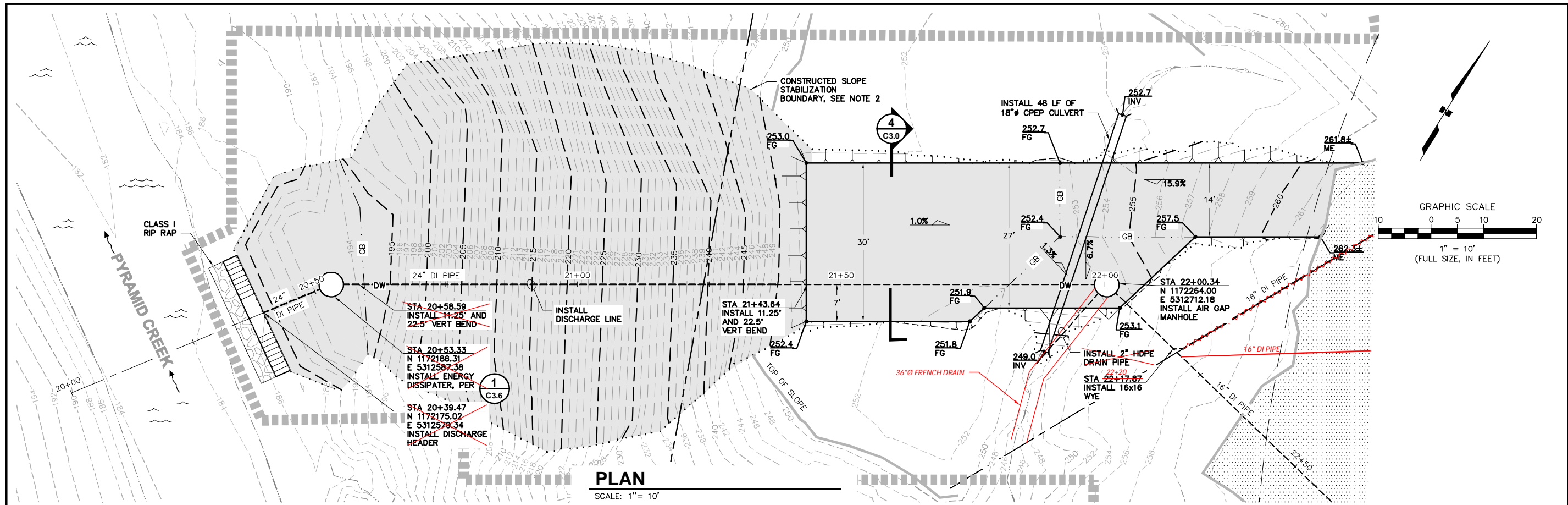
CITY OF UNALASKA

**PYRAMID WTP
 UNALASKA, ALASKA**

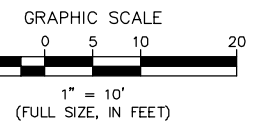
**DISCHARGE WATER LINE
 SITE PLAN**

SCALE: AS SHOWN
 DESIGNED BY: DM
 DRAWN BY: CS
 CHECKED BY: GWF
 DATE: 12/2/13
 FILE NO. 850.01

SHEET NUMBER
 C1.2 OF



PLAN
SCALE: 1" = 10'

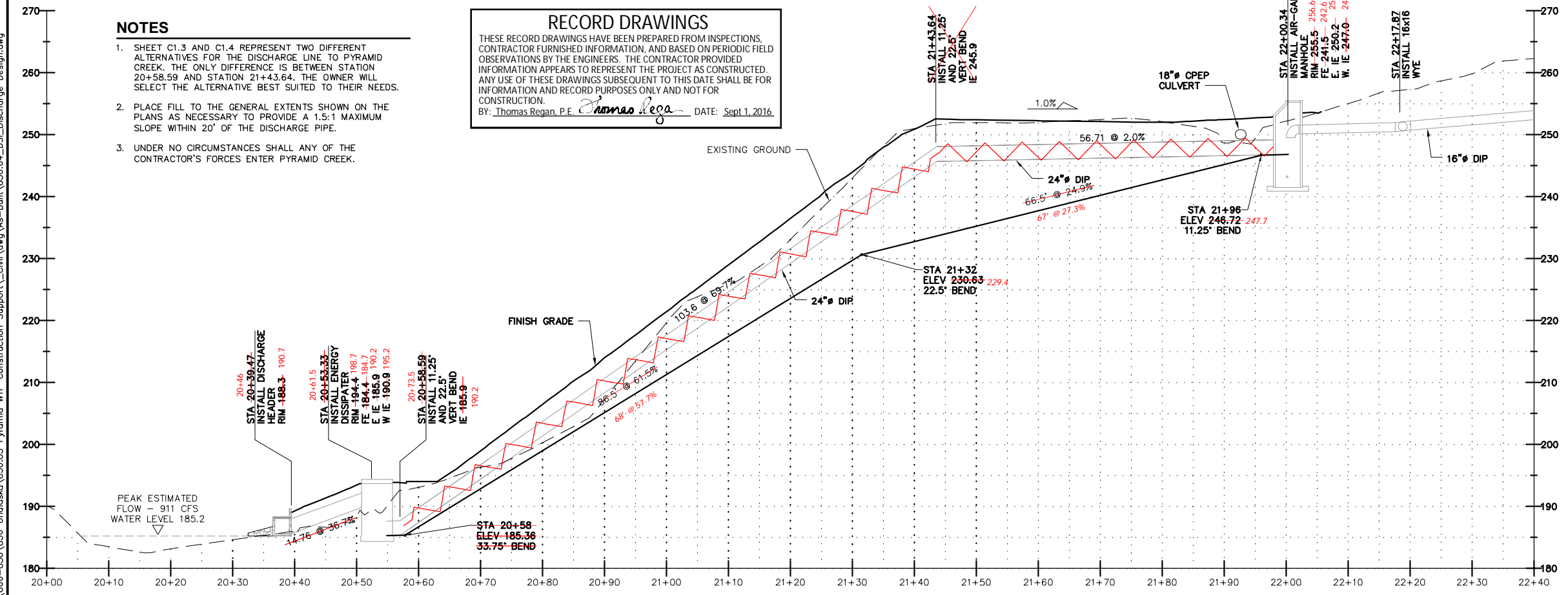


NOTES

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.

RECORD DRAWINGS

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BY: *Thomas Regan, P.E.* *Thomas Regan* DATE: Sept 1, 2016



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

Plotted By: Curtis
Date/Time: 09/01/2016 2:54 pm
File Name: P:\800-850\850 Unalaska\850 Pyramid WTP Construction_Support\Civil\dwg\As-Built\850.04_DSL_Discharge_Design.dwg

NO.	DATE	BY	REVISION
1	9/2/16	DM	RECORD DRAWINGS
2	4/7/14	DM	CONFORMED DOCUMENTS
3	12/2/13	DM	ISSUED FOR BID

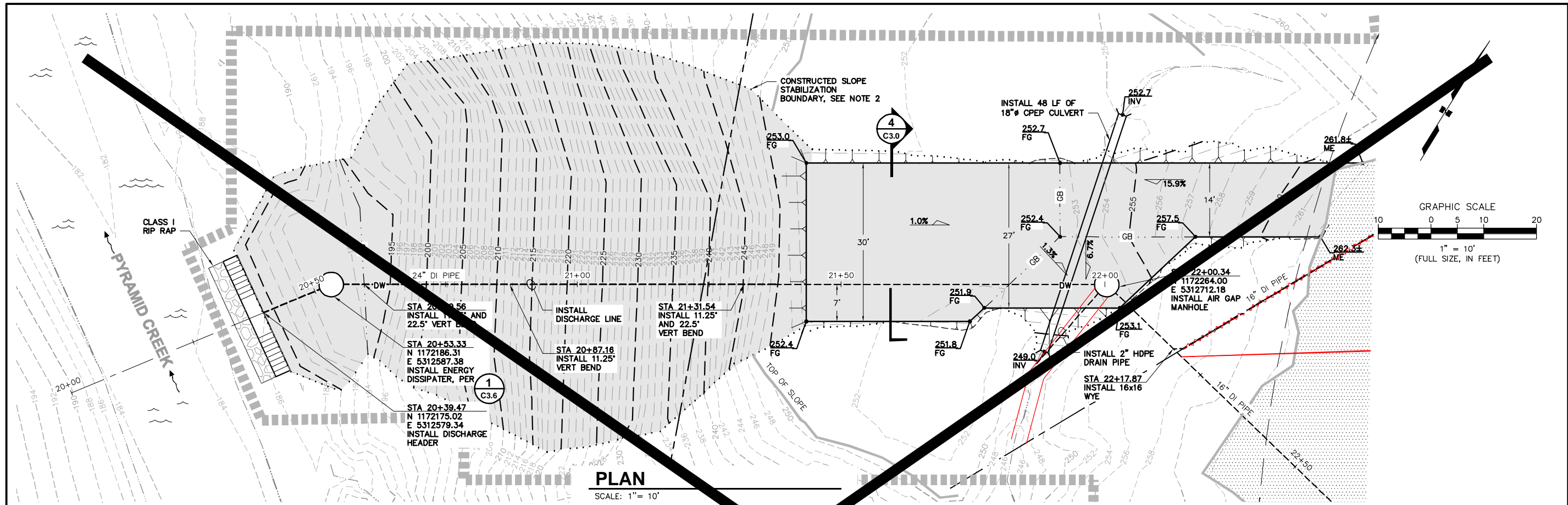
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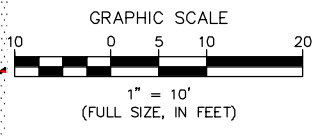
CITY OF UNALASKA

**PYRAMID WTP
UNALASKA, ALASKA
BURIED 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	C1.3
	OF

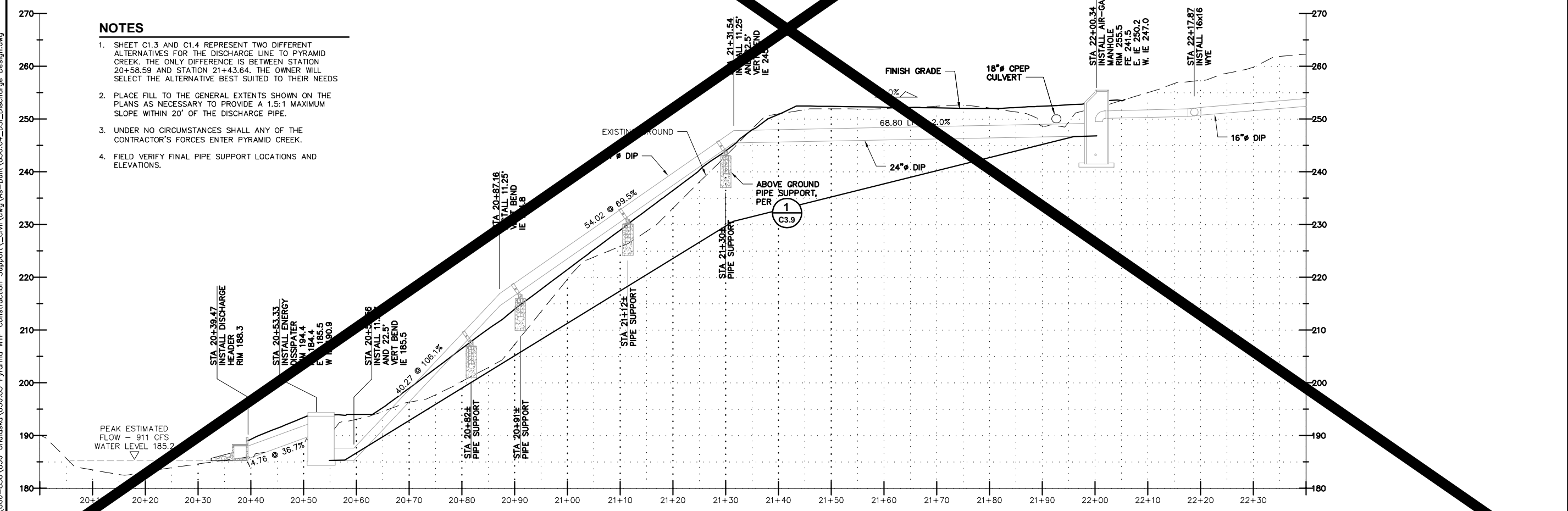


PLAN
SCALE: 1" = 10'



NOTES

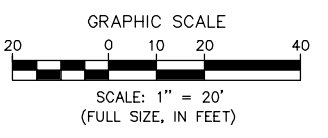
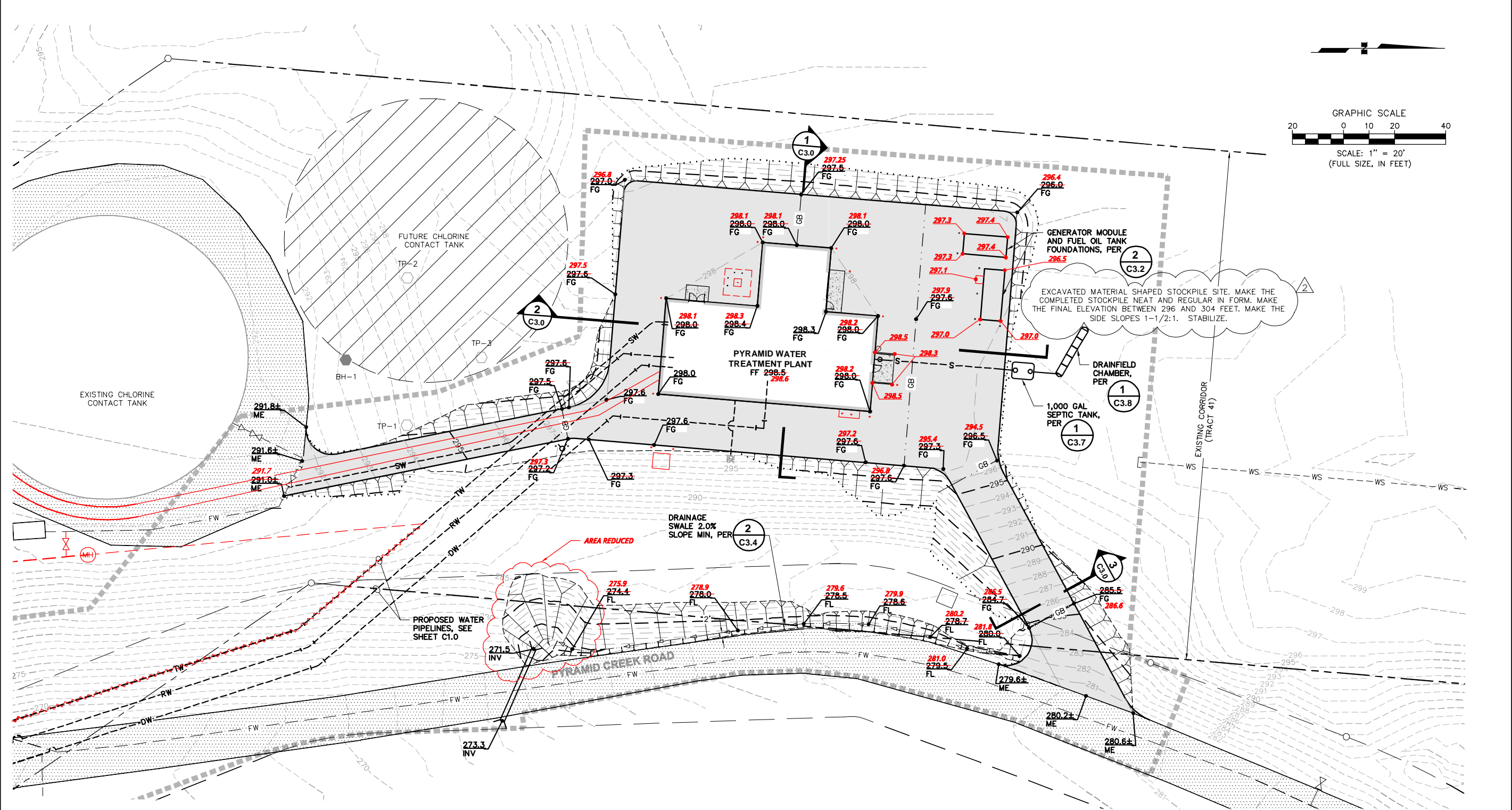
1. SHEET C1.3 AND C1.4 REPRESENT TWO DIFFERENT ALTERNATIVES FOR THE DISCHARGE LINE TO PYRAMID CREEK. THE ONLY DIFFERENCE IS BETWEEN STATION 20+58.59 AND STATION 21+43.64. THE OWNER WILL SELECT THE ALTERNATIVE BEST SUITED TO THEIR NEEDS.
2. PLACE FILL TO THE GENERAL EXTENTS SHOWN ON THE PLANS AS NECESSARY 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)
SCALE: 1" = 10' (HORIZONTAL)
SCALE: 1" = 10' (VERTICAL)

Plotted By: Curtis
Date/Time: 01 Sep 2016 2:54 pm
File Name: P:\800-850\850 Unalaska\850.05 Pyramid WTP Construction_Support\Civil\dwg\As-Built\850.04_DSL_Discharge_Design.dwg

RECORD DRAWINGS	TR	DM	DM	BY	REVISION
CONFORMED DOCUMENTS	9/2/16	4/7/14	12/2/13	DATE	NO.
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<p>PYRAMID WTP UNALASKA, ALASKA</p> <p>ABOVE GROUND DISCHARGE WATER LINE PLAN AND PROFILE</p>					
<p>SCALE: AS SHOWN DESIGNED BY: DM DRAWN BY: CS CHECKED BY: GWF DATE: 12/2/13 FILE NO. 850.01</p>					
<p>SHEET NUMBER C1.4 OF</p>					



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.

RECORD DRAWINGS
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

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 6" AGGREGATE SURFACE COURSE AND 18" CLASSIFIED 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'

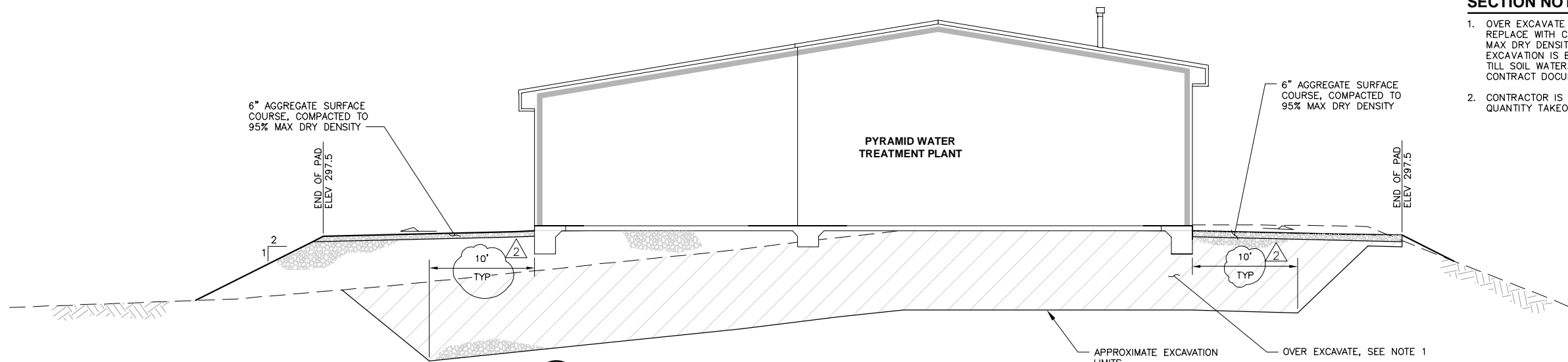
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 P:\800-850\850 Unalaska\850_05 GRADING

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CITY OF UNALASKA	NO. DATE BY
PYRAMID WTP UNALASKA, ALASKA WATER TREATMENT PLANT GRADING PLAN	SCALE: AS SHOWN DESIGNED BY: DM DRAWN BY: CS CHECKED BY: GWF DATE: 12/2/13 FILE NO. 850.01
C2.0 OF	SHEET NUMBER

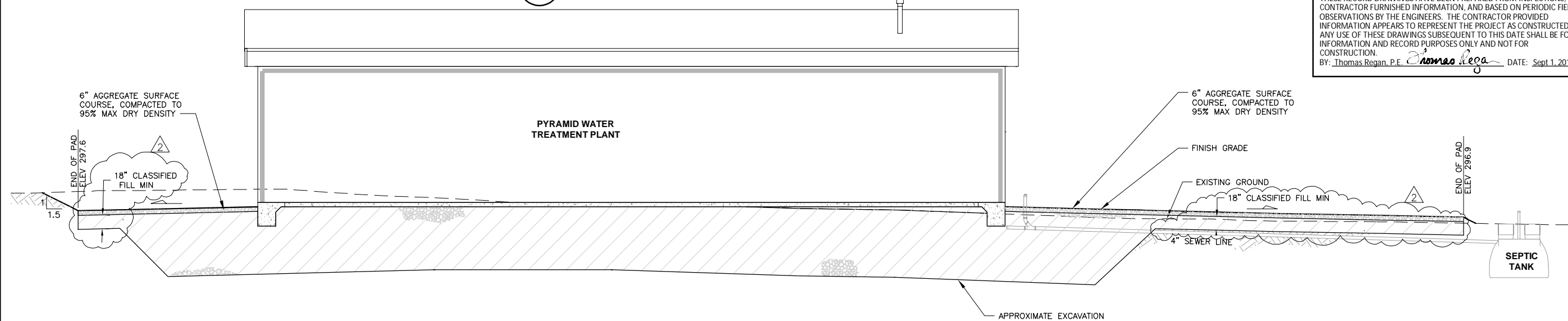
SECTION NOTES

- 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.

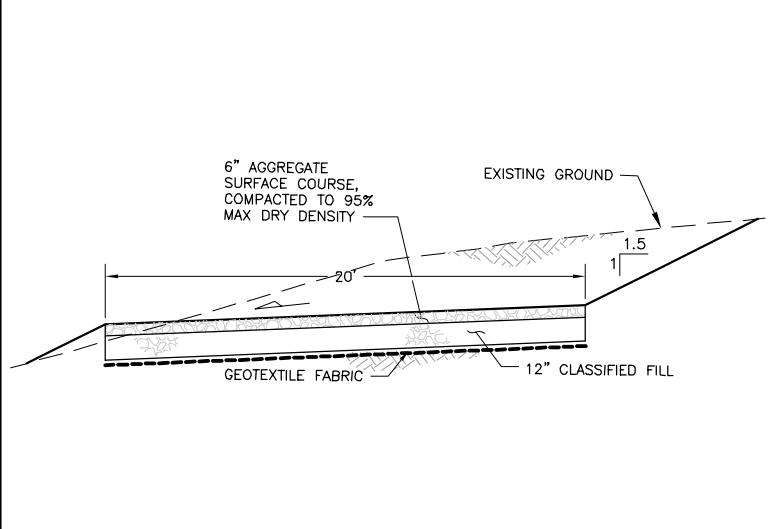
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



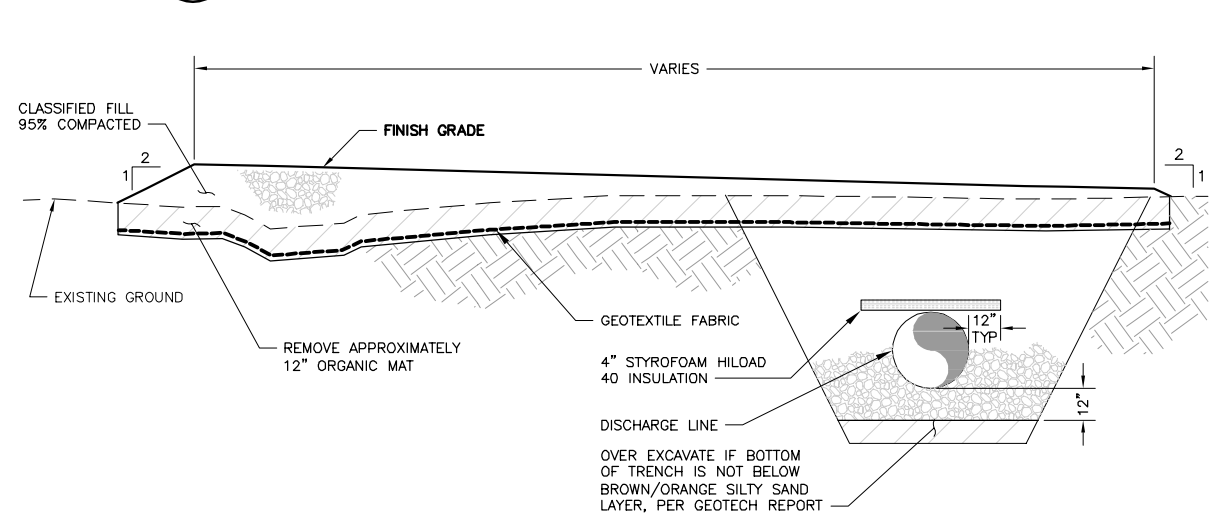
1 NORTH BUILDING SECTION
 C3.0 SCALE: 1" = 6'



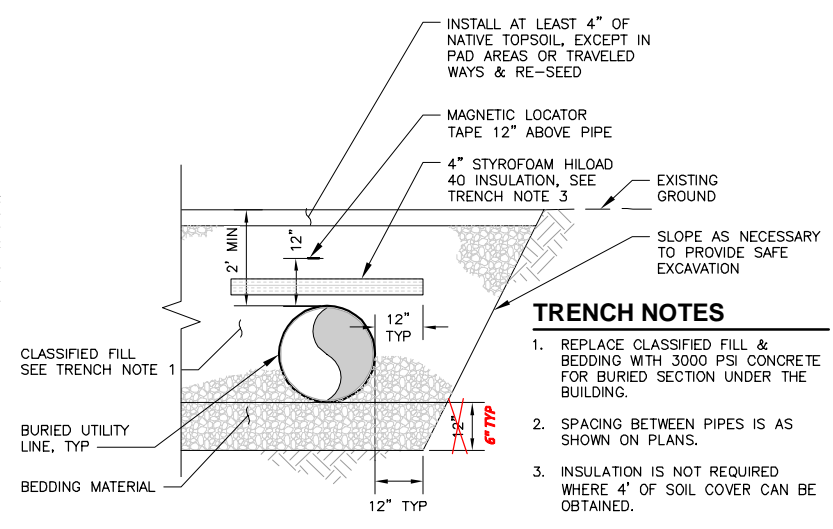
2 WEST BUILDING SECTION
 C3.0 SCALE: 1" = 6'



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.

NO.	DATE	BY	REVISION
1	9/2/16	DM	RECORD DRAWINGS
2	4/7/14	DM	CONFORMED DOCUMENTS
3	12/2/13	DM	ISSUED FOR BID

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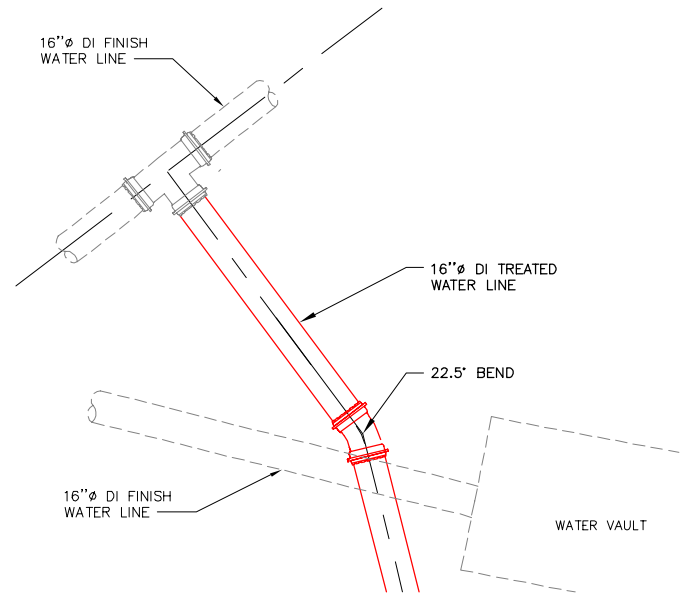
CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 CIVIL SECTIONS

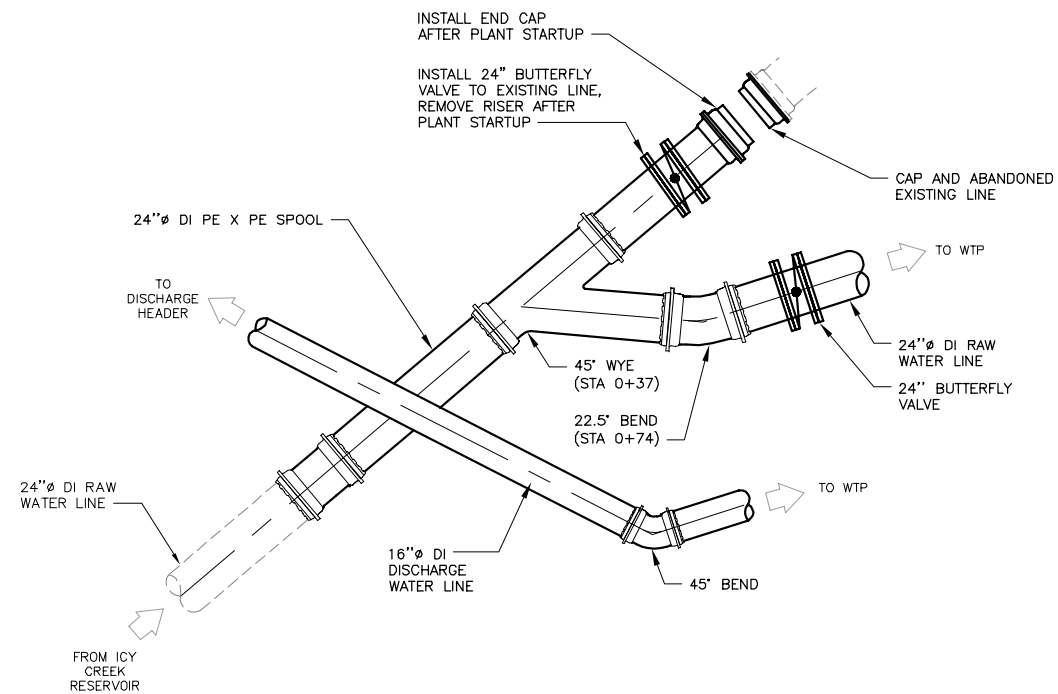
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 DRAWN BY: CS
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 FILE NO. 850.01
 SHEET NUMBER
 C3.0 OF

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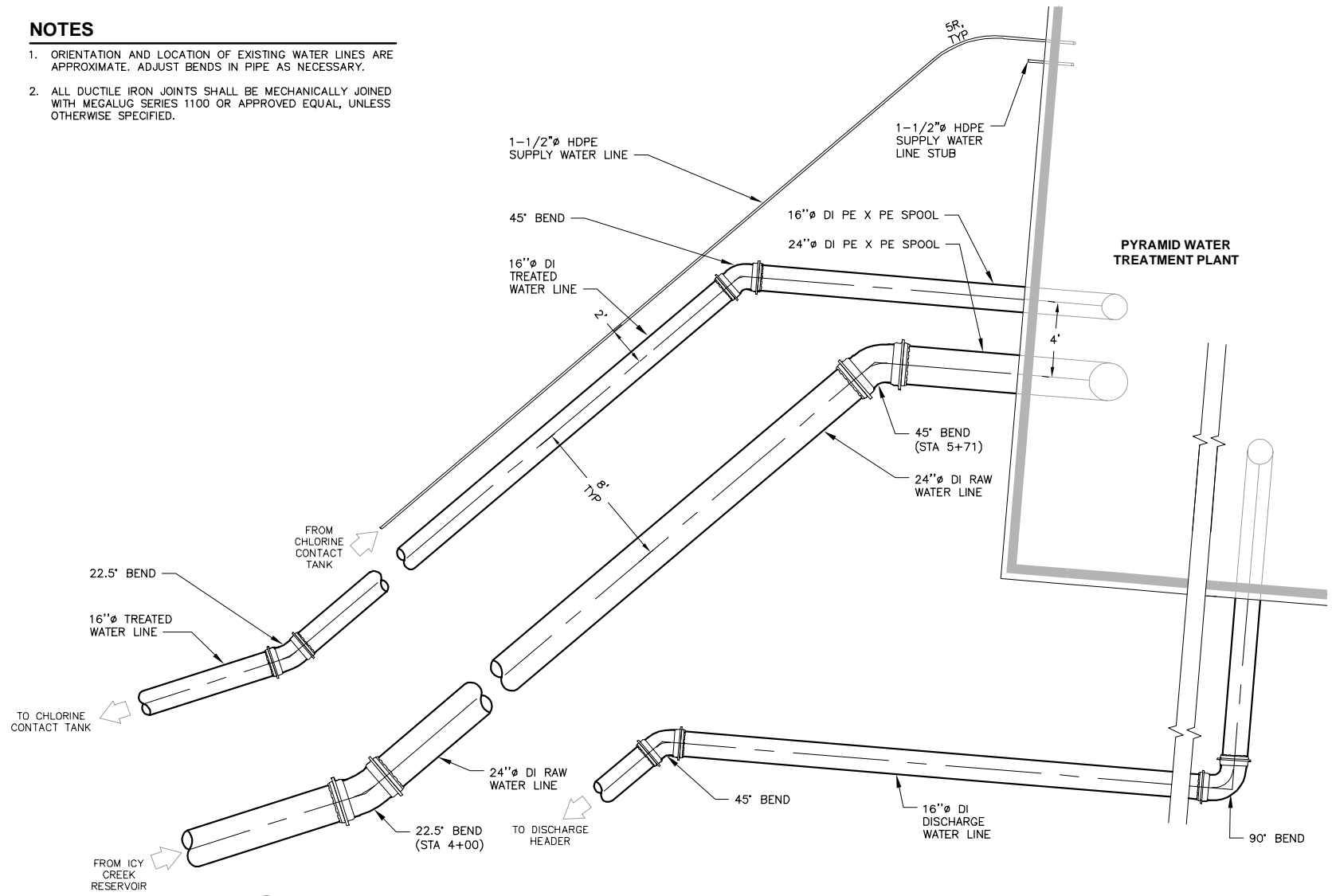


1 TREATED WATER LINE CONNECTION
 C3.1 SCALE: 1" = 4'



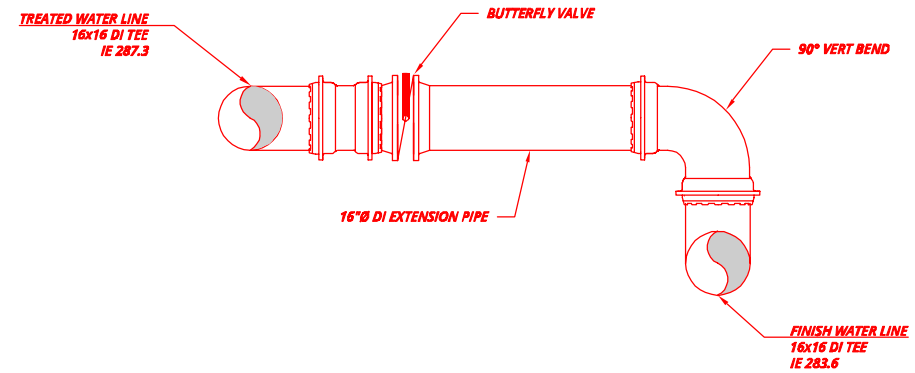
3 RAW WATER CONNECTION
 C3.1 SCALE: 1" = 4'

- 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.



2 WATER LINE BUILDING CONNECTIONS
 C3.1 SCALE: 1" = 4'

RECORD DRAWINGS
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



4 TREATED WATER TO FINISH WATER BYPASS
 C3.1 SCALE: NTS

NO.	DATE	BY	REVISION
1	9/2/16	DM	RECORD DRAWINGS
2	4/7/14	DM	CONFORMED DOCUMENTS
3	12/2/13	DM	ISSUED FOR BID

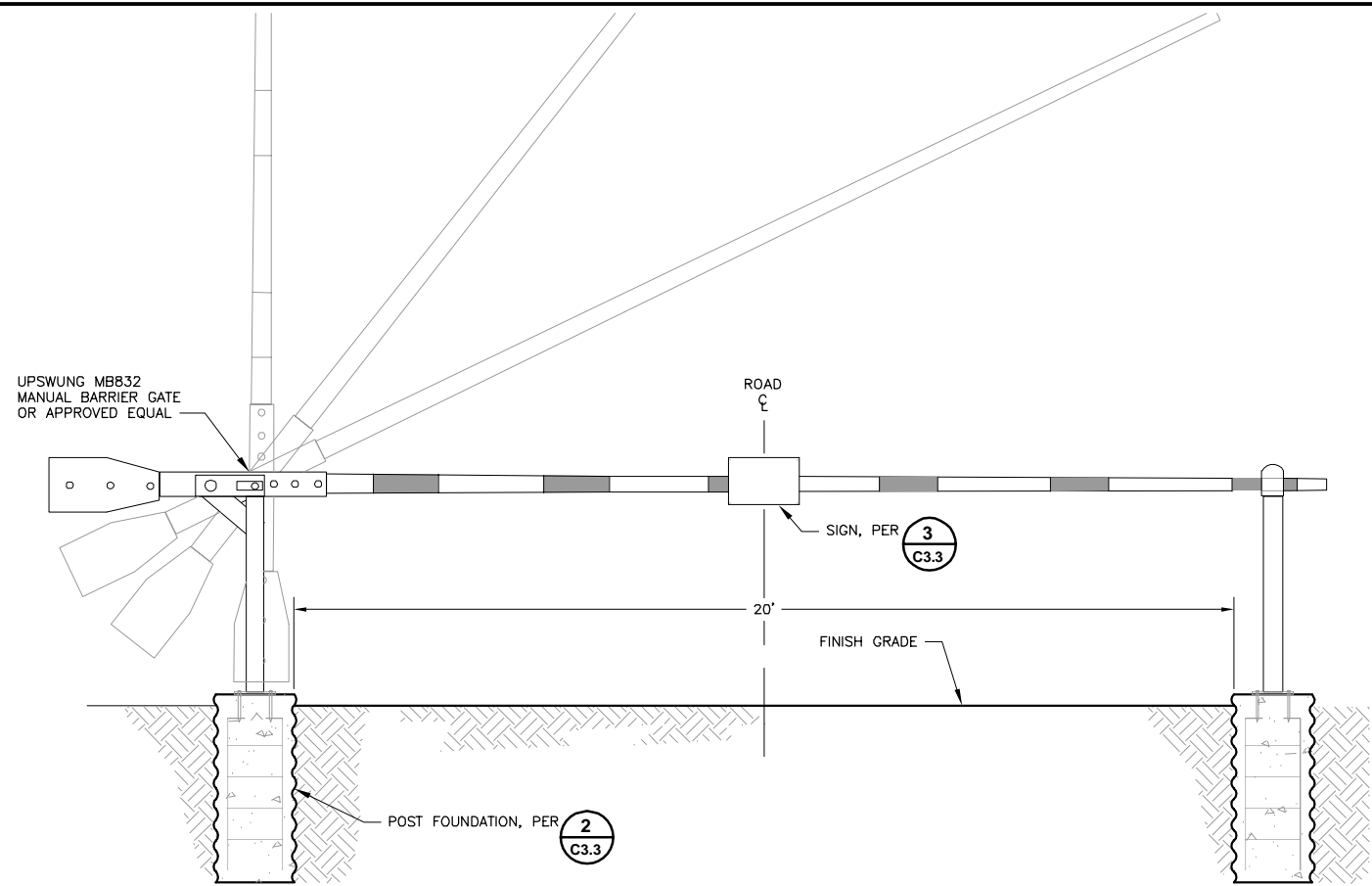
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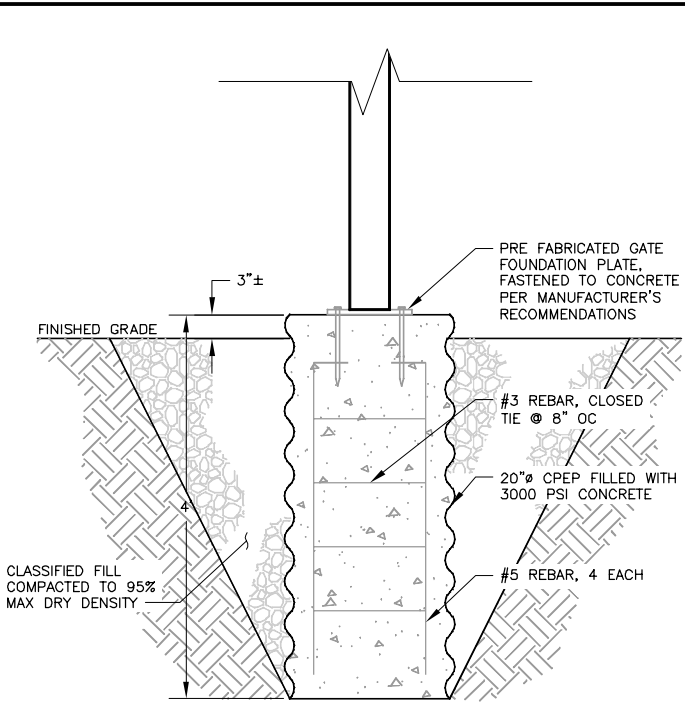
CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 EXTERIOR PIPING LAYOUT

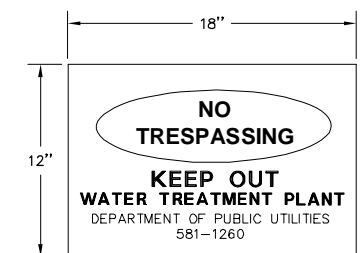
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1 ACCESS GATE
C3.3 SCALE: 1" = 2'



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



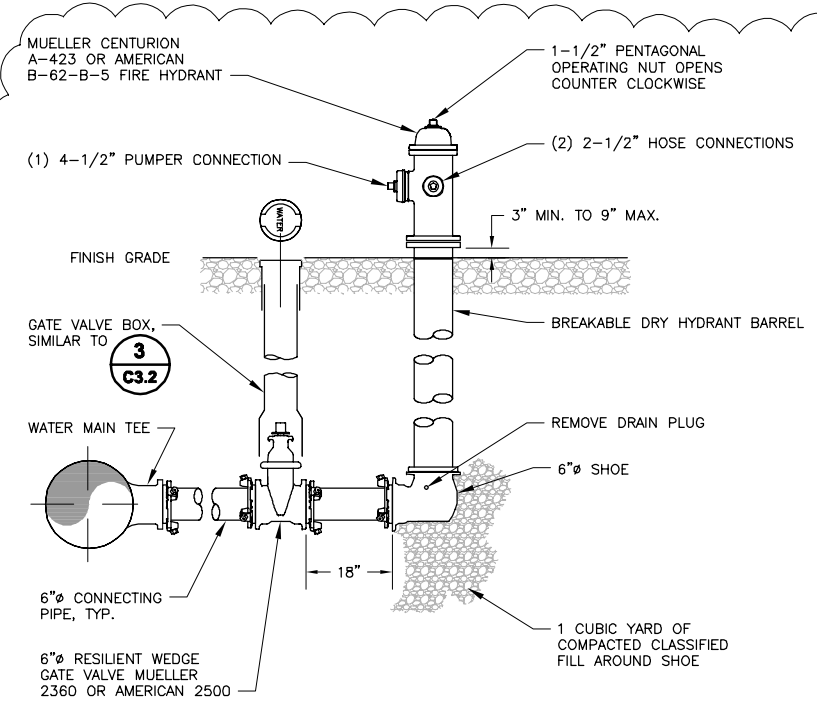
- NOTES**
1. ATTACH SIGN TO ACCESS GATE PER GATE MANUFACTURER'S RECOMMENDATIONS.
 2. SIGN MATERIAL SHALL BE 0.125" ALUMINUM SHEETING.
 3. LETTERING SHALL BE 1.5 INCH HELVETICA BOLD, OR EQUIVALENT ON A WHITE BACKGROUND WITH MINIMUM 0.5 INCHES FROM LETTERING TO EDGE. LETTERS SHALL BE BLACK.
 4. CONTRACTOR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

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

RECORD DRAWINGS

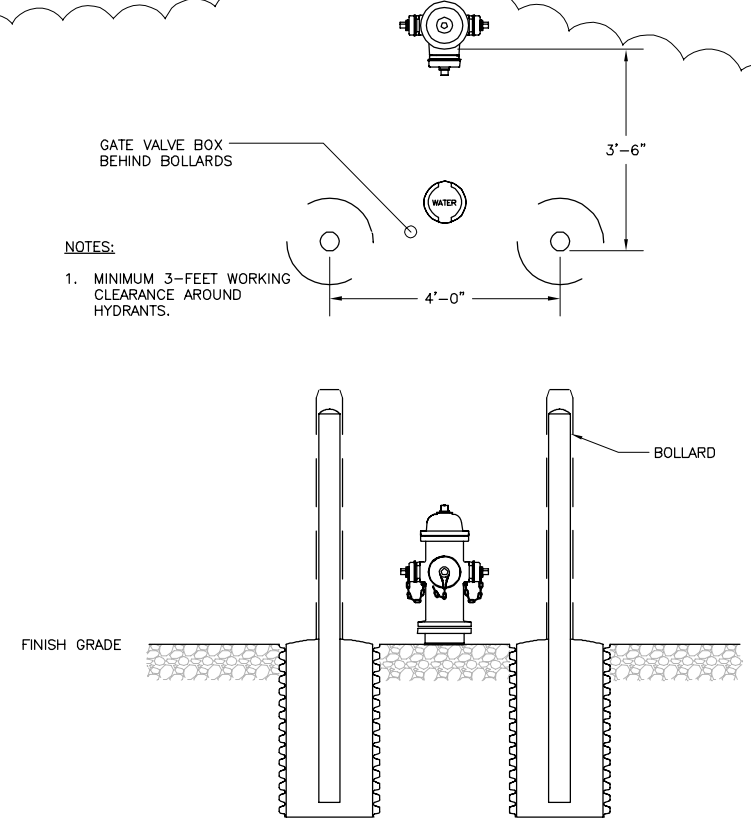
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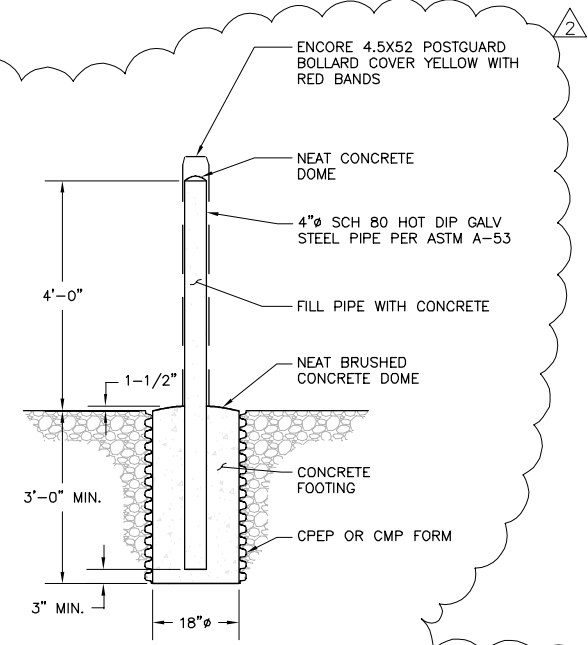
- NOTES:**
1. HYDRANTS ARE UL/FM LISTED AND MEET AWWA STANDARDS.
 2. HYDRANTS ARE FACTORY FINISH; MUELLER-YELLOW, AMERICAN-RED.
 3. SCREW THREAD CONNECTIONS ARE NFPA #1963.
 4. JOINT, FITTING, AND VALVE CONNECTIONS ARE MECHANICAL JOINTS WITH MEGALUG STYLE RETAINING GLANDS EBAA IRON 1100 SERIES.
 5. PIPE IS AWWA RATED CLASS 52 CEMENT MORTAR LINED DUCTILE IRON PIPE.

4 PROFILE VIEW
C3.3 SCALE: 1" = 1'



- NOTES:**
1. MINIMUM 3- FEET WORKING CLEARANCE AROUND HYDRANTS.

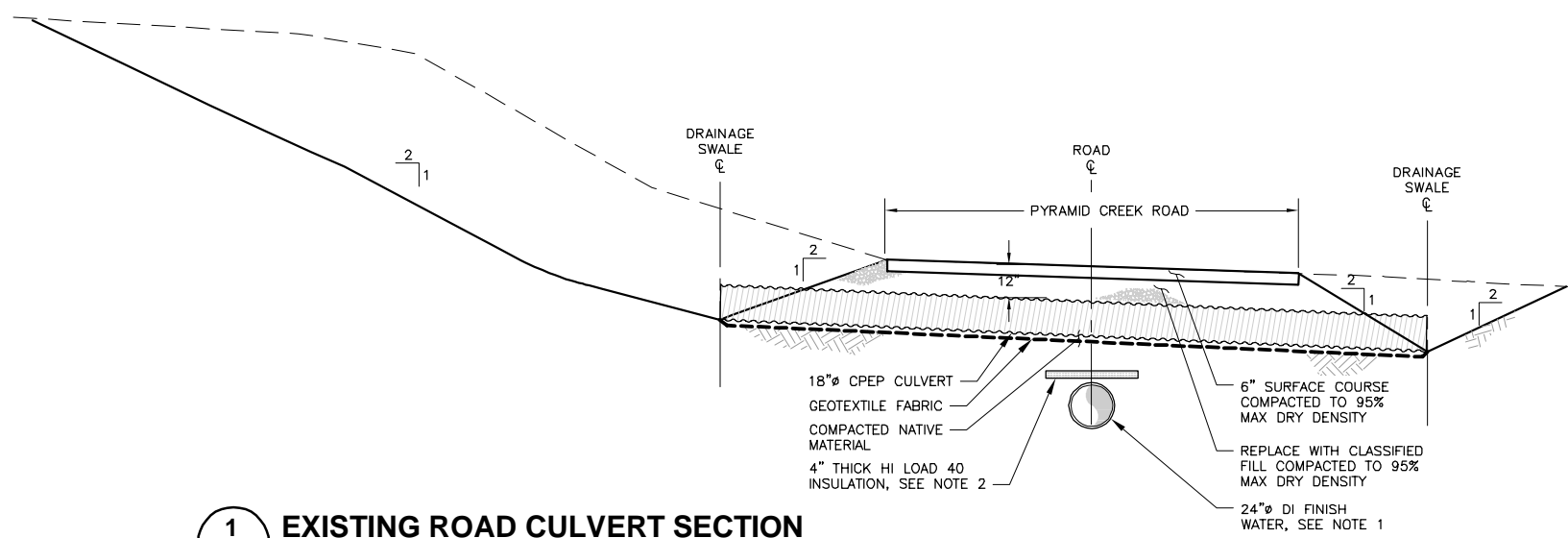
5 FRONT ELEVATION VIEW
C3.3 SCALE: 2" = 1'



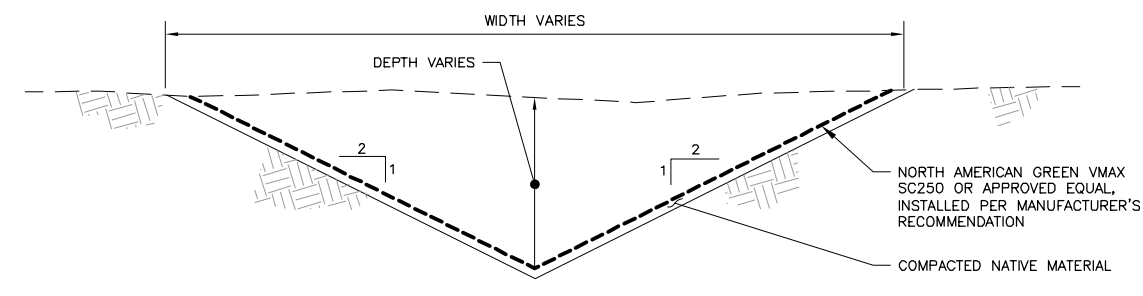
6 LOW TRAFFIC AREA BOLLARD
C3.3 SCALE: 2" = 1'

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C3.3
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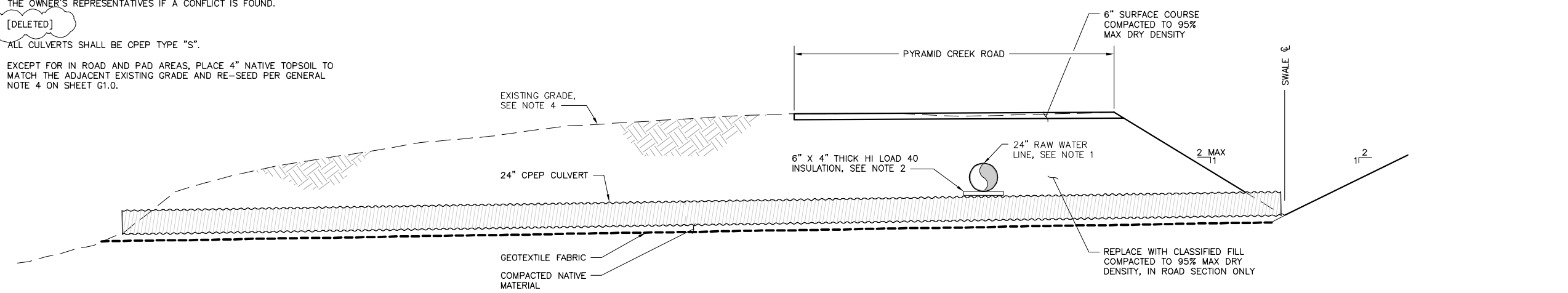
1 EXISTING ROAD CULVERT SECTION
C3.4 SCALE: 1" = 4'



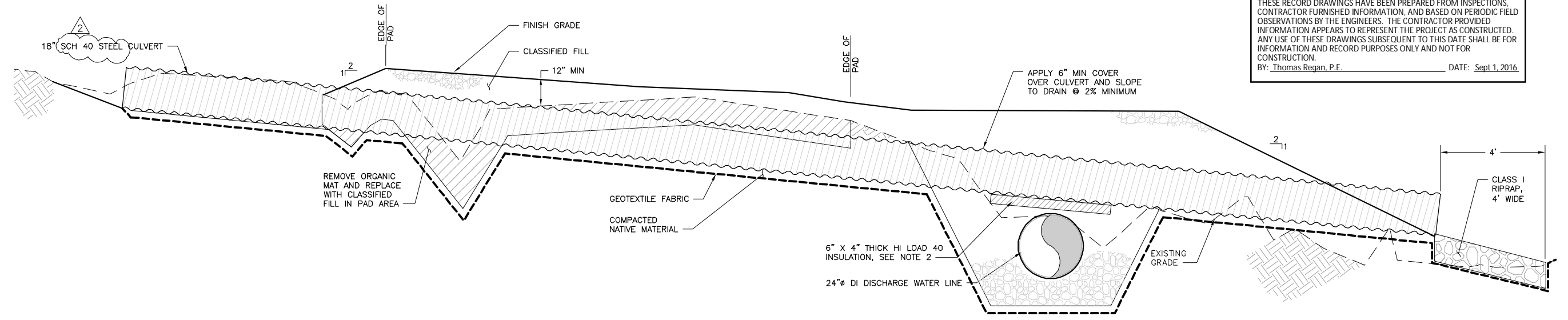
2 TYPICAL SWALE SECTION
C3.4 SCALE: 1" = 1'

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. [DELETED]
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 CULVERT RELOCATION SECTION
C3.4 SCALE: 1" = 5'



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

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CONFORMED DOCUMENTS	9/2/16	4/7/14	12/2/13	DATE
ISSUED FOR BID	NO.	NO.	NO.	NO.
REVISION	NO.	NO.	NO.	NO.

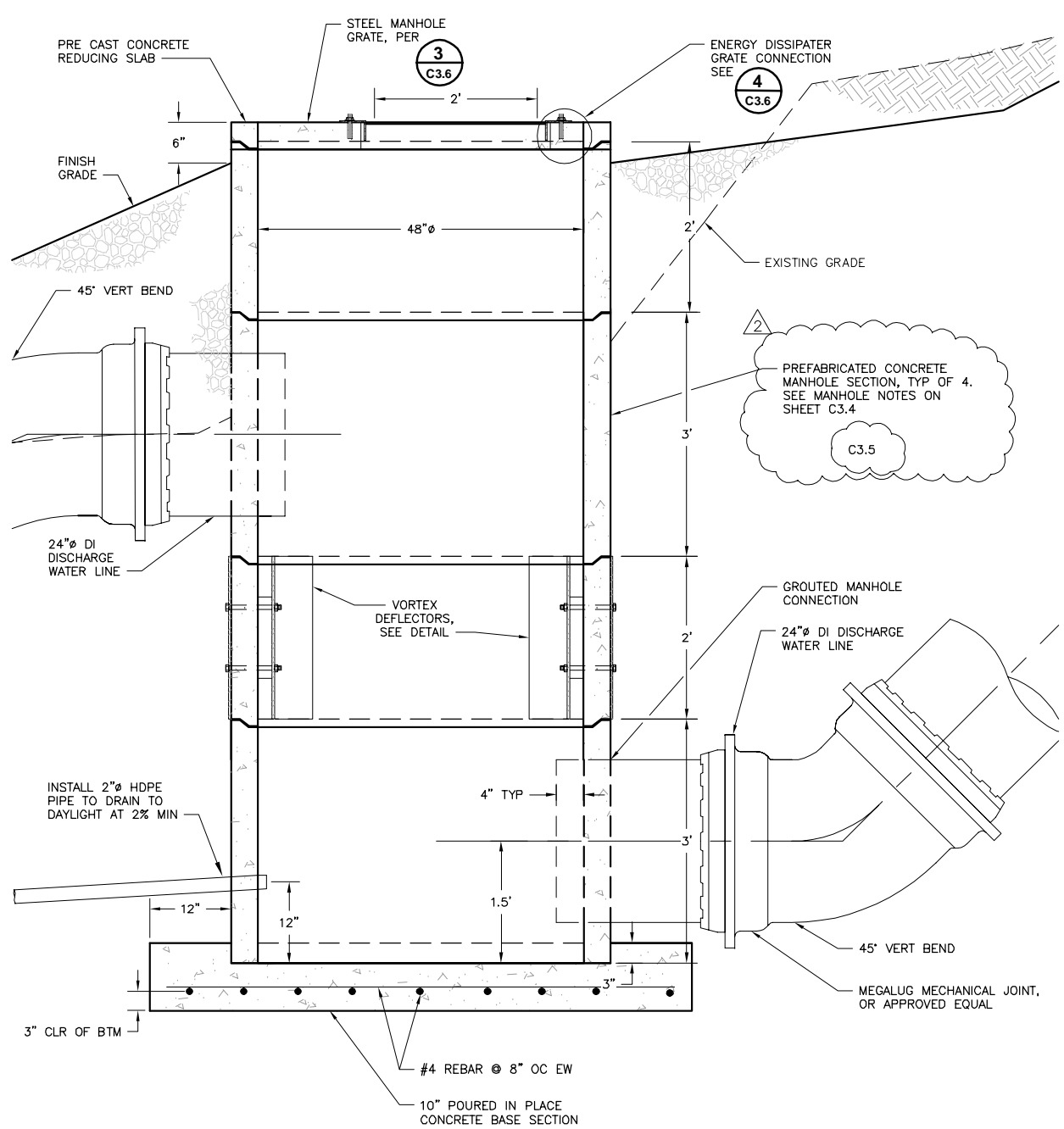
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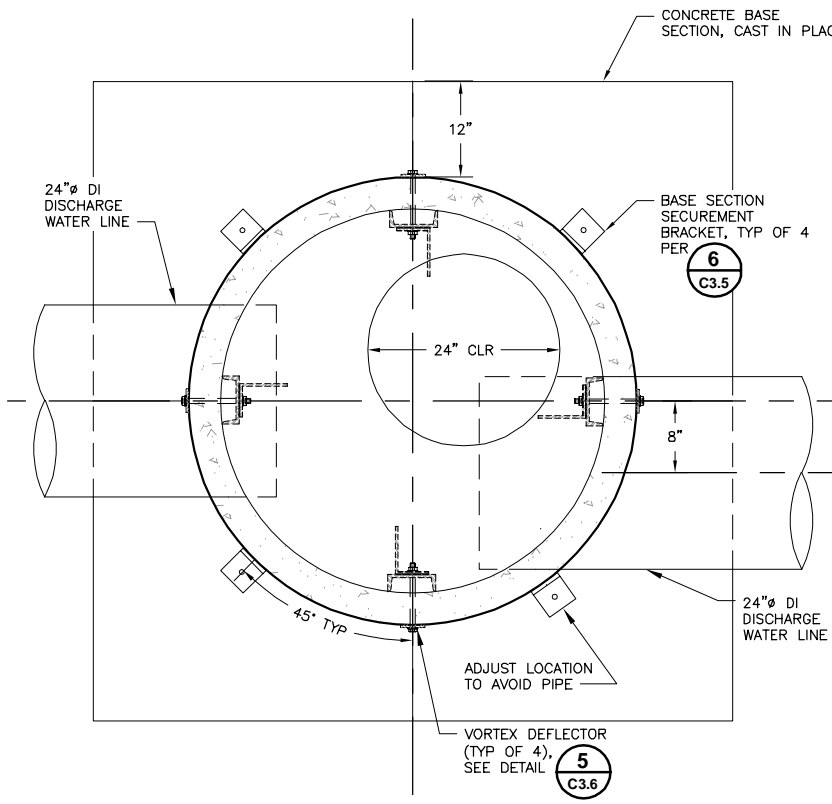
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PYRAMID WTP UNALASKA, ALASKA
DRAINAGE DETAILS

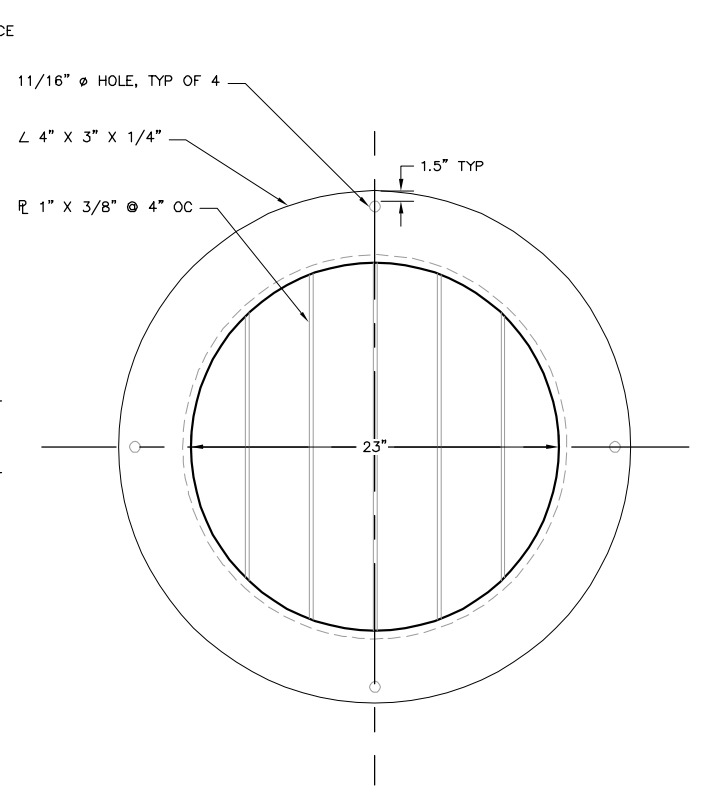
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1 ENERGY DISSIPATER SECTION
 C3.6 SCALE: 1" = 1'

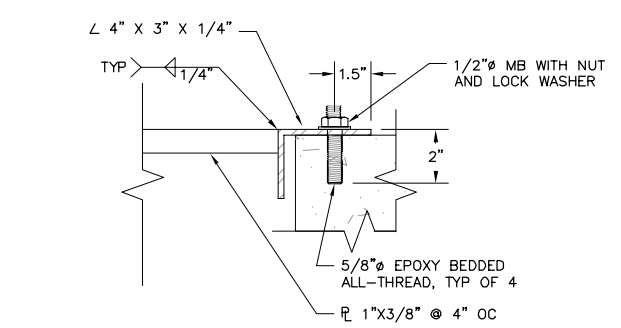


2 ENERGY DISSIPATER PLAN
 C3.6 SCALE: 1" = 1'

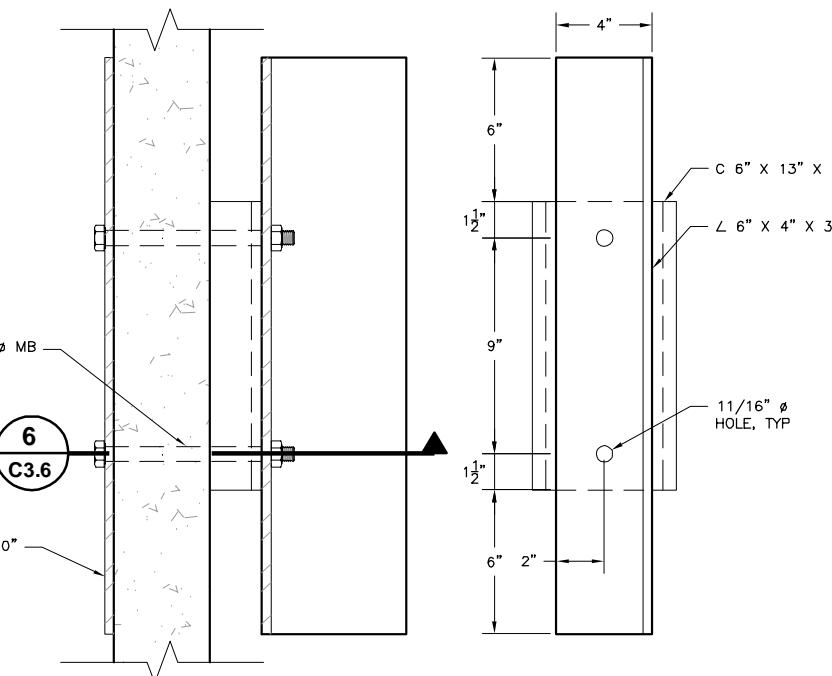


3 STEEL MANHOLE GRATE
 C3.6 SCALE: 2" = 1'

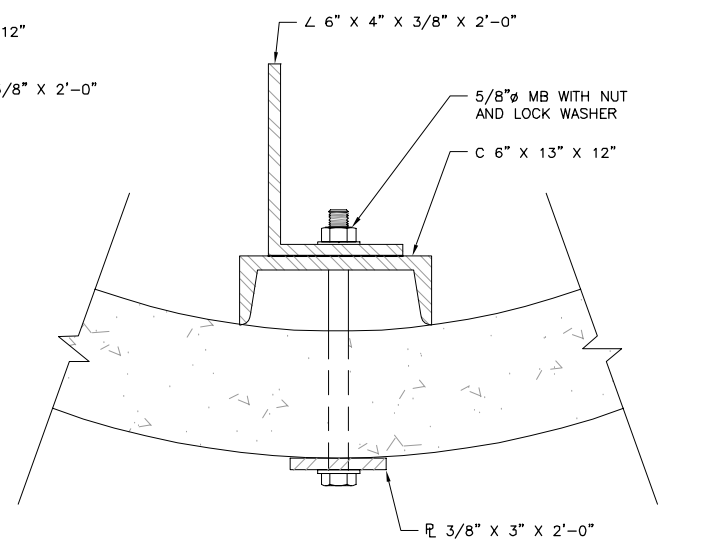
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4 STEEL MANHOLE GRATE CONNECTION
 C3.6 SCALE: 3" = 1'



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



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

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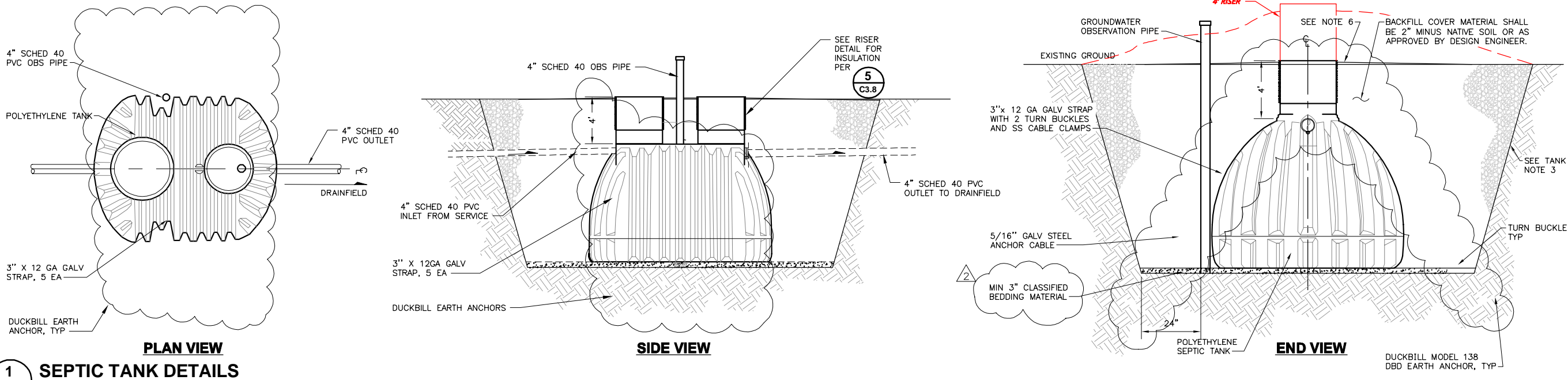
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**PYRAMID WTP
 UNALASKA, ALASKA**

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.

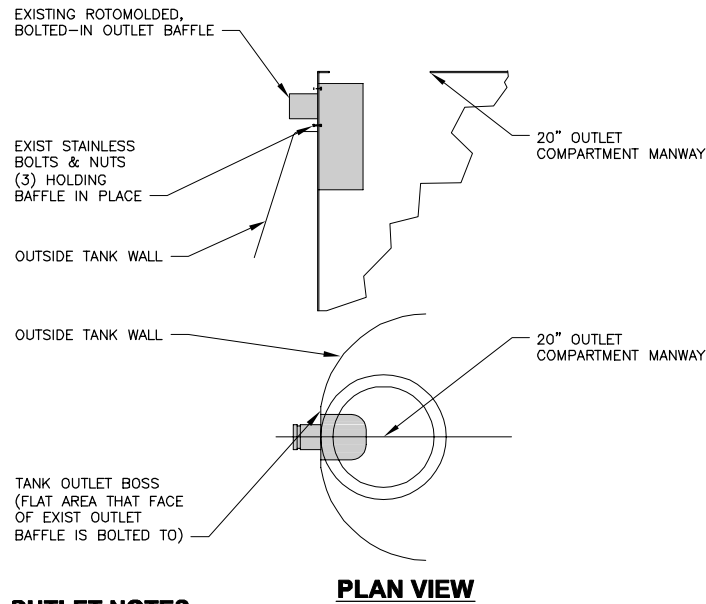
SEPTIC TANK INFORMATION

- 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

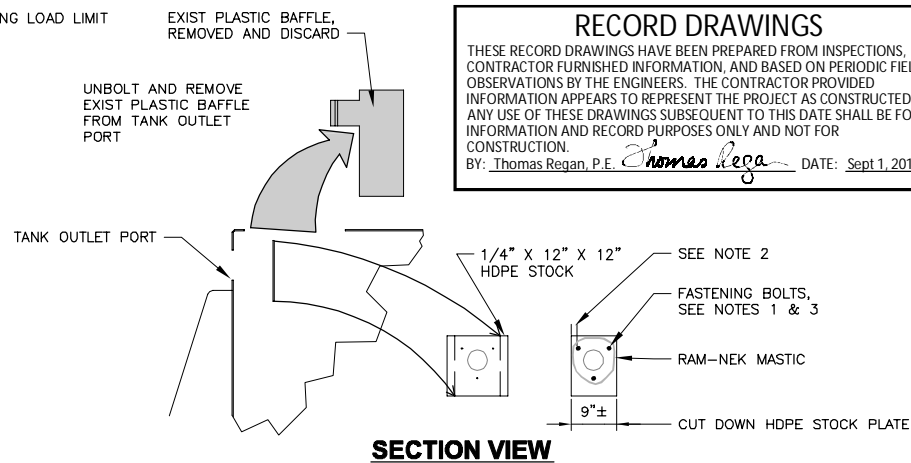
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OUTLET NOTES:

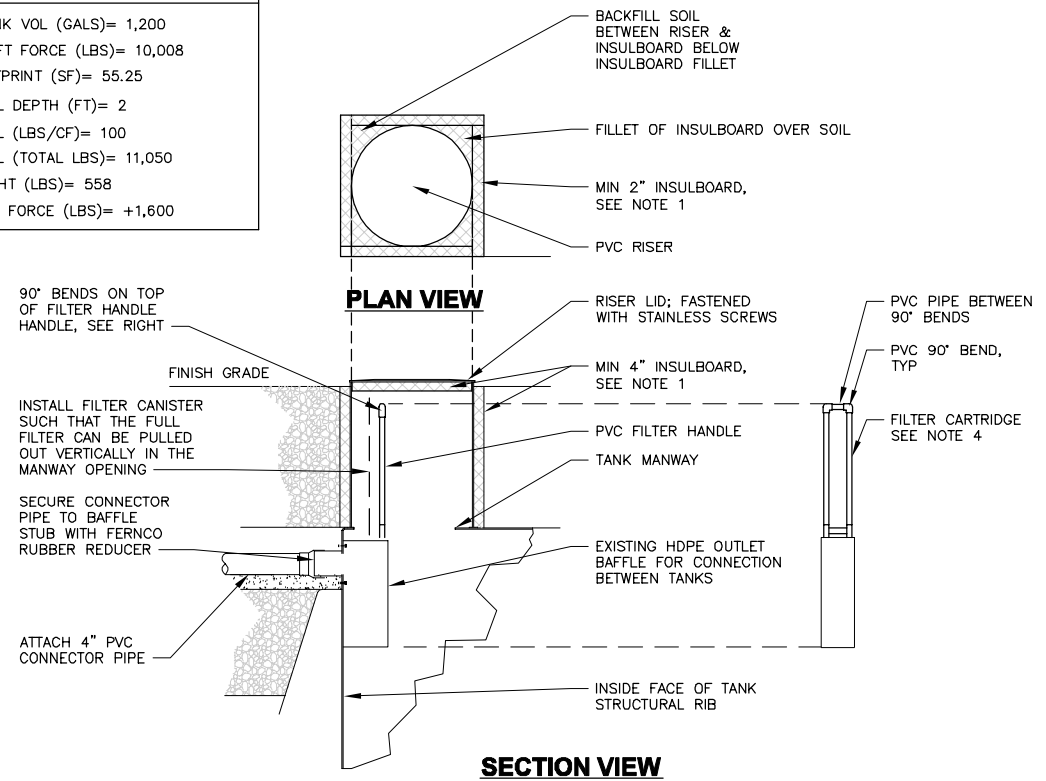
- EXAMINE TANK UPON ARRIVAL TO ENSURE IT IS IN GOOD CONDITION AND THAT ALL TANK COMPONENTS ARE PRESENT.
- REMOVE EXISTING ROTOMOLDED TANK OUTLET BAFFLE FROM DOSING TANK ONLY, BY REMOVING BOLTS AND NUTS SECURING BAFFLE TO TANK BOSS. RETAIN BOLTS AND NUTS TO SECURE HDPE STOCK TO TANK. SAVE BOLTS & NUTS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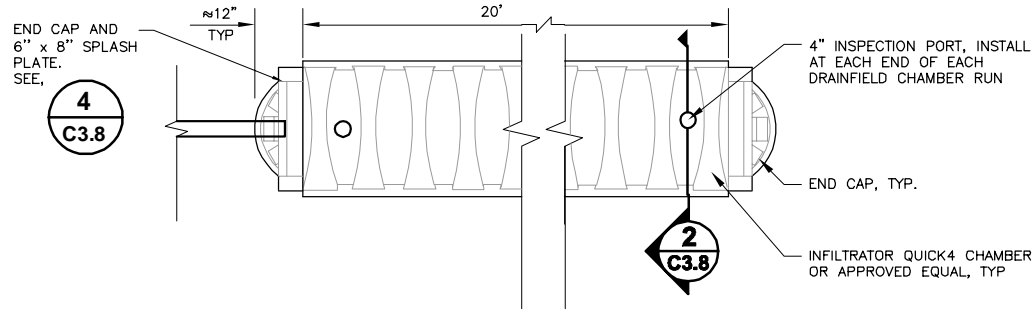
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PYRAMID WTP UNALASKA, ALASKA
SEPTIC TANK DETAILS

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1 SEPTIC DRAINFIELD CHAMBER LAYOUT
C3.8 SCALE: 1" = 2'

DRAINAGE FIELD NOTES:

- ALL WORK SHALL BE SUPERVISED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ALASKA. THE LICENSED ENGINEER WILL BE PROVIDED BY THE OWNER.
- NO VEHICLE TRAFFIC SHALL BE ALLOWED ON THE DRAINFIELD AREAS PRIOR TO, DURING OR AFTER CONSTRUCTION.
- ALL MANHOLES, OBSERVATION PIPES AND CLEANOUTS SHALL BE BROUGHT TO THE SURFACE AND CAPPED OR LIDDED AS SHOWN ON THE DRAWING.
- PROVIDE WATER TIGHT FITTINGS FOR ALL MANHOLE APPURTENANCES, CONNECTIONS AND PENETRATIONS.
- 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.
- 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.
- 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
- 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.
- 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

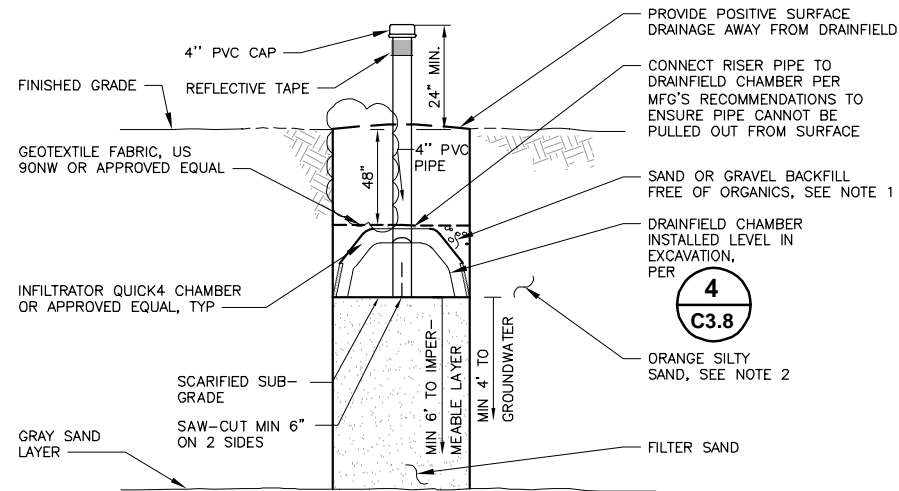
SYSTEMS DESIGN CRITERIA

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)

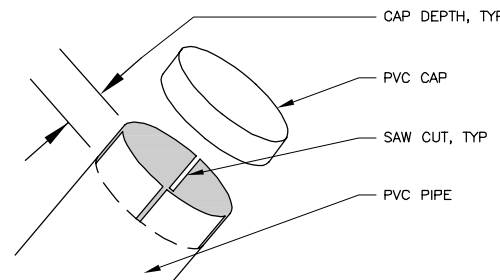
- SEPTIC TANKS SHALL CONFORM WITH ALL ADEC REQUIREMENTS, AND BE INSTALLED IN ACCORDANCE WITH ALL MANUFACTURER'S DIRECTIONS.
- GRAVITY SLOPE FOR ALL SYSTEM PIPING (FROM BUILDING TO SEPTIC TANK AND FROM SEPTIC TANK TO DRAINFIELD) SHALL BE 2% MIN, 10% MAX. SLOPE OF INFILTRATORS IN DRAINFIELD SHALL BE LEVEL (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.
- THE INSTALLER SHALL GIVE THE ENGINEER A MINIMUM OF 48 HOURS PRIOR NOTICE FOR EACH OF THE FOLLOWING 3 SYSTEM INSTALLATION INSPECTIONS:
 - AFTER THE TANK HAS BEEN SET AND DRAINFIELD BEDS HAVE BEEN DUG AND SCARIFIED,
 - AFTER ROCK/CHAMBERS AND PIPING HAVE BEEN PLACED AND BEFORE ANY BACKFILLING OVER PIPE, AND
 - AFTER FINAL BACKFILL HAS PLACED, FOR FINAL INSPECTION.
- 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.
- 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.
- 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.
- DO NOT INSTALL ANY COMPONENTS IN A FLOODED EXCAVATION.
- COMPACT SOIL BELOW ADV VAULT (2 FT HORZ ALL DIRECTIONS) TO MIN 95% MAX DRY DENSITY.



CHAMBERED BED NOTES:

- FILL AROUND OUTSIDE AND BETWEEN CHAMBERS WITH SEWER ROCK TO PREVENT INFILTRATION OF FINES INTO CHAMBER LOUVERS AND PROVIDE FULL FIELD INFILTRATION.
- 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.

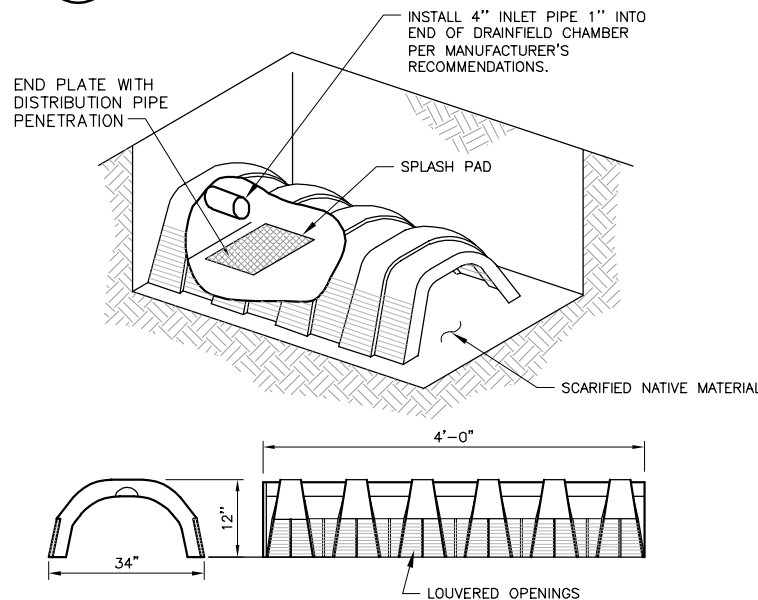
2 TYPICAL DRAINFIELD TRENCH SECTION
C3.8 SCALE: 1" = 2'



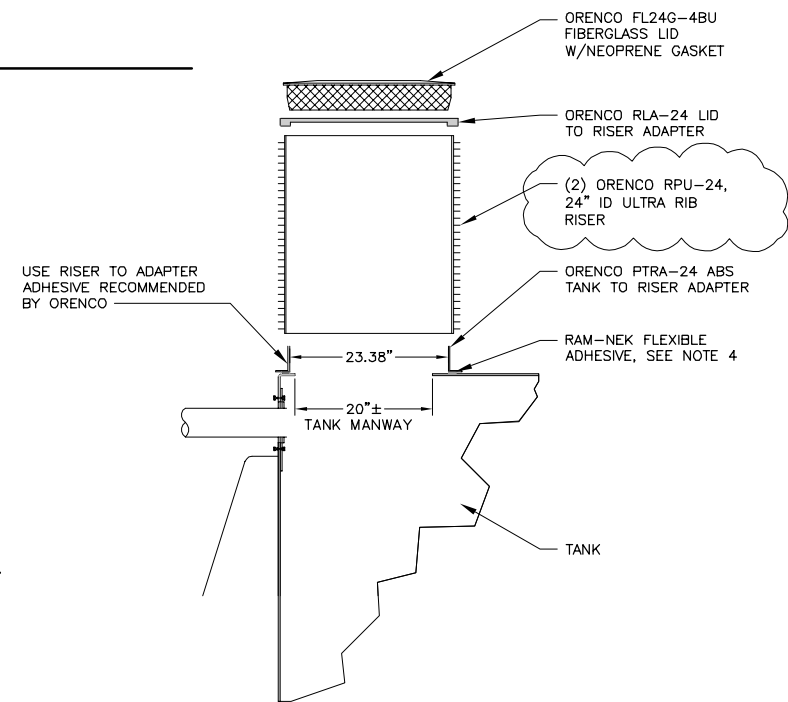
RISER PIPE CAP NOTES:

- 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.
- DETAIL APPLIES TO ALL OBSERVATION PORTS AND RISER PIPES
- USE THIS SAME CAP DETAIL FOR THE 12" VALVE VAULT FOR THE FLUSHING ASSEMBLIES.

3 RISER AND SMALL VAULT CAP
C3.8 SCALE: NOT TO SCALE



4 DRAINFIELD CHAMBER
C3.8 SCALE: 1" = 2'



TANK RISER NOTES:

- 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.
- 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.
- 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.
- INSTALL FULL RING OF RAM-NEK ADHESIVE AROUND BASE OF ADAPTER BEFORE BOLTING TO TANK.
- USE EXISTING GALVANIZED LAG BOLTS TO SECURE ADAPTER TO TOP OF TANK MANWAY.
- INSTALL ALL COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
- 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
C3.8 SCALE: NOT TO SCALE

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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

Plotted By: Curtis
 Date/Time: 09/01/2016 2:55 pm
 File Name: P:\800-850\850 Unalaska\850.05 Pyramid WTP Construction_Support\Civil\dwg\As-Built\850.04_DSIDT_Unalaska-asbuilt.dwg

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CONFORMED DOCUMENTS	DM	4/7/14	DM	DATE
ISSUED FOR BID	DM	12/2/13	DM	NO.
REVISION				REVISION

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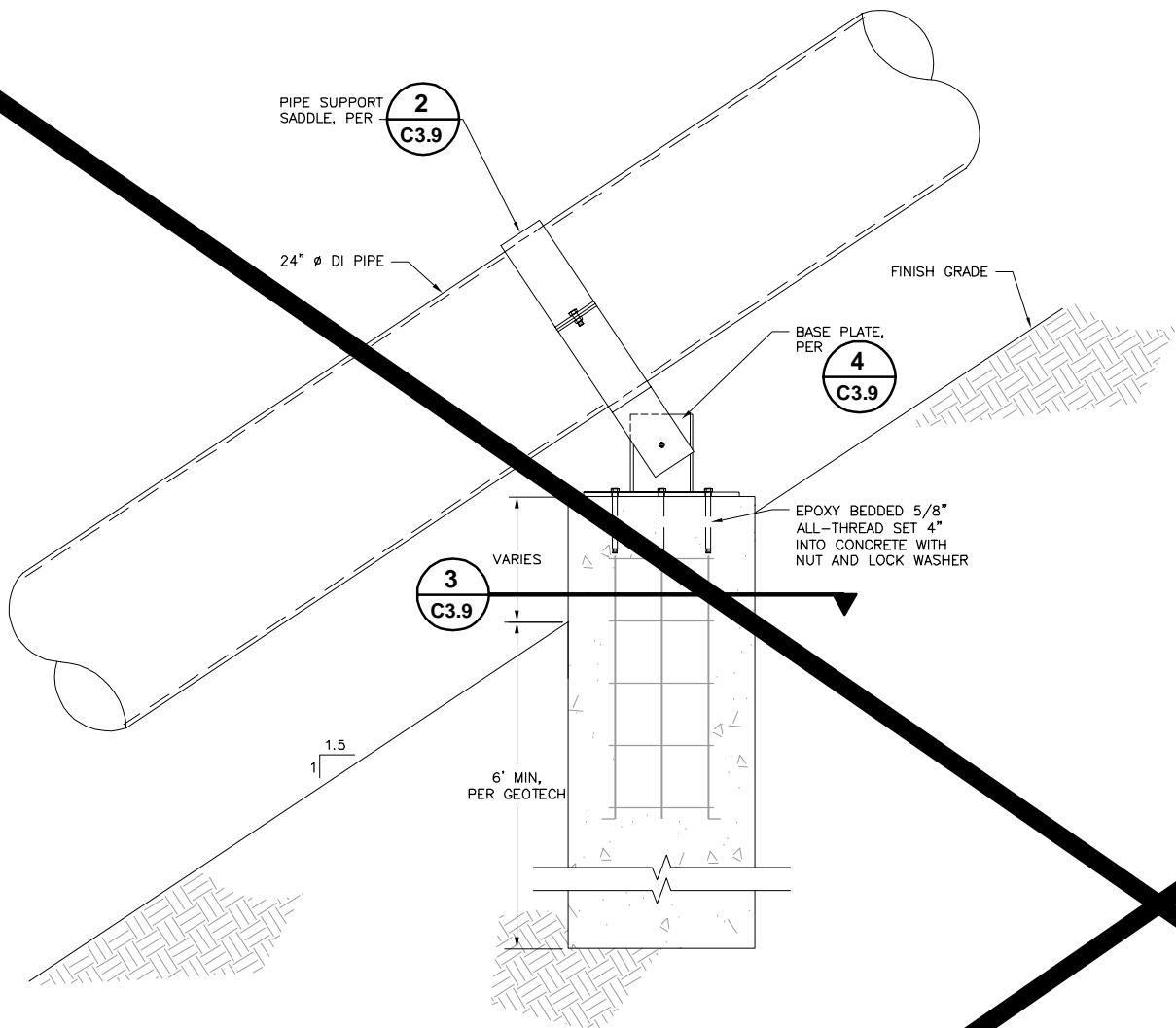
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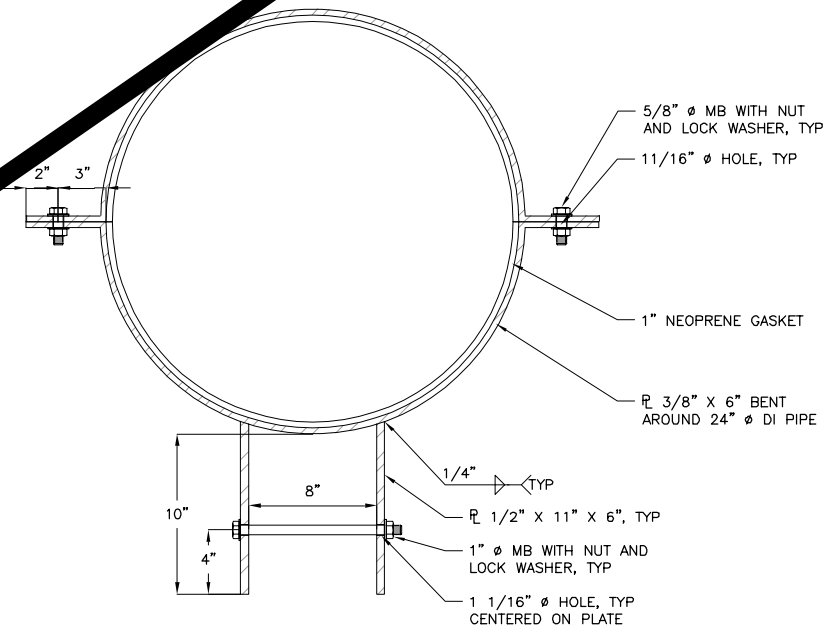
PYRAMID WTP UNALASKA, ALASKA
SEPTIC DRAINFIELD DETAILS

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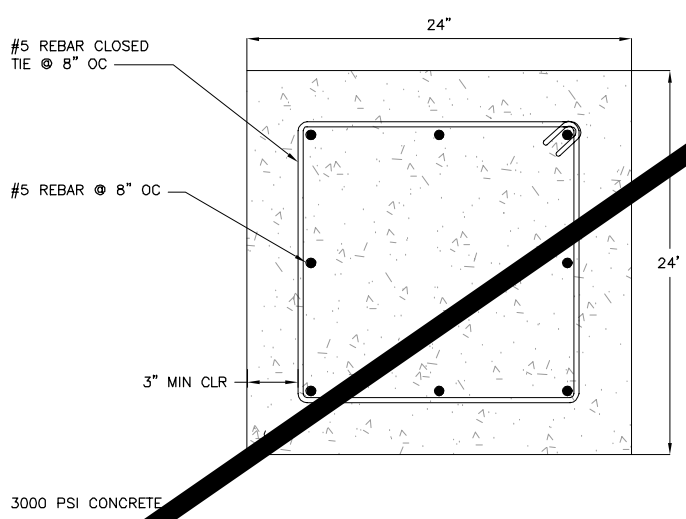
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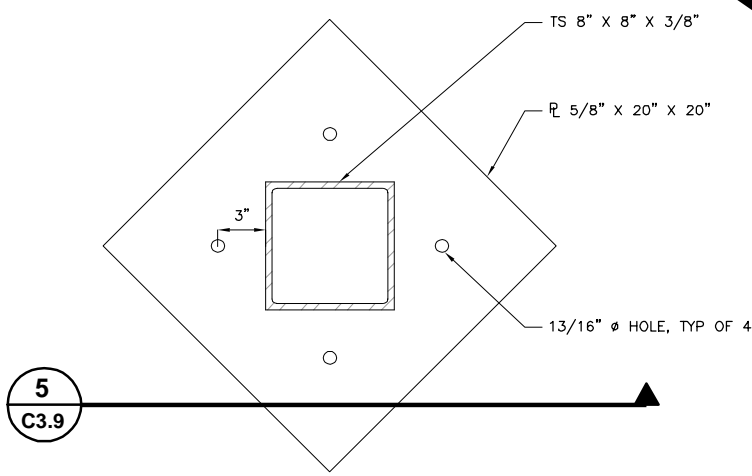
1 PIPE SUPPORT DETAIL
C3.9 SCALE: 1" = 1'



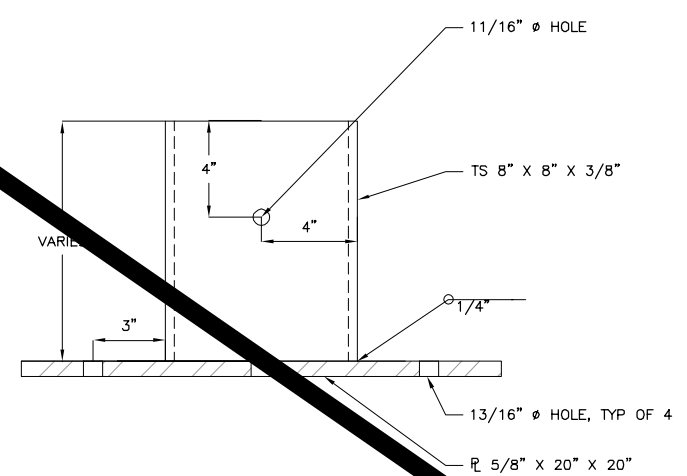
2 PIPE SUPPORT SADDLE
C3.9 SCALE: 2" = 1'



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'

Plotted By: Curtis
Date/Time: 09 Sep 2016 2:55 pm
C3.9
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PYRAMID WTP UNALASKA, ALASKA		12/2/13	DM
PIPE SUPPORT DETAILS		NO.	DATE
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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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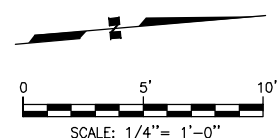
BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

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<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>250 H Street Anchorage, AK 99501</p> <p>P (907) 248-8995 F (907) 248-8628 www.lcgat.com</p> </div> <div style="text-align: center;">  <p>LCG Lantech Inc <i>architecture • engineering • surveying</i></p> </div> <div style="text-align: center;"> <p>CITY OF UNALASKA</p> </div> </div>							
<p>PYRAMID WTP UNALASKA, ALASKA</p>				<p>PROCESS DESCRIPTION (2 of 2)</p>			
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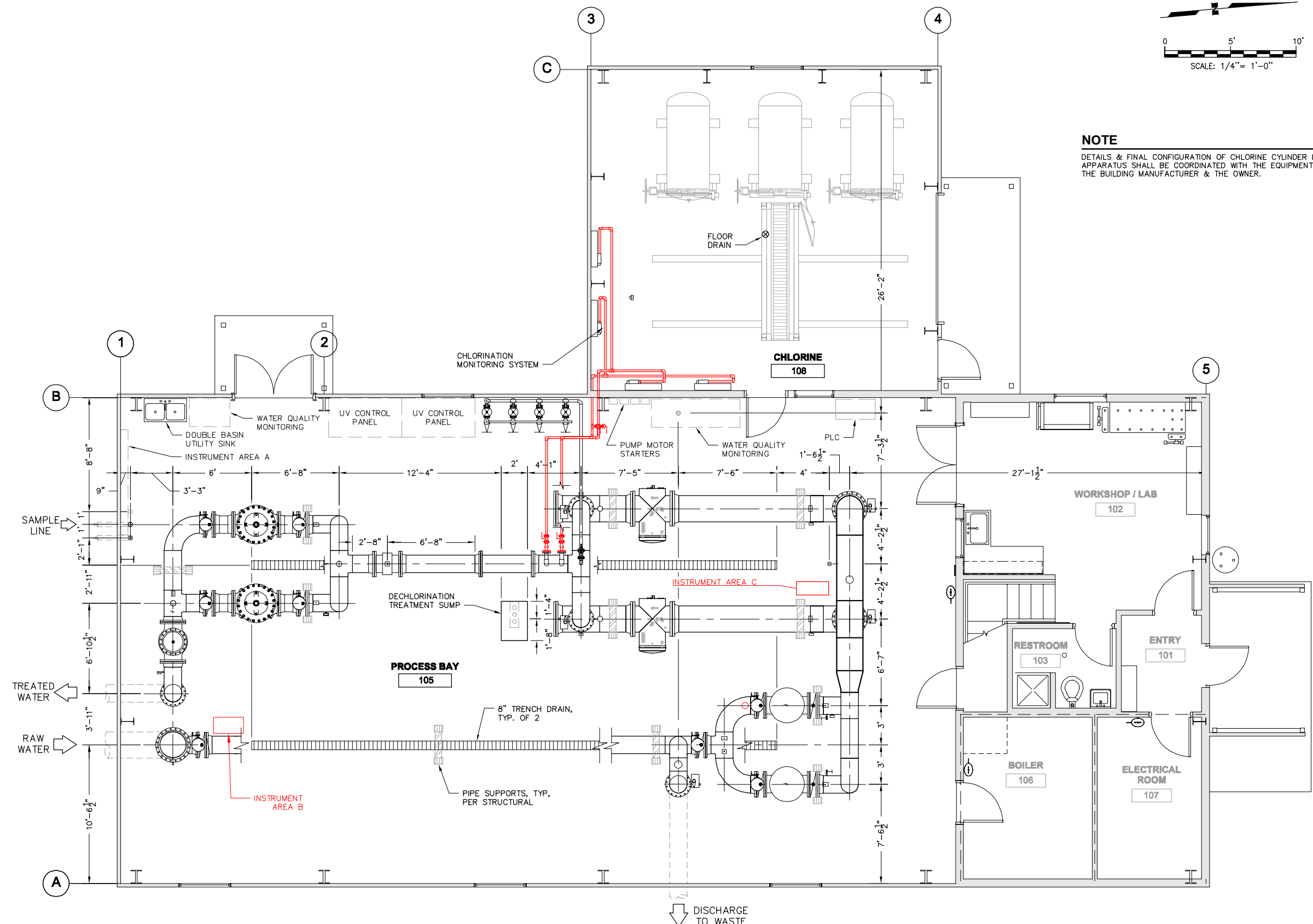
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NOTE

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



PROCESS FLOOR PLAN

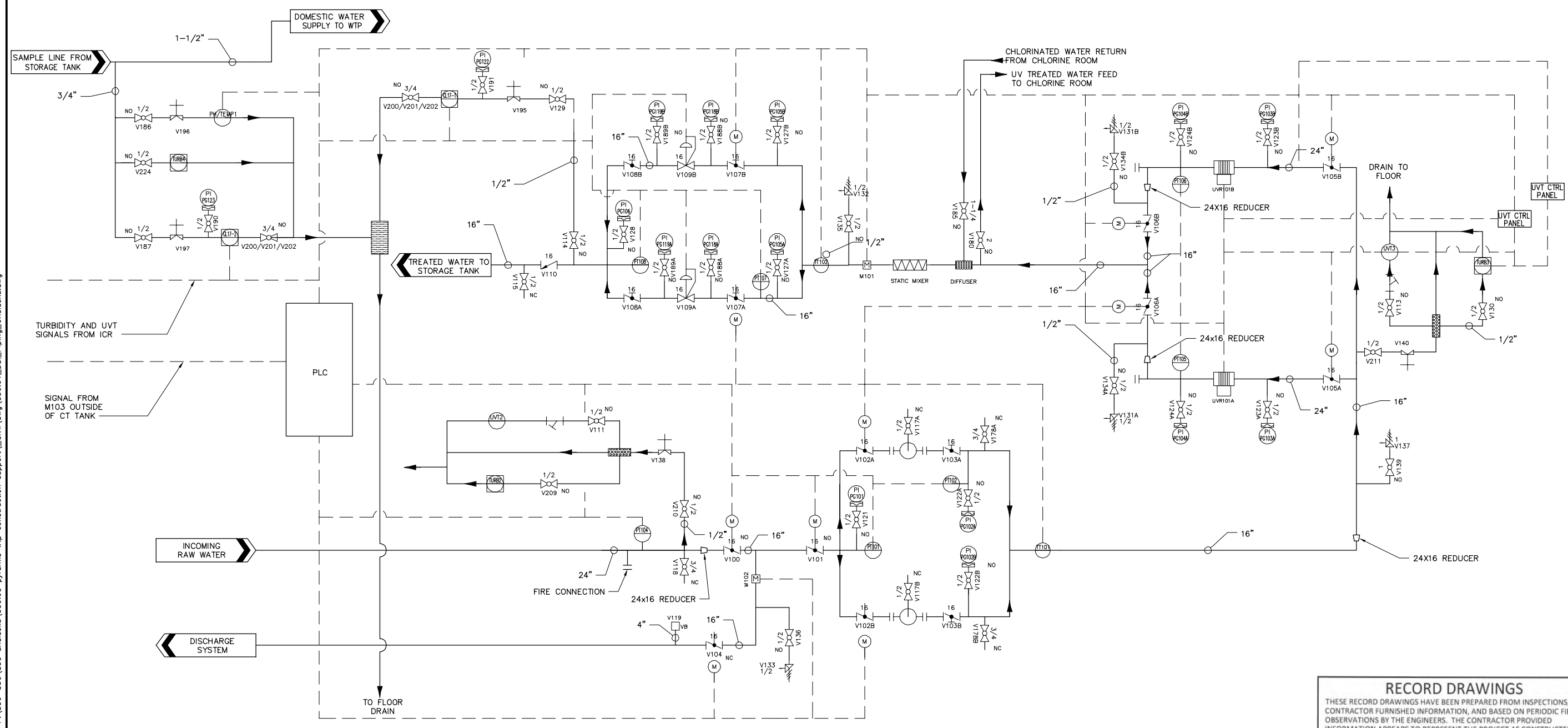
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PYRAMID WTP UNALASKA, ALASKA PROCESS FLOOR PLAN					
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SHEET NUMBER		P1.2		OF	

CONTRACTOR MAY SUBSTITUTE 1-1/2" KYNAR PIPING FOR 1-1/4" KYNAR PIPING.

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		ALTITUDE FLOW CONTROL VALVE
	PIPE REDUCER		BALL VALVE NO-NORMALLY OPEN NC-NORMALLY CLOSED		DIFFUSER		PRESSURE GAUGE WITH ISOLATION VALVE		
	STATIC MIXER		CHEMTRAC CHLORINE MONITOR		STRAINER				
	MAGNETIC FLOW METER		TURBIDIMETER		ACTIVATED CARBON FILTER				



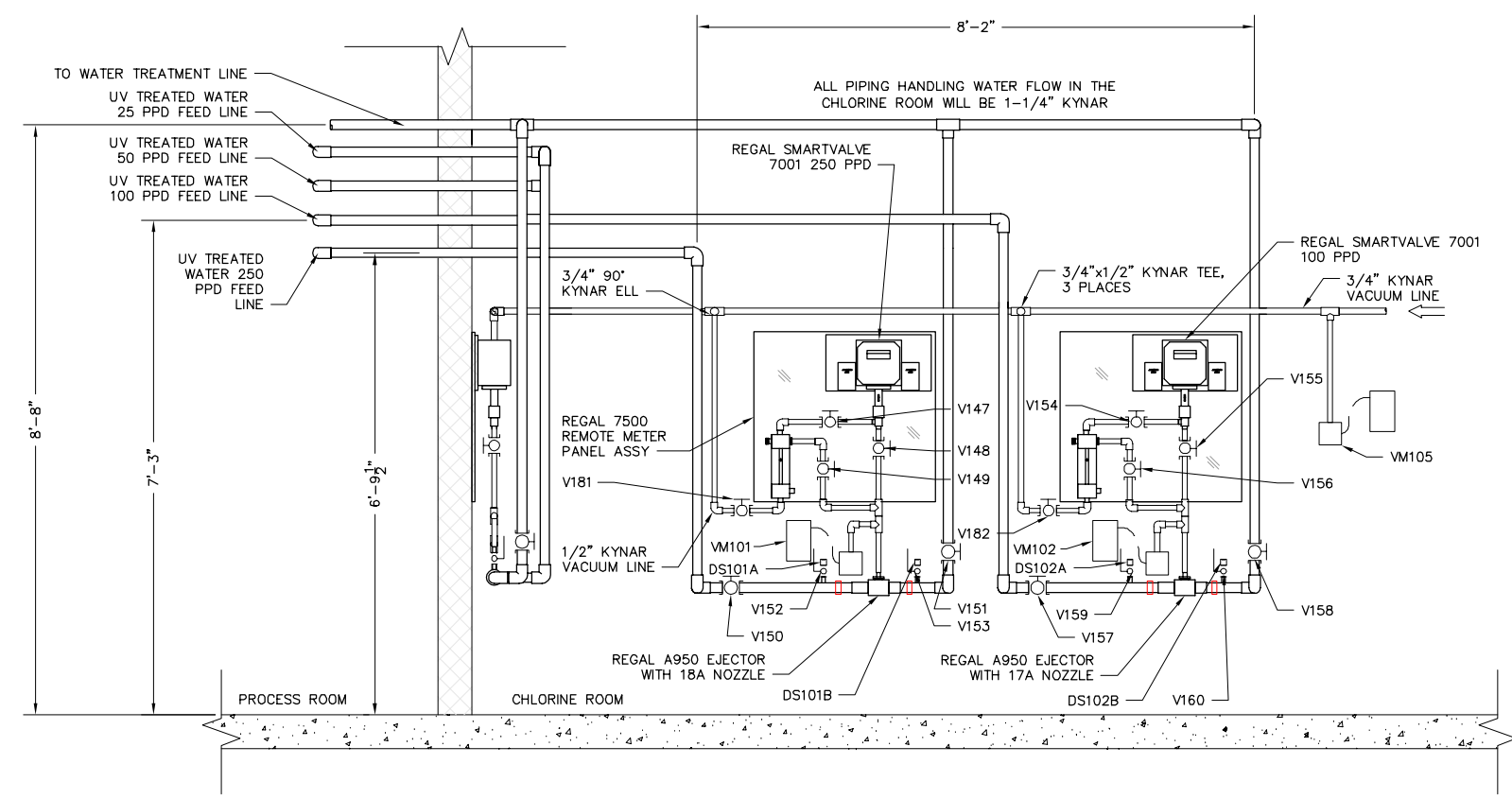
FLOW PROCESS & INSTRUMENTATION DIAGRAM
SCALE: NOT TO SCALE

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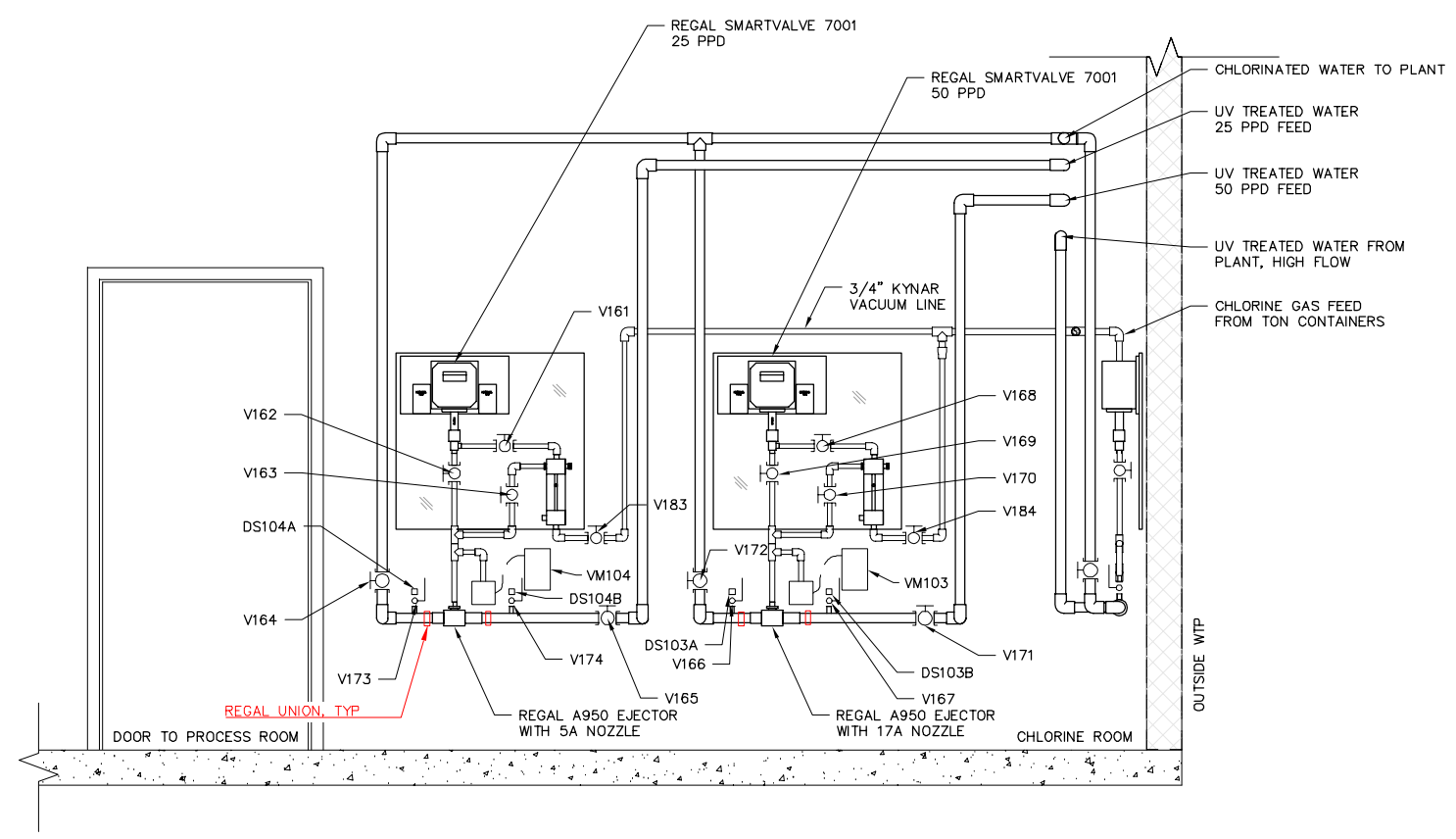
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LG Tech Inc <i>architecture - engineering - surveying</i> CITY OF UNALASKA		PYRAMID WTP UNALASKA, ALASKA FLOW PROCESS AND INSTRUMENTATION DIAGRAM			
		SCALE: AS SHOWN	DESIGNED BY: JM	DRAWN BY: CRS	CHECKED BY: GWF
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P1.3		OF			

CONTRACTOR MAY SUBSTITUTE 1-1/2" KYNAR PIPING FOR 1-1/4" KYNAR PIPING.



CHLORINATION ELEVATION SOUTH WALL
SCALE: 3/4" = 1'-0"



CHLORINATION ELEVATION EAST WALL
SCALE: 3/4" = 1'-0"

NO.	DATE	BY	REVISION
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2	4/7/14	JM	CONFORMED DOCUMENTS
3	9/2/16	TR	RECORD DRAWINGS

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UNALASKA, ALASKA
CHLORINATION

SCALE: AS SHOWN

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DATE: 12/2/13

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P1.4 OF

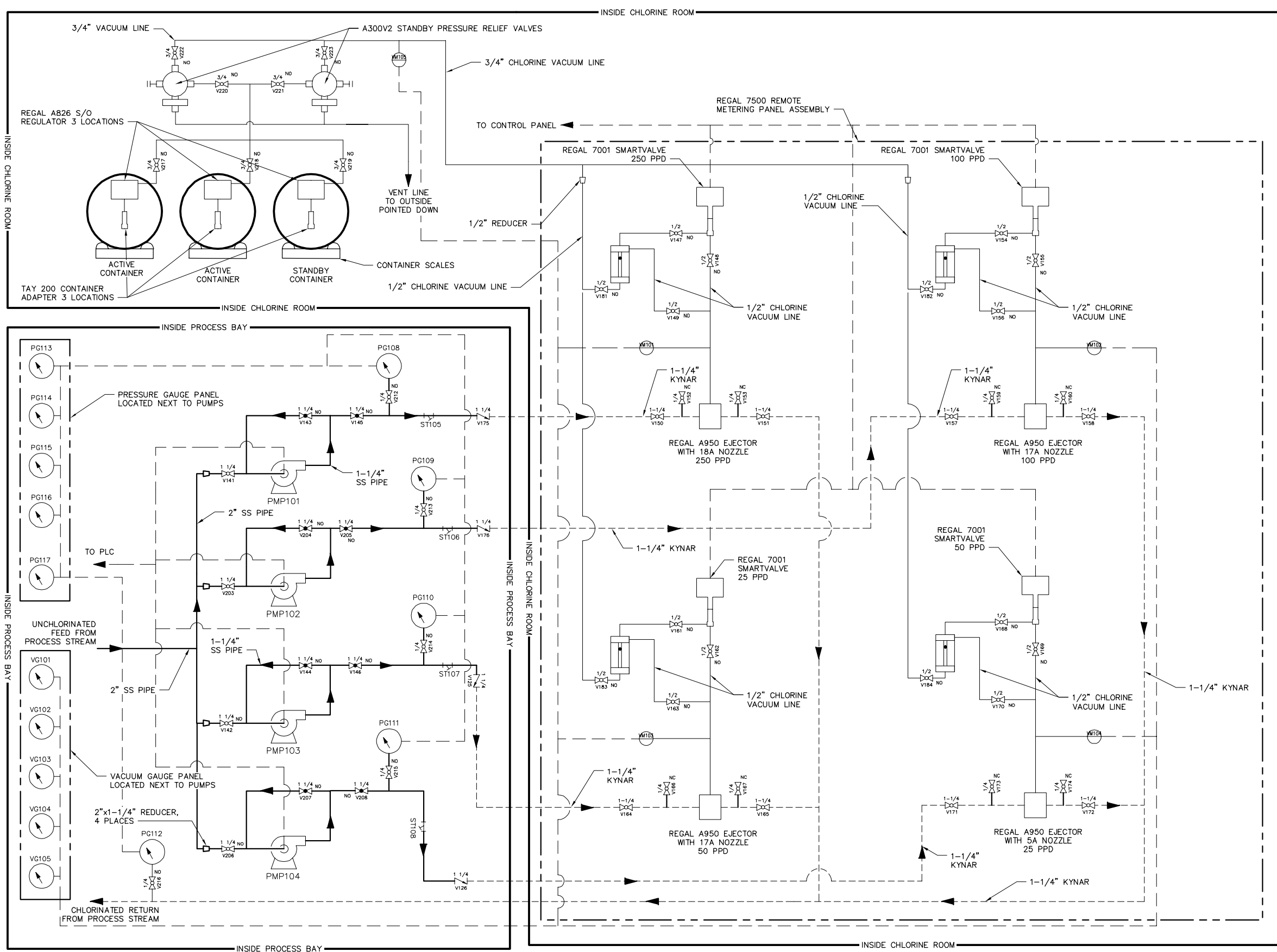
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CONTRACTOR MAY SUBSTITUTE 1-1/2" KYNAR PIPING FOR 1-1/4" KYNAR PIPING.

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

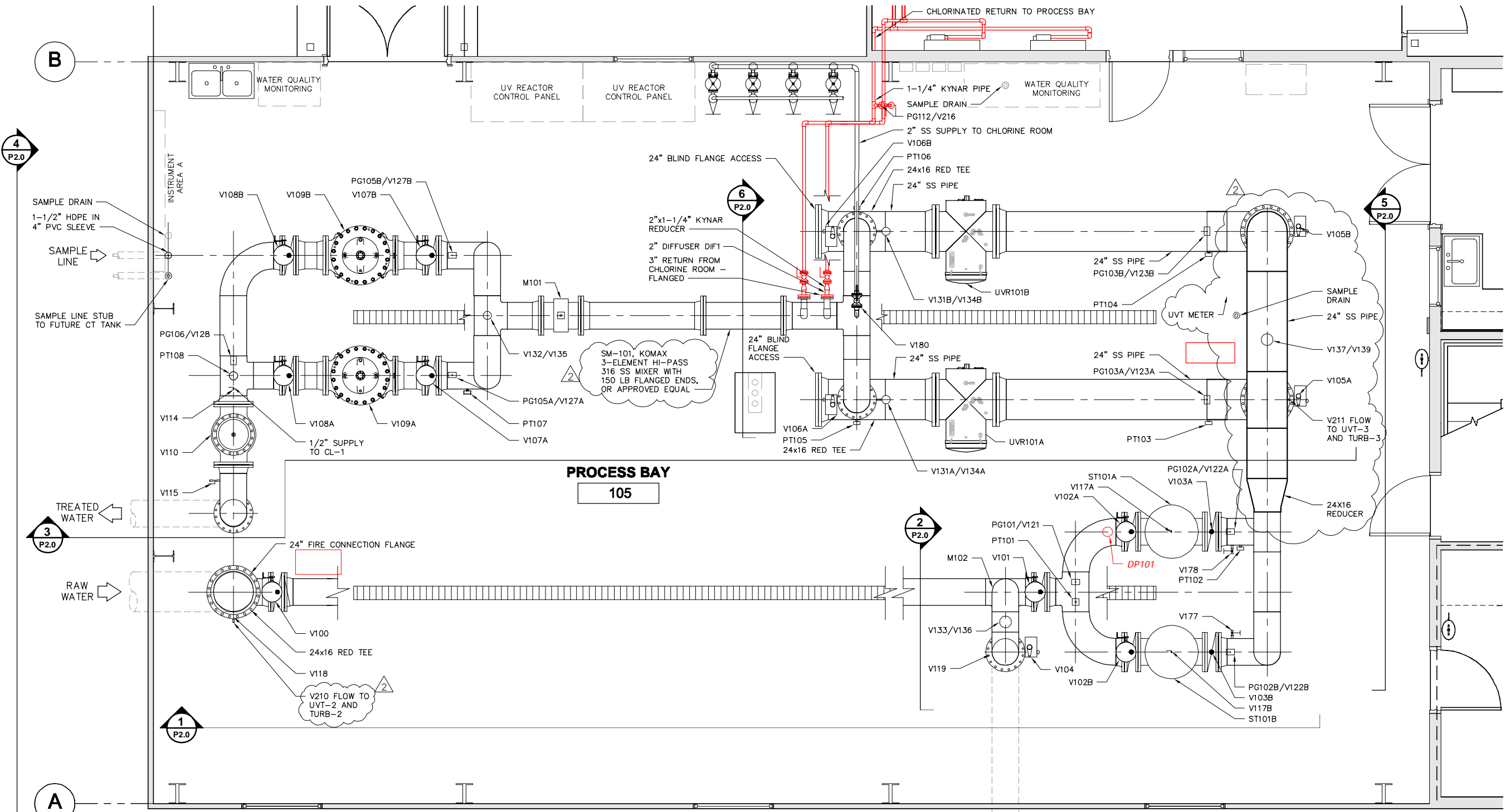
RECORD DRAWINGS
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

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 LCG Lantech Inc <i>architecture - engineering - surveying</i>		CITY OF UNALASKA			
		PYRAMID WTP UNALASKA, ALASKA CHLORINATION PROCESS AND INSTRUMENTATION DIAGRAM			
SCALE: AS SHOWN		DESIGNED BY: JM		DRAWN BY: CRS	
CHECKED BY: GWF		DATE: 12/2/13		FILE NO: 850.01	
SHEET NUMBER P1.5		OF			

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.

CONTRACTOR MAY SUBSTITUTE 1-1/2" KYNAR PIPING FOR 1-1/4" KYNAR PIPING.



Plotted By: Curtis
 Date/Time: 04 Oct 2016 11:48 am
 Layout: Piping Plan
 Filename: P:\300-850\850_unalaska\850.05_pyramid_wtp_construction_support\Civil\dwg\850.01_DSI_Piping_Unalaska.dwg

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

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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

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PYRAMID WTP UNALASKA, ALASKA PIPING PLAN		DESIGNED BY: JM		BY	
SCALE: AS SHOWN		DRAWN BY: CRS		REVISION	
DATE: 12/2/13		CHECKED BY: GWF		NO. DATE	
FILE NO. 850.01		DATE: Sept 1, 2016		NO. DATE	
SHEET NUMBER P1.6 OF		CONFORMED DOCUMENTS		NO. DATE	

Plotted By: Curtis
 Date/Time: 04 Oct 2016 11:48 am
 Layout: Instrument Details
 Filename: P:\800-850-unalaska\850.05-pyramid wtp construction support\Civil\dwg\850.01_DSI_Piping_Unalaska.dwg

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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

		TR	RECORD DRAWINGS		
	9/2/16	JM	CONFORMED DOCUMENTS		
	4/7/14	JM	ISSUED FOR BID		
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CITY OF UNALASKA

PYRAMID WTP
 UNALASKA, ALASKA
 INSTRUMENT DETAILS

SCALE: AS SHOWN

DESIGNED BY: JM

DRAWN BY: CRS

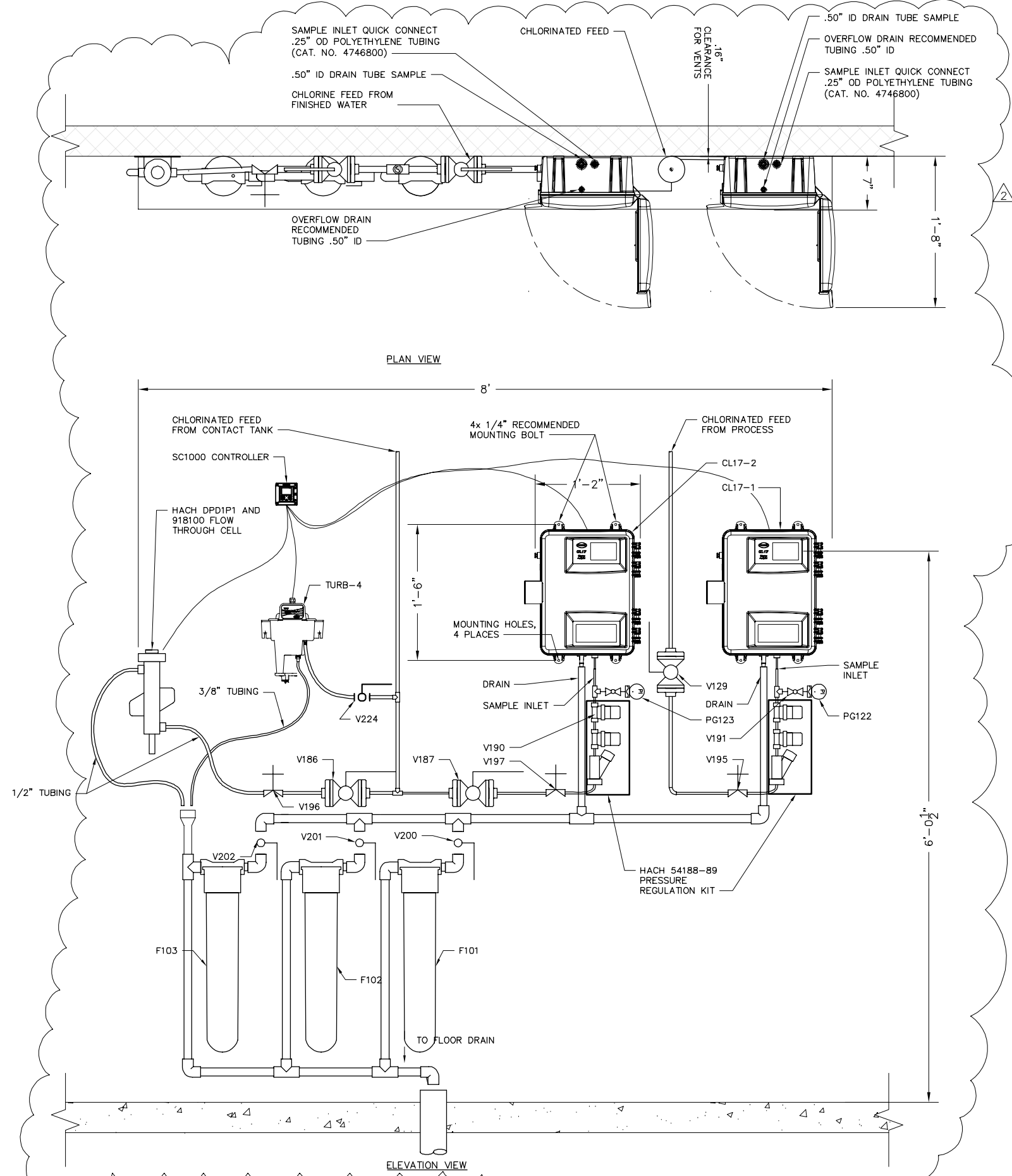
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DATE: 12/2/13

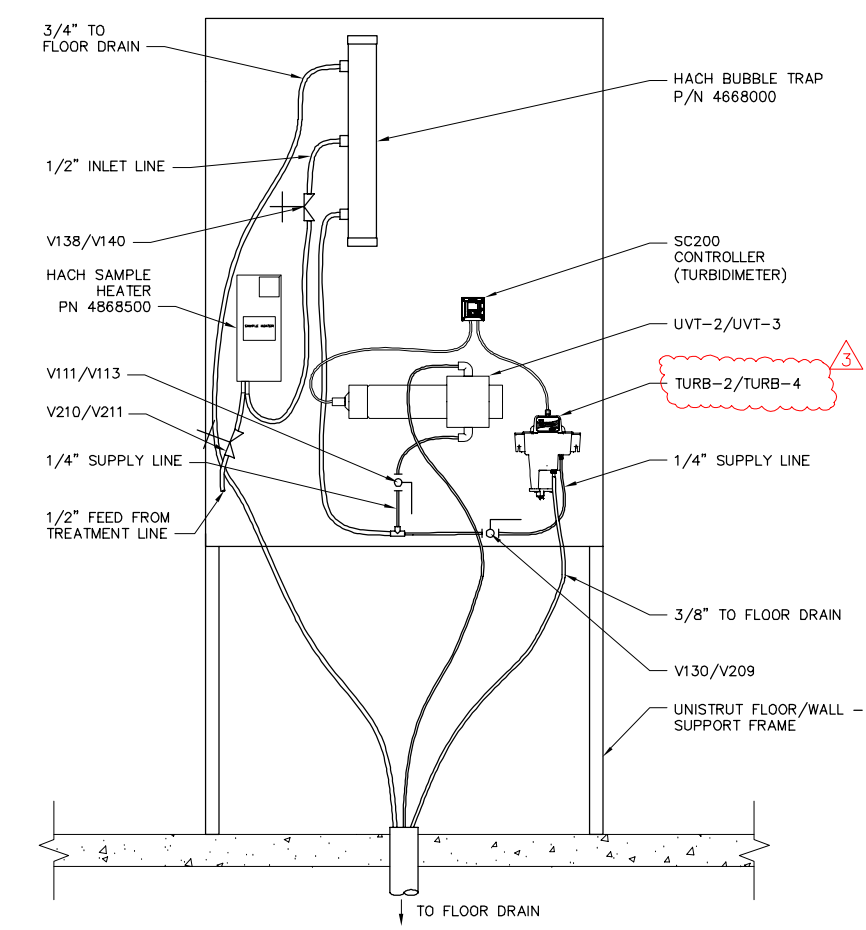
FILE NO. 850.01

SHEET NUMBER

P2.1 OF



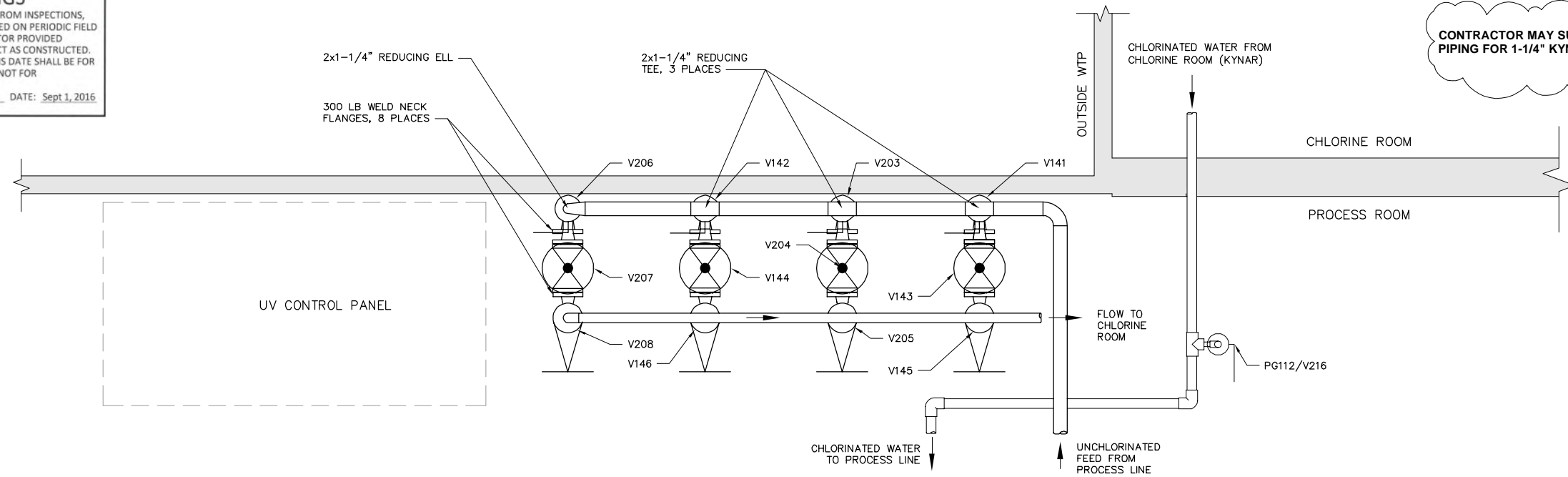
INSTRUMENT AREA A ARRANGEMENT
 SCALE: 1-1/2" = 1'-0"



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

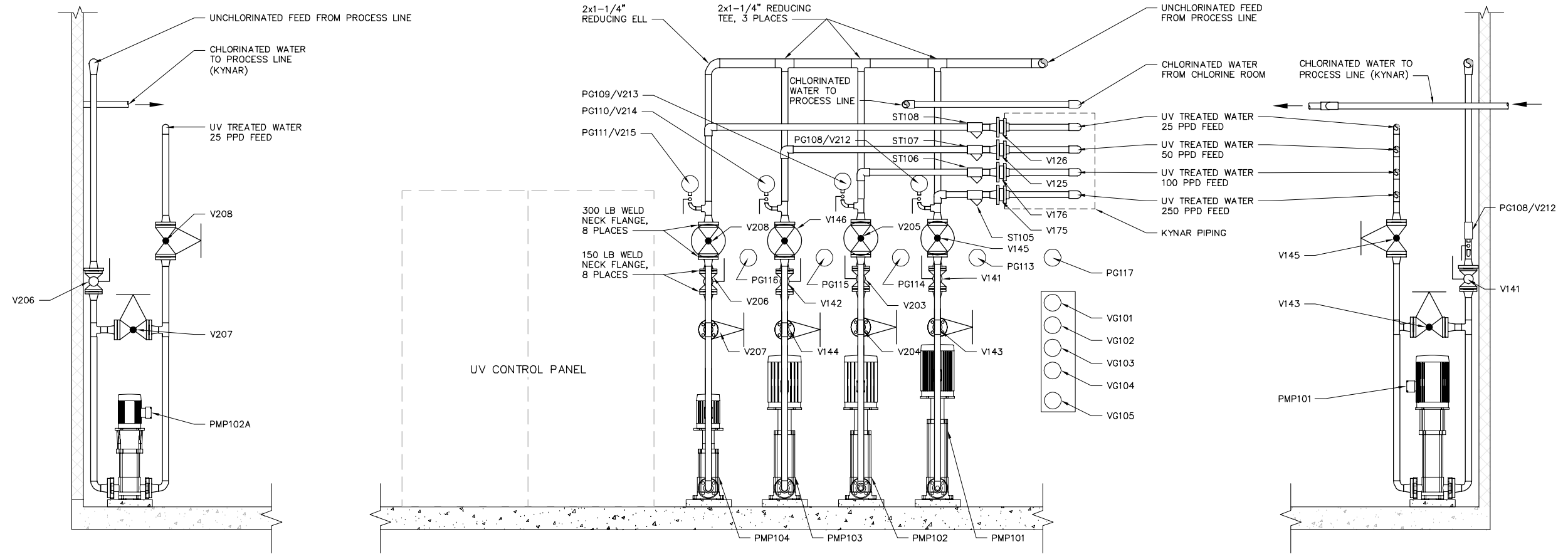
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



CHLORINE PUMPS PLAN

SCALE: 1" = 1'-0"



CHLORINE PUMPS LEFT ELEVATION

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

CHLORINE PUMPS FRONT ELEVATION

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

CHLORINE PUMPS RIGHT ELEVATION

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

Plotted By: Curtis
 Date/Time: 04 Oct 2016 11:48 am
 Layout: Chlorine Pumps
 Filename: P:\800-850\850_unalaska\850.05_pyramid_wtp_construction_support\Civil\dwg\850.01_DSI_Piping_Unalaska.dwg

NO.	DATE	BY	REVISION
1	12/2/13	JM	ISSUED FOR BID
2	4/7/14	JM	CONFORMED DOCUMENTS
3	9/2/16	TR	RECORD DRAWINGS

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CITY OF UNALASKA

**PYRAMID WTP
 UNALASKA, ALASKA
 CHLORINE ROOM PUMPS**

SCALE: AS SHOWN

DESIGNED BY: JM

DRAWN BY: CRS

CHECKED BY: GWF

DATE: 12/2/13

FILE NO. 850.01

SHEET NUMBER
P2.2 OF

UNALASKA VALVE AND CONTROL SCHEDULE -CONT'D

CONTRACTOR MAY SUBSTITUTE 1-1/2" KYNAR PIPING FOR 1-1/4" KYNAR PIPING.

RECORD DRAWINGS
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 By: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

TAG NO.	ITEM	Operation	FUNCTION	SIZE	MANUFACTURER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
V107B	ELECTRICALLY OPERATED BUTTERFLY VALVE	MANUAL	INLET ISOLATION VALVE FOR CLA-VAL CONTROL VALVE V109B	16	PRATT	HP250II	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	HP250II	OP/CL	N/A	
V108B	MANUALLY OPERATED BUTTERFLY VALVE	MANUAL	OUTLET ISOLATION VALVE FOR CLA-VAL CONTROL VALVE V109B	16	PRATT	HP250II	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 UV1-1	1/4			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 UV1-2	1/4			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	1804VB.1	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 VALVW, PREVENT BACKFLOW TO CHLORINE PUMPS	1-1/4	FLOWMATIC	812X - 2423X	-	-	
V126	STAINLESS STEEL CHECK VALVE	-	CHECK VALVW, 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	1/4			OP/CL	N/A	
V130	BALL VALVE	MANUAL	ISOLATION VALVE FOR TURB-2	1/4			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	
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	1/2	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	1/2	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	

TAG NO.	ITEM	Operation	FUNCTION	SIZE	MANUFACTURER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
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	1/4			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	1/4			MANUAL	N/A	
V191	BALL VALVE	MANUAL	ISOLATION VALVE FOR PG122	1/4			MANUAL	N/A	
V192	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V193	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V194	REMOVED FROM SYSTEM	-	-	-	-	-	-	-	
V195	DIAPHRAGM VALVE	MANUAL	FLOW CONTROL THROUGH CL17-1	1/4	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	1/4	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	

RECORD DRAWINGS	TR	9/2/16	TR	4/7/14	JM	12/2/13	JM
CONFORMED DOCUMENTS	JM	4/7/14	JM	12/2/13	JM	12/2/13	JM
ISSUED FOR BID	JM	4/7/14	JM	12/2/13	JM	12/2/13	JM
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CITY OF UNALASKA

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

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

Printed By: Curtis
 Date/Time: 04 Oct 2016 11:48 am
 Layout: Valve Schedule 2
 Filename: P:\800-850\850_unalaska\850.05_pyramid_wtp_construction_support\Civil\dwg\850.01_DSI_Piping_Unalaska.dwg

UNALASKA VALVE AND CONTROL SCHEDULE -CONT'D

CONTRACTOR MAY SUBSTITUTE 1-1/2" KYNAR PIPING FOR 1-1/4" KYNAR PIPING.

TAG NO.	ITEM	Operati on	FUNCTION	SIZE	MANUFACTUR ER/SUPPLIER	MODEL NO	TYPE	ACTUATOR	NOTES
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 VAVLE FOR TURB-3	1/4	-	-	OP/CL	N/A	
V210	BALL VALVE	MANUAL	ISOLATION VAVLE FOR INSTRUMENT FLOW	1/2	-	-	OP/CL	N/A	
V211	BALL VALVE	MANUAL	ISOLATION VAVLE 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 VAVLE FOR TURB-4	1/4	-	-	OP/CL	N/A	
V225	ISOLATION VALVE	MANUAL	ISOLATION OF PRESSURE GAUGE TO PH/TEMP INSTRUMENT	3/8	-	-	MANUAL	N/A	
VG101	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 250 PPD SYSTEM	-	ASHCROFT	45-1279-SSL-04L 30/0 HG IMV	-	N/A	
VG102	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 100 PPD SYSTEM	-	ASHCROFT	45-1279-SSL-04L 30/0 HG IMV	-	N/A	
VG103	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 50 PPD SYSTEM	-	ASHCROFT	45-1279-SSL-04L 30/0 HG IMV	-	N/A	
VG104	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 25 PPD SYSTEM	-	ASHCROFT	45-1279-SSL-04L 30/0 HG IMV	-	N/A	
VG105	REMOTE VACUUM GAUGE	-	MONITOR VACUUM IN CHLORINE SYSTEM, 25 PPD SYSTEM	-	ASHCROFT	45-1279-SSL-04L 30/0 HG IMV	-	N/A	
VM101	VACUUM MONITOR	-	MONITOR VACUUM IN CHLORINE SYSTEM	-	REGAL	VAC 1000	AUTOMATIC	N/A	
VM102	VACUUM MONITOR	-	MONITOR VACUUM IN CHLORINE SYSTEM	-	REGAL	VAC 1000	AUTOMATIC	N/A	
VM103	VACUUM MONITOR	-	MONITOR VACUUM IN CHLORINE SYSTEM	-	REGAL	VAC 1000	AUTOMATIC	N/A	
VM104	VACUUM MONITOR	-	MONITOR VACUUM IN CHLORINE SYSTEM	-	REGAL	VAC 1000	AUTOMATIC	N/A	
VM105	VACUUM MONITOR	-	MONITOR VACUUM IN CHLORINE SYSTEM	-	REGAL	VAC 1000	AUTOMATIC	N/A	

UNALASKA PUMP SCHEDULE

PUMP NO.	NOMINAL FLOW			REQ'D HEAD		MANUFACT	PRODUCT LINE	RPM	NO OF STAGES	CONFIG OPTION	HP RATING HP RATING	POLE/HZ/ PHASE	VOLAGE		ENCLOSURE		MODEL NO
	GPM	M3/HR	CALLOUT	PSI	FT								VOLTAGE	CALLOUT	TYPE	CALLOUT	
PMP 101	29.1	6.61	5	195	450	GOULD	SV	3500	17	ROUND 304	7.5	2/60/3	230/460	F	TEFC	2	5SV17FG4F60
PMP 102	24.0	5.45	5	185	427	GOULD	SV	3500	15	ROUND 304	5	2/60/3	230/460	F	TEFC	2	5SV15FG4F60
PMP 103	23.7	5.38	5	182	420	GOULD	SV	3500	14	ROUND 304	5	2/60/3	230/460	F	TEFC	2	5SV14FG4F60
PMP 104	14.4	3.27	5	153	353	GOULD	SV	3500	12	ROUND 304	3	2/60/3	230/460	F	TEFC	2	3SV12FF4C60

Plotted By: Curtis
 Date/Time: 04 Oct 2016 11:48 am
 Layout: Valve Schedule 3
 Filename: P:\300-850\850 unalaska\850.05 pyramid wtp construction support\Civil\dwg\850.01_DSI_Piping_Unalaska.dwg

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

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

RECORD DRAWINGS

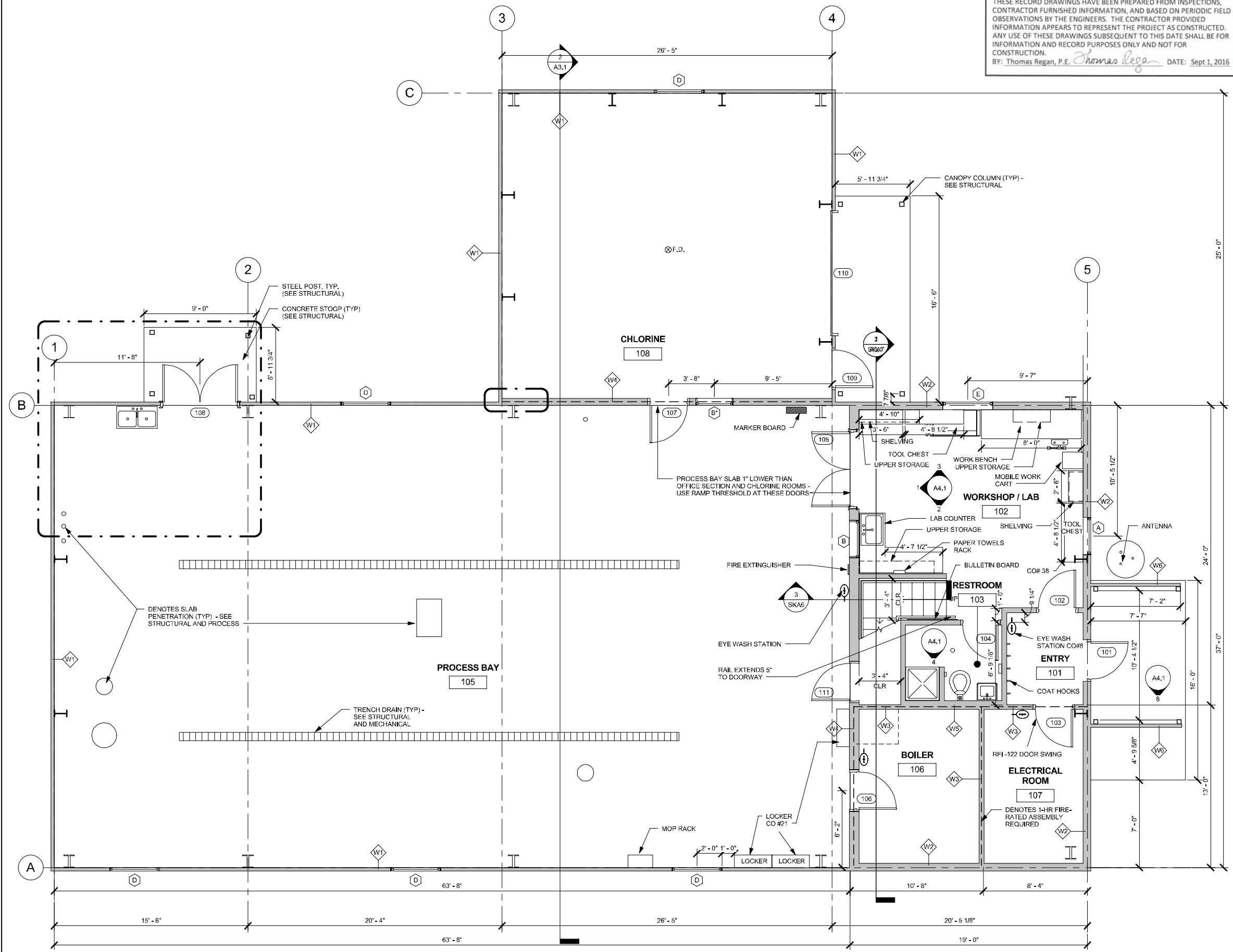
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BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

PROJECT SCOPE AND GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BUILDING PERMITS, LETTERS OF NON-OBJECTION, UTILITY SERVICES AND APPLICATIONS AS REQUIRED.
2. CONTRACTOR TO BE RESPONSIBLE FOR ALL REQUIRED SAFETY PRECAUTIONS, METHODS AND TECHNIQUES.
3. 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.
4. PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO COMPLETE ALL WORK AS SHOWN OR AS IMPLIED ON THESE DRAWINGS.
5. 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.
6. DIMENSIONS TO FACE OF STUD OR CENTERLINE OF STRUCTURAL STEEL UNLESS OTHERWISE NOTED.
7. 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.
8. {removed}
9. 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).
10. 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.
11. SIDING AND ROOFING SUPPLIER TO PROVIDE COMPLETE SHOP DRAWINGS INDICATING ALL DETAILS OF INSTALLATION.
12. 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.
13. CAULK ALL JOINTS, PROVIDE BACKER ROD AS NEEDED, AND PROVIDE FLASHING & COUNTER FLASHING AS NEEDED TO PROVIDE COMPLETE WEATHER PROOF INSTALLATION.
14. PROVIDE SAFETY GLAZING AT ALL DOORS AND HAZARDOUS LOCATIONS AS REQUIRED BY CODE AND LOCAL STANDARDS.
15. ALL WOOD TO BE INSTALLED IN CONTACT WITH CONCRETE MUST BE PRESSURE TREATED LUMBER.
16. REMOVE ALL RUBBISH AND DEBRIS RESULTING FROM CONSTRUCTION.

RECORD DRAWINGS
 THESE RECORD DRAWINGS HAVE BEEN PREPARED FROM INSPECTIONS, CONTRACTOR FURNISHED INFORMATION, AND BASED ON PERIODIC FIELD OBSERVATIONS BY THE ENGINEERS. THE CONTRACTOR PROVIDED INFORMATION APPEARS TO REPRESENT THE PROJECT AS CONSTRUCTED. ANY USE OF THESE DRAWINGS SUBSEQUENT TO THIS DATE SHALL BE FOR INFORMATION AND RECORD PURPOSES ONLY AND NOT FOR CONSTRUCTION.
 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



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

Plotted By: 10/4/2016 11:25:10 AM
 Date/Time: 10/4/2016 11:25:10 AM
 Layout: A1
 Filename: P:\800-850-850 Unalaska\850.05 Pyramid WTP Construction Support\Architectural\850.01 Unalaska WTP.rvt

NO	DATE	BY	REVISION
1	12/2/13	RW	ISSUED FOR BID
2	04/07/14	RW	CONTRACT DOCUMENTS
3	9/02/16	RW	RECORD DRAWINGS

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PYRAMID WTP
UNALASKA, ALASKA
ARCHITECTURAL GENERAL NOTES
MAIN LEVEL FLOOR PLAN

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

DESIGNED BY: WS

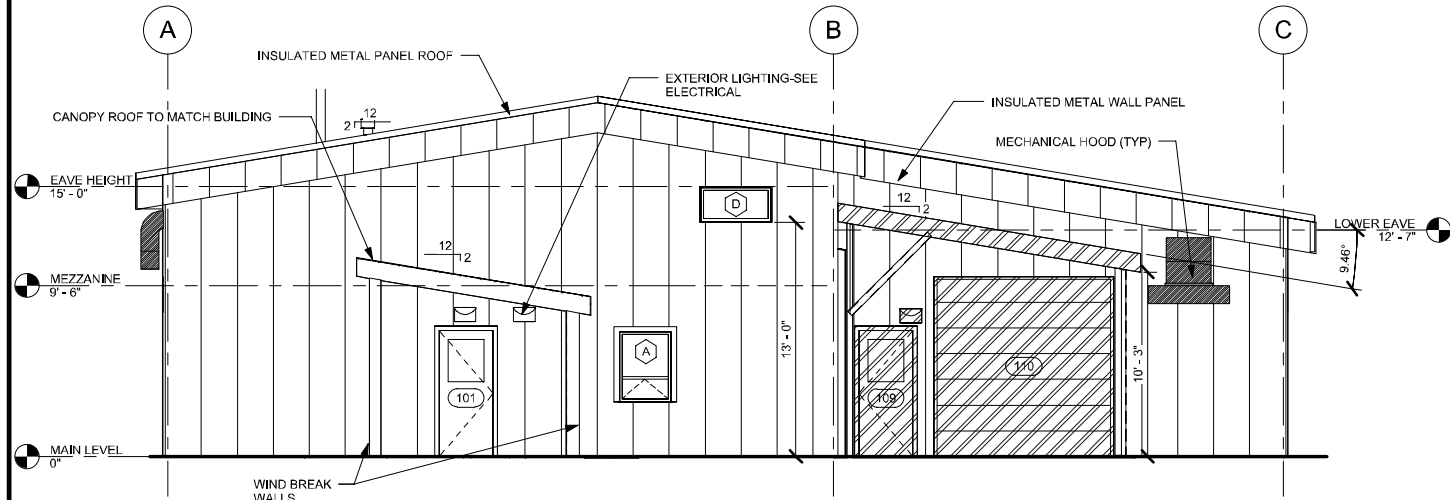
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CHECKED BY: WS

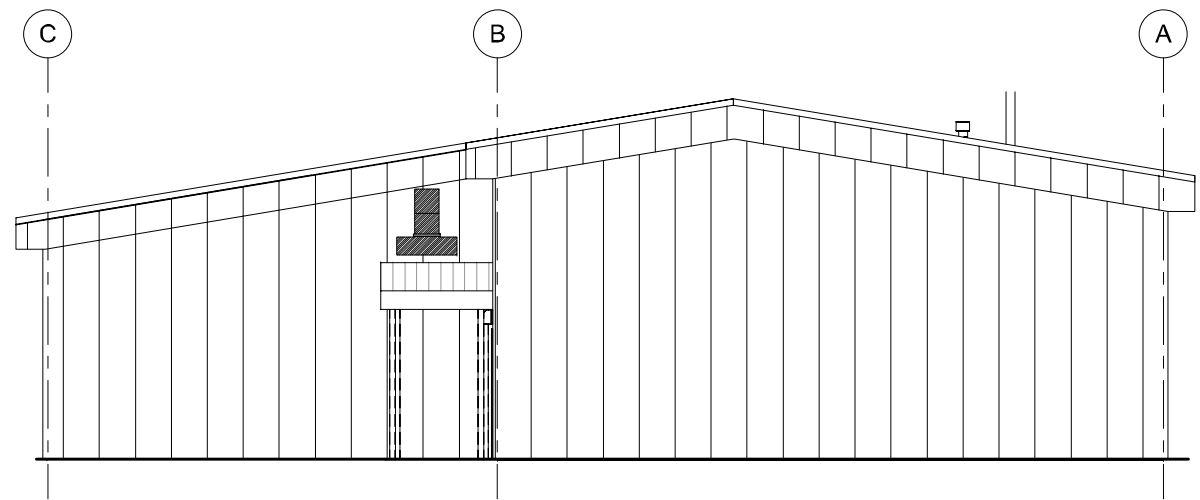
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FILE NO. 850.05

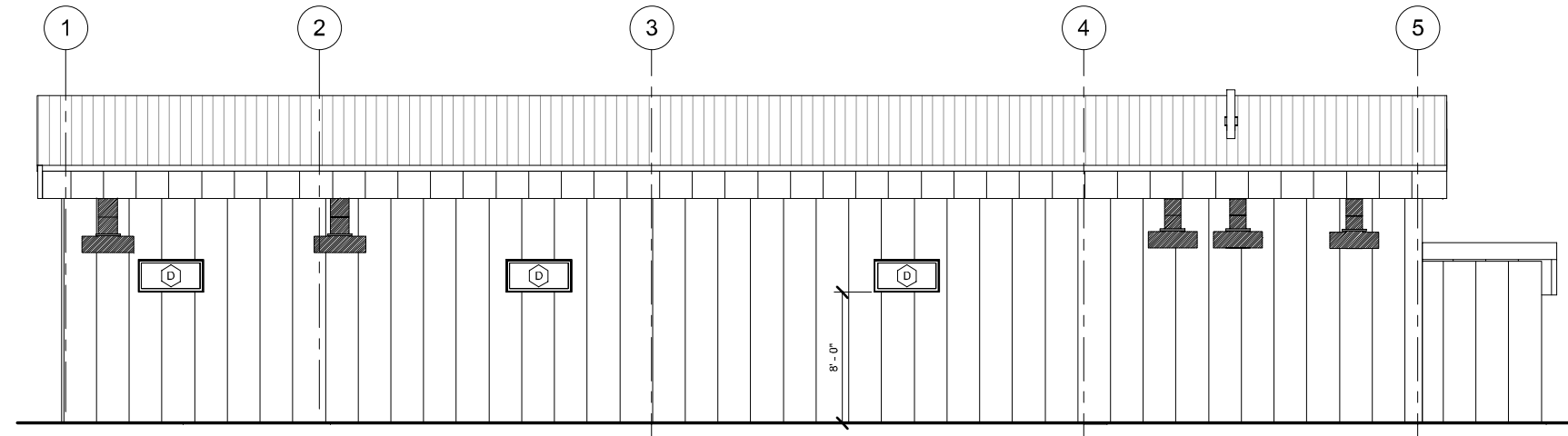
SHEET NUMBER
A1.1 OF 8



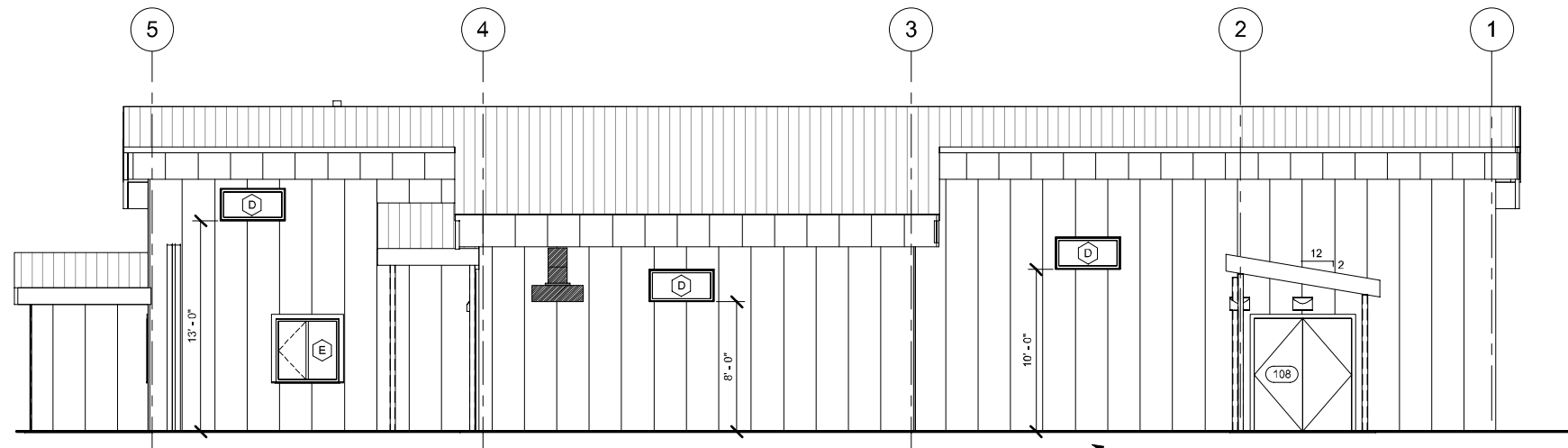
1 NORTH ELEVATION
A2.1 3/16" = 1'-0"



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"

Plotted By: 10/4/2016 11:25:12 AM
 Date/Time: 10/4/2016 11:25:12 AM
 Layout: A2
 File Name: P:\800-850-850 Unalaska\850.05 Pyramid WTP Construction Support\Architecture\850.01 Unalaska WTP.rvt

NO	DATE	BY	REVISION
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2	04/07/14	RW	CONTRACT DOCUMENTS
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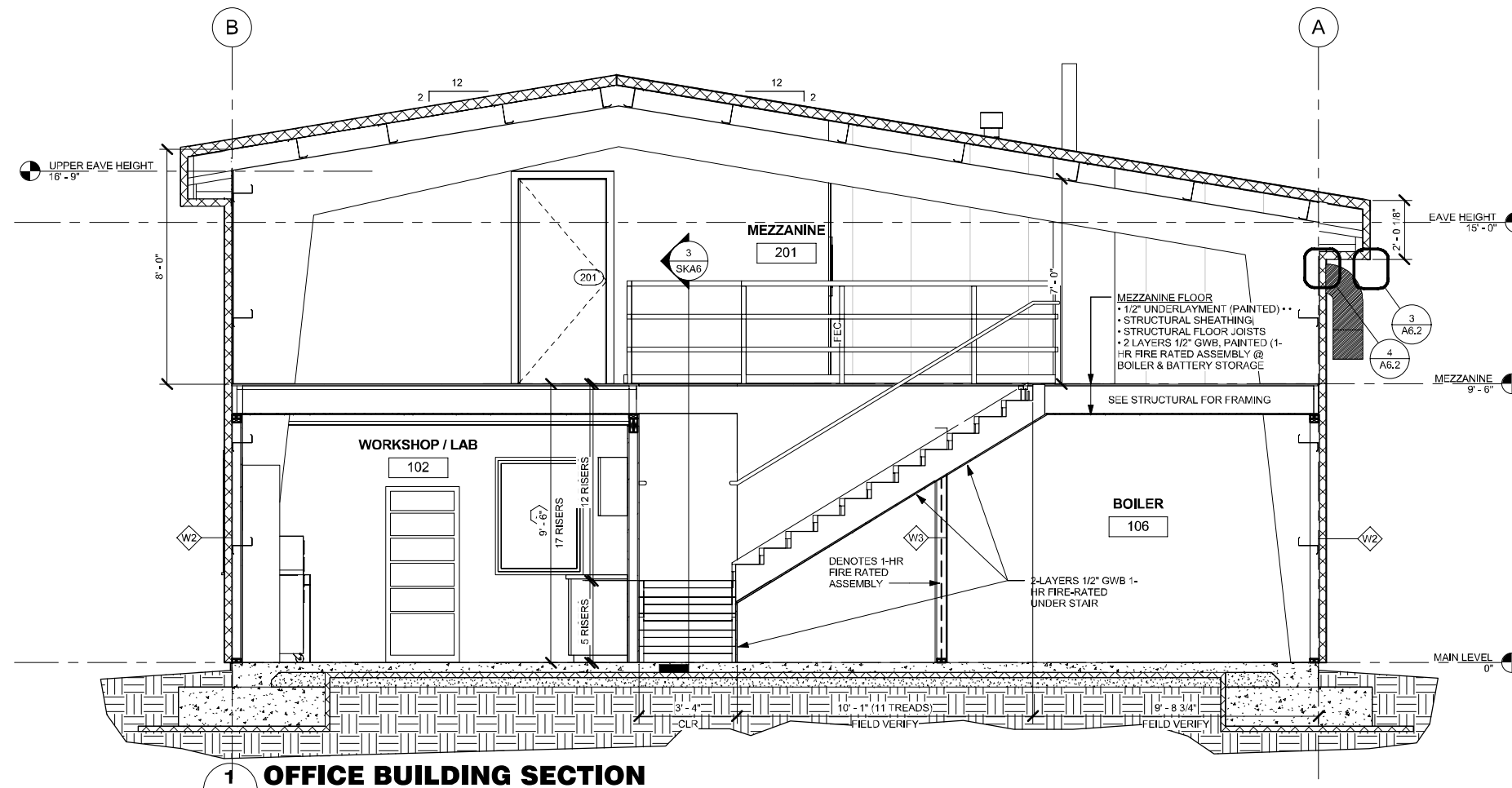
PYRAMID WTP
UNALASKA, ALASKA
EXTERIOR ELEVATIONS

SCALE:	3/16" = 1'-0"
DESIGNED BY:	WS
DRAWN BY:	RW
CHECKED BY:	WS
DATE:	12/2/13
FILE NO.	850.05
SHEET NUMBER	A2.1 OF 8

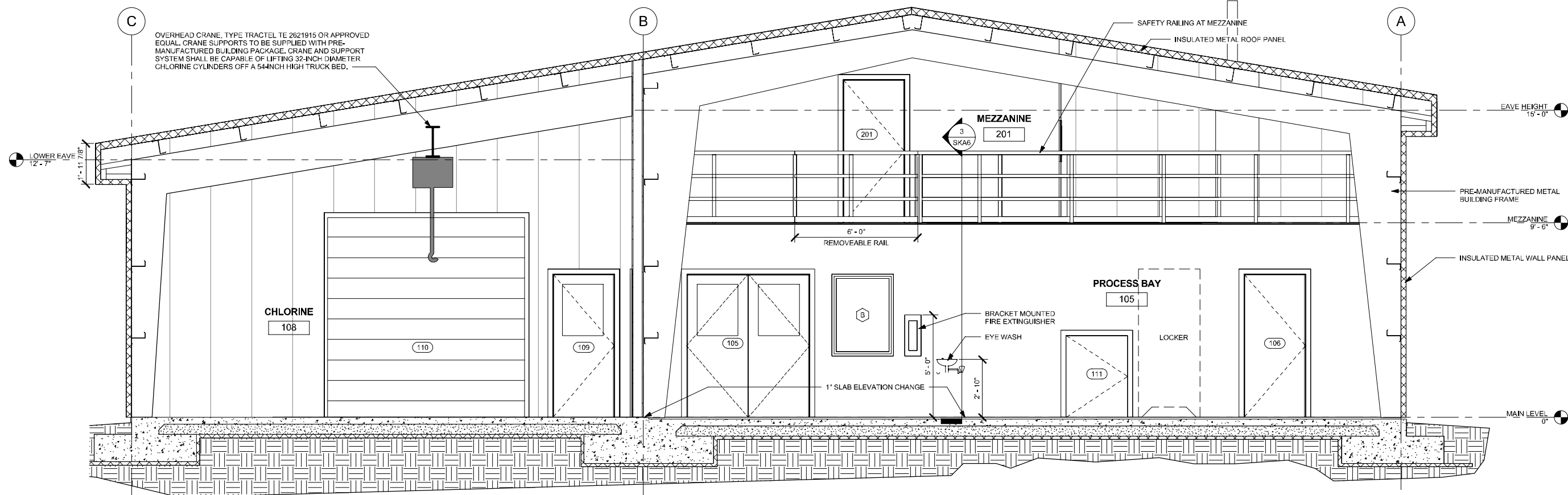
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BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



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



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

NO	DATE	BY	REVISION
3	9/02/16	RW	RECORD DRAWINGS
2	04/07/14	RW	CONFORMED DOCUMENTS
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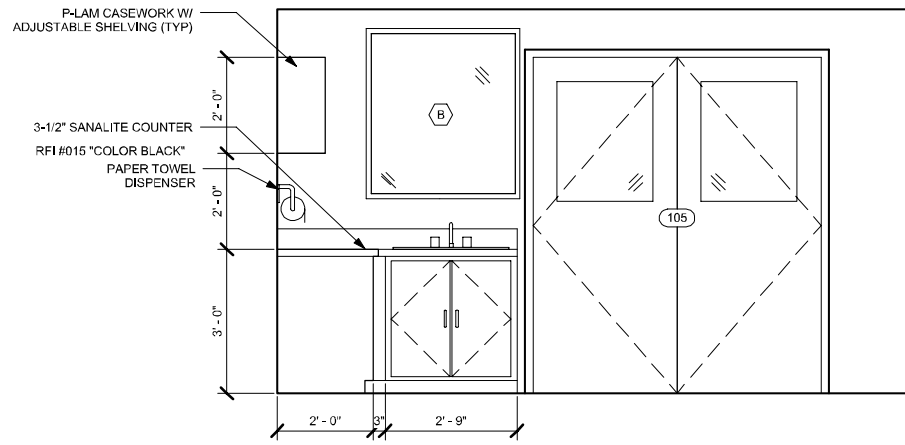
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**PYRAMID WTP
UNALASKA, ALASKA**

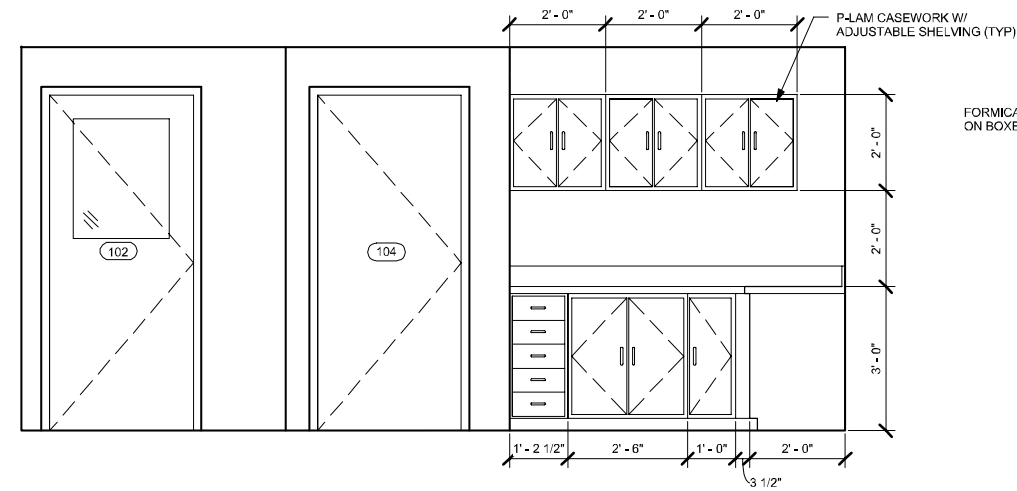
BUILDING SECTIONS

SCALE: 3/8" = 1'-0"
DESIGNED BY: WS
DRAWN BY: RW
CHECKED BY: WS
DATE: 12/2/13
FILE NO. 850.05
SHEET NUMBER
A3.1 OF 8

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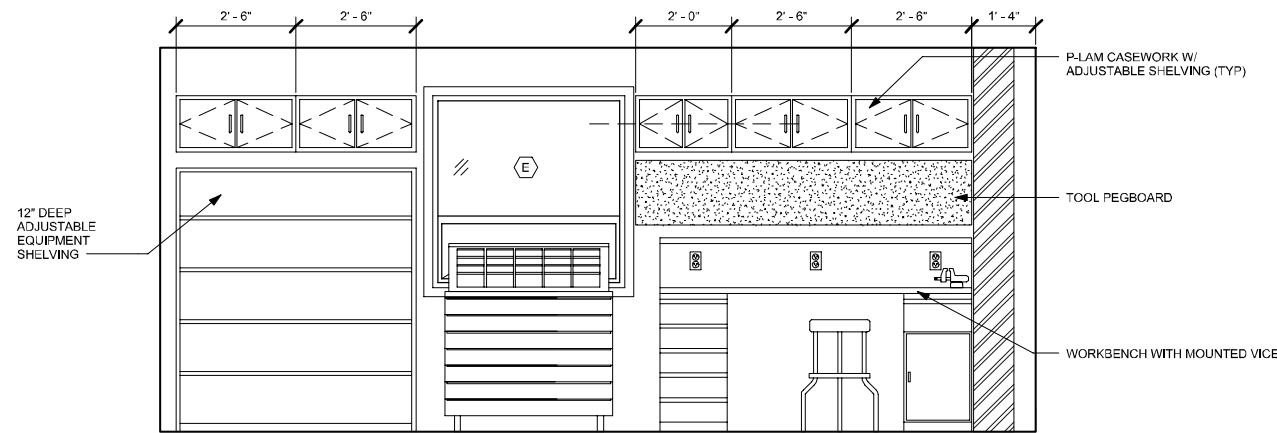


1 SINK ELEVATION
A4.1 1/2" = 1'-0"

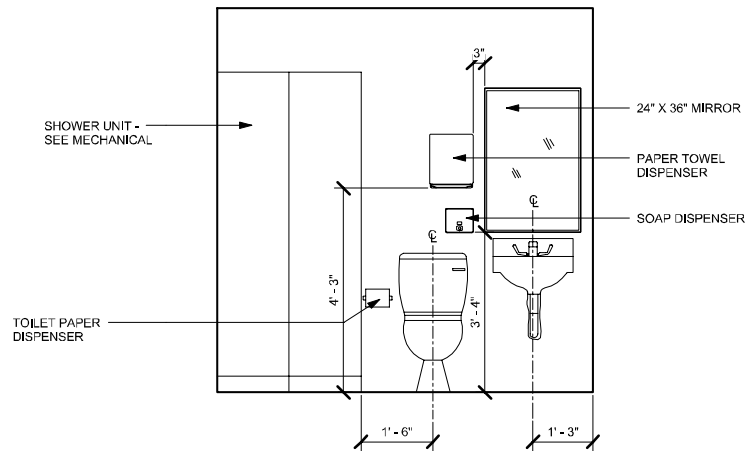


2 STORAGE ELEVATION
A4.1 1/2" = 1'-0"

FORMICA PALOMA POLAR MATTE WITH ALMOND EDGING ON BOXES AND FACES "CABINETS"

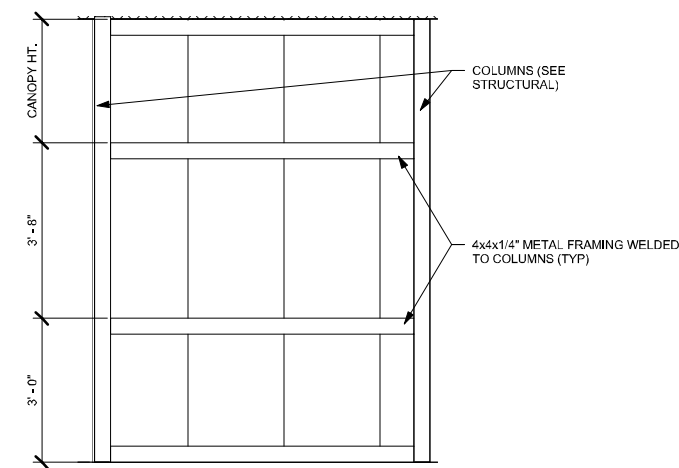


3 WORKBENCH ELEVATION
A4.1 1/2" = 1'-0"

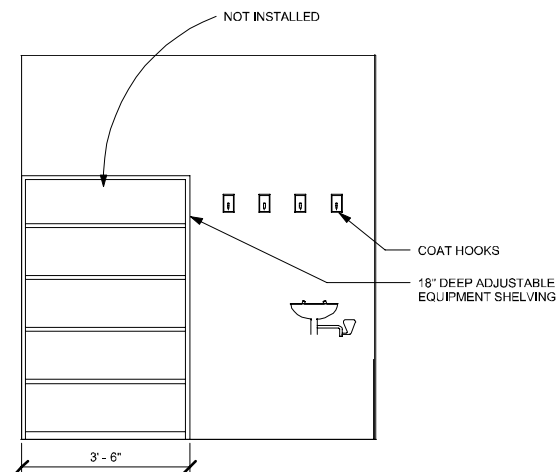


4 RESTROOM ELEVATION
A4.1 1/2" = 1'-0"

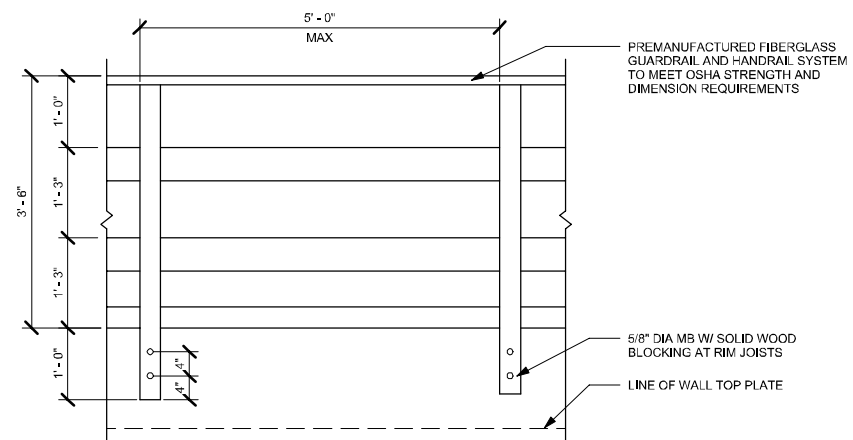
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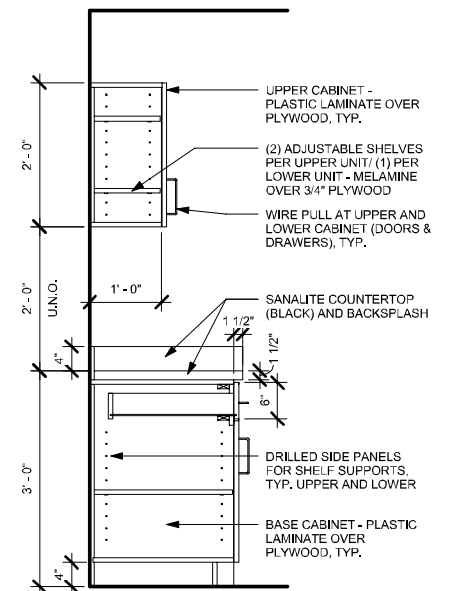
8 EXTERIOR ENTRY WALL (TYP)
A4.1 1/2" = 1'-0"



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"

NO	DATE	BY	REVISION
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2	04/07/14	RW	CONTRACT DOCUMENTS
1	12/02/13	RW	ISSUED FOR BID

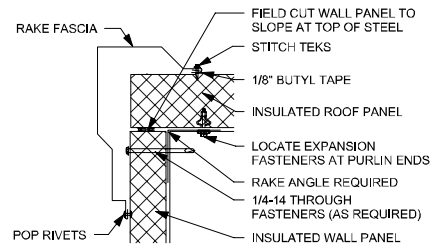
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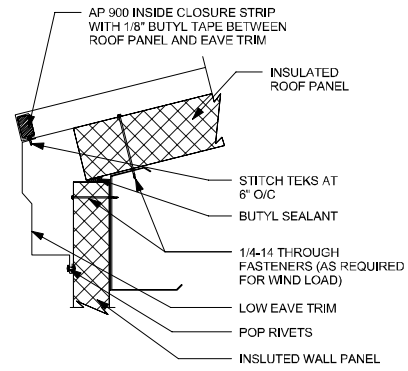
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UNALASKA, ALASKA
INTERIOR ELEVATIONS

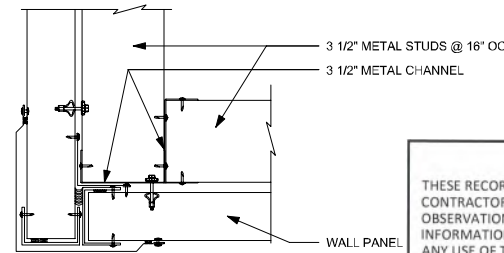
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CHECKED BY:	WHS
DATE:	12/2/13
FILE NO.:	850.05
SHEET NUMBER:	A4.1 OF 8



1 RAKE DETAIL
A6.2 3" = 1'-0"

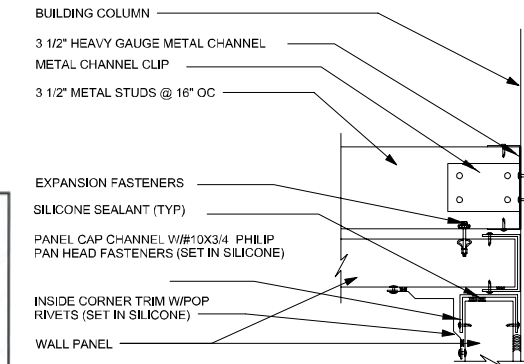


2 EAVE DETAIL
A6.2 3" = 1'-0"

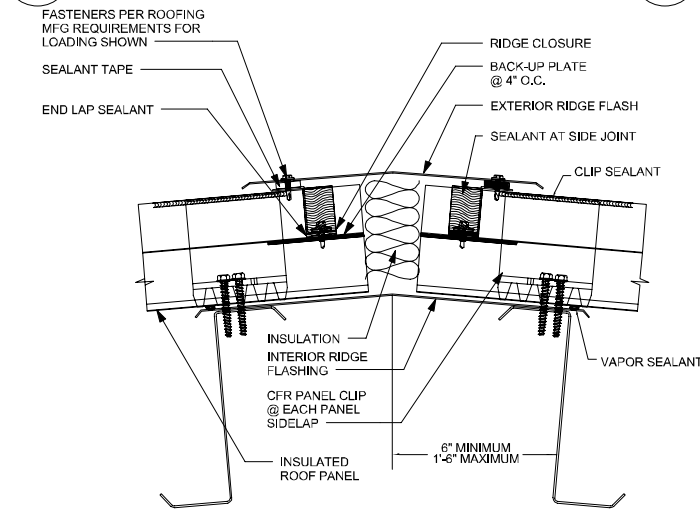


3 OVERHANG DETAIL
A6.2 3" = 1'-0"

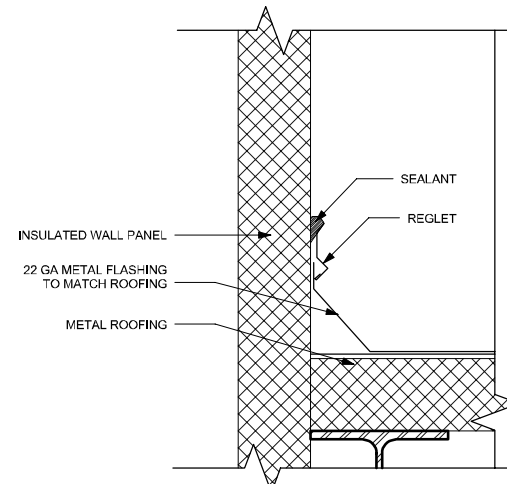
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BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016



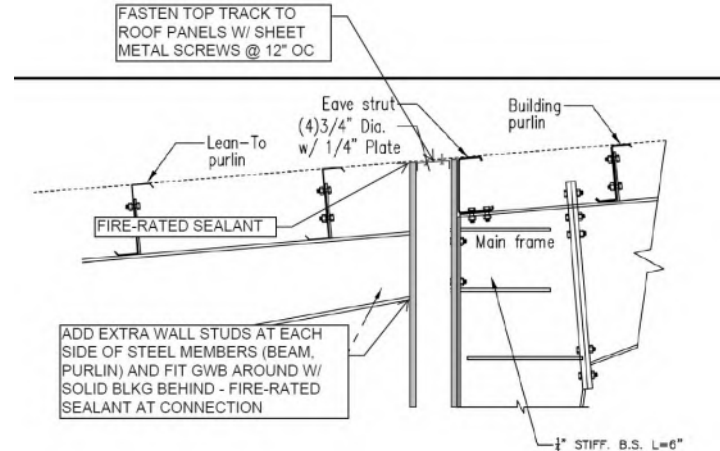
4 OVERHANG AT WALL
A6.2 3" = 1'-0"



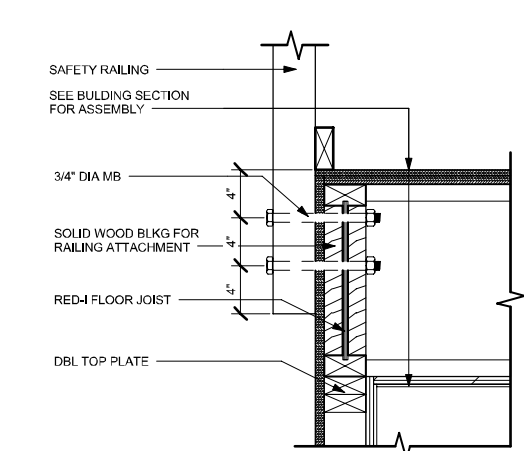
5 RIDGE DETAIL
A6.2 3" = 1'-0"



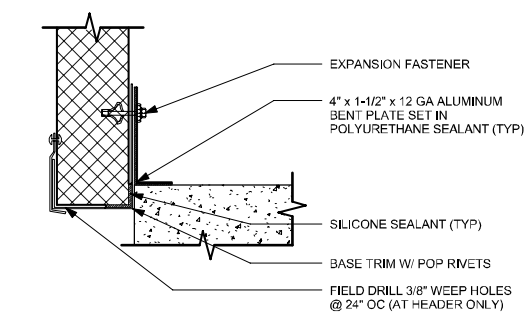
6 WALL TO CANOPY CONNECTION
A6.2 3" = 1'-0"



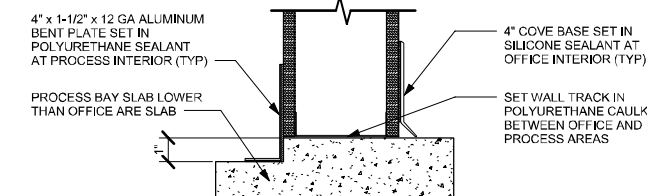
7 STEEL FRAMED WALL-ROOF CONNECTION
A6.2



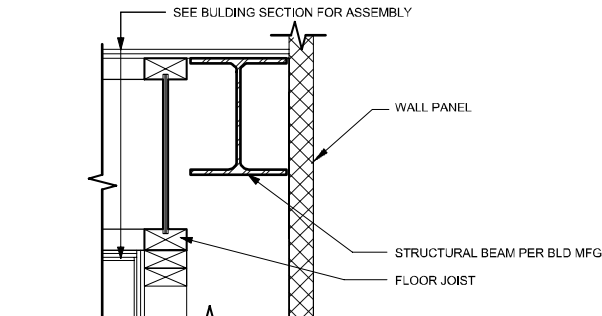
12 MEZZANINE FLOOR AT RAILING
A6.2 1 1/2" = 1'-0"



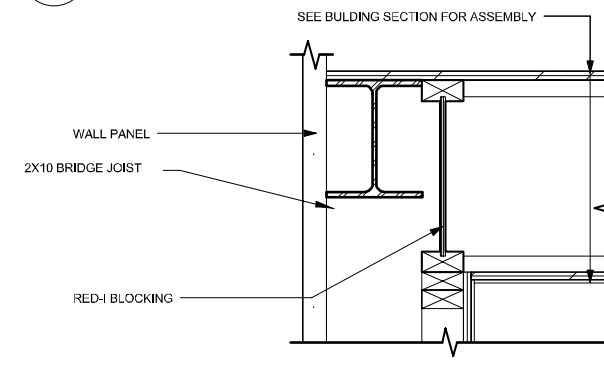
8 EXTERIOR WALL BASE
A6.2 3" = 1'-0"



9 INTERIOR WALL BASE
A6.2 3" = 1'-0"

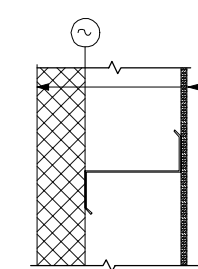


10 MEZZANINE FLOOR EXTENSION
A6.2 1 1/2" = 1'-0"

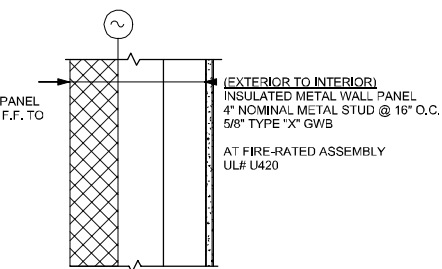


11 MEZZANINE FLOOR OVERHANG
A6.2 1 1/2" = 1'-0"

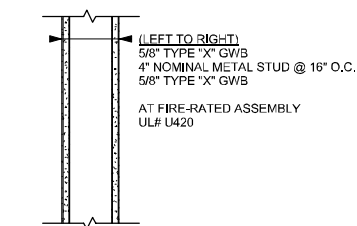
WALL ASSEMBLIES



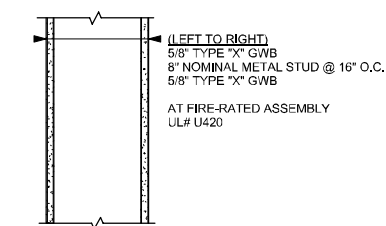
W1 EXTERIOR WALL
1 1/2" = 1'-0"



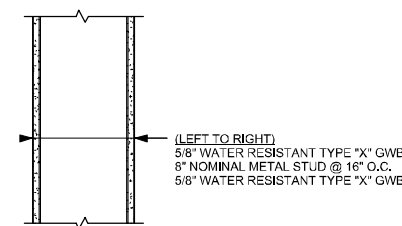
W2 EXTERIOR WALL @ MAIN OFFICE
1 1/2" = 1'-0"



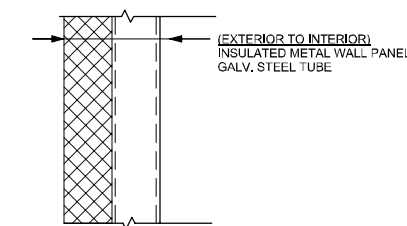
W3 2x4 INTERIOR WALL
1 1/2" = 1'-0"



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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 Date/Time: 10/4/2016 11:25:17 AM
 Layout: A6.2
 Filename: P:\800-850-850 Unalaska\850.05 Pyramid WTP Construction Support_Architectural\850.01 Unalaska WTP.rvt

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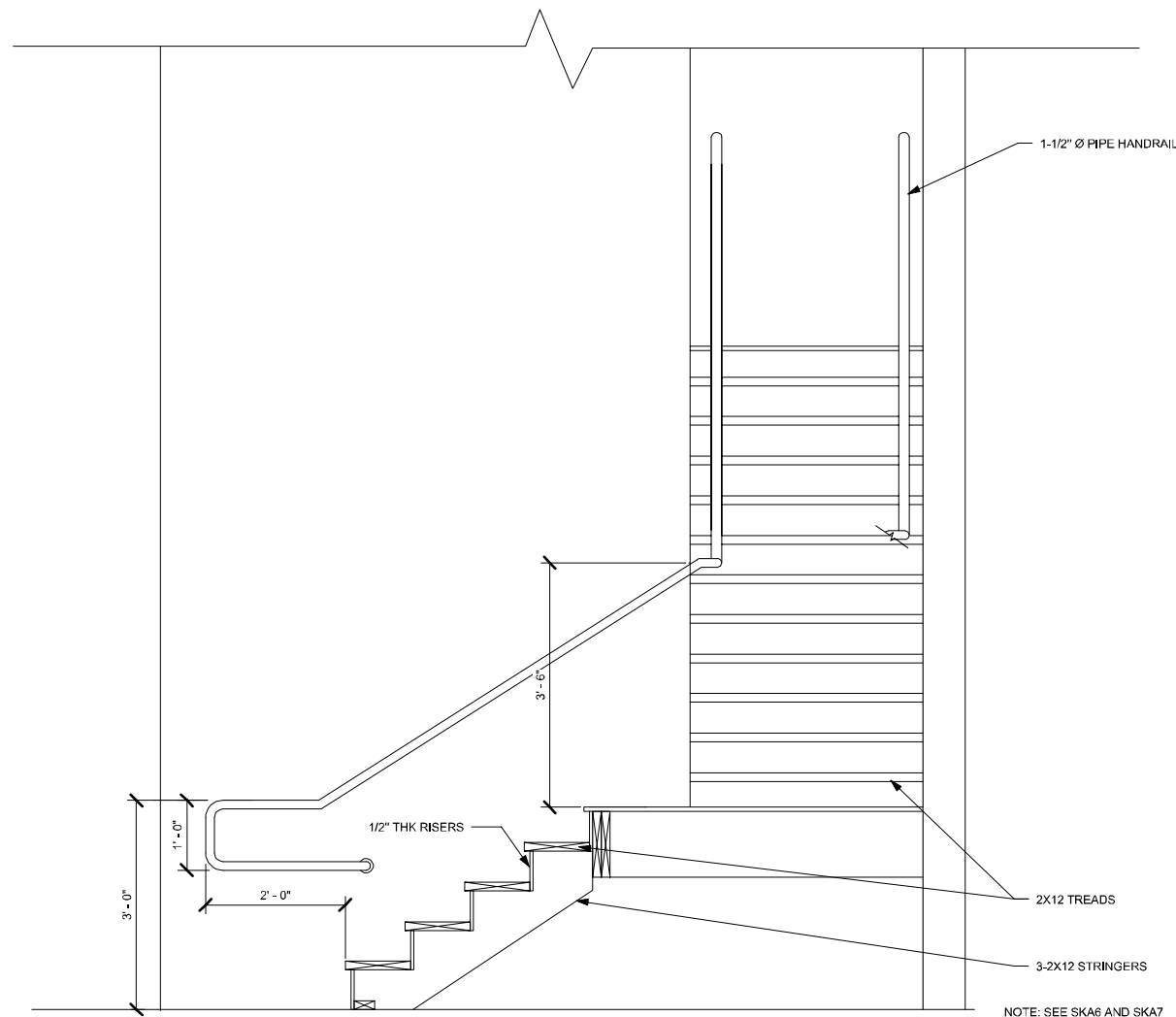
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PYRAMID WTP
UNALASKA, ALASKA
BUILDING ASSEMBLIES
WALL, ROOF AND CANOPY DETAILS

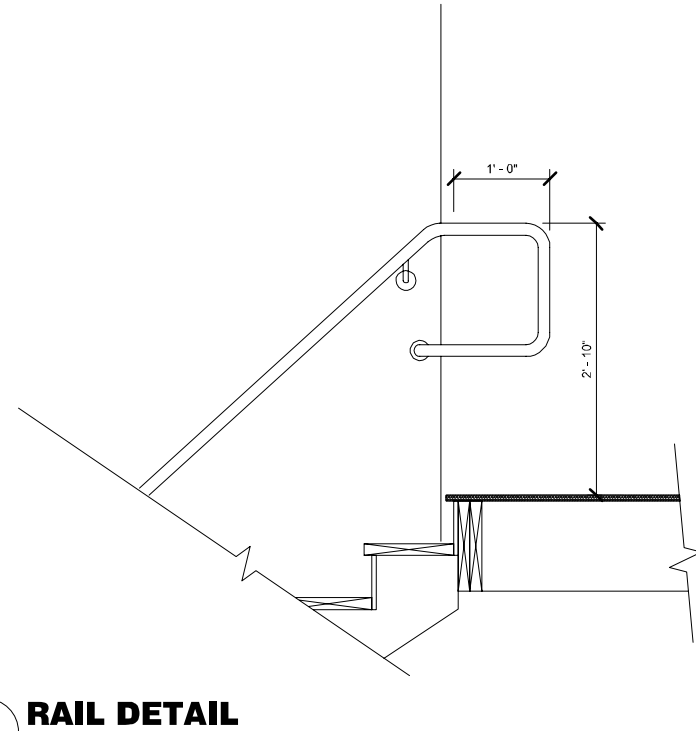
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 BY: Thomas Regan, P.E. *Thomas Regan* DATE: Sept 1, 2016

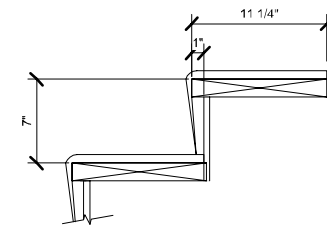


2 RAILING DETAIL
 A6.3 3/4" = 1'-0"

NOTE: SEE SKA6 AND SKA7



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



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

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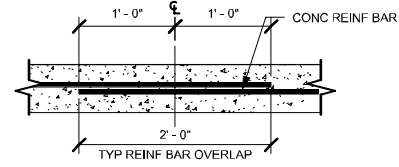
STAIR AND RAILING DETAILS

SCALE:	As indicated
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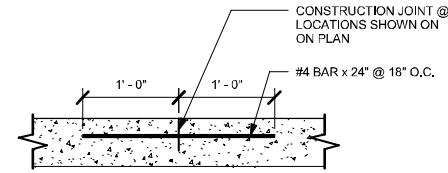
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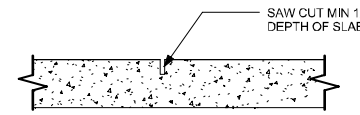
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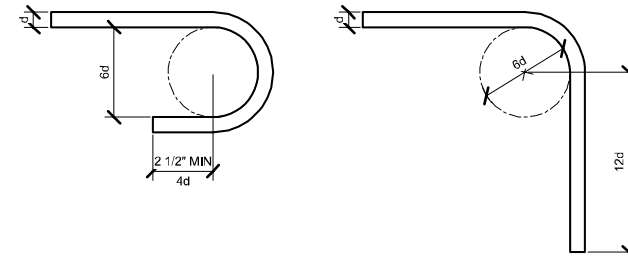
1 TYP. REINFORCING OVERLAP
S1.0 1" = 1'-0"



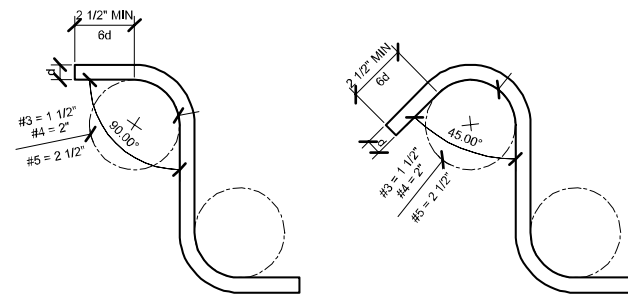
2 TYP. CONSTRUCTION JOINT
S1.0 1" = 1'-0"



3 TYP. CONTROL JOINT
S1.0 1" = 1'-0"



4 REINFORCING HOOKS
S1.0 3" = 1'-0"



(REINFORCING TIES SIMILAR)

5 REINFORCING STIRRUPS
S1.0 3" = 1'-0"

ABBREVIATIONS

AB	ANCHOR BOLT	MIN	MINIMUM
BLKG	BLOCKING	MTL	METAL
BN	BOUNDARY NAIL	(n)	NEW
BTM	BOTTOM	NTS	NOT TO SCALE
BETWN	BETWEEN	OC	ON CENTER
CC	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	RDWD	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	STOGRD	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
FRWG	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	⊕	CENTERLINE
LS	LAG SCREW	#	NUMBER OR POUNDS
LT WT	LIGHT WEIGHT	PL	PLATE
MB	MACHINE BOLT	∅	ROUND OR DIAMETER
MFR	MANUFACTURER		CONTINUOUS PLATE IN SECTION
MI	MALLEABLE IRON		WOOD BLOCKING IN SECTION

DESIGN CRITERIA

CODES AND STANDARDS PER INTERNATIONAL BUILDING CODE (IBC) 2009 IN ADDITION TO DEAD LOADS, THE FOLLOWING MINIMUM LIVE LOADS APPLY TO THE CONSTRUCTION OF ALL BUILDINGS AND FACILITIES SHOWN UNLESS OTHER-WISE NOTED.

OCCUPANCY CATEGORY:	III
FLOOR LOADINGS:	50 PSF OFFICE 15 PSF PARTITION 125 PSF LIGHT STORAGE
ROOF LIVE LOAD:	50 PSF SNOW, FLAT ROOF
WIND LOADS:	
BASIC WIND SPEED	150 MPH, 3 SECOND GUST
IMPORTANCE FACTOR	1.25
EXPOSURE	"C"
COMPONENTS AND CLADDING	TABLE 1609.6.2.1(3) BY AREA
SEISMIC DESIGN GROUP	"D"
IMPORTANCE FACTOR	1.25
SPECTRAL RESPONSE COEFFICIENT	S _{DS} =1.0 S _{d1} =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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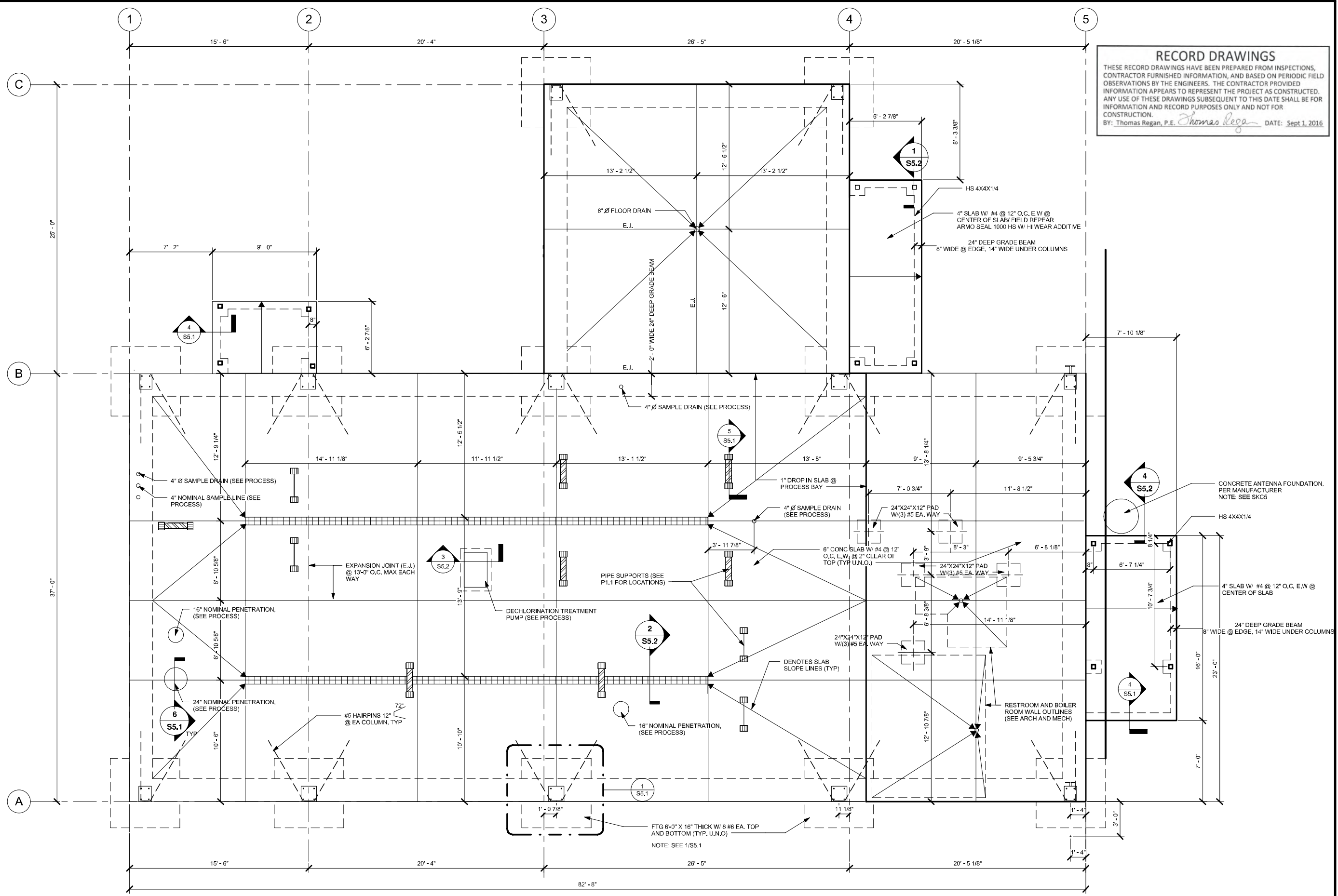
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UNALASKA, ALASKA
GENERAL NOTES & DETAILS

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 UNALASKA, ALASKA**

CONCRETE SLAB AND FOUNDATION PLAN

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CHECKED BY:	DOG
DATE:	12/2/13
FILE NO.	850.05
SHEET NUMBER	S1.1 OF 6

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 Layout: S1
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