



**Department of Environmental Conservation
Village Safe Water Program**

**Invitation to Bid (ITB)
ITB # 20-VSW-EMM-012**

Addendum Two

**Construction of All Season River Intake,
Emmonak, Alaska**

Date of Issue: December 20, 2019

The ITB Package is hereby clarified or changed as follows:

1. Submittal deadline and time has been changed to: **January 8, 2020 at 2:00 P.M. AKST;**
2. Remove and Replace;
3. Questions and Answers;
4. Attachments.

The questions and answers, remove and replace, attachments begin on page two. This Addendum is hereby made part of the ITB and is a total of 68 pages including attachments.

All other terms and conditions for this ITB remain unchanged.

Issued by: Christine Mash
Procurement Officer
Email: decdasprocurement@alaska.gov

Remove and Replace:

On page eight of the ITB, Section 3, Award of Contract, Remove and Replace with “Addendum Two, Revised Section 3, Award of Contract.

- Liquidated Damages is added in Section 3, Award of Contract.

On page 21 of the ITB, Attachment A, Bid Schedule, Remove and Replace with “Addendum Two, Revised-Attachment A, Bid Schedule”.

- Revised Bid-Schedule identifies more details of line item.

On page 473 of the ITB, Attachment C, Drawings, Remove the entirety of the drawings and Replace with Addendum Two, Attachment C, Issued Drawings for Construction.

- See Attachment three for Change log from IFAR to IFC drawings.

Questions and Answers

Question 1: Are there any geotechnical reports available?

Answer 1: There are two geotechnical reports located the end of the technical specifications.

Question 2: Are the geotechnical reports representative of the project area since they are not directly at the project site?

Answer 2: The Contractor is responsible for interpreting the reports.

Question 3: Please clarify the timeframe when clearing or land disturbance may not occur.

Answer 3: See Technical Specification, Section 01 50 00 – Temporary Facilities and Controls, page 11, under Subsection 1.23 Special Controls, Article D - the permits are listed.

- a. United States Army Corps of Engineers (ACOE) Permit;
 - i. In order to comply with the Endangered Species Act, land disturbance and vegetative clearing will not take place between May 5 and July 25. Vegetative clearing for the pumphouse would need to occur outside this window.
 - ii. According to ACOE, since the drilling pit will be located in an existing roadway corridor, the Horizontal Directional Drilling (HDD) is not considered a clearing or land disturbance activity, so it can occur during the window listed above.
- b. Alaska Department of Fish and Game Fish Habitat Permit.

c. The ACOE and ADF&G permits are included as an Attachment in this Addendum.

Question 4: Is it necessary that this job bid by December 23rd, 2019?

Answer 4: Please refer to Addendum One issued on December 13, 2019 and page one of this Addendum for due date and time changed.

Question 5: Is it necessary to visit the site in order to submit a bid? Traveling to Emmonak is very difficult at this time. There are frequent flight cancelations due to unpredictable weather, as well as heavily booked flights.

Answer 5: The requirement to perform visit the site to submit a bid is removed.

Question 6: In the HDD design criteria, 1.5 Article C requires a reclaimer. Can this requirement be waived?

Answer 6: No, the requirement is not waived, a reclaimer is required.

Question 7: Where is drilling fluid to be disposed of?

Answer 7: Refer to Section 33 05 23.13, page 8, Subsection 3.4 Article D – Disposal of Drilling Fluids.

Question 8: Where is the landfill located?

Answer 8: See sheet G002 for the location of the landfill relative to the project.

Question 9: Where is the gravel source?

Answer 9: There is no local gravel source. There is a local silty-sand source. The Contractor can direct any questions on purchase of local backfill material to the City of Emmonak. Refer to the drawings for material requirements – both local backfill material and imported bedding material/surface course (section 31.05.13 – Soils for Earthwork).

Question 10: Can a plan holders list be sent out?

Answer 10: Yes. Everyone that is on today's pre-bid meeting list will be added to the registry. The plan holder list will be distributed only via e-mail request to the Procurement Officer. The e-mail address is located on Page 2 of the ITB.

Attachments

The following attachments are now added to the ITB:

1. DNR Fish Habitat Permit FH19-II-0146 issued August 8, 2019 (seven pages);
2. DA Permit POA-2019-00317 issued August 21, 2019 (nine pages);
3. Change Log from IFAR drawing to IFC drawings (two pages).

Bidders must acknowledge receipt of this addendum prior to the submittal deadline.

The bid documents require acknowledgment individually of all addenda to the drawings and/or specifications. This is a **mandatory requirement** and any bid received without acknowledgment of receipt of addenda may be classified as not being a responsive bid.

End of Addendum

Addendum Two REVISED-Section 3

Award of Contract

1. Award will be made to the lowest responsive and responsible bidder, based on the total bid price in words on Attachment A. The additive alternate will not be calculated toward the total bid price.
2. For purposes of award, offers made in accordance with this Invitation to Bid (ITB) shall be good and firm for 90 days from the date of bid opening. If a contract is to be awarded, the Procurement Section shall issue a Notice of Intent to Award to the lowest responsive and responsible bidder as soon as practicable.
3. Acceptance of the bidder's offer shall be by issuance of a construction services standard contract. The bidders total bid amount shall be construed as its offer, pursuant to the bid documents, to be accepted by the VSW Program. The terms and conditions of this ITB and bidders offer shall become part of any construction services standard contract resulting from this ITB. The Contractor may not add additional or different terms and conditions to the ITB or any construction services standard contract resulting from this ITB.
4. Work shall commence after a Notice to Proceed is issued to the Contractor by the VSW Program.
5. Prevailing Wages: The Contractor must comply with all requirements of Alaska Statute 36.05, entitled Public Contracts, Wage & Hour Administration, including the latest State of Alaska Department of Labor & Workforce Development - Laborers and Mechanics Minimum Rates of Pay – Pamphlet No. 600. <http://www.labor.state.ak.us/lss/pamp600.htm> is the website link for the current document. The Contractor is responsible for ensuring they use the most up-to- date version of Pamphlet No. 600.
6. The Contractor shall furnish the following documentation to the Procurement Officer prior to contract award:
 - Valid Alaska Business License;
 - Valid Alaska Contractor's License;
 - Subcontractor List with required documentation (see requirements below);
 - Certificate of Insurance – **Appendix A, Article 11, Paragraph 11.2, General Requirements;**
 - Performance Bond and Payment Bond – **Appendix A, Article 11, Paragraph 11.3, Performance Bond and Payment Bond;**
 - Completed Federal Debarment Certification Form (two pages) – **Appendix B;**
 - Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions Form (three pages) – **Appendix C;**
7. Subcontractors: Within five working days after identification of the apparent low bidder for a construction contract, the apparent low bidder shall submit a list of the subcontractors proposed to use in the performance of the construction contract. The list must include the name and location of the place of business for each subcontractor, evidence of each subcontractor's valid Alaska business

license and evidence of each subcontractor's valid Alaska Contractor's license. Bidders will not be allowed to use subcontractors in the performance of the construction contract that do not have a valid Alaska business license and contractor's license at the date/time bids are opened.

8. Prior to beginning construction, a preconstruction conference is required. VSW Program will coordinate with the Contractor to set up a date/time for the preconstruction conference.

9. The VSW Program will include liquidated damages in this contract to assure its timely completion. The amount of actual damages will be difficult to determine. For the purposes of this contract the VSW Program has set the rate of liquidated damages at **\$1000.00** per day. This amount is based on importance to the community health. Essentially the community has no drinking water for four to eight weeks in the fall and spring each year because of river break up and ice formation, so failure to complete the work in 2020 would interrupt drinking water supply for at least those periods of time. If the Contractor fails to complete the work, the VSW Program shall begin to collect liquidated damages on **NOVEMBER 1, 2020** and will continue to collect them until the completion and the actual date of completion in accordance with the terms hereof; such deduction to be made, or sum to be recovered, not as a penalty but as liquidated damages.

END OF SECTION 3.

Addendum Two

REVISED- ATTACHMENT A

BID SCHEDULE

VILLAGE SAFE WATER

ITB # 20-VSW-EMM-012- CONSTRUCTION OF ALL SEASON RIVER INTAKE, EMMONAK, AK

Modifications and any additions to the below form or format will not be allowed. Bids may be considered non-responsive if any modification or additions made to the form. All items have to be made in USA. Any Substitutions must be submitted for approval prior to bid close date. Substitutions without approval will be considered Non-Responsive.

Bid Item	Description of item/service	Unit	Quantity	Unit Cost (US\$)	Total Cost (US\$)
A Mobilization and Demobilization (Sum of A1, A2, and A3)					
A1	General mobilization/demobilization	LS	1		
A2	Mobilization/demobilization of HDD materials and equipment	LS	1		
A3	Mobilization of pumphouse	LS	1		
B River intake pipeline (Sum of B1 and B2)					
B1	HDD drilling, placing, and commissioning	LS	1		
B2	All other water main piping and appurtenances	LS	1		
C Pumphouse Total (sum of C1, C2, C3, C4, and C5)					
C1	Demolition of existing pumphouse	LS	1		
C2	Wetwell and associated components	LS	1		
C3	Site work, including binwall and associated earthwork, and placing pumphouse.	LS	1		
C4	All electrical and mechanical work.	LS	1		
C5	Commissioning	LS	1		
Total Cost		Sum of A, B, and C			

Total Bid Amount in Words:

Total Bid Price in US\$:

Company Name: _____

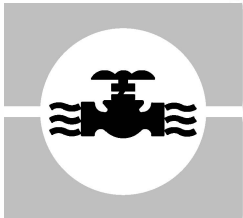
Printed Name: _____

Signature of Authorized Official: _____

Title: _____

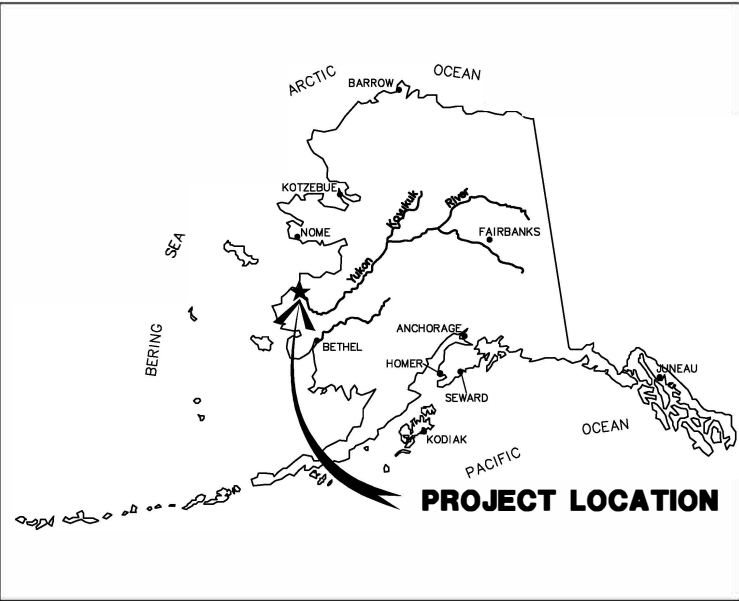
Date: _____

CITY OF EMMONAK, ALASKA
RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION
DECEMBER 2019



In Cooperation with the State of Alaska
Department of Environmental Conservation
VILLAGE SAFE WATER PROGRAM
United States Environmental Protection Agency

Sheet Number	Sheet Title
GENERAL	
G001	COVER
G002	GENERAL LEGEND AND ABBREVIATIONS
G003	GENERAL NOTES
G004	SYSTEM SCHEMATIC & DESIGN CRITERIA
SURVEY	
V001	SURVEY CONTROL HORIZONTAL
V002	SURVEY CONTROL HORIZONTAL
V003	SURVEY CONTROL VERTICAL
V004	SURVEY CONTROL VERTICAL
CIVIL	
C200	SITE PLAN AND SECTION
C201	DETAILED SITE PLAN
C202	DEMO PHOTOS
C220	PUMPHOUSE PLAN AND WETWELL SECTION
C221	WETWELL SECTIONS
C222	BINWALL PLAN AND ELEVATION
C300	ARCTIC PIPE DETAILS
C301	FLUSHING PORT AND PIPE SUPPORT DETAILS
C302	WELL SCREEN DETAILS
C303	PIPING DETAILS
C304	BRIDGE CRANE DETAILS
C600	HDD DRILL PATH
C601	HDD DETAILS
STRUCTURAL	
S200	GENERAL STRUCTURAL NOTES
S201	BUILDING FOUNDATION PLAN
S202	FOUNDATION DETAILS
ARCHITECTURAL	
A200	FLOOR PLAN AND CODE ANALYSIS
A220	EXTERIOR BUILDING ELEVATIONS
A230	BUILDING SECTION
A231	BUILDING SECTION
A232	STAIR SECTION
A233	ENLARGED DETAILS
A400	DOOR SCHEDULE AND DETAILS
A401	ROOFING AND SIDING NOTES AND DETAILS
MECHANICAL	
M001	MECHANICAL LEGENDS AND ABBREVIATIONS
M200	MECHANICAL PLAN AND DETAILS
ELECTRICAL	
E001	LEGEND AND ABBREVIATIONS
E200	ELECTRICAL SITE PLAN AND ONE LINE DIAGRAM
E201	PUMPHOUSE AND WTP POWER PLANS
E202	LIGHTING PLAN
E300	PANEL SCHEDULES
E400	PANEL SCADA
E401	LADDER DIAGRAM
E402	WELL PUMP SCHEMATIC
E403	WELL PUMP CONTROLS



Location Map

Project Number (Consultant) 81904.00

VSW Project Engineer SEAN LEE

Construction Contractor TBD

Final Design (Date) DECEMBER 2019

ADEC Approval (Date) _____

Construction Period (From) _____ (To) _____

As-Built (Date) _____



3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Consultant

Status: ISSUED FOR CONSTRUCTION

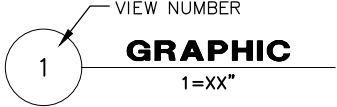
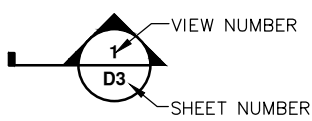
Date: DECEMBER 2019

Project Status

GENERAL LEGEND

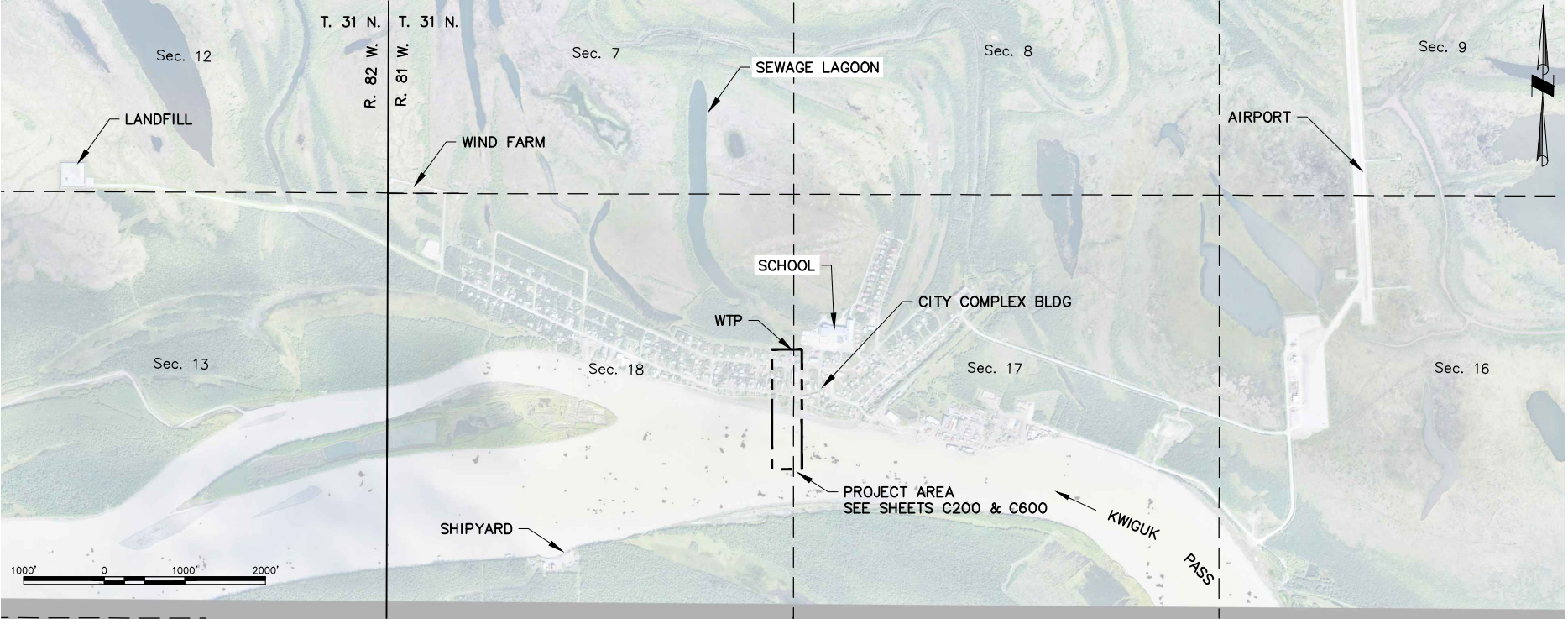
	PROPERTY LINE/RIGHT-OF-WAY		EXISTING WATER LINE
	FENCE		EXISTING VACUUM SEWER LINE WITH GLYCOL
	EXISTING UNPAVED ROADWAY		EXISTING RAW WATER
	EXISTING POWER POLE		EXISTING SEWER FORCE MAIN
	EXISTING CULVERT		OVERHEAD ELECTRIC
	ROAD OR TRAIL CROSSING		OVERHEAD ELECTRIC/TELEPHONE
	DIRECTION OF FLOW		BUILDING SERVICE LINE
	SPOT ELEVATION		PROPOSED HDD LINE
	REVISION CALLOUT		PROPOSED RAW WATER LINE
	PARCEL NUMBER		PROPOSED PIPE ELEVATION (EXISTING PIPE ELEVATION)
	HOUSE NUMBER		DIMENSION BREAK
			PROJECT AREA LIMITS
			BLOCK NUMBER

SECTION AND DETAIL DESIGNATIONS



ABBREVIATIONS

ASB – AS-BUILT	HDD – HORIZONTAL DIRECTIONAL DRILLING	REF – REFERENCE
ABS – ACRYLONITRILE BUTADIENE STYRENE	HDG – HOT DIPPED GALVANIZED	REQ'D – REQUIRED
ADNR – ALASKA DEPARTMENT OF NATURAL RESOURCES	HDPE – HIGH DENSITY POLYETHYLENE	ROW – RIGHT-OF-WAY
ALUM – ALUMINUM	HORIZ – HORIZONTAL	S – SOUTH
BLDG – BUILDING	ID – INSIDE DIAMETER	SCH – SCHEDULE
CF – CUBIC FEET	INV – INVERT	SDR – STANDARD DIMENSION RATIO
CL – CENTERLINE	KSI – KIPS/SQUARE INCH	SF – SQUARE FOOT
CLR – CLEAR	L – LENGTH	SIM– SIMILAR
CMP – CORRUGATED METAL PIPE	LB – POUND	SS – STAINLESS STEEL
CO – CLEANOUT	LF – LINEAR FEET	STA – STATION
CU – COPPER	MAX – MAXIMUM	STD – STANDARD
CY – CUBIC YARD	MIN – MINIMUM	STL – STEEL
DIA – DIAMETER	MPT – MALE NPT	T – TOWNSHIP
E – EAST	N – NORTH	TBD – TO BE DETERMINED
(E)– EXISTING	NC – NORMALLY CLOSED	TBM – TEMPORARY BENCH MARK
EA – EACH	NFS – NON-FROST SUSCEPTIBLE	TEMP – TEMPORARY
EL – ELEVATION	NO – NORMALLY OPEN	THD – THREADED
FC – FIELD CHANGE	NPT – NATIONAL PIPE THREAD	TYP – TYPICAL
FDN – FOUNDATION	NTS – NOT TO SCALE	VERT – VERTICAL
FF – FINISHED FLOOR	OAE – OR APPROVED EQUAL	VTR – VENT TROUGH ROOF
FLG – FLANGE	OC – ON CENTER	W – WEST
FP – FLUSHING PORT	OD – OUTSIDE DIAMETER	W/ – WITH
FPS – FEET PER SECOND	OFOS – OUTSIDE FACE OF STUDS	WST – WATER STORAGE TANK
FPT – FEMALE NPT	PL – PLATE	WTP – WATER TREATMENT PLANT
FRP – FIBERGLASS REINFORCED PLASTIC	PLYWD – PLYWOOD	Ø – DIAMETER
FT – FEET	PSF – POUNDS PER SQUARE FOOT	
GA – GAUGE	PSI – POUNDS PER SQUARE INCH	
GAL – GALLON	PVC – POLYVINYL CHLORIDE	
GALV – GALVANIZED	R – RADIUS	
GPCD – GALLONS PER CAPITA DAY	R – RANGE	
GPM – GALLONS PER MINUTE		



EMMONAK COMMUNITY MAP

Alaska Department of
Environmental Conservation
Division of Water

Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501



CRW
ENGINEERING GROUP LLC

3840 ARCTIC BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AEC-882-AK

CITY OF EMMONAK

GENERAL LEGEND AND ABBREVIATIONS

RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	WMK
Drawn	CMK
Approved	JVS

File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\00 General\81904.00 Notes.dwg

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS AND THE PROJECT MANUAL (SEPARATELY BOUND) WHICH CONTAINS CONTRACT REQUIREMENTS, CONSTRUCTION SPECIFICATIONS AND REFERENCE DATA. THE PLANS AND PROJECT MANUAL ARE COLLECTIVELY REFERRED TO AS "CONTRACT DOCUMENTS".
2. THIS DESIGN IS BASED ON A COMBINATION OF FIELD SURVEY DATA AND RECORDED AS-BUILT INFORMATION AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS IN ALL LOCATIONS. CONTRACTOR SHALL VERIFY ACTUAL CONDITIONS ENCOUNTERED DURING CONSTRUCTION AND NOTE ANY DIFFERENCES ON THE RECORD DRAWINGS INCLUDING THE DIMENSIONS AND LOCATIONS OF ALL ENCOUNTERED PIPING AND EQUIPMENT.
3. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL ENCOUNTERED UTILITIES AND NOTING ANY CHANGES ON THE RECORD DRAWINGS.
4. HISTORICAL PRESERVATION – SHOULD ANY ARCHAEOLOGICAL, CULTURAL OR PALEONTOLOGICAL RESOURCES BE DISCOVERED AS A RESULT OF CONSTRUCTION ACTIVITY, WORK THAT WOULD DISTURB SUCH RESOURCES SHOULD BE STOPPED AND THE OFFICE OF HISTORY AND ARCHAEOLOGY BE CONTACTED IMMEDIATELY AT (907) 269–8718.
5. RECORD DRAWINGS – THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN SET OF DRAWINGS FOR RECORD INFORMATION AT THE PROJECT OFFICE. ALL REQUIRED INFORMATION SHALL BE RECORDED IN RED PENCIL ON A DAILY BASIS IN A NEAT, LEGIBLE FASHION. ALL ELEVATIONS AND DISTANCES SHOWN ON THE PLANS SHALL BE MARKED ASB (AS–BUILT) OR FC (FIELD CHANGE) WITH THE CORRECT VALUE INSERTED. ALL SURVEY NOTES SHALL BE KEPT IN GOOD QUALITY FIELD BOOKS AND SUBMITTED TO THE ENGINEER WITH THE RECORD DRAWINGS AT THE END OF CONSTRUCTION.
6. ALL CONSTRUCTION WASTE AND DEBRIS SHALL BE DISPOSED OF AT AN ADEC PERMITTED LANDFILL FACILITY. CONTACT THE CITY OF EMMONAK FOR DISPOSAL RATES AND CONDITIONS FOR DISPOSAL.
7. BARRICADES AND WARNING SIGNS SHALL BE PROVIDED TO ADVISE USERS OF AREAS UNDER CONSTRUCTION AND ALL HAZARDS.
8. MANUFACTURER'S INSTRUCTIONS SHALL BE FULLY COMPLIED WITH. SHOULD MANUFACTURER'S INSTRUCTIONS CONFLICT WITH THE CONTRACT DOCUMENTS, REQUEST CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING.
9. ALL DISTURBED AREAS SHALL BE RESTORED TO AS NEAR PRE–CONSTRUCTION CONDITIONS AS REASONABLE.
10. THE TOP OF THE BINWALL FOR THE PUMP HOUSE SHALL BE AT LEAST 24–INCHES ABOVE THE HIGHEST RECORDED FLOOD ELEVATION AS ESTABLISHED BY THE U.S. ARMY CORP OF ENGINEERS (USACE). AND INDICATED BY THE "HIGH WATER MARK" ON THE USACE FLOOD STAFF #1 LOCATED ON THE NORTHEAST CORNER OF THE CITY COMPLEX BUILDING. THE "HIGH WATER MARK" ELEVATION CORRESPONDS TO A SURVEY ELEVATION OF 20.0 FOR THIS PROJECT.
11. ALL ELECTRICAL WORK SHALL BE COMPLETED IN ACCORDANCE WITH LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE (NEC).
12. CONSTRUCTION SHALL ONLY OCCUR WITHIN DEDICATED EASEMENTS OR PUBLIC RIGHT–OF–WAY.
13. SEE INDIVIDUAL PLAN SHEETS FOR SPECIFIC CONSTRUCTION NOTES.
14. ANY INTERRUPTIONS IN RAW WATER SERVICE TO THE WTP SHALL BE COORDINATED WITH THE CITY OF EMMONAK. CITY OFFICE (907) 949–1249.

GENERAL PIPING NOTES

1. SIZE OF FITTINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
2. ALL JOINTS SHALL BE WATERTIGHT.
3. SYMBOLS, LINE TYPES AND ABBREVIATIONS SHOWN IN LEGENDS ARE TYPICAL FOR THIS PROJECT AND SIMILAR CONSTRUCTION. NOT ALL OF THE VARIOUS COMPONENTS SHOWN OR LISTED ARE NECESSARILY USED IN THIS PLAN SET.
4. PROVIDE ALL CONNECTIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
5. CONTRACTOR SHALL VERIFY LOCATIONS AND DIMENSIONS OF ALL CONNECTIONS TO EXISTING PIPING AND NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES THAT WOULD AFFECT PROPOSED CONSTRUCTION.
6. ALL MATERIALS, SUPPLIES, AND EQUIPMENT INCORPORATED INTO THE PROJECT SHALL BE NEW.

WATER PIPING NOTES

1. ALL SYSTEM COMPONENTS IN CONTACT WITH POTABLE WATER (OR RAW WATER) SHALL BE NSF 61 APPROVED OR CONSTRUCTED OF NSF CERTIFIED MATERIALS AND ALL SOLDER AND FLUX SHALL BE LEAD–FREE.

RIGHT–OF–WAY

1. AN APPLICATION FOR UTILITY EASEMENT THROUGH NAVIGABLE WATERS AND SUBMERGED LANDS WAS SUBMITTED TO THE ALASKA DEPARTMENT OF NATURAL RESOURCES IN MAY 2019 AND IS CURRENTLY UNDER REVIEW. SEE SHEETS C200 AND C600 FOR EASEMENT BOUNDARIES.

SCOPE OF WORK – ALL SEASON RIVER INTAKE

- HORIZONTALLY DIRECTIONALLY DRILLED (HDD) PIPELINE BENEATH KWIGUK PASS.

• SEASONAL MARKER BUOY AND SHORELINE MARKER TO LOCATE INTAKE

• CONCRETE WETWELL CONNECTED TO HDD PIPELINE.

• BINWALL RETAINING WALL FOUNDATION TO SUPPORT THE RAW WATER PUMPHOUSE.

• RAW WATER PUMPHOUSE
 - STICK–FRAME BUILDING WITH A STEEL SKID
 - NEW BUILDING ELECTRICAL SERVICE.
 - BUILDING HEATING AND VENTILATION SYSTEMS.
 - TWO (2) RAW WATER TANKS AND FISH RETURN SYSTEM.

• SUBMERSIBLE PUMP INSTALLED IN THE WETWELL AND ASSOCIATED PIPING.

• WETWELL SCREEN SYSTEM TO PREVENT PASSAGE OF FISH INTO THE SUBMERSIBLE PUMP

• BRIDGE CRANE TO ALLOW FOR LIFTING THE SUBMERSIBLE PUMP AND WETWELL SCREENS

• RAW WATER LINE EXTENSION TO NEW PUMPHOUSE

• ASSOCIATED CONTROL AND COMMUNICATION SYSTEMS

• DEMOLITION OF EXISTING RAW WATER PUMPHOUSE

Alaska Department of
Environmental Conservation
Division of Water



Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501





CRW
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PHONE: (907) 562–3252
#AEC0882–AK

CITY OF EMMONAK

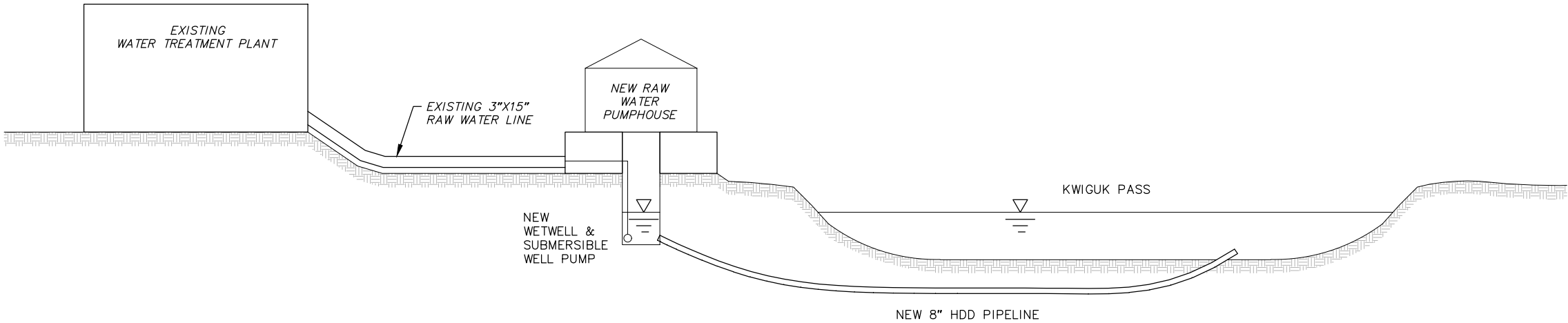
GENERAL NOTES

RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	WMK
Drawn	CMK
Approved	JVS

File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\00 General\81904.00 Schematic.dwg



SYSTEM SCHEMATIC

GRAPHIC

DESIGN CRITERIA

SYSTEM CHARACTERISTICS

	2017 SUMMER	2037 WINTER	2037 SUMMER
POPULATION	843	1137	1137
AVERAGE DAY DEMAND (ADD)			
RESIDENTIAL (GPD), NOTE 1	34,300	45,480	45,480
COMMERCIAL – CLINIC, WASHETERIA, SCHOOL (GPD)	8,000	13,000	9,400
FISH PROCESSOR (GPD)	24,700	–	29,000
TOTAL ADD (GPD)	67,000	58,480	83,880
MAX DAY DEMAND (MDD) (GPD) – NOTE 2	117,250	102,340	146,790
PEAK HOUR DEMAND (GPM) – NOTE 3	183	182	243
WTP FLOW RATE (GPM) – NOTE 4	60	130	130
ADD PLANT RUNTIME (HOURS PER DAY)	19	7	11
MDD PLANT RUNTIME (HOURS PER DAY)	24+	13	19

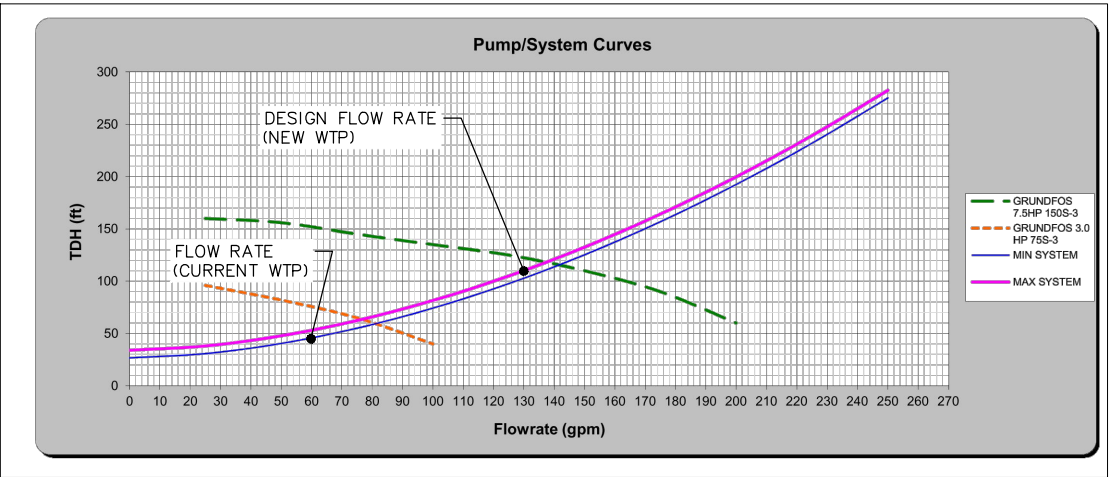
NOTES:

- 1– RESIDENTIAL DEMAND IS BASED ON 40 GPCD
- 2– PEAKING FACTOR OF 1.75 X ADD
- 3 – PEAKING FACTOR OF 4.5 X ADD HOURLY FOR RESIDENTIAL AND COMMERCIAL, AND 3 X ADD HOURLY FOR FISH PROCESSOR
- 4– DESIGN FLOW RATE FOR THE PROPOSED FUTURE WATER TREATMENT SYSTEM IS 130 GPM. MAXIMUM FLOWRATE OF THE CURRENT WATER TREATMENT SYSTEM IS 60 GPM

WETWELL SCREEN

MAXIMUM WATER VELOCITY AT SCREEN	0.5 FEET PER SECOND
MAXIMUM SCREEN MESH OPENING SIZE	0.04 INCHES

WETWELL SUBMERSIBLE PUMP



THE CURRENT PROJECT WILL INSTALL A 3.0 HP SUBMERSIBLE WELL PUMP TO MEET THE FLOW REQUIREMENTS OF THE EXISTING WATER TREATMENT PLANT (60 GPM). THE WELL CONTROL PANEL WILL BE DESIGNED TO ACCOMMODATE FUTURE INSTALLATION OF A 7.5 HP SUBMERSIBLE WELL PUMP TO MEET THE FLOW REQUIREMENTS OF THE FUTURE WATER TREATMENT PLANT (130 GPM).

OPERATIONAL NARRATIVE

A SUBMERSIBLE WELL PUMP LOCATED IN A WETWELL WILL DRAW WATER FROM KWIGUK PASS THROUGH A HORIZONTALLY DRIRECTIONALLY DRILLED (HDD) PIPELINE AND PUMP IT TO THE EXISTING WATER TREATMENT PLANT. A SCREEN IN THE WET WELL WILL PREVENT DEBRIS AND FISH FROM ENTERING THE PUMP. THE SCREEN WILL BE REMOVABLE TO ALLOW FOR PERIODIC CLEANING.

FLOW IN THE HDD PIPELINE WILL PERIODICALLY BE REVERSED TO ALLOW ANY FISH IN THE WETWELL AND PIPELINE TO RETURN TO KWIGUK PASS. TWO POLYETHYLENE TANKS INSIDE THE INTAKE PUMPHOUSE WILL BE FILLED USING THE SUBMERSIBLE PUMP. ONCE THE TANKS ARE FILLED, A VALVE WILL BE OPENED, ALLOWING WATER FROM THE TANKS TO FLOW INTO THE WETWELL AND THROUGH THE HDD PIPELINE TO KWIGUK PASS.

A CLEANOUT WILL ALSO BE PROVIDED TO ALLOW FOR PERIODIC FLUSHING OF THE HDD LINE TO REMOVE ANY ACCUMULATED SEDIMENT. TO FLUSH THE LINE, THE CLEANOUT WILL BE CONNECTED TO A NEW WATER MAIN FLUSHING PORT WITH A TEMPORARY HOSE AND CHECK VALVE. THE HIGH BOOST PUMP AT THE WATER TREATMENT PLANT WILL BE OPERATED MANUALLY TO FLUSH THE LINE.

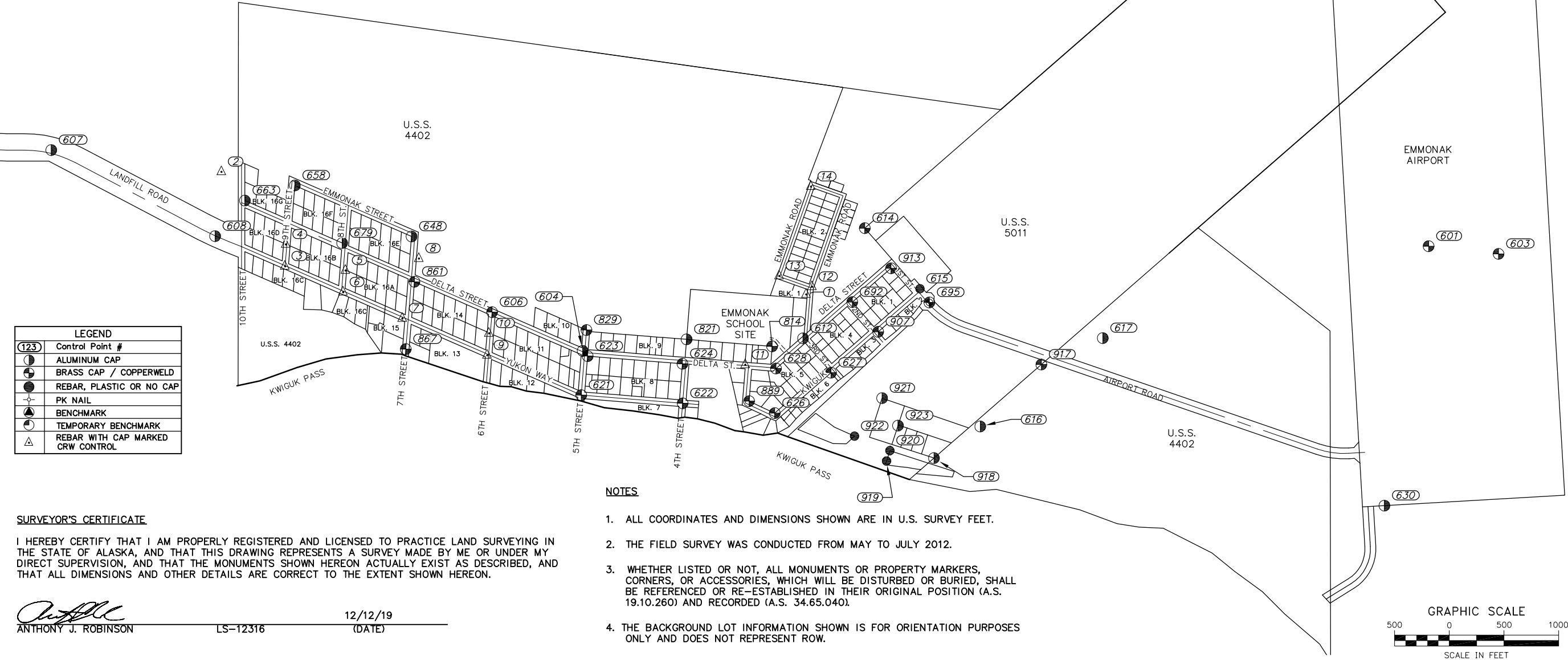
NO.	REVISION	BY	DATE

Plot Date 12/12/19	Designed WMK	Drawn CMK	Approved JVS
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HORIZONTAL CONTROL STATEMENT

COORDINATE SYSTEM:
IS AN ASSUMED PROJECT COORDINATE SYSTEM, RELATIVE TO GRID NORTH.

BASIS OF COORDINATES:
POINT # (621) 60000.00' N, 30000.00' E, LOCATED AT INTERSECTION OF YUKON WAY AND 5TH STREET.



NO.	REVISION	BY	DATE

Plot Date 12/12/19	Designed AJR	Drawn AJR	Approved AJR
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File: \\crweng.com\Projects\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\02 Survey Control\81904.00 SCS-H.dwg

Horizontal Control			
Point No	Northing	Eastng	Description
1	60920.03	32056.77	Found Spike with center punch and 4" square flasher flush with ground.
2	62040.30	26711.26	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
3	61176.90	27292.76	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
4	61377.28	27300.60	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
5	61139.23	27844.78	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
6	60940.39	27823.98	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
7	60700.85	28365.36	Set a 5/8" x 30" rebar with red plastic cap, 0.1' below ground, located center punch, cap stamped "CRW CONTROL"
8	61248.10	28516.39	Set a 5/8" x 30" rebar with red plastic cap, flush with ground, located center punch, cap stamped "CRW CONTROL"
9	60363.64	29140.77	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
10	60564.69	29157.43	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
11	60277.30	31499.89	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
12	60989.95	32111.01	Set a 5/8" x 30" rebar with red plastic cap, 0.15' below ground, located center punch, cap stamped "CRW CONTROL"
13	61088.25	31809.88	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
14	61905.43	32100.78	Set a 5/8" x 30" rebar with red plastic cap, 0.2' below ground, located center punch, cap stamped "CRW CONTROL"
601	61361.18	37745.96	Found 9/16" stainless steel rod with center punch, in a 7" diameter monument case in concrete, 1.3' diameter and flush with ground. Rod is 0.5' below rim of monument case in excellent condition, located center punch. Monument case is stamped "PACS ENM A".
602	65486.91	38132.76	Found 9/16" stainless steel rod with center punch, in a 7" diameter monument case in concrete, 1.3' diameter and flush with ground. Rod is 0.6' below rim of monument case in excellent condition, located center punch. Monument case is stamped "SACS ENM C".
603	61290.91	38385.26	Found 9/16" stainless steel rod with center punch, in a 7" diameter monument case in concrete, 1.3' diameter and flush with ground. Rod is 0.7" below rim of monument case in excellent condition, located center punch. Monument case is stamped "PACS ENM B".
604	60404.46	30013.07	Found 2" Aluminum cap flush with ground, good condition, located center cross "+". Cap stamped "R&M CONSULTANTS CP 16 7843 2003".
606	60758.56	29185.32	Found 3 1/4" Brass cap, 1.5' below ground in good condition located center cross "+". Cap stamped "US CADASTRAL SURVEY BUREAU OF LAND MANAGEMENT S4402 ETS 1966"
607	62239.49	25155.39	Found 2" Aluminum cap flush with ground, good condition, located center cross "+". Cap stamped "R&M CONSULTANTS CP 4 7843 2003".
608	61452.74	26653.21	Found 2" Aluminum cap 1.5' below ground, good condition, located center cross "+". Cap stamped "R&M CONSULTANTS CP 3 7843 2003".
612	60519.15	32027.47	Found 2" Aluminum cap flush with ground, good condition, located center cross "+". Cap stamped "R&M CONSULTANTS CP 10 7843 2003"
614	61526.34	32592.00	Found 3 1/4" Brass cap, 0.6' above ground in good condition located angle point in lines near center of cap. Cap stamped "US DEPARTMENT OF INTERIOR BUR. OF LAND MANAGEMENT S4402 C5 B16 TRB S5011 C4 2011"
615	60972.36	33096.44	Found 5/8" Rebar, no cap, except plastic bushing from missing ALCAP, flush with ground, good condition, located center.
616	59713.94	33647.79	Found 2" Aluminum cap 0.3' below ground, good condition, located center cross "+". Cap stamped "R&M CONSULTANTS CP 14 7843 2003"
617	60521.11	34767.92	Found 5/8" rebar with yellow plastic cap, flush with ground, good condition, located center punch, cap stamped "4408S".
621	60000.00	30000.00	Found 3 1/4" Brass cap, 0.6' below ground in good condition located center cross "+". Cap stamped "US CADASTRAL SURVEY BUREAU OF LAND MANAGEMENT S4402 ETS 1966"
622	59925.49	30926.77	Found 3 1/4" Brass cap, 0.4' below ground in good condition located center cross "+". Cap stamped "US DEPARTMENT OF INTERIOR BUR. OF LAND MANAGEMENT S4402 ETS 2011"

Horizontal Control			
Point No	Northing	Eastng	Description
623	60356.62	30059.00	Found 1 1/2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS L8 B8 2011"
624	60286.62	30925.58	Found 1 1/2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS L1 B8 2011"
626	59835.97	31768.77	Found 1 1/2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS B5 L9 2011"
627	60205.19	32283.21	Found 1 1/2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS L1 B6 2011"
628	60243.11	31780.22	Found 1 1/2" Copper Weld, 0.1' above ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS L5A L4 B8 2011"
629	65887.49	37090.94	Found 3 1/4" Aluminum cap, 0.3' above ground, good condition, located center punch with cross, cap stamped "4469-S 7 EA 1999"
630	58990.59	37342.16	Found 3 1/4" Aluminum cap, 1' above ground, good condition, located intersection lines, cap stamped "4469-S 20 EA BRL 1999"
648	61450.11	28448.68	Found 1 1/2" Aluminum cap, flush with ground, good condition, located center of cap, cap stamped "6529-S 1988"
658	61915.62	27382.25	Found 1 1/2" Aluminum cap, flush with ground, good condition, located center of cap, cap stamped "6529-S 1988"
663	61778.33	26925.16	
679	61390.11	27814.52	Found 1 1/2" Aluminum cap, flush with ground, good condition, located center of cap, cap stamped "6529-S 1988"
692	60850.32	32477.57	Found 2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "USDI BLM BL1 L5"
695	60847.25	33182.40	Found 2 1/2" Aluminum cap in monument box, 1.5' below ground, good condition, located center punch, cap stamped "4725-S C3-USS5011 2010".
814	60446.35	31744.98	Found 1 1/2" Copper Weld, 0.1' above ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS B16 L1 B9 2011"
821	60510.19	30963.32	Found 1 1/2" Aluminum cap, flush with ground, good condition, located center of cap, cap stamped "LCG 4125-S 2003"
829	60595.05	30048.08	Found 3 1/4" Brass cap, 1.25' below ground in good condition located center cross "+". Cap stamped "US CADASTRAL SURVEY BUREAU OF LAND MANAGEMENT S4402 ETS 1966"
861	61035.92	28475.77	Found 2" Copper Weld, 0.2' above ground, good condition, located angle point in lines, cap stamped "USDI BLM L7 BL14"
867	60420.57	28396.20	Found 3 1/4" Brass cap, flush with ground in good condition located center cross "+". Cap stamped "US CADASTRAL SURVEY BUREAU OF LAND MANAGEMENT S4402 ETS 1966"
889	59945.43	31534.66	Found 2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "USDI BLM BL5 L8 2011"
907	60578.95	32714.42	Found 2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "USDI BLM L4 BL2"
913	61159.18	32832.23	Found 1 1/2" Copper Weld, flush with ground, good condition, located angle point in lines, cap stamped "BLM CADASTRAL SURVEY ETS L1 B1 2011"
917	60279.97	34205.88	3 1/4" Brass cap, 0.5' above ground in good condition located center of cap. Cap stamped "US CADASTRAL SURVEY BUREAU OF LAND MANAGEMENT WP S5011 TRA S4402 1966"
918	59425.09	33224.33	Found 5/8" rebar with orange plastic cap, flush with ground, good condition, located center punch, cap stamped "SETNTEC AS11796".
919	59397.86	32790.83	Found 5/8" rebar flush with ground, good condition, located center.
920	59493.14	32821.40	Found 5/8" rebar 1.0' below ground, good condition, located center.
921	59973.01	32750.72	Found 1 1/2" Aluminum cap, 0.1' above ground, good condition, located center punch, cap stamped "6716S 1987"
922	59625.15	32498.18	Found 5/8" rebar 0.1' above ground, good condition, located center.
923	59721.98	32895.70	Found 2" Aluminum cap 0.3' below ground, good condition, located center punch. Cap stamped "PND WC LOT1 PAR C LS7324 2004"

Alaska Department of
Environmental Conservation
Division of Water



Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501



**CRW**
ENGINEERING GROUP LLC

3945 ARCTIC BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECB82-AK

CITY OF EMMONAK

SURVEY CONTROL HORIZONTAL

RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date 12/12/19	Designed AJR
Drawn AJR	Approved AJR

Sheet No. **V002**

File: \\crweng.com\Projects\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\02 Survey\03 Survey Control\81904.00 SCS-V.dwg

VERTICAL CONTROL STATEMENT

BASIS OF ELEVATION BASED ON THE ARMY CORP OF ENGINEERS ELEVATION OF 20.00' NGVD. WE USED HIGH WATER MARK 4.3 ON FLOOD GAUGE, LOCATED NEAR THE NORTHEAST CORNER OF THE CITY OFFICE / COMMUNITY BUILDING IN EMMONAK, AK, ESTABLISHED BY THE ARMY CORPS OF ENGINEERS. THE PUBLISHED ELEVATION FOR THE HIGH WATER MARK 4.3 ON GAUGE IS EQUAL 20.00' NGVD AS PER THE ARMY CORPS OF ENGINEERS FLOOD DATA SHEETS FOR EMMONAK, AK.

LEGEND	
(123)	Control Point #
●	ALUMINUM CAP
●	BRASS CAP / COPPERWELD
●	REBAR, PLASTIC OR NO CAP
+	PK NAIL
▲	BENCHMARK
●	TEMPORARY BENCHMARK
△	REBAR WITH CAP MARKED CRW CONTROL

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, AND THAT THIS DRAWING REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT THE MONUMENTS SHOWN HEREON ACTUALLY EXIST AS DESCRIBED, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT TO THE EXTENT SHOWN HEREON.

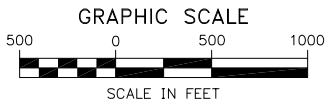

Anthony J. Robinson

LS-12316

12/12/19
(DATE)

NOTES

- ALL COORDINATES AND DIMENSIONS SHOWN ARE IN U.S. SURVEY FEET.
- THE FIELD SURVEY WAS CONDUCTED FROM MAY TO JULY 2012.
- WHETHER LISTED OR NOT, ALL MONUMENTS OR PROPERTY MARKERS, CORNERS, OR ACCESSORIES, WHICH WILL BE DISTURBED OR BURIED, SHALL BE REFERENCED OR RE-ESTABLISHED IN THEIR ORIGINAL POSITION (A.S. 19.10.260) AND RECORDED (A.S. 34.65.040).
- THE BACKGROUND LOT INFORMATION SHOWN IS FOR ORIENTATION PURPOSES ONLY AND DOES NOT REPRESENT ROW.



NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	AJR
Drawn	AJR
Approved	AJR

Sheet No. V003

CITY OF EMMONAK
SURVEY CONTROL VERTICAL
RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION



Alaska Department of
Environmental Conservation
Division of Water

Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

Vertical Control				
Point No	Northing	Eastng	Elevation	Description
350	60093	31478	20.00	4.3 foot mark (HWE – high water elevation) on Flood Gauge on the side of city office / community center.
351	59882	31574	20.42	Yellow benchtie spike on north side of power pole #3L–3R on the south side of Kwiguk Street, two houses east of Chuloonwick office building.
352	59867	31800	18.81	Yellow benchtie spike on west side of telephone pole at northwest quadrant of Kwiguk Street and Road heading to corporation store and fish processing plant.
353	60012	31969	18.98	Yellow benchtie spike on west side of power pole #7L on west side of Kwiguk Street, between lot 11 and 12 of block 5.
354	60223	32215	19.16	Yellow benchtie spike on southeast side of power pole #7L –2L on west side of Kwiguk Street, just south of 3rd Street.
355	60410	32434	19.31	Yellow benchtie spike on southeast side of power pole #7L –4L on west side of Kwiguk Street, between lot 7 and 8 of block 4.
356	61133	33060	19.37	Chisled "X" at southwest corner of steel plate on a 6" diameter pile support, located at southwest side of building entrance the southern most Clinic apartment building.
357	60280	31501	18.98	Yellow benchtie spike on south side of power pole #3LA on north side Delta Street near the intersection of Kwiguk Street.
358	60371	31927	18.75	Yellow benchtie spike on west side of power pole #5L–1–1 on east side Delta Street, between lot 2 and 3 of block 5.
359	60650	32112	18.61	Yellow benchtie spike on west side of power pole #5L–1–3–1 on east side Emmonak Street, just north of intersection with Delta Street.
360	60581	31658	23.76	Chisled "X" at southwest corner of steel beam for the top of deck attached to entrance stairs of Emmonak School, just above southwest support column for deck & stairs on south side of school on newer addition, approximately 5' above ground.
361	60255	31156	18.17	Yellow benchtie spike on north side of power pole #B3–5, at 2.0 on flood gauge attached to pole, on south side of Delta Street and across Street from power plant.
362	60366	30006	18.37	Yellow benchtie spike on east side of power pole #7–R at the southwest quadrant of Delta Street and 5th Street.
363	60281	29300	19.35	Yellow benchtie spike on north side of power pole #2R–11A on the south side of Yukon way, just west of the Family Restaurant, power pole has an electric meter on it.
364	60565	28766	19.22	Yellow benchtie spike on south side of power pole #2R–14 on north side of Yukon Way, across the Street from Alaska Department of Fish and Game office.
365	60785	28169	20.47	Yellow benchtie spike on north side of power pole with meter on south side of Yukon Way, first pole west of 7th Street, pole is a service pole.
366	60973	27849	20.16	Yellow benchtie spike on north side of power pole #2R–19 at northeast quadrant of 8th Street and Yukon Way.
367	61052	27562	19.87	Yellow benchtie spike on north side of power pole #2R–21B with meter on pole, first pole west of 8th Street on south side of Yukon Way.
368	61287	27029	20.54	Yellow benchtie spike on north side of power pole #2R–23A, first pole west of 9th Street on south side of Yukon Way.
369	62038	26724	22.66	Chisled "X" top center of northeast edge of vertical ibeam support for power pole #t–21 on east side of Road heading to windmill, power pole is part of main line between villages.
370	61343	27359	19.50	Spike on west side of power pole #1R–A, approximately 50' east of 9th Street and 9' south of arctic pipe at the back of lot 6 of block 16A, pole is a service pole with meter.
371	61325	27810	18.63	Spike on north side of power pole #19R at southwest quadrant of Delta Street and 8th Street.
372	61036	28477	18.11	Spike on west side of power pole #15R at southeast quadrant of Delta Street and 7th Street.
373	60712	29239	17.26	Spike on northwest side of power pole #11R at southeast quadrant of Delta Street and 6th Street.
374	60556	29185	18.87	Yellow benchtie spike on west side of telephone pole on east side of 6th Street between lot 8 and 9A of block 11, just south of arctic piping.
375	61785	32222	18.51	Spike on west side of power pole #5L–12 on west side of boardwalk and between lot 13 and 14 of block 2, just south of Emmonak Road.
376	61124	31989	18.42	Spike on west side of power pole #5L–7 on west side of boardwalk and between lot 23 and 44 of block 2, just north of Emmonak Road.

Alaska Department of
Environmental Conservation
Division of Water



Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501



**CRW**
ENGINEERING GROUP LLC

3940 ARCTIC BLVD., SUITE 300
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PHONE: (907) 562-3252
#AEC0882-AK

CITY OF EMMONAK

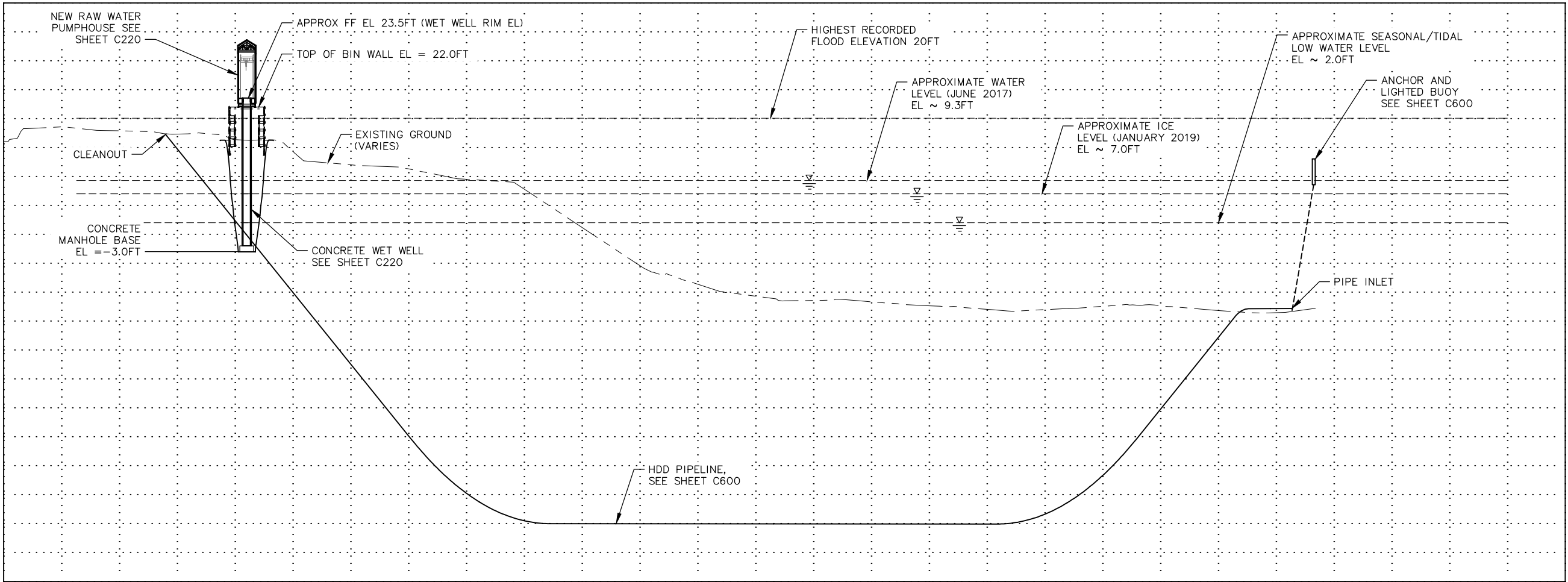
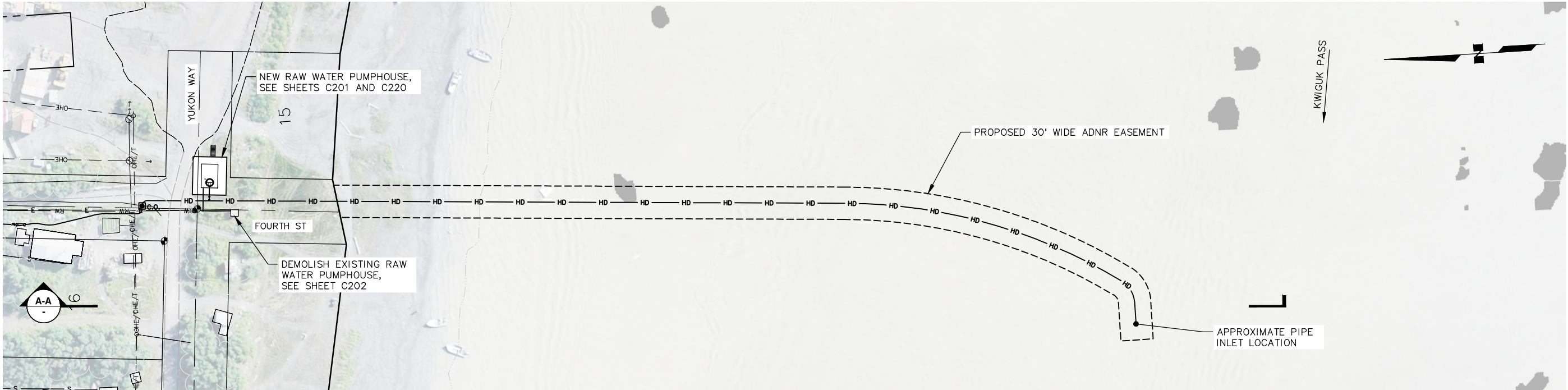
SURVEY CONTROL VERTICAL

RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	AJR
Drawn	AJR
Approved	AJR

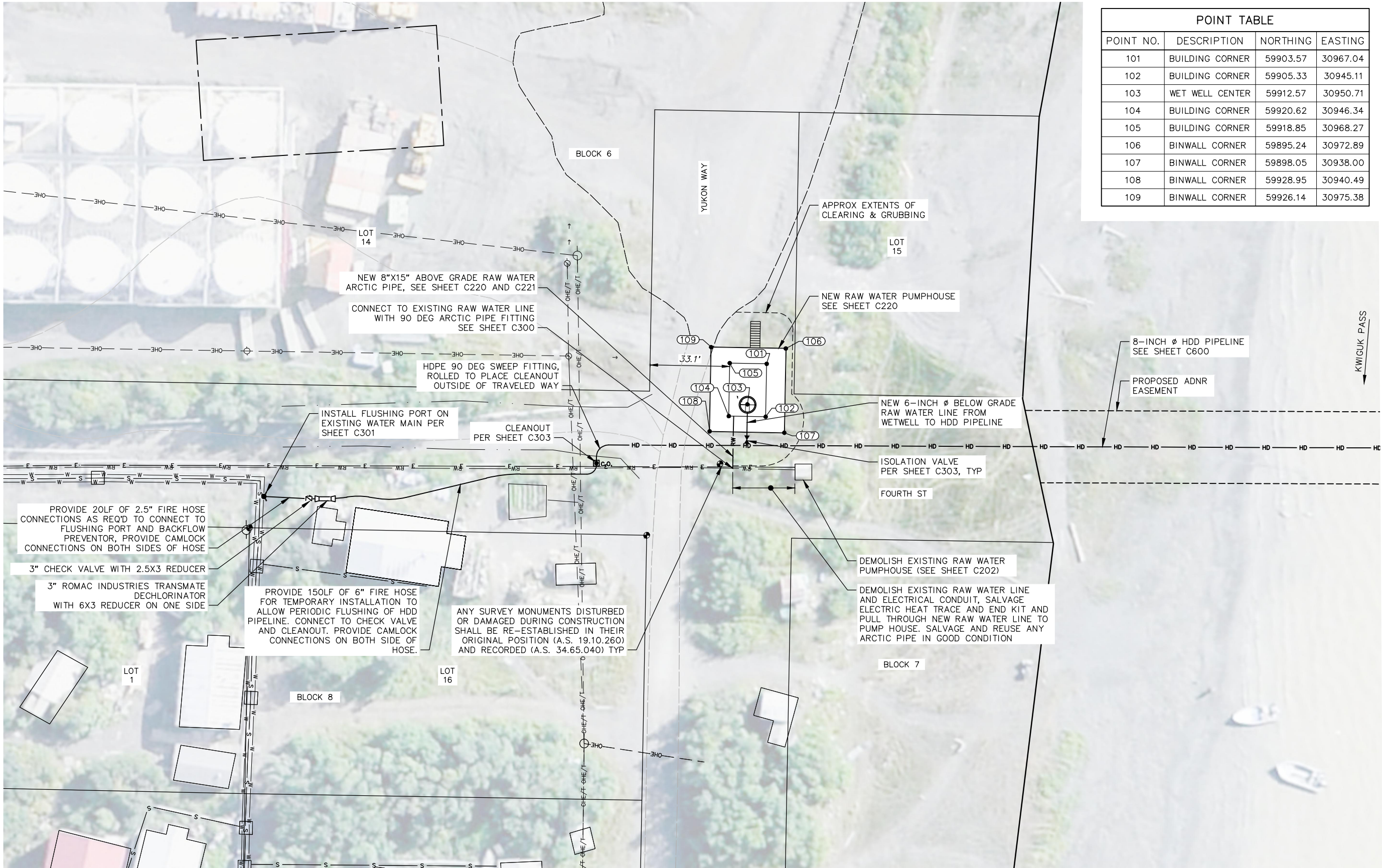
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NO.	REVISION	BY	DATE

Plot 12/13/19	Designed WMK	Drawn CMK	Approved JVS
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POINT TABLE			
POINT NO.	DESCRIPTION	NORTHING	EASTING
101	BUILDING CORNER	59903.57	30967.04
102	BUILDING CORNER	59905.33	30945.11
103	WET WELL CENTER	59912.57	30950.71
104	BUILDING CORNER	59920.62	30946.34
105	BUILDING CORNER	59918.85	30968.27
106	BINWALL CORNER	59895.24	30972.89
107	BINWALL CORNER	59898.05	30938.00
108	BINWALL CORNER	59928.95	30940.49
109	BINWALL CORNER	59926.14	30975.38

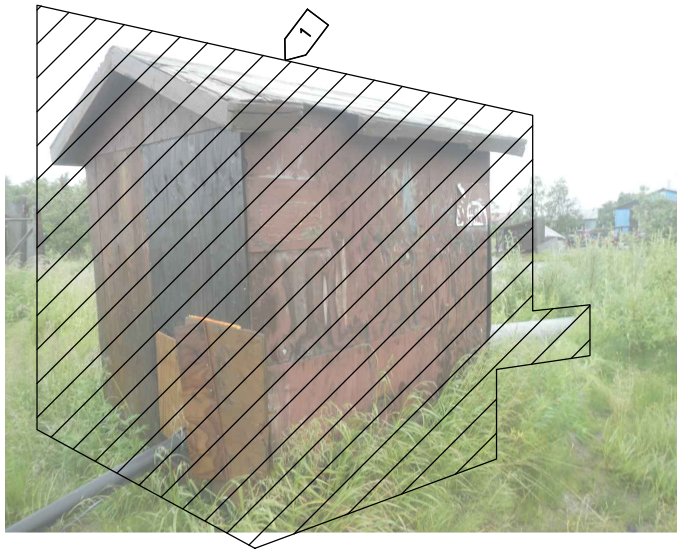
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SITE PLAN



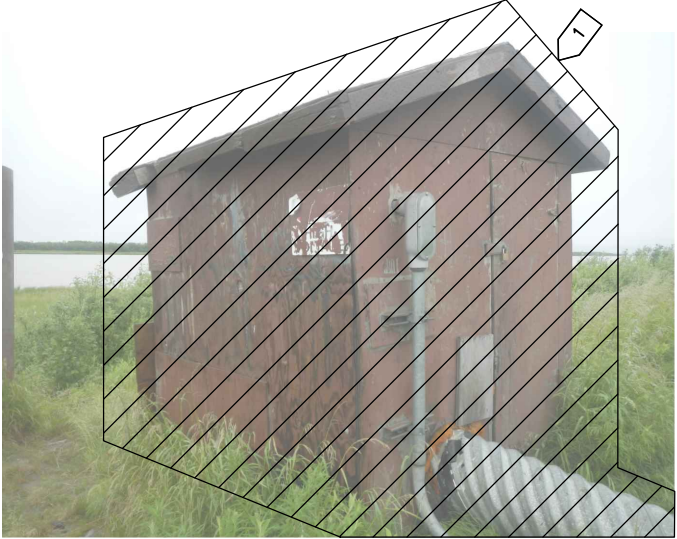
NO.	REVISION	BY	DATE

Plot 12/13/19	Designed WMK
Date	Drawn CMK
	Approved JVS



EXISTING RAW WATER PUMPHOUSE

SCALE: NTS



EXISTING RAW WATER PUMPHOUSE

SCALE: NTS



EXISTING RAW WATER PUMPHOUSE

SCALE: NTS

NOTES:

- 1 DEMOLISH RAW WATER PUMPHOUSE, INCLUDING ALL ELECTRICAL COMPONENTS AND RAW WATER PIPELINE (TO EXTENT INDICATED ON SHEET C200).



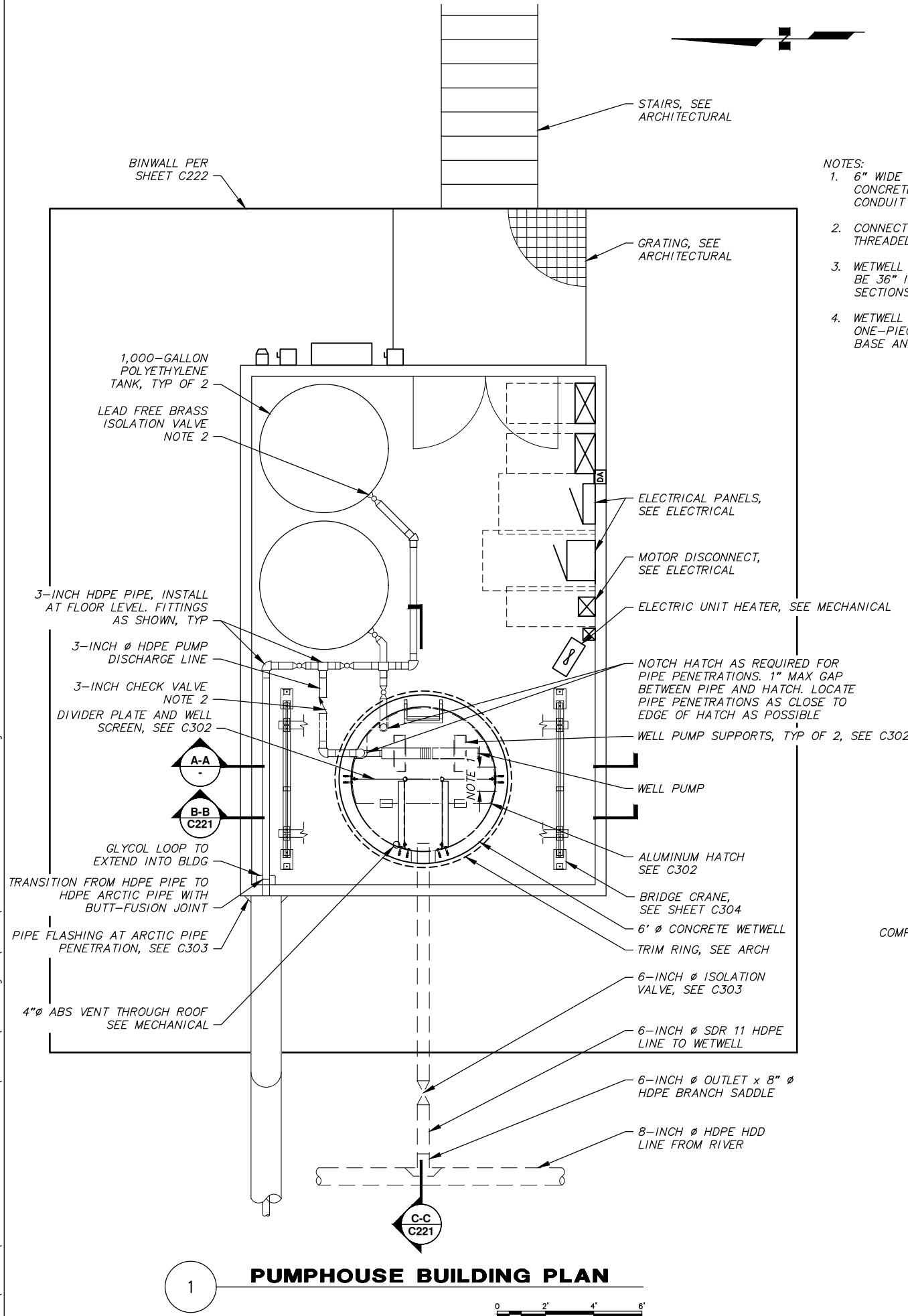
EXISTING RAW WATER PUMPHOUSE ELECTRICAL PANELS

SCALE: NTS

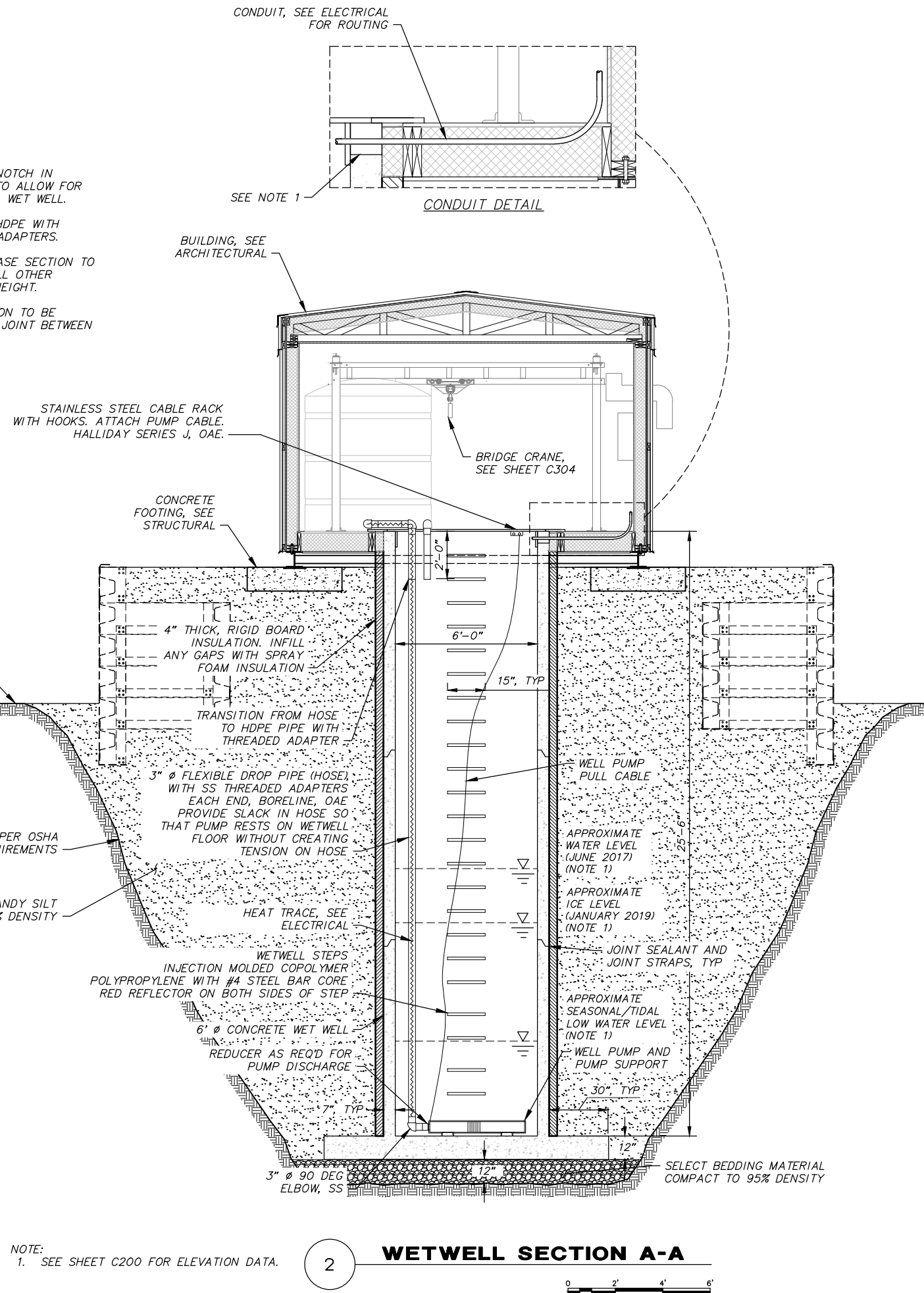
NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	WMK
Drawn	CMK
Approved	JVS

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PUMPHOUSE BUILDING PLAN

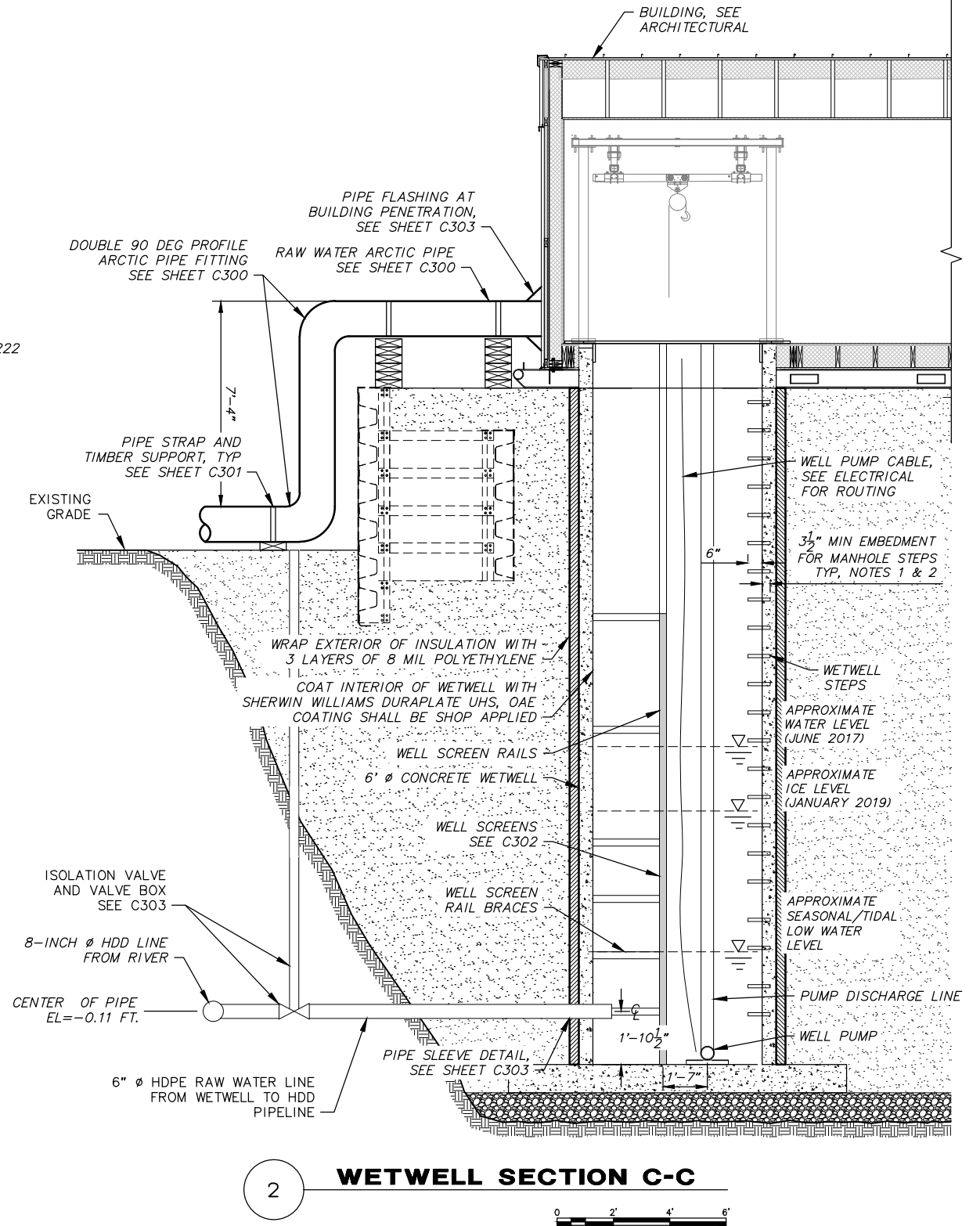
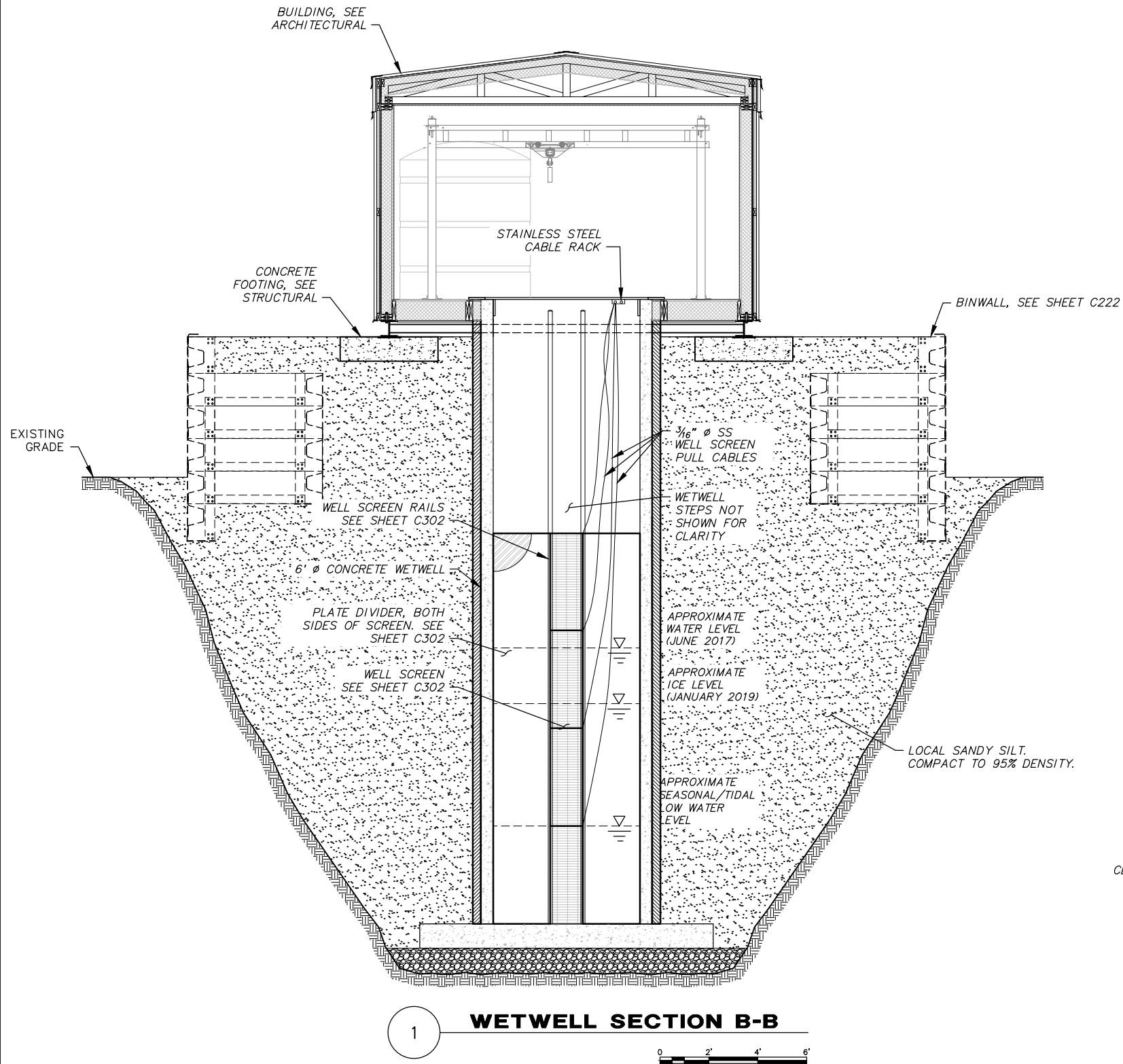


WETWELL SECTION A-A

NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	WMK
Drawn	CMK
Approved	JVS

File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\01 Civil\81904.00 Wetwell Section South.dwg



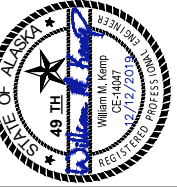
NOTES:

1. DRIVE RUNG INTO PREFORMED OR DRILLED HOLES AFTER CONCRETE IS CURED TO 3,000 PSI MIN.
2. INSTALLED STEP SHALL RESIST A PULLOUT FORCE OF 1,500 LBS.
3. SEE SHEET C200 FOR ELEVATION DATA.

Alaska Department of
Environmental Conservation
Division of Water



Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501



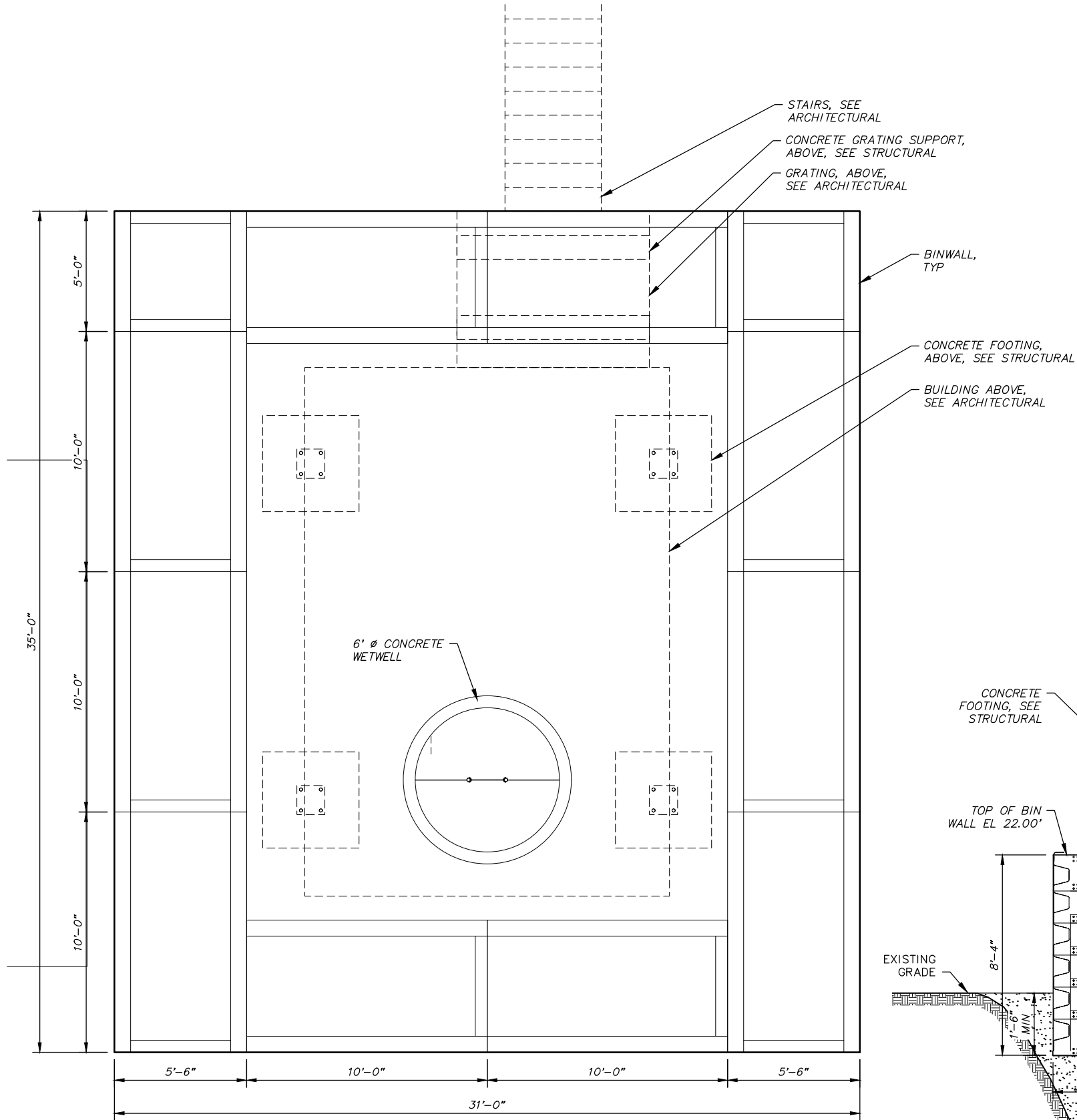
CITY OF EMMONAK
WETWELL SECTIONS
RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	WMK
Drawn	CMK
Approved	JVS

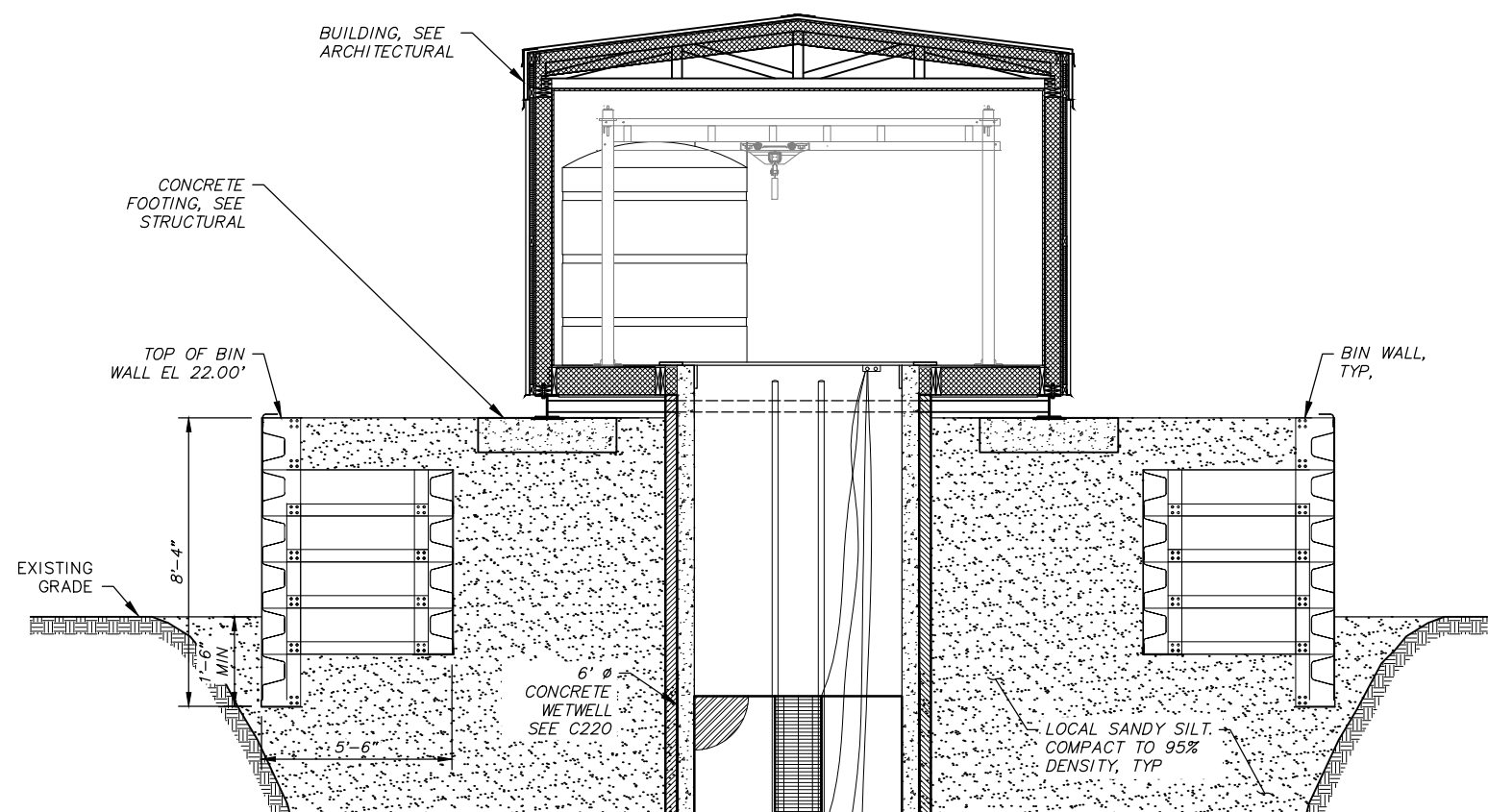
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1 **BINWALL PLAN**

0 2' 4' 6'



2 **BINWALL ELEVATION**

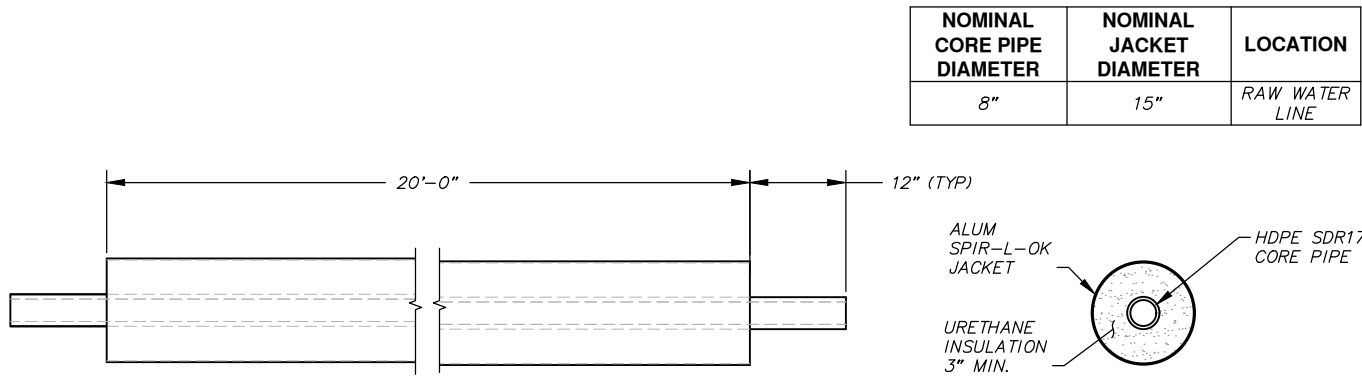
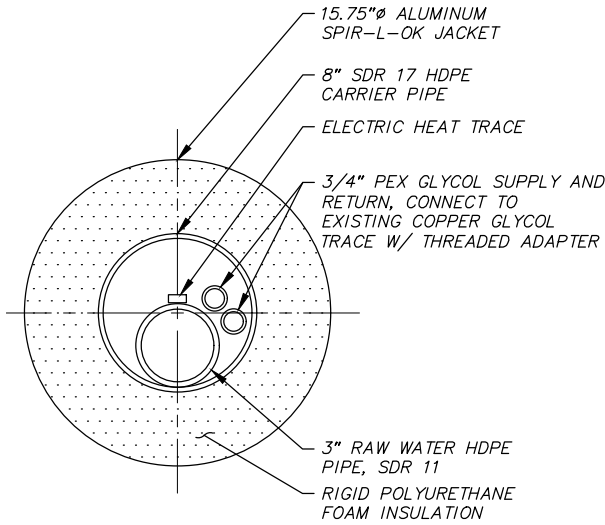
0 2' 4' 6'

NO.	REVISION	BY	DATE

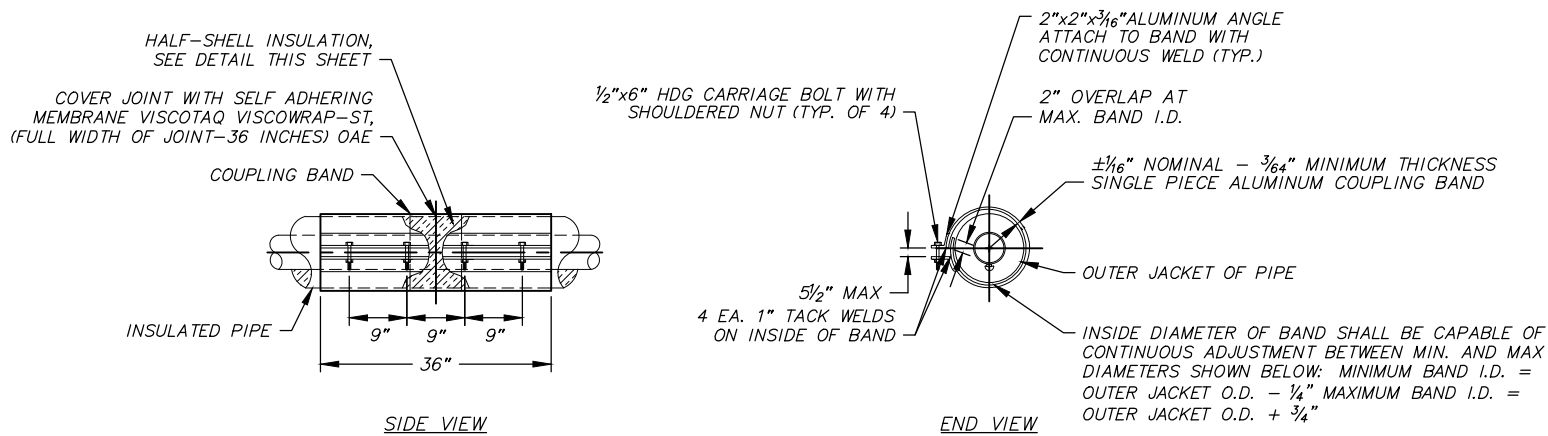
Plot Date	12/12/19
Designed	WMK
Drawn	CMK
Approved	JVS

File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\01 Civil\81904.00 Details 1.dwg

1 **8x15-INCH RAW WATER LINE**

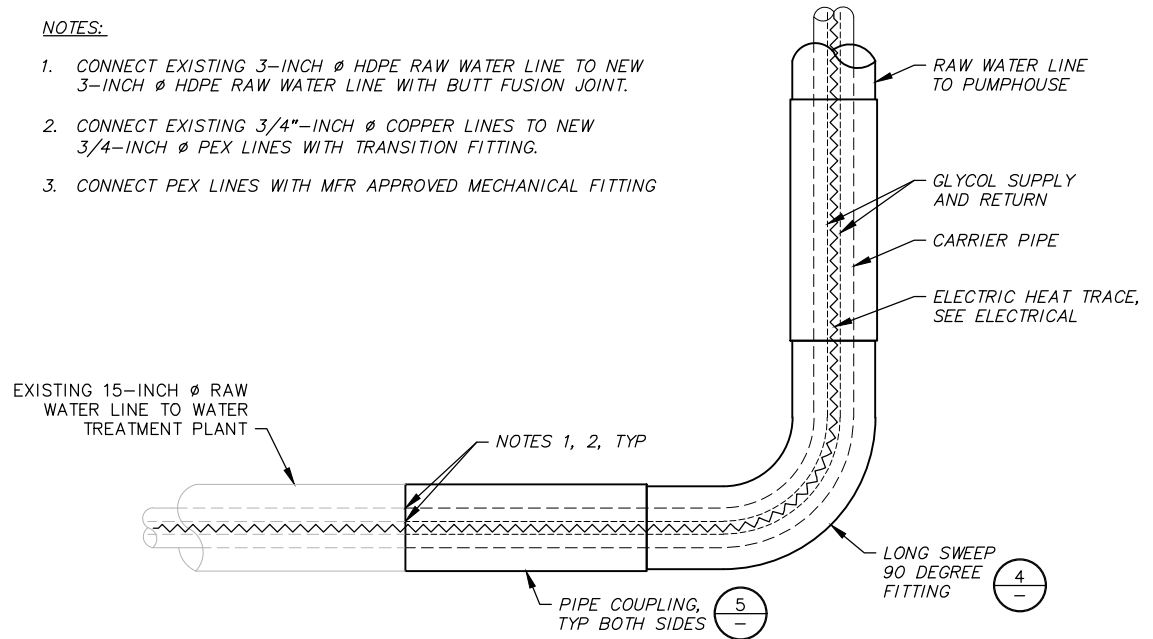


3 **ARCTIC PIPE STICK**

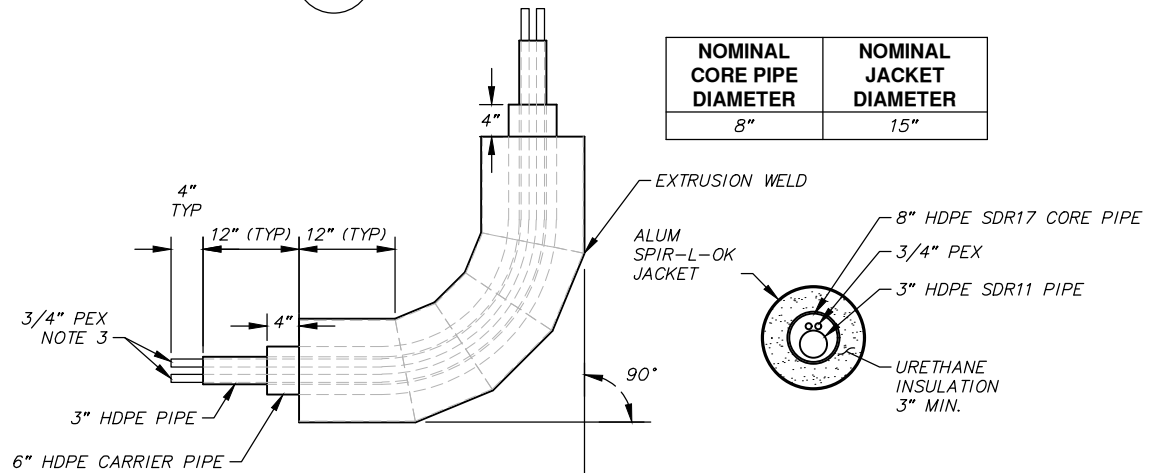


5 **ARCTIC PIPE COUPLING**

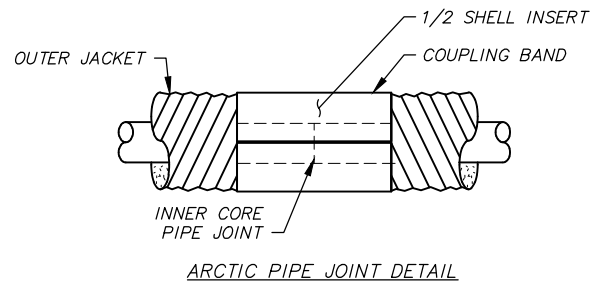
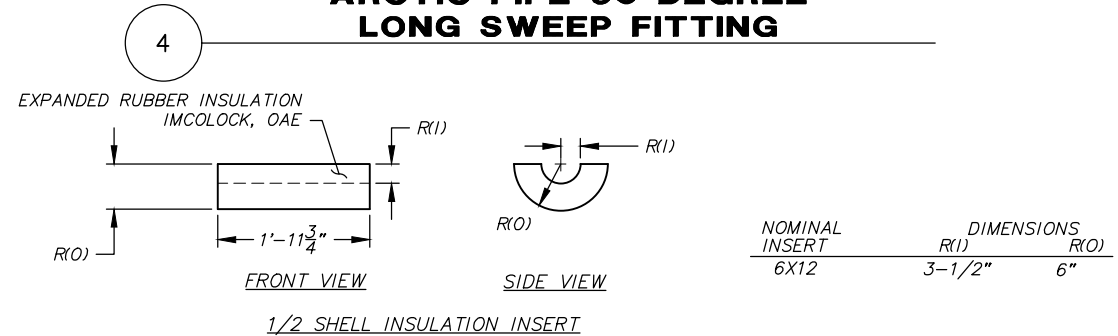
- NOTES:**
- CONNECT EXISTING 3-INCH ϕ HDPE RAW WATER LINE TO NEW 3-INCH ϕ HDPE RAW WATER LINE WITH BUTT FUSION JOINT.
 - CONNECT EXISTING 3/4-INCH ϕ COPPER LINES TO NEW 3/4-INCH ϕ PEX LINES WITH TRANSITION FITTING.
 - CONNECT PEX LINES WITH MFR APPROVED MECHANICAL FITTING



2 **CONNECTION TO EXISTING RAW WATER LINE-PLAN VIEW**



4 **ARCTIC PIPE 90 DEGREE LONG SWEEP FITTING**

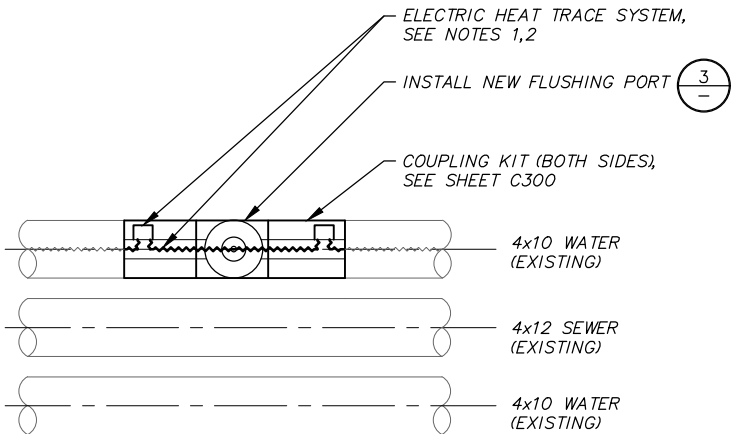


6 **ARCTIC PIPE HALF SHELL**

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Drawn	CMK
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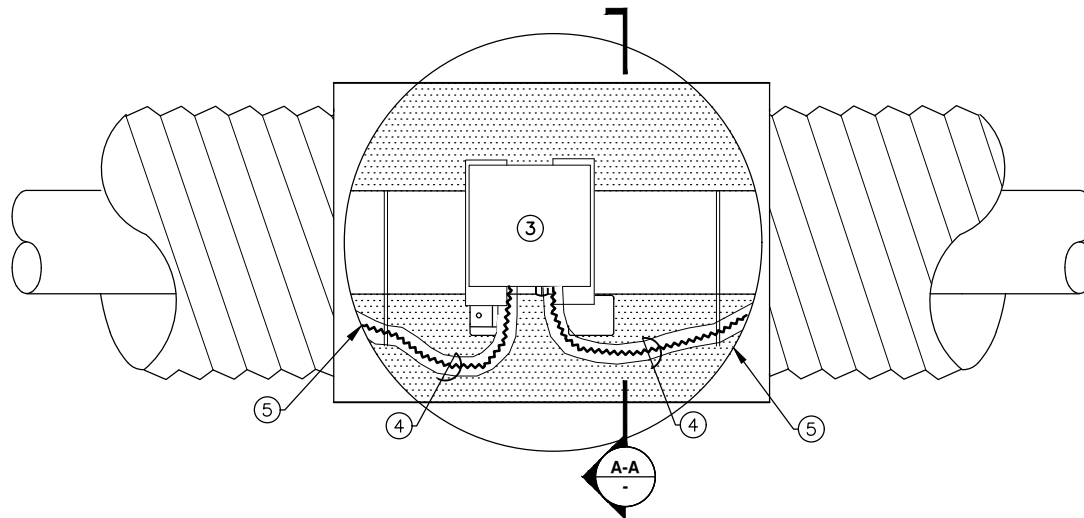
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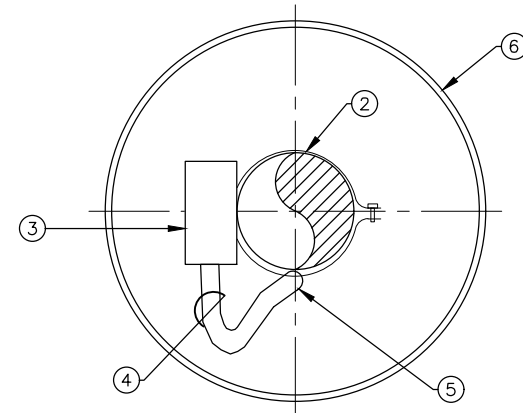
HEAT TRACE NOTES:

1. RECONNECT AND REPLACE EXISTING ELECTRIC HEAT TRACE TO MAINTAIN FUNCTIONALLY OF EXISTING SYSTEM.
2. HEAT TRACE SPLICE BOXES TO BE RELOCATED AND MOUNTED INSIDE ARCTIC PIPE, SEE DETAIL THIS SHEET.

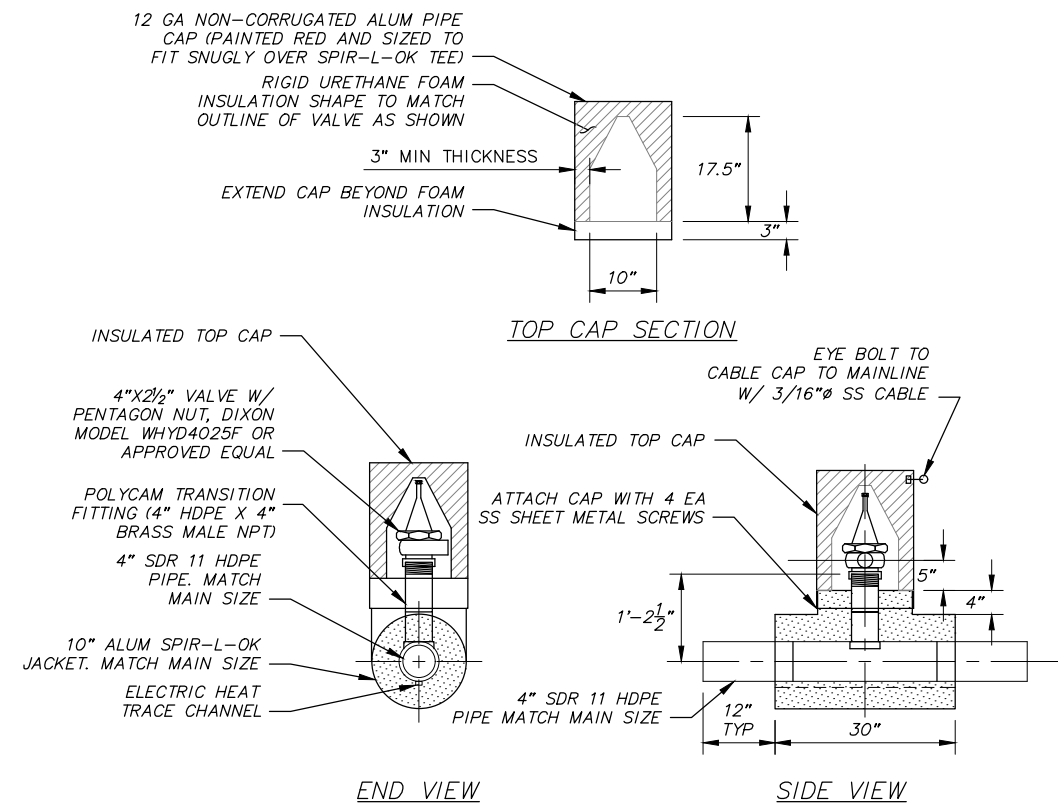
FLUSHING PORT PLAN



HEAT TRACE SPLICE



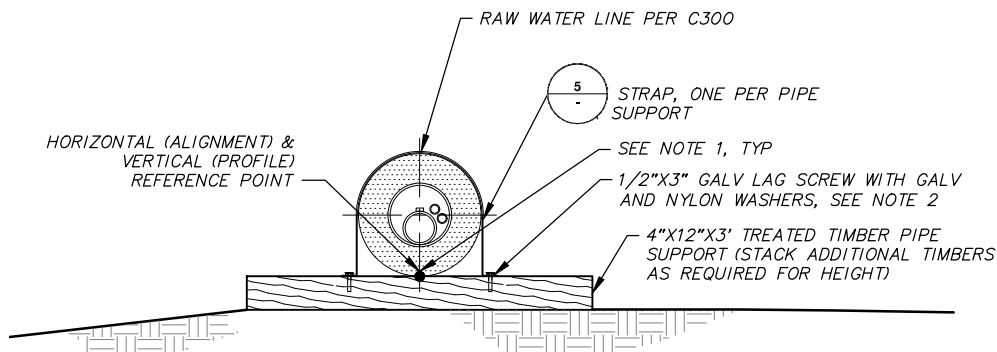
SECTION A-A



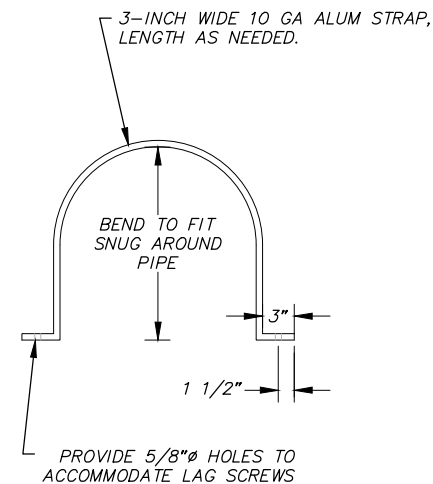
FLUSHING PORT

AT GRADE FOUNDATION NOTES:

1. PROVIDE 3-INCH WIDE EPDM STRIP BETWEEN ALL NEW ALUMINUM JACKETED PIPE AND TREATED TIMBER FOUNDATIONS TO PROVIDE DIELECTRIC SEPARATION.
2. INSTALL NYLON WASHER BETWEEN GALV WASHER AND ALUM STRAP AT EACH LAG SCREW CONNECTION.
3. PIPE SUPPORTS SHALL BE SPACED AT 10 FEET MAX, AND BENEATH ALL HORIZONTAL AND VERTICAL FITTINGS.



AT-GRADE PIPE SUPPORT



PIPE STRAP

HEAT TRACE SPLICE BOX NOTES

1. NOT USED
2. NON-METALLIC 4" PIPE STRAP. VERIFY PIPE SIZE.
3. LOW PROFILE RAYCHEM PMKG-LS SPLICE BOX. SECURE TO UNISTRUT WITH STAINLESS HARDWARE. WHERE HEAT TAPE IS TOO SHORT FOR BOTH TO REACH COMMON POINT PROVIDE TWO JUNCTION BOXES WITH SUPPORT AND CONNECT WITH 3/4" LFNC AND 3#12 CU XHHW-2.
4. 3/4" LFNC WITH CONNECTORS AT BOTH ENDS..
5. PROVIDE BUSHING ON CONNECTOR AND ROUTE HEAT TRACE THROUGH CONDUIT TO JUNCTION BOX. USE TY-RAP BAND TO HOLD CONDUIT AGAINST HEAT TRACE CHANNEL. SEAL SPACE AT JUNCTION OF CONDUIT AND CHANNEL TO PREVENT FOAM FROM ENTERING.
6. COUPLING KIT TO ACCOMMODATE SPLICE BOX

Alaska Department of
Environmental Conservation
Division of Water

Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

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49 TH
WILLIAM M. KEMP
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12/12/2010
REGISTERED PROFESSIONAL ENGINEER

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ENGINEERING GROUP LLC
3900 ARCTIC BLVD, SUITE 300
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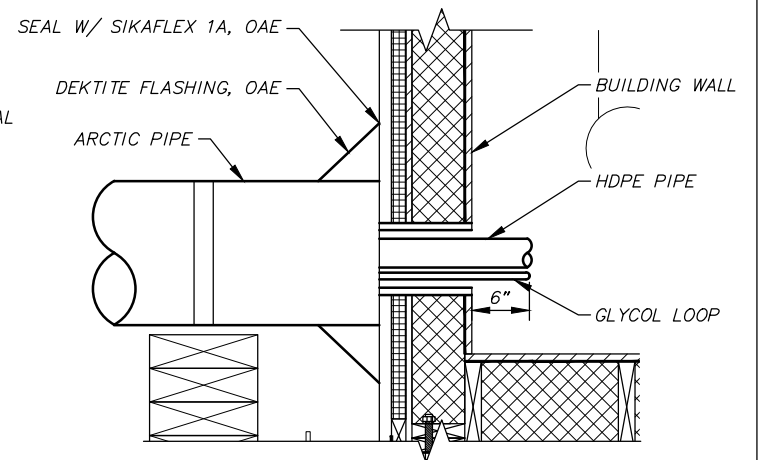
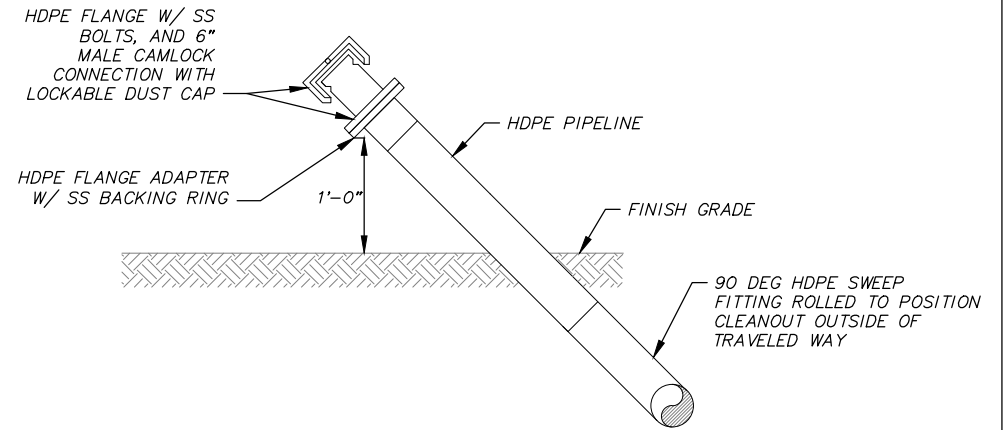
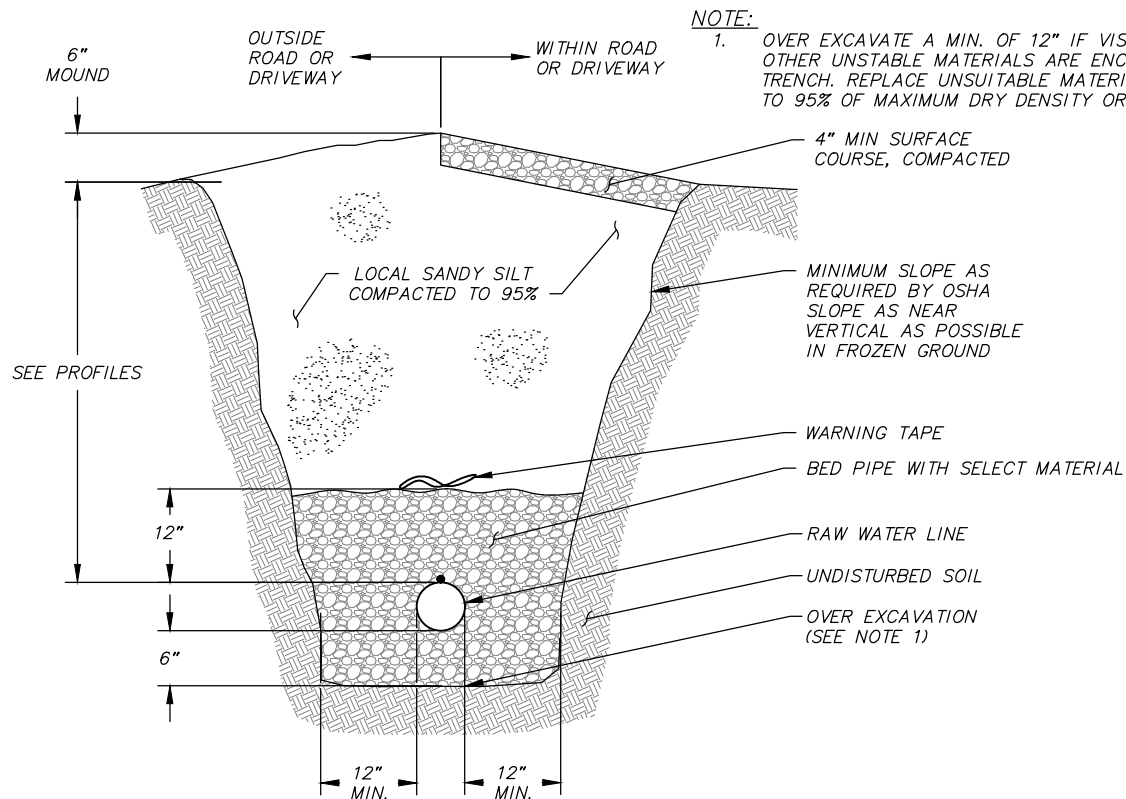
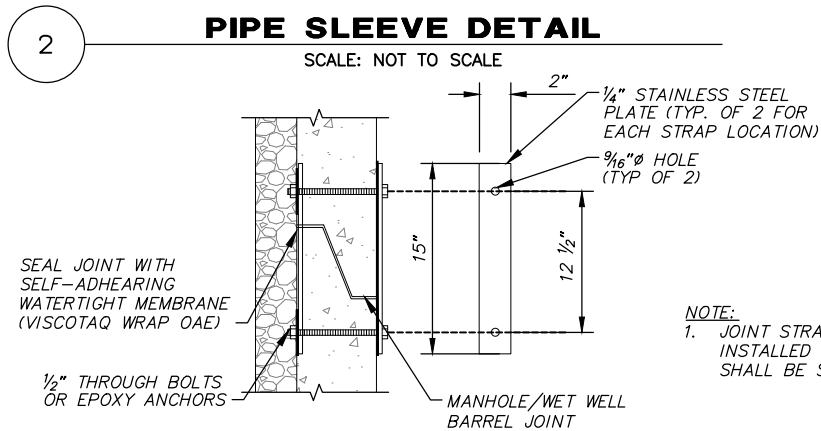
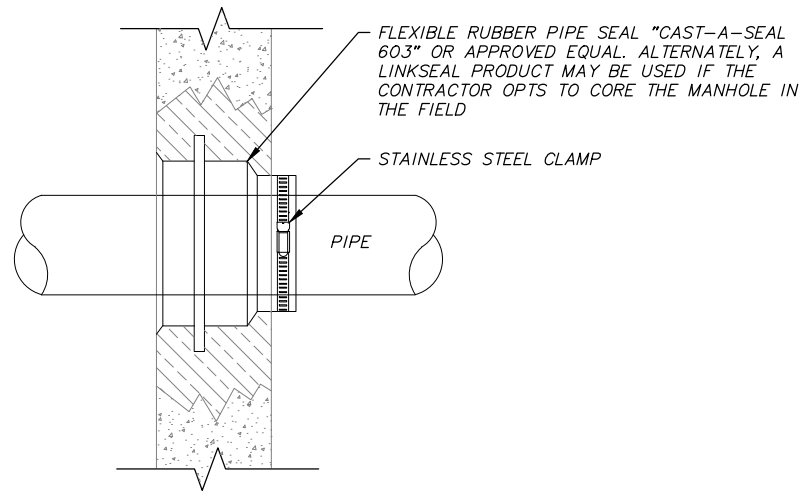
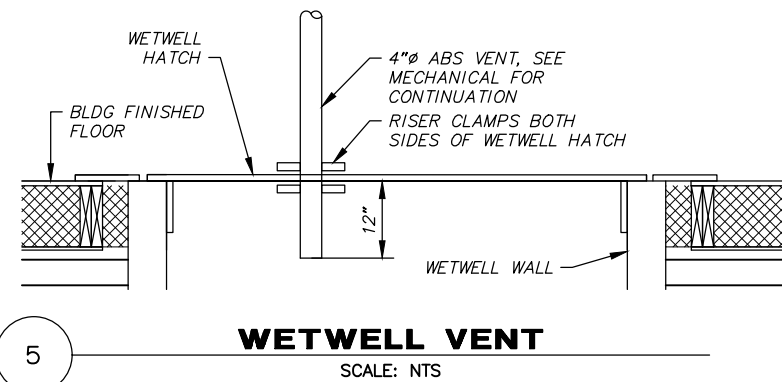
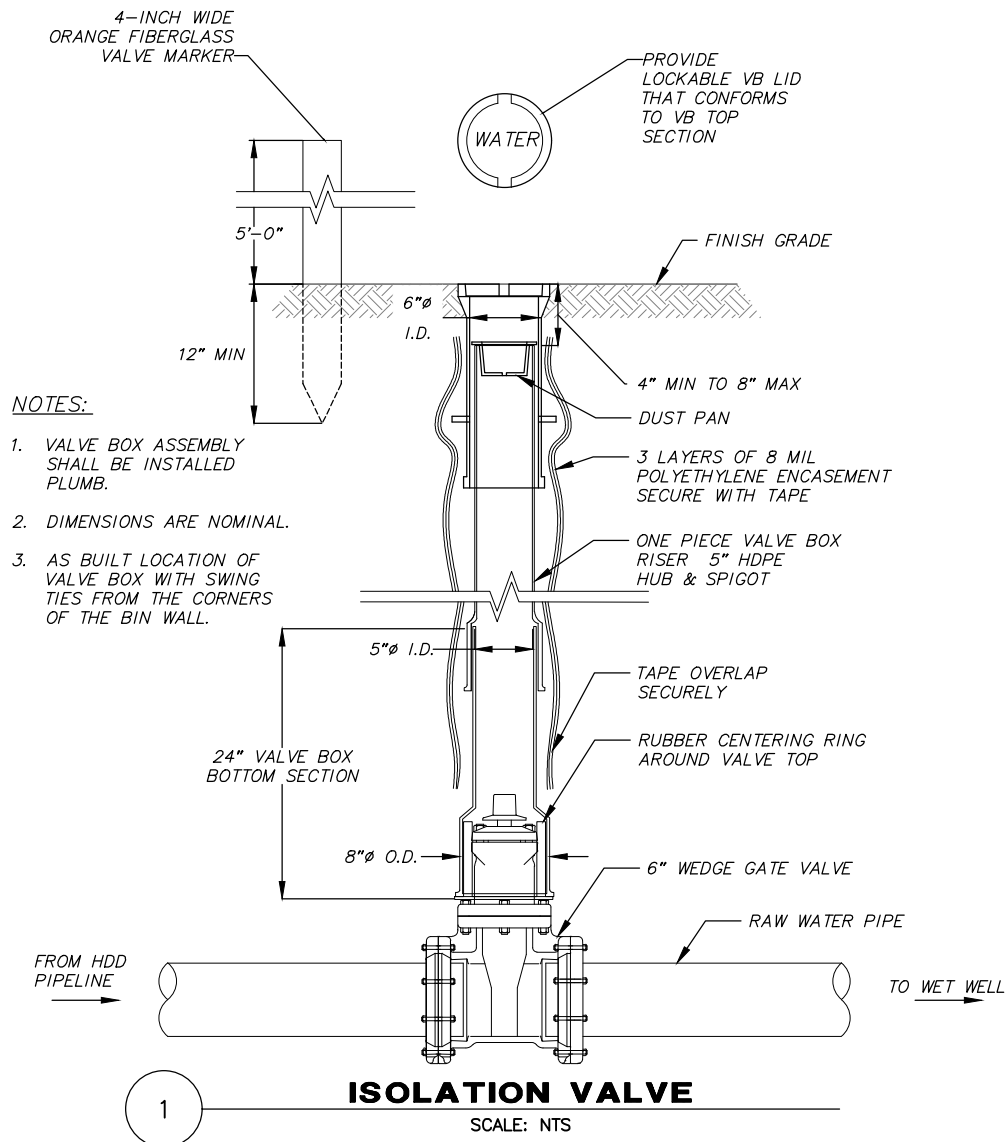
CITY OF EMMONAK
FLUSHING PORT AND PIPE SUPPORT DETAILS
RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION

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Plot Date 12/12/19
Designed WMK
Drawn CMK
Approved JVS

Sheet No. C301

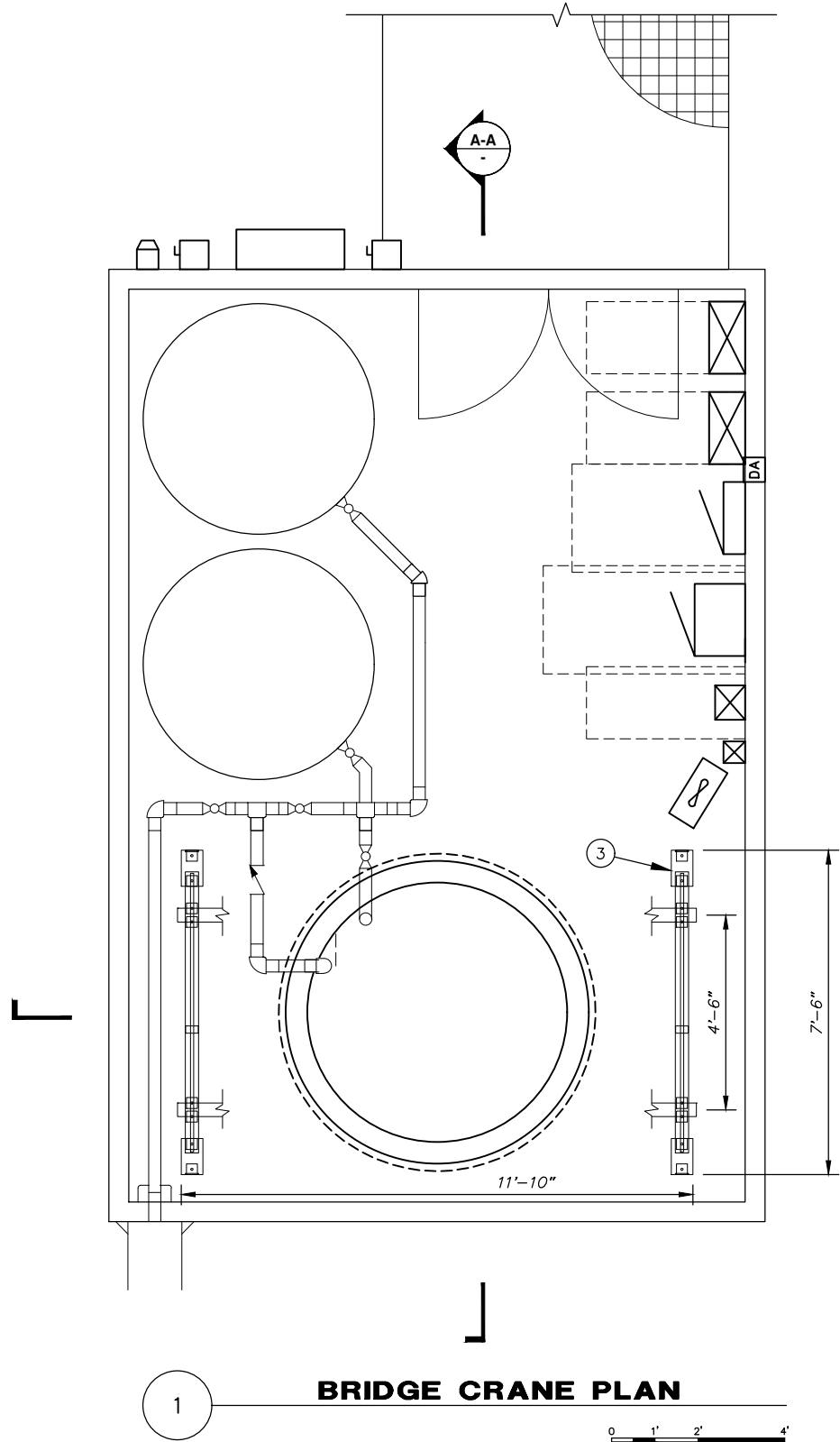
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NO.	REVISION	BY	DATE

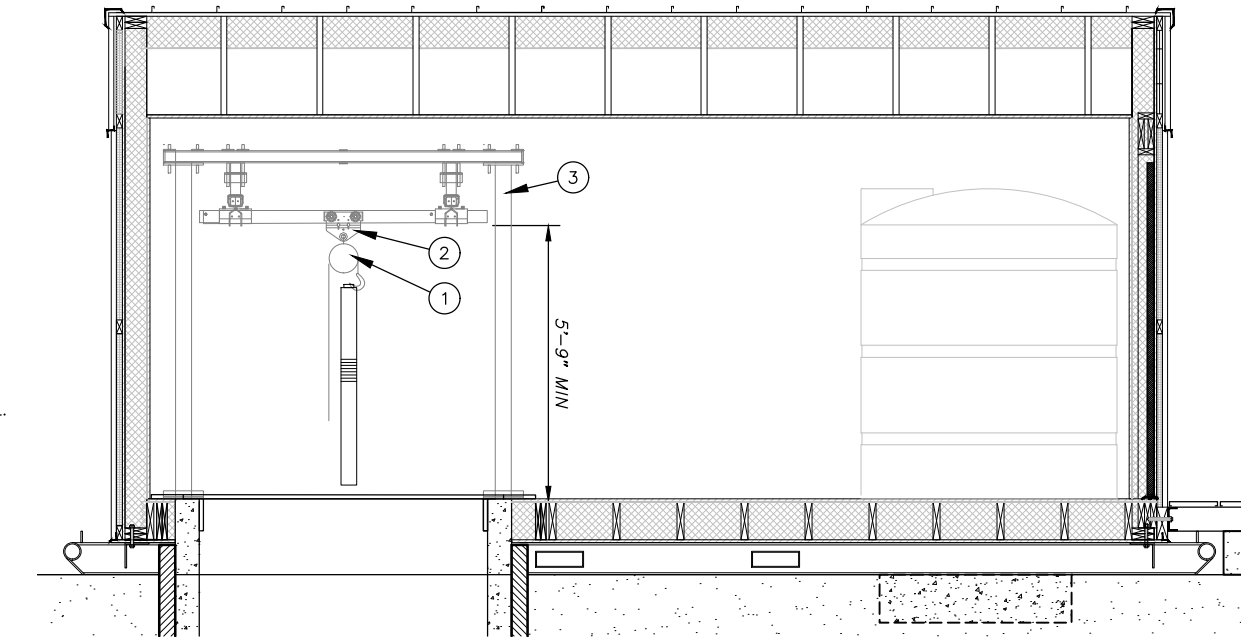
Plot Date	12/12/19
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Drawn	CMK
Approved	JVS

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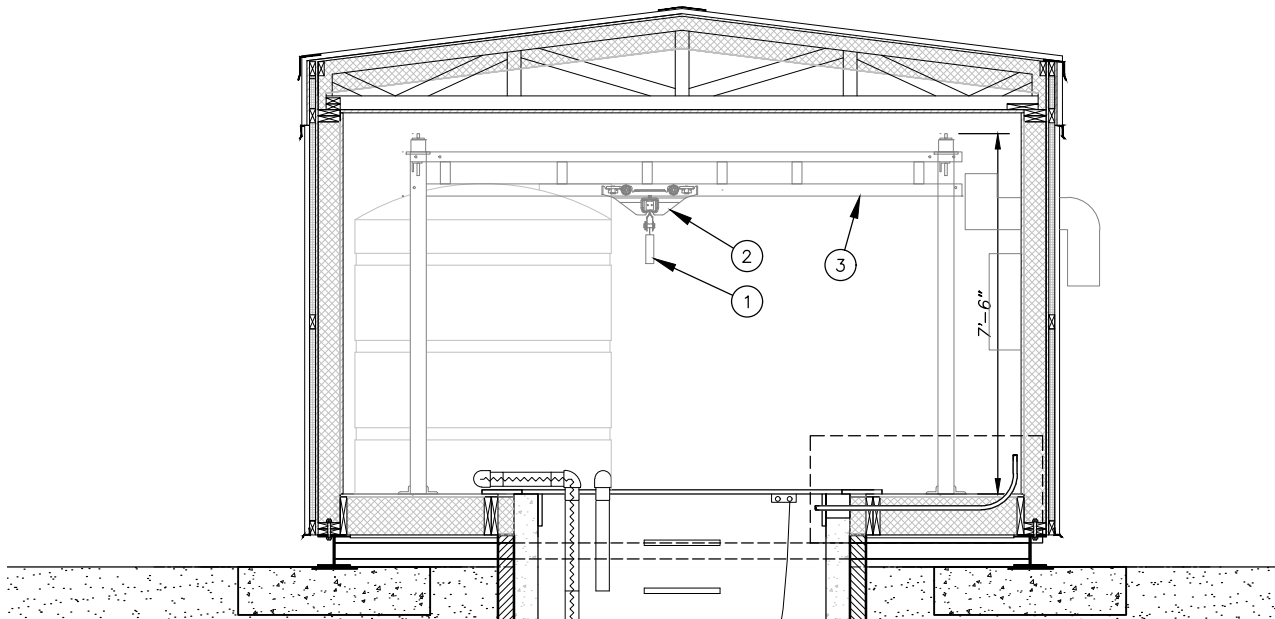


BRIDGE CRANE PLAN

- KEY NOTES
1. CHAIN HOIST, 500 LB CAPACITY, SS CHAIN. PROVIDE ENOUGH CHAIN TO REACH THE BOTTOM OF THE WETWELL AND A CHAIN BAG.
 2. PUSH TROLLEY
 3. PREMANUFACTURED FREE STANDING MANUAL BRIDGE CRANE, GORBEL OR APPROVED EQUAL.



CRANE SECTION A-A



CRANE SECTION B-B

Plot Date 12/12/19
Designed WMK
Drawn CMK
Approved JVS

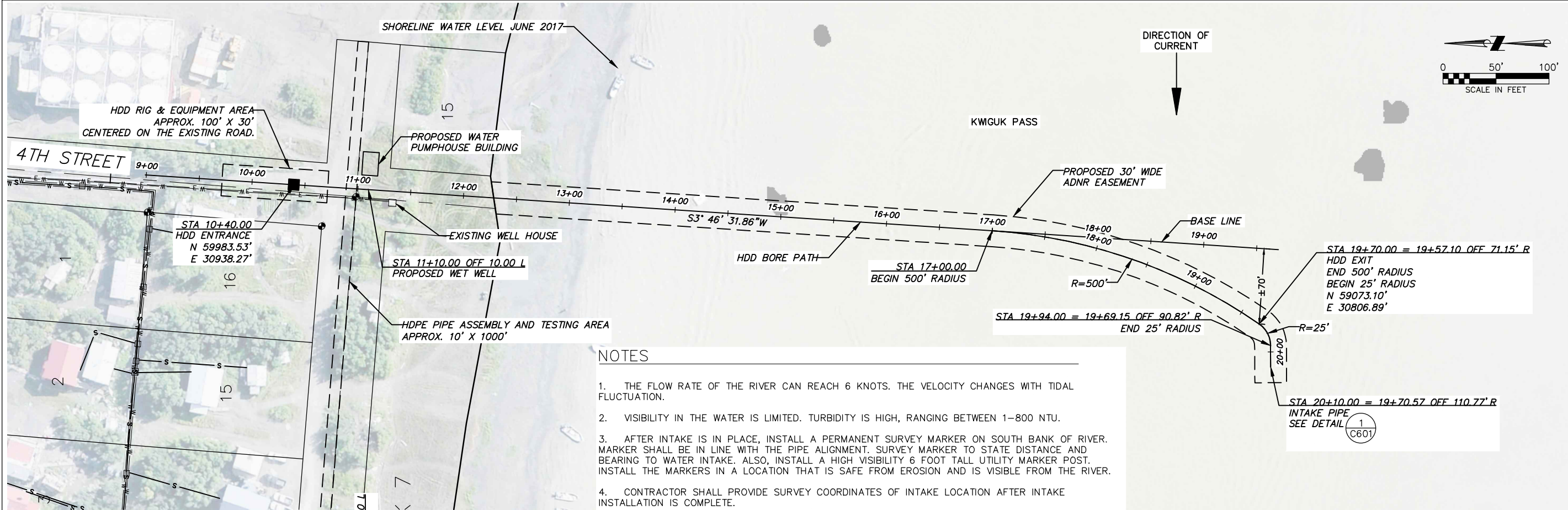
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CITY OF EMMONAK
BRIDGE CRANE DETAILS
RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

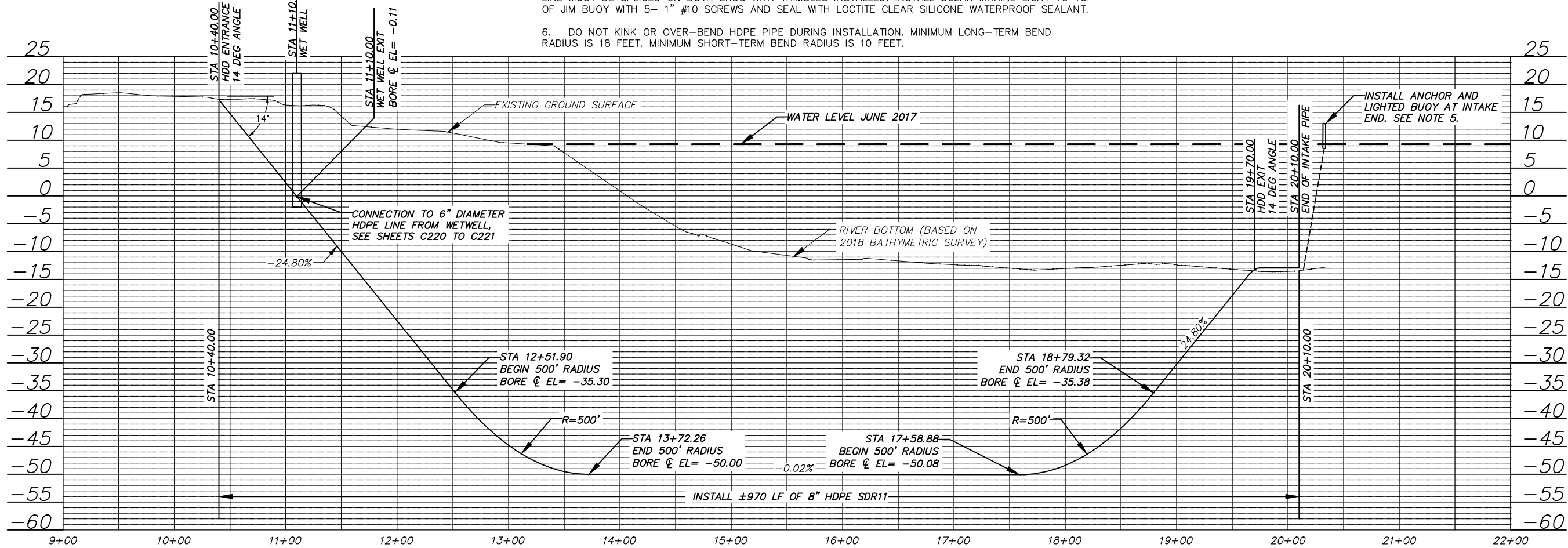


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Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
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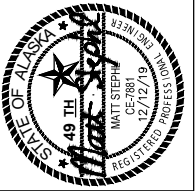


NOTES

1. THE FLOW RATE OF THE RIVER CAN REACH 6 KNOTS. THE VELOCITY CHANGES WITH TIDAL FLUCTUATION.
2. VISIBILITY IN THE WATER IS LIMITED. TURBIDITY IS HIGH, RANGING BETWEEN 1-800 NTU.
3. AFTER INTAKE IS IN PLACE, INSTALL A PERMANENT SURVEY MARKER ON SOUTH BANK OF RIVER. MARKER SHALL BE IN LINE WITH THE PIPE ALIGNMENT. SURVEY MARKER TO STATE DISTANCE AND BEARING TO WATER INTAKE. ALSO, INSTALL A HIGH VISIBILITY 6 FOOT TALL UTILITY MARKER POST. INSTALL THE MARKERS IN A LOCATION THAT IS SAFE FROM EROSION AND IS VISIBLE FROM THE RIVER.
4. CONTRACTOR SHALL PROVIDE SURVEY COORDINATES OF INTAKE LOCATION AFTER INTAKE INSTALLATION IS COMPLETE.
5. AFTER INTAKE IS IN PLACE INSTALL AN ANCHOR AND LIGHTED BUOY TO MARK ITS POSITION. PROVIDE LAKE LITE SOLAR MARINE LIGHT, JIM BUOY LARGE REGULATORY BUOY 428R WITH "NO ANCHORING" LABEL, 3/4" STAINLESS STEEL ANCHOR SHACKLE, 30FT OF 3/8" 3-STRAND NYLON ANCHOR LINE, 6FT OF 3/8" 316 STAINLESS STEEL CHAIN, AND FORTRESS FX-11 7LB ANCHOR. ANCHOR LINE MUST BE SPLICED ON BOTH ENDS WITH THIMBLES INSTALLED. INSTALL SOLAR MARINE LIGHT TO TOP OF JIM BUOY WITH 5- 1" #10 SCREWS AND SEAL WITH LOCTITE CLEAR SILICONE WATERPROOF SEALANT.
6. DO NOT KINK OR OVER-BEND HDPE PIPE DURING INSTALLATION. MINIMUM LONG-TERM BEND RADIUS IS 18 FEET. MINIMUM SHORT-TERM BEND RADIUS IS 10 FEET.



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NO.	REVISION	BY	DATE

Plot 12-12-19	Designed MJS	Drawn MES	Approved -
Date			

File: J:\JobsData\81904.00 Emmonak River Intake\00 CAD\01 Working Set\05 Structural\81904.00 Details-Foundation.dwg

GENERAL STRUCTURAL NOTES:

BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE AND ASCE 7-10.
DESIGN LIVE LOADS:
FLOOR: 125 PSF OR 2000LB POINT LOAD
SNOW: 60 PSF FLAT ROOF SNOW LOAD.
WIND: BASIC WIND SPEED (3 SEC. GUST), V3S = 150 MPH;
SEISMIC: SS = 0.20, SL = 0.05, I = 1.5, CATEGORY IV, SITE CLASS = D.
SEE SHEET S201 FOR EQUIPMENT/TANK LOADS

FOUNDATIONS:
FOUNDATIONS HAVE BEEN DESIGNED ASSUMING 3000 PSF BEARING.

CONCRETE: (PRECAST OR CAST-IN-PLACE)
1. CONCRETE SHALL COMPLY TO REQUIREMENTS OF THE 2012 IBC AND THE CURRENT AMERICAN CONCRETE INSTITUTE (ACI) STANDARDS WITH THE FOLLOWING MINIMUM REQUIREMENTS:
2. ALL CONCRETE SHALL HAVE A 28 DAY STRENGTH, FC = 4000 PSI, WITH A MAXIMUM SLUMP OF 4". MINIMUM CEMENT CONTENT SHALL BE 5.5 SACKS PER CUBIC YARD OF CONCRETE. DESIGN STRENGTH = 4000 PSI @ 28 DAYS (A 1200 PSI OVER-DESIGN WILL BE USED UNLESS SUFFICIENT TEST RECORDS EXIST IN COMPLIANCE WITH CURRENT CODES).
3. MIX DESIGNS WILL BE SUBMITTED AND APPROVED BY THE ENGINEER OR OWNERS REPRESENTATIVE. MAXIMUM WATER CEMENT RATIO = 0.50. MAXIMUM SLUMP = 4", UNLESS INCREASED BY AN APPROVED PLASTICIZER OR OTHER APPROVED METHOD, TO MAINTAIN THE MAXIMUM WATER CEMENT RATIO.
4. AIR ENTRAINMENT SHALL EQUAL 6% FOR CONCRETE EXPOSED TO FREEZING WEATHER. ALL ITEMS, TO BE CAST IN CONCRETE, SUCH AS REINFORCING, DOWELS, ANCHORS, ETC., SHALL BE SECURELY POSITIONED IN THE FORM, PRIOR TO PLACING CONCRETE. PROTECT CONCRETE FROM DAMAGE, OR REDUCED STRENGTH, DUE TO HOT OR COLD WEATHER IN ACCORDANCE WITH ACI 305 AND 306. CONCRETE MIXING, PLACEMENT AND QUALITY SHALL BE PER IBC SECTION 1905.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A615. REINFORCING SHALL EQUAL GRADE 60, FOR ALL # 4 BARS AND LARGER. GRADE 40 MAY BE USED FOR #3 BARS OR SMALLER OR AS OTHERWISE INDICATED.
2. ALL REINFORCING TO BE WELDED SHALL EQUAL ASTM A706, GRADE 60 WELD-ABLE STEEL. WELDING REINFORCING STEEL SHALL COMPLY WITH UBC STANDARD 19-1 AND STRUCTURAL WELDING CODE - REINFORCING STEEL, ANSI/AWS D1.4-92, PUBLISHED BY THE AMERICAN WELDING SOCIETY, INC.
3. SPLICE REINFORCING BARS WITH 36 DIAMETER BAR LAP, 24" MINIMUM, OR AS SHOWN ON THE DRAWINGS. ALL CORNERS AND OTHER INTERSECTIONS SHALL RECEIVE 24"X24" CORNER BARS, UNLESS OTHERWISE DETAILED.
4. ALL REINFORCING SHALL BE BENT COLD AT THE MINIMUM RADIUS RECOMMENDED BY THE INTERNATIONAL BUILDING CODE (IBC) AND AMERICAN CONCRETE INSTITUTE (ACI).
5. CONCRETE COVER SHALL COMPLY WITH SECTION 1907.7 AND AS FOLLOWS: CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, COVER = 3". CONCRETE EXPOSED TO EARTH OR WEATHER, COVER = 2". CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND; SLABS, WALLS, AND JOIST COVER = ¾".

STRUCTURAL STEEL AND METAL FABRICATIONS:

1. THE DESIGN, FABRICATION AND ERECTION OF ALL STRUCTURAL STEEL SHALL COMPLY WITH THE CODE OF STANDARD PRACTICE OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
2. ALL STRUCTURAL STEEL SHALL BE ASTM A 36 PLATES AND ROLLED SECTIONS; A500, GRADE B FOR STRUCTURAL STEEL TUBING AND A53, GRADE B FOR STEEL PIPE.
3. ALL METAL TO METAL CONNECTIONS SHALL BE EQUAL TO "STANDARD CONNECTIONS", OR AS DETAILED USING A325 BOLTS (BEARING TYPE CONNECTIONS). TIGHTEN BOLTS SNUG TIGHT - CONNECTIONS ARE NOT SLIP CRITICAL. ALL CONNECTIONS, UNLESS OTHERWISE DETAILED, SHALL HAVE THE MAXIMUM NUMBER OF ¾" DIAMETER BOLTS, USING STANDARD GAUGES AND CLEARANCES.
4. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE CURRENT CODE OF THE AMERICAN WELDING SOCIETY; MINIMUM FILLET WELD SHALL BE ⅜". USE AWS 5J E70XX ELECTRODES.
5. ALL STEEL NOT SPECIFICALLY REQUIRED BY THE DRAWINGS OR SPECIFICATIONS TO RECEIVE GALVANIZING OR ANOTHER SPECIFIC COATING SYSTEM, SHALL RECEIVE STANDARD SHOP PRIMER.
6. BOLTS FOR WOOD TO WOOD OR STEEL TO WOOD CONNECTIONS EQUAL 3/4" DIAMETER, A307 BOLTS.

WOOD:

1. FLOOR DECK AND WALL SHEATHING SHALL BE WOOD STRUCTURAL PANEL SHEATHING, WITH EXTERIOR GLUE, OR BETTER, UNLESS OTHERWISE NOTED ON THE DRAWINGS. ¾" (OR ⅝") PLYWOOD CALLED OFF SHALL HAVE A PANEL SPAN RATING OF 32/16. ½" PLYWOOD CALLED OFF ON DRAWINGS SHALL HAVE A PANEL SPAN RATING OF 24/0. MINIMUM NAILING FOR ROOF PANELS SHALL EQUAL 10D NAILS AT 4" CENTERS AROUND PLYWOOD PANEL EDGES FOR A BLOCKED DIAPHRAGM AND 4" ALONG ENDS FOR AN UNBLOCKED DIAPHRAGM AND 10D'S @ 12" CENTERS ALONG INTERMEDIATE FRAMING. MINIMUM NAILING FOR WALL PANELS SHALL BE 8D'S @ 4" CENTERS AROUND PLYWOOD PANELS AND 8D'S @ 12" CENTERS ALONG INTERMEDIATE FRAMING. BLOCK ALL SHEAR WALL PANEL EDGES.
2. FRAMING MATERIAL, DOUGLAS FIR, NO. 2, OR BETTER. MAXIMUM MOISTURE CONTENT SHALL BE 19%.
3. ALL WOOD IN DIRECT CONTACT WITH GROUND OR FOUNDATION CONCRETE SHALL BE PRESSURE TREATED NO. 1 DOUGLAS FIR AND MARKED WITH THE "FDN" GRADE MARK. FIELD TREAT ALL CUT EDGES. MAXIMUM MOISTURE CONTENT SHALL BE 19%. ALL FASTENERS IN TREATED WOOD SHALL BE HOT DIPPED GALVANIZED.
4. ALL METAL TO WOOD OR WOOD TO WOOD CONNECTIONS SHALL BE STANDARD OR AS DETAILED ON THE DRAWINGS USING A307 BOLTS. ALL BOLTS AND LAG SCREW IN CONTACT WITH WOOD SHALL HAVE 2"X2"X¾" PLATE WASHERS AS A MINIMUM.
5. ALL METAL FRAMING ANCHORS AND HANGERS SHALL SUPPORT THE LOADS INDICATED ON THE DRAWINGS. UNLESS OTHERWISE DETAILED, HANGERS SHALL SUPPORT A NORMAL LOAD CAPACITY EQUAL TO THE SHEAR CAPACITY OF THE SUPPORTED MEMBER. ANCHORS AND HANGERS INDICATED ON THE DRAWINGS ARE "SIMPSON CO." OR EQUAL.
6. MINIMUM NAILING SHALL EQUAL THAT INDICATED IN THE INTERNATIONAL BUILDING CODE TABLE 2304.9.1, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
7. VERSALAM MATERIAL SHALL BE BOISE CASCADE, OR APPROVED EQUAL.

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Village Safe Water Program
555 Cordova Street 4th Floor
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**CRW**
ENGINEERING GROUP LLC

3840 ARCTIC BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
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#AEC0882-AK

CITY OF EMMONAK

GENERAL STRUCTURAL NOTES

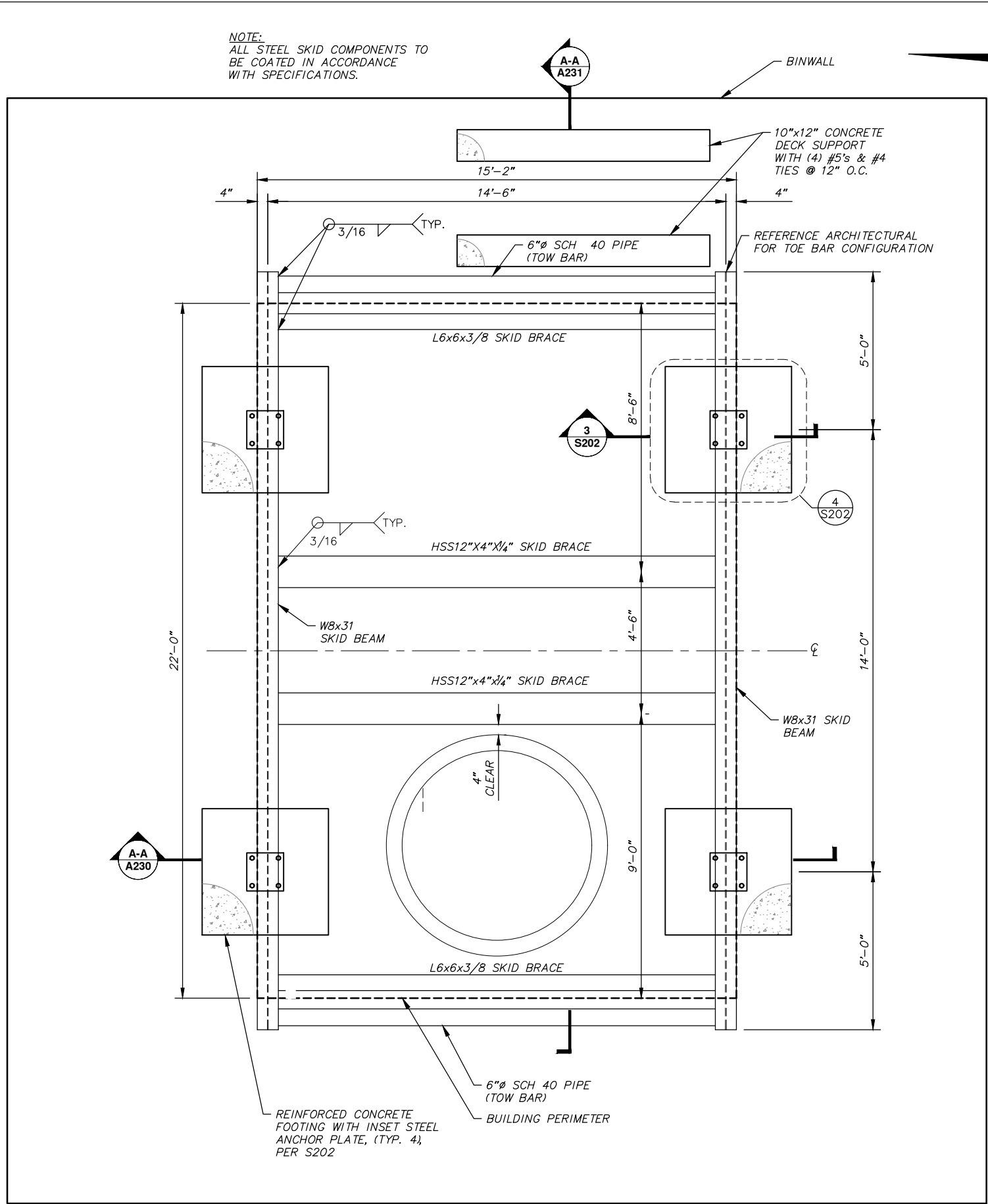
RIVER INTAKE UPGRADES
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NO.	REVISION	BY	DATE

Plot Date	12/12/19
Designed	DT
Drawn	KEG
Approved	JVS

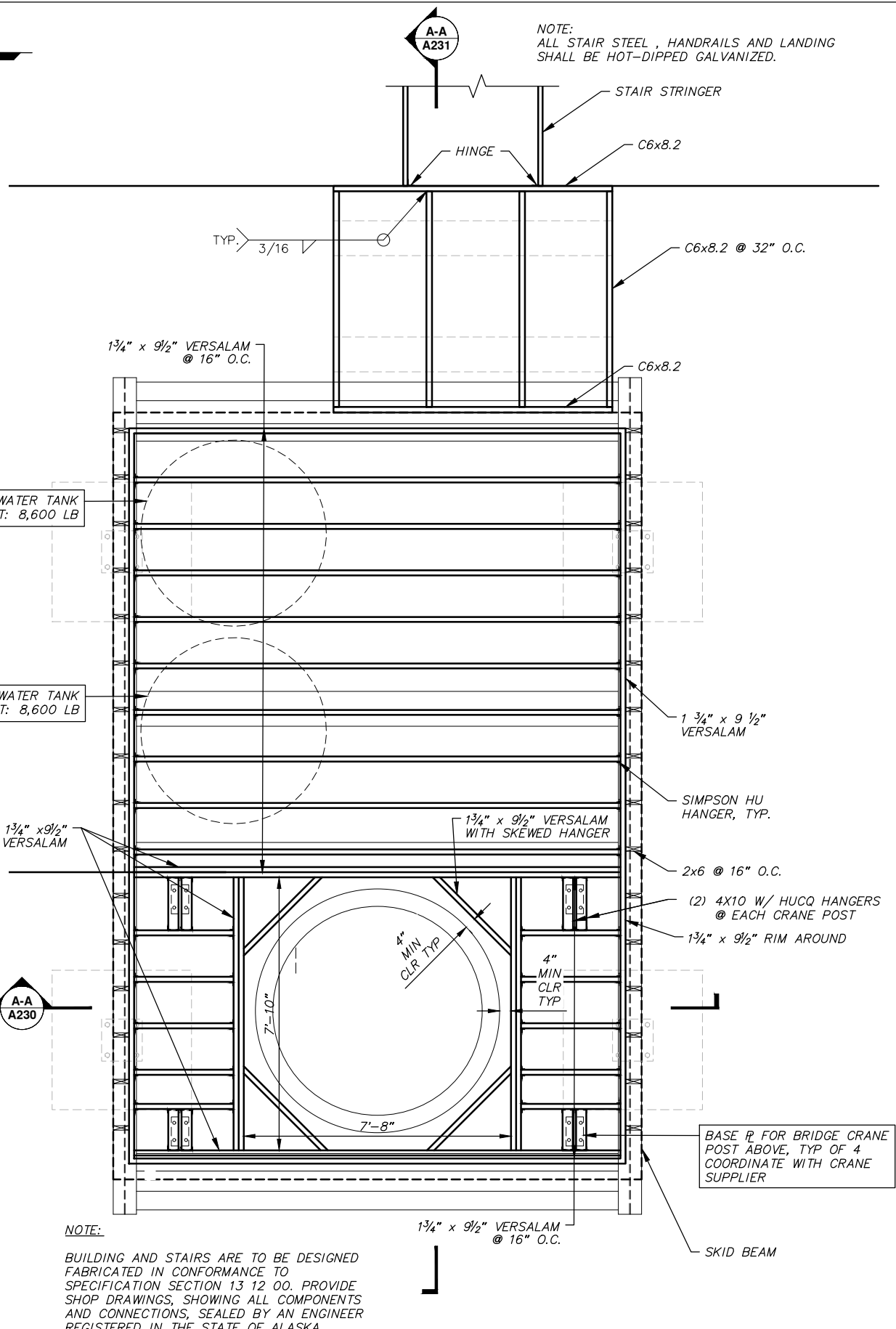
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NOTE:
ALL STEEL SKID COMPONENTS TO
BE COATED IN ACCORDANCE
WITH SPECIFICATIONS.



PUMP HOUSE FOUNDATION PLAN

0 1' 2' 4'



FLOOR FRAMING PLAN

0 1' 2' 4'

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Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

SEAL OF THE STATE OF ALASKA
DAVID G. THOMPSON
GOVERNOR
JANUARY 13, 2019
REGISTERED PROFESSIONAL ENGINEER
NO. 14228

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3940 ARCTIC BLVD., SUITE 300
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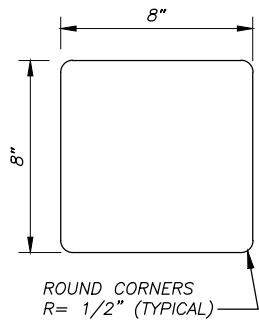
CITY OF EMMONAK
BUILDING FOUNDATION PLAN
RIVER INTAKE UPGRADES
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Plot Date 12/12/19
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Sheet No. **S201**

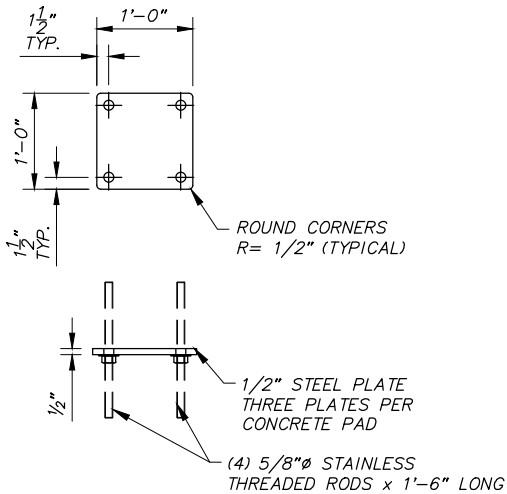
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SHIM FABRICATION TABLE		
THICKNESS	QUANTITY	MATERIAL
1/4"	12	ALUMINUM
1/2"	8	ALUMINUM
1"	4	ALUMINUM

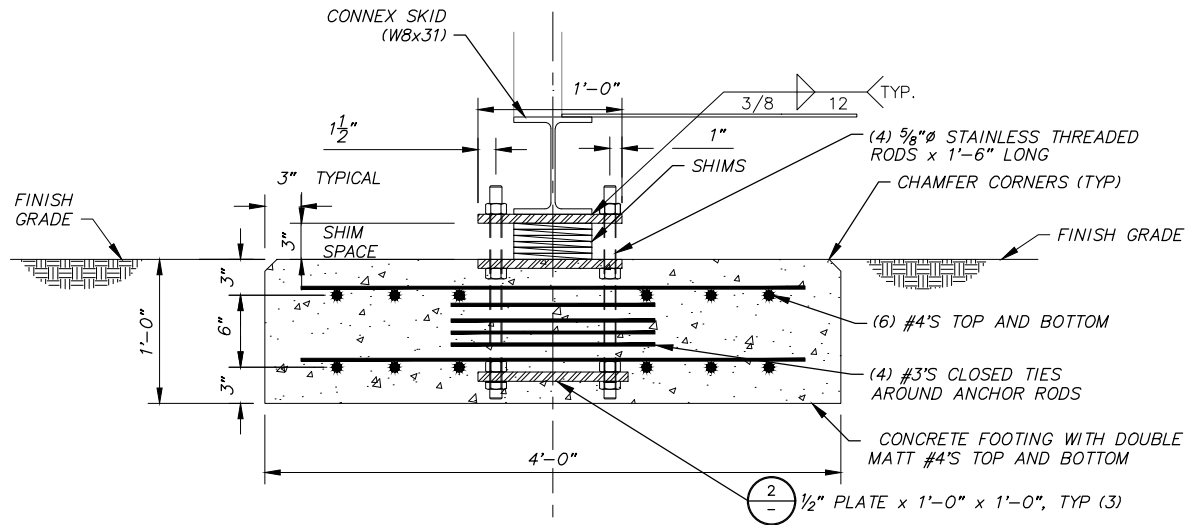
TYPICAL SHIM

SCALE: NTS



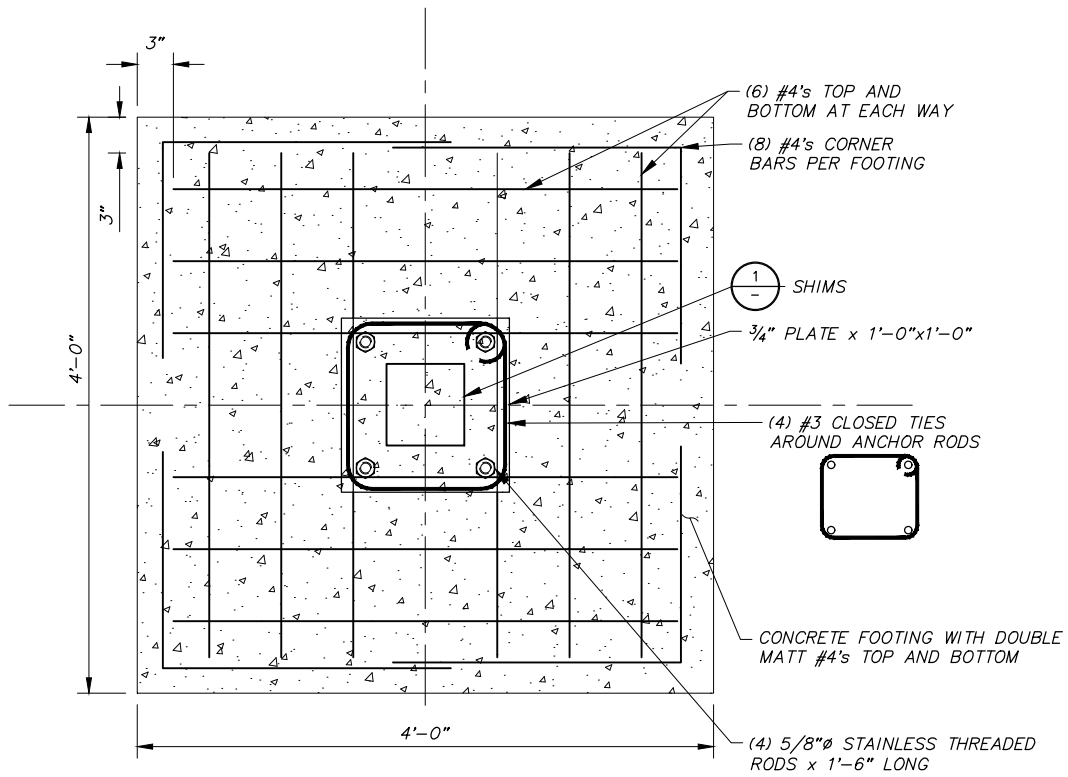
TYPICAL STEEL PLATE

SCALE: NTS



SECTION - FOOTING

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



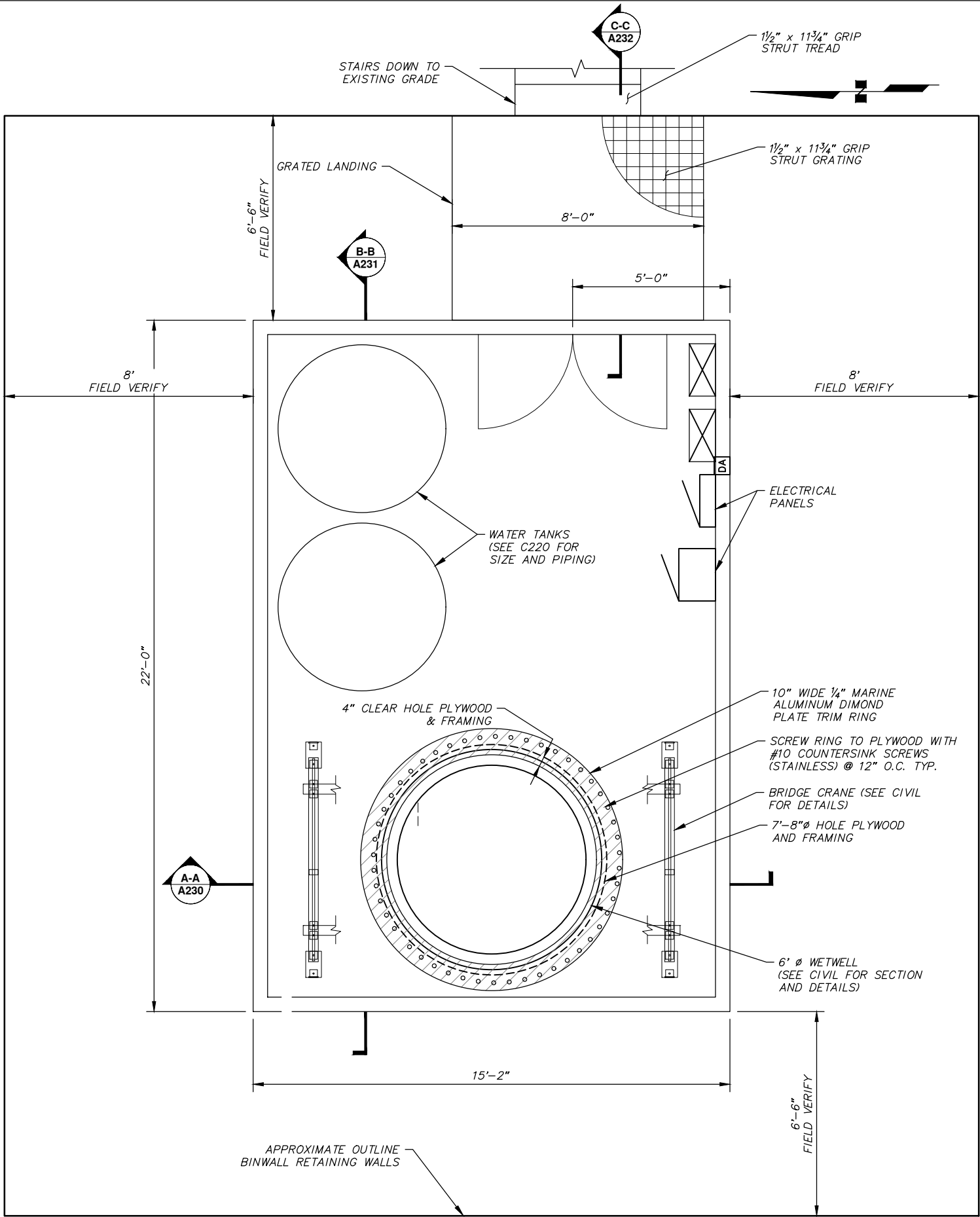
PLAN - FOOTING

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

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File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\07 Architectural\81904.00 Arch_Plan_Section.dwg



1 **PUMP HOUSE FLOOR PLAN** 0 1' 2' 4'

CODE ANALYSIS – 2012 EDITION INTERNATIONAL BUILDING CODE			
OCCUPANCY CLASSIFICATION			
GROUP U		REF: IBC–2012, SEC. 312	
TYPE OF CONSTRUCTION		REF: IBC–2012, TABLE 601	
EXIST. TYPE V–B (NON–RATED)		REF: IBC–2012, SEC. 602.5	
BUILDING HEIGHTS AND AREAS		REF: IBC–2012, TABLE 503	
ALLOWED 40'–0"		1 STORY 5,300 S.F.	PROVIDED: 12'–0" 1 STORY 330 S.F.
FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS		REF: IBC–2012, TABLE 601	
EXIST. STRUCTURAL FRAME	0 HR	BEARING WALLS	0 HR
NEW STRUCTURAL FRAME	0 HR	BEARING WALLS	0 HR
		INTERIOR PARTITIONS	0 HR
		FLOOR	0 HR
		ROOF	0 HR
		INTERIOR PARTITIONS	0 HR
		FLOOR	0 HR
		ROOF	0 HR
FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS		REF: IBC–2012, TABLE 602	
EXIST. EXTERIOR WALLS	X ≤ 30'	0 HR	
NEW EXTERIOR WALLS	X ≤ 30'	0 HR	

ARCHITECTURAL GENERAL NOTES:

- SEE CIVIL SITE PLAN FOR LOCATION AND LAYOUT. PROVIDE SEPARATION TO PROPERTY BOUNDARIES IN ACCORDANCE WITH CODE ANALYSIS.
- 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.
- PROVIDE SHOP DRAWING IN CONFORMANCE WITH SPECIFICATION SECTION 13 12 00.
- PROVIDE A COMPLETE AND OPERATIONAL FACILITY. ALL WORK TO BE IN ACCORDANCE WITH CURRENT APPROVED EDITIONS OF THE IBC, IMC, IFC, AND NEC INCLUDING STATE OF ALASKA AMENDMENTS.
- ALL EXPOSED SURFACES TO BE PAINTED OR FACTORY FINISHED. CAULK ALL JOINTS AND PROVIDE FLASHING AS NEEDED TO PROVIDE COMPLETE WEATHERPROOF INSTALLATION.
- DIMENSIONS TO FACE OF STUD OR STRUCTURAL MEMBER UNLESS INDICATED OTHERWISE.
- FRAME EXTERIOR WALLS WITH 6" DIMENSIONAL LUMBER WITH 5/8" T&G PLYWOOD UNLESS SPECIFICALLY INDICATED OTHERWISE.
- INSTALL DOOR AS INDICATED. SEE PLANS AND ELEVATIONS FOR LOCATIONS AND SEE SHEET A400 FOR DETAILS AND SPECIFICATIONS.
- INSTALL FIBER REINFORCED PLASTIC (F.R.P.) OVER ALL INTERIOR SURFACES.
- INSTALL ICE AND WATER SHIELD OVER ROOF SHEATHING AND INSTALL NEW METAL ROOFING OVER ENTIRE ROOF.
- INSTALL METAL SIDING OVER ALL EXTERIOR WALL SURFACES.

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555 Cordova Street 4th Floor
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STATE OF ALASKA
DIVISION OF WATER
No. 7034
49 TH
REGISTERED PROFESSIONAL

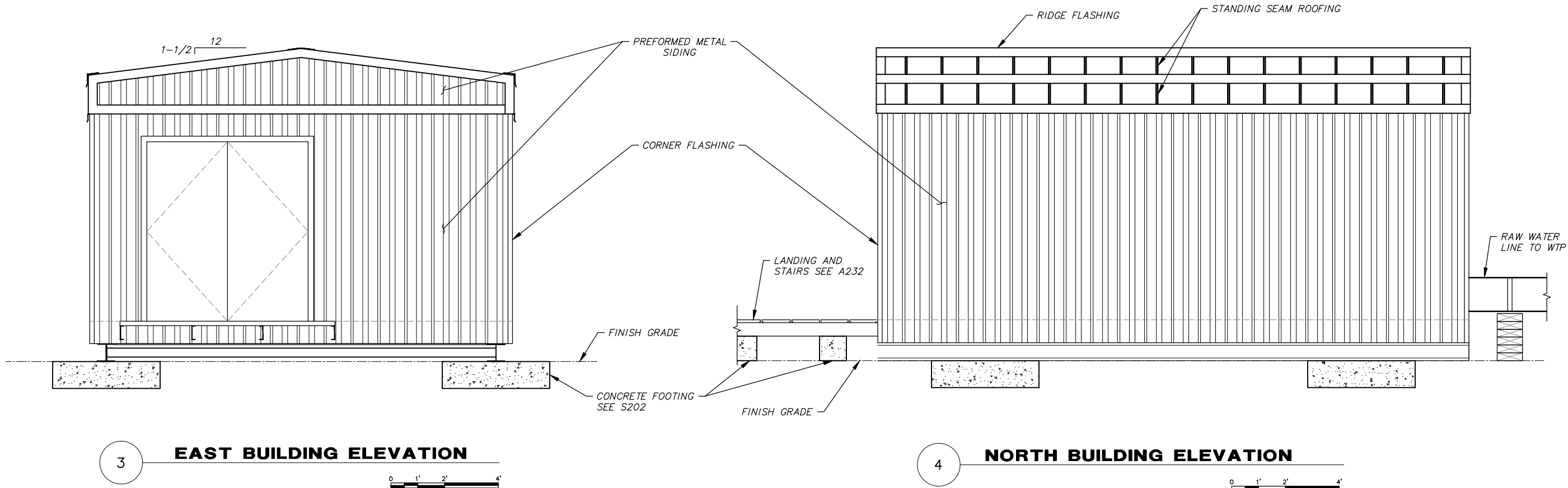
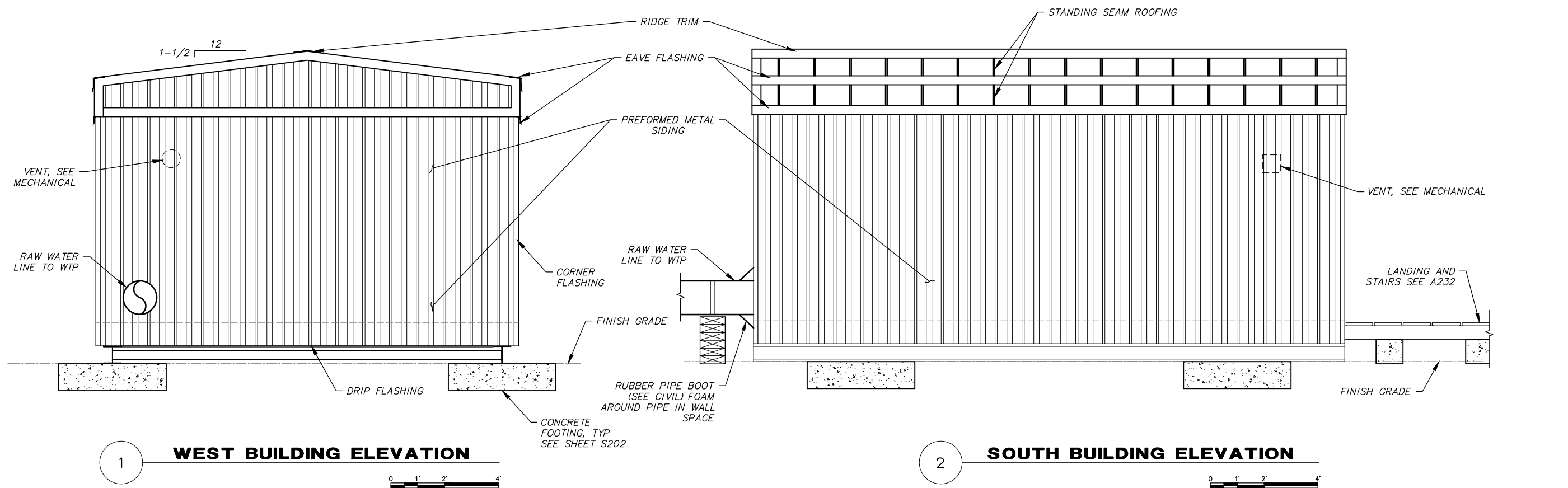
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#AEC0882-AK

CITY OF EMMONAK
FLOOR PLAN AND CODE
ANALYSIS
RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date 12/12/19	DT
Designed	DT
Drawn	KEG
Approved	JVS

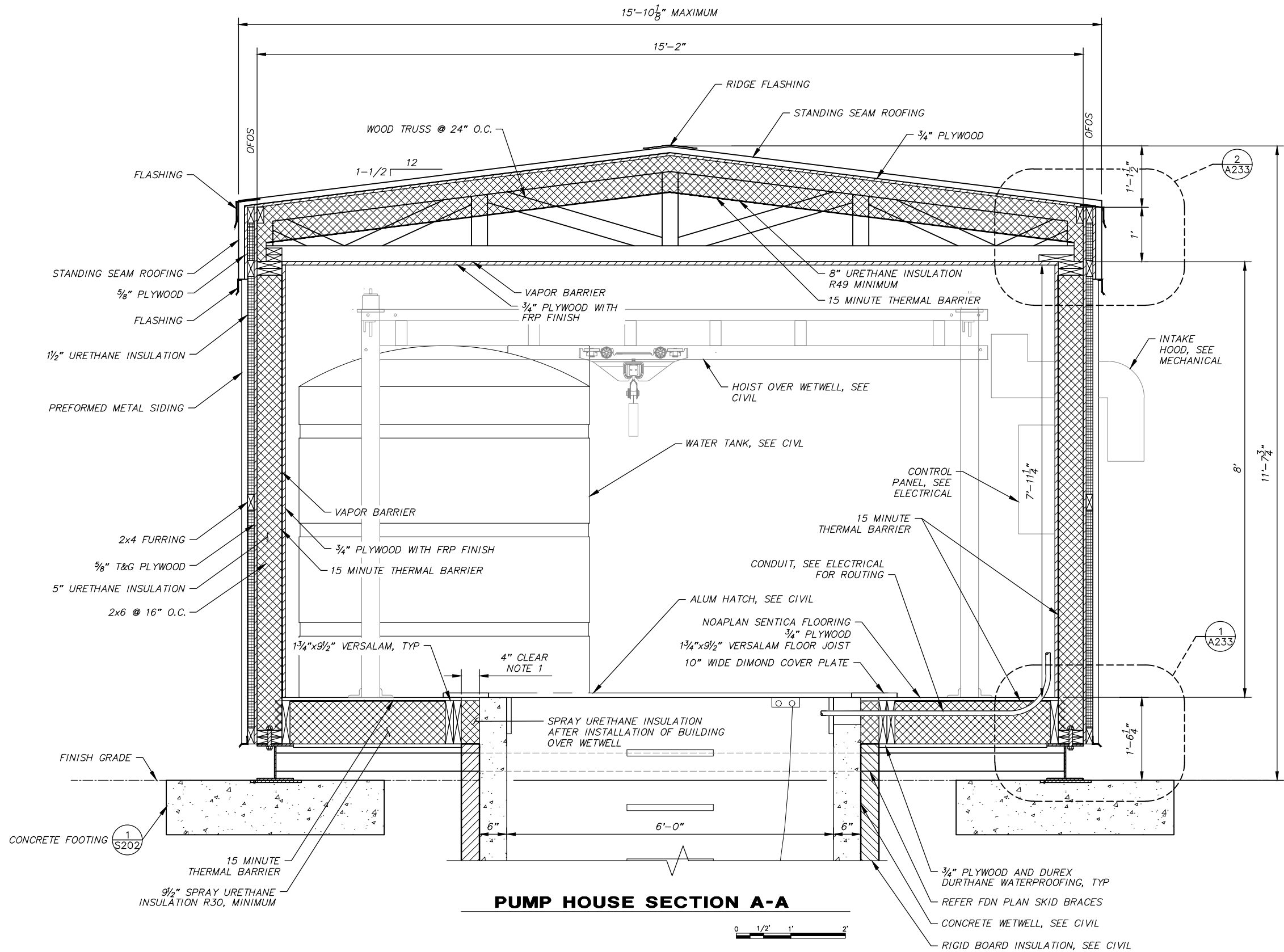
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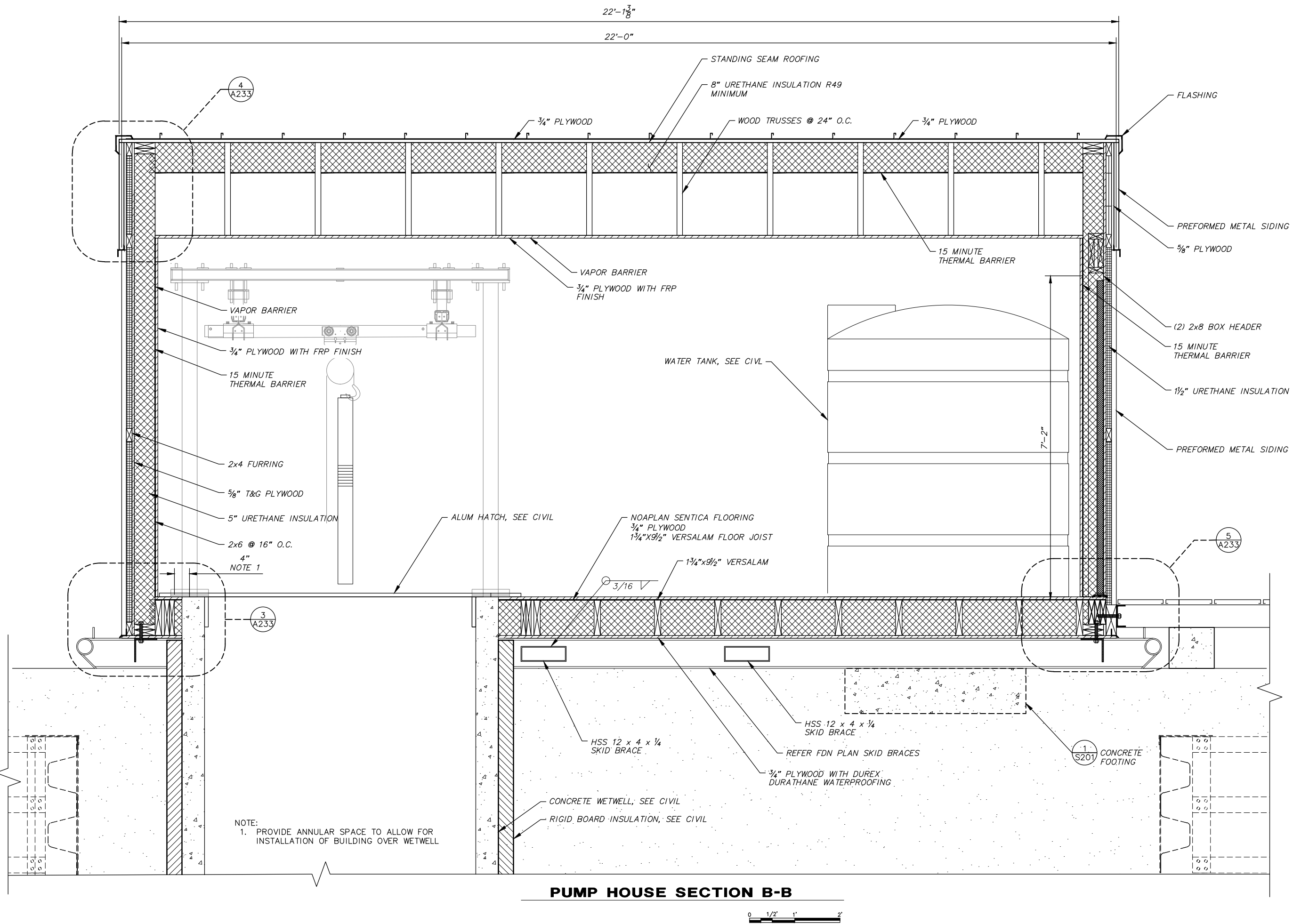


NOTE:
1. PROVIDE ANNULAR SPACE TO ALLOW FOR
INSTALLATION OF BUILDING OVER WETWELL

NO.	REVISION	BY	DATE

Plot Date	12/12/19
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Approved	JVS

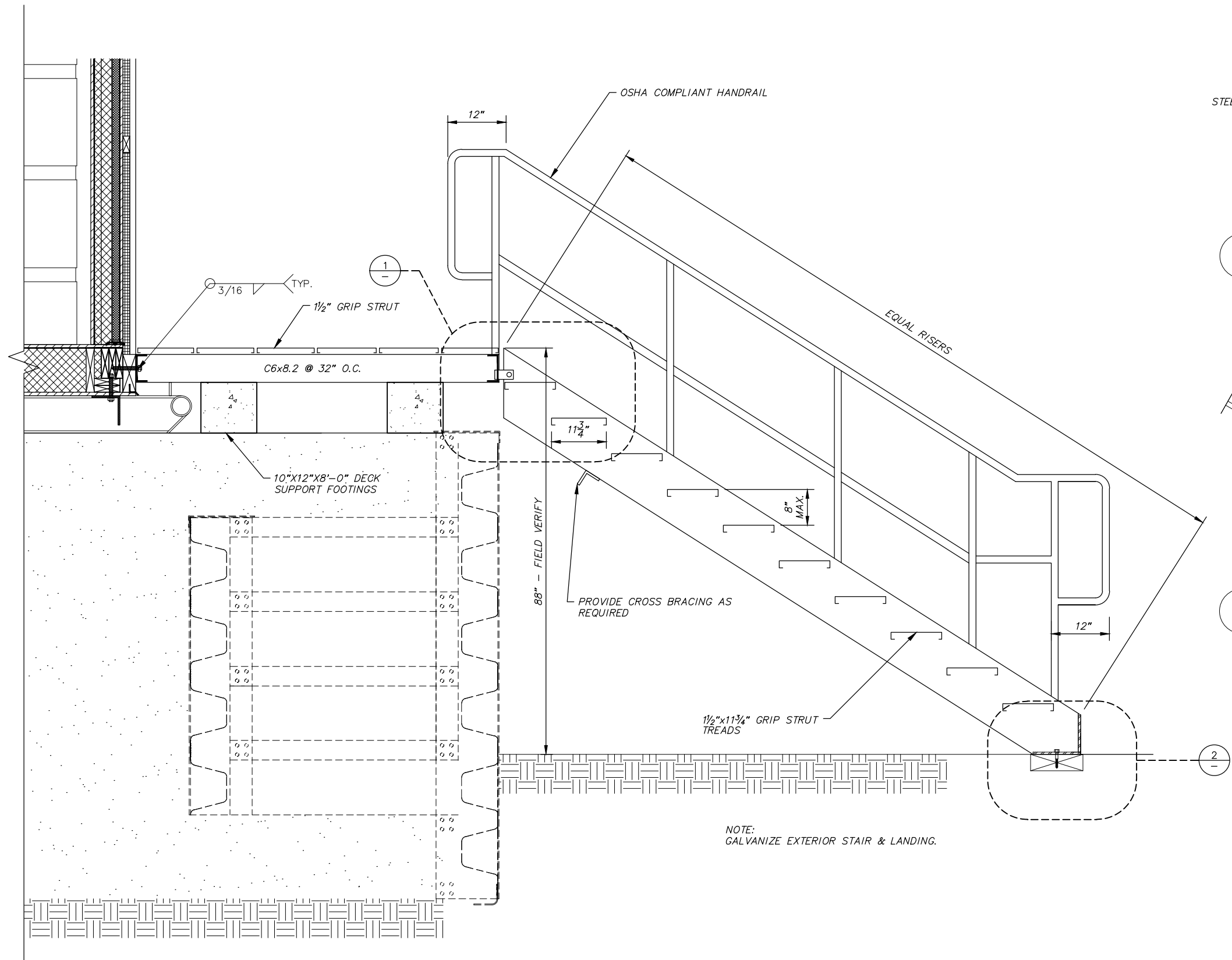
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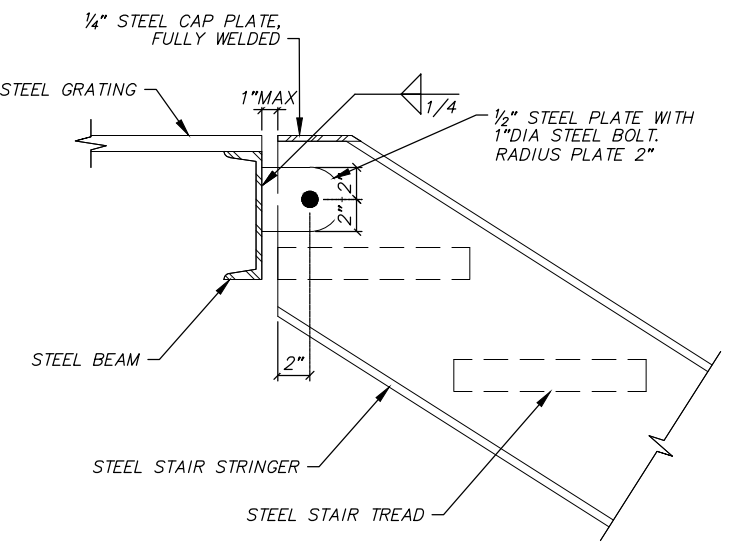
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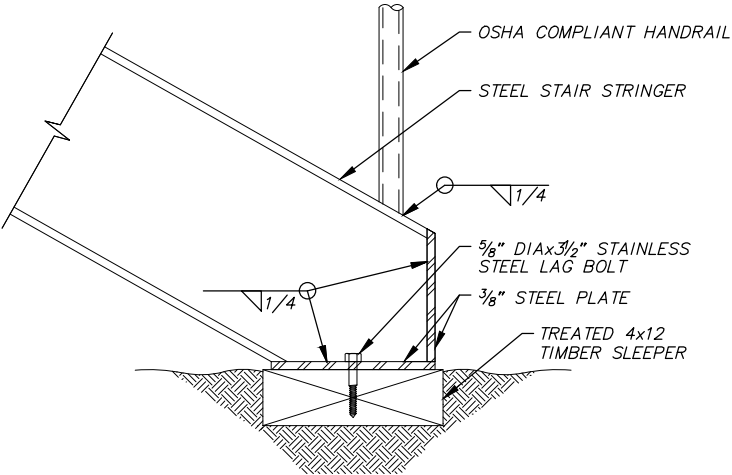


PUMP HOUSE SECTION C-C



STEEL STRINGER AT STEEL BEAM

1



STEEL STRINGER AT WOOD SLEEPER

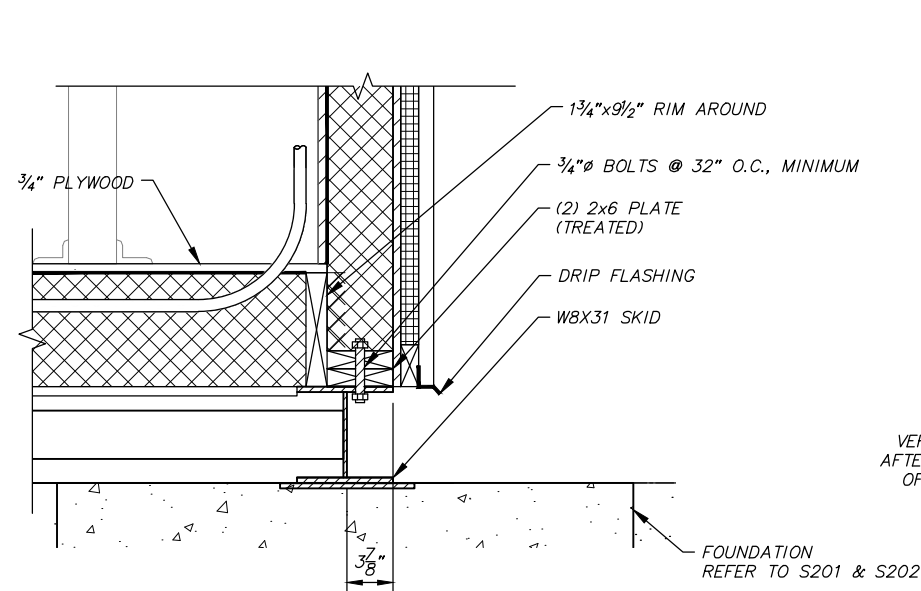
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NO.	REVISION	BY	DATE

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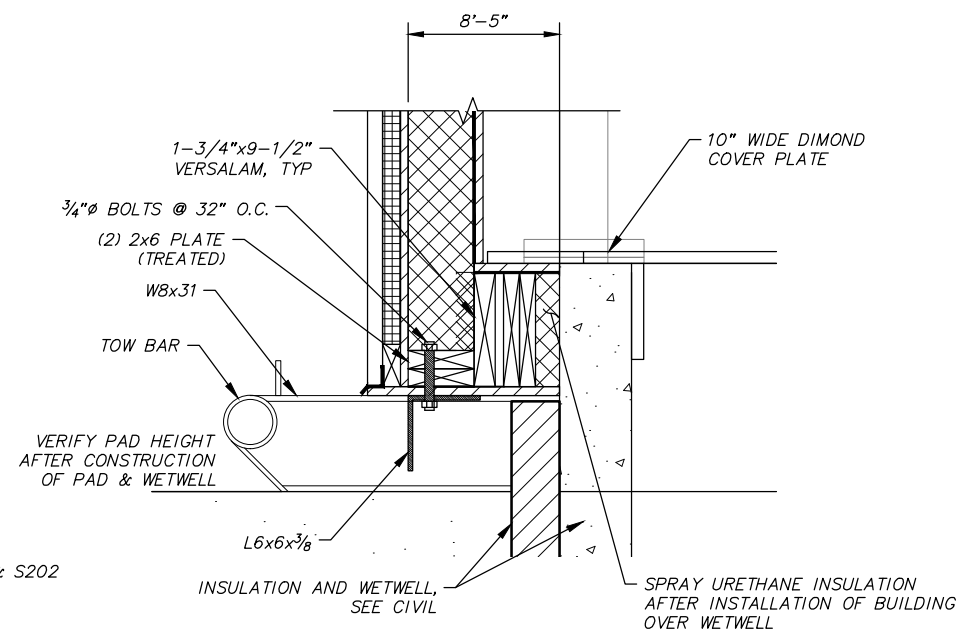
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Plot	12/12/19
Date	
Designed	DT
Drawn	KEG
Approved	JVS



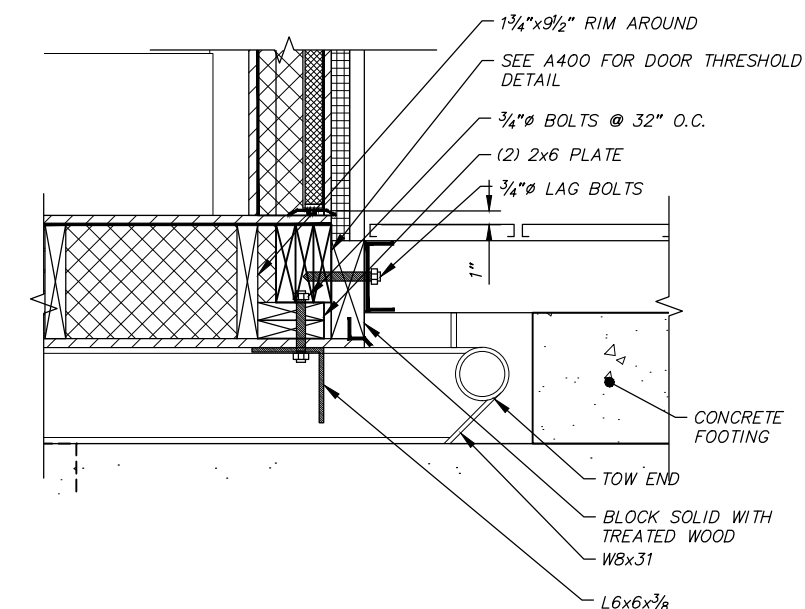
ENLARGED DETAIL

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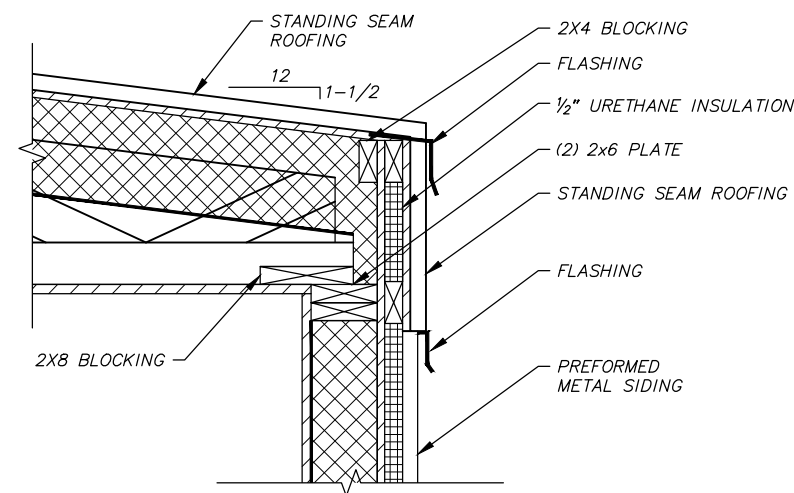
3 **ENLARGED DETAIL**

0 1/2' 1' 1 1/2'



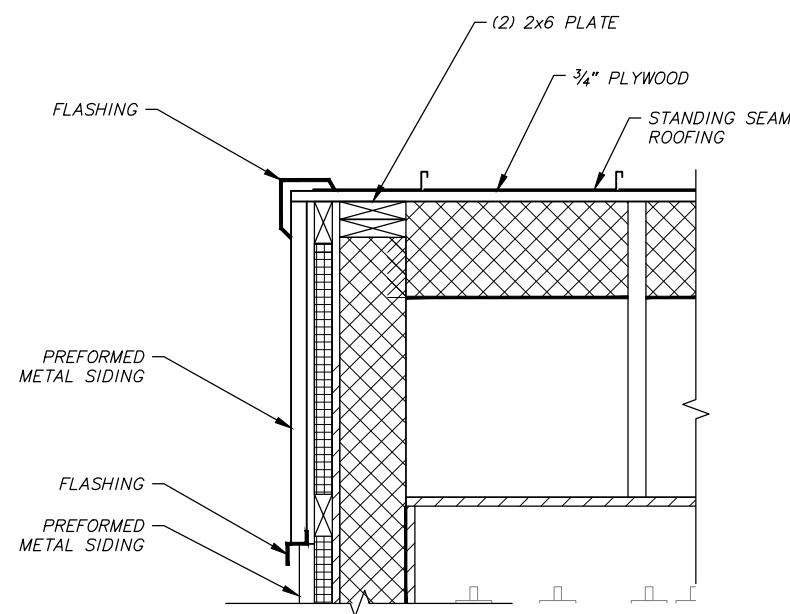
5 **ENLARGED DETAIL**

0 1/2' 1' 1 1/2'



2 **ENLARGED DETAIL**

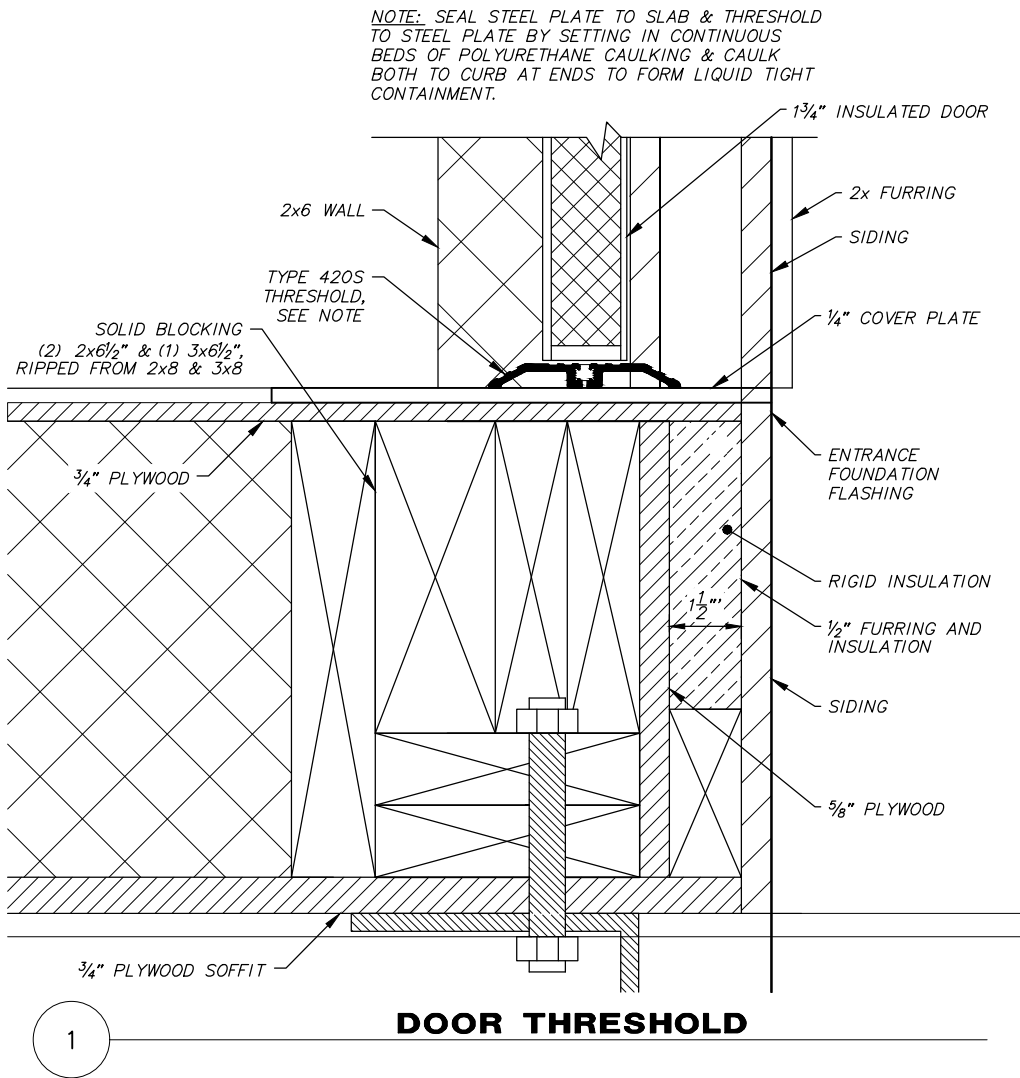
0 1/2' 1' 1 1/2'



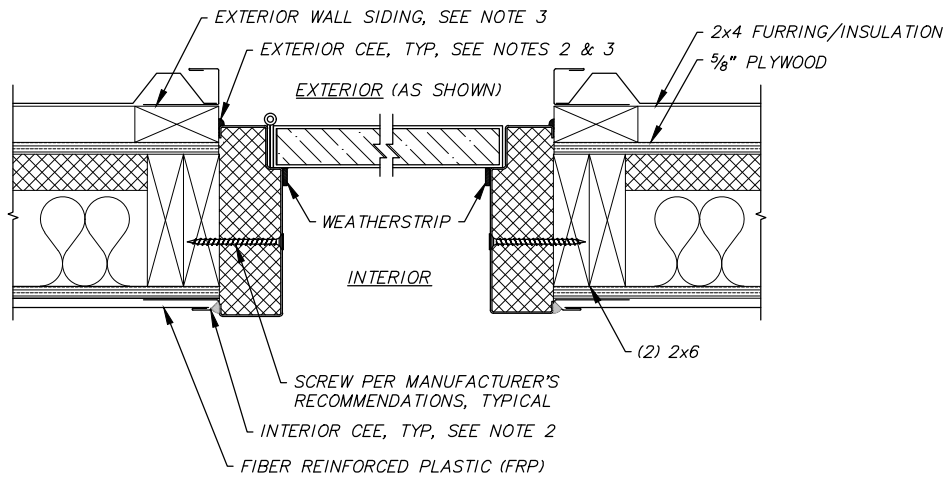
ENLARGED DETAIL

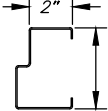
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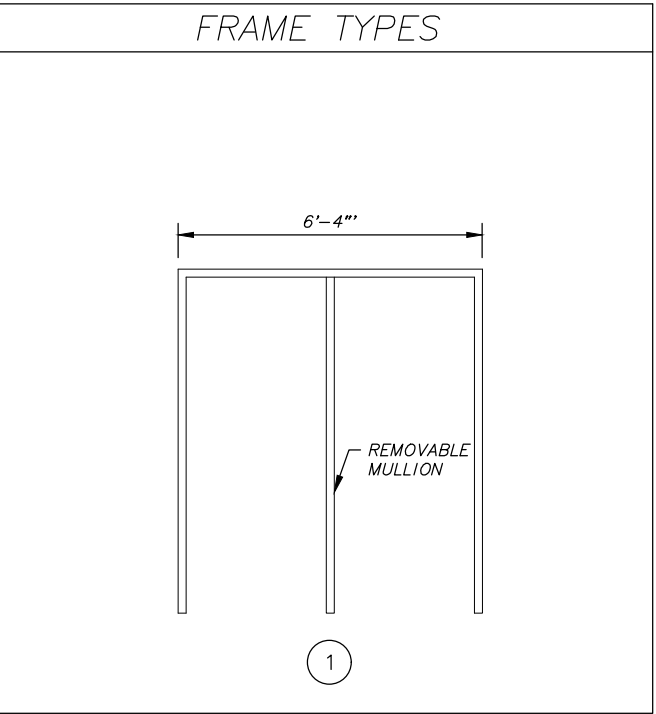
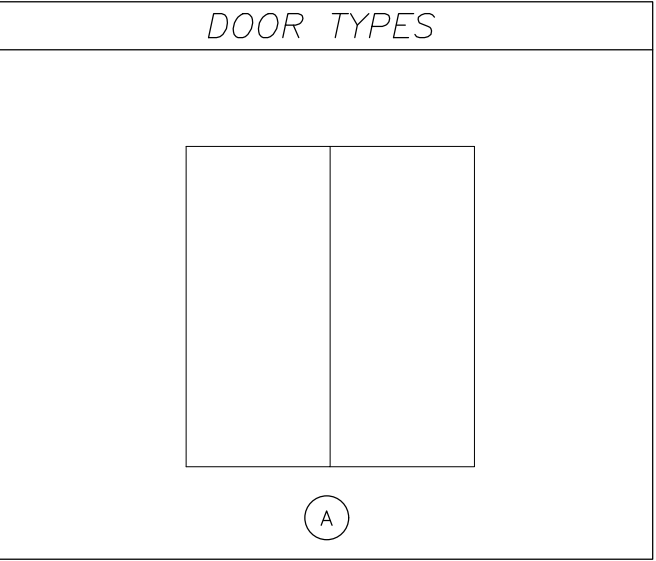
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NOTES:
1) DOOR JAMB SHOWN, HEAD SIMILAR.
2) CAULK CEE METAL TO FRAME ALL AROUND, COLOR TO MATCH DOOR FRAME.



DOOR CONSTRUCTION							FRAME CONSTRUCTION						
DOOR NO.	WIDTH	HEIGHT	THICK NESS	MATERIAL	CORE	REMARKS	WALL THICK.	MATERIAL	TYPE	PROFILE	PREP.	FIRE RATING	HDWR. GROUP
(1)	6'-0"	7'-0"	1-3/4"	16 GA. H.M.	POLYURETHANE	WITH REMOVABLE MULLION	N/A	16 GA. H.M.	WELDED	SINGLE RABBETED DIMPLE & PUNCH	NONE	NONE	HW-1
DOOR HARDWARE:											DOOR FRAME PROFILE:		
<u>NOTES:</u> {1} DOOR AND HOLLOW METAL FRAME GALVANIZED AND FACTORY PRIMED. ALL FRAMES WELDED CONSTRUCTION, DIMPLED AND PUNCHED. {2} DOOR TO HAVE SOLID POLYURETHANE INSULATION CORE WITH TOPS INVERTED AND CAULKED WATER TIGHT. {3} FINISH ALL DOOR AND HOLLOW METAL FRAMES WITH TWO COATS OF SHERWIN WILLIAMS MACROPOXY 646, OR APPROVED EQUAL, COLOR SELECTED BY OWNER.						<u>HW-1 DOUBLE DOOR</u> 6 EA HINGES HAGER BB1191 4.5 x 4.5NRP x 630 2 EA EXIT LOC SCHLAGE ND25D 2 EA OVERHEAD STOP ROCKWOOD OH1004M x US32D 2 EA WEATHER STRIP PEMKO 2891AS x 36 (HEAD) 4 EA WEATHER STRIP PEMKO 290AS x 84 (SIDE JAMBS) 2 EA THRESHOLD HAGER 420S x 36					 REFER HEAD AND JAMB DETAILS		
											<u>NOTE:</u> DIMENSIONS ARE OVERALL FRAME SIZE.		



Alaska Department of
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David G. Thompson
No. 7034
COMMISSION EXPIRES 12/31/2024
REGISTERED PROFESSIONAL ENGINEER

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PHONE: (907) 562-3252
#AEC682-AK

CITY OF EMMONAK

DOOR SCHEDULE AND DETAILS

RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION

NO.	REVISION	BY	DATE

Plot Date 12/12/19

Designed DT

Drawn KEG

Approved JVS

Sheet No. A400

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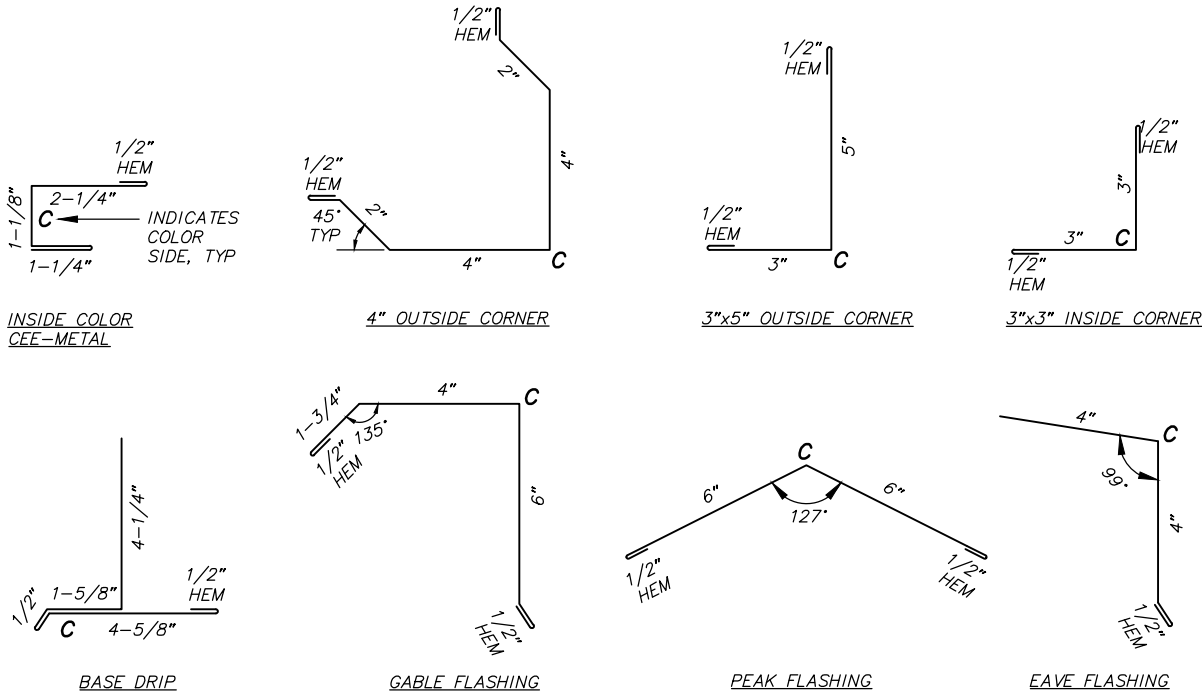
ROOFING/SIDING SYSTEM NOTES:

1. ALL ROOFING, SIDING, SOFFIT, TRIM, AND FLASHING SHALL BE MIN 24 GAUGE GALVANIZED STEEL WITH KYNAR FINISH. ALL FASTENERS SHALL BE CORROSION RESISTANT STAINLESS STEEL SCREWS AND ALUMINUM RIVETS.

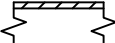
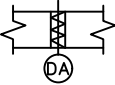
2. ROOFING SHALL BE STANDING SEAM TYPE, 24 GAUGE, 16" NET COVERAGE, 2" HIGH RIBS AT 16" O.C. SPAN-LOK OR EQUAL. FURNISH CLIPS AND FASTENERS AS REQUIRED TO MEET LOAD CONDITIONS INDICATED ON SHEET S200.

3. SIDING SHALL BE LOW PROFILE, 24 GAUGE, 36" NET COVERAGE, 1-1/4" HIGH MAJOR RIBS AND 1/4 HIGH MINOR RIBS AT 12" O.C. AEP SPAN SUPER-SPAN OR EQUAL. FURNISH FASTENERS AS REQUIRED TO MEET LOAD CONDITIONS INDICATED ON SHEET S200.

ROOFING SYSTEM TRIM & FLASHING: TAKEN FROM INSTALLATION MANUAL AND SHOWN TO IDENTIFY CONFIGURATION ONLY, INSTALL PER MANUFACTURERS RECOMMENDATIONS.



File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\06 Mechanical\M001 LEGENDS AND ABBREVIATIONS.dwg

PIPING LEGEND	PIPING SYMBOL LEGEND	HVAC/DUCTWORK LEGEND	LOGIC LEGEND
----- VENT	 PIPE DOWN  PIPE UP	 INSULATED DUCTWORK  MOTORIZED CONTROL DAMPER  SUPPLY AIR UP  SUPPLY AIR DOWN  ROUND DUCT DOWN	 SHEET NOTES  THERMOSTAT

ABBREVIATIONS									
ABS	ACRYLONITRILE BUTADIENE STYRENE	DIA/Ø	DIAMETER	EUH-X	ELECTRIC UNIT HEATER DESIGNATOR	NTS	NOT TO SCALE	TSP	TOTAL STATIC PRESSURE
AD	ACCESS DOOR	DN	DOWN	F	FAHRENHEIT	O/A	OUTSIDE AIR	TYP	TYPICAL
AFF	ABOVE FINISHED FLOOR	DWV	DOMESTIC WASTE VENT	HP	HORSEPOWER	PH	PHASE	V	VENT
AMP	AMPERES	E/A	EXHAUST AIR	IN	INCHES	RPM	REVOLUTIONS PER MINUTE	VTR	VENT THRU ROOF
CFM	CUBIC FEET PER MINUTE	EF-X	EXHAUST FAN DESIGNATOR	KW	KILOWATTS	SCH	SCHEDULE	WC	WATER COLUMN
DA-X	DAMPER ACTUATOR DESIGNATOR	EPDM	ETHYLENE PROPYLENE DIENE TERPOLYMER	MIN	MINIMUM	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION		

FAN SCHEDULE										
SYMBOL	MANUFACTURER	MODEL	SERVICE	CAPACITY (CFM)	FAN TYPE	DRIVE	TSP (IN WC)	MOTOR HP	MOTOR DATA (VOLTS/PH)	REMARKS
EF-1	GREENHECK	SQ-90-E	PUMP HOUSE EXHAUST	250	CENTRIFUGAL	DIRECT	0.20	1/50	115/1	PROVIDE WITH FACTORY DISCONNECT SWITCH, FAN SPEED CONTROLLER, BACKDRAFT DAMPER AND PERFORMANCE BAFFLE. FOR TIMER SEE ELECTRICAL.

ELECTRIC UNIT HEATER SCHEDULE									
SYMBOL	MANUFACTURER	MODEL	CAPACITY (KW)	AIR FLOW (CFM)	RPM	HP	POWER DATA (VOLTS/PH)	REMARKS	
EUH-1	CHROMALOX	LUH-04-43	4	380	1550	1/35	480/3	PROVIDE CEILING MOUNTED ELECTRIC UNIT HEATER WITH INTERNAL TRANSFORMER, INTERNAL THERMOSTAT, BUILT-IN THERMAL OVERLOAD PROTECTION, FACTORY PROVIDED DISCONNECT SWITCH, AND CONTACTOR. CAUTION: BOTTOM OF UNIT TO BE INSTALLED 6'-1"AFF, POTENTIAL HAZARD.	

CONTROL SCHEDULE					
SYMBOL	MANUFACTURER	MODEL	TYPE	POWER SUPPLY (VOLTS)	REMARKS
DA-1	BELIMO	LF-SERIES	DIRECT COUPLED	120	NEMA 2 ENCLOSURE, FAIL OPEN. PROVIDE WITH RUSKIN MODEL CDTI-50. MOTOR OPERATED DAMPER, ALUMINUM FRAME. BLADE MODEL CDTI-50.

Alaska Department of
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Division of Water



Village Safe Water Program
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CITY OF EMMONAK

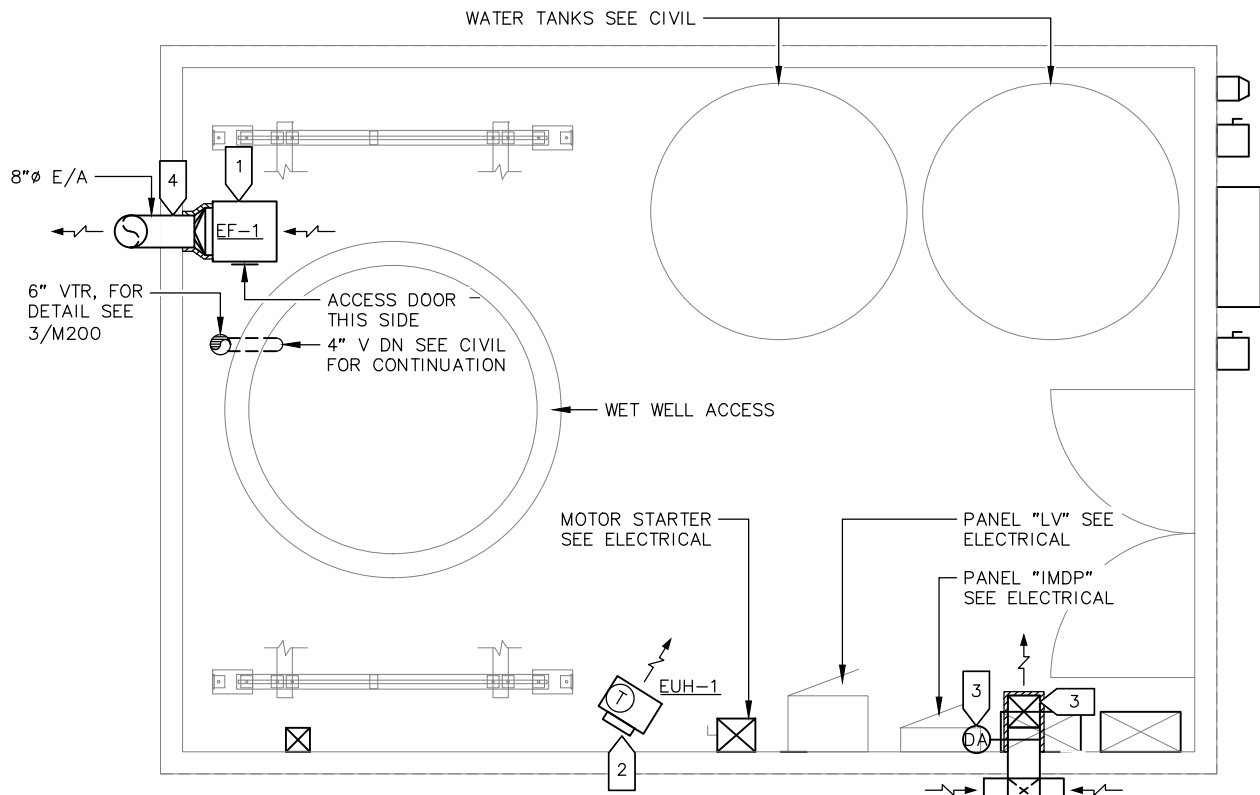
MECHANICAL LEGENDS AND
ABBREVIATIONS

RIVER INTAKE UPGRADES
ISSUED FOR
CONSTRUCTION

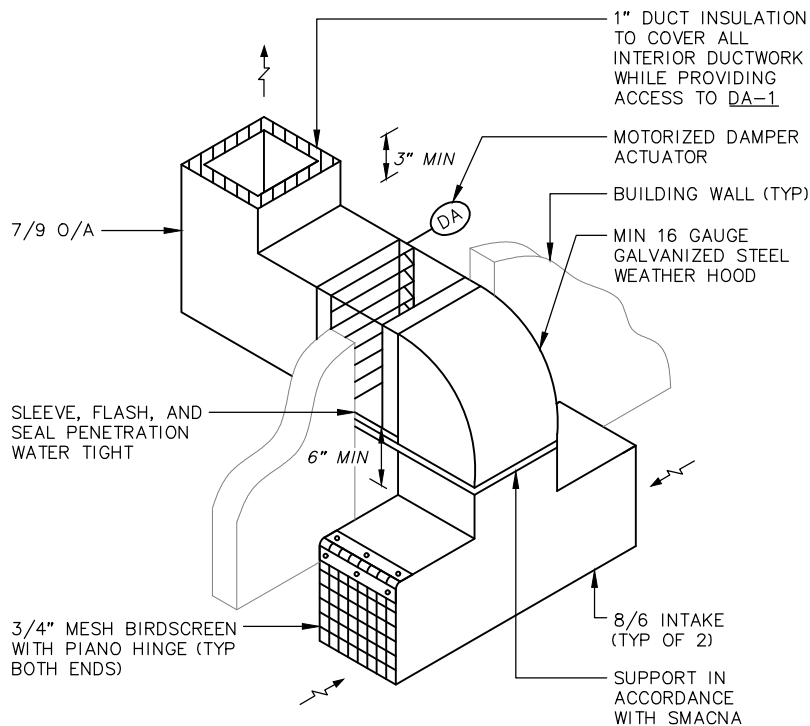
NO.	REVISION	BY	DATE

Plot Date	12/16/19
Designed	TLM
Drawn	ADD
Approved	TLM

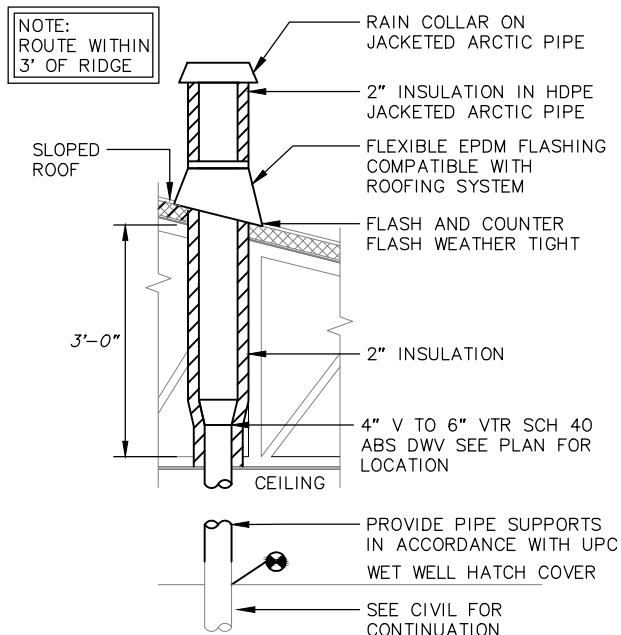
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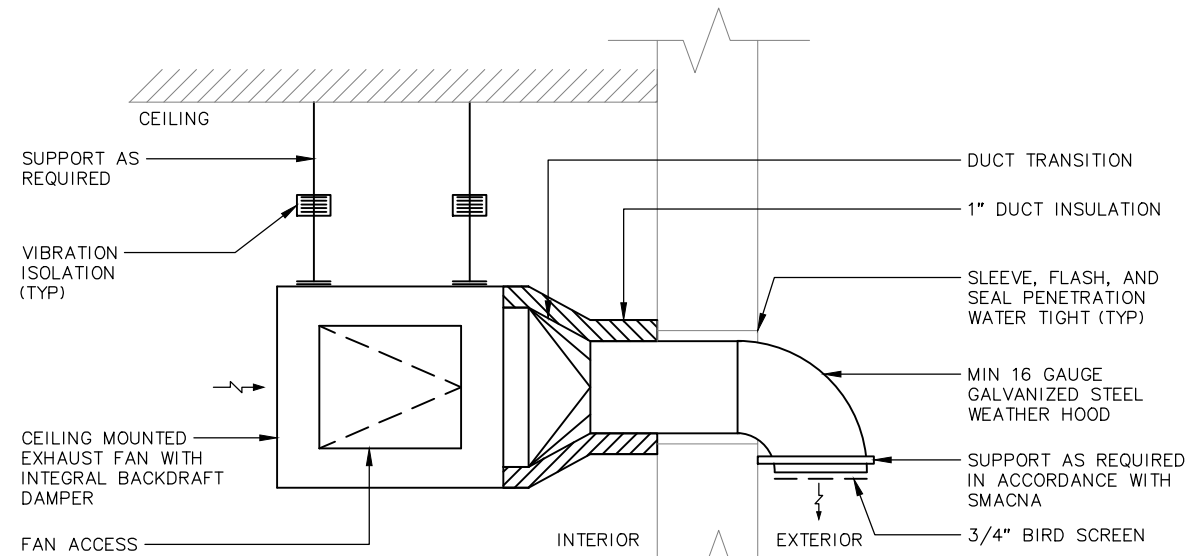
1 **MECHANICAL PLAN - HVAC**
SCALE: 1/2" = 1'-0"



2 **INTAKE HOOD DETAIL**
SCALE: NTS



3 **VENT THROUGH ROOF DETAIL**
SCALE: NTS



4 **EXHAUST FAN DETAIL**
SCALE: NTS

SHEET NOTES:

- 1 INSTALL NEW EXHAUST FAN, EF-1, ASSOCIATED DUCTWORK, AND APPURTENANCES. EXHAUST FAN TO BE CEILING MOUNTED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COORDINATE FINAL LOCATION TO AVOID CONFLICTS WITH CRANE. FOR DETAIL SEE 4/M200.
- 2 INSTALL AND SUPPORT NEW ELECTRIC UNIT HEATER, EUH-1, AND ASSOCIATED APPURTENANCES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. SEE ELECTRICAL FOR SPECIFIED TIMER AND WIRING. CAUTION: BOTTOM OF UNIT TO BE INSTALLED 6'-1" AFF, POTENTIAL HAZARD.
- 3 INSTALL ARCTIC INTAKE HOOD. MOTORIZED DAMPER ACTUATOR, DA-1, TO INTERLOCK WITH EXHAUST FAN EF-1. FOR DETAILS SEE 2/M200. TOP OF AIR INTAKE HOOD TO HAVE 6" MINIMUM CLEARANCE FROM CEILING. SUPPORT DUCT IN ACCORDANCE WITH SMACNA STANDARDS.
- 4 8"Ø GALVANIZED DUCT TO BE SUPPORTED IN ACCORDANCE WITH SMACNA STANDARDS.

SEQUENCE OF OPERATIONS:

1. EF-1: EXHAUST FAN TO SWITCH AT LOCAL PANEL ON WALL. WHEN EF-1 IS ENABLED DAMPER ACTUATOR, DA-1, TO OPEN. WHEN EF-1 IS DISABLED DA-1 TO CLOSE. EXHAUST FAN TO CYCLE ON ONCE A DAY FOR 20 MINUTES.
2. EUH-1 WILL CYCLE ON WHEN THERE IS A CALL FOR HEAT FROM INTERNAL THERMOSTAT. WHEN INTERNAL THERMOSTAT IS SATISFIED, THE FAN SHALL CONTINUE TO OPERATE UNTIL ALL HEATED AIR HAS BEEN DISCHARGED INTO THE SPACE. INITIAL SET POINT 50 DEGREES F (ADJUSTABLE).

NO.	REVISION	BY	DATE

Plot Date 12/16/19	Designed TLM	Drawn ADD	Approved TLM
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LEGEND

	ANALOG SIGNAL(S)
	BUS
	EXPOSED CONDUIT, GRC UNLESS OTHERWISE SHOWN
	CONDUIT RUN UNDERGROUND OR IN CONCRETE
	DIGITAL SIGNAL(S)
	HEAT TRACE
	HOMERUN TO PANEL "X", CIRCUITS NO. Y AND Z CONDUIT RUNS NOT DEFINED ARE 1/2" C with 3#12.
	GROUND
	CONDUIT RUN - CHANGE IN ELEVATION
	GROUND ROD
	LIQUID-TIGHT FLEXIBLE CONDUIT
	MOTOR, 3 PHASE
	MOTOR, FRACTIONAL HP, SINGLE PHASE
	JUNCTION BOX OR FITTING
	THERMOSTAT
	SHEET NOTE "X"
	DISCONNECT SWITCH
	PANELBOARD
	MANUAL MOTOR STARTER. PROVIDE OVERLOADS AS REQUIRED
	COMBINATION MAGNETIC MOTOR STARTER
	SINGLE POLE SWITCH.
	THREE WAY SWITCH
	FOUR WAY SWITCH
	120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5 - 20R.
	120V DUPLEX GROUND FAULT INTERRUPT RECEPTACLE, NEMA CONFIGURATION 5 - 20R.
	120V QUADUPLEX RECEPTACLE, NEMA CONFIGURATION 5 - 20R GFI.
	LOCAL CONTROL PANEL
	KILOWATT-HOUR METER
	MOLDED CASE CIRCUIT BREAKER, X = AMPERE RATING, Y = NO. OF POLES THERMAL/MAGNETIC UON
	TRANSFORMER, DETAILS AS NOTED WITH GROUNDED SECONDARY
	CENTRIFUGAL PUMP
	CHEMICAL INJECTION PUMP
	HEAT TAPE POWER POINT
	HEAT TAPE END KIT
	VARIABLE FREQUENCY DRIVE

	MOTOR OVERLOAD
	FUSE, RATING AND QUANTITY AS SHOWN
	MCC
	3-WAY VALVE
	LADDER LOGIC RUNG
	TEMPERATURE SWITCH
	FLOW SWITCH/METER
	ALARM HORN (PROCESS)
	CURRENT TRANSFORMER / CURRENT SWITCH
	VOLTMETER
	GENERATOR
	TRANSFORMER
	DAMPER MOTOR

	RELAY COIL
	INSTRUMENT DEVICE LOCATION (SEE TAG)
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	PILOT LIGHT R=RED, B=BLUE, A=AMBER, G=GREEN
	FIELD MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
	LCP (BACK PANEL) MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
	PANEL (FRONT DOOR) MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
	PANEL (BACK OF DOOR) MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
	LOCAL CONTROL PANEL (LCP) YYY = PANEL NAME XXX = CONTROL SHEET NUMBER
	PANEL (FRONT) MOUNTED LIGHT XX = FUNCTION; YY = TAG NO.

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AVEC	ALASKA VILLAGE ELECTRICAL COOPERATIVE
BCP	BOILER CONTROL PANEL
BCU	BARE COPPER
bcu	BARE COPPER
C	CONDUCTOR
C	CONDUIT
CIRC	CIRCULATION
CP	CONTROL PANEL
CP	CIRCULATION PUMP
CT	CURRENT TRANSFORMER
DHW	DOMESTIC HOT WATER
DWG	DRAWING
ELCP	EAST LOOP CIRCULATION PUMP CONTROL PANEL
EF	EXHAUST FAN
FE	FIRE EXTINGUISHER (SEE ARCH)
FM	FORCE MAIN
G	GROUND CONDUCTOR
GFI	GROUND FAULT INTERRUPTING
H	HOT CONDUCTOR
HB	HIGH BOOST PUMP
HE	HEAT EXCHANGER
HOA	HAND OFF AUTO
HP	HORSEPOWER
KVA	KILO-VOLT-AMPERES
KW	KILOWATT
LCP	LOCAL CONTROL PANEL
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILLS
MCP	MAGNETIC (ONLY) CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MV	MOTORIZED VALVE
N	NEUTRAL CONDUCTOR
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
P	POLE
pF	POWER FACTOR
PP	PRESSURE PUMP
PPCP	PRESSURE PUMP CONTROL PANEL
RCP	RECEPTACLE
RM	ROOM
RMC	RIGID METAL CONDUIT (GALVANIZED)
TLCP	TANK LOOP CONTROL PANEL
TWSH	TWISTED/SHIELDED
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
WLCP	WEST LOOP CIRCULATION PUMP CONTROL PANEL
WTP	WATER TREATMENT PLANT
XFMR	TRANSFORMER

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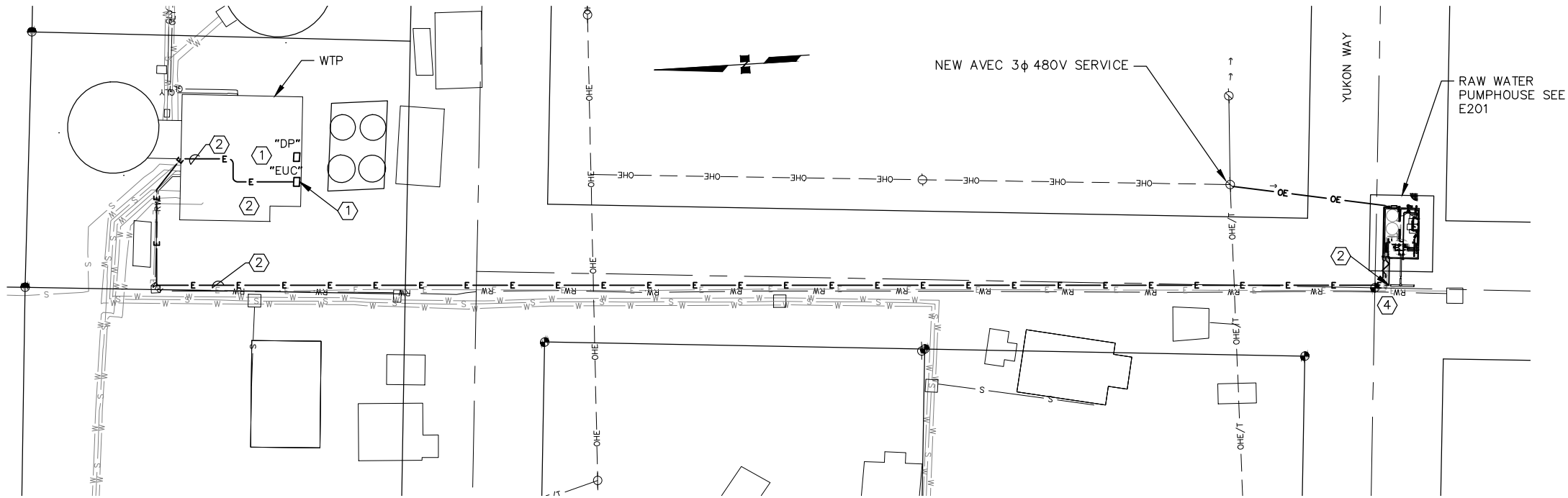
LEGEND AND ABBREVIATIONS

RIVER INTAKE UPGRADES
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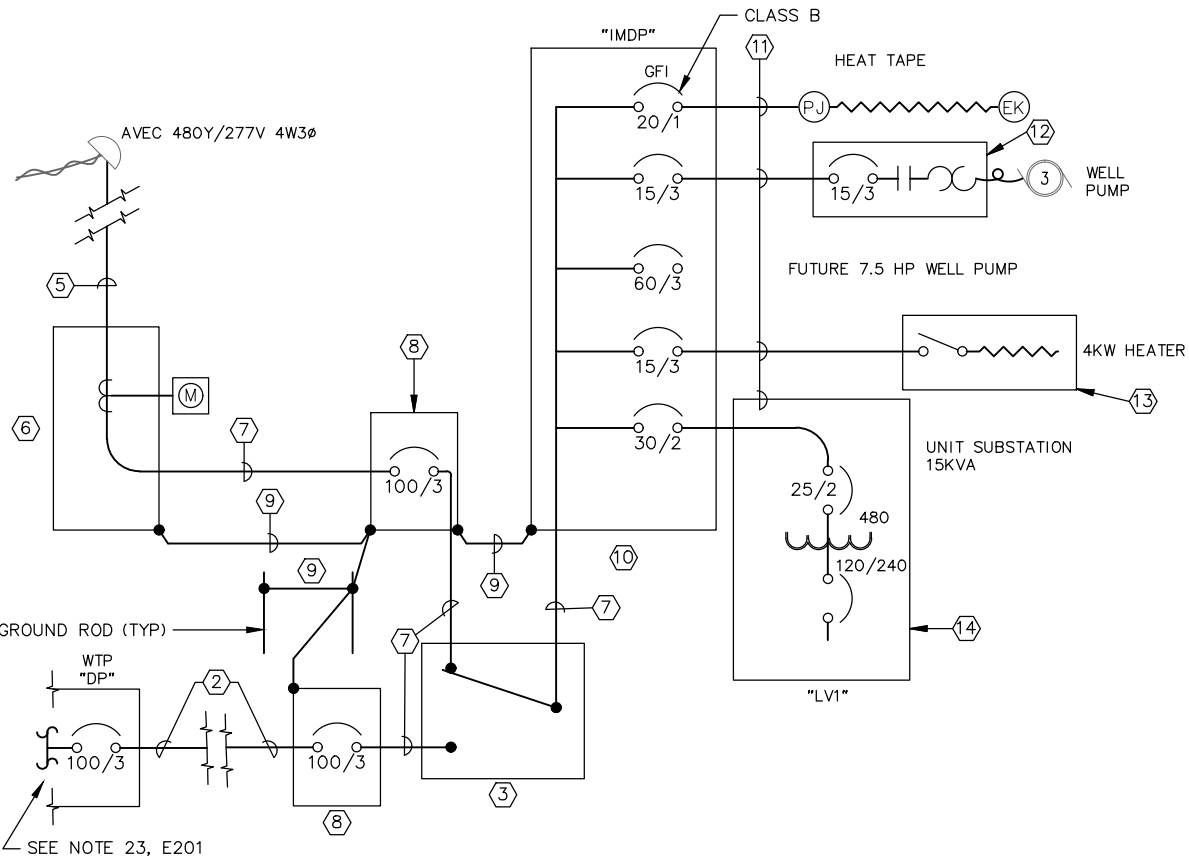
NO.	REVISION	BY	DATE

Plot Date12/16/19	Designed WMM	Drawn -	Approved -
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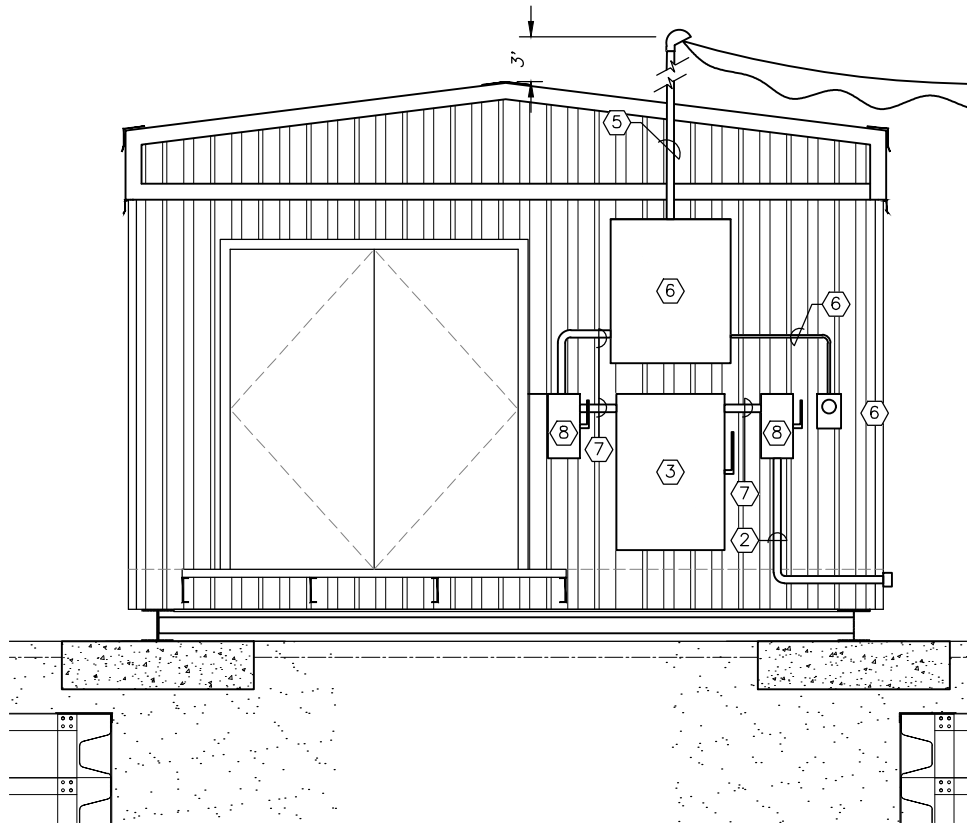
File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\03 Electrical\81904.00 Electrical.dwg



1 **ELECTRICAL SITE PLAN**



2 **POWER ONE LINE**



3 **RAW WATER PUMPHOUSE EAST ELEVATION**
NTS

NOTES

- EUC IS THE EXISTING WELL PUMP CONTROLLER. DISCONNECT AND REMOVE PANEL EUC.
- RE-PURPOSE EXISTING 2" CONDUIT SERVING EXISTING PUMP BUILDING BY REMOVING EXISTING (5) POWER CONDUCTORS: (2) SERVED FROM MOTOR INLET (PUMPHOUSE HEAT TAPE CIRCUIT) ON NORTH WALL, AND (3) FROM EUC. EXTEND 2" CONDUIT AT WTP TO NEW 100/3 BREAKER IN PANEL DP AND EXTEND OTHER END TO NEW 100/3 MAIN SWITCH TO PUMPHOUSE. SEE E201. PROVIDE (4) #1/0 XHHW.
- 100A, 480V, 4P, MANUAL TRANSFER SWITCH, NEMA4X.
- REROUTE EXISTING HEAT TAPE AND END KIT TO NEW PUMPHOUSE. WRAP INTERIOR RISER WITH ANY EXCESS HEAT TAPE.
- 2"C, (4) #2 (3H, N) WITH SLIPFITTER CAP.
- PROVIDE C.T. ENCLOSURE SET UP FOR "BAR TYPE" C.T.'S TO BE FURNISHED BY AVEC. INSTALL 13-JAW METER BASE, CONNECTED WITH 1"C TO C.T. ENCLOSURE. PROVIDE ALL PER AVEC SERVICE REQUIREMENTS.
- 2"C, (4) #2 (3H, N) (1) #4(G).
- 480V, 3φ, SERVICE RATED MAIN CIRCUIT BREAKER 100A RATED NEMA 4X ENCLOSURE. PROVIDE PLACARD STATING SHORT CIRCUIT AND ARC FLASH LEVEL. DATA TO BE FURNISHED BY ENGINEER AFTER INSTALLATION. BOND NEUTRAL AT THIS POINT.
- GROUND SYSTEM:
 - #4BCU
 - 3/4"X10' Cu CLAD STEEL RODS
 - BOND STEEL SKID
 - RADIO DEMARC
- PANEL "IMDP" - 480V, 3φ, 30 SPACE, NEMA 12. PROVIDE ARC FLASH PLACARD SEAL FEEDER CONDUIT.
- SEE E201 FOR BRANCH CIRCUITS.
- COMBINATION MOTOR STARTER, NEMA 12 ENCLOSURE. SEE E403.
- 480V 4KW HEATER WITH INTEGRAL THERMOSTAT CONTACTOR, TRANSFORMER, AND DISCONNECT.
- 15 KVA UNIT SUBSTATION. NEMA 3R. SEE SCHEDULE, E300. PANEL LVI. 120/240V 8 SPACE.

Alaska Department of
Environmental Conservation
Division of Water



Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501



CITY OF EMMONAK
ELECTRICAL SITE PLAN AND ONE LINE
DIAGRAM
RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION

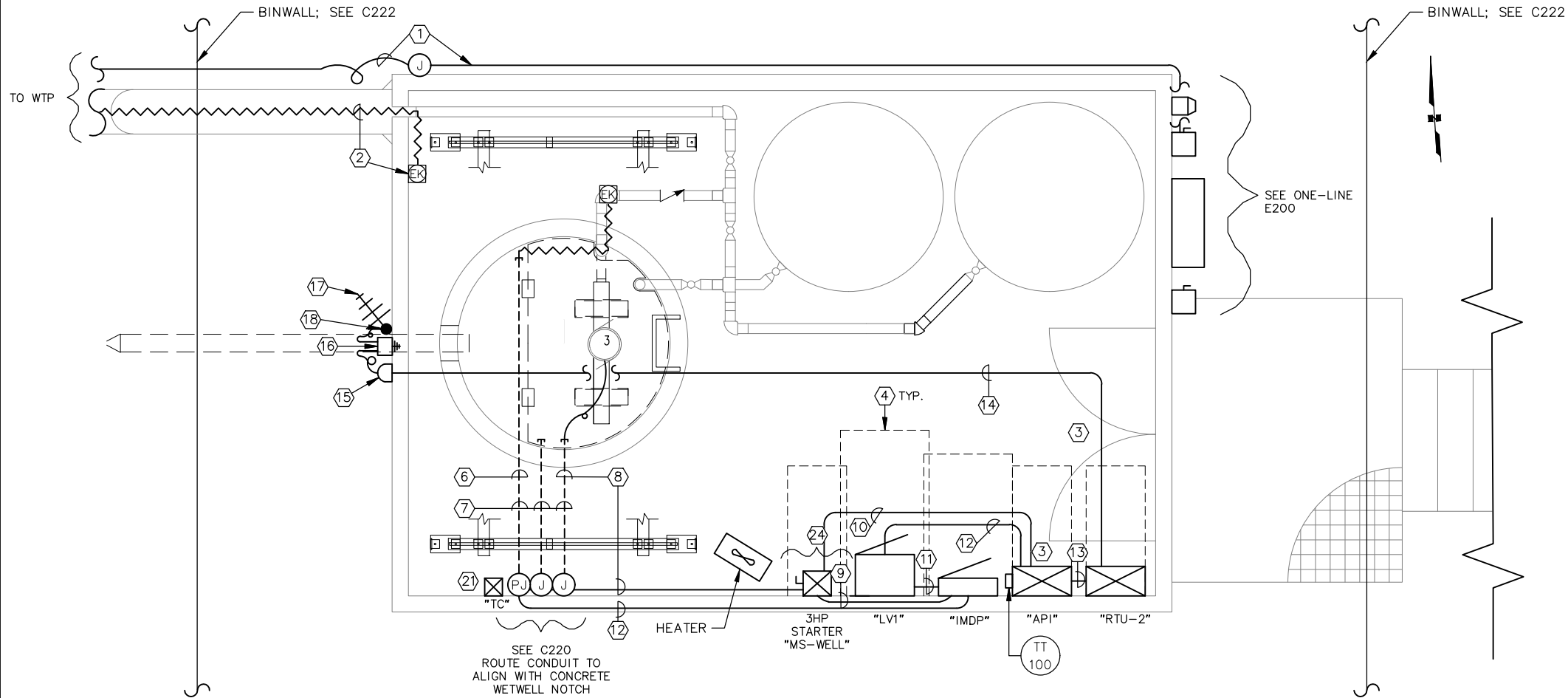
NO.	REVISION	BY	DATE

Plot 12/16/19	Designed WMM
Date	Drawn
	Approved

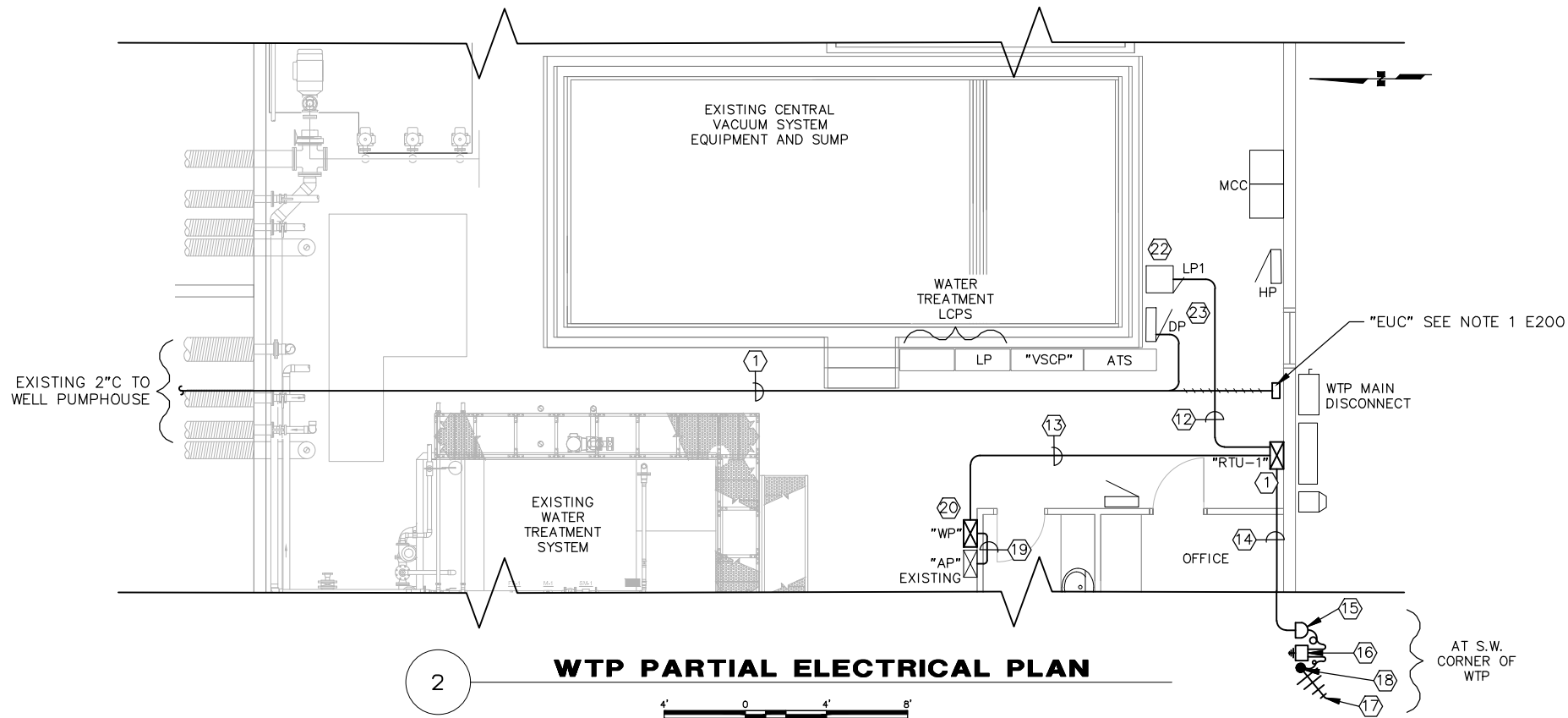
Sheet No.

E200

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1 RAW WATER PUMPHOUSE ELECTRICAL PLAN



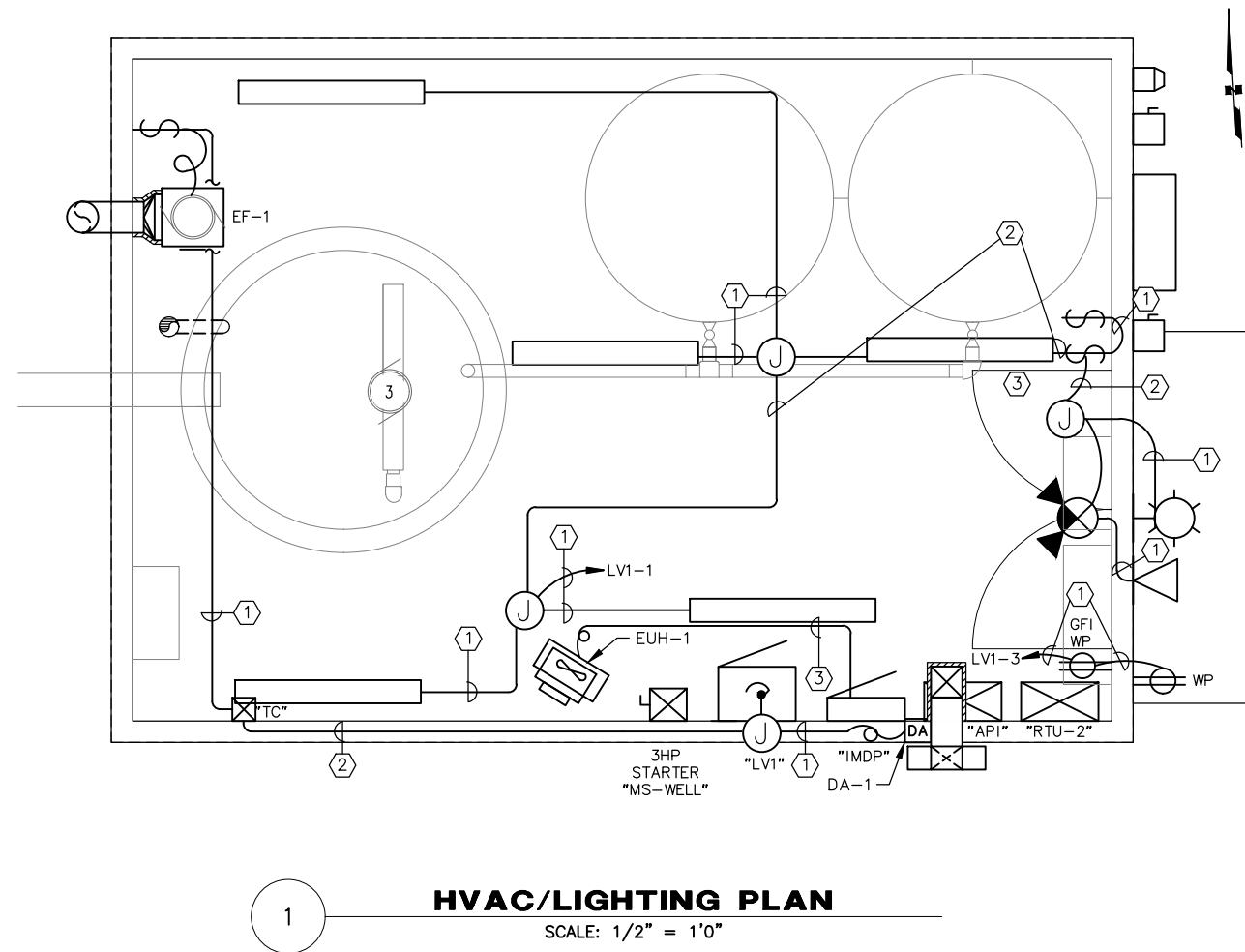
2 WTP PARTIAL ELECTRICAL PLAN

NOTES

- ① SEE NOTE 2 E200.
- ② REROUTE THE EXISTING HEAT TAPE TO THE NEW INTAKE PUMPHOUSE.
- ③ PANEL API PROVIDES BOTH ALARM AND CONTROL:
 - a. BUILDING TEMPERATURE
 - b. PUMP RUNNING
 - c. PUMP FAIL
 - d. WELL START (CONTROL)
- TEMP & PUMP ALARMS COMBINED FOR SINGLE SIGNAL. SEE E400.
- ④ CLEARSPACE
- ⑤ 5 kW (MAX) 480/3 HEATER. SEE MECHANICAL.
- ⑥ 1" C WITH HEAT TAPE. EXTEND ACROSS WELL, SECURE TO FIXED PORTION OF COVER. WRAP HEAT TAPE ON RISER HOSE AND EXPOSED PIPING. RAYCHEM 5BTB OR EQUAL. SEE NOTE 7, AND ELEVATION ON C220.
- ⑦ RUN CONDUITS UNDER FLOOR AND ROUTE THROUGH NOTCH IN CONCRETE WET WELL. SECURE TO UNDERSIDE OF FIXED PORTION OF LID. SEE CIVIL C220.
- ⑧ 1" C, (3)#12 (H), 1#12 G. TRANSITION TO 1" C, 8/3 TWISTED PUMP CABLE AT J-BOX. SEE NOTE 7.
- ⑨ 1" C, (4)#6 (3H,G), 1#12 G.
- ⑩ 1/2" C, (6)#12 CONTROL/ALARM.
- ⑪ 1" C, (3)#10, 1#6 G.
- ⑫ 1/2" C, (3)#12.
- ⑬ 1/2" C, (3)#12; 1/2" C, (1) 1pr#18TWS, 1/2" C, (6)#14.
- ⑭ 1" C, LM-400, 50ohm COAX.
- ⑮ ROUTE THROUGH WALL AND PROVIDE 1" SLIPFITTER CAP. PROVIDE DRIP LOOP WITH COAX TO SURGE PROTECTION.
- ⑯ PROVIDE 900MHz SURGE PROTECTION BLOCK. RUN #6 BCU TO GROUND.
- ⑰ ENCLOSED ANTENNA KATHREIN CL900B.
- ⑱ PROVIDE 2" SCHEDULE 80 STEEL PIPE FOR ANTENNA MAST. RUN FROM GRADE TO 5' PAST ROOF LINE. SECURE TO BUILDING. BOND PIPE TO GROUND USING GALVANIZED UNISTRUT.
- ⑲ 1/2" C, (2)#14 ALARM TO SPARE CHANNEL IN "AP". PROVIDE NEW PLACARDS. SEE E400.
- ⑳ "WP" REMOTE CONTROL/ALARM PANEL FOR WELL PUMPHOUSE CONTROL. SEE E400/403.
- ㉑ 24 HR TIME CLOCK. SET FOR 20 MIN. RUN EVERY 24 HOURS. CLOCK CIRCUIT OPERATES EF-1 AND DA-1. INTERMATIC ET1125CPD82.
- ㉒ PROVIDE 15A BREAKER IN "LP1" POLE 8. UPDATE SCHEDULE.
- ㉓ PROVIDE 100A 3-POLE CIRCUIT BREAKER IN "DP". PROVIDE PLACARD "RAW WATER PUMPHOUSE."
- ㉔ PRESERVE SPACE FOR FUTURE LARGER MOTOR STARTER FOR 7½ HP WELL PUMP.

NO.	REVISION	BY	DATE

Plot 12/16/19	Designed WMK	Drawn -	Approved -
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LIGHTING FIXTURE SCHEDULE				
SYMBOL	DESCRIPTION	MANUFACTURER	PART NUMBER	MOUNTING
	2x1 LED, RATED FOR WET LOCATIONS	LITHONIA	DMW2 L24 4000LM MD PCL MVOLT	CEILING SURFACE
	OUTDOOR WALL MOUNT SECURITY LIGHT LED WITH PHOTO CELL	LITHONIA	OLW 31	WALL MOUNTED
	EXIT & EMERGENCY LIGHT WITH ADDITIONAL CAPACITY TO OPERATE REMOTE LAMP	LITHONIA	LHQMLEDR	WALL MOUNTED OVER DOOR
	REMOTE EMERGENCY LIGHT HEAD (PART OF EXIT SIGN)	LITHONIA	ELA LED WP M12	EXTERIOR MOUNTED OVER DOOR

NOTES

- ① 1/2"C, (3)#12
② 1/2"C, (4)#12
③ 3/4"C, (4)#12

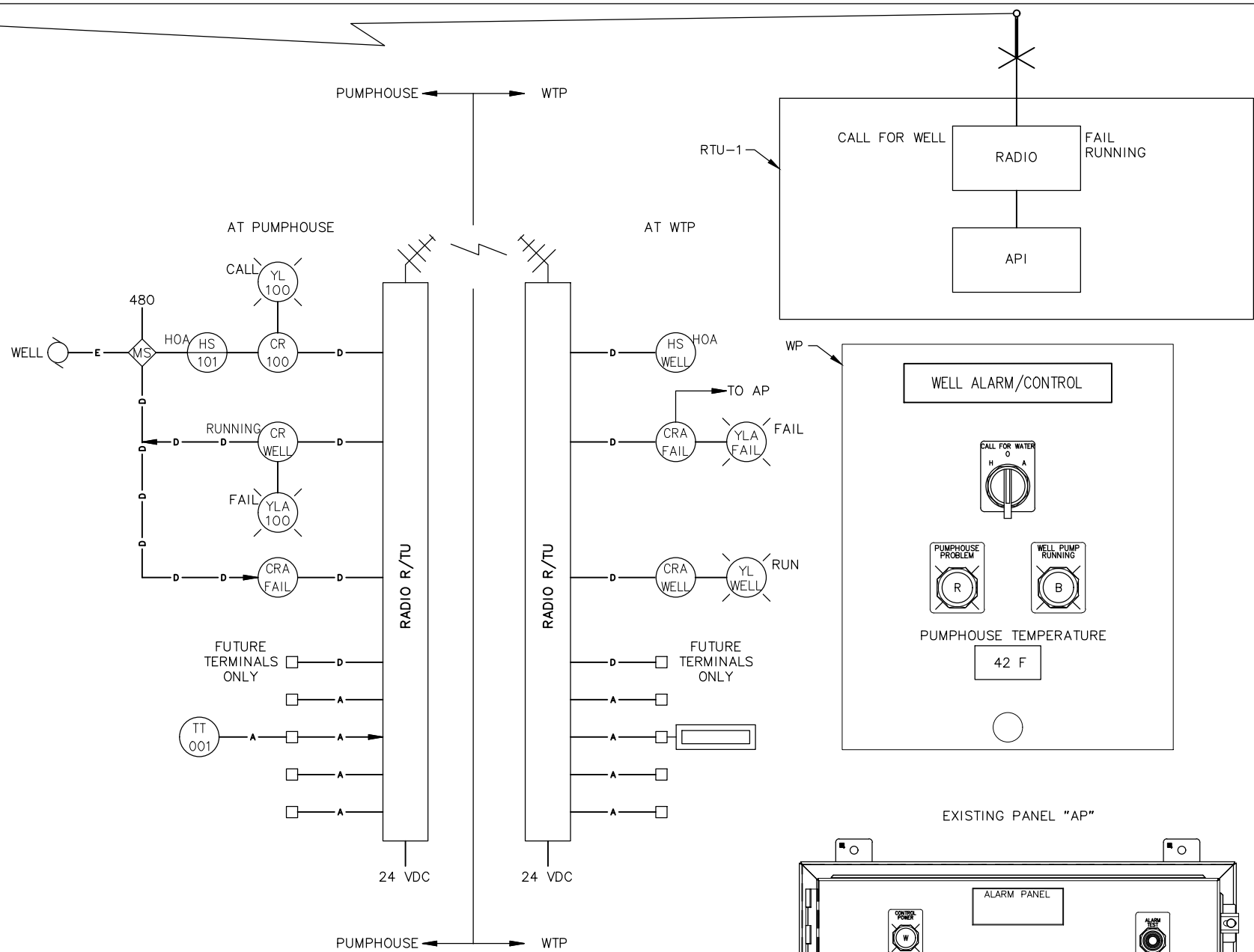
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PANEL IMDP																											
P/N			SQUARE D		VOLTS: 480/Y 277V			3 Ø 4W		ENCLOSURE: NEMA 12				MTG: SURFACE			A.I.C. RATING: 10,000A			225A MLO			LOCATION: RAW WATER PUMPHOUSE				
				LOAD (KVA)								PHASE			LOAD (KVA)												
NOTE	CIRC	POLE/AMPS	DESCRIPTION	LIGHTING	RECEPTACLE	MOTOR	LARGEST MOTOR	MISC.	KITCHEN	HVAC	SPECIAL	Ø 64	Ø 34	Ø 64	LIGHTING	RECEPTACLE	MOTOR	LARGEST MOTOR	MISC.	KITCHEN	HVAC	SPECIAL	DESCRIPTION	POLE/AMPS	CIRC	NOTE	
	1	15/3	4kW Unit Heater							1.75		2.9			1.10								Panel LV1 –15kVA Unit Substation	20/2	2		
	3									1.75			3.3		1.54											4	
	5											1.75			2.0								0.20	Heat Tape GFI	15/1	6	
	7	15/3	3HP Well Pump (Interim)									0.0													8		
	9												0.0												10		
	11													0.0												12	
	13	60/3	7.5HP Well Pump (Future)			3.00						3.0													14		
	15					3.00							3.0												16		
	17					3.00								3.0												18	
NOTES												5.9	6.3	5.0	PHASE KVA												
												16.2	17.5	13.7	PHASE AMPS												
												2.7%	10.4%	–13.1%	PHASE BALANCE												
												TOTAL CONNECTED DEMAND FACTOR DEMAND LOAD			LTG	RECP	MOTR	LG.MT	MISC	KIT	HVAC	SPEC	TOTAL		AMPS		
															2.6	0.0	9.0	0.0	0.0	0.0	0.0	5.3	0.2	17.1 kVA	480	20.6 A	
															1.0	NO	1.0	1.0	1.0	1.0	1.0	1.0					
															2.6	0.0	9.0	0.0	0.0	0.0	5.3	0.2	17.1 kVA	480	20.6 A		

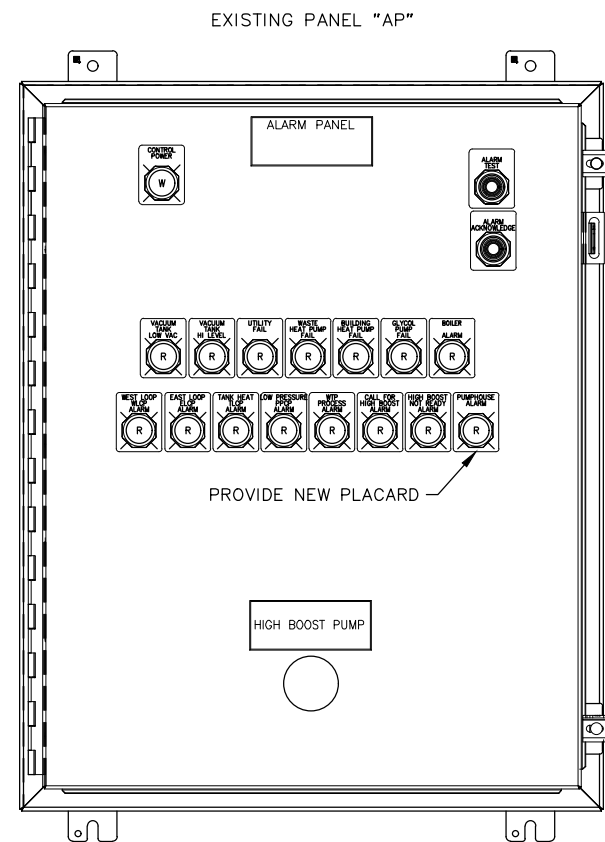
PANEL LV1																											
P/N			UNIT SUBSTATION		VOLTS: 240 / 120V			1 Ø 3W			ENCLOSURE: NEMA 3R/12			MTG: SURFACE			A.I.C. RATING: 10,000A			30A MCB			LOCATION: RAW WATER PUMPHOUSE				
				LOAD (KVA)								LEG		LOAD (KVA)													
NOTE	CIRC	POLE/AMPS	DESCRIPTION	LIGHTING	RECEPTACLE	MOTOR	LARGEST MOTOR	MISC.	KITCHEN	HVAC	SPECIAL	Ø 4	Ø 14	LIGHTING	RECEPTACLE	MOTOR	LARGEST MOTOR	MISC.	KITCHEN	HVAC	SPECIAL	DESCRIPTION	POLE/AMPS	CIRC	NOTE		
	1	20/1	Lighting	0.40								0.60								0.20		EFI & DA-1 TC	15/1	2			
	3	20/1	Receptacles		0.54								1.54								1.00	API/RTU-2	20/1	4			
	5										0.50	0.50												6			
	7												0.00											8			
NOTES: LV1 is a 15kVA Unit Substation with 480:240/120 transformer.												1.1	1.5	PHASE KVA													
												9.2	12.8	PHASE AMPS													
												-16.7%	16.7%	PHASE BALANCE													
												TOTAL CONNECTED DEMAND FACTOR DEMAND LOAD			LTG	RECP	MOTR	LG.MT	MISC	KIT	HVAC	SPEC	TOTAL		AMPS		
															0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.2	1.5	2.6 kVA	240	6.4 A	
															1.0	NO	1.0	1.0	1.0	1.0	1.0	1.0					
			0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.2	1.5	2.6 kVA	240	6.4 A													

NO.	REVISION	BY	DATE

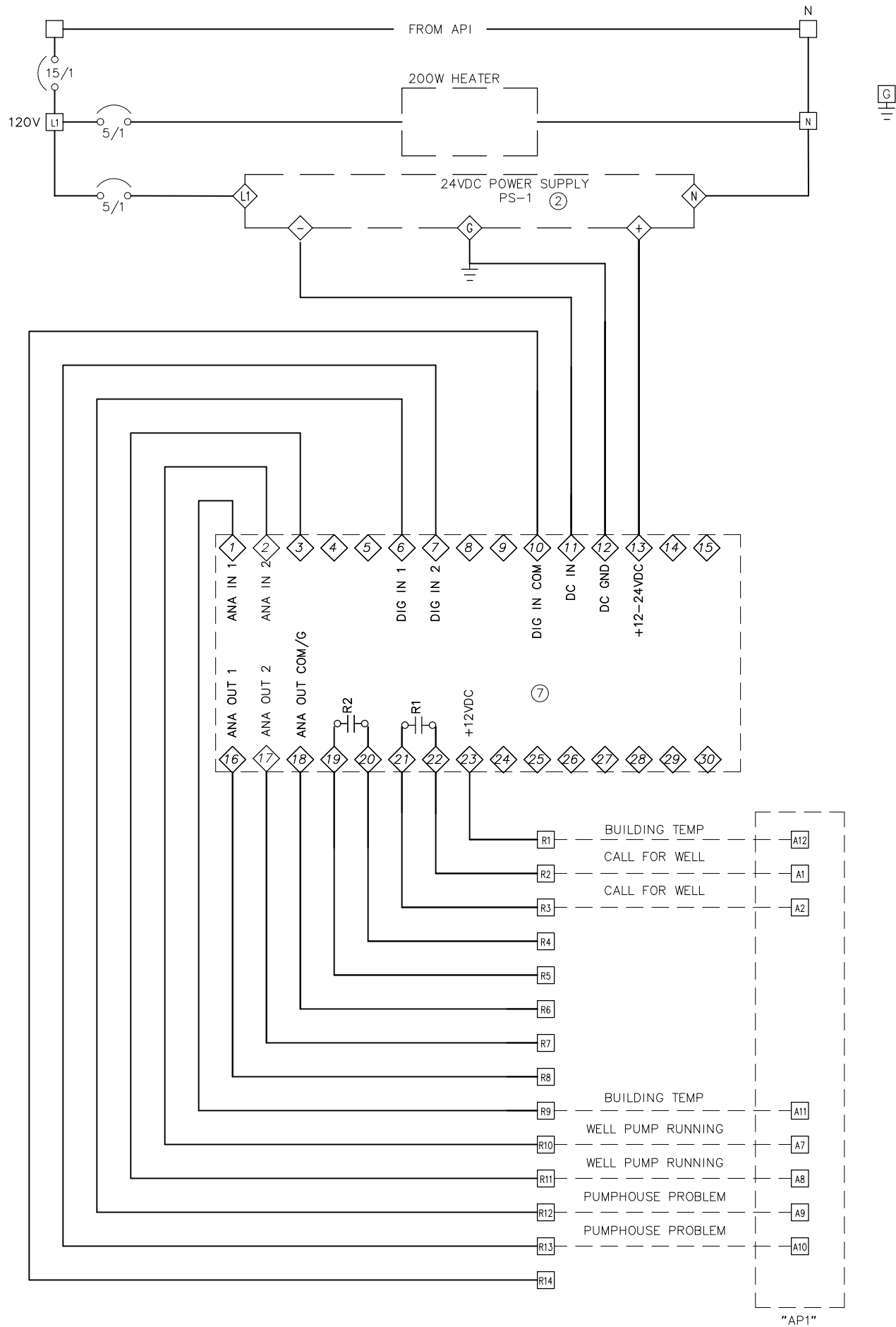
Plot Date	12/16/19
Designed	WMK
Drawn	—
Approved	—



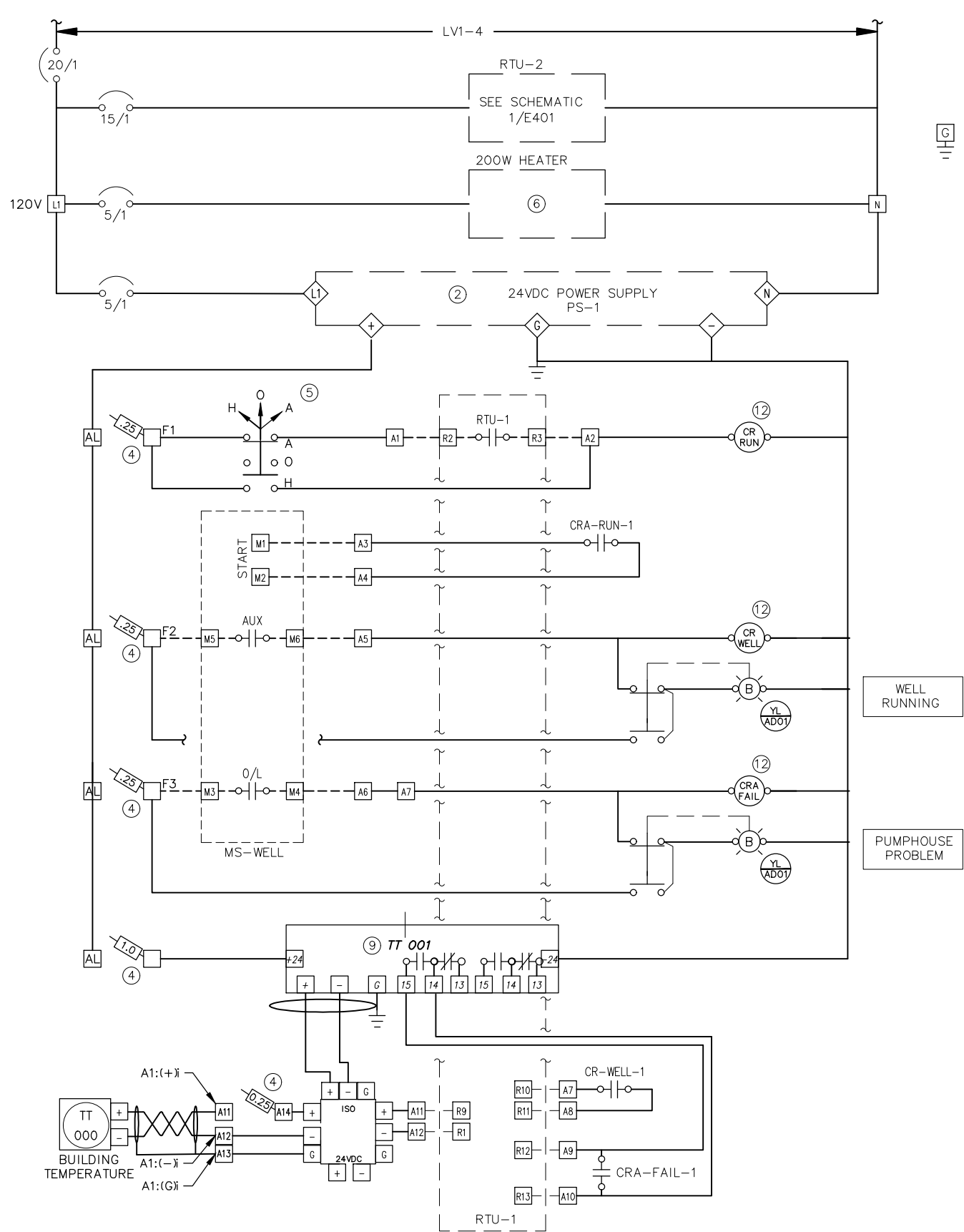
COMPONENT SCHEDULE		
ITEM #	DESCRIPTION	MANUFACTURER
①	Pilot Light, 120V, LED, NEMA 4X,	Allen Bradley CAT.# 800HC-QRH10*, where *= lens tint as shown
②	24vdc power supply	Sola or equal
③	Pilot Light, 120V, LED, full size, NEMA 4X Push-To-Test	Allen Bradley CAT.# 800HC-QRTH10*, where *= lens tint as shown
④	Fused D/N rail terminal	Weidmuller, WSI 4/2/1d 10-36 AC/DC with 2 spare fuses
⑤	3-Position Selector Switch, 120V, NEMA 4X, provide CAM and Contact Blocks as required	Allen Bradley CAT.# 800HC-JR2A
⑥	200W heater, 120v	Thermostat and circulation fan Hoffman or equal
⑦	RTU	Self Contained Synetcom D/N-R Nema 4x enclosure with power supply, 100 ft. coax, and antenna
⑧	NEMA 4X Non Metallic Enclosure with removable steel back panel, size as required	Hoffman or equal
⑨	Analog Display and Alarm Module	Red Lion P/N PAXLA0U0
⑩	Analog Isolation	Acumag 672T dual channel isolator
⑪	Not Used	
⑫	24 Vdc Relay 2P DIN Rail-Mounted, 5A Rated Contacts	Allen-Bradley or Equal
⑬	Time Delay	Provide Allen-Bradley Timer Base & Module for item 3

[illegible]

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1 **RTU-2 SCHEMATIC**
NTS



2 **API Schematic**
NTS

Alaska Department of
Environmental Conservation
Division of Water

Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

49 TH
REGISTERED PROFESSIONAL
ELECTRICIAN
William M. McDonald
12/12/19

CRW
ENGINEERING GROUP LLC
3940 ARCTIC BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AEC-882-AK

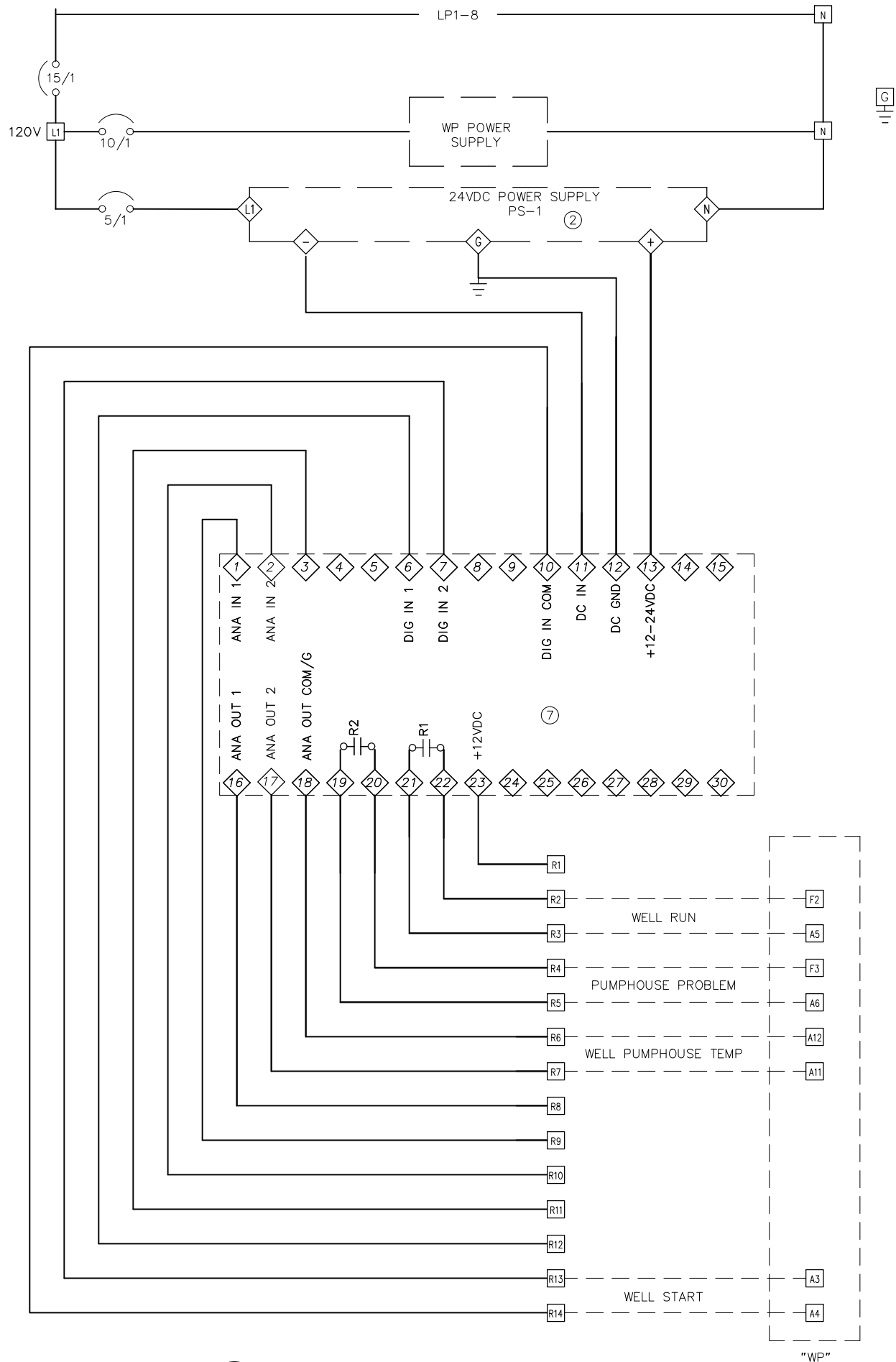
CITY OF EMMONAK
LADDER DIAGRAM
RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION

NO.	REVISION	BY	DATE

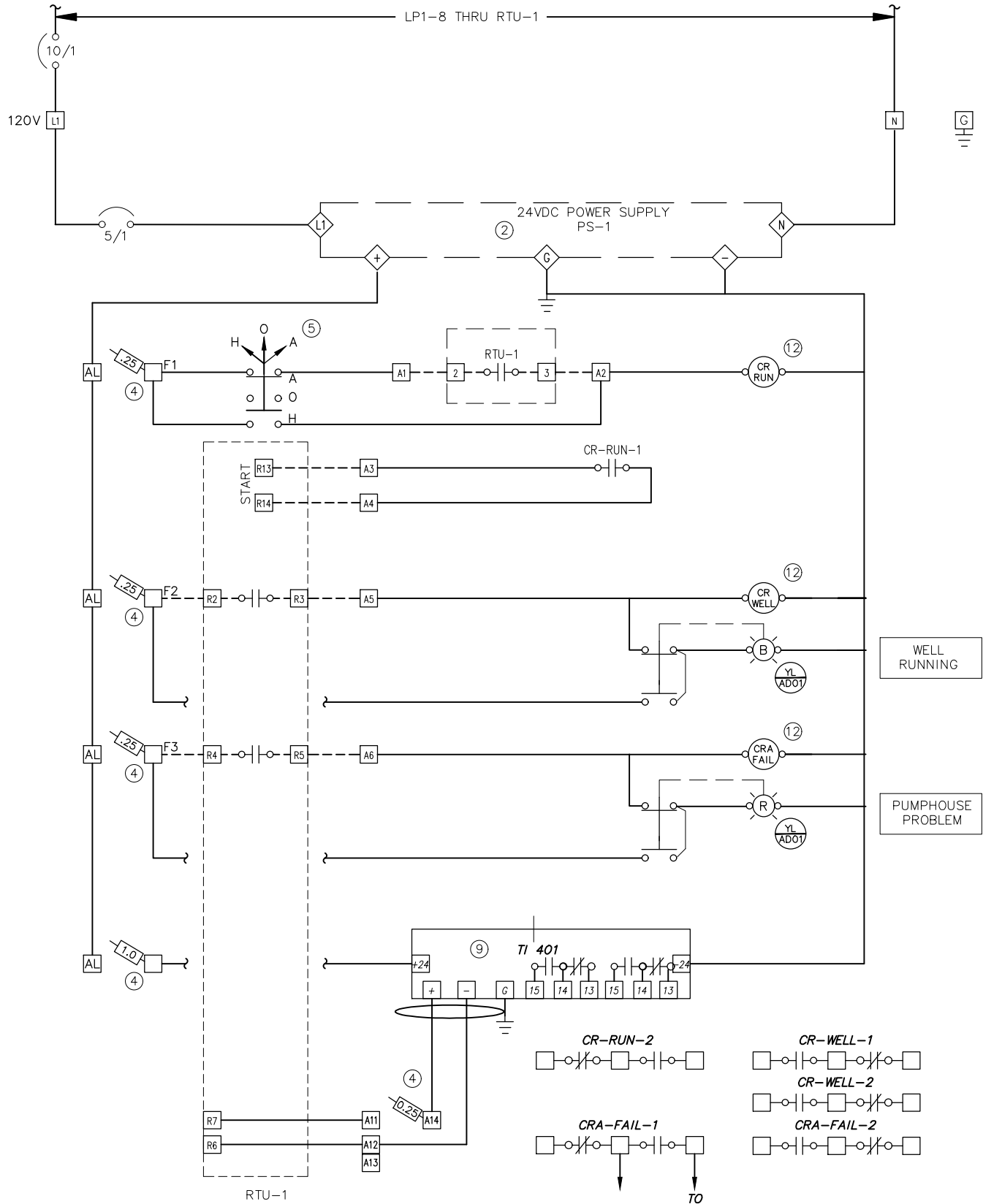
Plot: 12/16/19
Date: 12/16/19
Designed: WMK
Drawn: -
Approved: -

Sheet No. **E401**

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1 **RTU-1 SCHEMATIC**
NTS

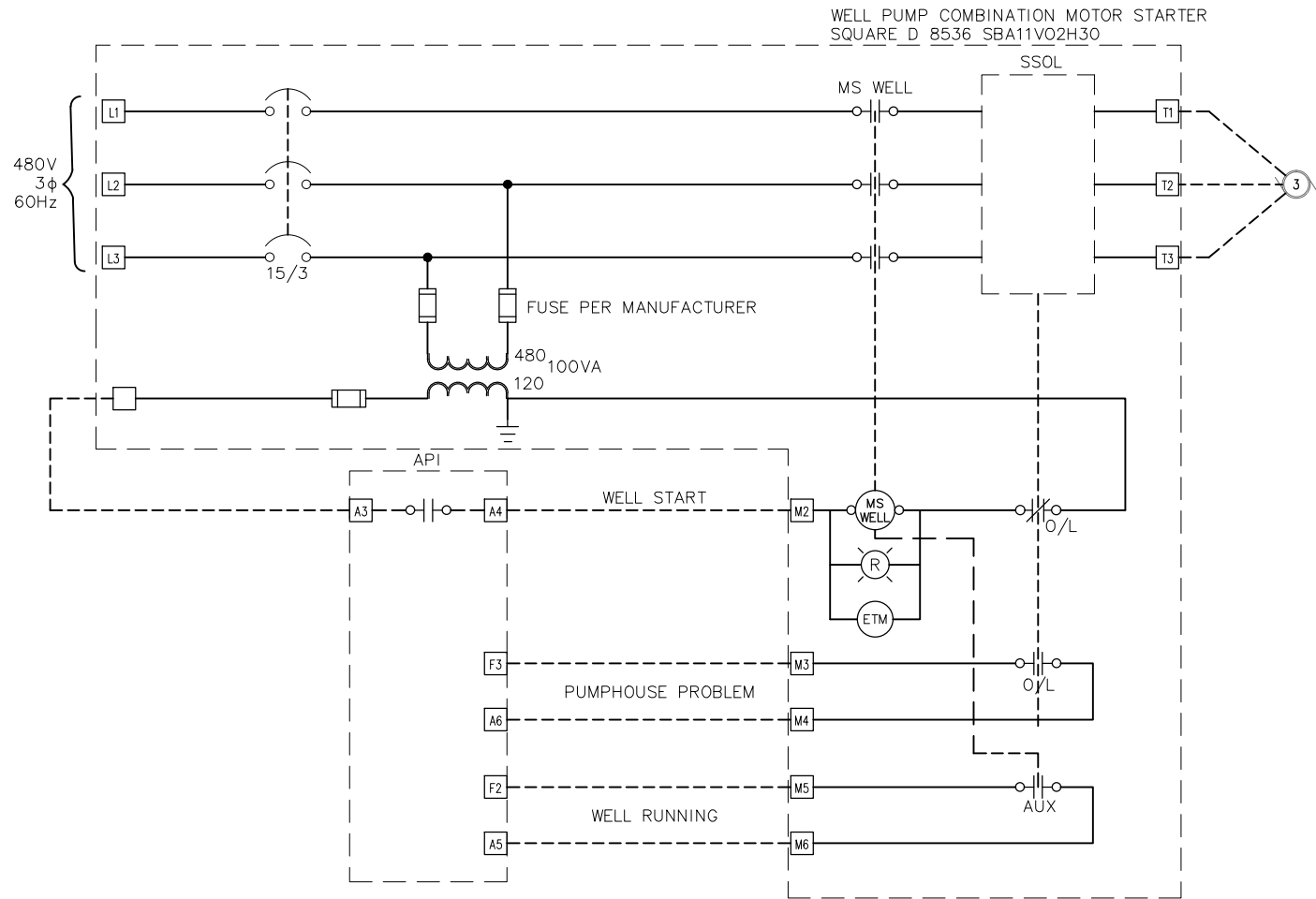


2 **WP Schematic**
NTS

NO.	REVISION	BY	DATE

Plot 12/16/19	Designed -	Drawn -	Approved -
Date			

File: J:\JobsData\81904.00 Emmonak River Intake\00 CADD\01 Working Set\03 Electrical\81904.00 Well Pump Controls.dwg



1 **WELL PUMP CONTROLLER**
NTS

Plot Date
12/16/19

Designed
—

Drawn
—

Approved
—

Sheet No.
E403

NO.	REVISION	BY	DATE

CITY OF EMMONAK
WELL PUMP CONTROLS
RIVER INTAKE UPGRADES
ISSUED FOR CONSTRUCTION



Alaska Department of
Environmental Conservation
Division of Water

Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501



THE STATE
of **ALASKA**

GOVERNOR MICHAEL J. DUNLEAVY

ATTACHMENT ONE

Department of Fish and Game

DIVISION OF HABITAT
Southcentral Region Office

333 Raspberry Road
Anchorage, Alaska
Main: 907.267.2342
Fax: 907.267.2499

FISH HABITAT PERMIT FH19-II-0146

ISSUED: August 8, 2019
EXPIRES: December 31, 2020

City of Emmonak
Attn: Martin Moore
P.O. Box 09
Emmonak, AK 99581

RE: Water Intake Installation
Kwiguk Pass (Water Body No. 334-10-10970)
Section 18, T 31 N, R 81 W, SM
Location: 62.7764 N, 164.5329 W

Dear Mr. Moore:

Pursuant to the anadromous fish act at AS 16.05.871 (b), the Alaska Department of Fish and Game (ADF&G) Division of Habitat has reviewed your proposal to install a new water intake in Kwiguk Pass to supply raw water to the City of Emmonak water treatment facility (Sheet 1).

Project Description

The City of Emmonak is upgrading the community drinking water facilities to provide reliable, year-round water sources to residents. You propose to use horizontal directional drilling (HDD) to install about 950-feet of 8-inch diameter high-density polyethylene (HDPE) pipe for the water treatment plant supply line. The pipe intake will surface mid-channel in about 20 feet of water to allow water into the treatment facility year-round (Sheet 5). The intake end will be fitted with an insert to prevent objects larger than 4-inches in diameter from entering the pipe (Sheet C601). Based on proposed pumping rates, flow rate in the pipeline is expected to be about 0.5 foot per second.

Water will be drawn through the pipe into a 6-foot diameter, concrete wet-well inside the pump house. The wet-well will be about 24 feet deep, with the intake pipe entering near the bottom to ensure water flow during all expected river conditions. A vertical divider with a screened section will be installed down the center of the wet-well to isolate the pump from the intake pipe (Sheet C221). The pump outflow will be redirected as needed to keep two, 1,000-gallon tanks full of water from Kwiguk Pass. Weekly from May 1 to September 30 and biweekly from October 1 to

April 30, the tank valves will be opened to perform a system backflush. The backflush will reverse the flow in the wet-well and intake pipe to direct any fish that may have entered the system back to Kwiguk Pass. It is not expected that fish will frequently enter the system, but the weekly and biweekly backflushing will continue as a precautionary measure.

Anadromous Fish Act

Water Body No. 334-10-10970 has been specified as being important for the spawning, rearing, or migration of anadromous fishes pursuant to AS 16.05.871(a). The water body provides habitat for arctic char, sheefish, whitefish, and Chinook, chum, coho, pink, and sockeye salmon

In accordance with AS 16.05.871(d), your project is approved subject to the project description, the following stipulations, and the permit terms.

1. To avoid entrainment, impingement, or injury to fish, a properly sized and screened structure must surround the water intake. The screen mesh shall not exceed 0.04 inches and water velocity at the screen surface shall not exceed 0.5 feet per second.
2. The system backflush schedule shall not be altered unless otherwise authorized by the ADF&G Division of Habitat.

Permit Terms

This letter constitutes a permit issued under the authority of AS 16.05.871 and must be retained on site during project activities. Please be advised that this determination applies only to activities regulated by the Division of Habitat; other agencies also may have jurisdiction under their respective authorities. This determination does not relieve you of your responsibility to secure other permits; state, federal, or local. You are still required to comply with all other applicable laws.

You are responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved project. For any activity that significantly deviates from the approved plan, you shall notify the Division of Habitat and obtain written approval in the form of a permit amendment before beginning the activity. Any action that increases the project's overall scope or that negates, alters, or minimizes the intent or effectiveness of any provision contained in this permit will be deemed a significant deviation from the approved plan. The final determination as to the significance of any deviation and the need for a permit amendment is the responsibility of the Division of Habitat. Therefore, we recommend you consult the Division of Habitat immediately before considering any deviation from the approved plan.

You shall give an authorized representative of the state free and unobstructed access to the permit site, at safe and reasonable times, for the purpose of inspecting or monitoring compliance with any provision of this permit. You shall furnish whatever assistance and information the authorized representative reasonably requires for monitoring and inspection purposes.

In addition to the penalties provided by law, this permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. You shall mitigate any adverse effect upon fish or wildlife, their habitats, or any restriction or

interference with public use that the commissioner determines was a direct result of your failure to comply with this permit or any applicable law.

You shall indemnify, save harmless, and defend the department, its agents, and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or your performance under this permit. However, this provision has no effect if, and only if, the sole proximate cause of the injury is the department's negligence.

You may appeal this permit decision relating to AS 16.05.871 in accordance with the provisions of AS 44.62.330-630.

Please direct questions about this permit to Habitat Biologist Scott Graziano at 267-2143 or scott.graziano@alaska.gov.

Sincerely,
Doug Vincent-Lang
Commissioner

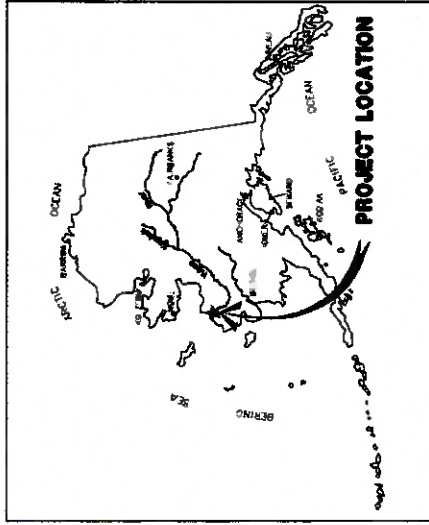
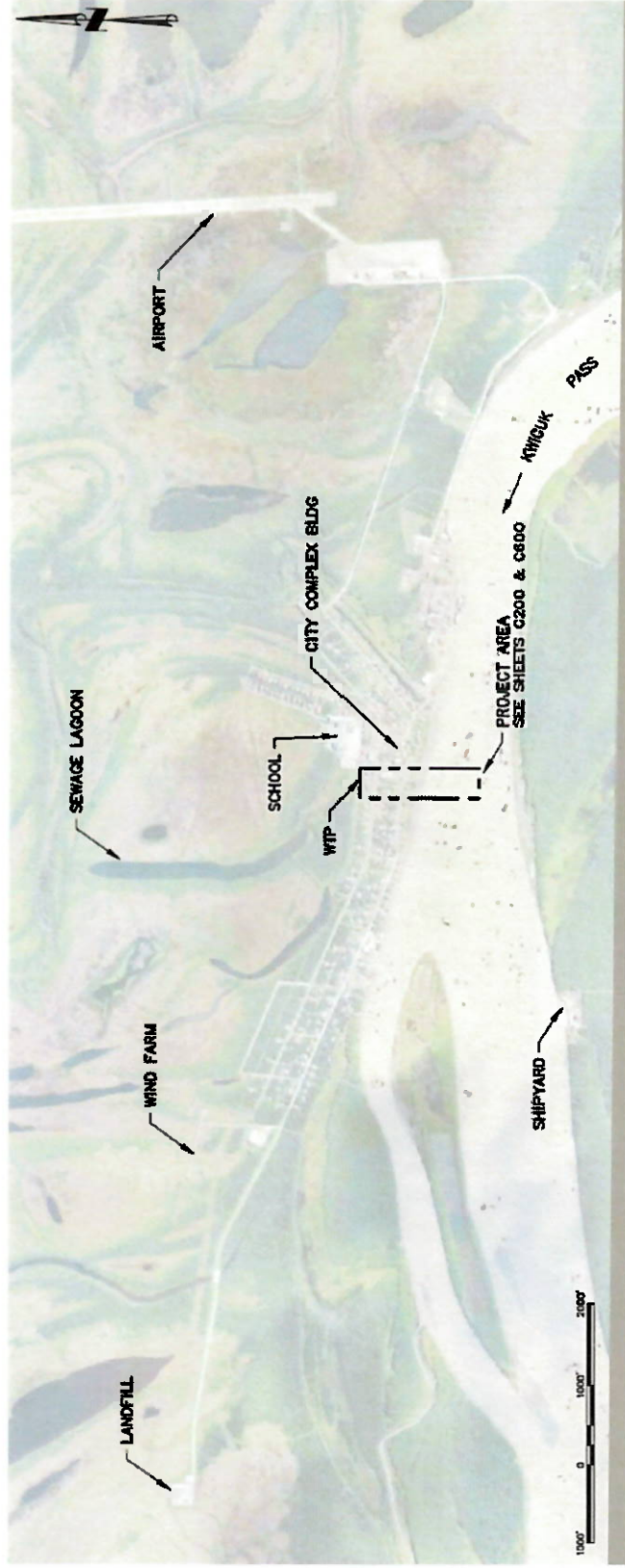


By Ron Benkert
Southcentral Regional Supervisor

Enclosures: Sheet 1. Emmonak Community Map
Sheet 5. Site Plan and Cross-Section
Sheet C601. Intake Pipe End Insert
Sheet C221. Wet-Well Cross-Sections

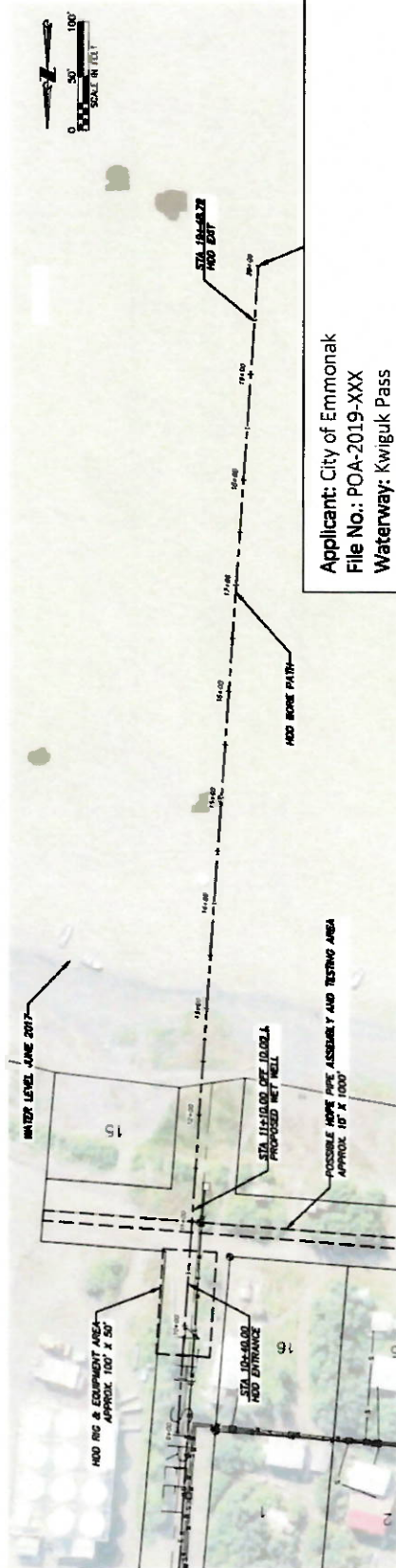
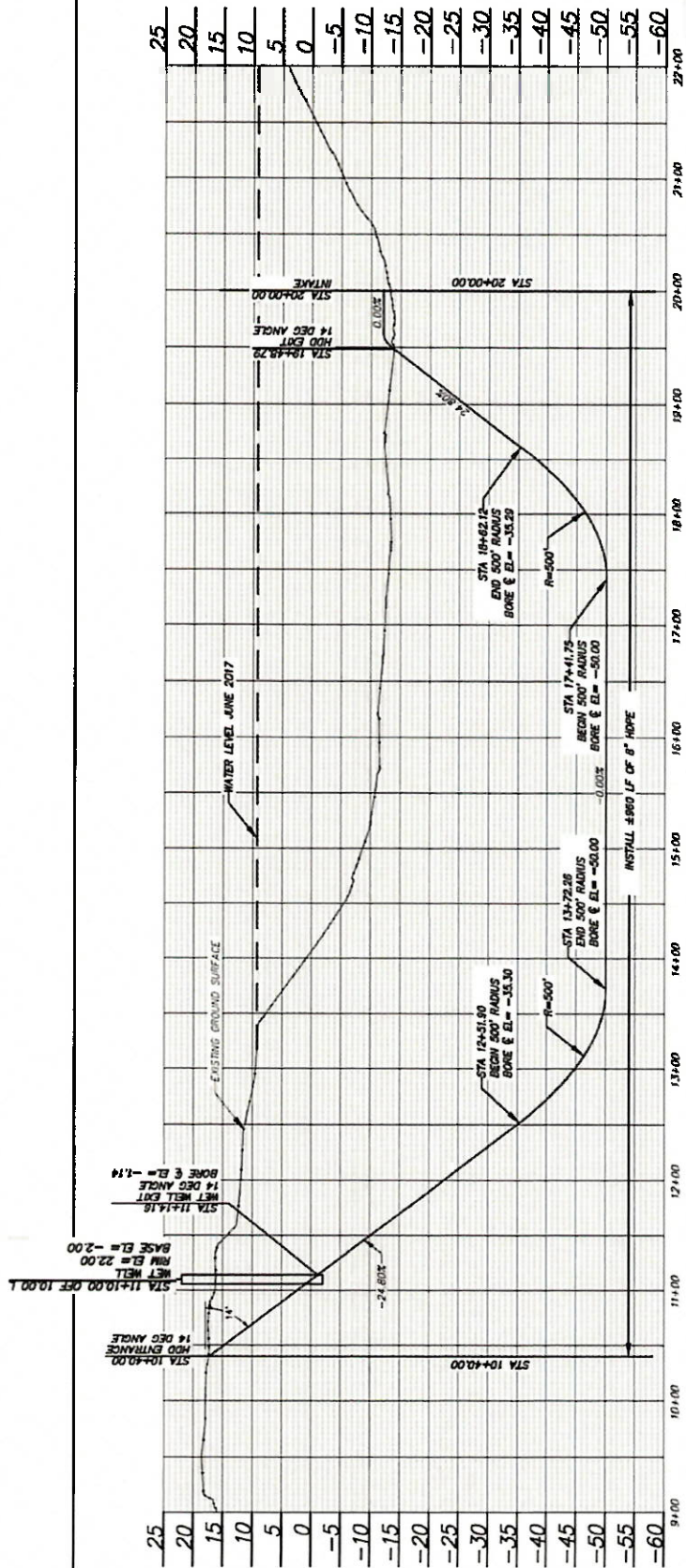
Email cc:

A. Ott, ADF&G
J. Estensen, ADF&G
H. Carroll, ADF&G
ARP Coordinator, ADF&G
C. Larson, ADNR
H. Brooks, ADNR
J. Rypkema, ADEC
AWT, Bethel
USACE, Regulatory

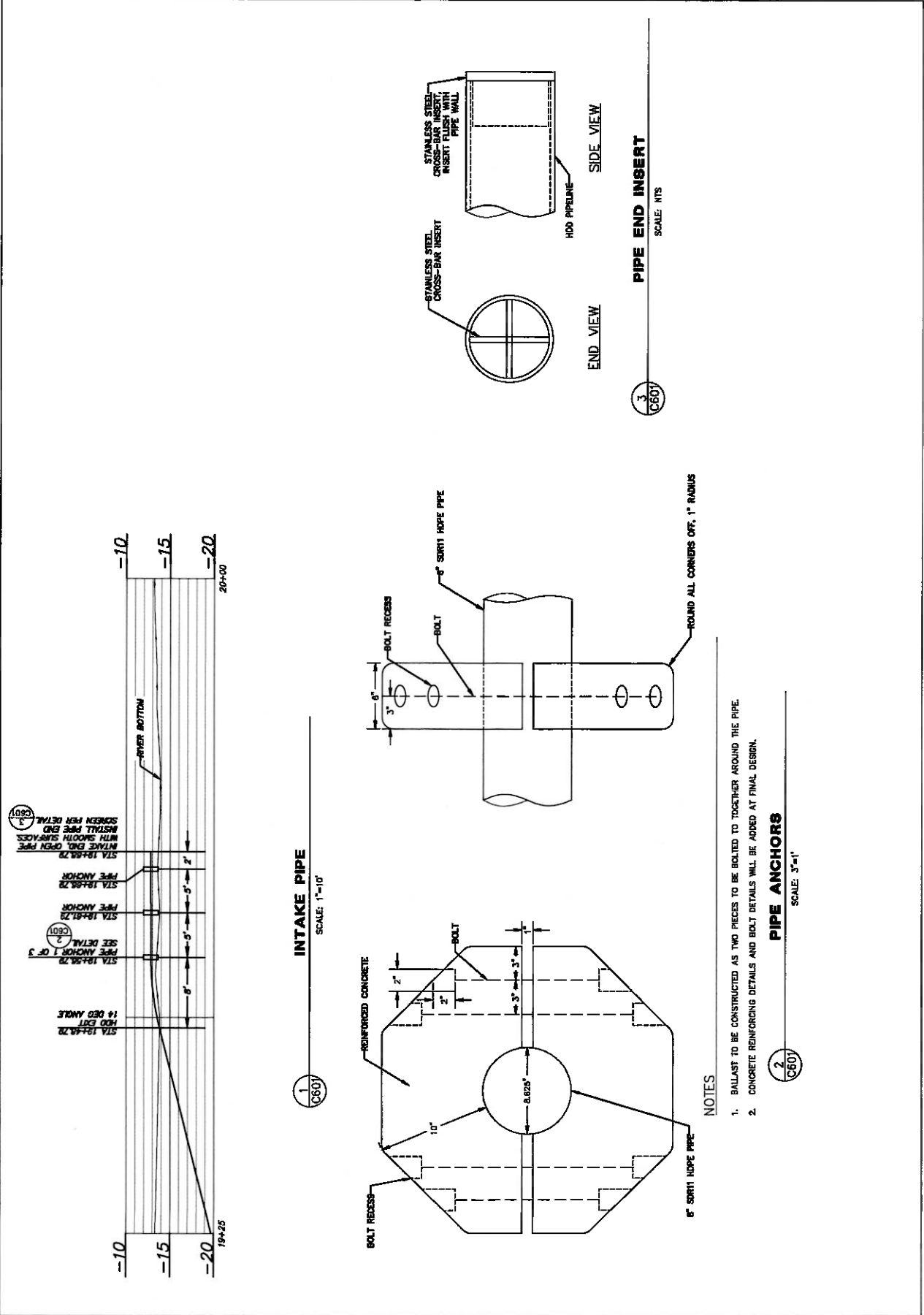


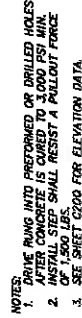
EMMONAK COMMUNITY MAP

Applicant: City of Emmonak
 File No.: POA-2019-XXX
 Waterway: Kwiguk Pass
 Proposed Activity: Water Intake Installation
 Section: 18 Township: 31N Range: 81W Meridian: Seward
 Lat.: 62.776445 Long.: -164.532962
 Sheet: 1 of 5 Date: April 2019



Applicant: City of Emmonak
 File No.: POA-2019-XXX
 Waterway: Kwiguk Pass
 Proposed Activity: Water Intake Installation
 Section: 18 Township: 31N Range: 81W Meridian: Seward
 Lat.: 62.776445 Long.: -164.532962
 Date: April 2019
 Sheet: 5 of 5







DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, AK 99506-0898

August 21, 2019

Regulatory Division
POA-2019-00317

City of Emmonak
Mr. Martin B. Moore, Sr.
P.O. Box 09
Emmonak, Alaska 99581

Dear Mr. Moore:

This is in response to your application for a Department of the Army (DA) permit to undertake the Kwiguk Pass Raw Water Intake Project.

This proposal has been assigned file number POA-2019-00317, which should be referred to in all future correspondence with this office. The project site is located within Section 18, T. 31N., R. 81W., Seward Meridian; USGS Quad Map Kwiguk D-6 SE; Latitude 62.776445° N., Longitude -164.532962° W.; Kusilvak Borough, in the City of Emmonak, Alaska.

DA permit authorization is necessary because your project would involve placement of fill material and other work in waters of the U.S. under our regulatory jurisdiction.

Based upon the information and plans you provided, we hereby verify that the work described above, which would be performed in **accordance with the enclosed plan** (Sheets 1-5) dated April 2019, is authorized by Nationwide Permit (NWP) No. 12 (utility lines). NWP No. 12 and associated Regional and General Conditions which can be accessed at our website: www.poa.usace.army.mil/Missions/Regulatory/Permits.aspx. You must comply with all terms and conditions associated with NWP numbers 12, as well as with the **special conditions** listed below:

1. If human remains, historic resources, or archaeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and you shall immediately (within one business day of discovery), notify the U.S. Army Corps of Engineers (Corps), Alaska District, Regulatory Office at P.O Box 6898 JBER, Alaska 99506-0898. Upon notification the Corps shall notify the appropriate Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO). Based on the circumstances of

the discovery, equity to all parties, and consideration of the public interest, the Corps may modify, suspend, or revoke the permit in accordance with 33 CFR Part 325.7. After such notification, project activities on federal lands shall not resume without written authorization from the Corps. After such notification, project activities on tribal lands shall not resume without written authorization from the SHPO and the Corps.

2. In order to comply with the Federal Endangered Species Act, land disturbance and vegetative clearing activities **will not be performed between May 5 and July 25** of any given year, in accordance with U.S. Fish and Wildlife Service (USFWS) guidelines for shrub or open habitat within the Yukon-Kuskokwim Delta. If you believe you are unable to abide by this condition you must immediately notify the Corps so we may consult as appropriate, prior to initiating the work, in accordance with Federal law.

3. All contractors involved in this permitted activity shall be provided copies of this permit in its entirety. A copy shall remain on site at all times during construction.

4. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.

5. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Further, please note General Condition 30 requires that you submit a signed certification to us once any work is completed. Enclosed is the form for you to complete and return to us.

This verification is valid until the NWP's are modified, reissued, or revoked. All of the existing NWP's are scheduled to be modified, reissued, or revoked prior to March 19, 2022. It is incumbent upon you to remain informed of changes to the NWP's. We will issue a Public Notice when the NWP's are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP's are

modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWPs to complete the activity under the present terms and conditions of these nationwide permits. Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Please contact me via email at stephen.a.moore2@usace.army.mil, by mail at the address above, by phone at (907) 753-5713, or toll free from within Alaska at (800) 478-2712, if you have questions or to request paper copies of the regional and/or general conditions. For more information about the Regulatory Program, please visit our website at <http://www.poa.usace.army.mil/Missions/Regulatory.aspx>.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Moore".

Steve Moore
Project Manager

Enclosures

CF: Solstice Alaska Consulting Incorporated - carrie@solsticeak.com

North:

ADEC - James Rypkema - james.rypkema@alaska.gov
ADF&G-DH, Ronald Benkert - Ronald.Benkert@alaska.gov
ADNR-SHPO-OHA - oha.revcomp@alaska.gov
EPA - AOOARU.R10@epamail.epa.gov
USFWS - FW7_POANotices@fws.gov
NMFS, Anchorage - HCD.Anchorage@noaa.gov

ENCLOSURE



**US Army Corps of Engineers
Alaska District**

Permit Number: POA-2019-00317

Name of Permittee: City of Emmonak

Date of Issuance: August 21, 2019

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to Mr. Steve Moore at the following address:

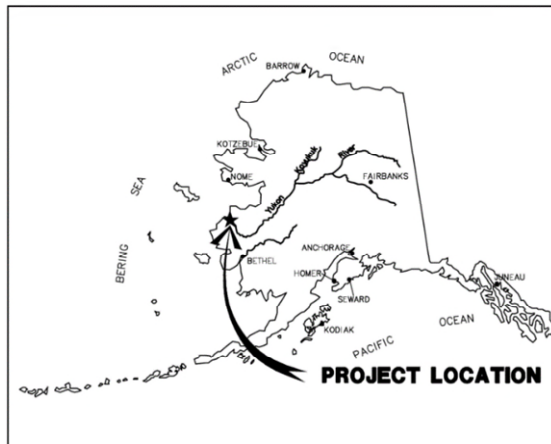
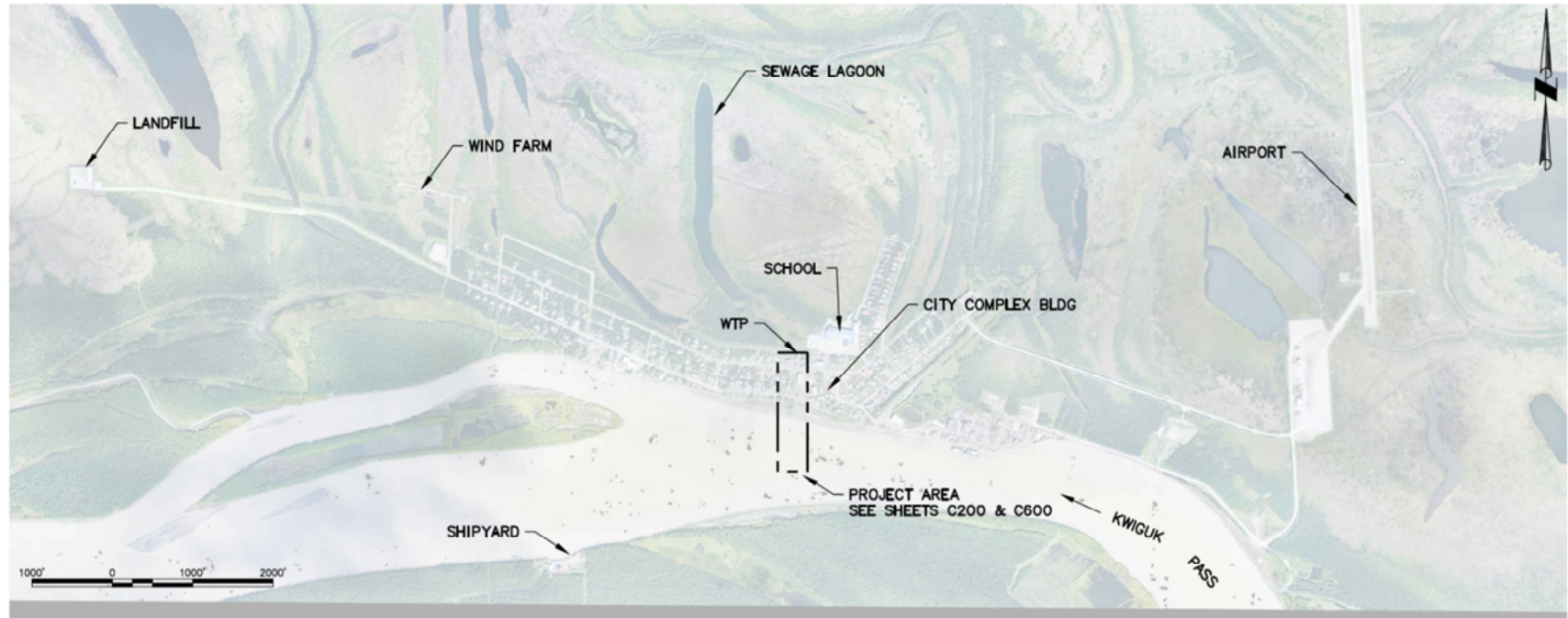
U.S. Army Corps of Engineers
Alaska District
Regulatory Division
Post Office Box 6898
JBER, Alaska 99506-0898

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date



EMMONAK COMMUNITY MAP

Applicant: City of Emmonak

File No.: POA-2019-00317

Waterway: Kwiguk Pass

Proposed Activity: Water Intake Installation

Section: 18 **Township:** 31N **Range:** 81W **Meridian:** Seward

Lat.: 62.776445

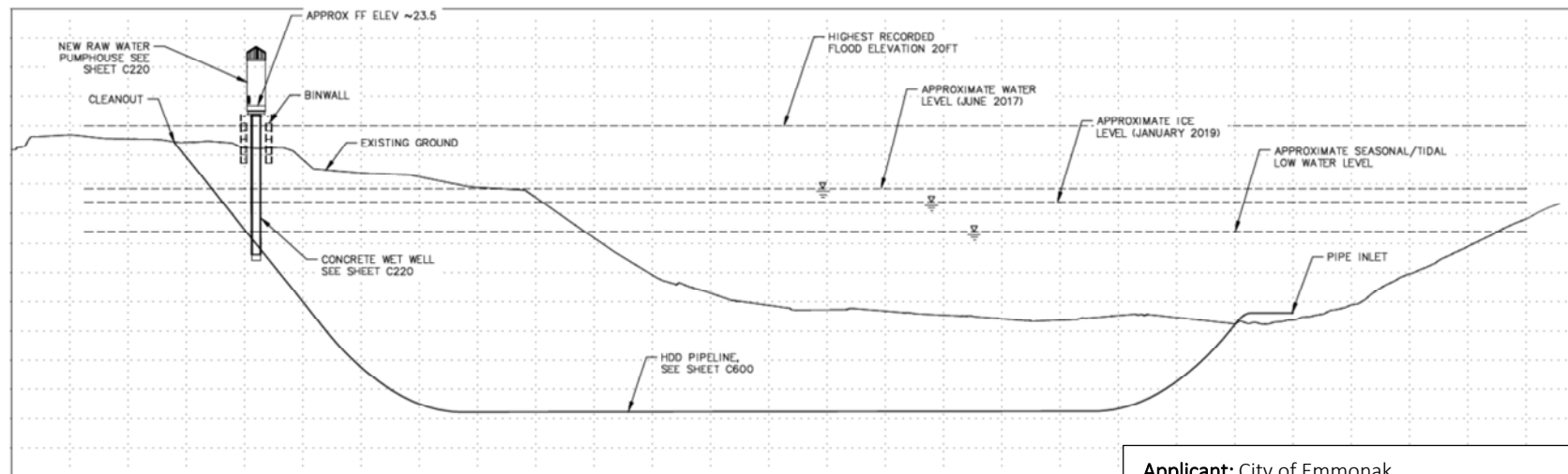
Long.: -164.532962

Sheet: 1 of 5

Date: April 2019



SITE PLAN



SECTION A-A



Applicant: City of Emmonak

File No.: POA-2019-00317

Waterway: Kwiguk Pass

Proposed Activity: Water Intake Installation

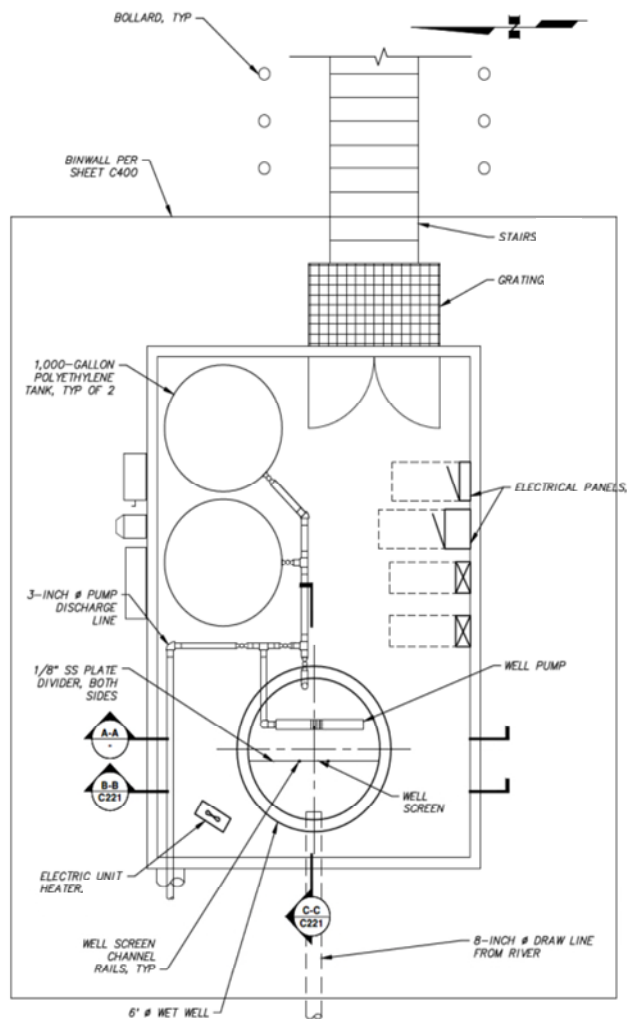
Section: 18 **Township:** 31N **Range:** 81W

Meridian: Seward

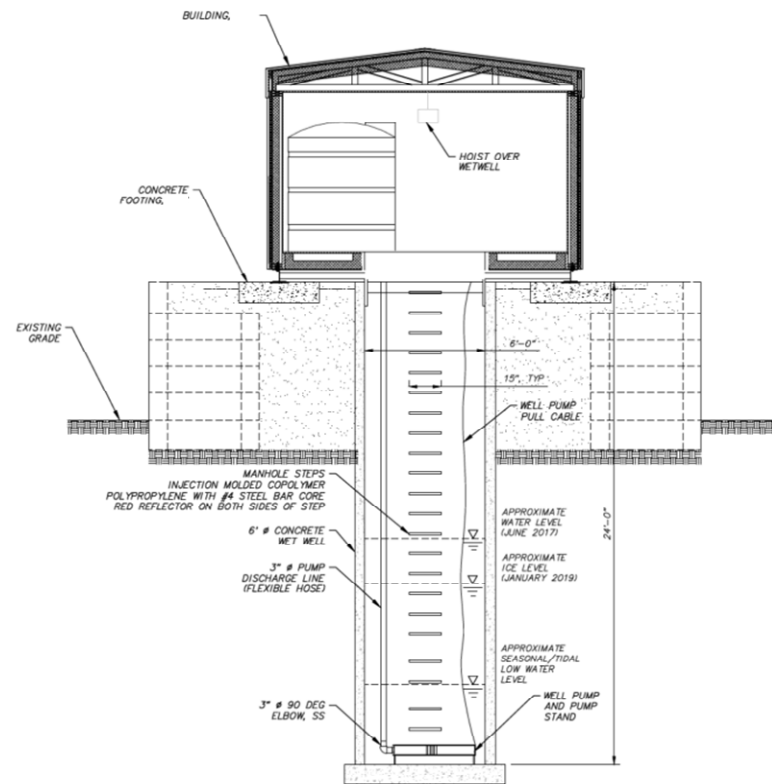
Lat.: 62.776445 **Long.:** -164.532962

Sheet: 2 of 5

Date: April 2019

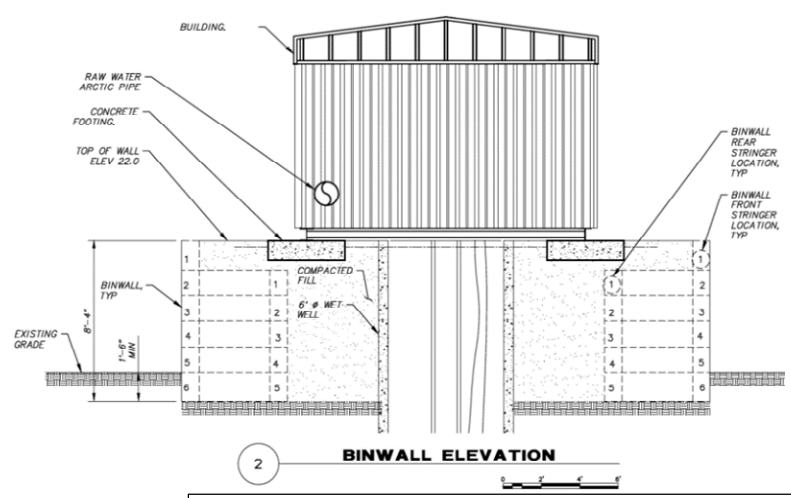
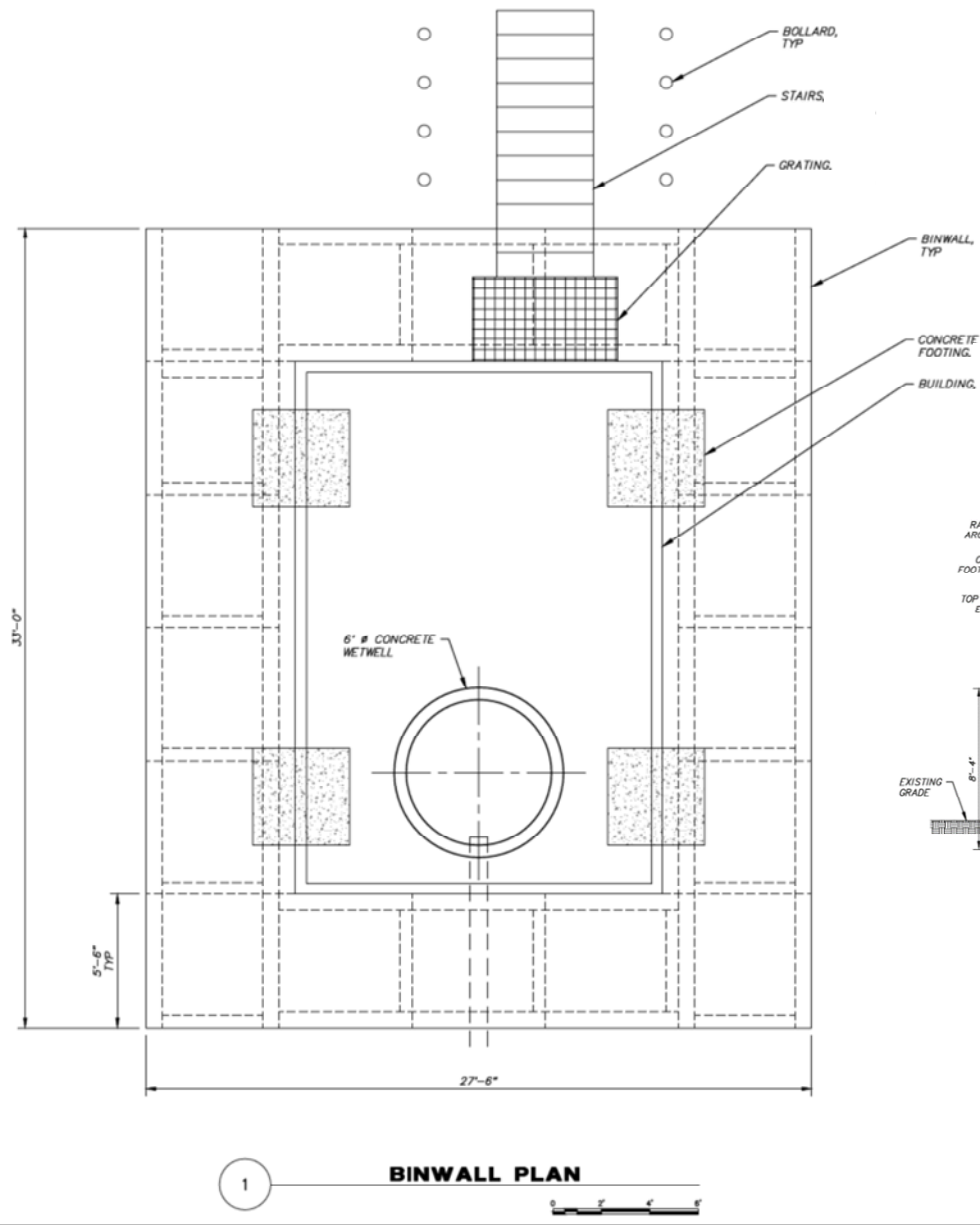


1 **PUMPHOUSE BUILDING PLAN**

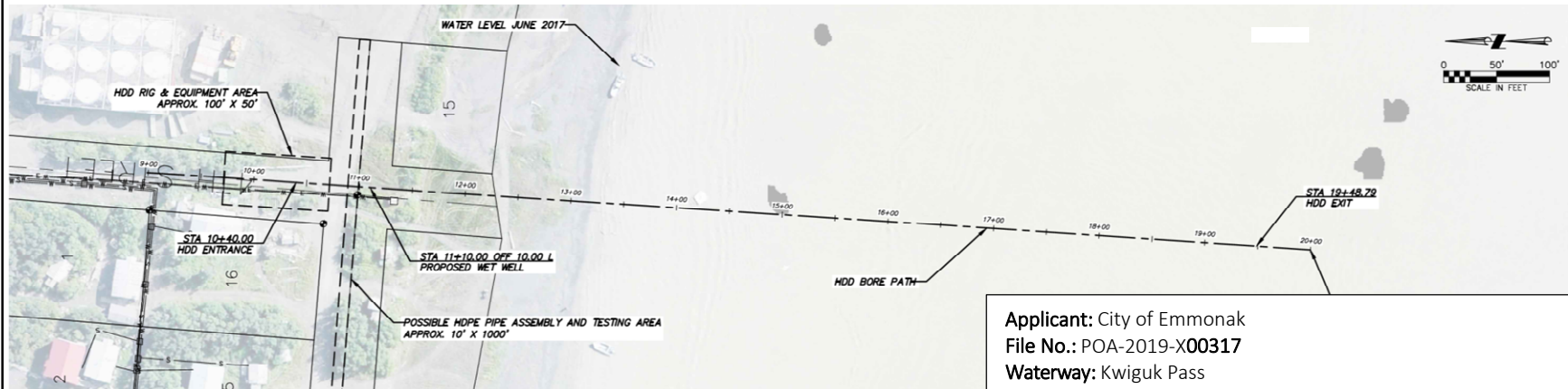
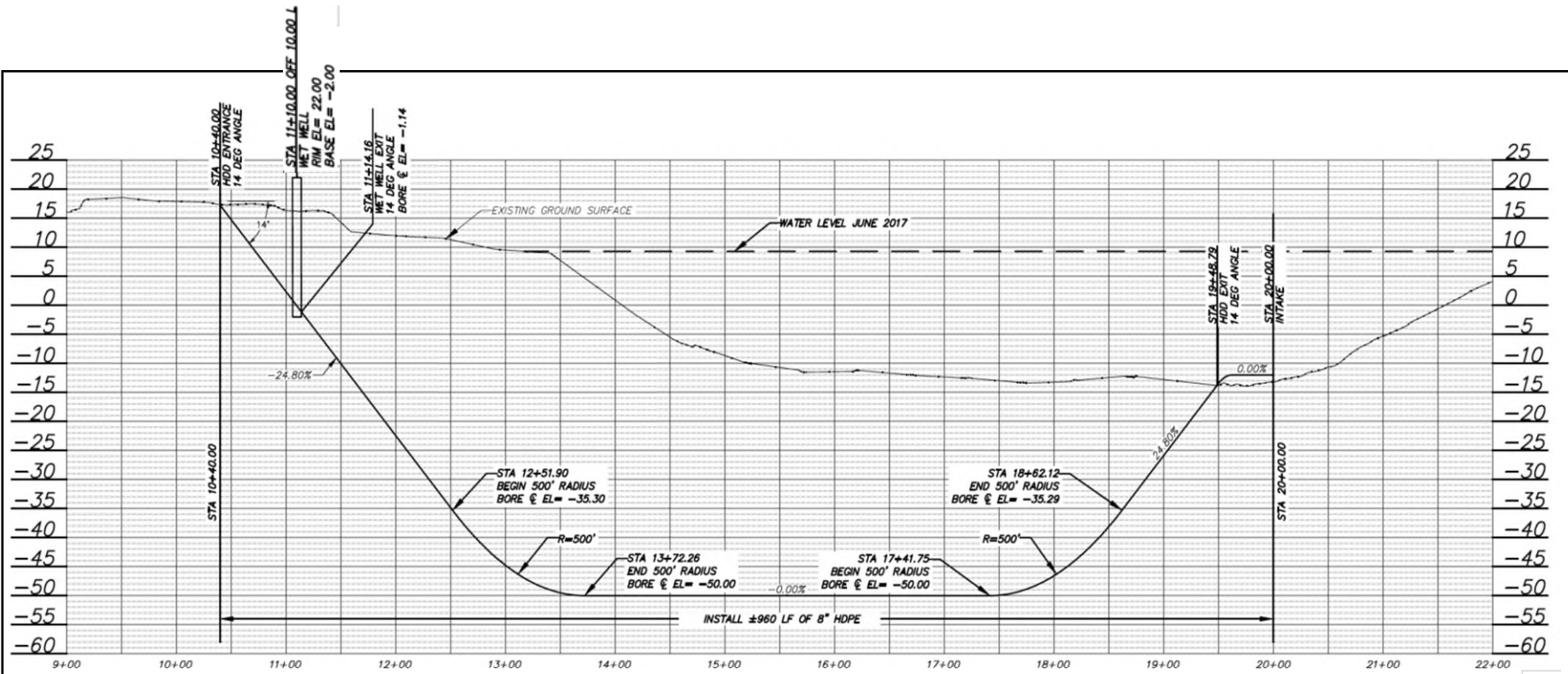


2 **WET WELL SECTION A-A**

Applicant: City of Emmonak
 File No.: POA-2019-00317
 Waterway: Kwiguk Pass
 Proposed Activity: Water Intake Installation
 Section: 18 Township: 31N Range: 81W Meridian: Seward
 Lat.: 62.776445 Long.: -164.532962
 Sheet: 3 of 5 Date: April 2019



Applicant: City of Emmonak
File No.: POA-2019-00317
Waterway: Kwiguk Pass
Proposed Activity: Water Intake Installation
Section: 18 **Township:** 31N **Range:** 81W **Meridian:** Seward
Lat.: 62.776445 **Long.:** -164.532962
Sheet: 4 of 5 **Date:** April 2019



Applicant: City of Emmonak
 File No.: POA-2019-X00317
 Waterway: Kwiguk Pass
 Proposed Activity: Water Intake Installation
 Section: 18 Township: 31N Range: 81W Meridian: Seward
 Lat.: 62.776445 Long.: -164.532962
 Sheet: 5 of 5 Date: April 2019

Addendum Two

Change log from IFAR drawing to IFC drawings

Specifications

Section 02 32 00 - Delete Section 1.2.B in its entirety.

General Drawings

Formatting and minor changes to drawings.

C201

Size of arctic pipe changed from 6"x12" to 8"x15" to match existing raw water line.

Option to reuse demolished raw water arctic pipe added.

Sizes of hoses for flushing adjusted.

Binwall corners added to point table.

C220

Configuration of piping from tanks adjusted.

Extensions on manhole base increased.

Requirement for monolithic wetwell base added.

Wall thickness of wetwell increased from 6" to 7".

C300

Size of arctic pipe changed from 6"x12" to 8"x15" to match existing raw water line.

C301

Heat trace splice box changed to low profile splice box.

Requirement for oversize coupling kit deleted. Instead standard coupling kit required.

C302

Additional 4' section of divider plate and screen added.

All plate changed to 1/4" thickness

Configuration of bracing revised and quantities clarified.

Wetwell hatch dimensions adjusted.

C303

Valve box changed from cast iron to HDPE

Wetwell joint strap detail added.

C304

Requirement for chain length and chain bag added.

C601

Requirement to cut off and grind lifting eyes added.

S201

Equipment/tank loads added.
4x10 w/ hangers added beneath crane posts.

S202

Rebar detailing clarified.

A200

Trim ring width adjusted from 8" to 10"

M200

Revised intake hood and mounting height

E200

Detail 2 – Minor clarifications and changed breaker size for future pump
Detail 3 – Corrected scale of conduits and added dimension for weather head
Notes – Minor revisions to notes 1, 2, 5, 8, 9, 13 and 14

E201

Detail 1 – Relocated "TC"
Detail 2 – Added location of "EUC" and move antenna location
Notes - Minor revisions to notes 7, 9, 18, 19, 20, 22, 23 and added note 24

E202

Detail 1 – Relocated "TC"

E300

Panel IMDP – Changed breaker size for future 7.5 HP well pump and added breaker for heat tape

E400

Schematic – Clarified components and updated inputs and outputs
Component Schedule – Changed components 2, 4, 6, 7, 10 and 11
Existing Panel "AP" – Added new placard

E401

Added component labels and minor clarifications

E402

Added component labels, field connections, and minor clarifications