

**OUTER DRIVE & WEST JUNEAU WASTEWATER  
LIFT STATION IMPROVEMENTS**

**VOLUME II of II**

**Contract No. BE23-194**

File No. 2124



ENGINEERING DEPARTMENT

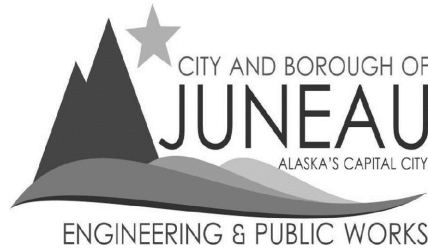
# OUTER DRIVE AND WEST JUNEAU PUMP STATION REHABILITATION

## CONTRACT BE23-194

### JUNEAU, ALASKA

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BID SET

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION  
 JUNEAU, AK  
 COVER

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
G-001

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**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINE
---	---	ADJACENT PROPERTY
---	---	ROW CENTERLINE
---	---	EASEMENT LINE
(NUM)		CONTROL POINT NUMBER
⊕		CONTROL POINT SYMBOL
⊙		ALCAP
⊙		TEMPORARY BENCH MARK
⊙		SURVEY MONUMENT
		BUILDING
		CONCRETE
		EDGE OF PAVEMENT
		CURB AND GUTTER
W	W	WATER LINE
⊕	⊕	VALVE / KEYBOX
⊕	⊕	FIREHYDRANT
L	L	CAP
FM	FM	SEWER FORCE MAIN
S	S	SEWER LINE
⊕	⊕	SEWER MANHOLE
⊕	⊕	AIR RELEASE VALVE
⊕	⊕	SEWER PLUG VALVE
SD	SD	STORM DRAIN LINE
⊕	⊕	STORM DRAIN MANHOLE
⊕	⊕	CATCH BASIN FIELD INLET
⊕	⊕	CATCH BASIN CURB & GUTTER INLET
⊕	⊕	YARD DRAIN
G	G	GAS LINE
C	C	COMMUNICATION LINE
C	C	COMMUNICATIONS PEDESTAL
OE	OE	OVERHEAD ELECTRIC LINE
E	E	UNDERGROUND ELECTRIC LINE
⊕	⊕	POWER POLE / UTILITY POLE
⊕	⊕	LIGHTPOLE
←	←	ANCHOR
E	E	ELECTRIC PEDESTAL
⊕	⊕	ELECTRIC METER
⊕	⊕	JUNCTION BOX
•	•	BOLLARD
MB	MB	MAIL BOX
⊕	⊕	TRANSFORMER
X	X	FENCE
⊕	⊕	SIGN
⊕	⊕	CONTROL LINE
⊕	⊕	CONTROL LINE & LABEL
⊕	⊕	DECIDUOUS TREE
⊕	⊕	CONIFEROUS TREE
⊕	⊕	SHRUB
⊕	⊕	BOULDER
⊕	⊕	VEGETATION
⊕	⊕	GEO TECHNICAL BORING LOCATION
#	#	SECTION INDICATOR
#	#	DETAIL BUBBLE
⊕	⊕	BREAK LINE
⊕	⊕	REVISION INDICATOR
		DEMOLITION LIMITS

**GENERAL NOTES**

- TOGETHER THE DRAWINGS AND CONSTRUCTION SPECIFICATIONS CONSTITUTE A COMPLETE AND INSEPARABLE SET OF CONSTRUCTION DOCUMENTS, INCLUDING ALL NECESSARY CONSTRUCTION AND MATERIALS SPECIFICATIONS TO ENSURE THE PROJECT AS CONSTRUCTED MEETS THE DESIGN INTENT. ANY CHANGES TO CONSTRUCTION METHODS OR MATERIALS SHALL BE APPROVED IN WRITING IN ADVANCE BY THE RESPONSIBLE REGISTERED PROFESSIONAL.
- THIS IS A STANDARD SHEET OF SYMBOLOGY AND NOT ALL SYMBOLS MAY HAVE BEEN USED IN THIS PLANSET.
- THE USE OF THE TERM "PUMP STATION" AND "LIFT STATION" THROUGHOUT THESE PLANS, SPECIFICATIONS, ESTIMATES, AND OTHER PERTINENT PROJECT DOCUMENTS ARE SYNONYMOUS AND REFER TO A "SANITARY SEWER LIFT STATION". THE TERM "PUMP STATION" SHALL NOT BE CONSTRUED TO MEAN POTABLE WATER PUMP STATION.
- EXISTING GROUND CONTOURS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY SITE CONDITIONS.
- LOCATIONS OF UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO CONSTRUCTION. EXERCISE CAUTION DURING EXCAVATION TO EXPOSE UTILITIES WITHOUT DAMAGE. CONTRACTOR SHALL CALL ALASKA DIG LINE (811) FOR UTILITY LOCATES BEFORE DIGGING PER A.S. 42.30.410.
- VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED PRIOR TO CONSTRUCTION. REPORT DISCREPANCIES FROM PLANS IMMEDIATELY TO ENGINEER. RECORD LOCATIONS AND CHANGES TO UTILITIES IN SURVEY NOTES AND ON AS-BUILT DRAWINGS.
- RESTORE ALL DISTURBED PROPERTY OUTSIDE OF WORK LIMITS TO ORIGINAL CONDITIONS.
- THE PLAN DRAWINGS DO NOT SHOW ALL LANDSCAPING AND VEGETATION TO BE ENCOUNTERED DURING CONSTRUCTION. CONTRACTOR SHOULD HAVE A PLAN TO REMOVE AND REPLACE OR WORK AROUND ANY VEGETATION. LITTLE OR NO VEGETATION IS ANTICIPATED WITHIN THE WORK AREA.
- ALL DESIGNATED ITEMS TO BE REMOVED OR DEMOLISHED SHALL BE DISPOSED OF AT AN OFF-SITE, PERMITTED LOCATION UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL FOLLOW ALL CITY OF JUNEAU REGULATIONS FOR NOISE, HOURS OF OPERATIONS, AND DUST CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS AS NECESSARY TO COMPLY WITH FEDERAL, STATE, AND MUNICIPAL LAWS THAT PROHIBIT UNPERMITTED DISCHARGE OF POLLUTANTS, INCLUDING SEDIMENTS, THAT ARE A RESULT OF EROSION AND OTHER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONDUCT ALL WORK SO SEDIMENT IS NOT TRANSPORTED ONTO THE ROADWAY, ADJACENT PROPERTY, OR GASTINEAU CHANNEL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY DEWATERING PERMITS PRIOR TO EXCAVATION. CONTRACTOR IS RESPONSIBLE FOR THE QUALITY OF EFFLUENT FROM DEWATERING PROCESSES AND ANY CONSTRUCTION RUNOFF.
- ALL COMPACTION SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- PIPE DEFLECTION AND JOINT DEFLECTION SHALL NOT EXCEED ONE-HALF OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEANS TO PROTECT EXISTING EQUIPMENT AND THE BUILDING STRUCTURE.
- WHERE CONDITIONS ARE ENCOUNTERED WHICH APPEAR DIFFERENT FROM THOSE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE PERFORMANCE OF WORK.
- CBJ ENGINEERING STANDARD DETAILS, 4TH EDITION, AUGUST 14, 2011 ARE MADE PART OF THESE CONTRACT DOCUMENTS WITH CURRENT MODIFICATIONS AS APPLICABLE. ALL WORK AND MATERIALS NOT INCLUDED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO THESE STANDARDS. IN CASE OF A CONFLICT BETWEEN REGULATORY OR STANDARD SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL. CBJ STANDARD DETAILS CAN BE FOUND AT: [HTTPS://JUNEAU.ORG/ENGINEERING-PUBLIC-WORKS/CBJ-ENGINEERING-STANDARDS](https://juneau.org/engineering-public-works/cbj-engineering-standards)
- CONSTRUCTION SAFETY AND SANITATION FACILITIES SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND ALL WORK IN THE AREA WITH THE PROJECT ENGINEER AND CBJ STAFF PRIOR TO BEGINNING WORK ON THE PROJECT.
- THE CONTRACTOR SHALL COORDINATE WITH CBJ OPERATORS IN OPERATING ALL EXISTING VALVES AND PUMPS.
- THE CONTRACTOR IS TO COMPLY WITH ALL PERMIT CONDITIONS AND RESTRICTIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL, USING WATER OR OTHER METHODS APPROVED BY THE REPRESENTATIVE.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SAFE SITE DURING BOTH WORKING AND NON-WORKING HOURS.
- REFER TO THE PROJECT SPECIFICATION FOR FACILITY SHUTDOWN ALLOWANCES AND CONSTRUCTION CONSTRAINTS.
- EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTALLATION AND STARTUP REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFICATIONS REQUIRED, IF ANY, TO ACCOMMODATE ALTERNATE EQUIPMENT.

**ABBREVIATIONS**

AC	ASBESTOS CEMENT	LF	LINEAR FEET
ACP	ASPHALT CONCRETE PAVEMENT	LT	LEFT
ADA	AMERICANS WITH DISABILITIES ACT	MAX	MAXIMUM
ARFS	AS REQUIRED FOR SAFETY	MCL	MATERIALS CERTIFICATION LIST
ASD	ABANDONED STORM DRAIN	ME	MATCH EXISTING
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MH	MANHOLE
ATM	ALASKA TRAFFIC MANUAL	MIN	MINIMUM
AVAP	AS VERTICAL AS POSSIBLE	MJ	MECHANICAL JOINT
AWWA	AMERICAN WATER WORKS ASSOCIATION	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
BLVD	BOULEVARD	N	NORTH
BOP	BOTTOM OF PIPE	NFS	NON FROST SUSCEPTIBLE
BV	BUTTERFLY VALVE	NO	NUMBER
C&G	CURB & GUTTER	NSF	NATIONAL SANITATION FOUNDATION
CAP	CORRUGATED ALUMINUM PIPE	NTS	NOT TO SCALE
CBMH	CATCH BASIN MANHOLE	O&M	OPERATION & MAINTENANCE
CBJ	CITY AND BOROUGH OF JUNEAU	OC	ON CENTER
CI	CAST IRON	OD	OUTER DRIVE PUMP STATION
CIPP	CURED-IN-PLACE-PIPE	OGS	OIL GRIT SEPARATOR
CL	CLASS	OH	OVERHEAD
CMP	CORRUGATED METAL PIPE	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
CO	CLEANOUT	PCC	PORTLAND CEMENT CONCRETE
CONC	CONCRETE	PE	PLAIN END
CPEP	CORRUGATED POLYETHYLENE PIPE	PI	POINT OF INTERSECTION
CPPP	CORRUGATED POLYPROPYLENE PIPE	PPI	PLASTIC PIPE INSTITUTE
CSP	CORRUGATED STEEL PIPE	PS	PUMP STATION
CSSP	CORRUGATED STRUCTURAL STEEL PIPE	PSI	POUNDS PER SQUARE INCH
CSSPA	CORRUGATED STRUCTURAL STEEL PIPE ARCH	PVC	POLYVINYL CHLORIDE
CTE	CONNECT TO EXISTING	R	RADIUS
CU	COPPER	R&R	REMOVE & REPLACE
CY	CUBIC YARD	ROW	RIGHT-OF-WAY
∅	DIAMETER	RT	RIGHT
DIA	DIAMETER	S	SOUTH
DEC	DEPARTMENT OF ENVIRONMENTAL CONSERVATION	SCH	SCHEDULE
DIP	DUCTILE IRON PIPE	SD	STORM DRAIN
DR	DIMENSION RATIO	SDCB	STORM DRAIN CATCH BASIN
EA	EACH	SDMH	STORM DRAIN MANHOLE
EG	EXISTING GRADE	SDR	STANDARD DIMENSION RATIO
ELEV	ELEVATION	SDYD	STORM DRAIN YARD DRAIN
EOP	END OF PROJECT	SS	SANITARY SEWER
E	EXISTING	STA	STATION
FF	FINISH FLOOR	STD	STANDARD
F&I	FURNISH & INSTALL	SW	SIDEWALK
FL	FLANGE	T	TELEPHONE
FM	FORCE MAIN	TB	TEST BORING
FT	FEET	TBC	TOP BACK OF CURB
G	GAS	TBD	TO BE DETERMINED
GB	GRADE BREAK	TYP	TYPICAL
GV	GATE VALVE	UG	UNDERGROUND
HDPE	HIGH DENSITY POLYETHYLENE	VB	VALVE BOX
HYD	HYDRANT	W	WEST
ID	INSIDE DIAMETER	WJ	WEST JUNEAU PUMP STATION
INV	INVERT	W/O	WITHOUT
JDWWTP	JUNEAU DOUGLAS WATER TREATMENT PLANT	WT	WEIGHT
LB	POUNDS	WWTP	WASTEWATER TREATMENT PLANT
LC	LEVELING COURSE	YD	YARD DRAIN

REV	DATE	DESCRIPTION



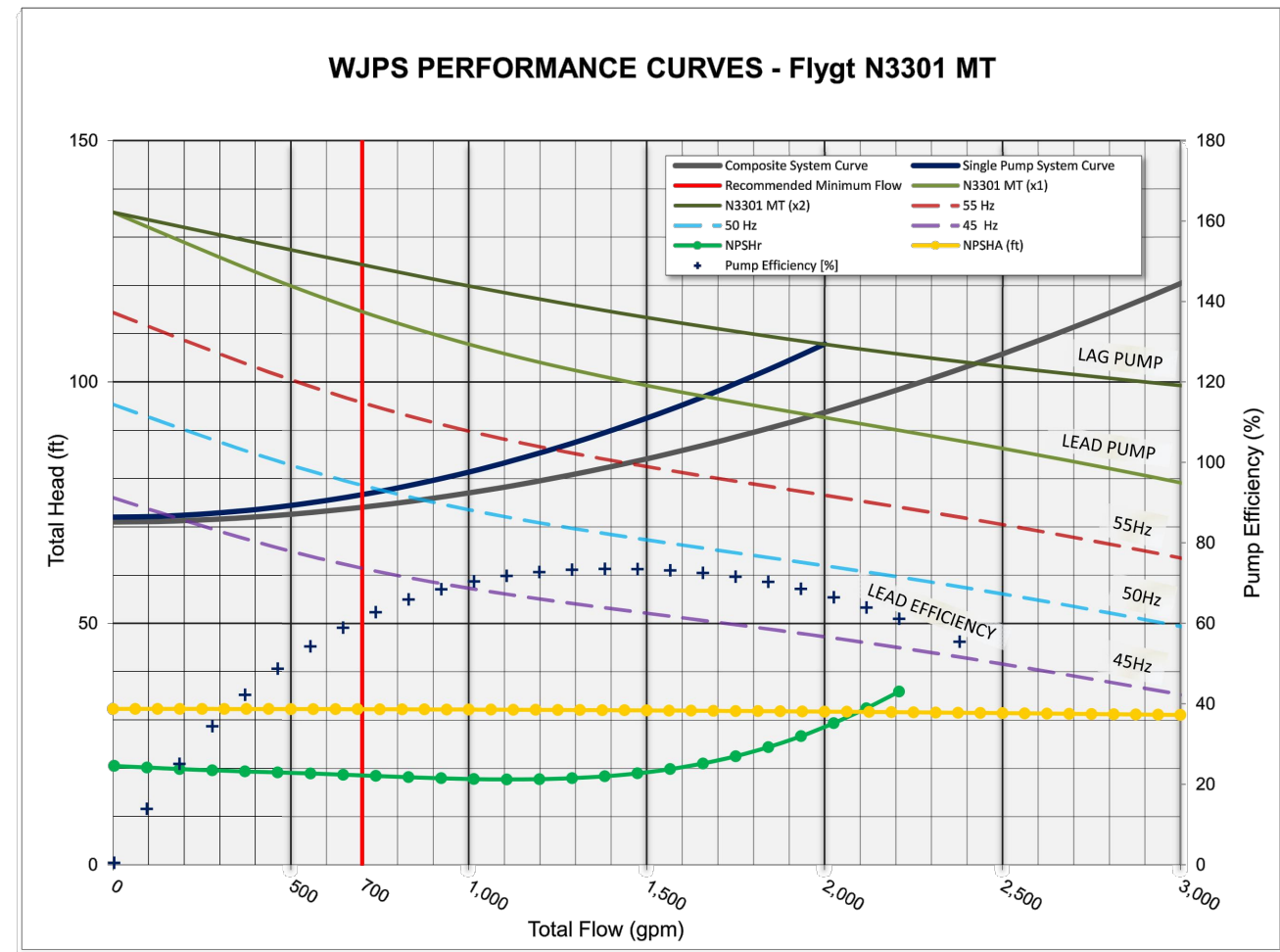
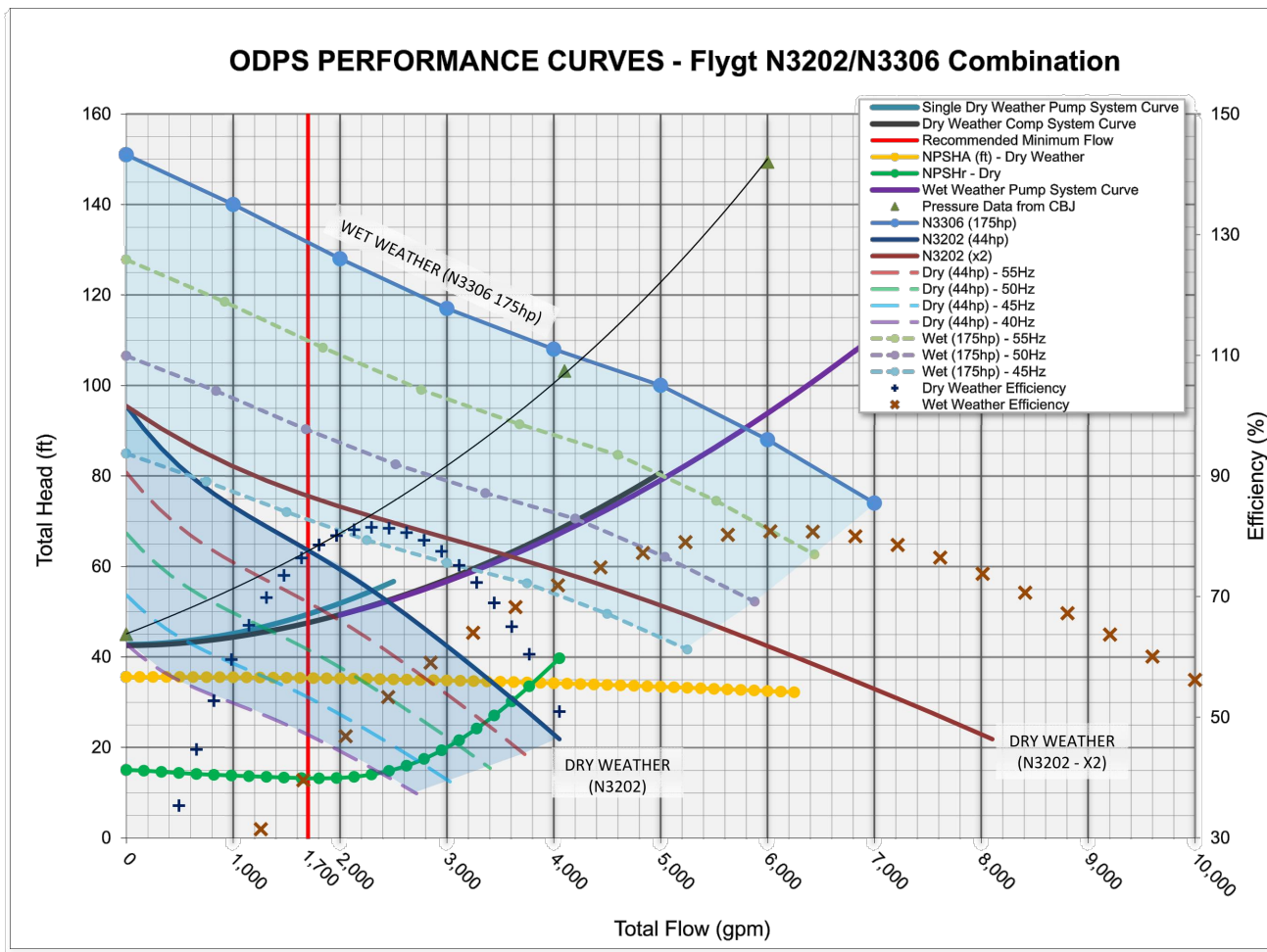
OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
**GENERAL LEGEND, NOTES, & ABBREVIATIONS**

PROJECT 1528.50233.01  
 DATE 01/17/2023

SHEET  
 G-002

**BID SET**

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1 G-003 OUTER DRIVE PERFORMANCE CURVES  
NTS

	WATER SURFACE ELEVATION	WATER DEPTH	WET WELL FALLING				WET WELL RISING			
			NO.1 60 Hz	NO.1 42+ Hz	NO.2 60 Hz	NO.2 42 Hz	NO.3 45 Hz	NO.1 60 Hz	NO.1 42 Hz	NO.2 60 Hz
HIGH ALARM	7.0	8.6								
HIGH HIGH	6.6	8.2								
LAG ON	6.0	7.6								
LEAD HIGH	5.6	7.2								
LEAD ON	4.6	6.2								
LEAD OFF	3.5	5.1								
LOW ALARM	3.2	4.8								
WET WELL FLOOR	-1.6	-								

NOTE:  
SEQUENCE PROVIDED AS THE RECOMMENDED INITIAL PUMP SET POINTS. OPTIMIZATION, FIELD TUNING, SET POINT ADJUSTMENT, PID CONTROLLER TUNING FOR CONSTANT WELL LEVEL ARE AT CBJ OPERATOR AND INTEGRATOR DISCRETION.

2 G-003 OUTER DRIVE PUMP SEQUENCE & CRITERIA  
NTS

OUTER DRIVE DESIGN CRITERIA:

PUMP STATION DESIGN CAPACITY (Q),  
FIRM = 3,500 GPM  
TOTAL DYNAMIC HEAD (TDH)  
AT DESIGN Q = 63 FT

DRY WEATHER PUMPS, RATED CAPACITY  
Q = 1,870 GPM  
TDH = 61 FT  
HP = 44 HP

WET WEATHER PUMP, RATED CAPACITY  
Q = 4,180 GPM  
TDH = 105 FT  
HP = 175 HP

AVERAGE DAILY PUMPED VOLUME 1.0 MGD  
MAXIMUM DAILY PUMPED VOLUME 2.3 MGD  
MINIMUM FORCE MAIN VELOCITY 2.0 FPS

FORCE MAIN  
LENGTH 5,300 FEET  
DIAMETER 20 INCHES  
MINIMUM PUMP FLOW RATE 1,700 GPM

GRAVITY MAIN  
FROM UPSTREAM MANHOLE 48 FEET  
SLOPE 0.77%  
DIAMETER 30 INCHES

3 G-003 WEST JUNEAU PERFORMANCE CURVES  
NTS

	WATER SURFACE ELEVATION	WATER DEPTH	WET WELL FALLING				WET WELL RISING	
			NO.1 45 Hz	NO. 1 60 Hz	NO.2 60 Hz	NO.2 45 Hz	NO.1 60 Hz	NO.2 60 Hz
HIGH ALARM	4.00	6.87						
LAG ON	3.50	6.37						
LEAD ON	2.70	5.57						
LAG OFF	0.50	3.37						
LEAD OFF	0.50	3.37						
LOW ALARM	0.00	2.87						
WET WELL FLOOR	-2.87	-						

NOTE:  
SEQUENCE PROVIDED AS THE RECOMMENDED INITIAL PUMP SET POINTS. OPTIMIZATION, FIELD TUNING, SET POINT ADJUSTMENT, PID CONTROLLER TUNING FOR CONSTANT WELL LEVEL ARE AT CBJ OPERATOR AND INTEGRATOR DISCRETION.

4 G-003 WEST JUNEAU PUMP SEQUENCE  
NTS

WEST JUNEAU DESIGN CRITERIA:

PUMP STATION DESIGN CAPACITY (Q),  
FIRM = 1,675 GPM  
TOTAL DYNAMIC HEAD (TDH)  
AT DESIGN Q = 97 FT

PUMP RATED CAPACITY  
Q = 1,860 GPM  
TDH = 94 FT  
HP = 85 HP

BOTH PUMPS OPERATING  
Q = 1,975 GPM  
TDH = 93 FT

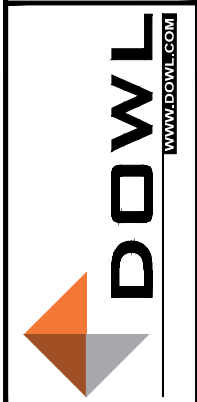
AVERAGE DAILY PUMPED VOLUME 0.5 MGD  
MAXIMUM DAILY PUMPED VOLUME 1.0 MGD  
MINIMUM FORCE MAIN VELOCITY 2.0 FPS

FORCE MAIN  
LENGTH 2,000 FEET  
DIAMETER 12 INCHES  
MINIMUM PUMP FLOW RATE 700 GPM

GRAVITY MAIN  
LENGTH FROM UPSTREAM MANHOLE 10 FEET  
SLOPE 2.10%  
DIAMETER 18 INCHES

BID SET

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
PUMP STATION PUMP CURVES AND DATA SHEET

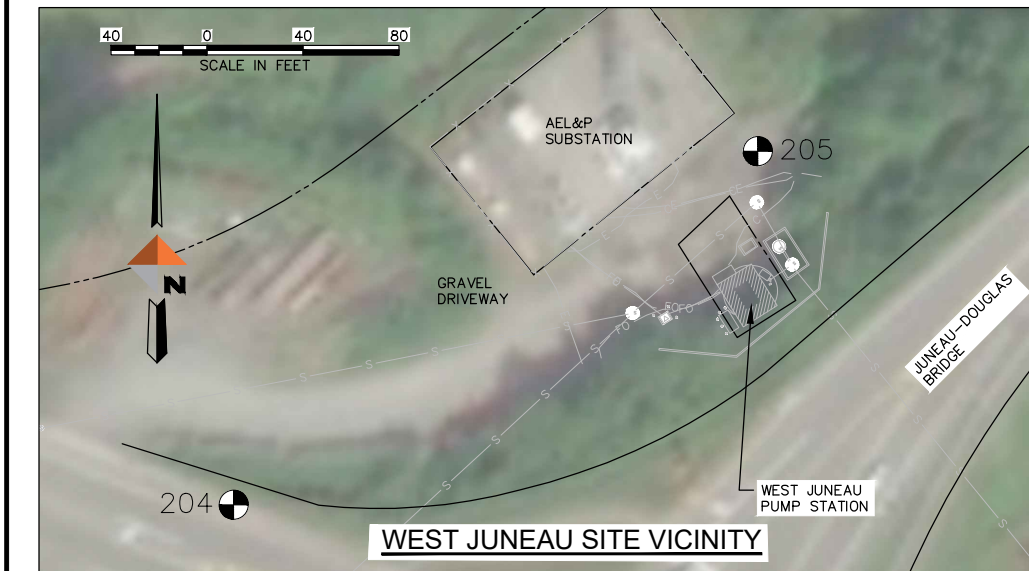
PROJECT 1528.50233.01  
DATE 01/17/2023

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G-003

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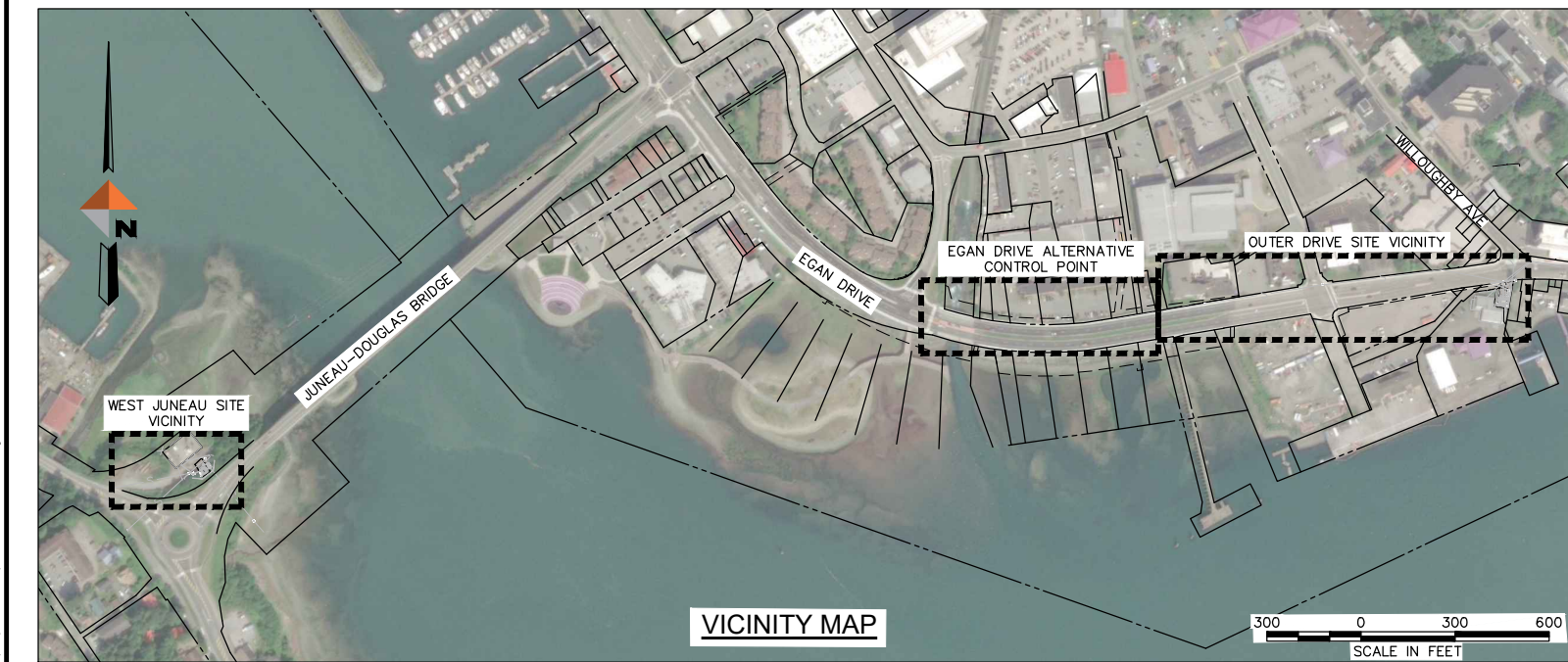
OUTER DRIVE SITE VICINITY



WEST JUNEAU SITE VICINITY



EGAN DRIVE ALTERNATIVE CONTROL POINT



VICINITY MAP

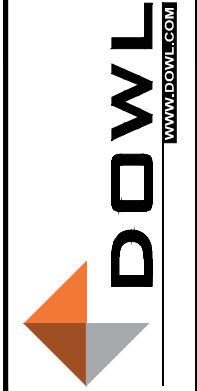
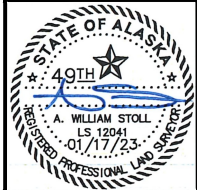
**HORIZONTAL CONTROL**  
 COORDINATES ARE ALASKA STATE PLANE ZONE 1, NAD83(2011) EXPRESSED IN U.S. SURVEY FEET. THE BASIS OF COORDINATES IS POINT 501, NATIONAL GEODETIC SURVEY TIDAL BENCHMARK "JNU TIDAL GPS" (PID: A14908), A BRASS DISK HAVING PUBLISHED NGS VALUES OF N 2,362,232.94 AND E 2,541,120.78. BEARING WERE DERIVED FROM STATIC GNSS OBSERVATIONS TAKEN DURING NOVEMBER 2021, HOLDING THE PUBLISHED NGS POSITION OF NGS STATION "JNU TIDAL GPS".

**VERTICAL CONTROL**  
 ELEVATIONS ARE NAVD88 GEOID 12B ORTHOMETRIC HEIGHTS EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS WERE DETERMINED HOLDING THE PUBLISHED ELLIPSOID HEIGHT FOR POINT 501, NATIONAL GEODETIC SURVEY TIDAL BENCHMARK "JNU TIDAL GPS" (PID: A14908), A BRASS DISK SET IN CONCRETE. THE GPS DERIVED NAVD88 GEOID 12B ELEVATION OF 25.31 WAS HELD FOR THIS PROJECT.

CONTROL MONUMENTS USED IN THIS SURVEY					
ID	NORTHING	EASTING	ELEVATION	DESCRIPTION	SURVEY POINT #
202	2362316.657	2542760.479	22.0470	BRASS CAP	202
203	2362342.233	2542220.353	22.3570	ALCAP	203
204	2361652.718	2538419.912	47.6370	MAGNAIL	204
205	2361800.014	2538637.481	25.0080	ALCAP	205
JNU TIDAL	2362232.94	2541120.777	25.3080	BRASS CAP	501

**BID SET**

REV	DATE	DESCRIPTION	BY

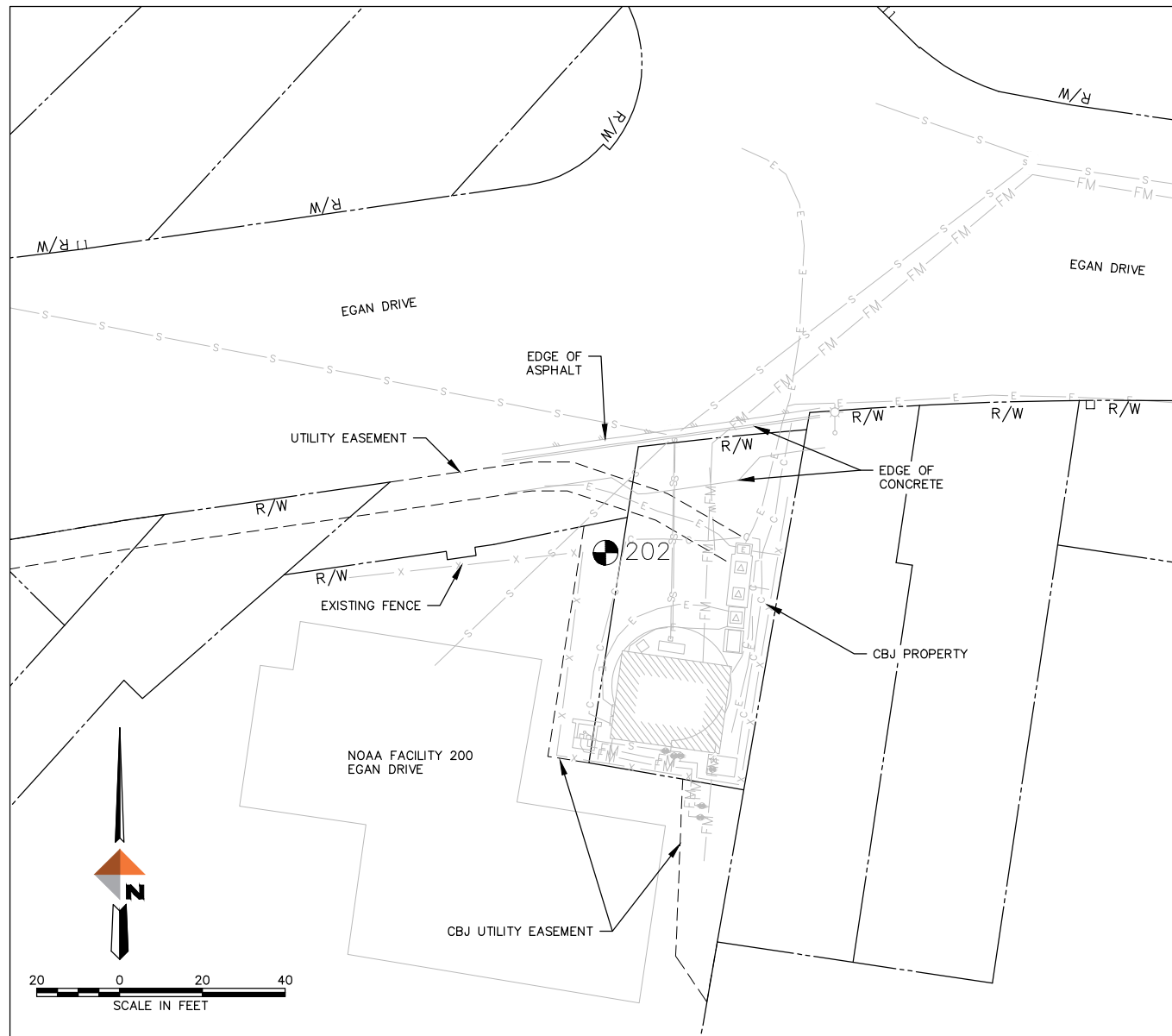


OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
 SURVEY CONTROL

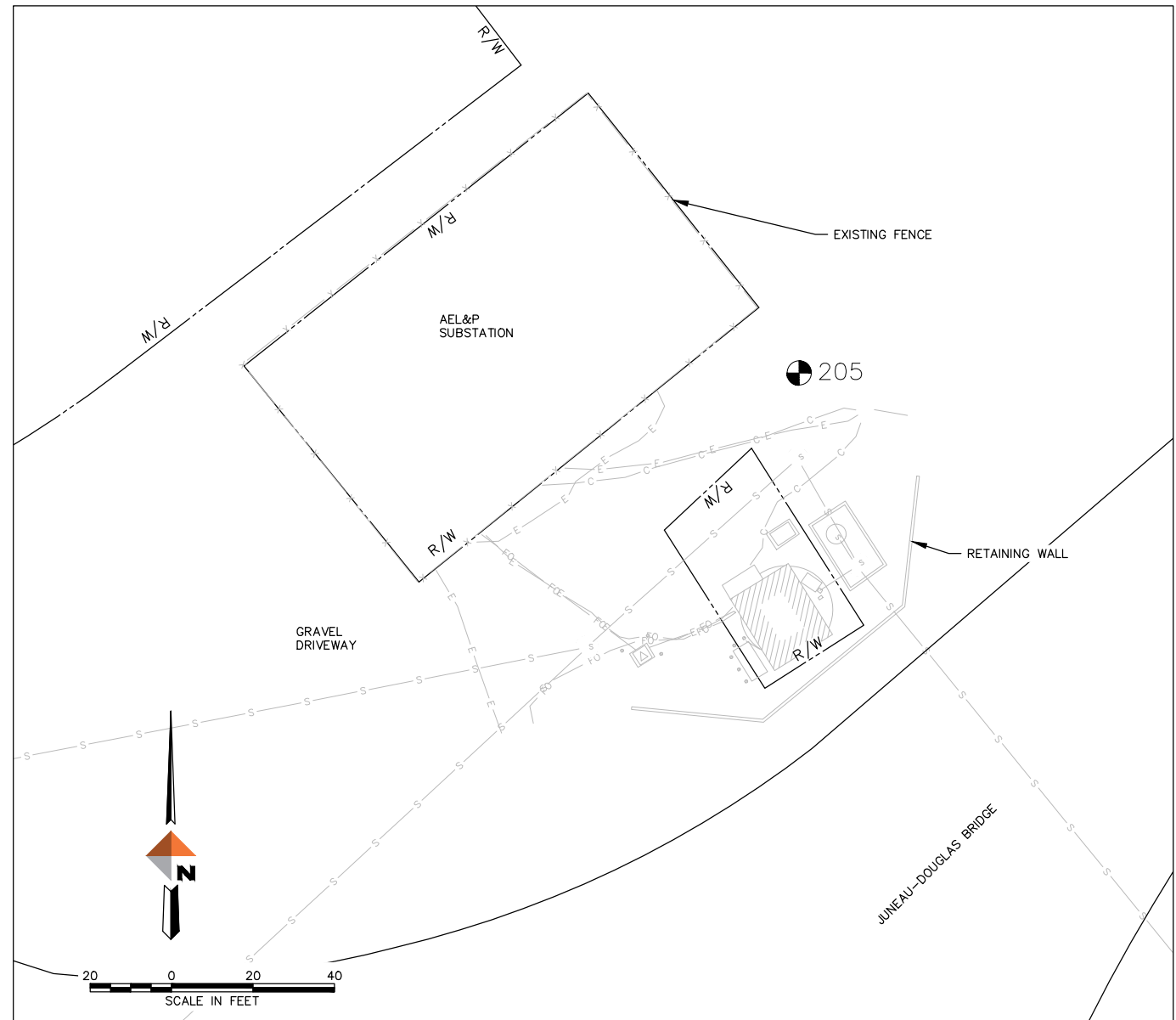
PROJECT 1528.50233.01  
 DATE 01/17/2023

SHEET  
 V-101

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1 OUTER DRIVE PUMP STATION SITE  
1" = 20'



2 WEST JUNEAU PUMP STATION SITE  
1" = 20'

**NOTES:**

1. THERE IS NO RIGHT-OF-WAY TAKE OR TEMPORARY CONSTRUCTION EASEMENT OBTAINED BY THE CITY AND BOROUGH OF JUNEAU FOR THE FACILITATION OF THIS PROJECT.
2. PROPERTY LINES AND UTILITY EASEMENTS DISPLAYED ARE EXISTING. R/W LABELS INDICATE DOT&PF ROW.
3. THE WEST JUNEAU PUMP STATION SITE IS LOCATED WITHIN CBJ PROPERTY. DOT&PF PROPERTY SURROUNDS THE PROJECT SITE.
4. THE GRAVITY SEWER FACILITIES UPSTREAM OF OUTER DRIVE PUMP STATION EXIST WITHIN AKDOT&PF. USE OF THESE FACILITIES SHALL BE PERFORMED UNDER THE CONDITIONS OF THE MAJOR UTILITY PERMIT NO. 331103-71-020, DATED JUNE 2ND 1971.

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION  
JUNEAU, AK  
RIGHT OF WAY

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
V-102

**BID SET**

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SECTION A-A



SECTION B-B

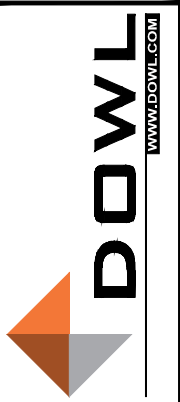
**NOTES:**

1. DO NOT BLOCK ACCESS TO AEL&P SUBSTATION AT ANY TIME. COORDINATE WITH THE UTILITY FOR ADDITIONAL STAGING AREA ONSITE.
2. NO STAGING AREA IS PROVIDED AT THE OUTER DRIVE SITE BESIDES THAT AVAILABLE WITHIN THE PROPERTY.



WEST JUNEAU PROPOSED STAGING AREA

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
CONSTRUCTION  
STAGING AREA

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
V-103

**BID SET**

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**NOTES:**

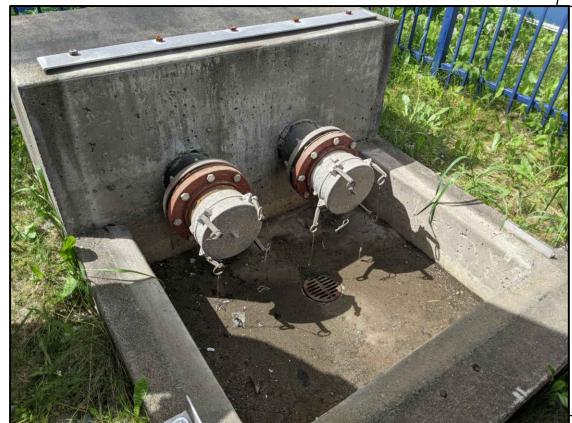
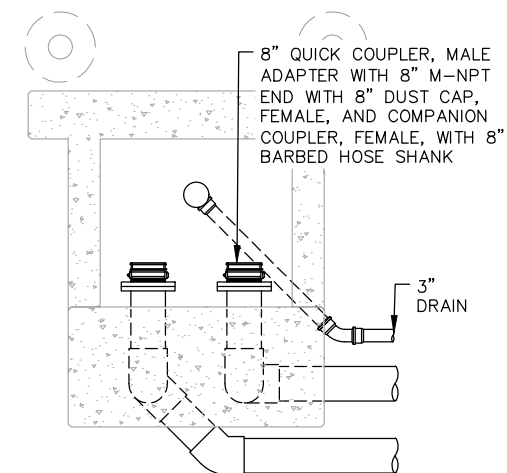
- CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL TEMPORARY BYPASS PUMPS, PIPING, AND EQUIPMENT NECESSARY FOR THE CONSTRUCTION OF THE STRUCTURES DETAILED IN THESE DRAWINGS. THE CONTRACTOR SHALL ENSURE CONTINUOUS SERVICE TO THE UPSTREAM SEWER.
- THE 30-INCH GRAVITY MAIN BETWEEN THE OD JUNCTION MANHOLE AND THE OUTER DRIVE PUMP STATION WET WELL MAY BE PLUGGED AND THE OD JUNCTION MANHOLE MAY BE USED AS AN INTERIM WET WELL. BYPASS LINES AND EQUIPMENT SHALL BE PROTECTED FROM TRAFFIC AND ALLOW TRAFFIC FLOW. CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL PLAN AND LANE CLOSURE PERMITTING AND APPROVAL PRIOR TO BEGINNING ANY WORK WITHIN THE AKDOT&PF ROW OR THE EGAN DRIVE ROADWAY PRISM.
- BYPASS PUMPS SHALL BE CAPABLE OF HANDLING RAW, UNSCREENED SEWAGE CONTAINING GRAVEL, RAGS, AND OTHER FIBROUS MATERIALS. PUMPS SHALL BE SELF-PRIMING, NON-CLOG, AND CAPABLE OF PASSING 3-INCH SOLIDS, OR CHOPPER STYLE PUMPS.
- A MINIMUM OF TWO (2) PUMPS SHALL BE INSTALLED AND OPERABLE AT THE OUTER DRIVE PUMP STATION AT ALL TIMES DURING BYPASS. FOR REDUNDANCY IN THE CASE OF PUMP FAILURE, AN ADDITIONAL PUMP IS RECOMMENDED TO BE AVAILABLE AND READY IN RESERVE FOR THE DURATION OF BYPASS PUMPING.
- ROUTING AND MAINTENANCE OF BYPASS LINES IS AT CONTRACTOR DISCRETION. ROUTING SHALL BE ACHIEVED WITHOUT DISRUPTION OF WORK AND RISK OF INJURY OR DAMAGE TO THE LINES DURING CONSTRUCTION. ROUTING MUST BE WITHIN EASEMENTS, UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE BYPASS PLAN SHOWN IN THE DRAWINGS HEREIN ARE PROVIDED TO ASSIST IN THE DEVELOPMENT OF CONTRACTOR WORK PLAN.
- PIPING MAY BE NEW OR USED, BUT SHALL NOT LEAK DURING OPERATION, AND SHALL NOT BE ALUMINUM IRRIGATION PIPE OR SOLVENT CEMENT PVC. IF FLEXIBLE HOISING IS USED, HOSE SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI.
- THE CONTRACTOR SHALL REMOVE ALL TEMPORARY BYPASS EQUIPMENT AND RESTORE THE JUNCTION MANHOLE TO ITS ORIGINAL CONDITION UPON COMPLETION OF BYPASSING OPERATIONS. CONTRACTOR SHALL REPAIR ANY DAMAGE INCURRED DURING BYPASS OPERATIONS AND ESTABLISH FLOWING CONDITIONS IN THE MANHOLE AND MAINS.
- ALL RESIDUAL WASTEWATER LEFTOVER IN BYPASS PIPING SHALL BE DISPOSED OF IN A SANITARY SEWER MANHOLE AND SHALL NOT BE ALLOWED TO SPILL ONTO THE GROUND.
- JUNCTION MANHOLE SHALL BE RETURNED TO PRIOR OR BETTER CONDITION. FLOW CHANNEL SHAPING OR OTHER MANHOLE MODIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH CBJ STANDARD SPECIFICATIONS AND MANHOLE DETAIL.

**ESTIMATED BYPASS PUMPING SYSTEM PERFORMANCE**

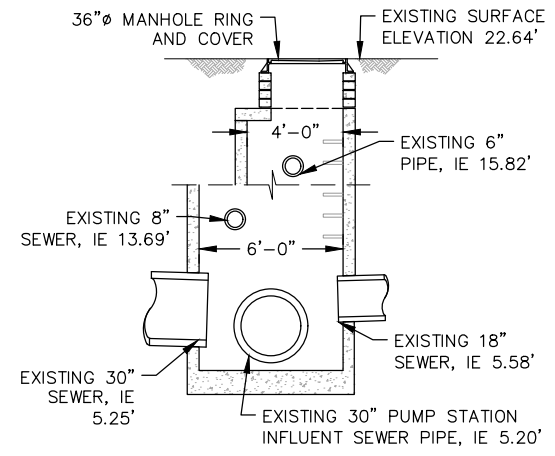
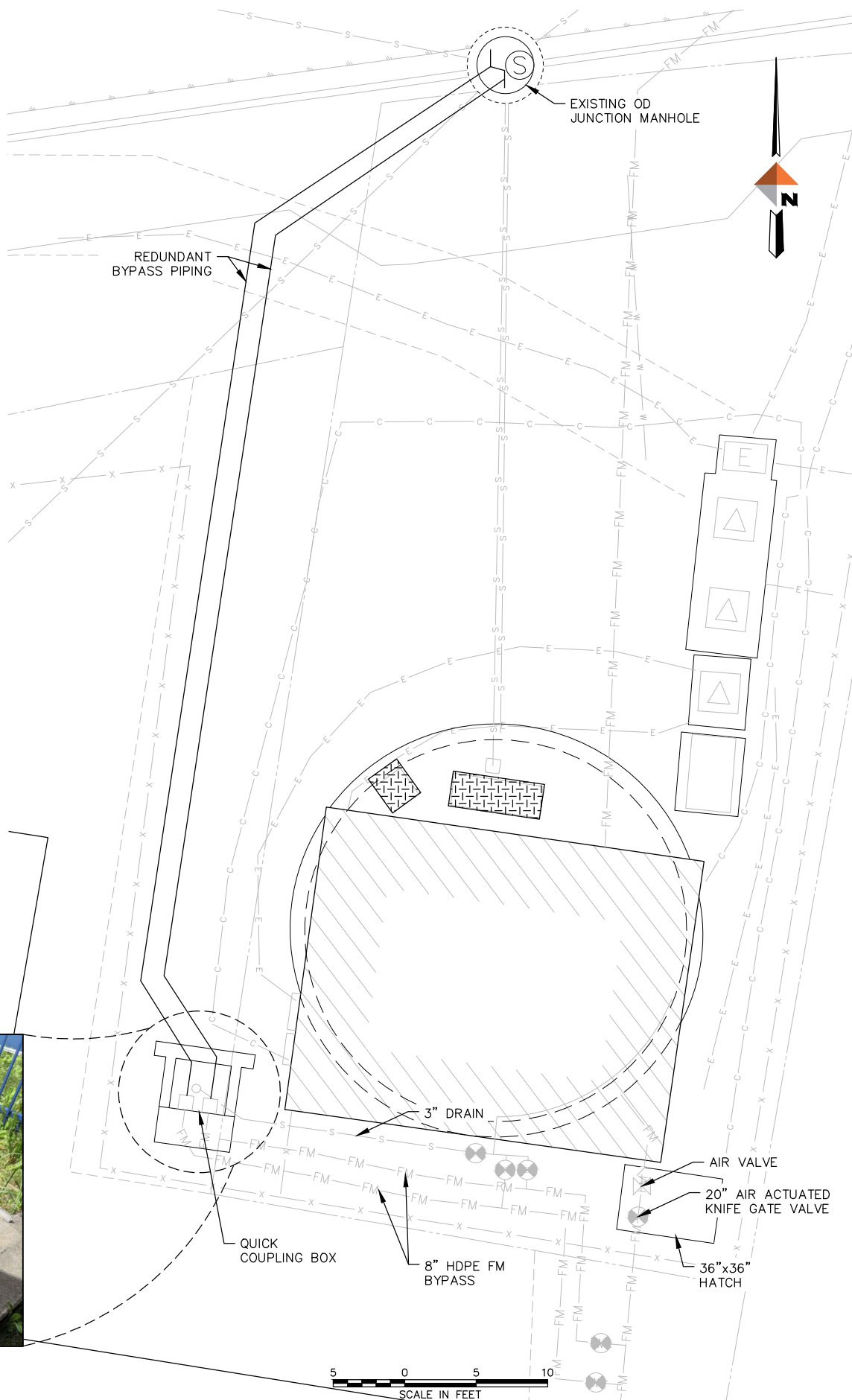
FLOW (GPM)	TOTAL SYSTEM HEAD (FT)
0	43
500	44
1000	47
2000	60
3000	79
3500	91
4500	122
5000	138
5500	161
6000	180

**TABLE NOTES:**

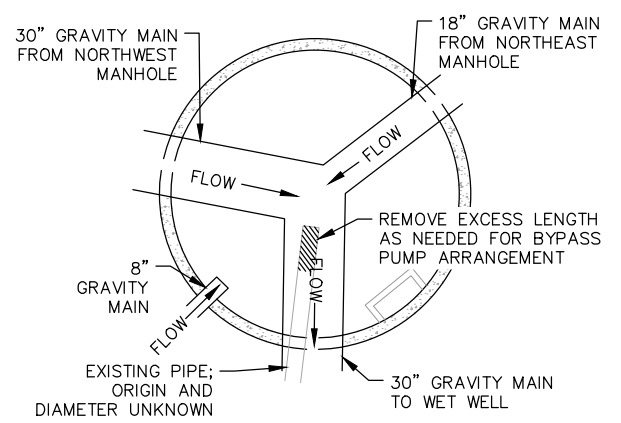
- VALUES IN THIS TABLE WERE GENERATED UNDER THE ASSUMPTION THAT THE CONTRACTOR USES 30 LF OF 8-INCH BYPASS SUCTION LINE AND 80 LF OF 8-INCH BYPASS DISCHARGE LINE FOR BYPASS OPERATIONS.



**1 EXISTING FORCE MAIN BYPASS CONNECTION**  
NTS



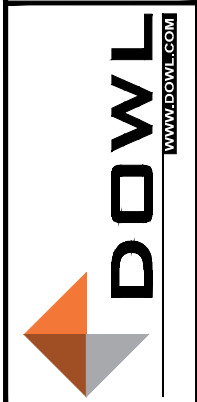
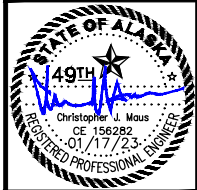
**2 EXISTING OD JUNCTION MANHOLE**  
NTS



**3 EXISTING OD JUNCTION MANHOLE PLAN VIEW**  
NTS

**BID SET**

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION  
JUNEAU, AK  
OD BYPASS PLAN

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
C-101

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**NOTES:**

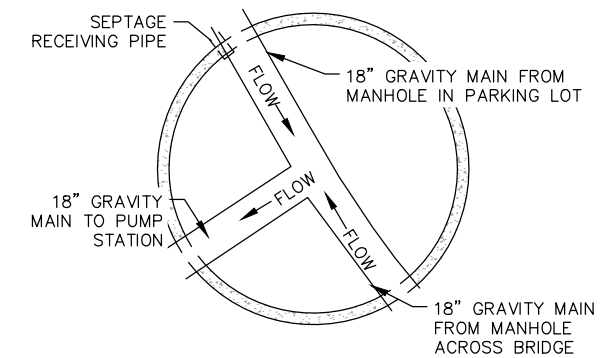
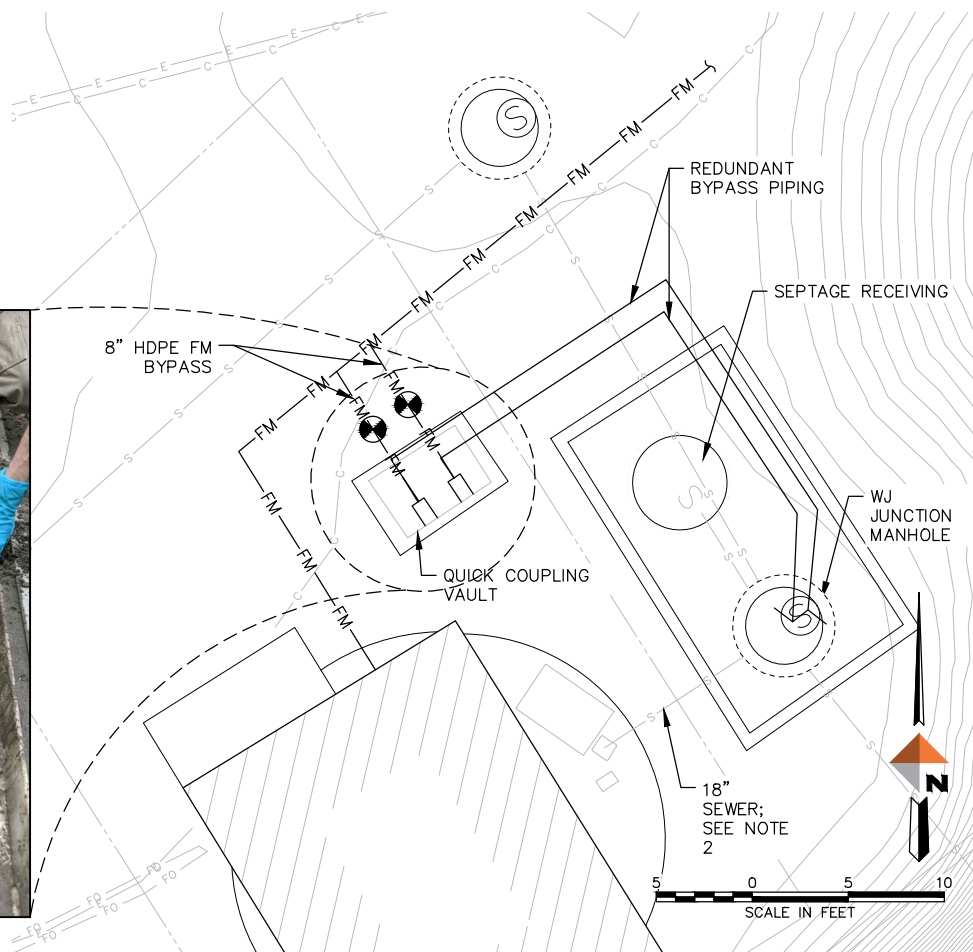
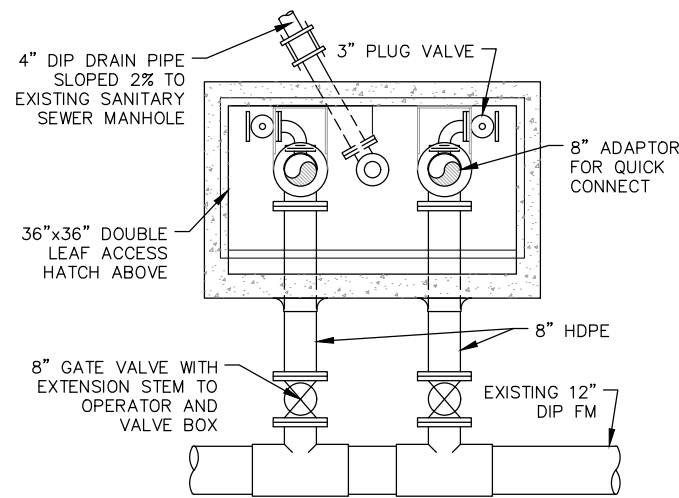
- CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL TEMPORARY BYPASS PUMPS, PIPING, AND EQUIPMENT NECESSARY FOR THE CONSTRUCTION OF THE STRUCTURES DETAILED IN THESE DRAWINGS. THE CONTRACTOR SHALL ENSURE CONTINUOUS SERVICE TO THE UPSTREAM SEWER.
- THE 18-INCH GRAVITY MAIN BETWEEN THE WJ JUNCTION MANHOLE AND THE WEST JUNEAU PUMP STATION WET WELL MAY BE PLUGGED AND THE WJ JUNCTION MANHOLE MAY BE USED AS AN INTERIM WET WELL.
- BYPASS PUMPS SHALL BE CAPABLE OF HANDLING RAW, UNSCREENED SEWAGE CONTAINING GRAVEL, RAGS, AND OTHER FIBROUS MATERIALS. PUMPS SHALL BE SELF-PRIMING, NON-CLOG, AND CAPABLE OF PASSING 3-INCH SOLIDS, OR CHOPPER STYLE PUMPS.
- A MINIMUM OF TWO (2) PUMPS SHALL BE INSTALLED AND OPERABLE AT THE OUTER DRIVE PUMP STATION AT ALL TIMES DURING BYPASS. FOR REDUNDANCY IN THE CASE OF PUMP FAILURE, AN ADDITIONAL PUMP IS RECOMMENDED TO BE AVAILABLE AND READY IN RESERVE FOR THE DURATION OF BYPASS PUMPING.
- ROUTING AND MAINTENANCE OF BYPASS LINES IS AT CONTRACTOR DISCRETION. ROUTING SHALL BE ACHIEVED WITHOUT DISRUPTION OF WORK AND RISK OF INJURY OR DAMAGE TO THE LINES DURING CONSTRUCTION. ROUTING MUST BE WITHIN EASEMENTS, UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE BYPASS PLAN SHOWN IN THE DRAWINGS HEREIN ARE PROVIDED TO ASSIST IN THE DEVELOPMENT OF CONTRACTOR WORK PLAN AND TO GIVE A GENERAL RECOMMENDED APPROACH.
- PIPING MAY BE NEW OR USED, BUT SHALL NOT LEAK DURING OPERATION, AND SHALL NOT BE ALUMINUM IRRIGATION PIPE OR SOLVENT CEMENT PVC. IF FLEXIBLE HOISING IS USED, HOSE SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI.
- THE CONTRACTOR SHALL REMOVE ALL TEMPORARY BYPASS EQUIPMENT AND RESTORE THE JUNCTION MANHOLE TO ITS ORIGINAL CONDITION UPON COMPLETION OF BYPASSING OPERATIONS. CONTRACTOR SHALL REPAIR ANY DAMAGE INCURRED DURING BYPASS OPERATIONS AND ESTABLISH FLOWING CONDITIONS IN THE MANHOLE AND MAINS.
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- JUNCTION MANHOLE SHALL BE RETURNED TO PRIOR OR BETTER CONDITION. FLOW CHANNEL SHAPING OR OTHER MANHOLE MODIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH CBJ STANDARD SPECIFICATIONS AND MANHOLE DETAIL.

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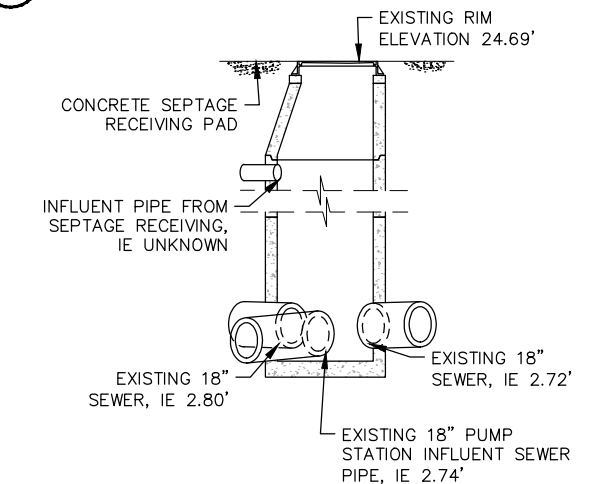
ESTIMATED BYPASS PUMPING SYSTEM PERFORMANCE	
FLOW (GPM)	TOTAL SYSTEM HEAD (FT)
0	70
500	72
1000	77
1500	86
2000	98
2500	112
3000	130
3500	151
4000	175

**TABLE NOTES:**

- VALUES IN THIS TABLE WERE GENERATED UNDER THE ASSUMPTION THAT THE CONTRACTOR USES 30 LF OF 8-INCH BYPASS SUCTION LINE AND 40 LF OF 8-INCH BYPASS DISCHARGE LINE FOR BYPASS OPERATIONS.



2 WJ JUNCTION MANHOLE PLAN VIEW  
NTS



3 WJ JUNCTION MANHOLE  
NTS

1 EXISTING FORCE MAIN BYPASS CONNECTION  
NTS

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

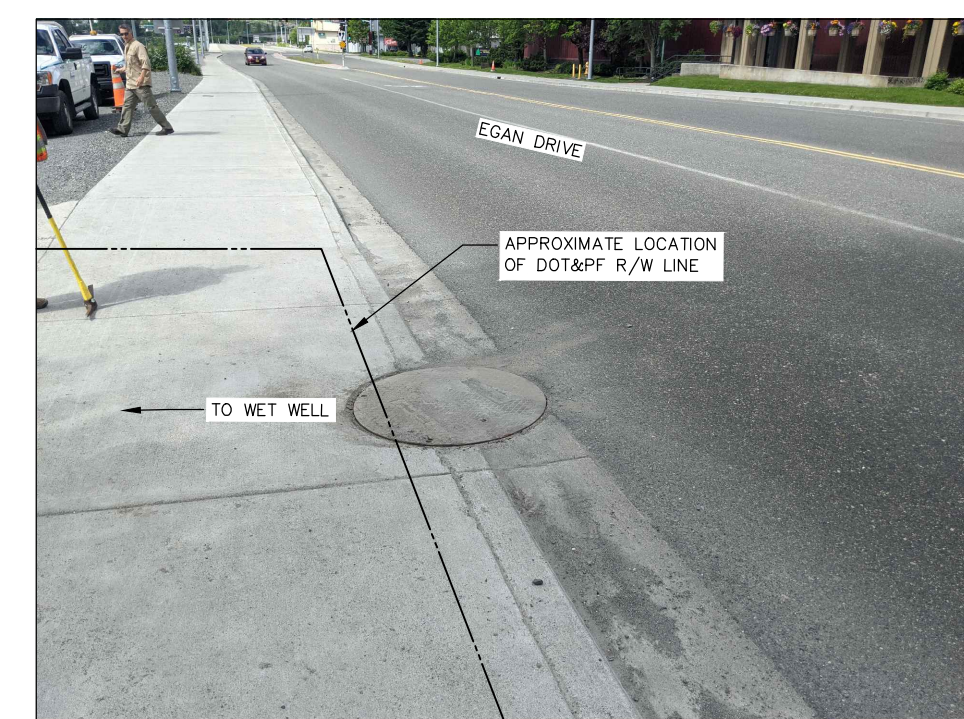
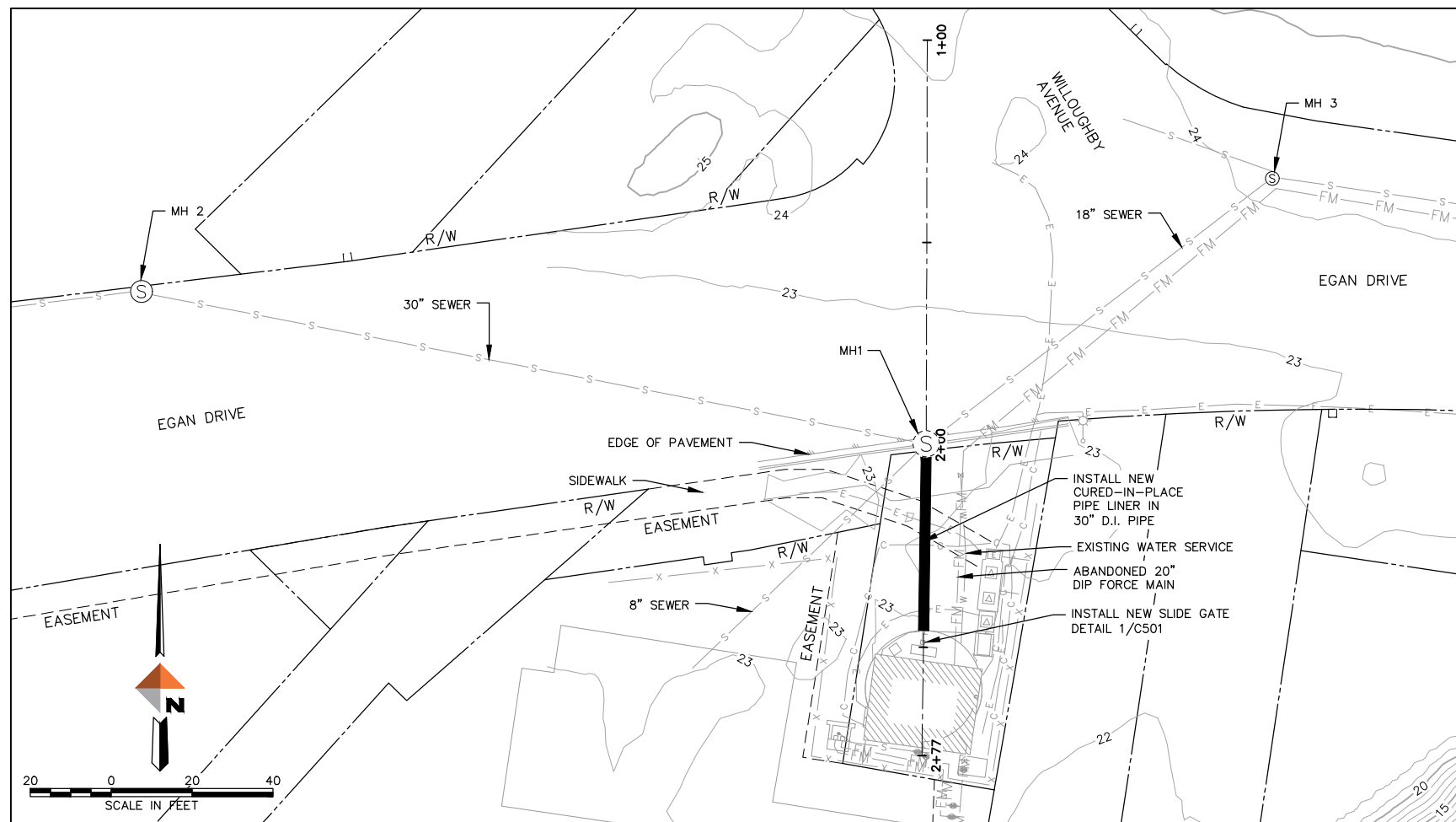
WJ BYPASS PLAN

PROJECT 1528.50233.01  
DATE 01/17/2023

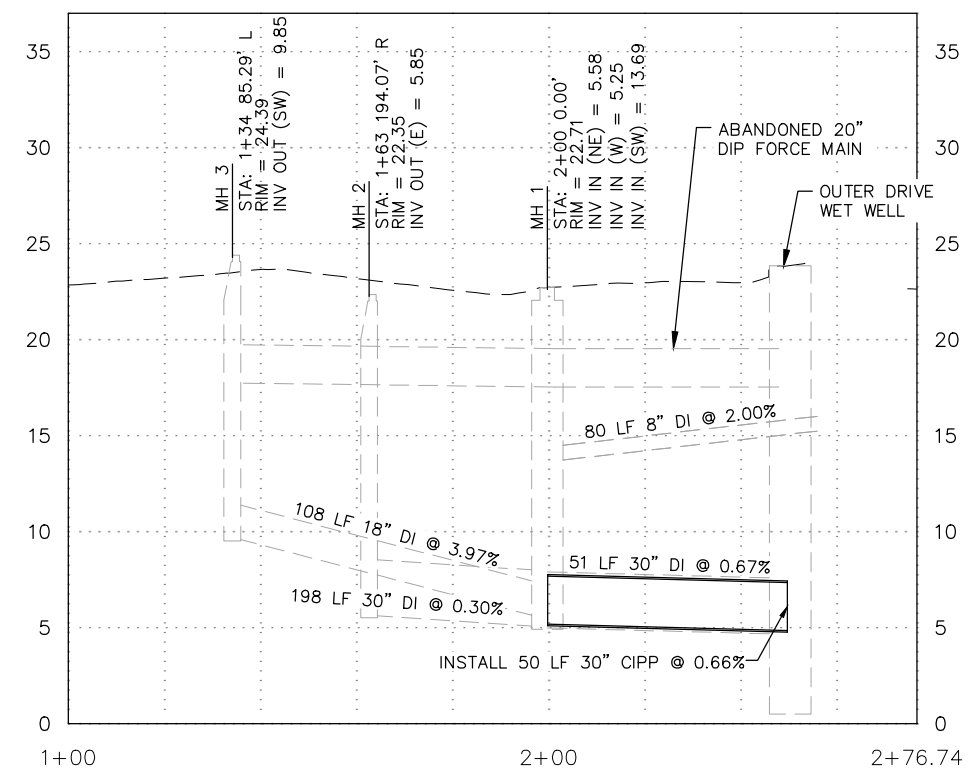
SHEET

C-102

**BID SET**



MH1 (OD JUNCTION MANHOLE)



- NOTES:
- ALL EXCAVATION AND TRENCHING FOR PIPE AND STRUCTURES SHALL BE DONE IN ACCORDANCE WITH CBJ STANDARD SPECIFICATIONS 02203.
  - CONTRACTOR SHALL CONSULT WITH A LICENSED PROFESSIONAL ENGINEER TRAINED AND COMPETENT IN THE DESIGN OF SHEETING, SHORING, AND BRACING FOR EXCAVATIONS IN PRESENCE OF GROUNDWATER.
  - LOCATION OF EXISTING, ABANDONED DIP FORCE MAIN IS APPROXIMATE, LOCATE AND PROTECT IN PLACE DURING ANY EXCAVATION ACTIVITIES.
  - CONTRACTOR TO COORDINATE WITH ALASKA ELECTRIC LIGHT & POWER (AEL&P), GCI, AND ACS FOR MAINTENANCE OF SERVICE DURING CONSTRUCTION ACTIVITIES.
  - THE WORK WILL REQUIRE THE CONTRACTOR TO USE THE JUNCTION MANHOLE LOCATED PARTIALLY WITHIN THE ALASKA DOT&PF RIGHT-OF-WAY. EXCAVATION WITHIN THE AKDOT&PF ROW IS NOT ALLOWED UNDER THE EXISTING UTILITY PERMIT.
  - THE CONTRACTOR SHALL DEVELOP AND SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL TO AKDOT&PF. TRAFFIC CONTROL PLAN SHALL ALSO BE PROVIDED TO THE CITY AND BOROUGH OF JUNEAU IN CONJUNCTION WITH AKDOT&PF REVIEW.
  - CONTRACTOR SHALL DIAL 811 OR 907-586-1333 FOR UTILITY LOCATES PRIOR TO EXCAVATING.
  - CONTRACTOR TO FIELD VERIFY PIPE LENGTHS PRIOR TO FURNISHING CIPP LINER. LENGTHS SHOWN ARE CENTER OF MH TO 2'-8" PAST INTERIOR WALL FACE OF WET WELL.

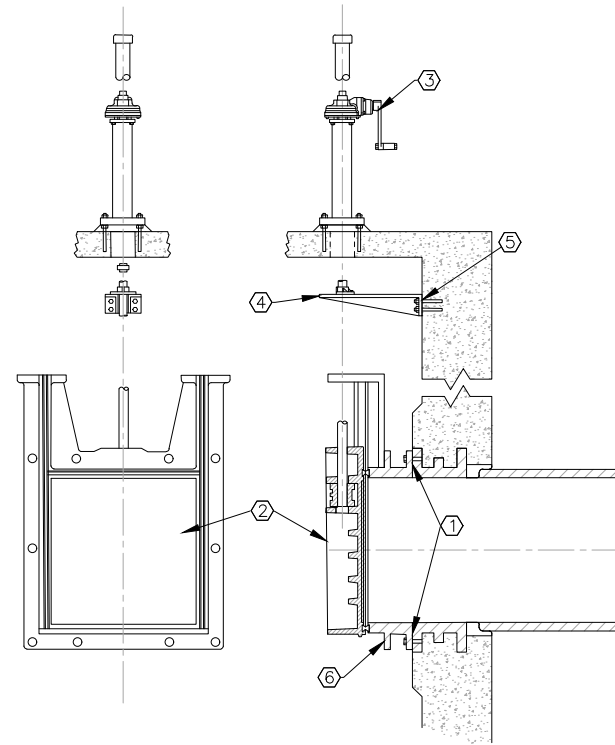
REV	DATE	DESCRIPTION



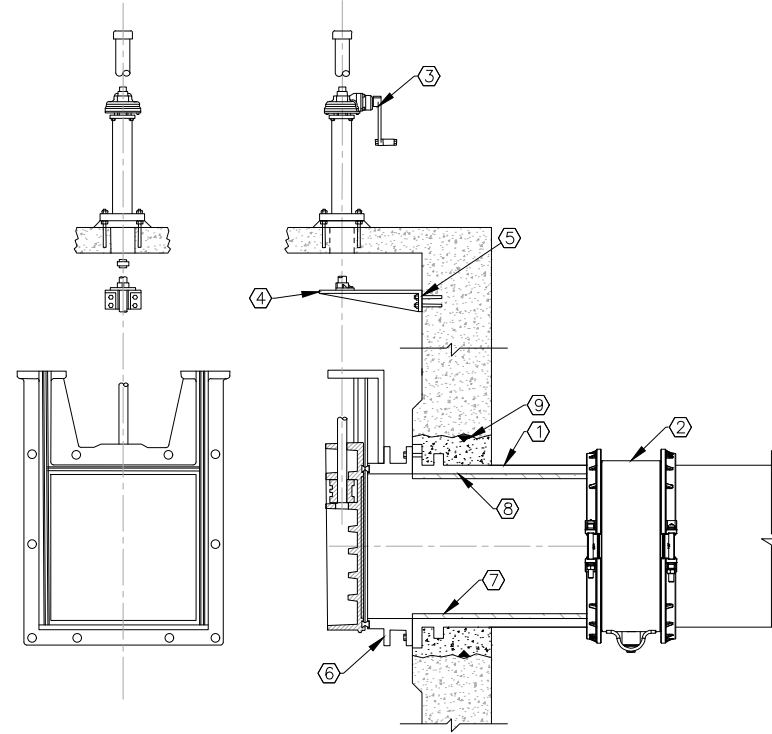
OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION  
JUNEAU, AK  
OD SITE UTILITIES

PROJECT 1528.50233.01  
DATE 01/17/2023

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- ① CONTRACTOR SHALL PREPARE SURFACE OF EXISTING FLANGE TO ENSURE A FLUSH SEAL OF EXTENDED FLANGE BACK WITH EXISTING FLANGE
- ② SLIDE GATE SHALL BE NON-SELF CONTAINED, CAST IRON
- ③ 40-POUND MAXIMUM EFFORT CRANK SHALL BE EASILY REMOVABLE FOR USE OF PORTABLE POWER OPERATOR.
- ④ STEM GUIDES SPACING SHALL BE AS RECOMMENDED BY GATE MANUFACTURER FOR THE SPECIFIC STEM SIZE. UNSUPPORTED STEM LENGTH/RADIUS OF GYRATION SHALL NOT EXCEED 200.
- ⑤ CONTRACTOR TO PROVIDE HILTI HIT-RE 500 V3, OR EQUAL EPOXY FOR ANCHORS
- ⑥ EXTENDED FLANGE BACK



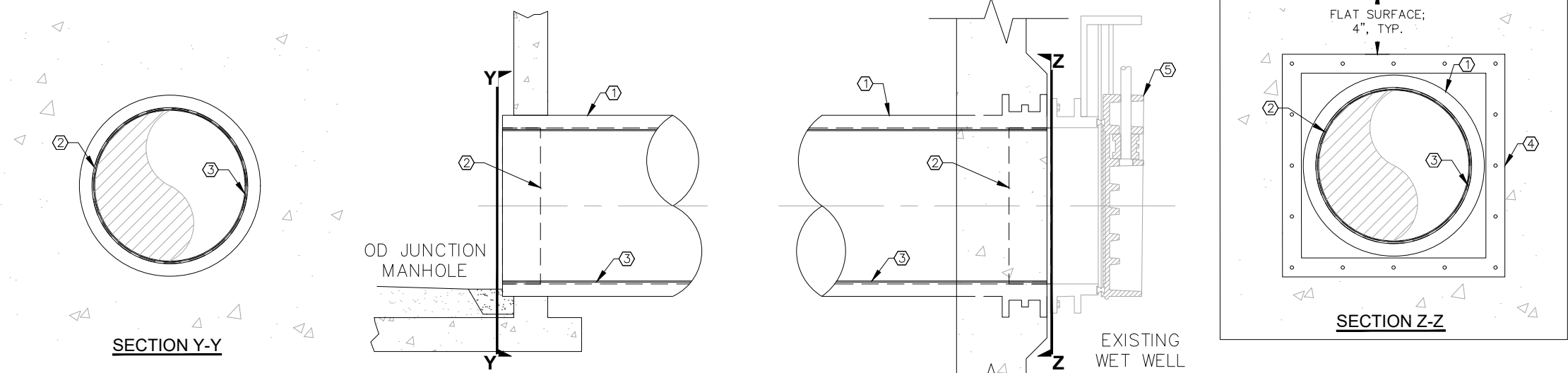
- ① CONTRACTOR SHALL REMOVE AND REPLACE THIMBLE PRIOR TO INSTALLATION OF CIPP LINING.
- ② CUT EXISTING PIPE AND INSTALL COUPLER BEFORE CIPP LINING.
- ③ 40-POUND MAXIMUM EFFORT CRANK SHALL BE EASILY REMOVABLE FOR USE OF PORTABLE POWER OPERATOR.
- ④ STEM GUIDES SPACING SHALL BE AS RECOMMENDED BY GATE MANUFACTURER FOR THE SPECIFIC STEM SIZE. UNSUPPORTED STEM LENGTH/RADIUS OF GYRATION SHALL NOT EXCEED 200.
- ⑤ CONTRACTOR TO PROVIDE HILTI HIT-RE 500 V3, OR EQUAL EPOXY FOR ANCHORS
- ⑥ EXTENDED FLANGE BACK
- ⑦ INSTALL CIPP IN EXISTING GRAVITY MAIN, EXTEND TO EDGE OF THIMBLE.
- ⑧ HYDROPHILIC END SEAL. NOT SHOWN.
- ⑨ CORE STRUCTURE AND SEAL WITH LINK-SEAL(R) OR EQUAL, ALTERNATIVELY CAST THIMBLE INTO WALL WITH HYDROSWELL WATERSTOP.

**1 WEST JUNEAU SLIDE GATE ISOLATION VALVE DETAIL**  
C-501 NTS

**1A OUTER DRIVE SLIDE GATE ISOLATION VALVE DETAIL**  
C-501 NTS

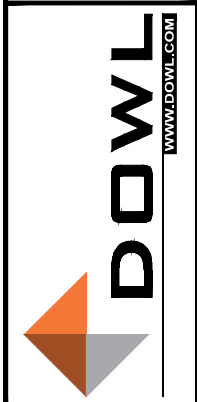
- NOTES:
- UPON REMOVAL OF EXISTING SLIDE GATES AT EACH STATION CONTRACTOR SHALL COORDINATE WITH OWNER AND ENGINEER TO ALLOW CONDITION VERIFICATION OF THE EXISTING WALL THIMBLES. THE OWNER AND ENGINEER WILL CONFIRM THIMBLE REPLACEMENT OR REHABILITATION APPROACH FOR EACH STATION AS DETAILED.
  - THE APPROACH DETAILED IN 1A WILL REQUIRE OPEN CUT EXCAVATION, BACKFILL, COMPACTION, TIDALLY INFLUENCED DEWATERING, SHORING, BRACING, AND OTHER TYPICAL CIVIL REQUIREMENTS.

- NOTES:
- ① EXISTING 30" DIP SANITARY SEWER MAIN
  - ② HYDROPHILIC END SEAL; LMK INSIGNIA OR APPROVED EQUAL
  - ③ CURED-IN-PLACE PIPE LINING
  - ④ EXISTING WALL THIMBLE; SQUARE FLANGE, ROUND OPENING
  - ⑤ NEW SLIDE GATE VALVE; SEE DETAIL 1 OR 1A, THIS SHEET



**2 OD JUNCTION MANHOLE PENETRATION**  
C-501 NTS

REV	DATE	DESCRIPTION



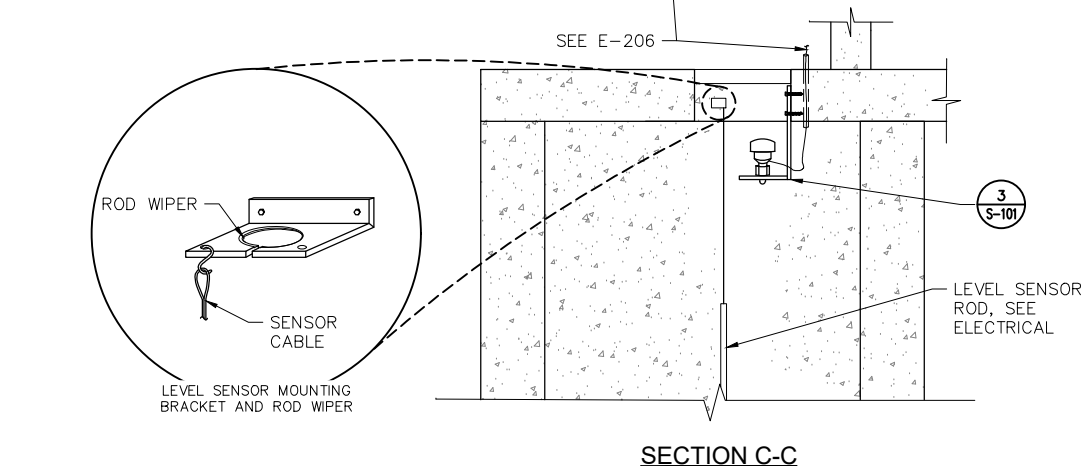
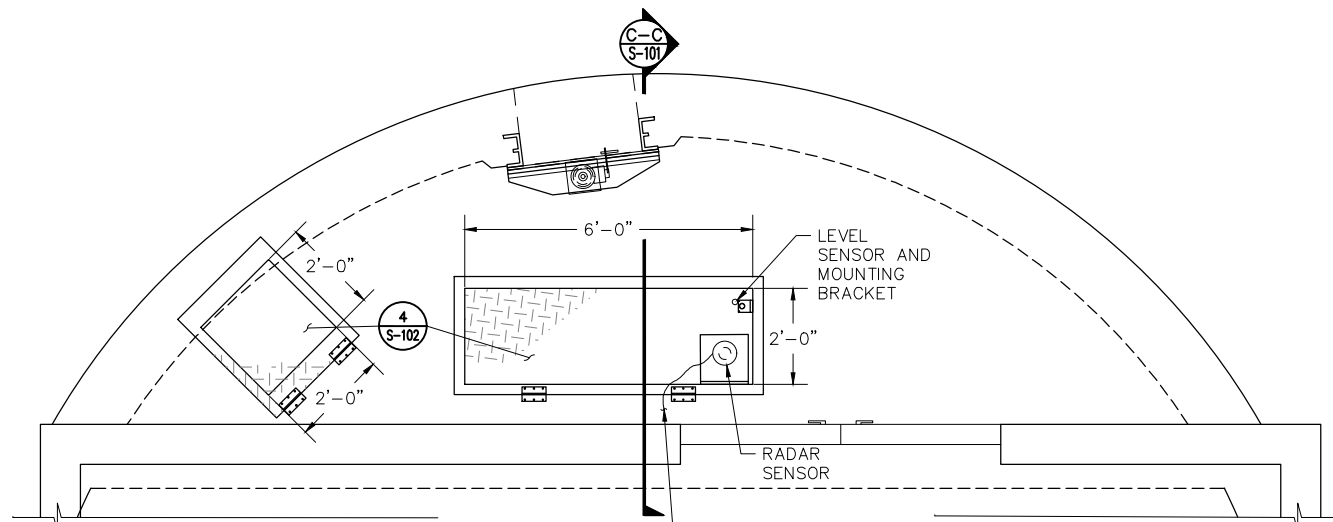
OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
CIVIL DETAILS

PROJECT 1528.50233.01  
DATE 01/17/2023

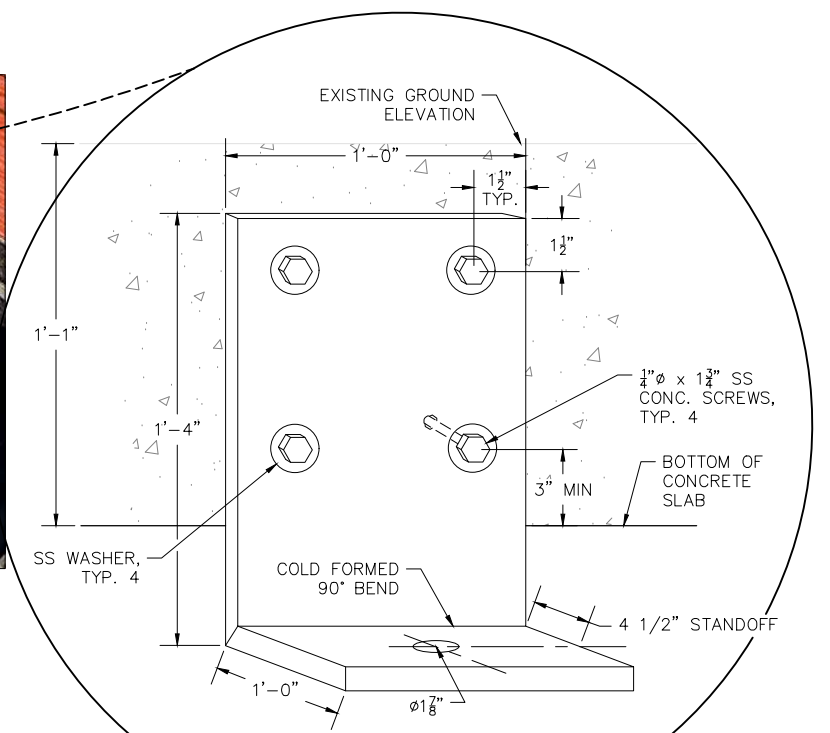
SHEET  
C-501

**BID SET**

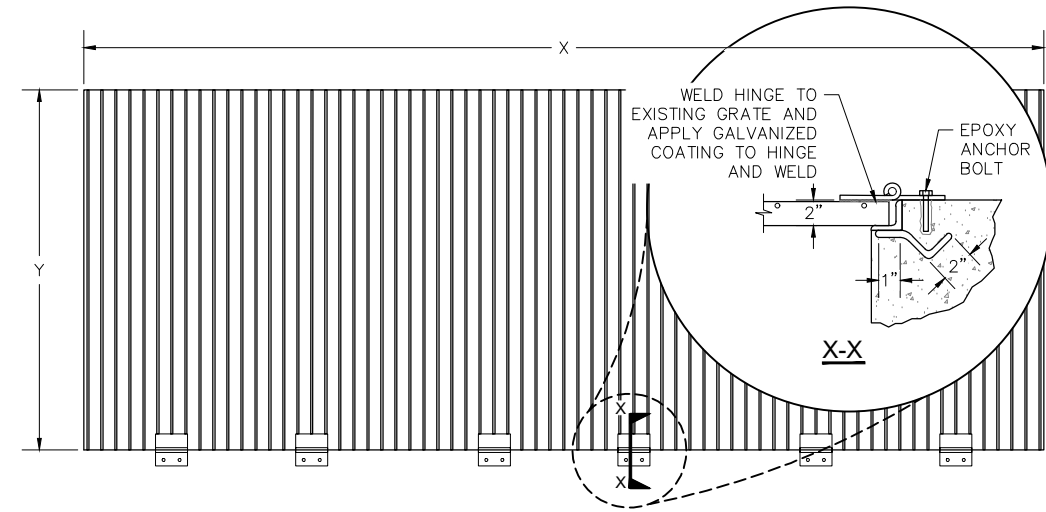
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**1** OD WET WELL HATCH MODIFICATION & INSTRUMENTATION INSTALLATION  
S-101 NTS

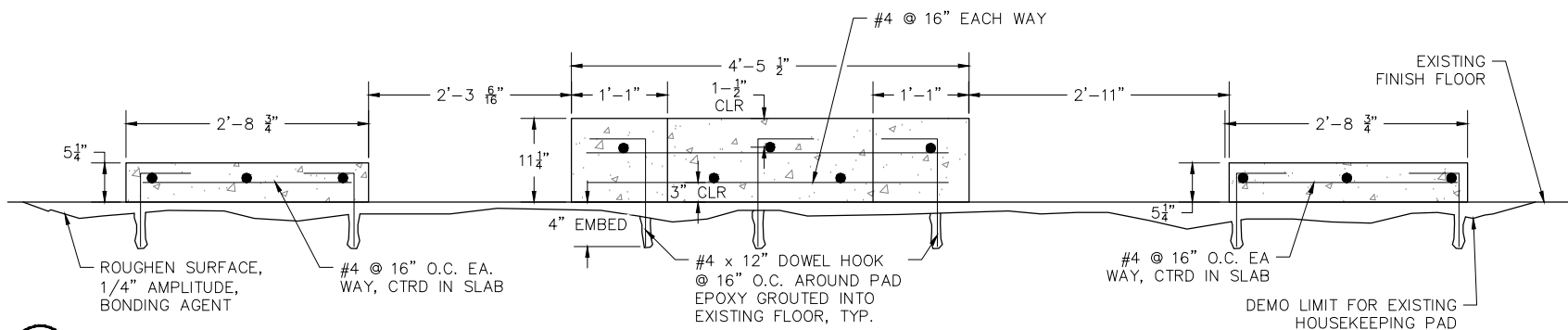


**3** RADAR SENSOR BRACKET DETAIL  
S-101 NTS

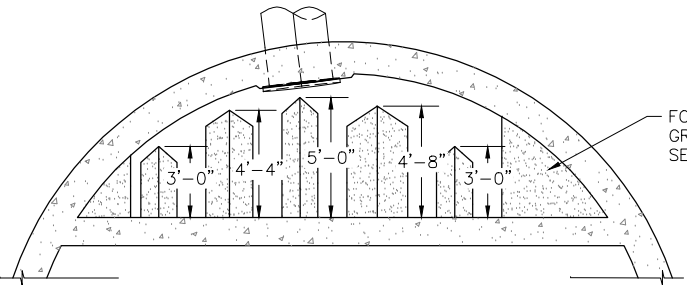
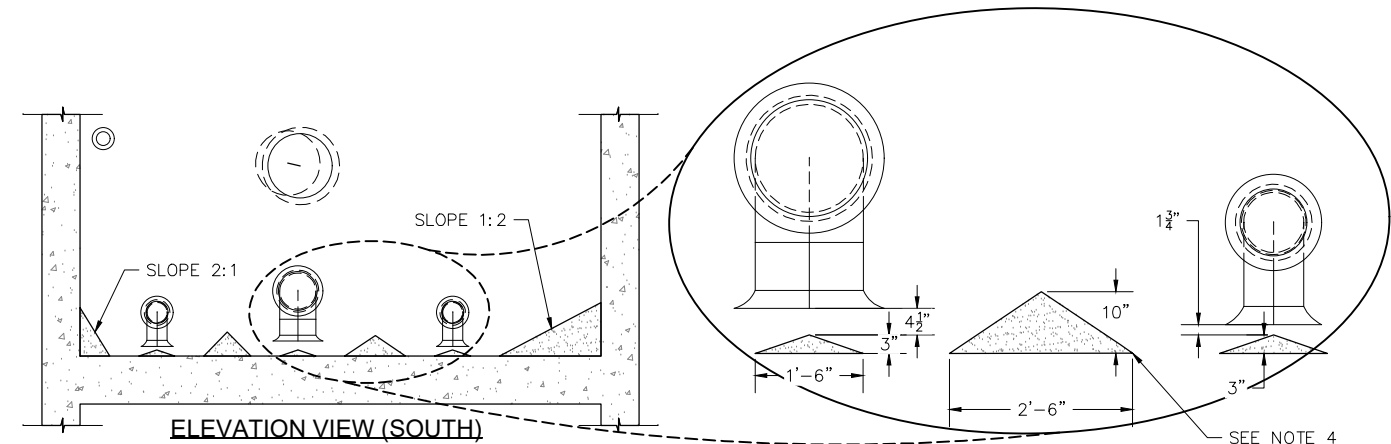


EXISTING GRATING DIMENSIONS		
	OUTER DRIVE	WEST JUNEAU
X	10'-0"	8'-0"
Y	3'-9"	3'-6"

**2** EXISTING INTERIOR GRATING MODIFICATION  
S-101 NTS



**4** OD NEW PUMP HOUSEKEEPING PAD  
S-101 NTS



**5** WET WELL GROUT IMPROVEMENTS  
S-101 1" = 4"

- NOTES:**
- EXISTING WET WELL GROUT IS ANTICIPATED TO BE HIGH STRENGTH AND REQUIRE PRECISION MECHANICAL OR CHEMICAL BURSTING IN ADDITION TO PNEUMATIC OR HYDRAULIC IMPACT DEMOLITION.
  - EXPANSIVE GROUT OR OTHER METHODS SHALL NOT BE IMPLEMENTED IN A WAY WHICH CAUSES DAMAGE TO THE EXTERIOR WET WELL WALL AND DRY WELL WALL. PROVIDE OPEN FACE FOR EXPANSION.
  - GROUT SHAPING MAY BE CUT FROM EXISTING GROUT AND RESURFACED TO PROVIDE SMOOTH FINISH.
  - 1/2" CHAMFER EACH BASE EDGE OF GROUT SHAPING.
  - ROUGHED SURFACE FROM DEMOLITION SHOULD BE CLEANED AND BONDING AGENT APPLIED BEFORE APPLICATION OF GROUT SHAPING.

REV	DATE	DESCRIPTION	BY



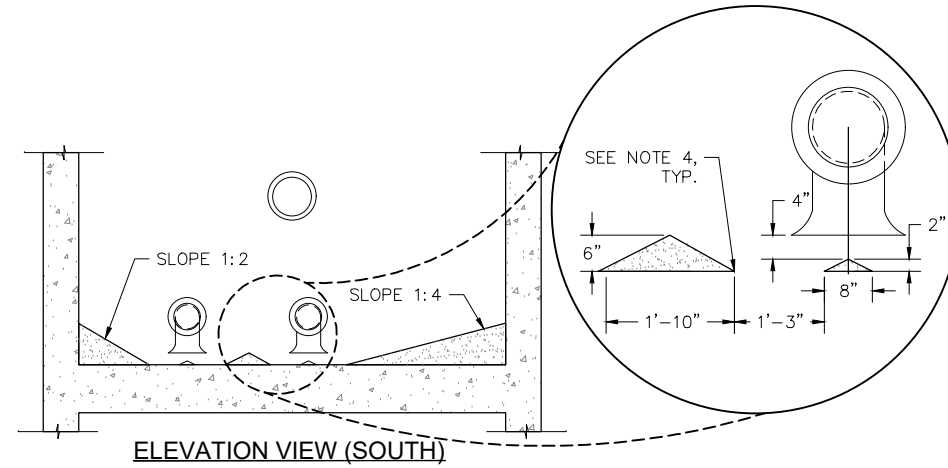
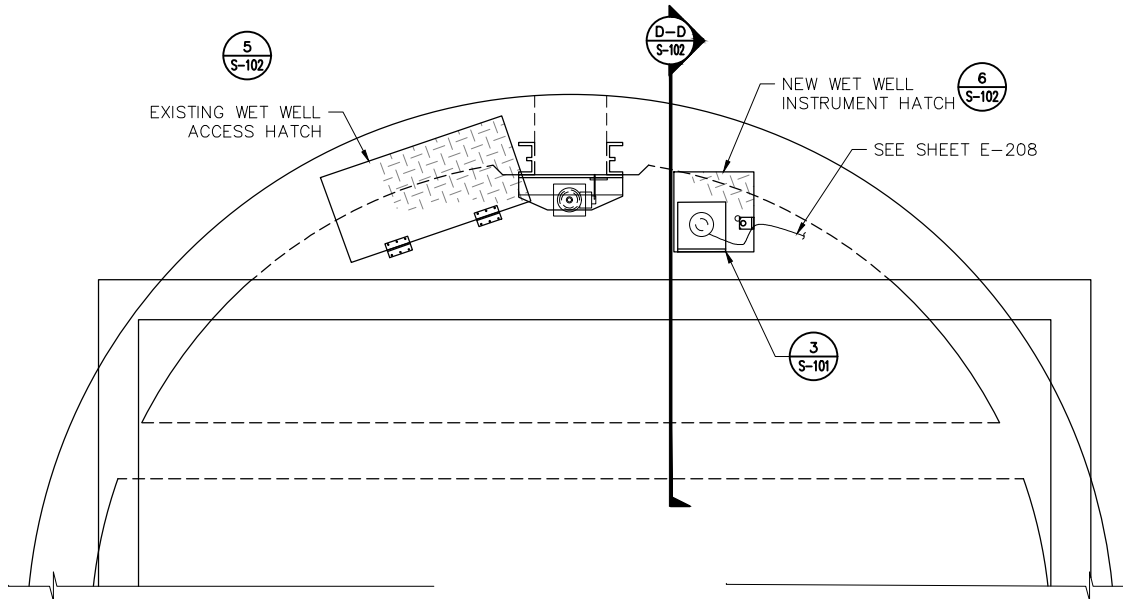
OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
OD WET WELL IMPROVEMENTS

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
S-101

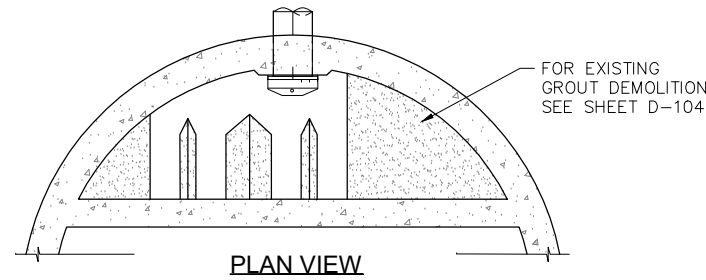
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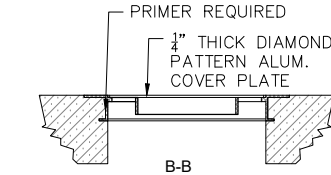
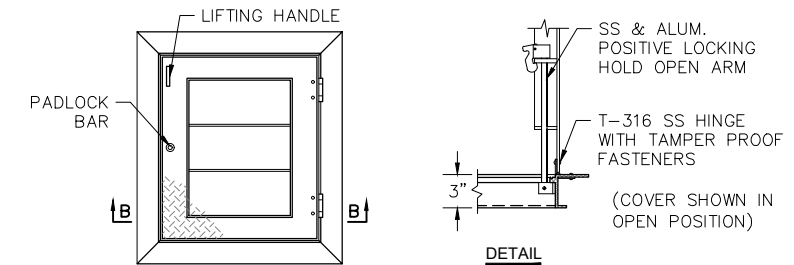


NOTES:

- EXISTING WET WELL GROUT IS ANTICIPATED TO BE HIGH STRENGTH AND REQUIRE PRECISION MECHANICAL OR CHEMICAL BURSTING IN ADDITION TO PNEUMATIC OR HYDRAULIC IMPACT DEMOLITION.
- EXPANSIVE GROUT OR OTHER METHODS SHALL NOT BE IMPLEMENTED IN A WAY WHICH CAUSES DAMAGE TO THE EXTERIOR WET WELL WALL AND DRY WELL WALL. PROVIDE OPEN FACE FOR EXPANSION.
- GROUT SHAPING MAY BE CUT FROM EXISTING GROUT AND RESURFACED TO PROVIDE SMOOTH FINISH.
- 1/2" CHAMFER EACH BASE EDGE OF GROUT SHAPING.



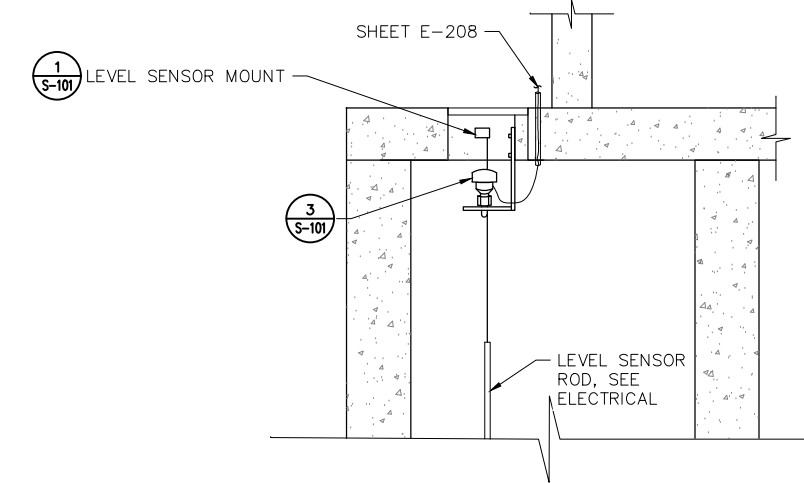
2 S-102 WET WELL GROUT IMPROVEMENTS 1" = 4"



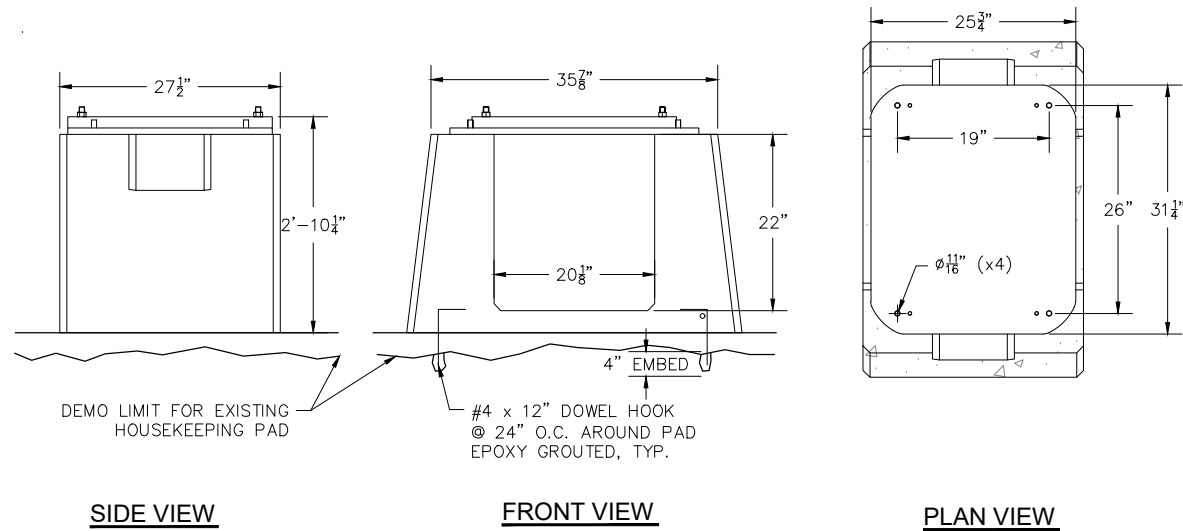
NOTES:

- ALL HATCHES SHALL BE FABRICATED TO DIMENSIONS FOUND HEREIN. BOTH HATCHES AT OD AND THE WET WELL ACCESS HATCH AT WJ SHALL BE FABRICATED TO FIT THE EXISTING HATCH OPENINGS. THE WET WELL INSTRUMENT HATCH SHALL BE FABRICATED TO FIT A NEW OPENING (SEE DETAIL 6, THIS SHEET).

5 S-102 HATCH DETAIL NTS

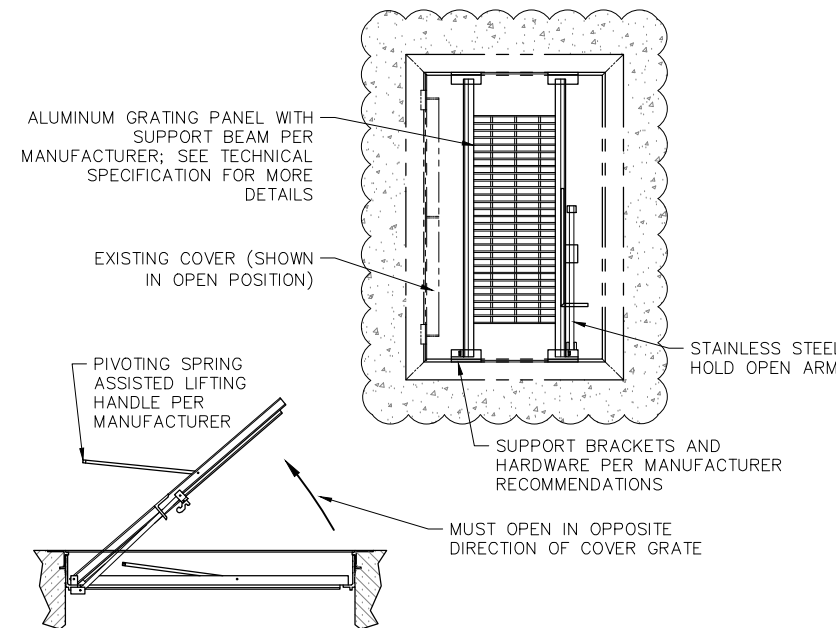


1 S-102 WJ WET WELL HATCH MODIFICATIONS & INSTRUMENTATION INSTALLATION NTS

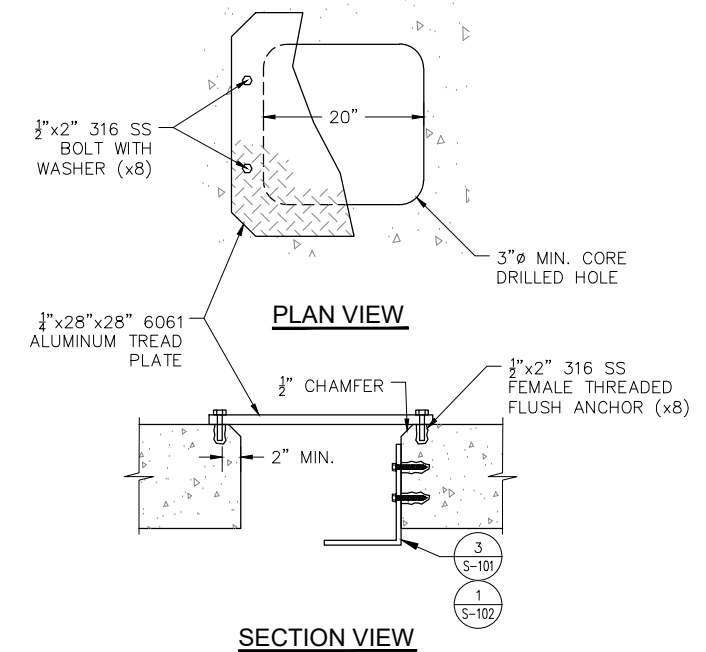


NOTE:  
1. PLINTH REINFORCING, BOLT EMBEDMENT, GROUT LEVELING DETAIL PROVIDE BY XYLEM WATER SOLUTIONS FOR THE PUMP SPECIFIED.

3 S-102 WJ PUMP PLINTH REINFORCEMENTS NTS

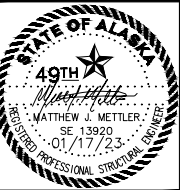


4 S-102 FALL THROUGH GRATING DETAIL NTS



6 S-102 WJ INSTRUMENT HATCH COVER NTS

REV	DATE	DESCRIPTION	BY



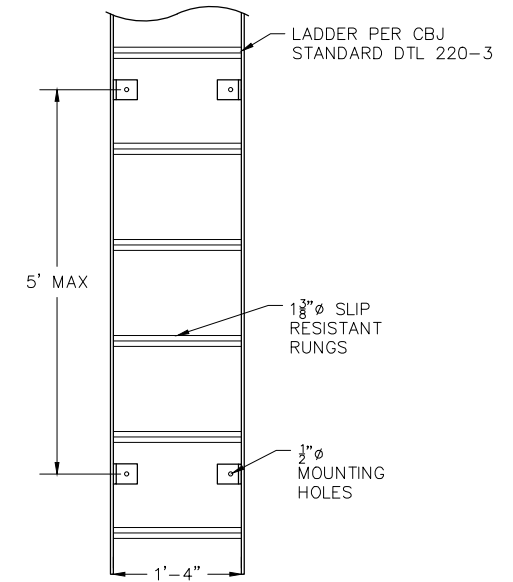
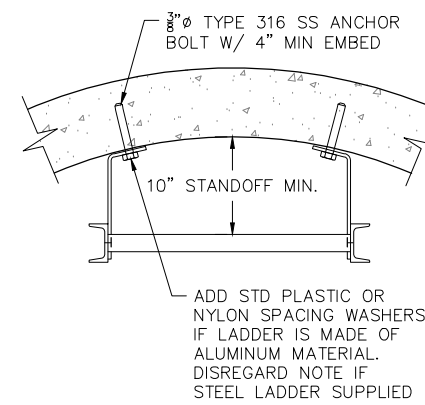
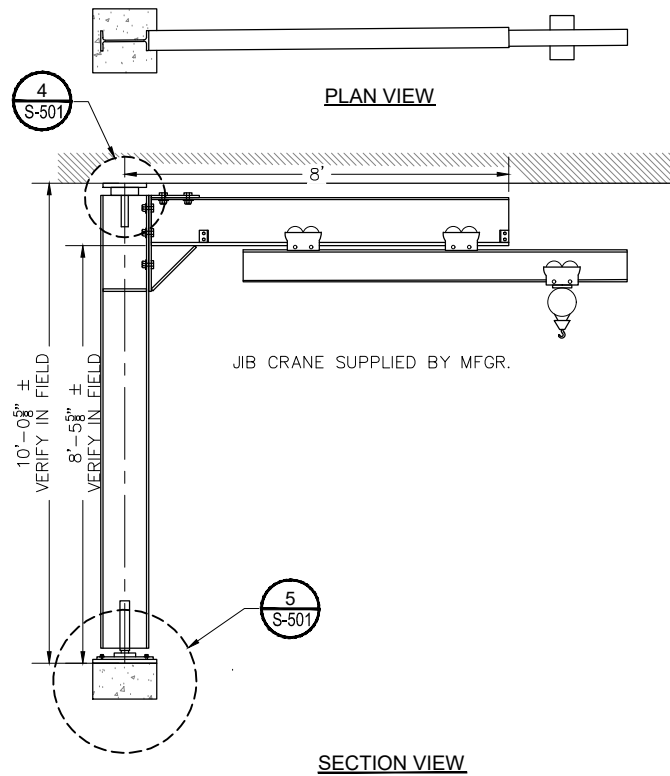
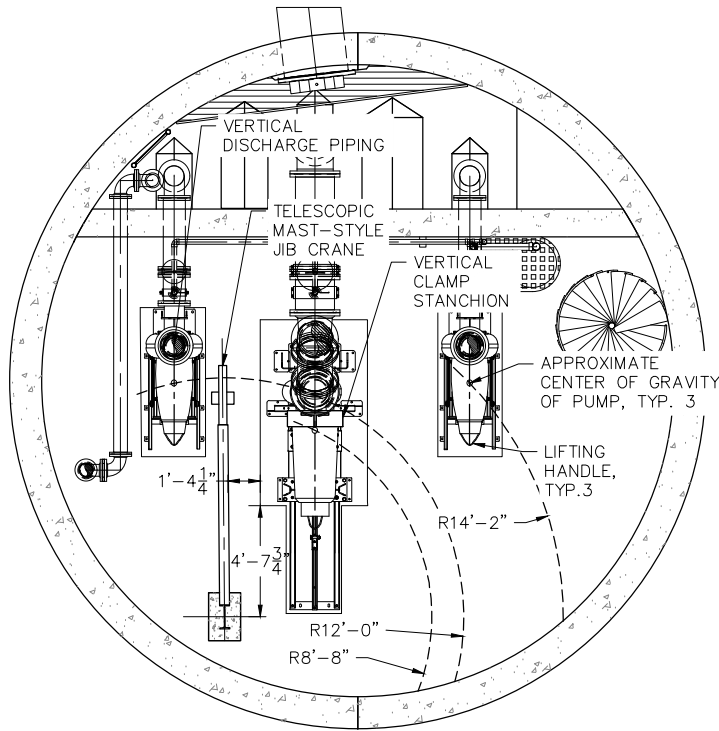
OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
WJ WET WELL IMPROVEMENTS

PROJECT 1528.50233.01  
DATE 01/17/2023

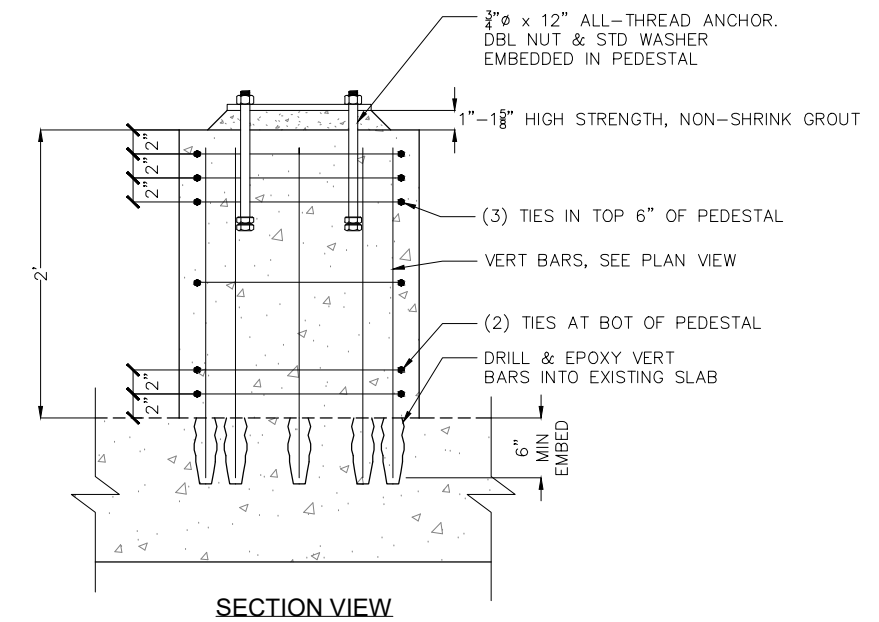
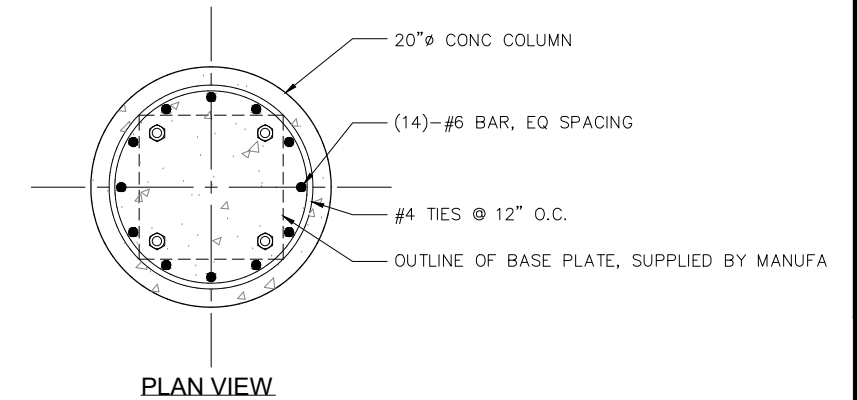
BID SET

SHEET  
S-102

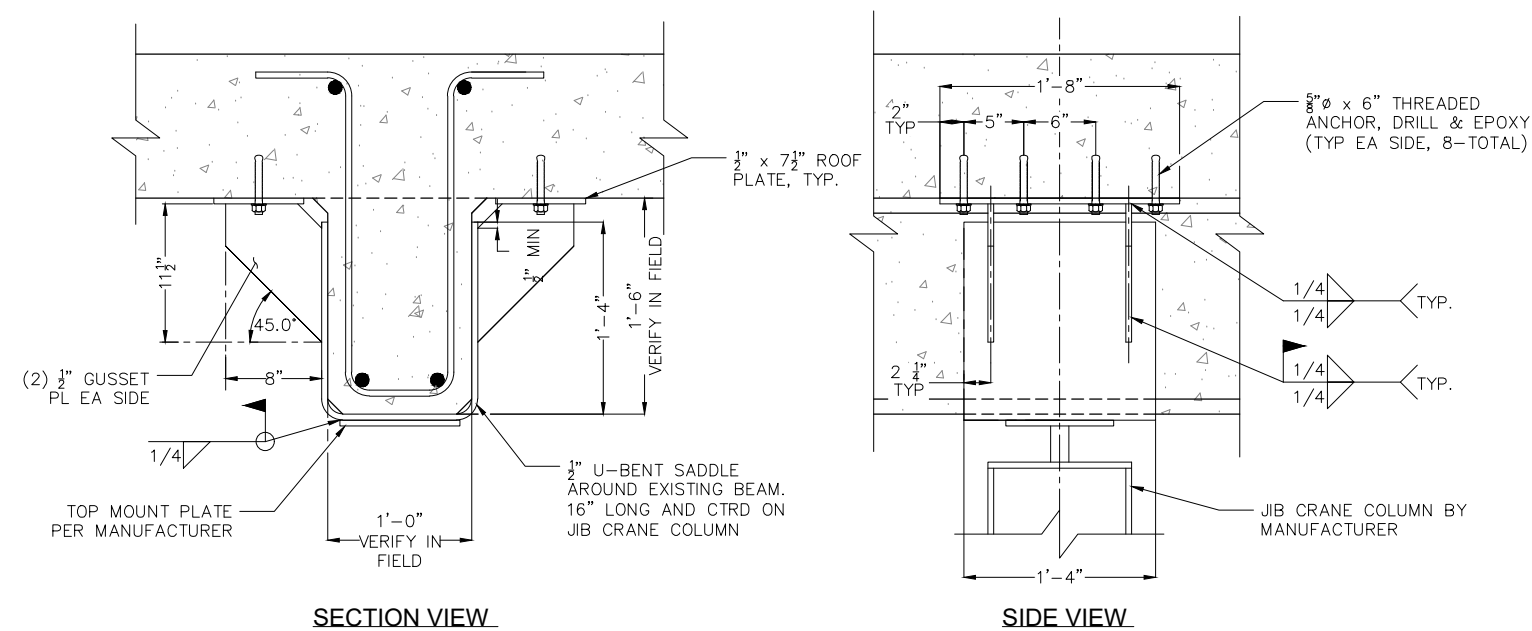
c:\dowl\_pva\0394737\SC-ST-DT-50233.dwg PLOT DATE 2023-01-17 15:04 SAVED DATE 2023-01-13 08:31 USER: ahorn



3 WET WELL LADDER DETAIL  
S-501 NTS



5 CONCRETE PEDESTAL DETAIL  
S-501 NTS

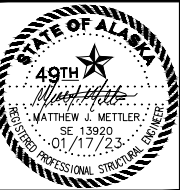


4 EXISTING BEAM DETAIL  
S-501 NTS

2 OD PUMP ROOM JIB CRANE  
S-501 NTS

1 OD JIB CRANE RADIAL DISTANCE TO PUMPS  
S-501 1:4

REV	DATE	DESCRIPTION	BY



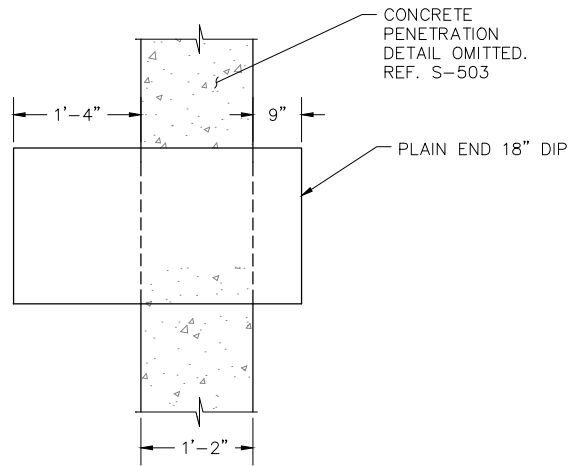
OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
GENERAL STRUCTURAL DETAILS

PROJECT 1528.50233.01  
DATE 01/17/2023

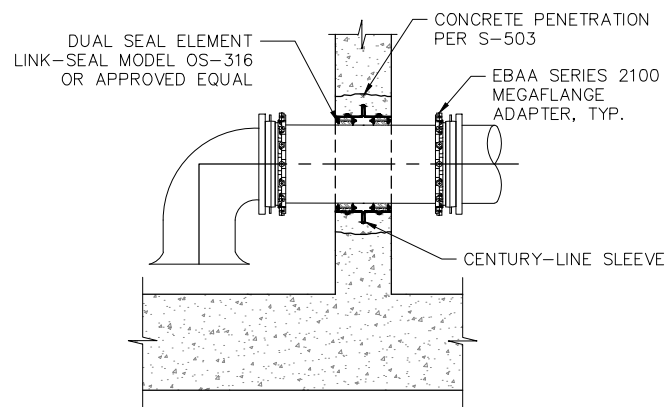
SHEET  
S-501

BID SET

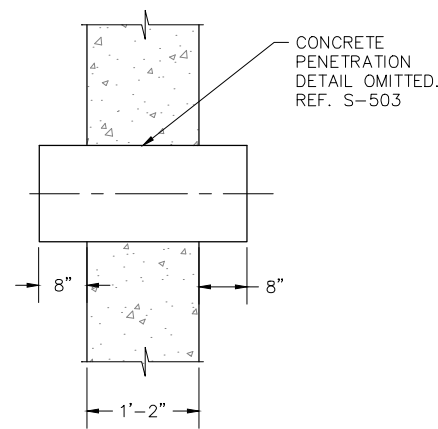
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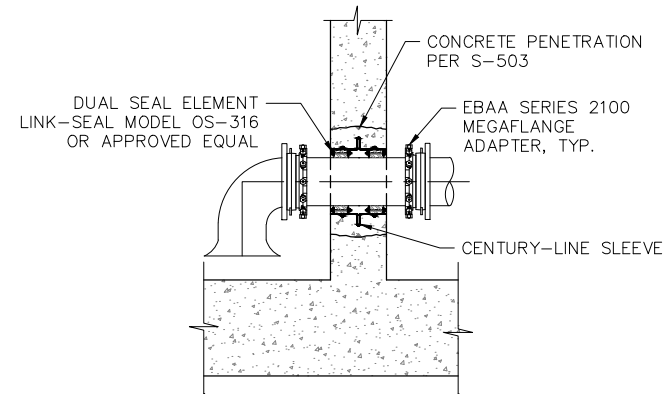
1 S-502 OD INTAKE PIPE FABRICATION DETAIL  
1:1



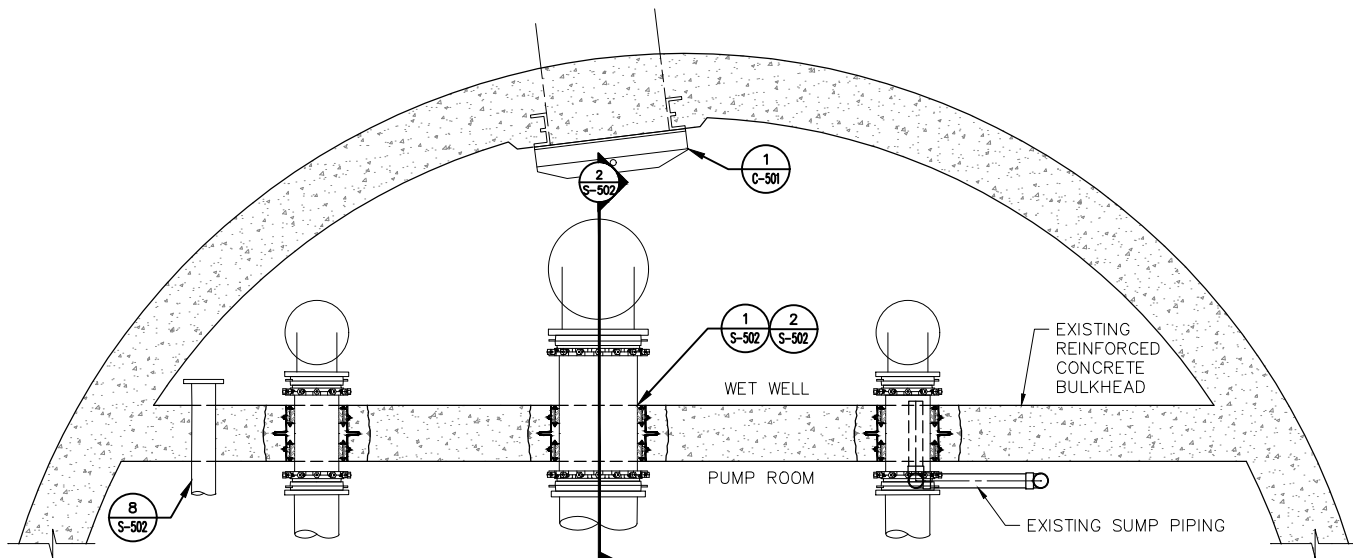
2 S-502 OD INTAKE PIPE INSTALLATION SECTION  
1:2



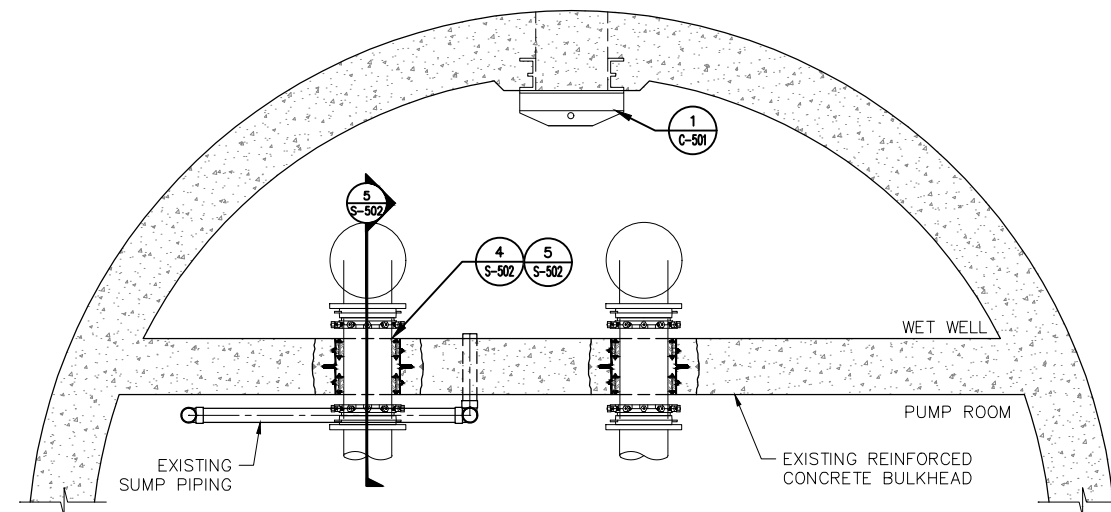
4 S-502 WJ INTAKE PIPE FABRICATION DETAIL  
1:1



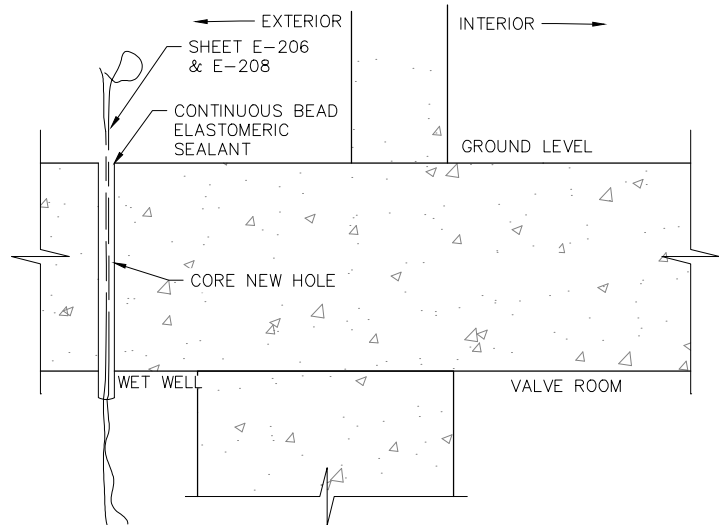
5 S-502 WJ INTAKE PIPE INSTALLATION SECTION  
1:2



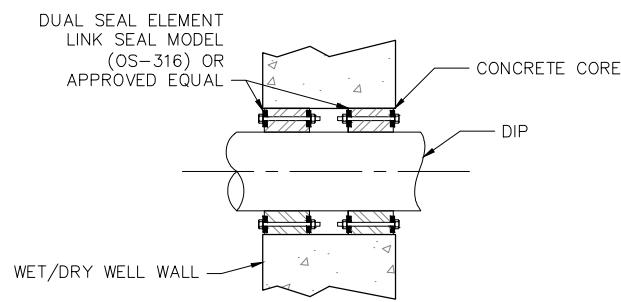
3 S-502 OD INTAKE PIPE PLAN VIEW  
1:2



6 S-502 WJ INTAKE PIPE PLAN VIEW  
1:2

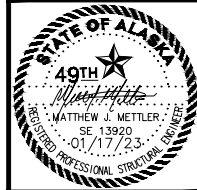


7 S-502 CONDUIT PENETRATION DETAIL  
NTS



8 S-502 SMALL CONCRETE OPENING PENETRATION DETAIL (<24"Ø)  
NTS

REV	DATE	DESCRIPTION



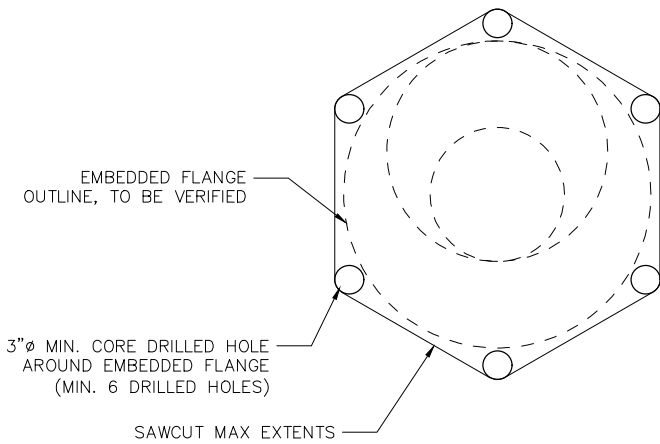
OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
WET WELL CONCRETE DETAILS

PROJECT 1528.50233.01  
DATE 01/17/2023

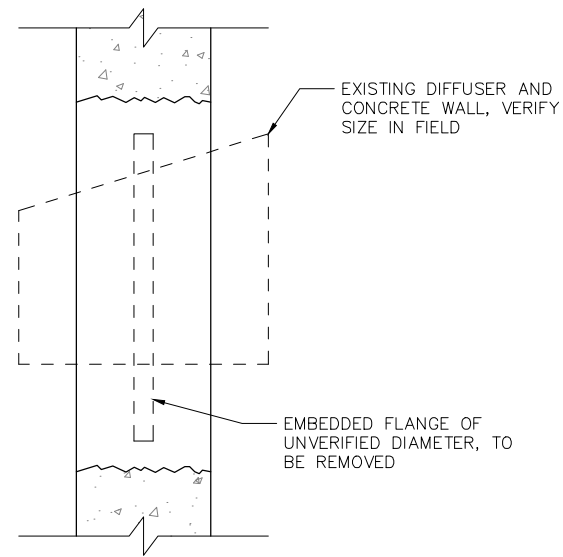
**BID SET**

SHEET  
S-502

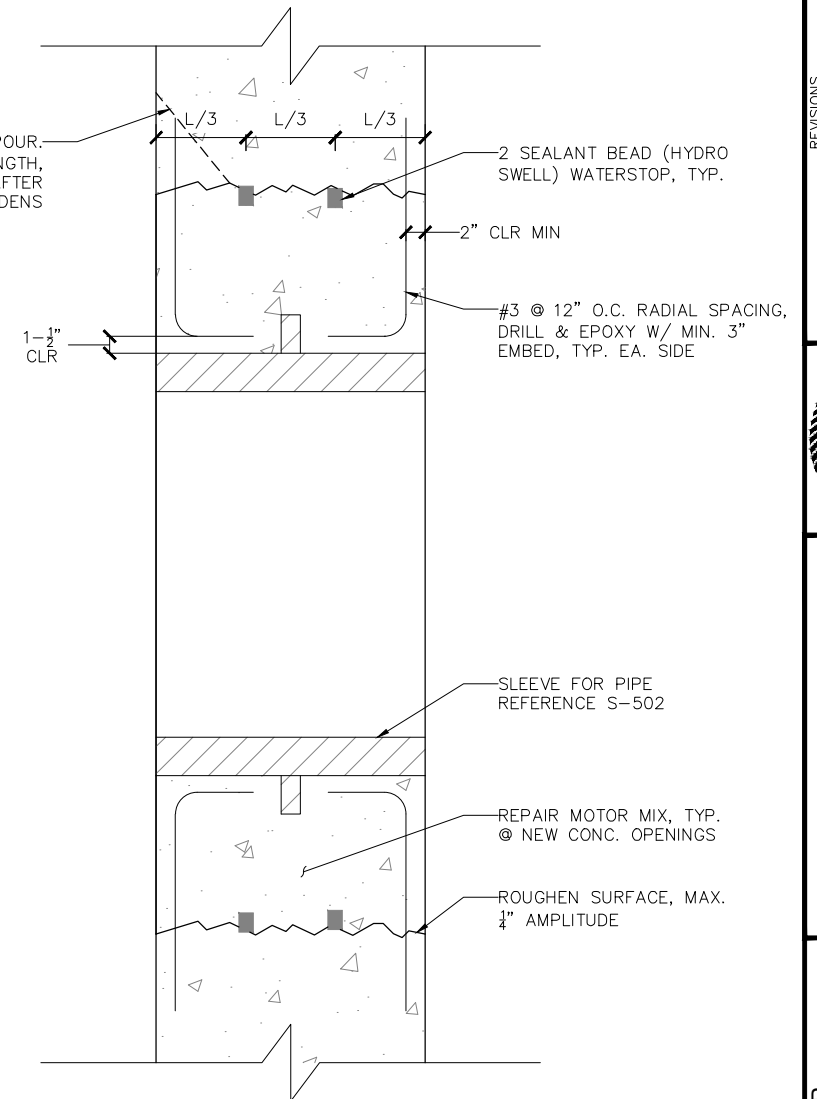
c:\dowl\p\00394737\SC-ST-DT-50233.dwg PLOT DATE 2023-1-17 15:04 SAVED DATE 2023-01-13 08:31 USER: ahorn



NEW OPENING DEMO PLAN



EXISTING SECTION VIEW



NEW SECTION VIEW

1 CONCRETE BULKHEAD DEMO DETAIL  
S-503 NTS

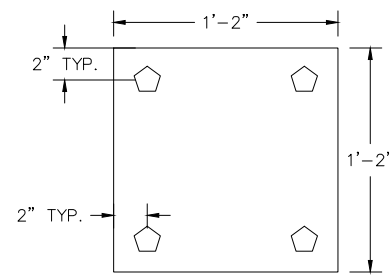
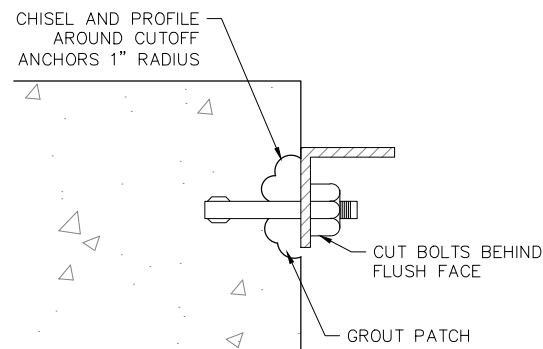
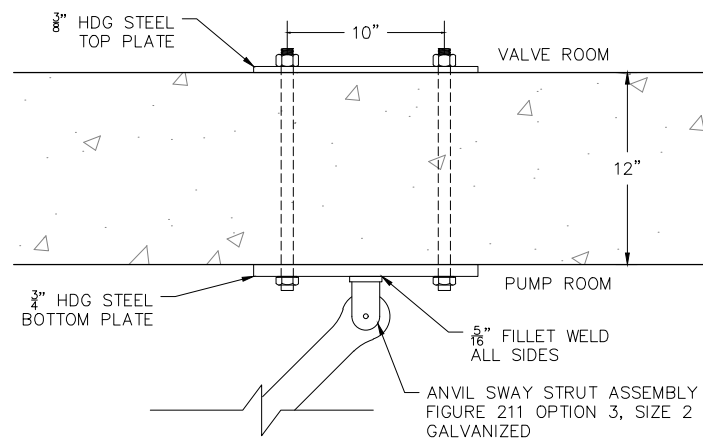


PLATE PLAN VIEW



3 CONCRETE ANCHOR REMOVAL  
S-503 NTS



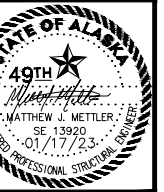
2 CONCRETE BULKHEAD REPAIR DETAIL  
S-503 NTS

NOTES:

1. PLATES SHALL BE HDG OR SPRAY-METALIZED COATED PER TECHNICAL SPECIFICATION
2. REFER TO METAL FABRICATIONS TECHNICAL SPECIFICATION FOR FASTENER REQUIREMENTS

4 OD WET WEATHER PUMP CEILING-MOUNTED STANCHION DETAIL  
S-503 NTS

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
WET WELL CONCRETE DETAILS

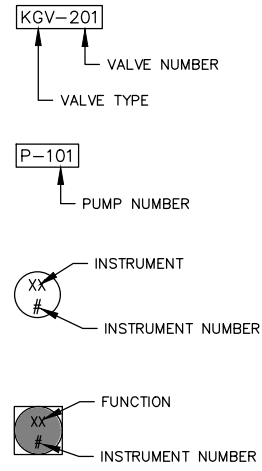
PROJECT 1528.50233.01  
DATE 01/17/2023

**BID SET**

SHEET  
S-503



**TAGS**



**P&ID SYMBOLS**

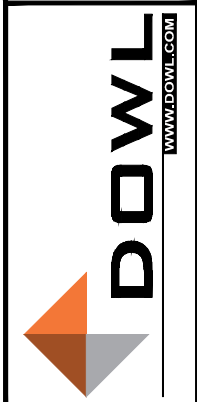
- CHECK VALVE
- GATE VALVE
- PLUG VALVE
- PUMP
- AIR ACTUATOR
- REDUCER
- MOTORIZED ACTUATOR

**ABBREVIATIONS**

- CV CHECK VALVE
- DI DUCTILE IRON
- ESD EMERGENCY SHUTDOWN
- FI FLOW INDICATOR
- FIT FLOW INDICATING TRANSMITTER
- FM FLOW METER
- KGV KNIFE GATE VALVE
- LEL LOWER EXPLOSIVE LIMIT
- LSH LEVEL SWITCH HIGH
- LT LEVEL TRANSDUCER
- P PUMP
- PT PRESSURE TRANSMITTER
- PV PLUG VALVE
- TLSH PUMP SEAL FAIL
- TSHL TEMPERATURE SWITCH HIGH, LOWER BEARING
- TSHU TEMPERATURE SWITCH HIGH, UPPER BEARING
- TSHW TEMPERATURE SWITCH HIGH, MOTOR WINDING
- VEU VIBRATION ELEMENT UPPER
- ZSC VALVE SWITCH FULLY CLOSED
- ZSO VALVE SWITCH FULLY OPEN

c:\dowl\_pw\00394725\SC-GN-CV-50233.dwg PLOT DATE 2023-01-17 15:05 SAVED DATE 2023-01-13 08:33 USER: ahorn

REV	DATE	DESCRIPTION	BY



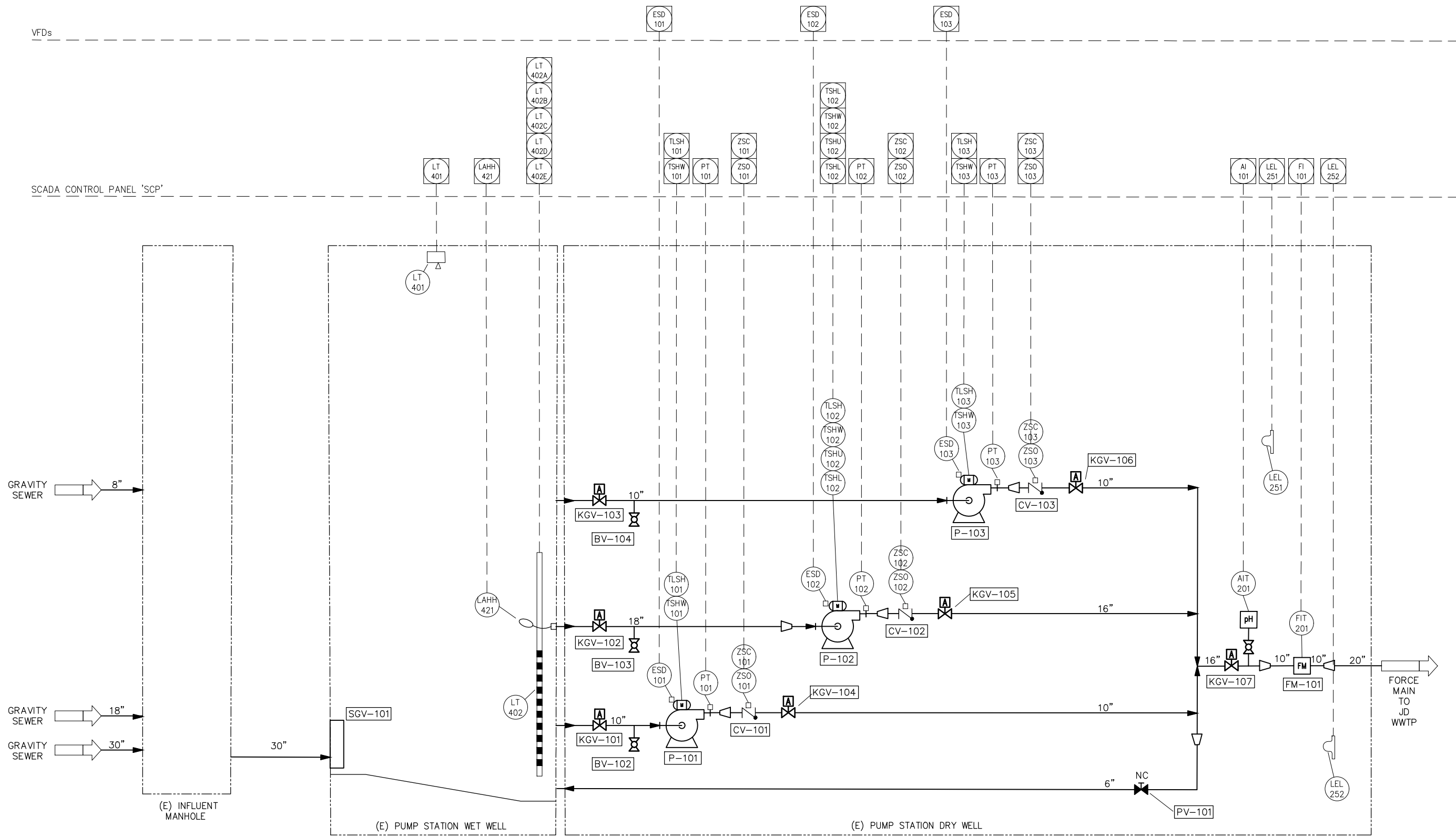
OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK  
 PROCESS LEGEND

PROJECT	1528.50233.01
DATE	01/17/2023

SHEET	D-001
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**BID SET**

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P-101 (NEW)	P-102 (NEW)	P-103 (NEW)
44HP	175HP	44HP
1800 GPM	5000 GPM	1800 GPM
LIFT PUMP	LIFT PUMP	LIFT PUMP
460V, 3ø	460V, 3ø	460V, 3ø

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

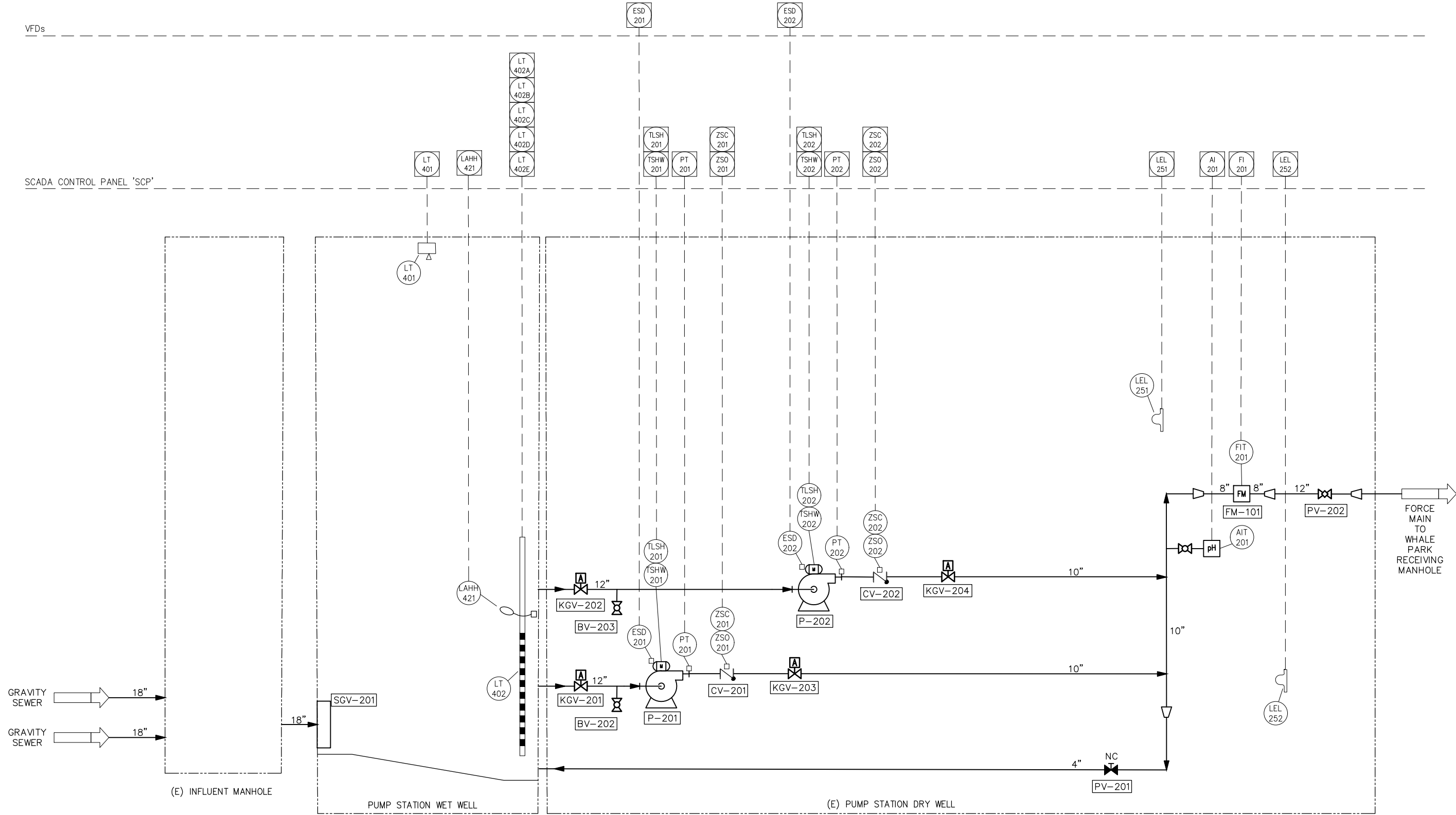
OUTER DRIVE PUMP STATION P&ID

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
D-101

**BID SET**

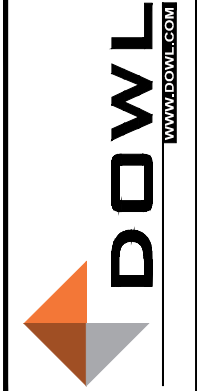
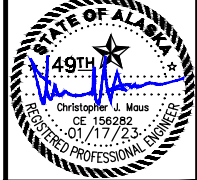
c:\dowl\_pva\0394737\WU P&ID.dwg PLOT DATE 2023-01-17 15:05 SAVED DATE 2023-01-11 08:42 USER: dhorn



P-201 (NEW)  
85HP  
1800 GPM  
LIFT PUMP  
460V, 3Ø

P-202 (NEW)  
85HP  
1800 GPM  
LIFT PUMP  
460V, 3Ø

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

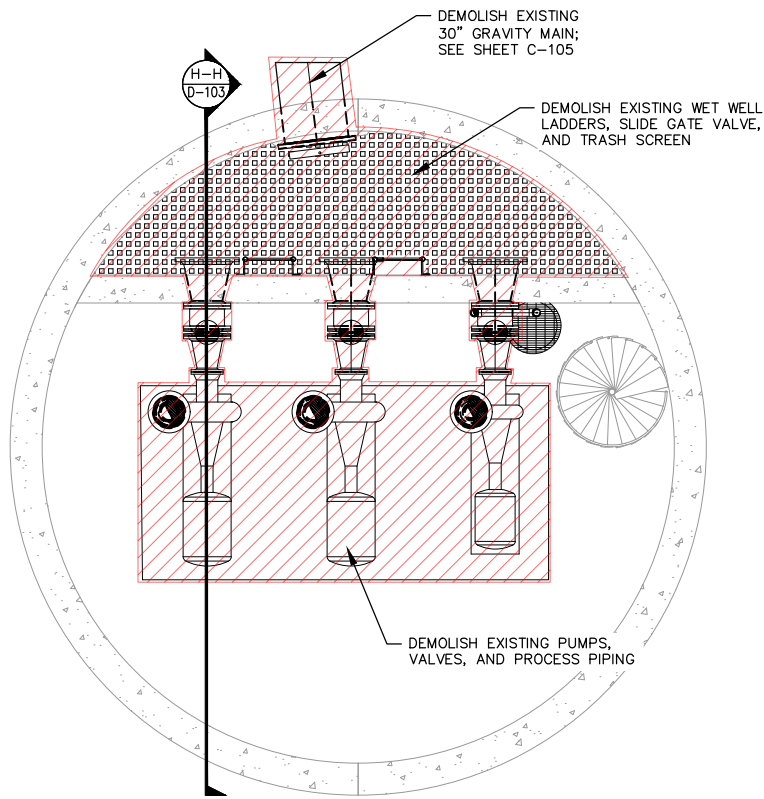
WEST JUNEAU PUMP STATION P&ID

PROJECT 1528.50233.01  
DATE 01/17/2023

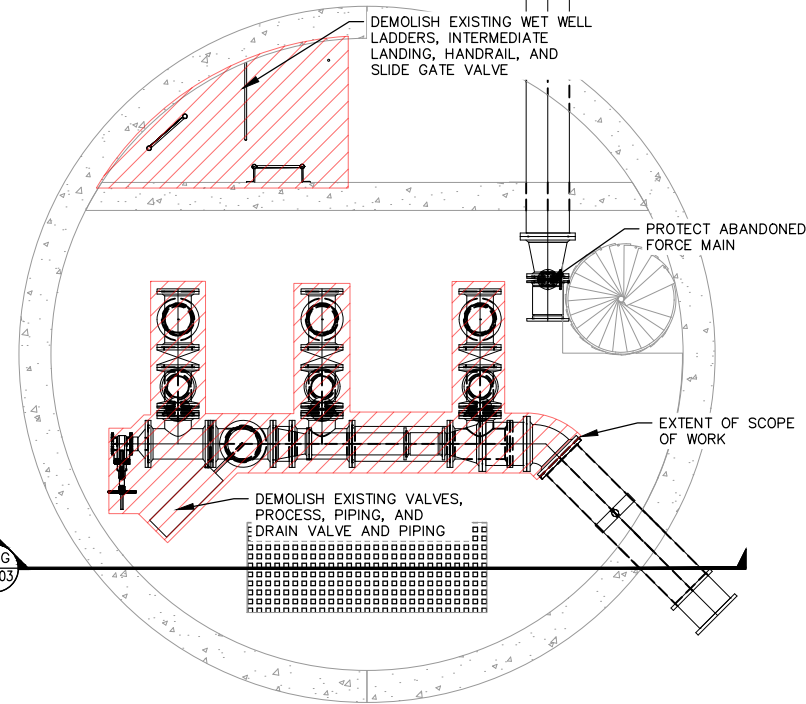
SHEET  
D-102

**BID SET**

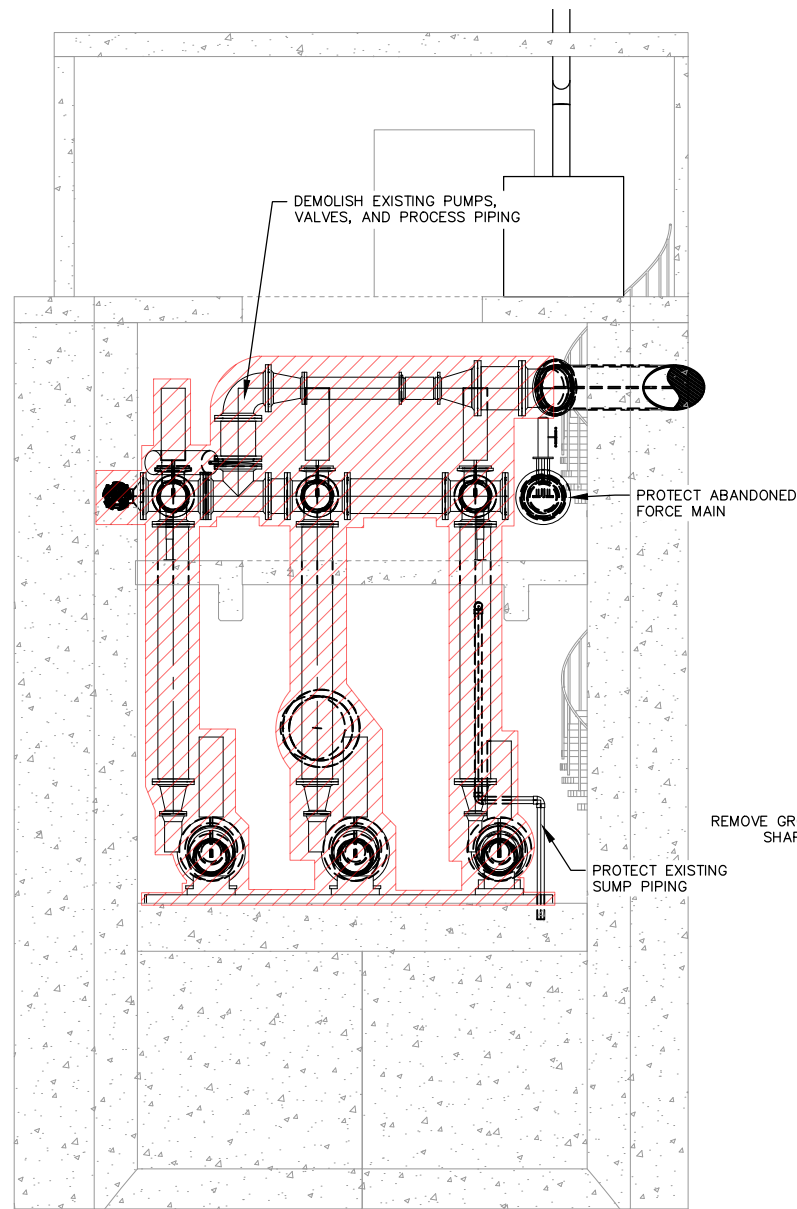
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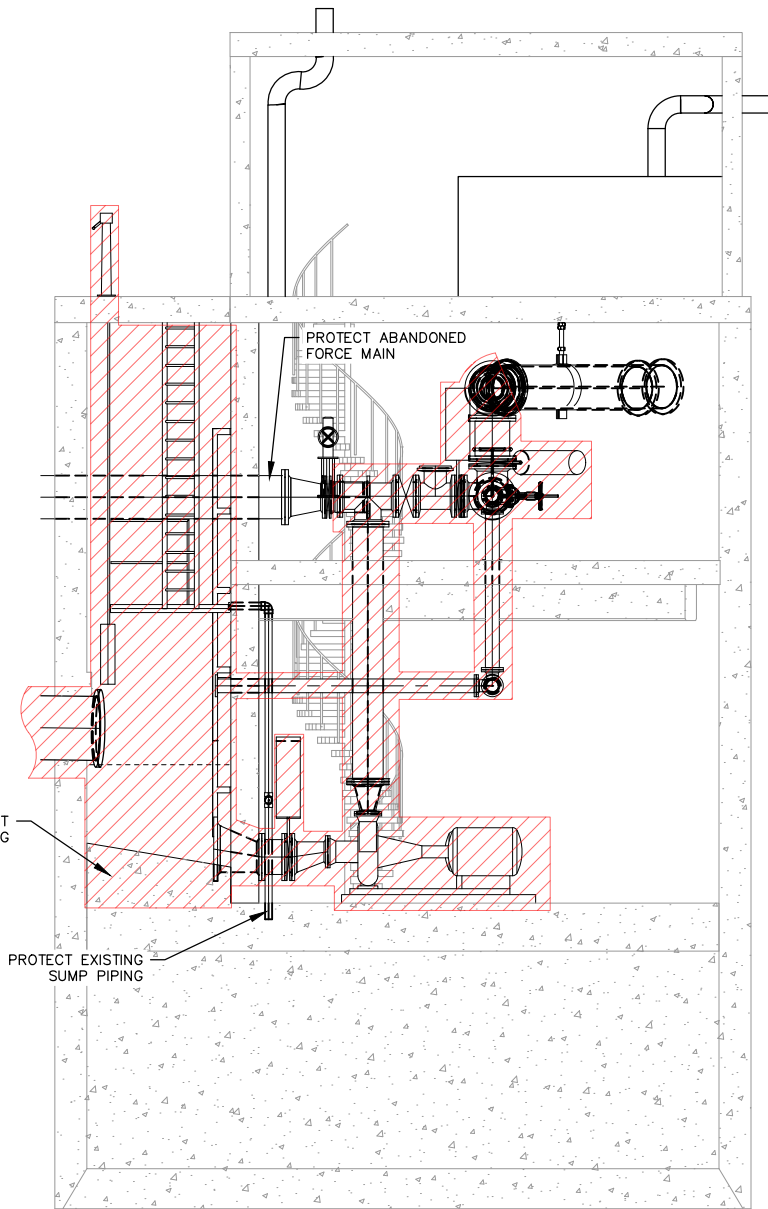
PUMP ROOM PLAN - DEMOLITION



VALVE ROOM PLAN - DEMOLITION



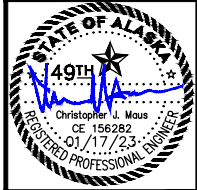
SECTION G-G



SECTION H-H



REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

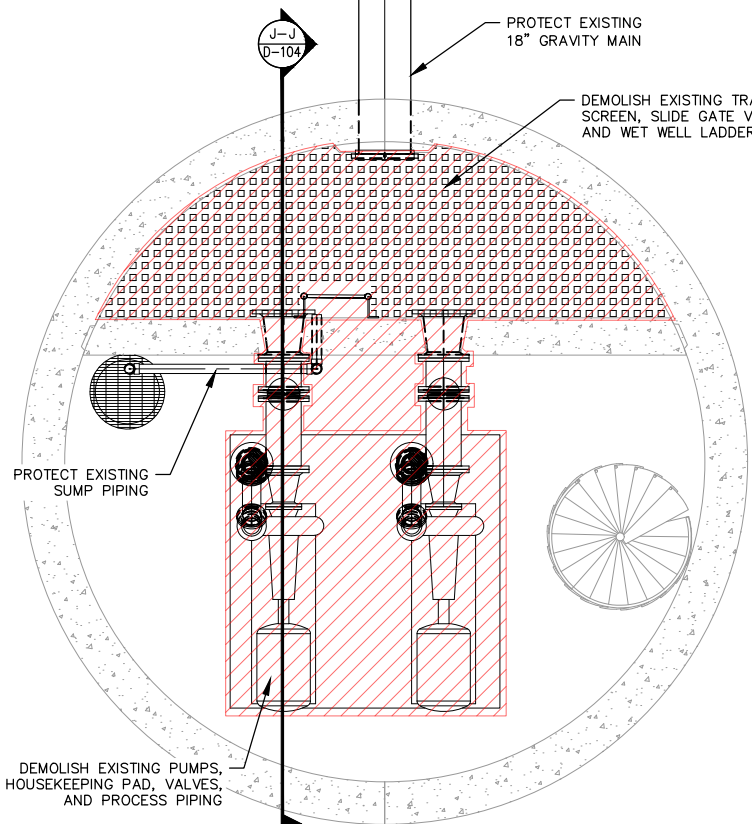
OD DEMOLITION

PROJECT DATE 1/17/2023

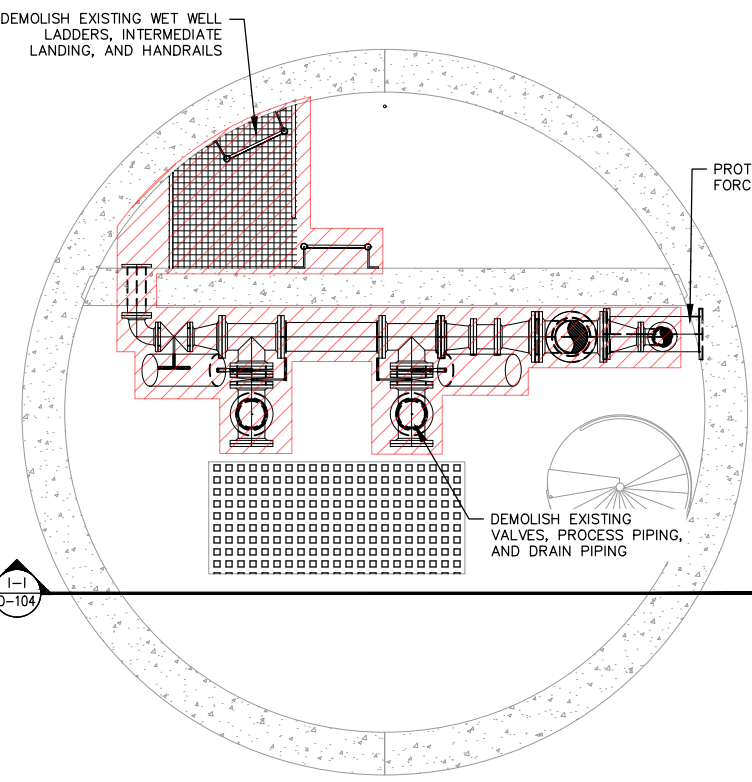
© DOWL 2021 SHEET

D-103

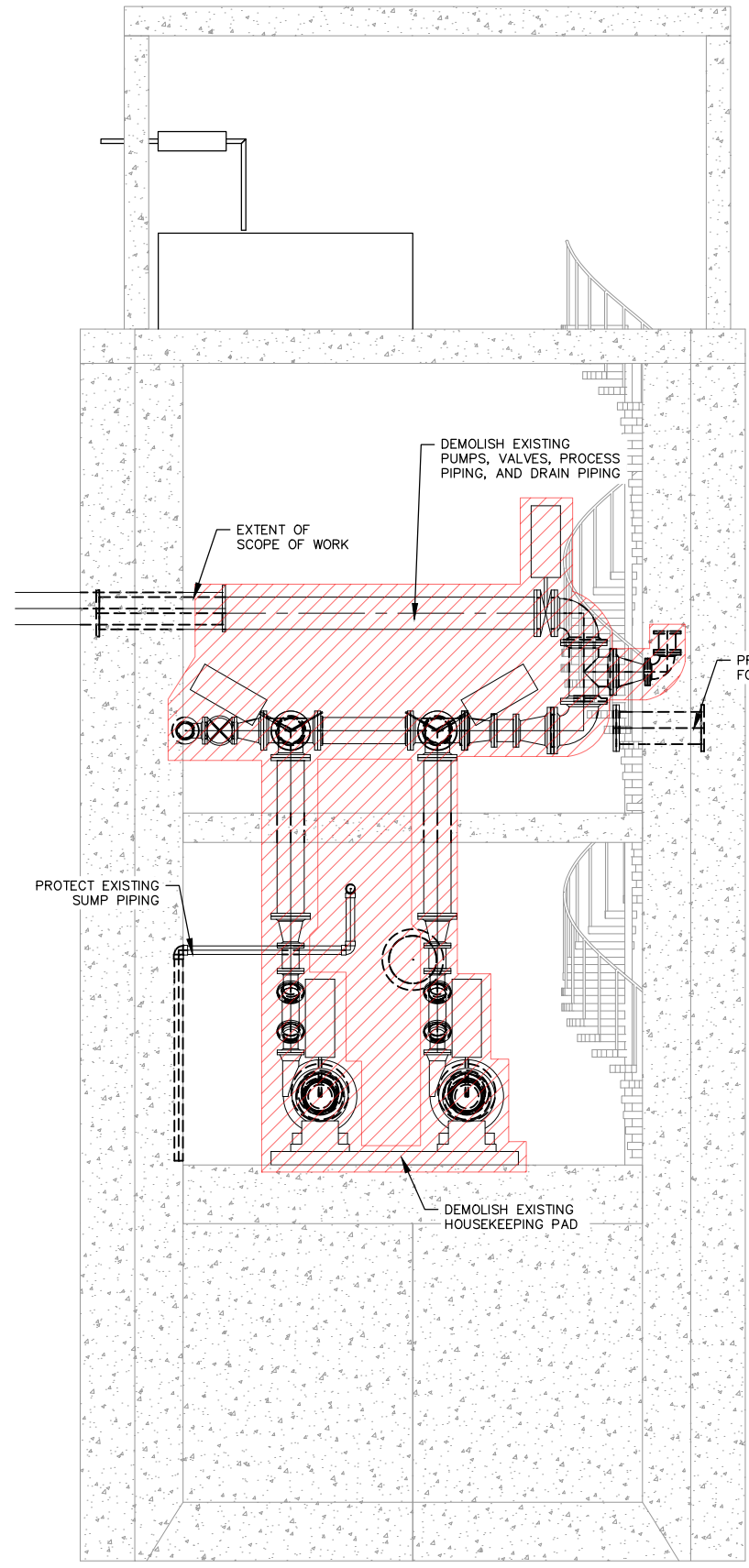
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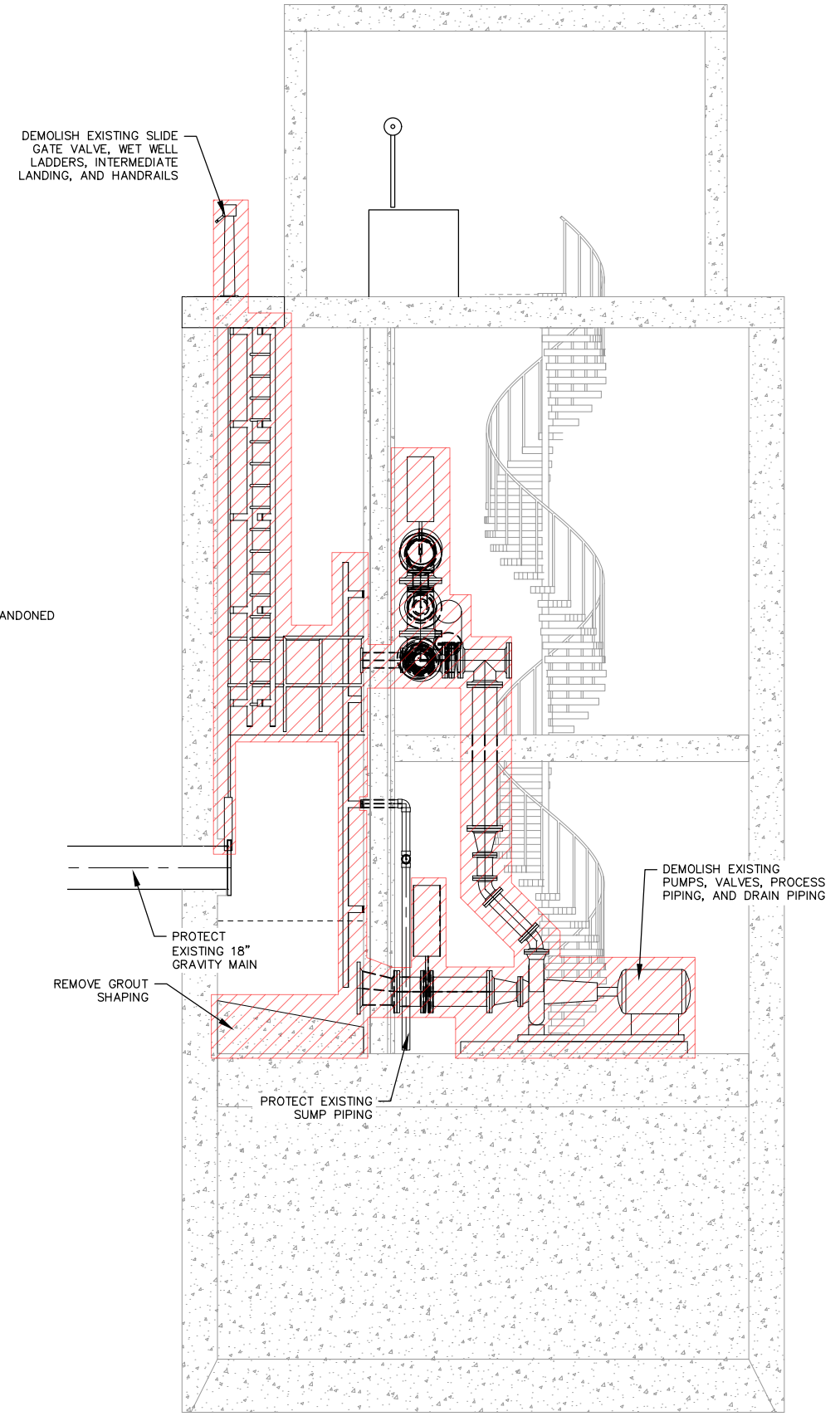
**PUMP ROOM PLAN - DEMOLITION**



**VALVE ROOM PLAN - DEMOLITION**



**SECTION I-I**



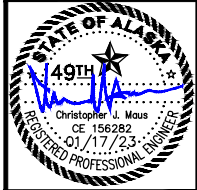
**SECTION J-J**



**BID SET**

\\dowl.com\Projects\28\_50233-01\_60CAD\Plant3D\Outer Drive & West Juneau Lift Stations\Ortho\WWS\F22-Ortho-Demo-WL.dwg PLOT DATE: 2023-11-17 15:15 SAVED DATE: 2022-12-14 16:36 USER: ahom

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

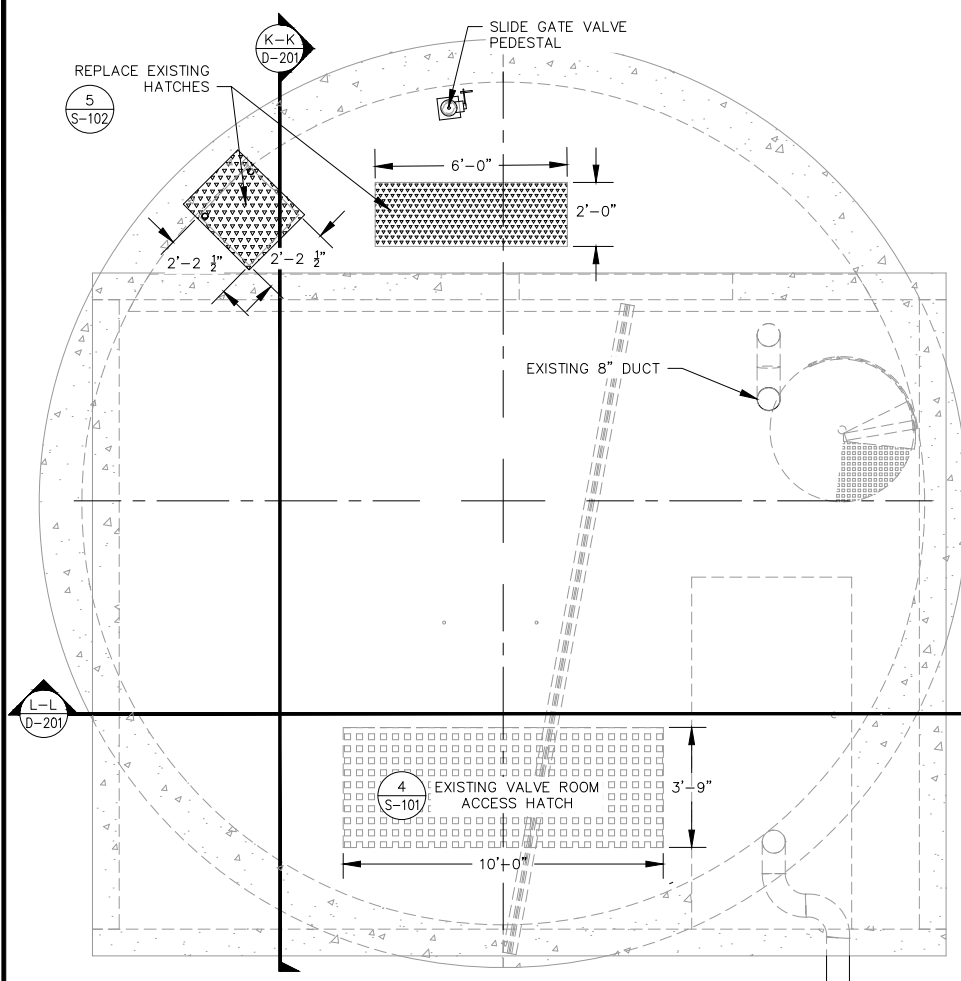
WJ DEMOLITION

PROJECT DATE 1/17/2023

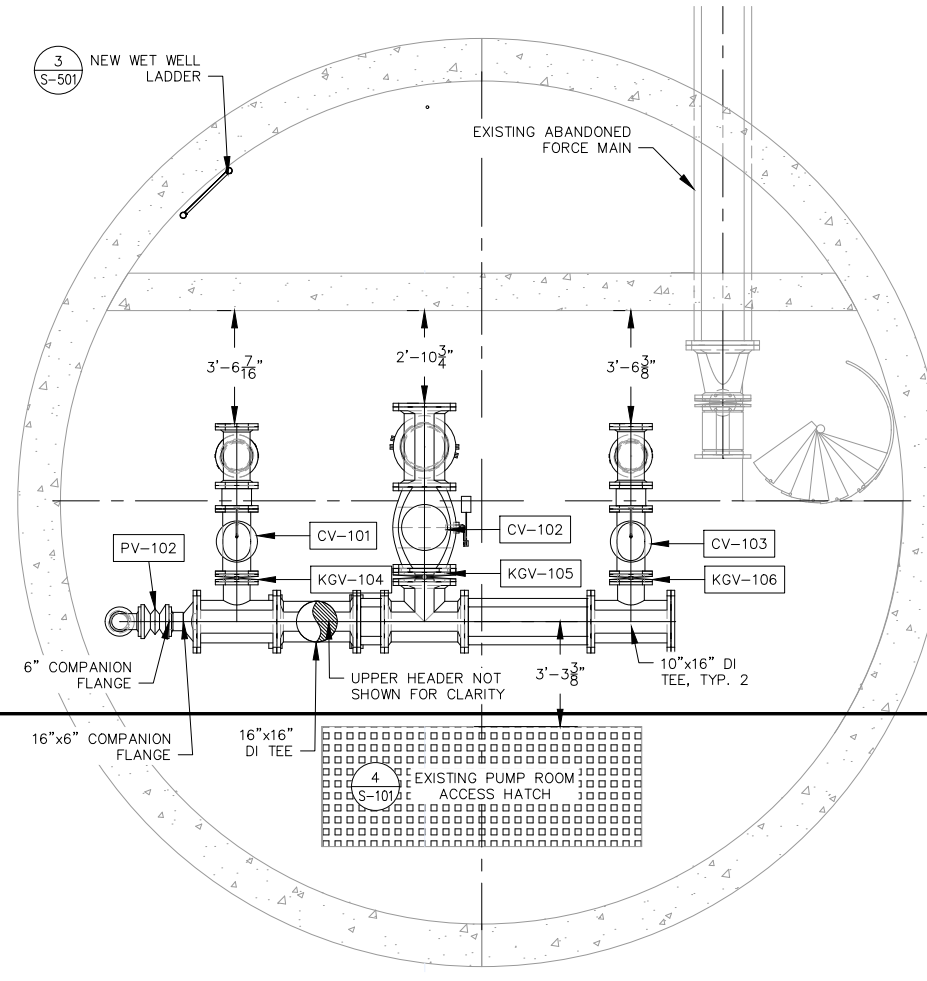
© DOWL 2021 SHEET

D-104

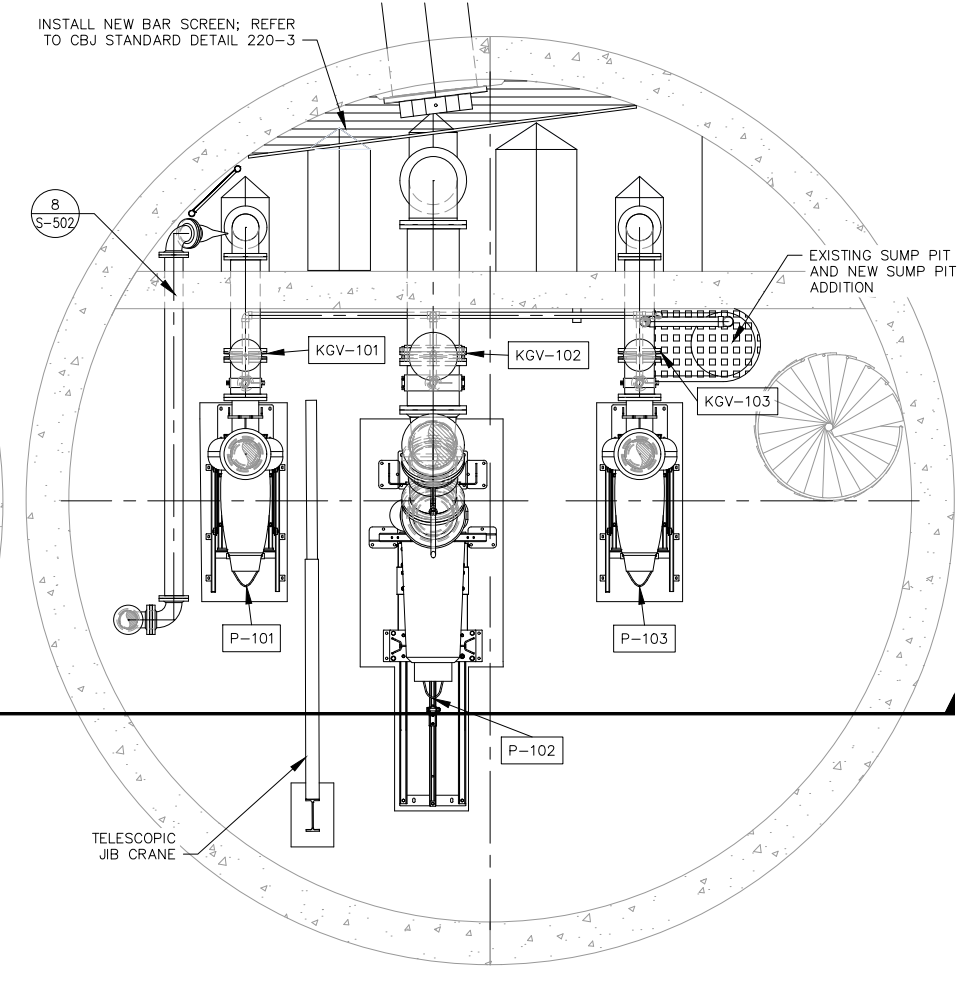
\\dowl.com\Projects\28 50233-01 60CAD\Plant3D\Outer Drive & West Juneau Lift Stations\Ortho\VDWs\F18-Ortho-OuterDrive.dwg PLOT DATE: 2023-11-17 15:16 SAVED DATE: 2022-12-14 16:41 USER: ahorn



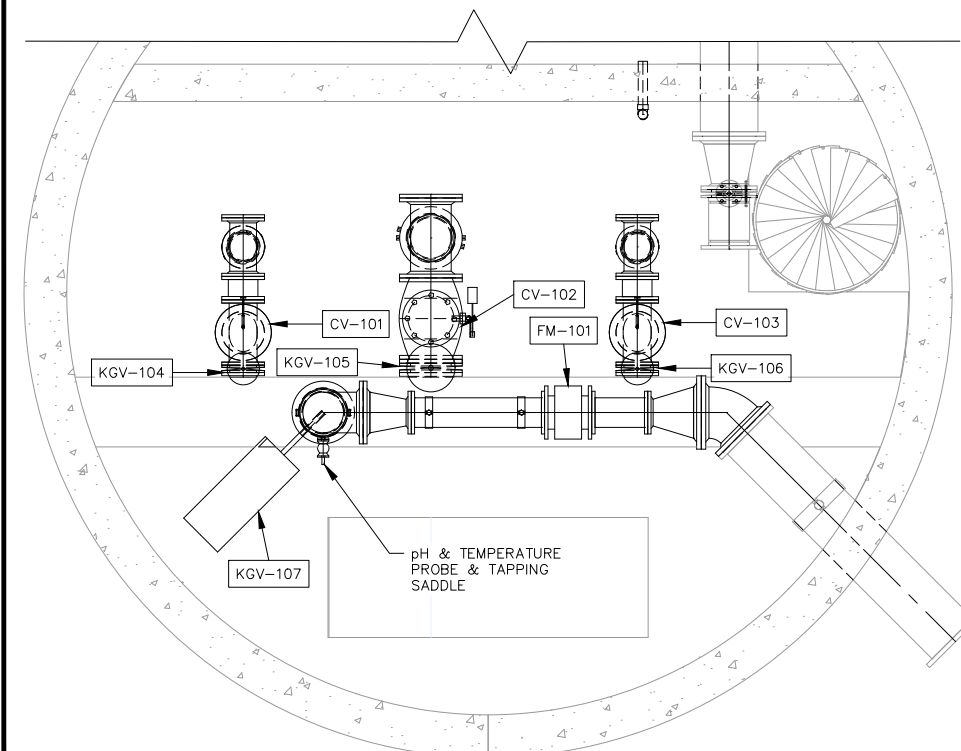
PLAN VIEW - GROUND LEVEL



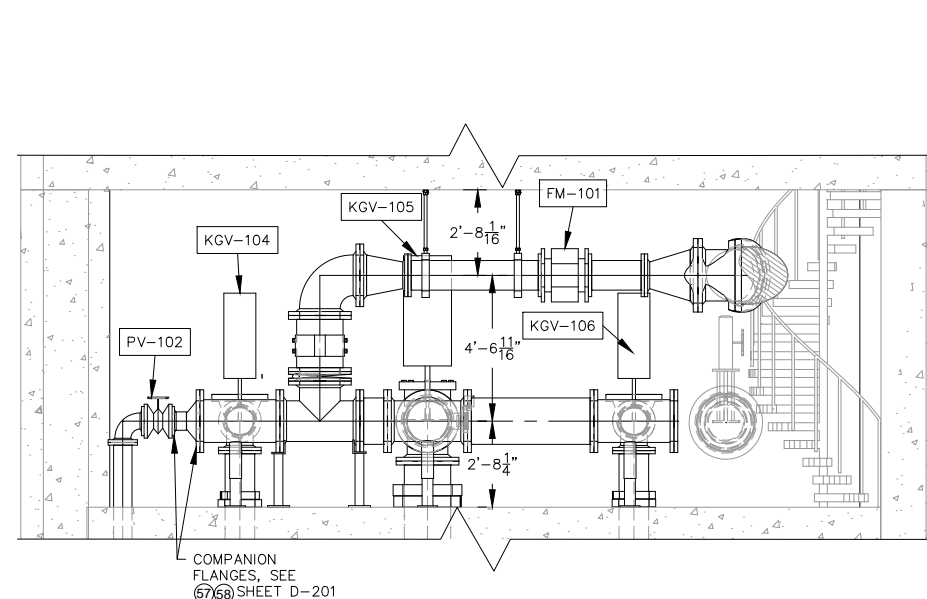
PLAN VIEW - MIDDLE FLOOR (LOWER HEADER)



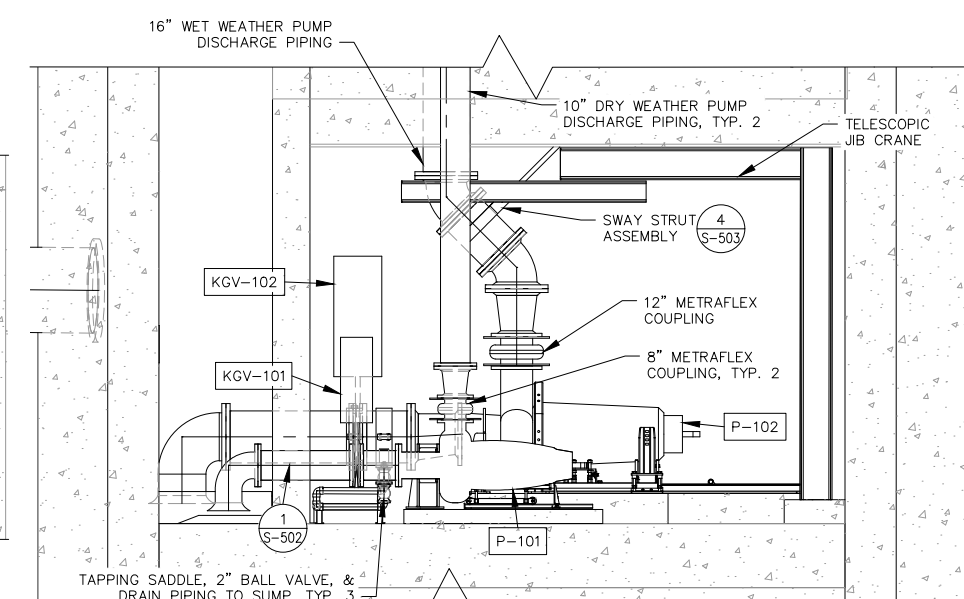
PLAN VIEW - BOTTOM FLOOR



PLAN VIEW - MIDDLE FLOOR (UPPER HEADER)



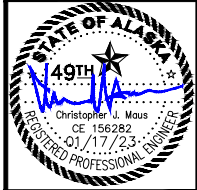
ELEVATION VIEW - MIDDLE FLOOR



ELEVATION VIEW - BOTTOM FLOOR



REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

OD PLAN & SECTION VIEWS

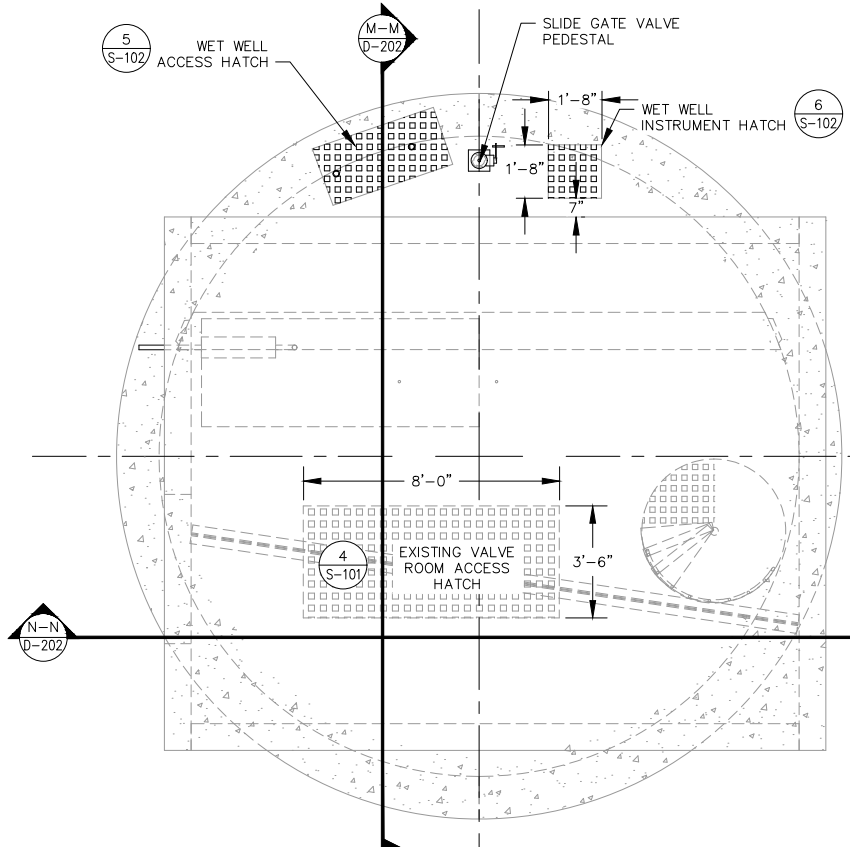
PROJECT 1528.50233.01  
DATE 1/17/2023

© DOWL 2021  
SHEET

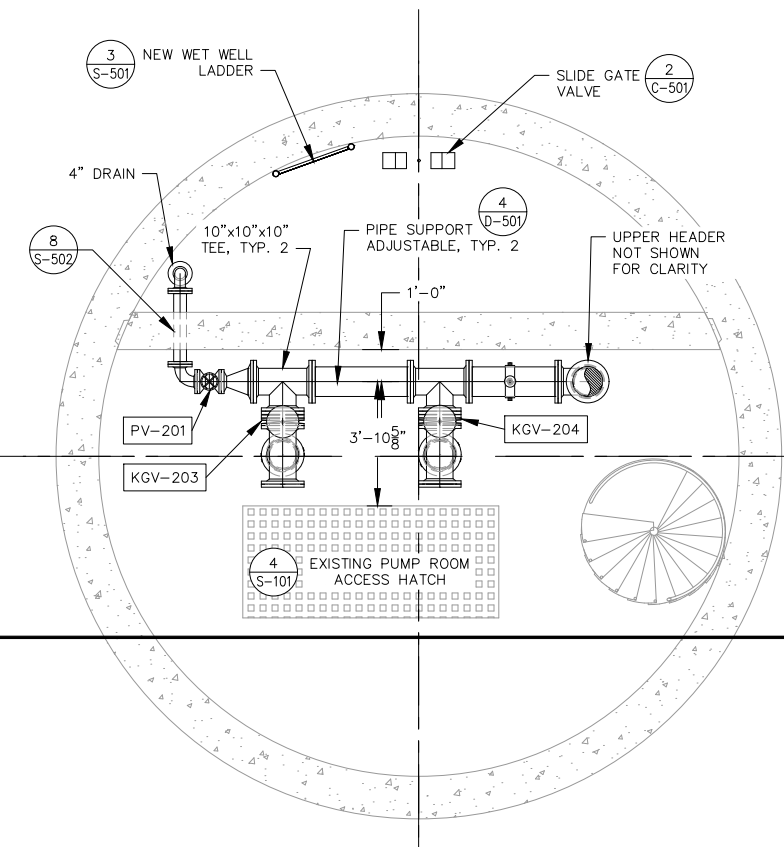
D-105

**BID SET**

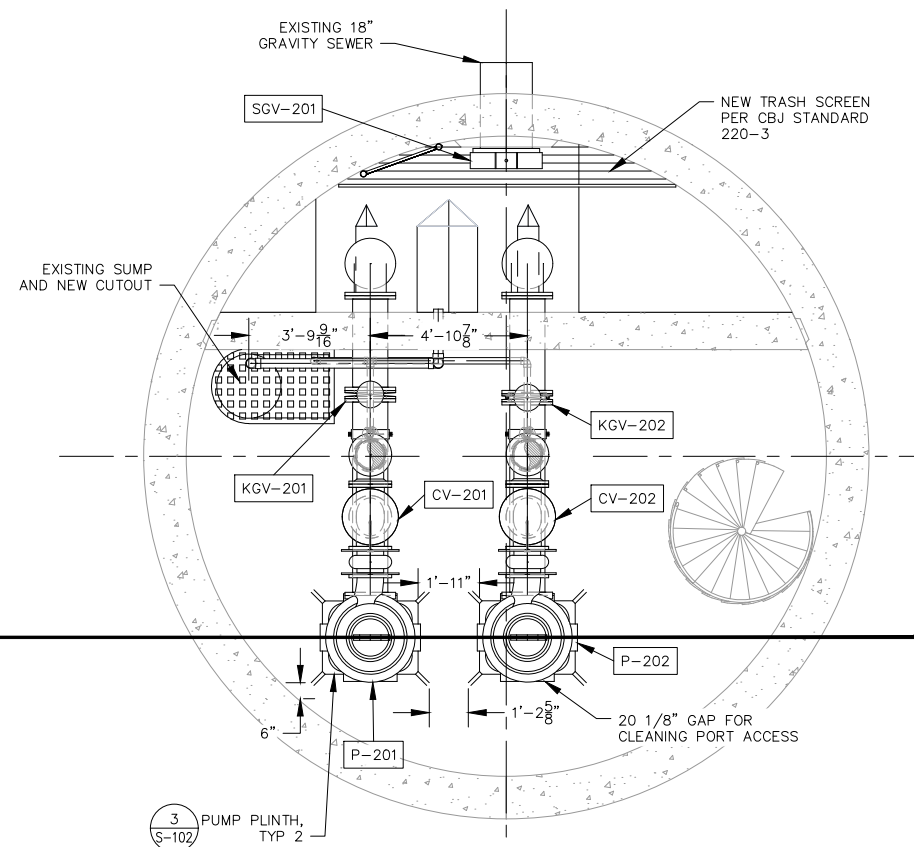
\\saw1.com\Projects\28\50233-01\600AD\Plan\3D\Outer Drive & West Juneau Lift Stations\Critics\DWG\WJ\_ortho.dwg PLOT DATE: 2023-1-17 15:15 SAVED DATE: 2022-12-14 16:40 USER: ahorn



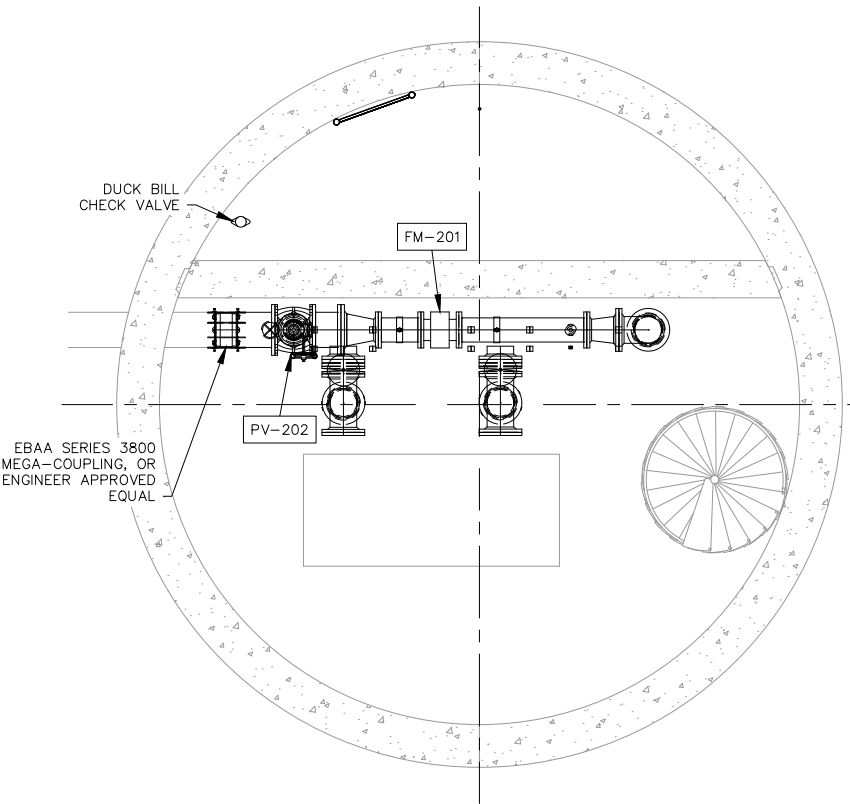
**PLAN VIEW - GROUND LEVEL**  
 SCALE IN FEET



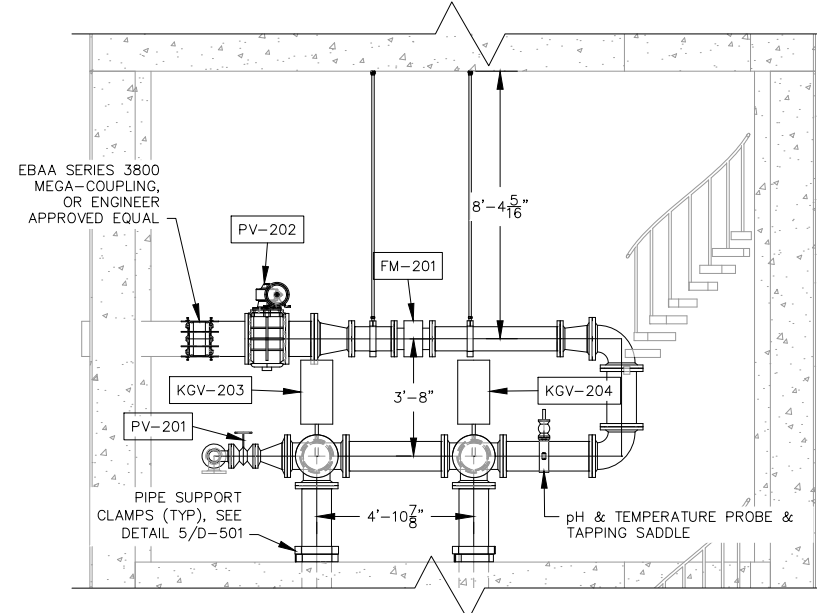
**PLAN VIEW - MIDDLE FLOOR**  
 SCALE IN FEET



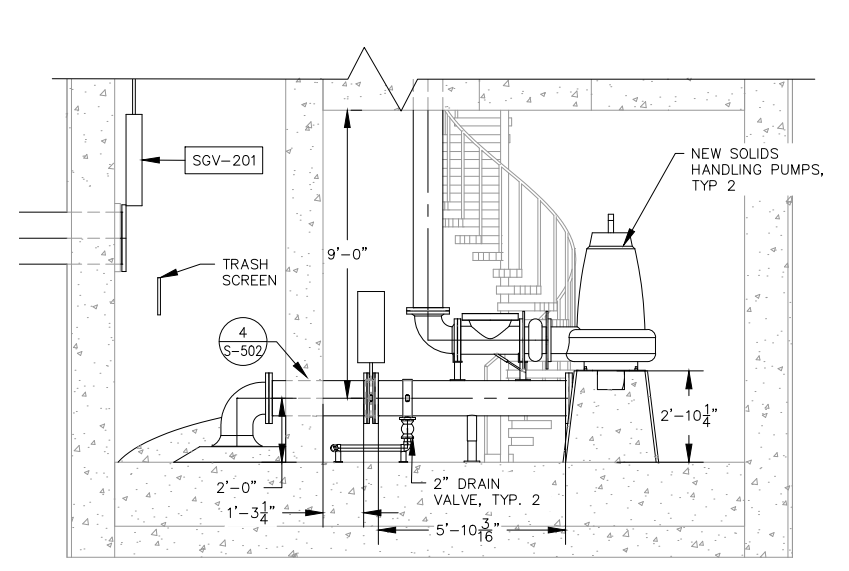
**PLAN VIEW - BOTTOM FLOOR**  
 SCALE IN FEET



**PLAN VIEW - UPPER HEADER**  
 SCALE IN FEET



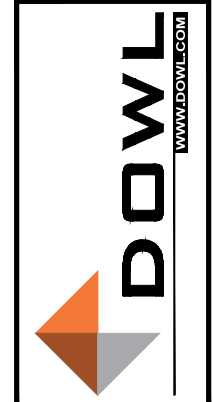
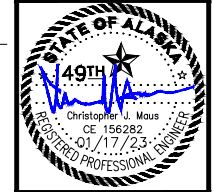
**ELEVATION VIEW - MIDDLE FLOOR**  
 SCALE IN FEET



**ELEVATION VIEW - BOTTOM FLOOR**  
 SCALE IN FEET

**BID SET**

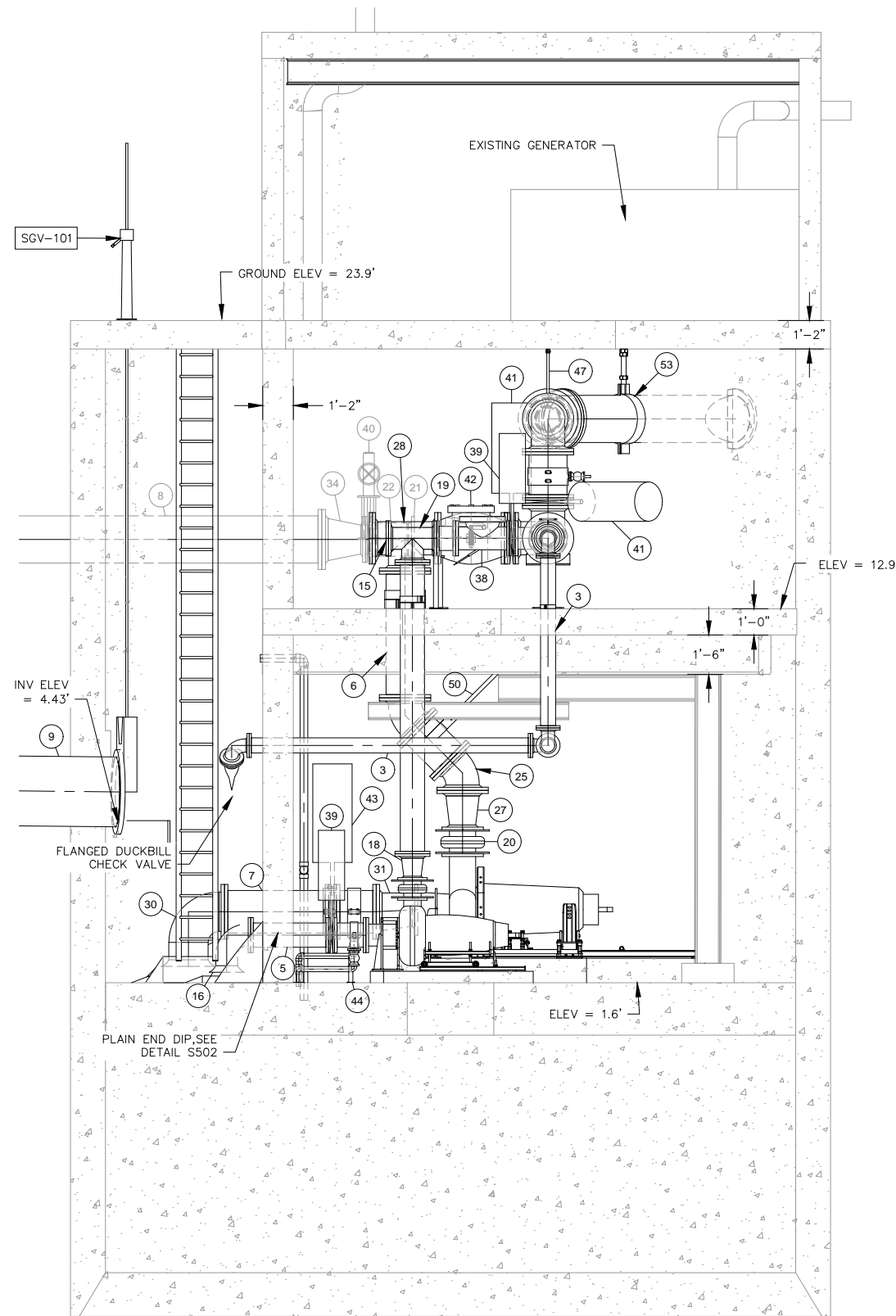
REV	DATE	DESCRIPTION	BY



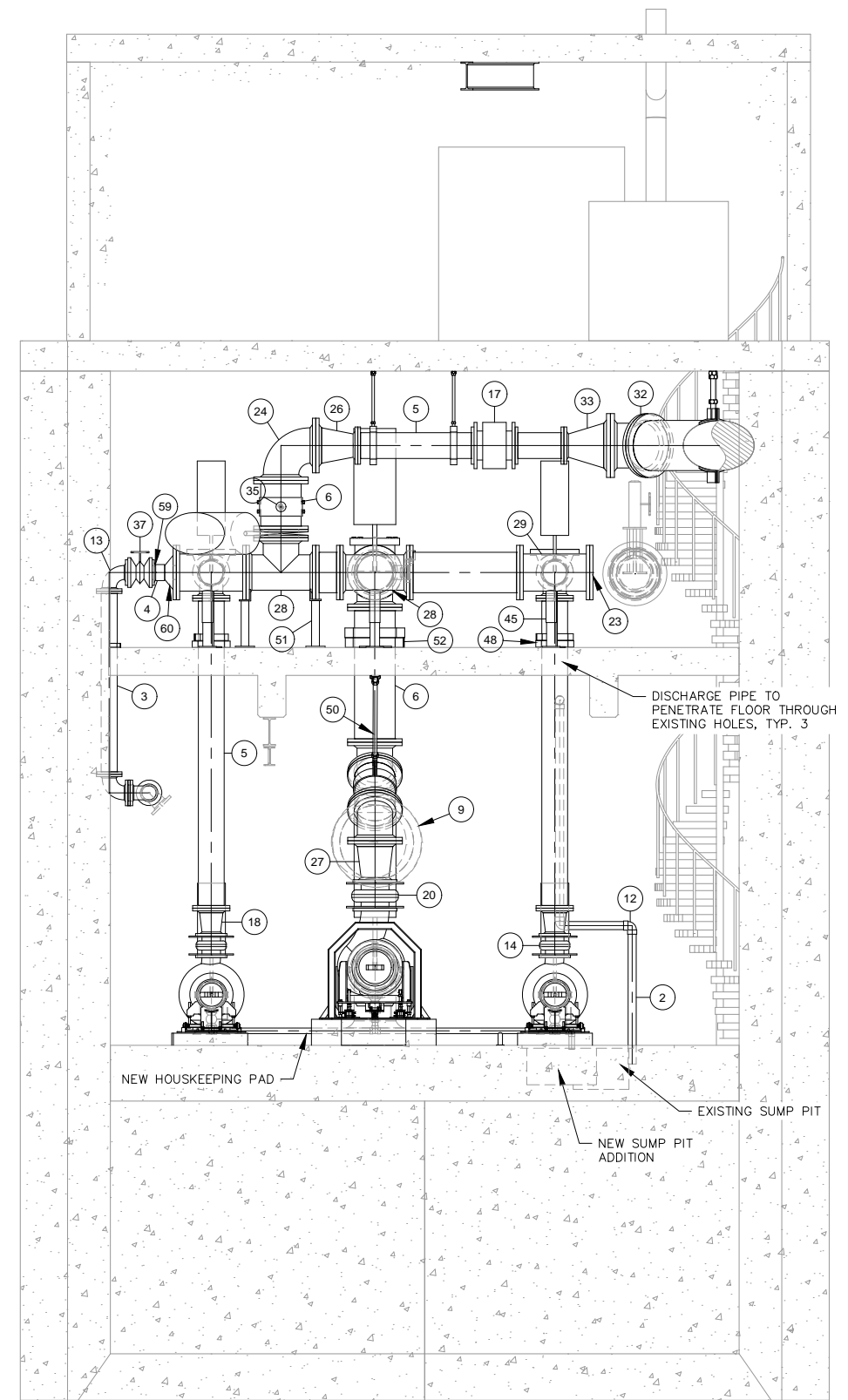
**OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK**  
**WJ PLAN & SECTION VIEWS**

SECTION K-K				
ID	DESCRIPTION	ND	QTY	COMMENTS
3	DI PIPE	6"	17'-4 9/16"	FLANGED
5	DI PIPE	10"	37'-11 5/32"	FLANGED; SEE DETAIL 1 & 2, SHEET S-502
6	DI PIPE	16"	13'-3 7/16"	FLANGED
7	DI PIPE	18"	5'-5 7/8"	FLANGED; SEE DETAIL 1 & 2, SHEET S-502
8	DI PIPE	20"	23'-6 13/32"	EXISTING, ABANDONED FORCE MAIN - TO REMAIN
9	DI PIPE	30"	45'-5 3/4"	EXISTING 30" GRAVITY MAIN TO BE LINED WITH CIPP
15	BLIND FLANGE	10"	2	-
16	90 DEGREE BELL	10"	2	-
18	CONCENTRIC REDUCER	10"x8"	2	-
19	TEE	10"	2	-
20	EXPANSION JOINT	12"	1	-
21	BLIND FLANGE	14"	1	EXISTING, ABANDONED FORCE MAIN - TO REMAIN
22	FLOW METER	14"	1	EXISTING, ABANDONED FORCE MAIN - TO REMAIN
25	45 DEGREE BEND	16"	2	-
27	CONCENTRIC REDUCER	16"x12"	1	-
28	TEE	16"	3	-
30	90 DEGREE BELL	18"	1	-
31	ECCENTRIC REDUCER	18"x16"	1	-
34	CONCENTRIC REDUCER	20"x14"	1	EXISTING, ABANDONED FORCE MAIN - TO REMAIN
38	CHECK VALVE	10"	2	-
39	KNIFE GATE VALVE	10"	4	AIR ACTUATED, INTAKE ISOLATION VALVE
40	KNIFE GATE VALVE	14"	1	EXISTING, ABANDONED FORCE MAIN ISOLATION VALVE - TO REMAIN
41	KNIFE GATE VALVE	16"	2	AIR ACTUATED, UPPER HEADER ISOLATION VALVE
42	CHECK VALVE	16"	1	-
43	KNIFE GATE VALVE	18"	1	AIR ACTUATED, INTAKE ISOLATION VALVE
44	WELDED STANCHION	1 1/2"	6	-
47	BOLTED HANGER	10"	2	INCLUDE SEISMIC RESTRAINT - SEE 7/D-501
50	SWING STRUT ASSEMBLY	16"	1	ANVIL MODEL SIZE 2, OPTION 3, FIGURE 211
53	BOLTED HANGER	20"	1	INCLUDE SEISMIC RESTRAINT - SEE 7/D-501

SECTION L-L				
ID	DESCRIPTION	ND	QTY	COMMENTS
2	SCH 40 PVC PIPE	3"	16'-2 19/32"	EXISTING SUMP PIPING - TO REMAIN
3	DI PIPE	6"	17'-4 9/16"	FLANGED
4	DI PIPE	6"	3 27/32"	FLANGED
5	DI PIPE	10"	37'-11 5/32"	FLANGED
6	DI PIPE	16"	13'-3 7/16"	FLANGED
9	DI PIPE	30"	45'-5 3/4"	EXISTING 30" GRAVITY MAIN TO BE LINED WITH CIPP
12	SCH 40 PVC 90 DEGREE BEND	3"	3	EXISTING SUMP PIPING - TO REMAIN
13	90 DEGREE ELBOW	6"	4	-
14	EXPANSION JOINT	8"	2	-
17	FLOW METER	10"	1	FM-101; SEE ELECTRICAL
18	CONCENTRIC REDUCER	10"x8"	2	-
20	EXPANSION JOINT	12"	1	-
23	BLIND FLANGE	16"	2	-
24	90 DEGREE ELBOW	16"	1	-
26	CONCENTRIC REDUCER	16"x10"	1	-
27	CONCENTRIC REDUCER	16"x12"	1	-
28	TEE	16"	3	-
29	TEE	16"x10"x16"	2	-
32	45 DEGREE BEND	20"	1	EXTENT OF SCOPE OF WORK
33	CONCENTRIC REDUCER	20"x10"	1	-
35	BALL VALVE	1"	1	PH SENSOR ISOLATION VALVE
37	PLUG VALVE	6"	1	DRAIN ISOLATION VALVE
45	ADJUSTABLE WELDED STANCHION	4"	3	-
48	CLAMP	10"	4	SEE DETAIL 5/D-501
50	SWING STRUT ASSEMBLY	16"	1	ANVIL MODEL SIZE 2, OPTION 3, FIGURE 211
59	COMPANION FLANGE	6"	1	-
60	COMPANION FLANGE	16"x6"	1	-



SECTION K-K



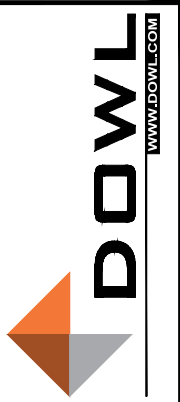
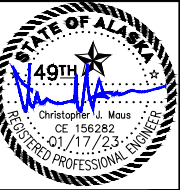
SECTION L-L



NOTES:

1. ALL PROCESS PIPING TO BE FACTORY PRIMED AND FIELD PAINTED PER SPECIFICATIONS
2. USE FLANGED COUPLING ADAPTERS AS NEEDED AND PER APPROVAL OF ENGINEER TO FACILITATE PIPE FITTING AND ASSEMBLY
3. PUMP SUPPORT BRACKETRY SHALL BE FOR FLYGT PUMP NZ INSTALLATION AND SUPPLIED BY MANUFACTURER

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
OD ELEVATION VIEWS

PROJECT 1528.50233.01  
DATE 1/17/2023

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SHEET

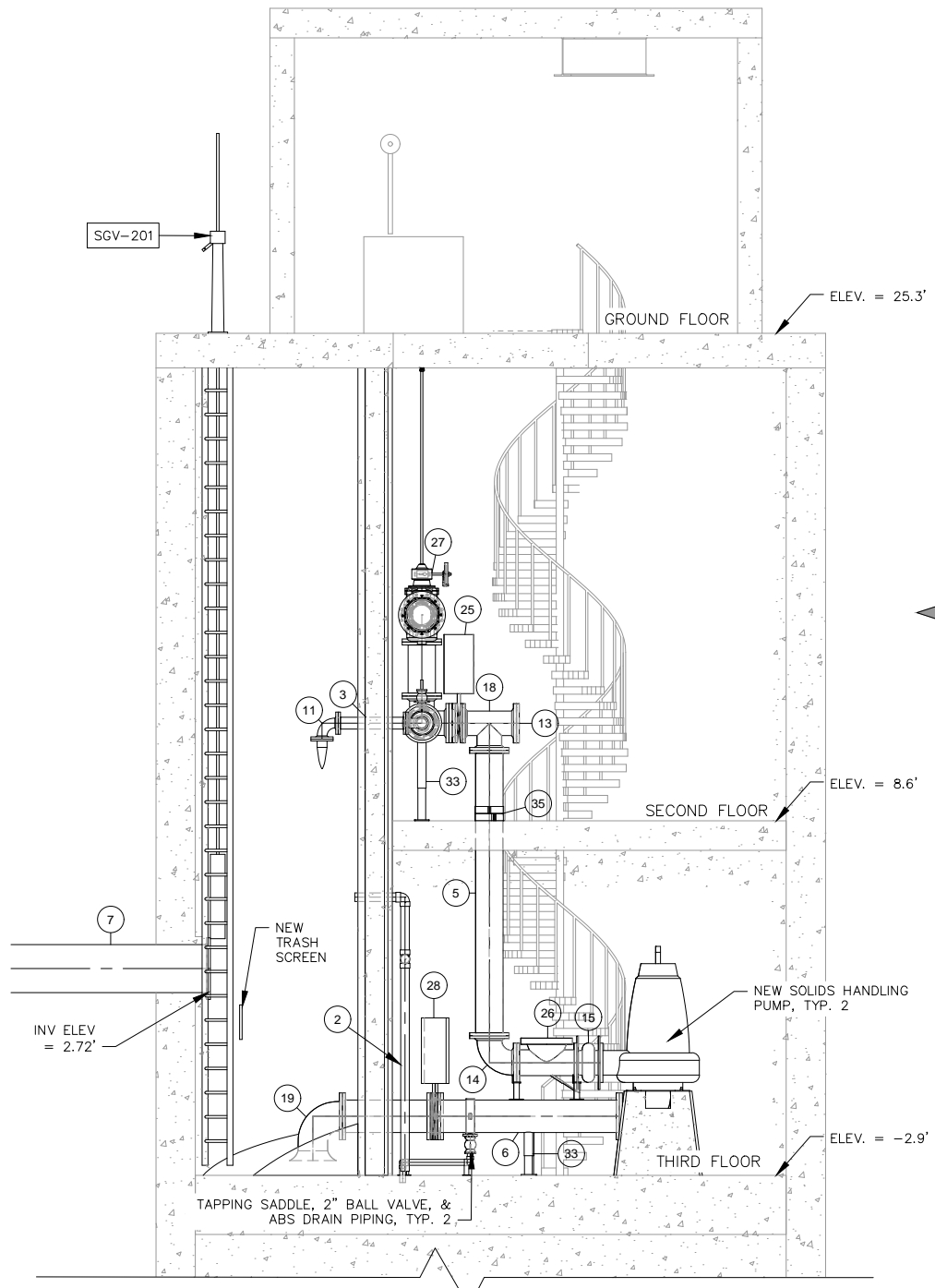
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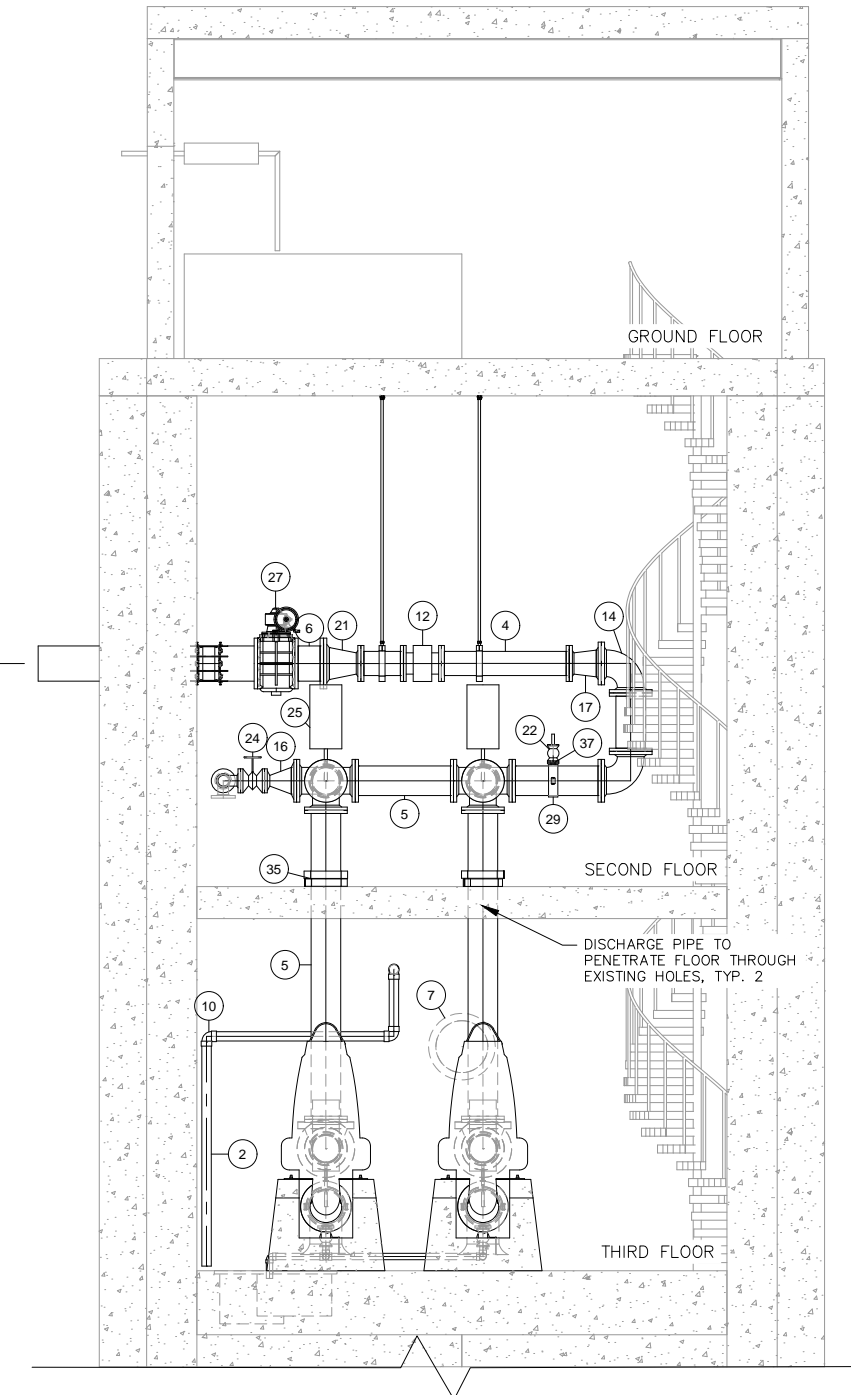


SECTION M-M				
ID	DESCRIPTION	ND	QTY	ITEM CODE
2	SCH 40 PVC PIPE	3"	15'-8 13/16"	EXISTING SUMP PIPING
3	DI PIPE	4"	2'-3 13/32"	DRAIN PIPING TO WET WELL
5	DI PIPE	10"	27'-5"	FLANGED
6	DI PIPE	12"	19'-1 9/16"	FLANGED
7	DI PIPE	18"	9'-7 11/32"	EXISTING 18" GRAVITY MAIN
11	90 DEGREE ELBOW	4"	2	-
13	BLIND FLANGE	10"	2	-
14	90 DEGREE ELBOW	10"	4	-
15	EXPANSION JOINT	10"	2	-
18	TEE	10"	4	-
19	90 DEGREE BELL	12"	2	-
25	KNIFE GATE VALVE	10"	2	AIR ACTUATED KNIFE GATE VALVE
26	CHECK VALVE	10"	2	-
27	PLUG VALVE	12"	1	CHAINWHEEL MANUAL OPERATOR
28	KNIFE GATE VALVE	12"	2	AIR ACTUATED KNIFE GATE VALVE
33	ADJUSTABLE WELDED STANCHION	3"	4	-
35	CLAMP	10"	4	SEE DETAIL 5/D-501

SECTION N-N				
ID	DESCRIPTION	ND	QTY	COMMENTS
2	SCH 40 PVC PIPE	3"	15'-8 13/16"	EXISTING SUMP PIPING
4	DI PIPE	8"	5'-3 7/8"	FLANGED
5	DI PIPE	10"	27'-5"	FLANGED
6	DI PIPE	12"	19'-1 9/16"	FLANGED
7	DI PIPE	18"	9'-7 11/32"	EXISTING 18" GRAVITY MAIN
10	SCH 40 PVC 90 DEGREE BEND	3"	3	-
12	FLOW METER	8"	1	FM-201; SEE ELECTRICAL
14	90 DEGREE ELBOW	10"	4	-
16	CONCENTRIC REDUCER	10"x4"	1	-
17	CONCENTRIC REDUCER	10"x8"	1	-
21	CONCENTRIC REDUCER	12"x8"	1	-
22	BALL VALVE	1"	1	ISOLATION BALL VALVE FOR PH PROBE
24	PLUG VALVE	4"	1	HANDWHEEL MANUAL OPERATOR
25	KNIFE GATE VALVE	10"	2	AIR ACTUATED KNIFE GATE VALVE
27	PLUG VALVE	12"	1	CHAINWHEEL MANUAL OPERATOR
29	TAPPING SADDLE	10"x1"	1	-
35	CLAMP	10"	4	SEE DETAIL 5/D-501
37	FLANGE	1"	1	PH PROBE CONNECTION



**SECTION M-M**



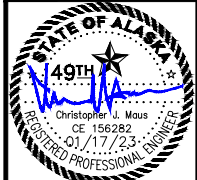
**SECTION N-N**



- NOTES:
- ALL PROCESS PIPING TO BE FACTORY PRIMED AND FIELD PAINTED PER SPECIFICATIONS
  - USE FLANGED COUPLING ADAPTERS AS NEEDED AND PER APPROVAL OF ENGINEER TO FACILITATE PIPE FITTING AND ASSEMBLY
  - PUMP SUPPORT BRACKETRY SHALL BE FOR FLYGT PUMP NZ INSTALLATION AND SUPPLIED BY MANUFACTURER

**BID SET**

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
WJ ELEVATION VIEWS

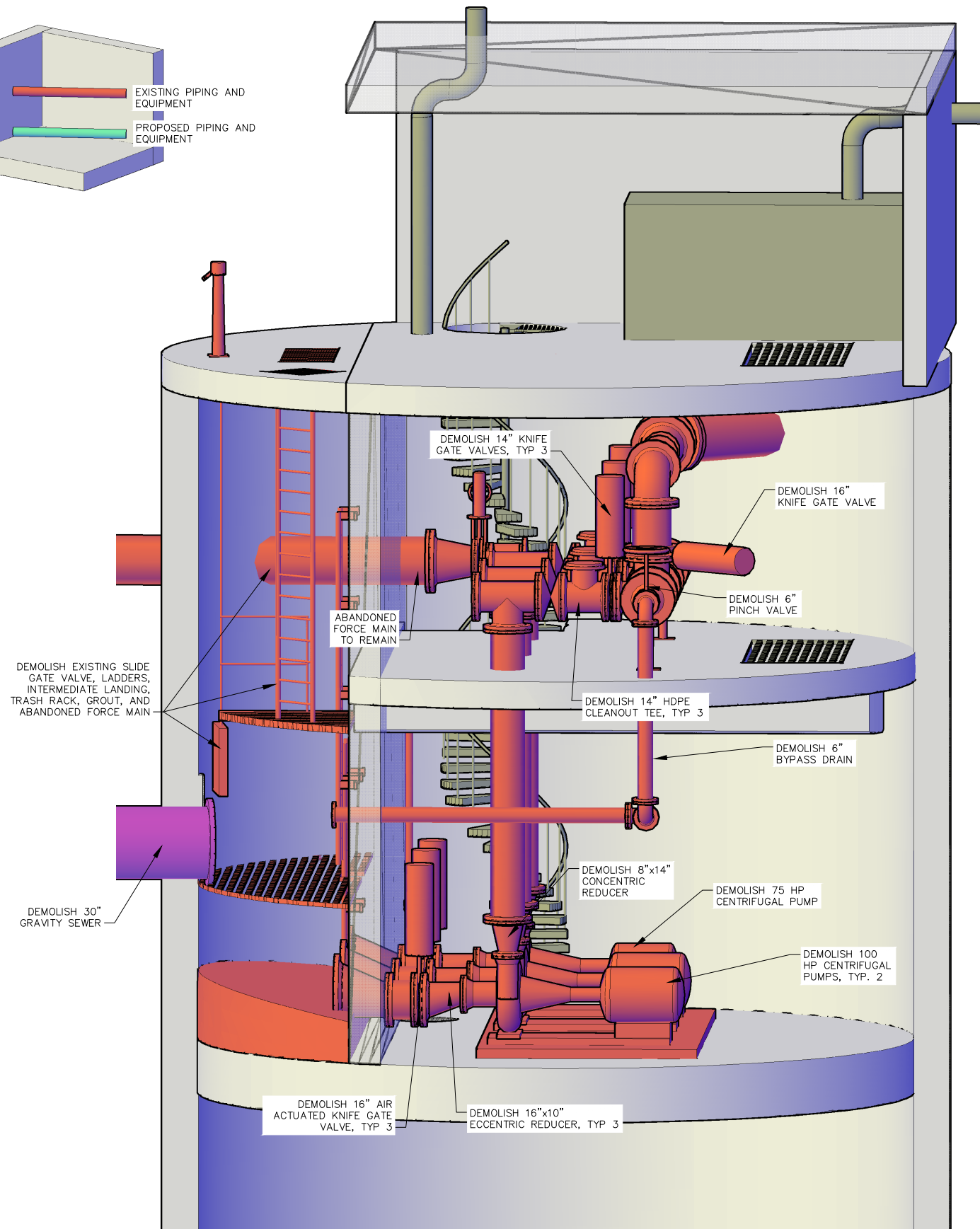
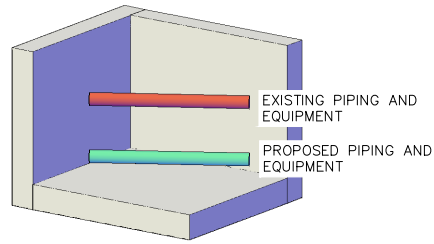
PROJECT 1528.50233.01  
DATE 1/17/2023

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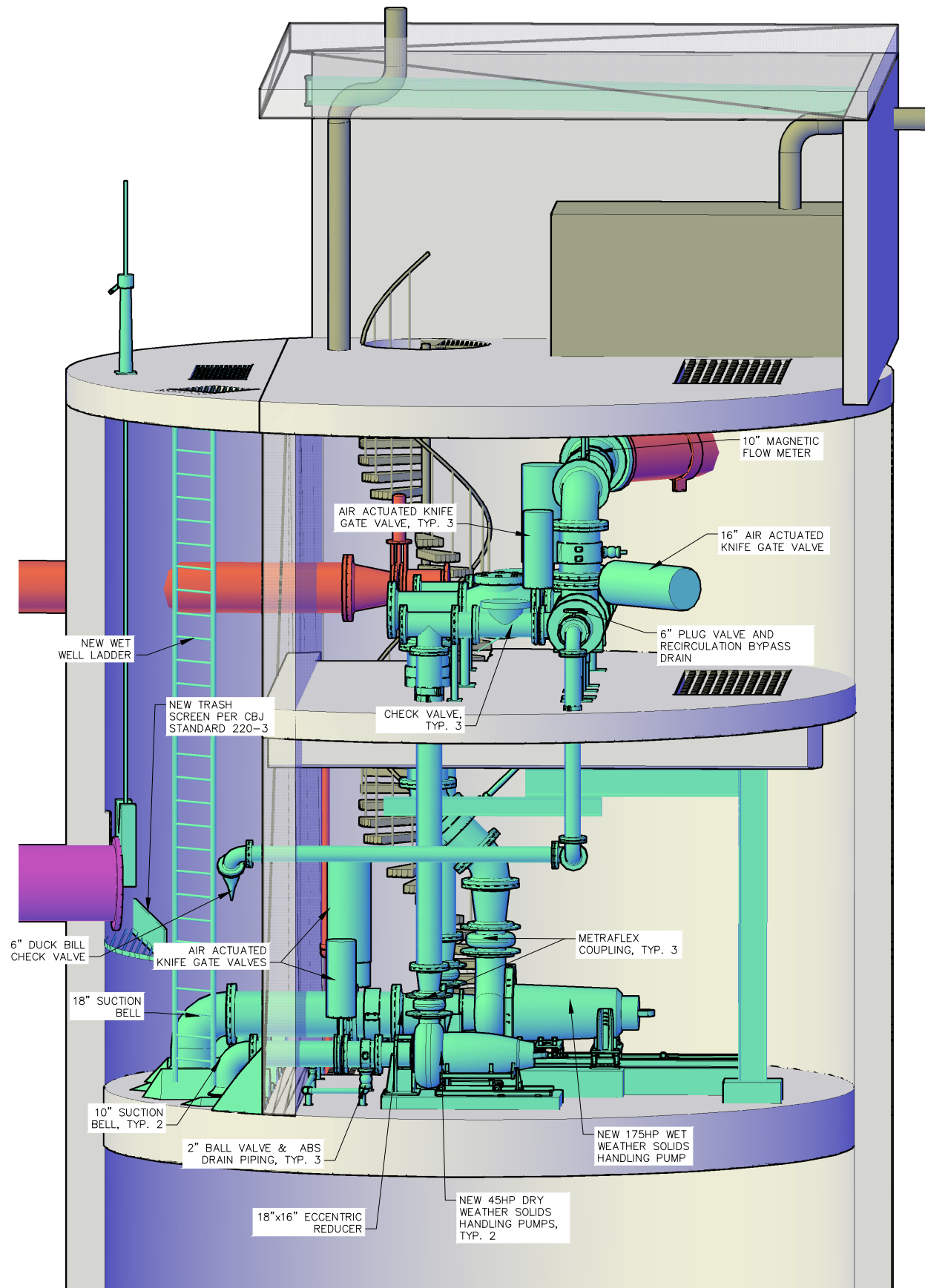
D-202

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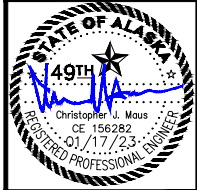
EXISTING PIPING AND DEMOLITION



PROPOSED PIPING

**BID SET**

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

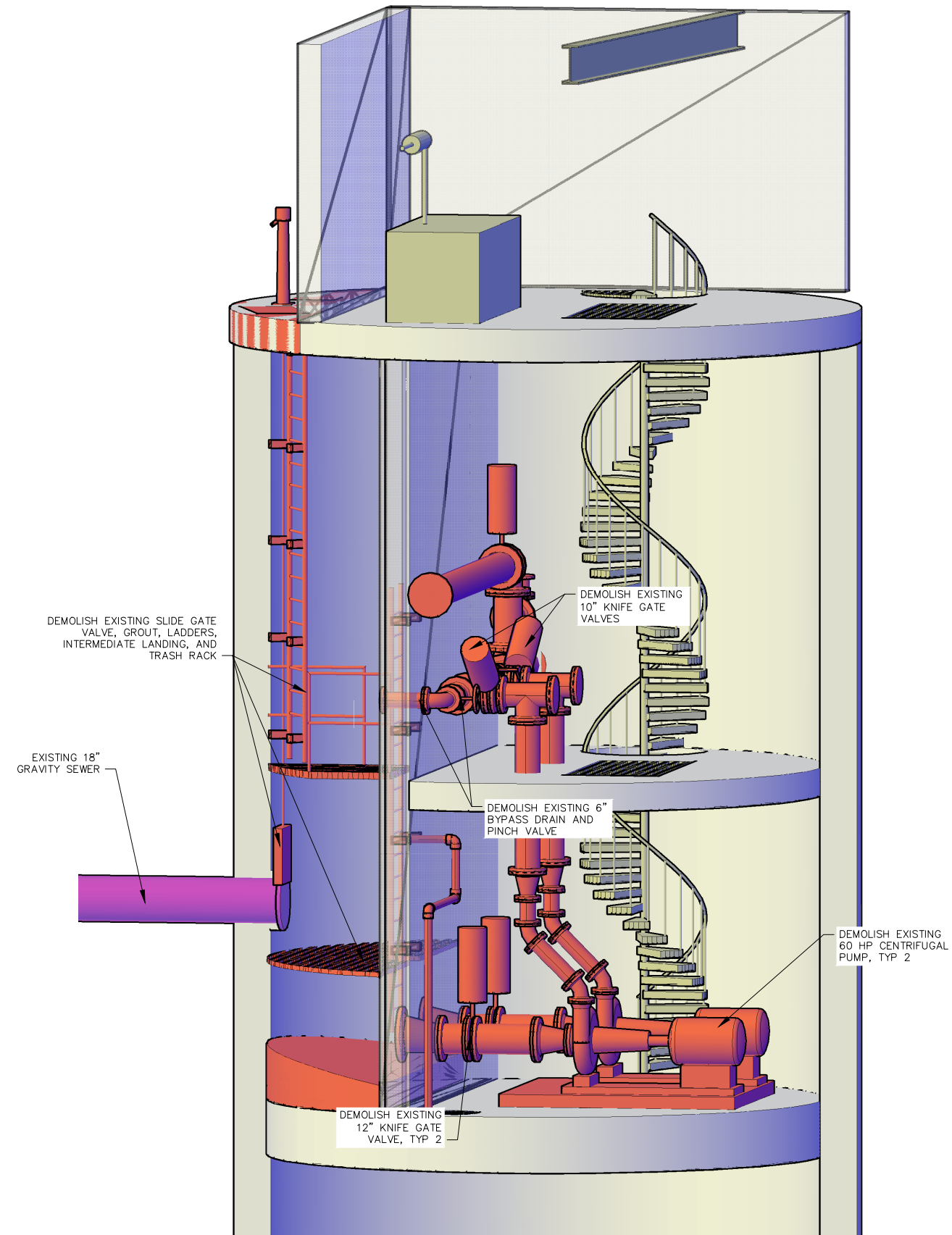
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PROJECT 1528.50233.01  
DATE 1/17/2023

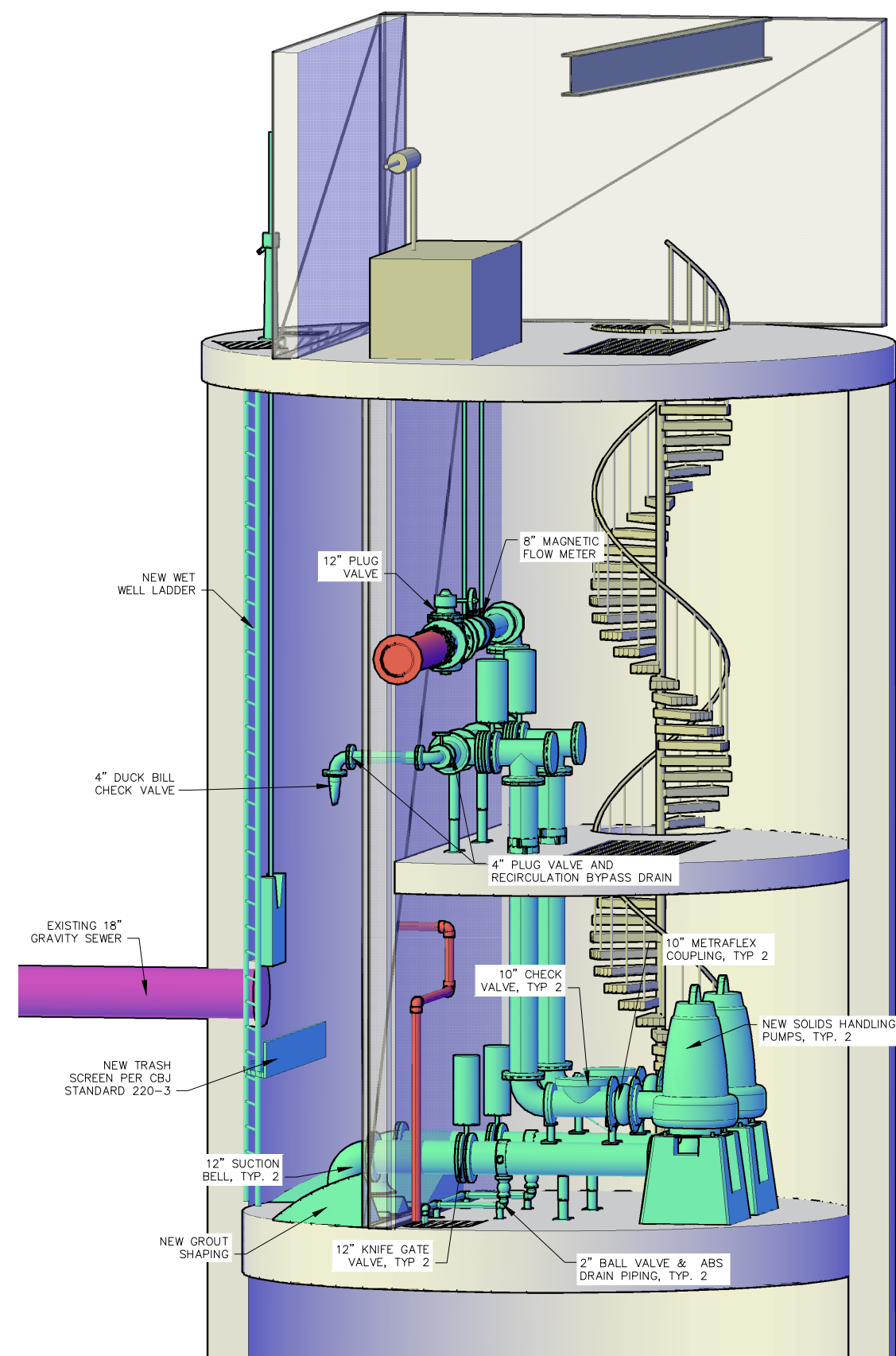
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D-301

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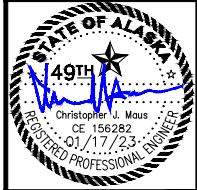


**EXISTING PIPING AND DEMOLITION**



**PROPOSED PIPING**

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

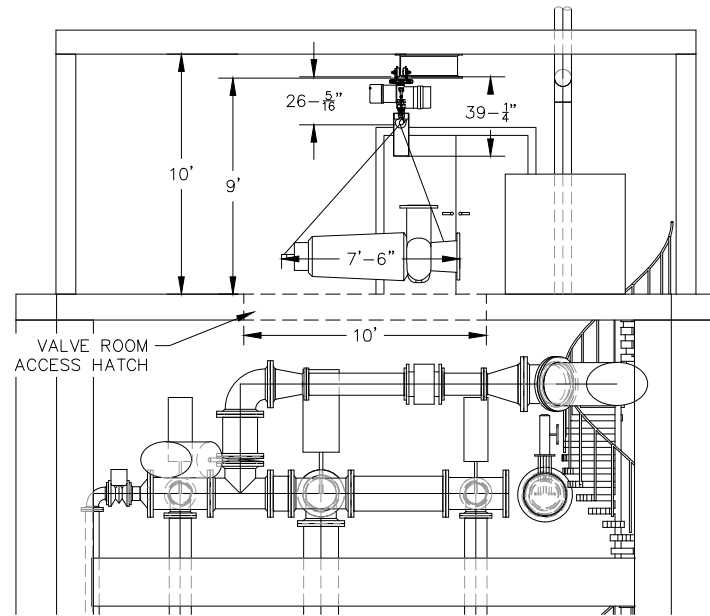
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PROJECT 1528.50233.01  
DATE 1/17/2023

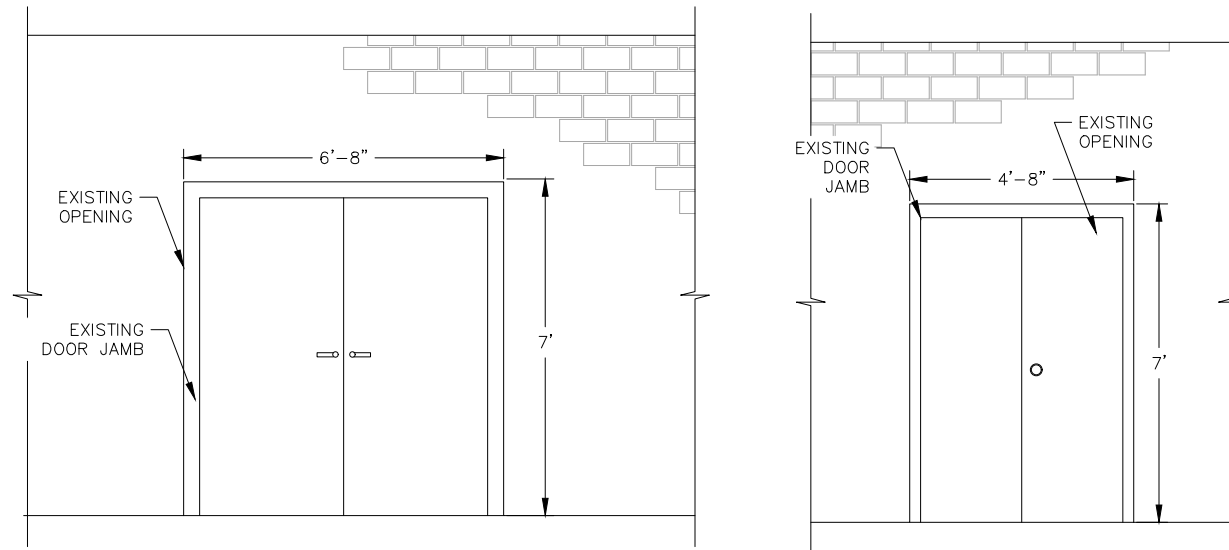
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D-302

**BID SET**



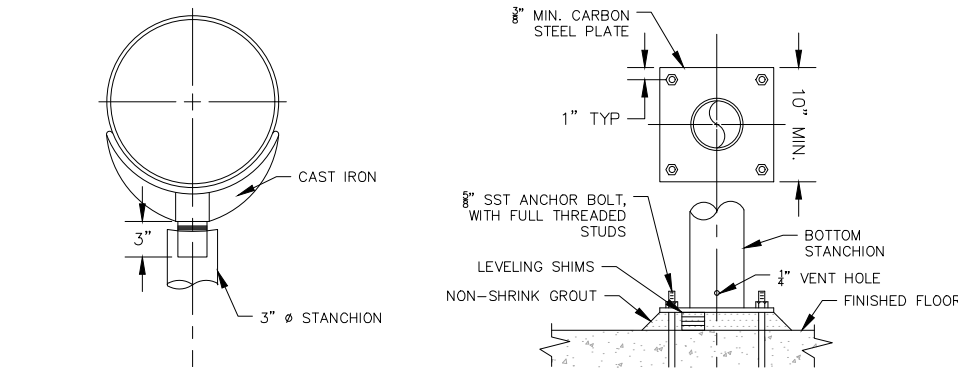
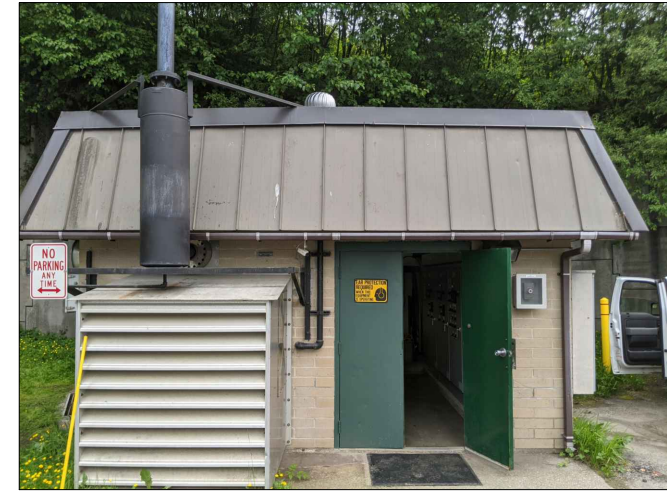
**1** OD WET WEATHER PUMP MONORAIL HOIST CLEARANCE  
D-501 NTS



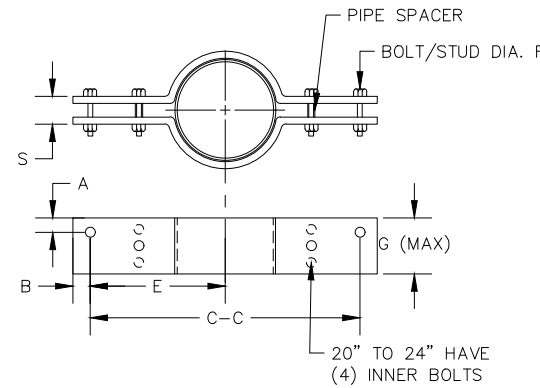
NOTES:  
1. INSTALL HOLLOW METAL DOORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

**2** OUTER DRIVE GROUND LEVEL DOOR  
D-501 NTS

**3** WEST JUNEAU GROUND LEVEL DOOR  
D-501 NTS

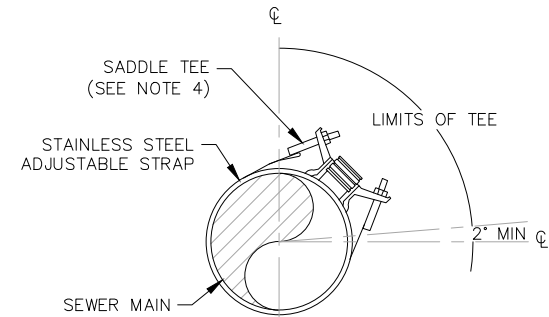


**4** PIPE SUPPORTS AND STANCHION  
D-501 NTS



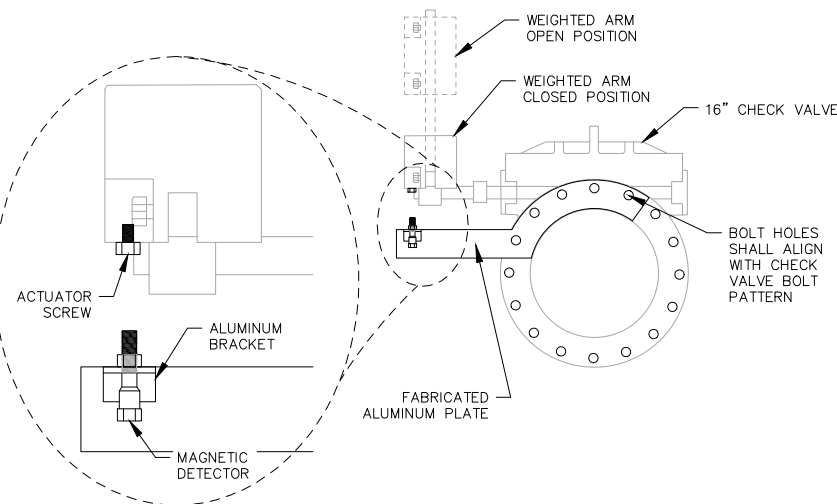
PIPE SIZE	DIMENSIONS (IN)						
	C-C	E	F (MAX)	G (MAX)	S	A (SS)	B (MAX)
8	27	13 1/2	7/8	5	1	1 1/4	2
10	30	15	1 1/4	6	1 1/2	1 5/8	3
12	32	16	1 1/2	7	1 3/4	1 7/8	3
14	34	17	1 1/2	7	1 3/4	1 3/8	3
16	36	18	1 1/2	8	2	2	3

**5** VERTICAL PIPE SUPPORT CLAMPS  
D-501 NTS

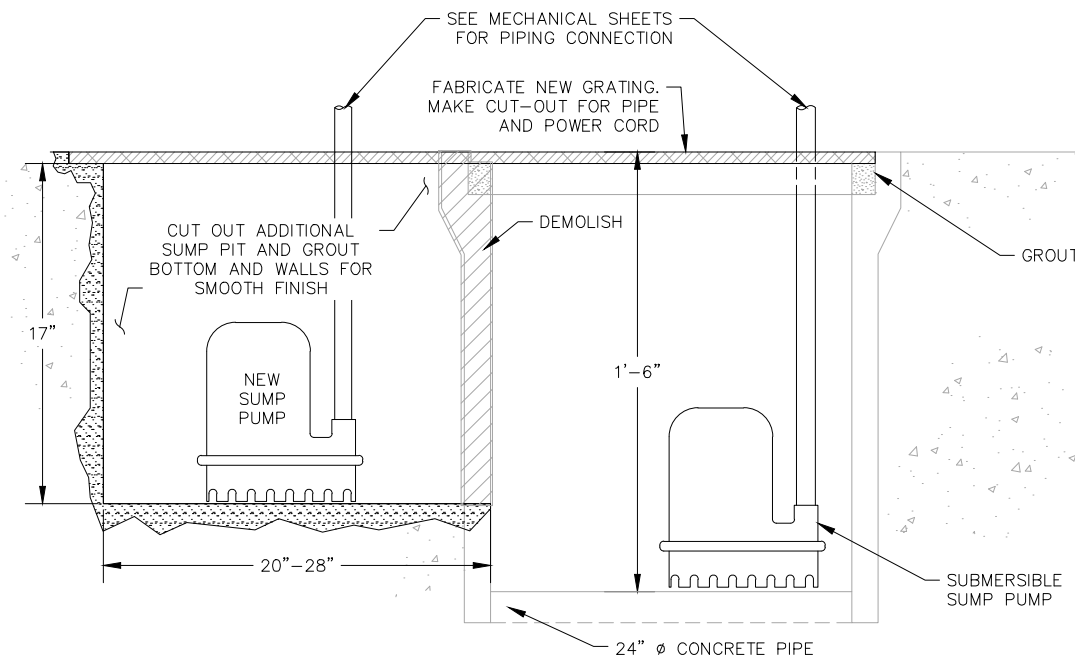


NOTES:  
1. DIAMETER OF HOLE CUT IN SEWER MAIN SHALL NOT EXCEED 0.25" LARGER THAN THE SADDLE TEE CONNECTION. TEE SHALL BE CENTERED OVER CUT IN PIPE AND CLAMPED WITH METAL BAND SO TEE GASKET FORMS A WATER-TIGHT SEAL.  
2. WATER AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE SEWER MAIN DURING THE TAPPING OPERATION.  
3. SWING TIES TO THE TEE MUST BE MEASURED AND FURNISHED TO CBJ ENGINEERING DEPARTMENT.  
4. SADDLE TEE SHALL BE A ROMAC CB SEWER SADDLE OR AN APPROVED EQUAL.

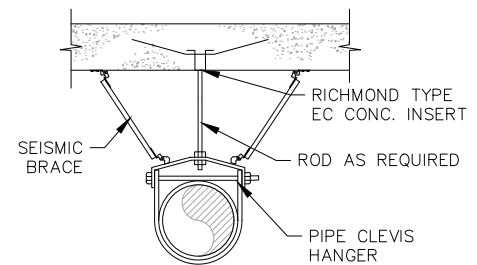
**6** TAPPING SADDLE  
D-501 NTS



**7** LIMIT SWITCH MOUNTING BRACKET DETAIL  
D-501 NTS



**8** SUMP DETAIL  
D-501 NTS



**9** CLEVIS HANGER AND SEISMIC BRACE  
D-501 NTS

REV	DATE	DESCRIPTION	BY



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
GENERAL DETAILS

PROJECT 1528.50233.01  
DATE 01/17/2023

SHEET  
D-501

**BID SET**

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F:\Projects\DOM\CBU Outer Drive and West Juneau Lift Stations\Dwg\Mech\001 MECH LEGEND, ABBREVIATIONS, AND SCHEDULES.dwg PLOT DATE 2023-1-16 11:23 SAVED DATE 2023-01-16 11:12

**SYMBOL LEGEND**

	AIR RELEASE VALVE
	BALANCING VALVE
	CHECK VALVE
	CIRCULATION PUMP
	DIFFUSER OR GRILLE TAG
	FIRE-SHUTOFF, FUSIBLE LINK GATE VALVE
	FLOOR CLEANOUT
	FLOOR DRAIN, FD-X PER SCHEDULE
	FLOW METER
	GATE VALVE
	HOSE BIBB
	MOTOR OPERATOR
	PRESSURE GAUGE
	PRESSURE RELIEF VALVE
	PRESSURE SWITCH
	SIGHT FLOW INDICATOR
	SIGHT FLOW INDICATOR - ROTOMETER TYPE
	SOLENOID VALVE OPERATOR
	TEMPERATURE CONTROLLER
	TEMPERATURE SWITCH
	THERMOMETER
	THERMOSTAT
	THREE-WAY VALVE
	UNION
	UNIT HEATER
	CONNECTION POINT

**ABBREVIATION LEGEND**

BTUH	BRITISH THERMAL UNIT PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATION
CW	DOMESTIC COLD WATER SUPPLY
EGT	ENTERING GLYCOL TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FNPT	FEMALE NATIONAL PIPE THREAD
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
HE	HEAT EXCHANGER
HGR	HEATING GLYCOL RETURN
HGS	HEATING GLYCOL SUPPLY
HP	HORSEPOWER
LGT	LEAVING GLYCOL TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBTUH	THOUSAND BTUH
MNPT	MALE NATIONAL PIPE THREAD
P / PRESS	PRESSURE
PG	PROPYLENE GLYCOL
PH	PHASE
SS	STAINLESS STEEL
T / TEMP	TEMPERATURE
TYP	TYPICAL
TW	TEMPERED WATER
UH	UNIT HEATER
V / VAC	AC VOLTS
WH	WATER HEATER / GENERATOR

**FANS**

TAG	LOCATION	SERVICE	CAPACITY (CFM)	EXT S.P. (IN H2O)	MOTOR POWER (HP)	VOLTAGE & PHASE (VAC/PH)	FAN SPEED (RPM)	MAKE & MODEL	REMARKS
EF-1	OUTER DRIVE	EXHAUST AIR FOR DE-CLASSIFICATION	1,630	0.40	1	460/3P	1750	GREENHECK G-140	SPARK RESISTANT B CONSTRUCTION, INVERTER DUTY-RATED MOTOR.
EF-2	WEST JUNEAU	EXHAUST AIR FOR DE-CLASSIFICATION	1,225	0.35	1	460/3P	1750	GREENHECK G-140	SPARK RESISTANT B CONSTRUCTION, INVERTER DUTY-RATED MOTOR.

**UNIT HEATERS**

TAG	LOCATION	ROOM	CAPACITY (kW)	VOLTAGE/PHASE	FAN SPEED (RPM)	AIRFLOW (CFM)	MAKE & MODEL	REMARKS
UH-1	OUTER DRIVE	GROUND FLOOR	10	460/3	1,600	650	Q-MARK, MUH104	INTEGRAL THERMOSTAT
UH-2	OUTER DRIVE	VALVE LEVEL	7.5	460/3	1,600	650	Q-MARK, MUH074	INTEGRAL THERMOSTAT
UH-3	OUTER DRIVE	PUMP LEVEL	5	460/3	1,600	350	Q-MARK, MUH0541	INTEGRAL THERMOSTAT
UH-4	WEST JUNEAU	GROUND FLOOR	10	460/3	1,600	650	Q-MARK, MUH104	INTEGRAL THERMOSTAT
UH-5	WEST JUNEAU	VALVE LEVEL	10	460/3	1,600	650	Q-MARK, MUH104	INTEGRAL THERMOSTAT
UH-6	WEST JUNEAU	PUMP LEVEL	3	460/3	1,600	350	Q-MARK, MUH0341	INTEGRAL THERMOSTAT

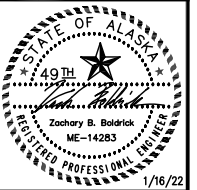
**WATER HEATERS**

TAG	LOCATION	SERVICE	CAPACITY (KW)	VOLTAGE/PHASE	MIN FLOW (GPM)	TEMP RISE @ 0.5 GPM	TEMP RISE @ 1.0 GPM	MAKE & MODEL	REMARKS
WH-1	OUTER DRIVE	WATER TEMPER FOR DRENCH HOSE	4.1	208/1	0.2	56°F	28°F	EEMAX SPEX4208T EE	SELF LIMITING TO 90°F OUTPUT PER ANSI Z358.1
WH-2	WEST JUNEAU	WATER TEMPER FOR DRENCH HOSE	4.1	208/1	0.2	56°F	28°F	EEMAX SPEX4208T EE	SELF LIMITING TO 90°F OUTPUT PER ANSI Z358.1

**PUMPS**

TAG	LOCATION	SERVICE	FLOW (GPM)	HEAD (FT)	SPEED (RPM)	POWER (HP)	VOLTAGE/PHASE	MAKE & MODEL	REMARKS
SP-1A/B	OUTER DRIVE	SUMP PUMP	4.1	21	1,725	1/2	120/1	ZOELLER MODEL 98	
SP-2A/B	WEST JUNEAU	SUMP PUMP	4.1	21	1,725	1/2	120/1	ZOELLER MODEL 98	

REV	DATE	DESCRIPTION



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

MECH LEGEND, ABBREVIATIONS, AND SCHEDULES

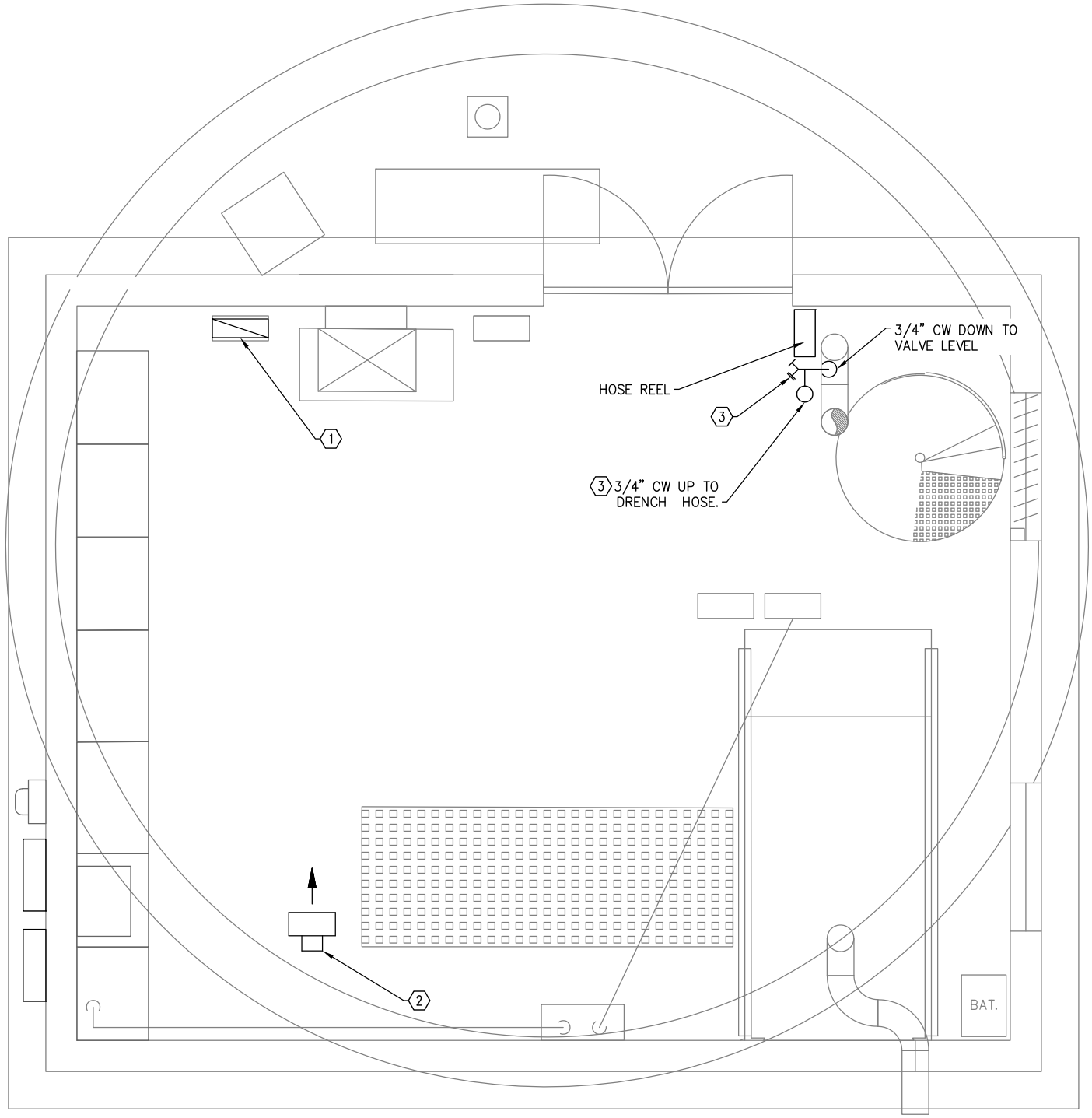
PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

M-001

**BID SET**

F:\Projects\DOM\CBU Outer Drive and West Juneau Lift Stations\Dwg\Mech\M-201 OD MECHANICAL DEMOLITION PLAN - GROUND LEVEL.dwg PLOT DATE 2023-01-16 11:23 SAVED DATE 2023-01-16 11:12



**GENERAL SHEET NOTES**

- 1. VERIFY FIELD CONDITIONS PRIOR TO WORK.

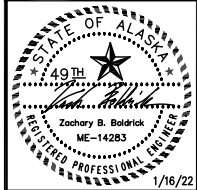
**SHEET NOTES**

- ① DEMOLISH ALL EXHAUST DUCTING BETWEEN FLOOR AND CEILING PENETRATIONS.
- ② DEMOLISH EXISTING ELECTRIC UNIT HEATER.
- ③ DEMOLISH ALL DOMESTIC WATER PIPING, HOSE BIBS, AND VALVES ON THE GROUND LEVEL. HOSE REEL AND DRENCH HOSE TO REMAIN.

1 OD MECHANICAL DEMOLITION PLAN - GROUND LEVEL  
M-201 SCALE: 1/2" = 1'-0"



REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMAN LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
OD MECHANICAL DEMOLITION PLAN -  
GROUND LEVEL

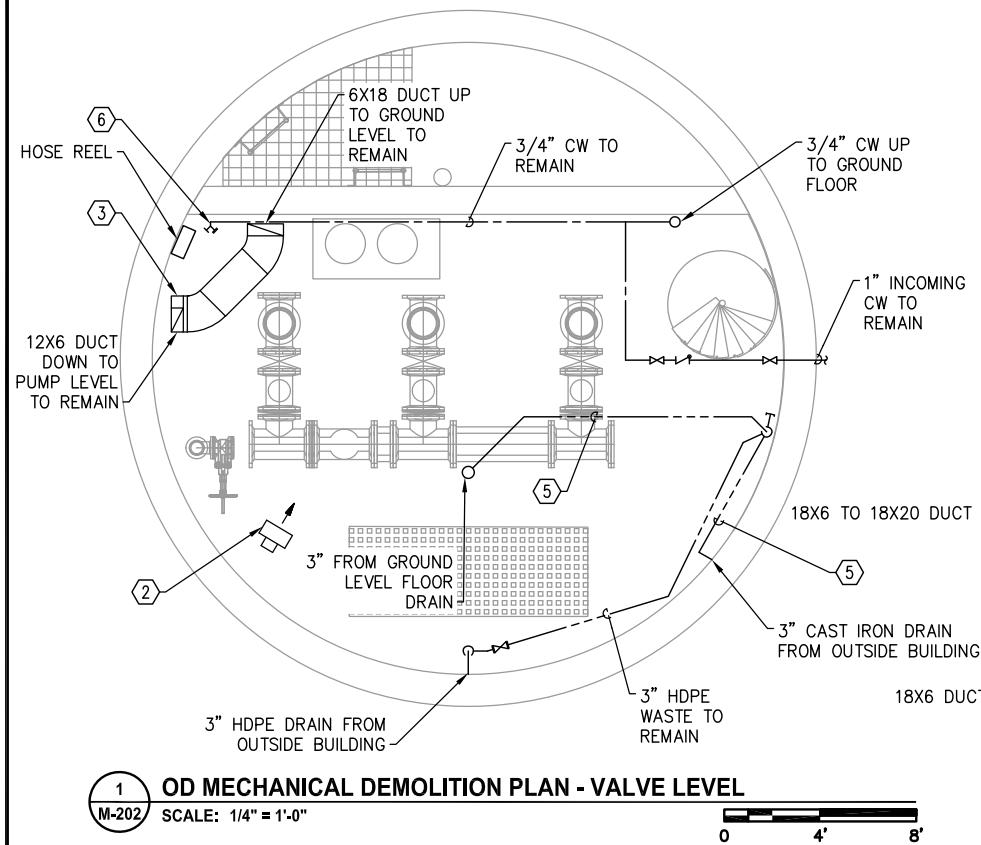
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DATE 01/16/2022

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SHEET

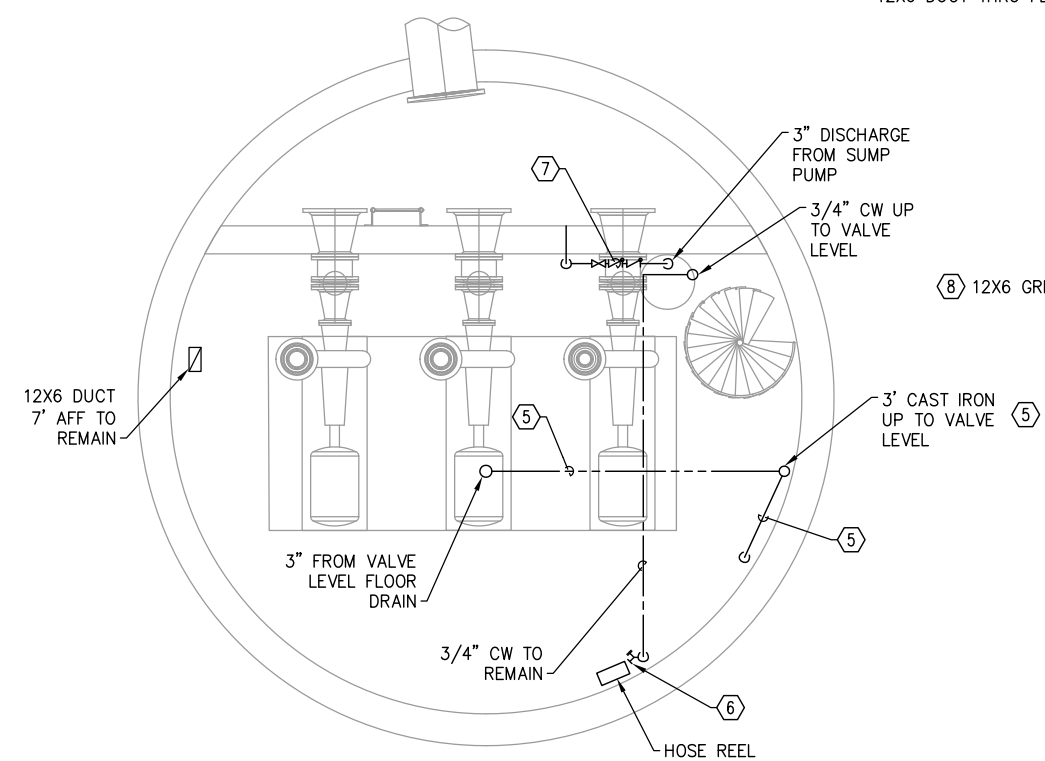
M-201

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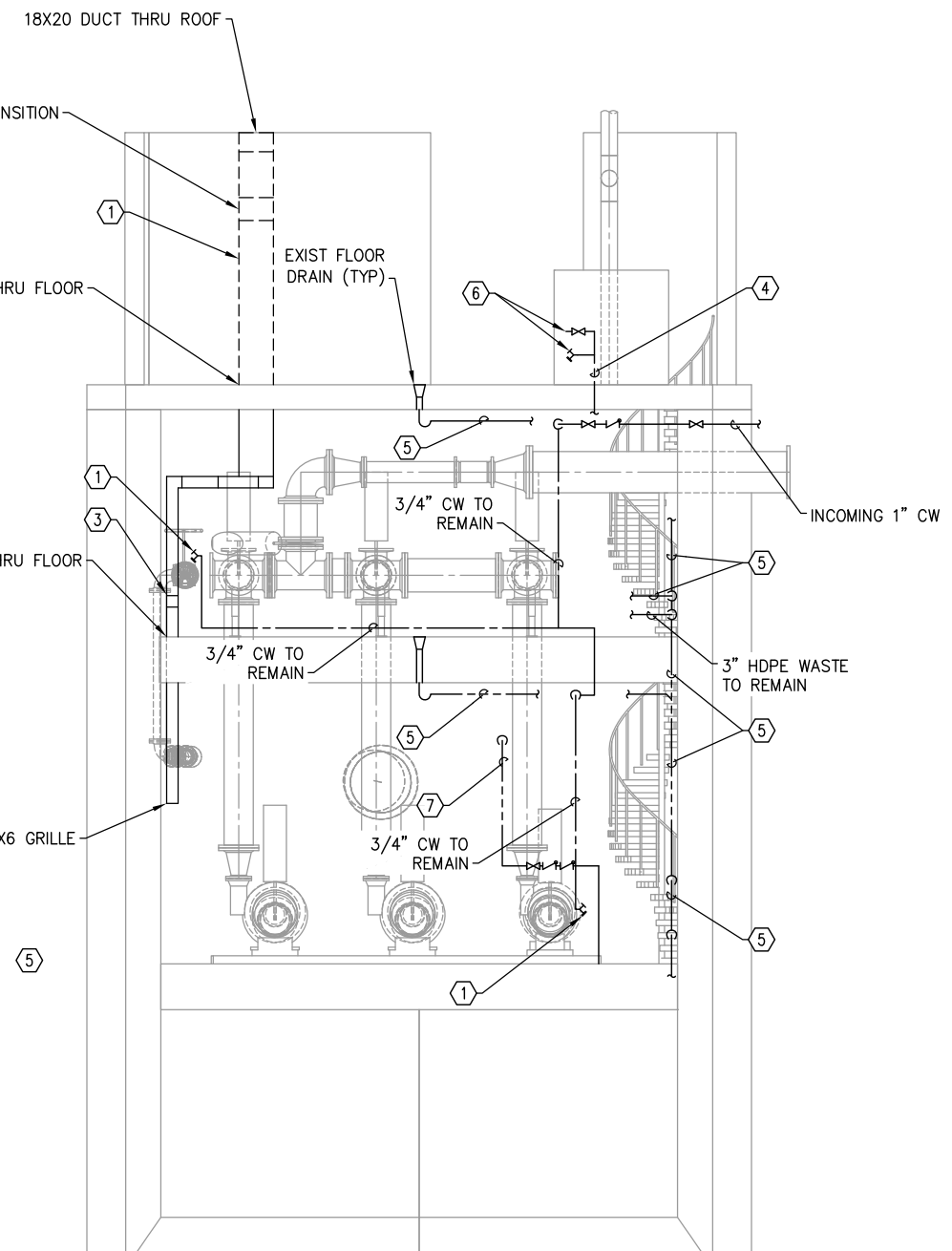
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**1 OD MECHANICAL DEMOLITION PLAN - VALVE LEVEL**  
 M-202 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**2 OD MECHANICAL DEMOLITION PLAN - PUMP LEVEL**  
 M-202 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**3 OD MECHANICAL DEMOLITION - ELEVATION**  
 M-202 SCALE: 1/4" = 1'-0"  
 0 4' 8'

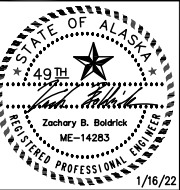
**GENERAL SHEET NOTES**

1. VERIFY FIELD CONDITIONS PRIOR TO WORK.

**SHEET NOTES**

- 1 DEMOLISH 18X6 DUCTING AND 12X20 DUCTING ON THE GROUND FLOOR.
- 2 DEMOLISH EXISTING ELECTRIC UNIT HEATERS ON THE GROUND LEVEL AND VALVE LEVEL.
- 3 DEMOLISH EXISTING 6X6 GRILLE ON THE VALVE LEVEL.
- 4 DEMOLISH ALL POTABLE WATER PIPING ON THE GROUND FLOOR. EXISTING POTABLE WATER PIPING ON THE LOWER LEVELS TO REMAIN.
- 5 DEMOLISH 3" CAST IRON WASTE PIPING ON VALVE LEVEL AND PUMP LEVEL.
- 6 DEMOLISH ALL HOSE BIBS.
- 7 DEMOLISH SUMP PUMP AND SUMP PUMP DISCHARGE PIPING.
- 8 DEMOLISH EXISTING 12X6 GRILLE ON PUMP LEVEL.

REV	DATE	DESCRIPTION



EDC, INC.  
 213 W. FREEMAN LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK  
 OD MECHANICAL DEMO PLAN - VALVE &  
 PUMP LEVELS AND ELEVATION

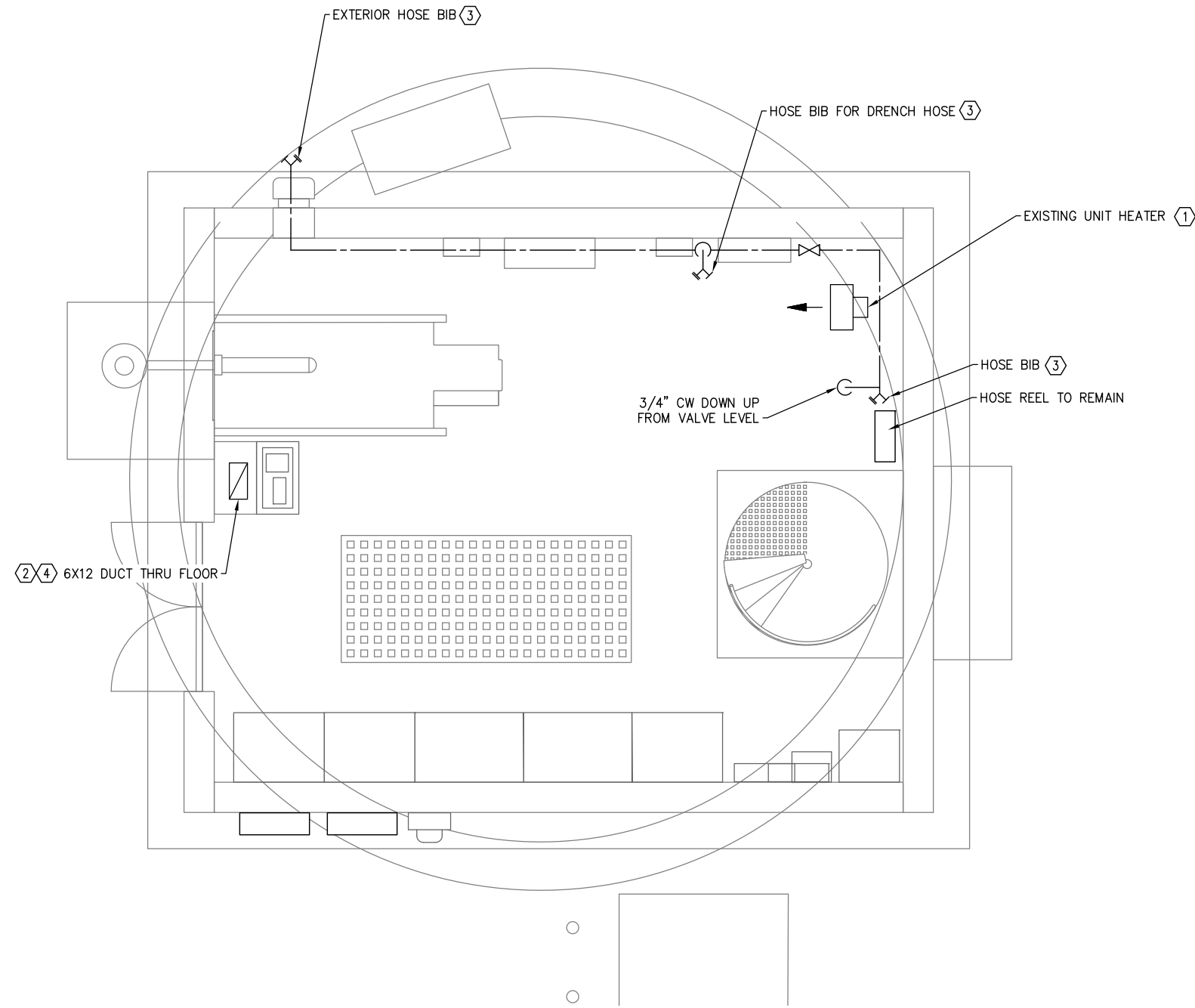
PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

M-202

**BID SET**

F:\Projects\00M\CBU Outer Drive and West Juneau Lift Stations\Drawings\Mech\M-203 WJ MECHANICAL DEMOLITION PLAN - GROUND LEVEL.dwg PLOT DATE 2023-01-16 11:24 SAVED DATE 2023-01-16 11:11



1 WJ MECHANICAL DEMOLITION PLAN - GROUND LEVEL  
 M-203 SCALE: 1/2" = 1'-0"



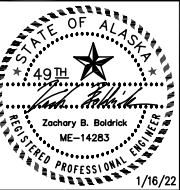
**GENERAL SHEET NOTES**

1. VERIFY FIELD CONDITIONS PRIOR TO WORK.

**SHEET NOTES**

- 1 DEMOLISH EXISTING ELECTRIC UNIT HEATER
- 2 DEMOLISH EXISTING 6X12 DUCTING UP TO 8X8 ROOF PENETRATION
- 3 DEMOLISH ALL DOMESTIC WATER PIPING, FITTINGS, VALVES, AND HOSE BIBS ON THIS LEVEL.
- 4 ENLARGE EXISTING 8X8 ROOF PENETRATION TO 18X18.

REV	DATE	DESCRIPTION	BY



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC705

OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK

WJ MECHANICAL DEMOLITION PLAN -  
 GROUND LEVEL

PROJECT 1528.50233.01  
 DATE 01/16/2022

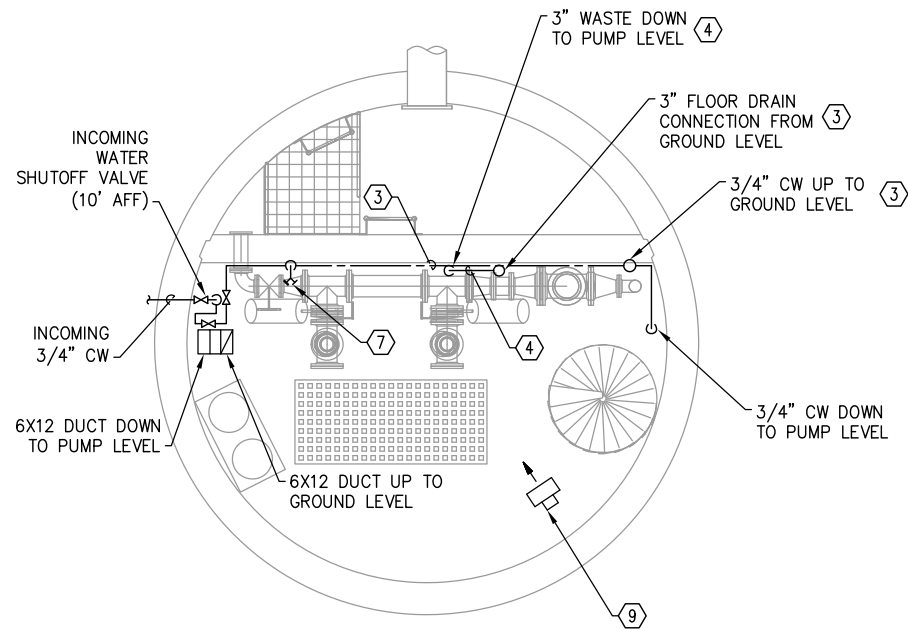
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 SHEET

M-203

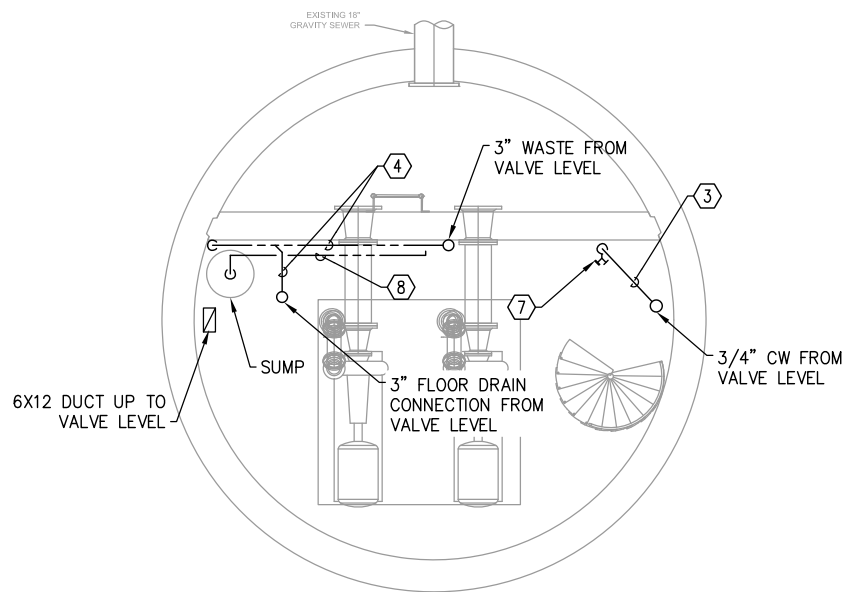
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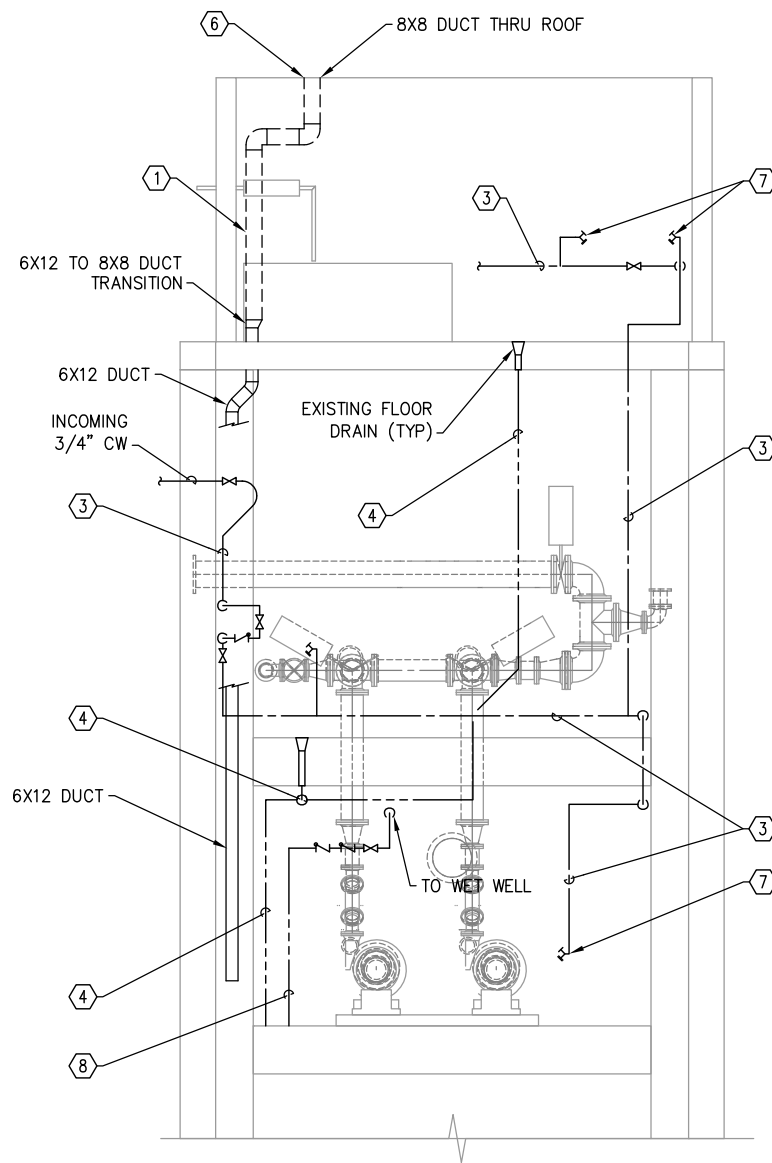
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**1 WJ MECHANICAL DEMOLITION PLAN - VALVE LEVEL**  
 M-204 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**2 WJ MECHANICAL DEMOLITION PLAN - PUMP LEVEL**  
 M-204 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**3 WJ MECHANICAL DEMOLITION - ELEVATION**  
 M-204 SCALE: 1/4" = 1'-0"  
 0 4' 8'

**GENERAL SHEET NOTES**

1. VERIFY FIELD CONDITIONS PRIOR TO WORK.
2. ALL EXISTING DOMESTIC WATER PIPING IS 3/4" COPPER.

**SHEET NOTES**

- ① DEMOLISH 12X6 DUCTING AND 8X8 DUCTING ON GROUND FLOOR. DUCTING IN THE VALVE AND PUMP LEVELS TO REMAIN.
- ② DEMOLISH EXISTING ELECTRIC UNIT HEATERS ON GROUND LEVEL AND VALVE LEVEL.
- ③ DEMOLISH ALL DOMESTIC WATER PIPING, VALVES, AND FITTINGS TO INCOMING SHUTOFF VALVE. HOSE REELS AND DRENCH HOSE TO REMAIN.
- ④ DEMOLISH ALL CAST IRON WASTE PIPING.
- ⑤ DEMOLISH ALL AIR INTAKE GRILLES IN DUCTING.
- ⑥ ENLARGE EXISTING 8X8 ROOF OPENING TO 18X18.
- ⑦ DEMOLISH ALL HOSE BIBS.
- ⑧ DEMOLISH SUMP DISCHARGE PIPING AND SUMP PUMP.
- ⑨ DEMOLISH EXISTING ELECTRIC UNIT HEATER ON VALVE LEVEL, APPROX 12' AFF.

REV	DATE	DESCRIPTION



**EDC, INC.**  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705

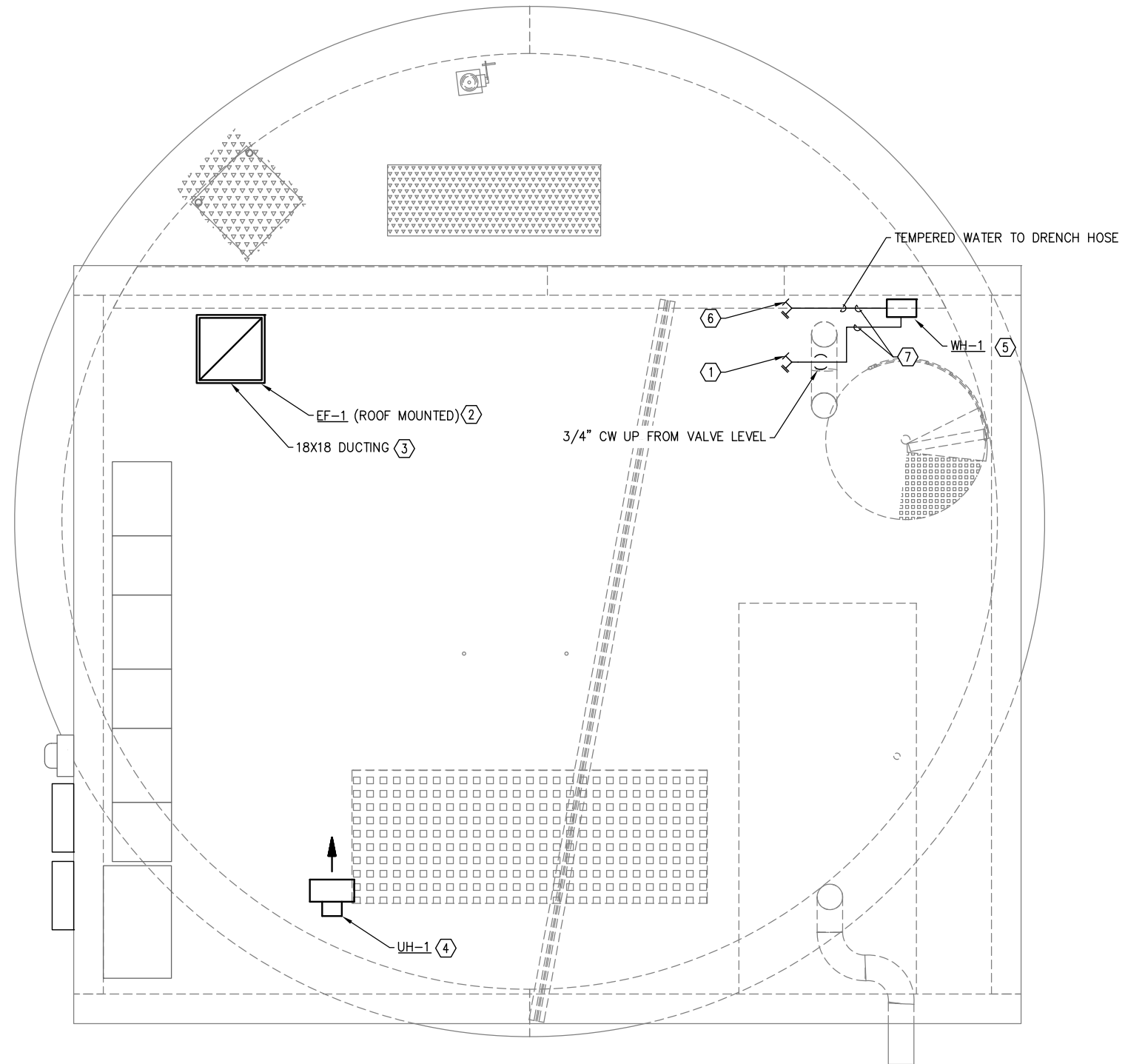
OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK

**WJ MECHANICAL DEMO PLAN - VALVE &  
 PUMP LEVELS AND ELEVATION**

PROJECT	1528.50233.01
DATE	01/16/2022
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SHEET	
M-204	

**BID SET**

F:\Projects\ODM\CBU Outer Drive and West Juneau Lift Stations\Dvgs\Mech\M-205 OD MECHANICAL NEW WORK PLAN - GROUND LEVEL.dwg PLOT DATE 2023-01-16 11:24 SAVED DATE 2023-01-16 11:10



**GENERAL SHEET NOTES**

- 1. VERIFY FIELD CONDITIONS PRIOR TO WORK.

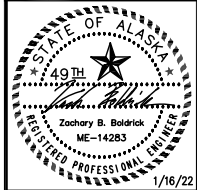
**SHEET NOTES**

- 1 INSTALL HOSE BIB ADJACENT TO EXISTING HOSE REEL.
- 2 INSTALL NEW EXHAUST FAN EF-1 ON THE ROOF. CONNECT TO NEW 18X18 DUCTING.
- 3 INSTALL NEW 18X18 DUCTING TO/FROM EF-1 THRU ROOF. SEE M-206.
- 4 INSTALL NEW UNIT HEATER UH-1. REUSE EXISTING UNIT HEATER SUPPORTS.
- 5 INSTALL NEW WATER HEATER WH-1 ON WALL ABOVE STAIRWELL.
- 6 INSTALL NEW HOSE BIB FOR DRENCH HOSE.
- 7 ALL NEW DOMESTIC WATER PIPING SHALL BE 3/4" TYPE L COPPER.

1 OD MECHANICAL NEW WORK PLAN - GROUND LEVEL  
M-205 SCALE: 1/2" = 1'-0"



REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
OD MECHANICAL NEW WORK PLAN -  
GROUND LEVEL

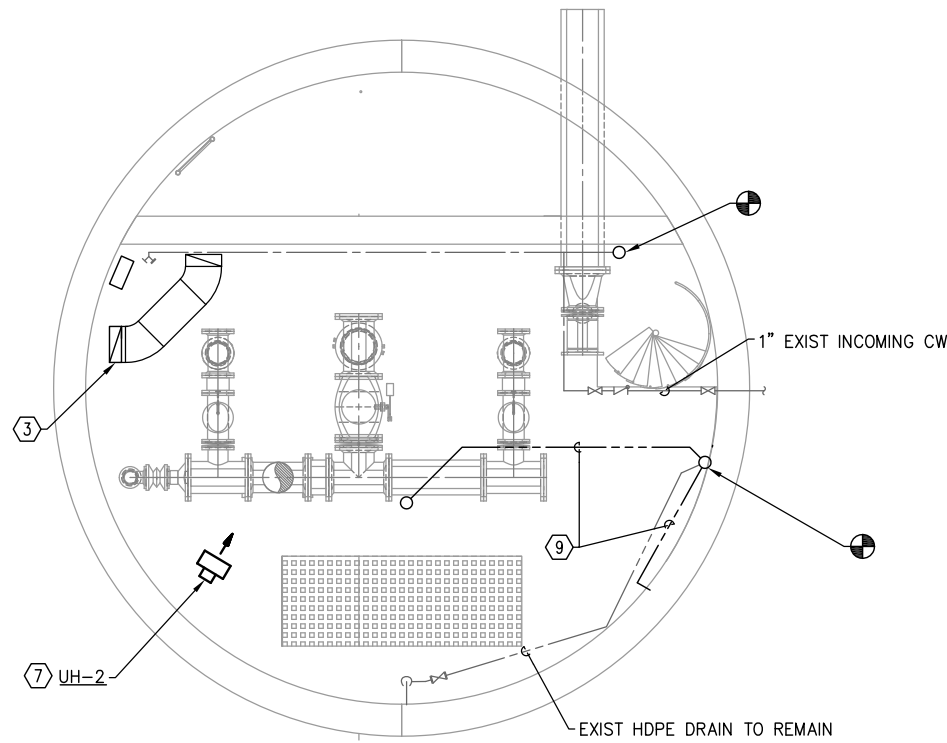
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

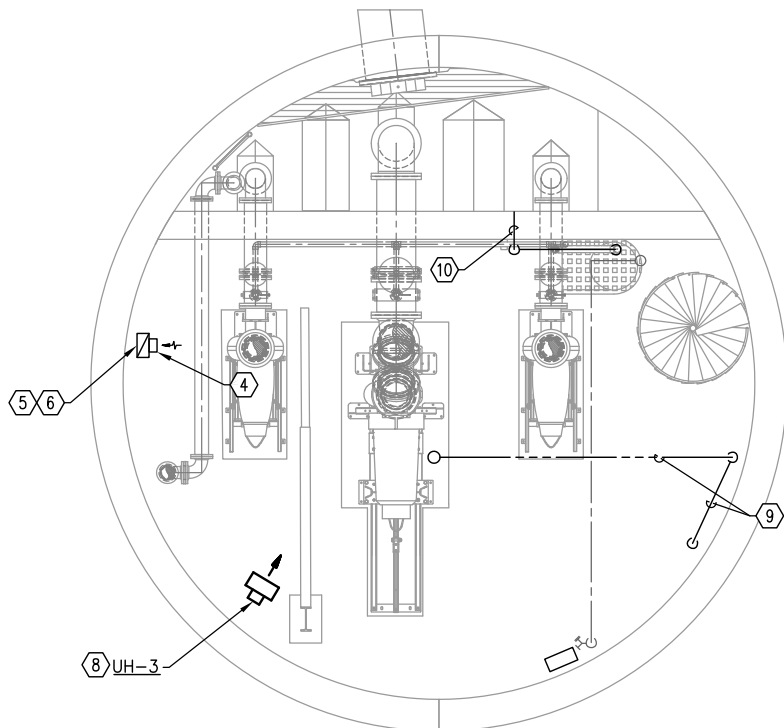
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M-205

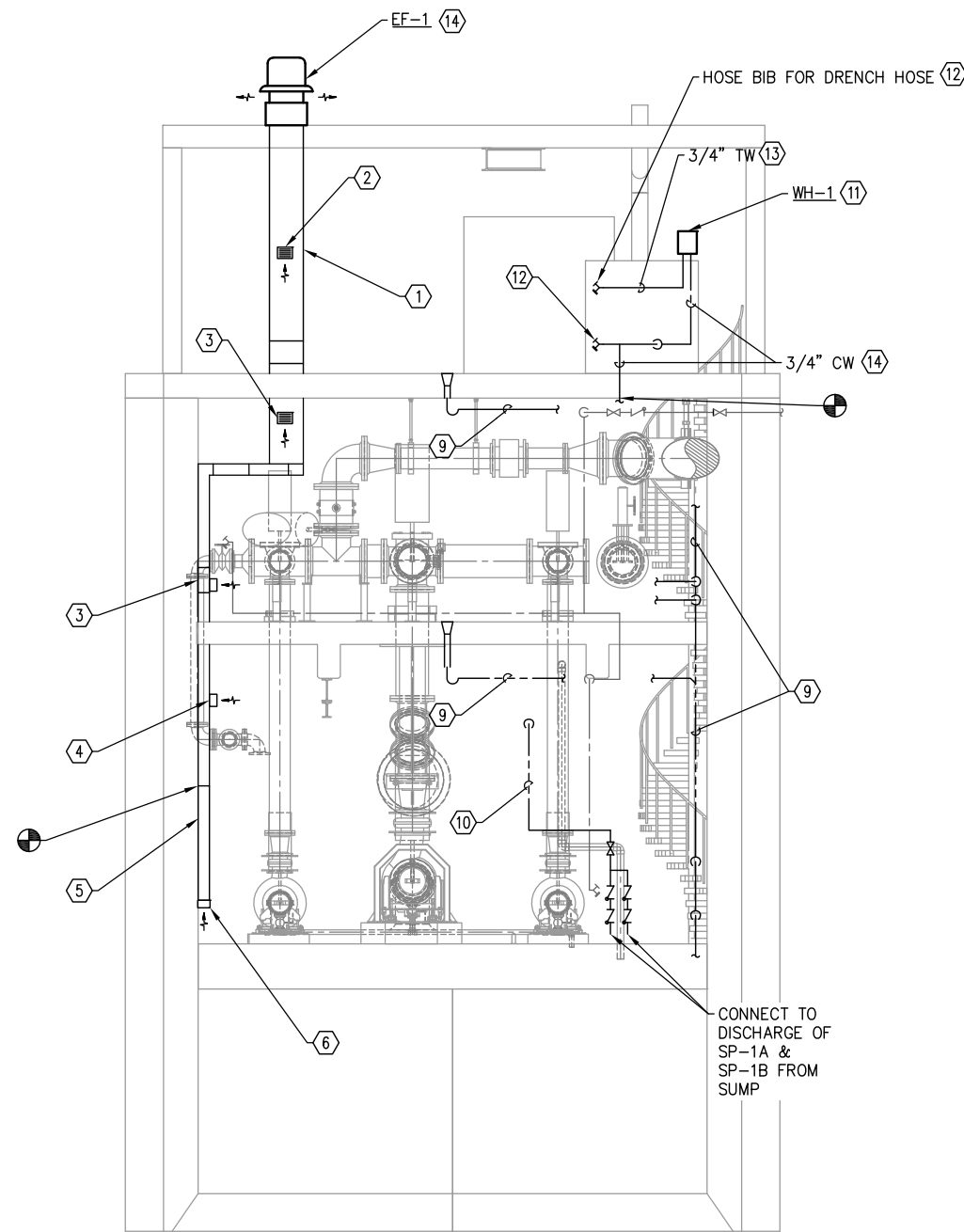
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**1 OD MECHANICAL NEW WORK PLAN - VALVE LEVEL**  
 M-206 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**2 OD MECHANICAL NEW WORK PLAN - PUMP LEVEL**  
 M-206 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**3 OD MECHANICAL NEW WORK PLAN - ELEVATION**  
 M-206 SCALE: 1/4" = 1'-0"  
 0 4' 8'

**GENERAL SHEET NOTES**

1. VERIFY FIELD CONDITIONS PRIOR TO WORK.

**SHEET NOTES**

- 1 INSTALL NEW 18X18 DUCTING AND 18X6 TRANSITION ON GROUND LEVEL.
- 2 INSTALL NEW 6X8 GRILLE W/ BALANCING DAMPER ON GROUND LEVEL.
- 3 INSTALL TWO NEW 6X8 GRILLE W/ BALANCING DAMPER ON VALVE LEVEL.
- 4 INSTALL NEW 6X8 GRILLE W/ BALANCING DAMPER ON PUMP LEVEL.
- 5 EXTEND 12X6 DUCTING DOWN TO 12" AFF ON PUMP LEVEL.
- 6 INSTALL NEW 12X6 GRILLE W/ BALANCING DAMPER ON END OF DUCT ON PUMP LEVEL.
- 7 INSTALL NEW ELECTRIC UNIT HEATER UH-2 ON VALVE LEVEL. REUSE EXISTING UNIT HEATER SUPPORTS.
- 8 INSTALL NEW ELECTRIC UNIT HEATER UH-3 ON PUMP LEVEL.
- 9 INSTALL 3" ABS WASTE PIPING ON VALVE AND PUMP LEVELS.
- 10 INSTALL NEW SUMP PUMP AND 3" ABS DISCHARGE PIPING. CONNECT TO NEW 3" FLANGE INSTALLED THRU WET WELL WALL.
- 11 INSTALL WH-1 AS SHOWN ABOVE STAIRWELL.
- 12 INSTALL NEW HOSE BIB.
- 13 INSTALL NEW 3/4" CW AND TW PIPING ON GROUND LEVEL.
- 14 INSTALL EF-1 ON ROOF W/ HIGH WIND ROOF CURB. PATCH AND REPAIR EXPANDED ROOF PENETRATION. CONTRACTOR TO CONFIRM EXISTING ROOF SYSTEM IS JOHN MANVILLE EPDM. PATCH EXISTING ROOF SYSTEM PER MANUFACTURER RECOMMENDED INSTRUCTIONS.

REV	DATE	DESCRIPTION



EDC, INC.  
 213 W. FREEMAN LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK

OD MECH NEW WORK PLAN - VALVE &  
 PUMP LEVELS AND ELEVATION

PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET  
 M-206

**BID SET**



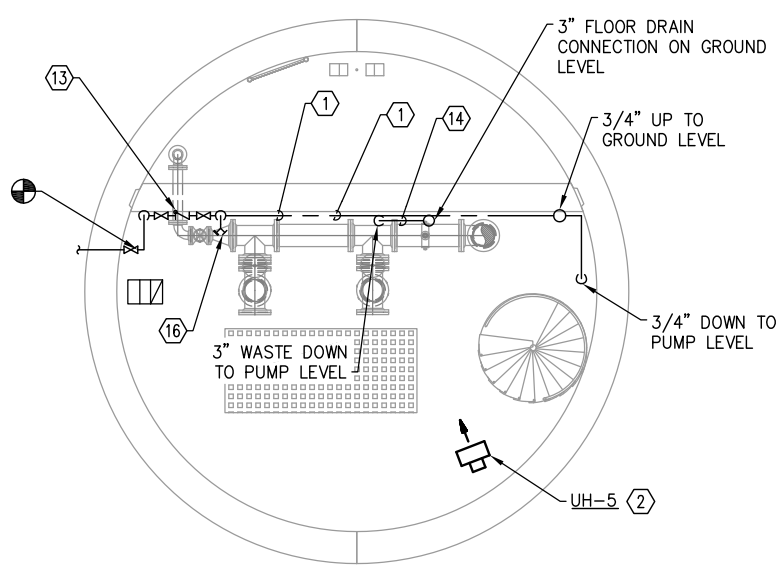
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**GENERAL SHEET NOTES**

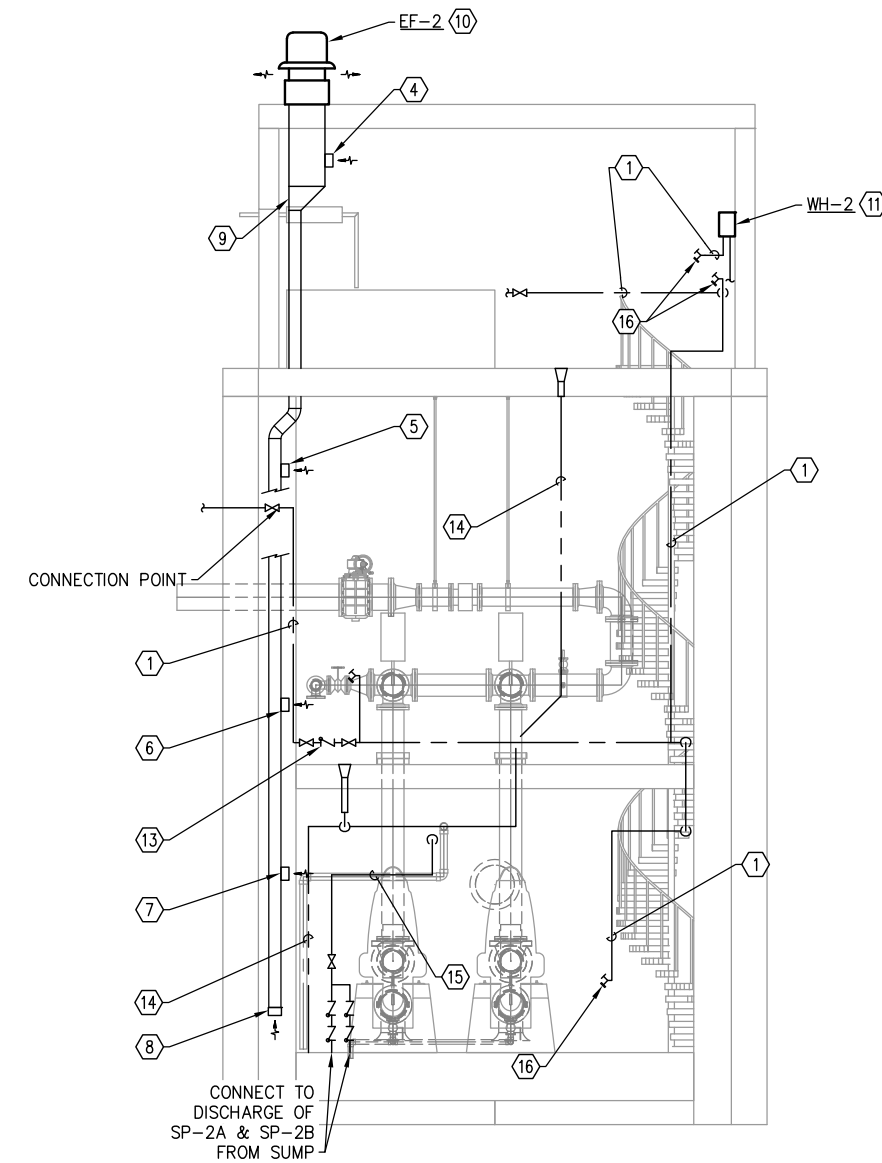
- 1. VERIFY FIELD CONDITIONS PRIOR TO WORK.

**SHEET NOTES**

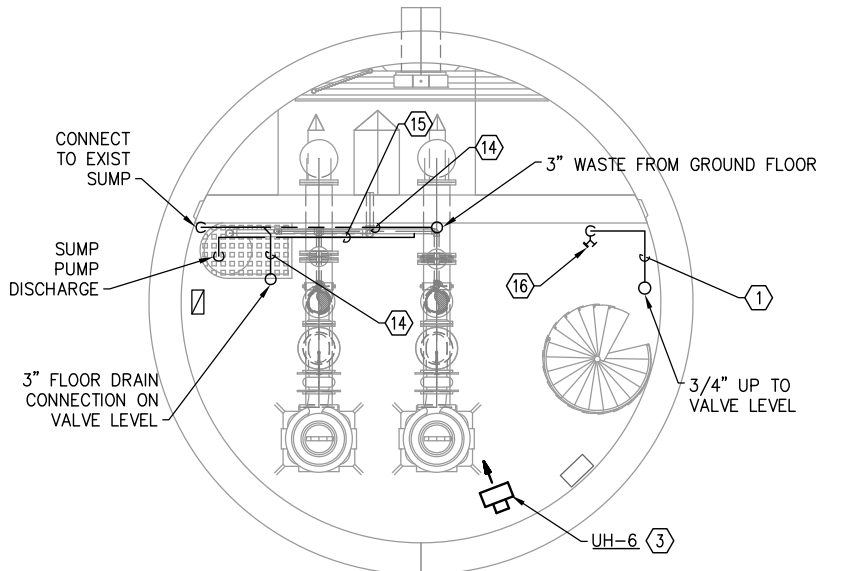
- ① ALL NEW DOMESTIC WATER PIPING SHALL BE 3/4" TYPE L COPPER.
- ② INSTALL UH-5 ON EXISTING UH SUPPORTS ON VALVE LEVEL.
- ③ INSTALL UH-6 ON PUMP LEVEL. REUSE EXISTING SUPPORTS.
- ④ INSTALL NEW 6X8 GRILLE W/ BALANCING DAMPER ON GROUND LEVEL.
- ⑤ INSTALL NEW 6X8 GRILLE W/ BALANCING DAMPER 12' AFF ON VALVE LEVEL.
- ⑥ INSTALL NEW 6X8 GRILLE W/ BALANCING DAMPER 18" AFF ON VALVE LEVEL.
- ⑦ INSTALL NEW 6X8 GRILLE W/ BALANCING DAMPER 8' AFF ON PUMP LEVEL.
- ⑧ INSTALL NEW 12X6 GRILLE W/ BALANCING DAMPER ON END OF DUCT ON PUMP LEVEL, APPROX 12" AFF.
- ⑨ INSTALL NEW 6X12 DUCT ON GROUND LEVEL. TRANSITION TO 18X18 DUCT ON ABOVE EXISTING DAYTANK.
- ⑩ INSTALL EF-2 ON ROOF W/ HIGH WIND ROOF CURB. PATCH AND REPAIR EXPANDED ROOF PENETRATION. CONTRACTOR TO CONFIRM EXISTING ROOF SYSTEM IS JOHN MANVILLE EPDM. PATCH EXISTING ROOF SYSTEM PER MANUFACTURER RECOMMENDED INSTRUCTIONS.
- ⑪ INSTALL WH-2, WALL MOUNTED.
- ⑫ ALL DOMESTIC WATER PIPING SHALL BE 3/4".
- ⑬ INSTALL BACKFLOW PREVENTER MIN 12" AFF ON VALVE LEVEL.
- ⑭ INSTALL 3" ABS WASTE PIPING ON VALVE AND PUMP LEVELS.
- ⑮ INSTALL 3" ABS SUMP PUMP DISCHARGE PIPING AS SHOWN. CONNECT TO NEW 3" FLANGE INSTALLED THRU WET WELL WALL.
- ⑯ INSTALL NEW HOSE BIB.



**1 WJ MECHANICAL NEW WORK PLAN - VALVE LEVEL**  
 M-208 SCALE: 1/4" = 1'-0"  
 0 4' 8'

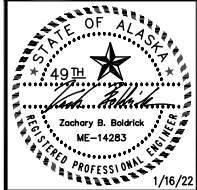


**3 WJ MECHANICAL NEW WORK - ELEVATION**  
 M-208 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**2 WJ MECHANICAL NEW WORK PLAN - PUMP LEVEL**  
 M-208 SCALE: 1/4" = 1'-0"  
 0 4' 8'

REV	DATE	DESCRIPTION



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
 WJ MECH NEW WORK PLAN - VALVE & PUMP LEVELS AND ELEVATION

PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

M-208

**BID SET**

**HVAC SEQUENCE OF OPERATION**

**UNIT HEATERS:**

UNIT HEATERS ARE CONTROLLED VIA INTEGRAL THERMOSTAT IN EACH UNIT.

**EXHAUST FAN:**

THE EXHAUST FAN EF-1 SHALL RUN CONTINUOUSLY TO MEET THE REQUIREMENTS OF NFPA 820 FOR ELECTRICAL DECLASSIFICATION OF THE SPACE. THE EXHAUST FAN SHALL BE CONTROLLED VIA THE LOCAL PLC IN THE FACILITY.

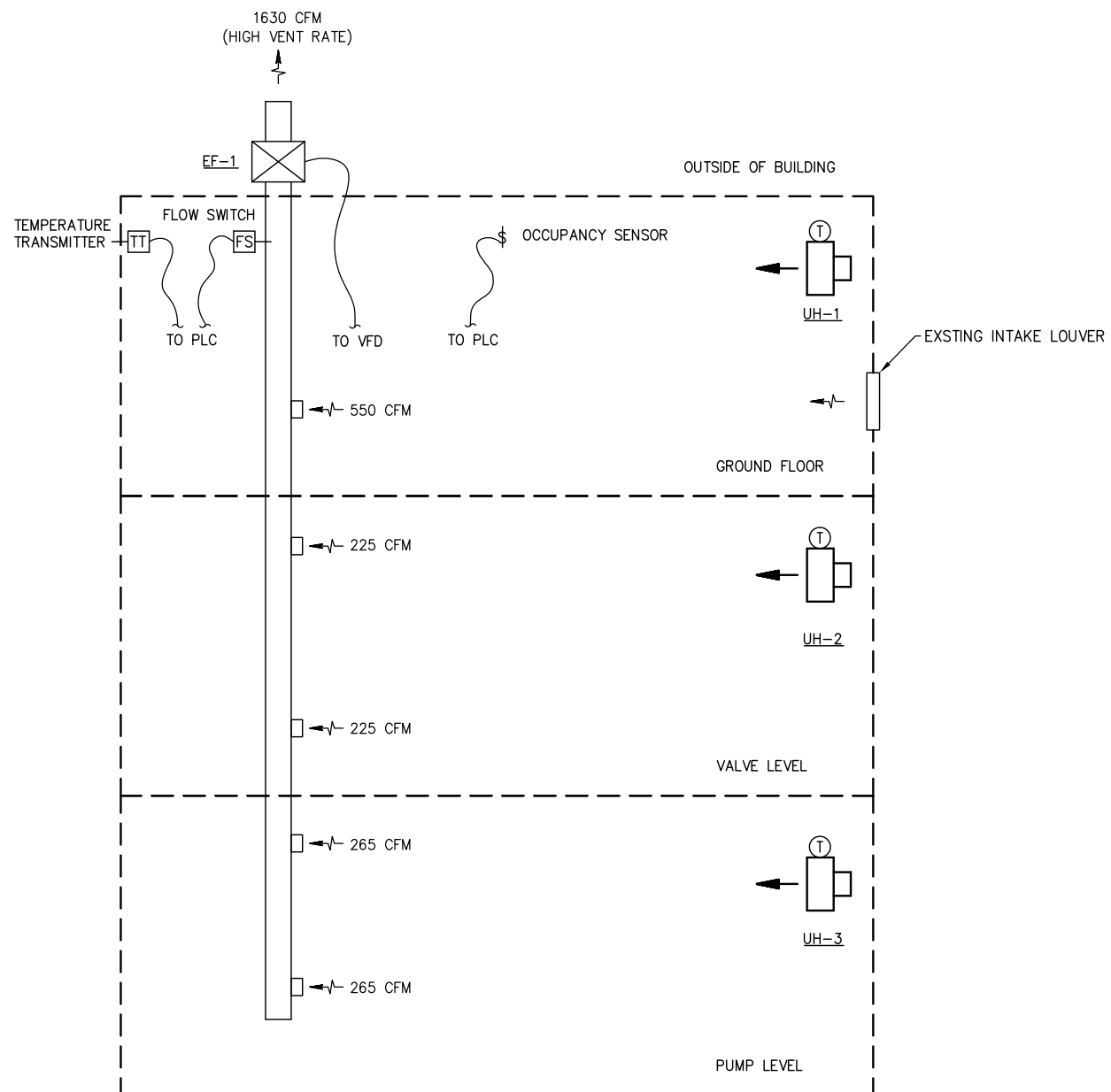
**HIGH VENTILATION RATE:**

BY DEFAULT THE FAN SHALL RUN AT THE DESIGNED HIGH RATE IN ORDER TO PROVIDE 6 AIR CHANGES PER HOUR TO THE FACILITY.

**LOW VENTILATION RATE:**

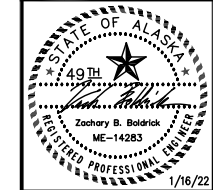
THE EXHAUST FAN VFD SHALL PROVIDE 50% AIRFLOW RATE WHEN THE FOLLOWING CONDITIONS ARE MET.

1. THE OUTSIDE AIR TEMPERATURE IS BELOW 50°F.
2. THE BUILDING IS UNOCCUPIED.



**1** OD MECHANICAL HVAC SCHEMATIC  
M-301 SCALE: NTS

REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

OD MECH SCHEMATIC & DETAILS

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

M-301

**BID SET**

F:\Projects\ODM\CBU Outer Drive and West Juneau Lift Stations\Dwg\Mech\M-301 OD MECH SCHEMATIC & DETAILS.dwg PLOT DATE 2023-01-16 11:24 SAVED DATE 2023-01-16 11:06

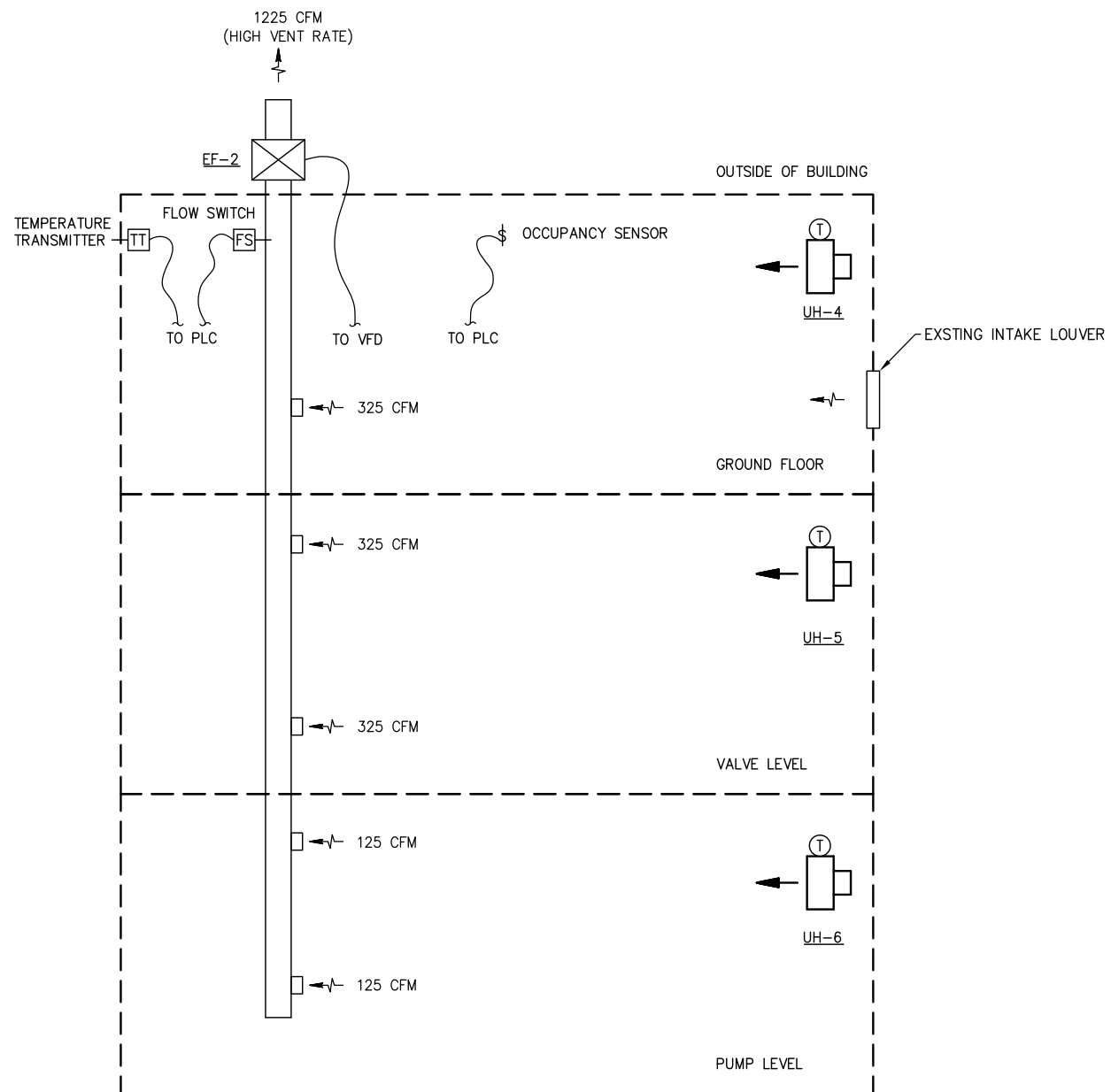
**HVAC SEQUENCE OF OPERATION**

**UNIT HEATERS:**  
UNIT HEATERS ARE CONTROLLED VIA INTEGRAL THERMOSTAT IN EACH UNIT.

**EXHAUST FAN:**  
THE EXHAUST FAN EF-1 SHALL RUN CONTINUOUSLY TO MEET THE REQUIREMENTS OF NFPA 820 FOR ELECTRICAL DECLASSIFICATION OF THE SPACE.  
THE EXHAUST FAN SHALL BE CONTROLLED VIA THE LOCAL PLC IN THE FACILITY.

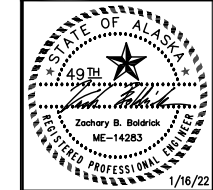
**HIGH VENTILATION RATE:**  
BY DEFAULT THE FAN SHALL RUN AT THE DESIGNED HIGH RATE IN ORDER TO PROVIDE 6 AIR CHANGES PER HOUR TO THE FACILITY.

**LOW VENTILATION RATE:**  
THE EXHAUST FAN VFD SHALL PROVIDE 50% AIRFLOW RATE WHEN THE FOLLOWING CONDITIONS ARE MET.  
1. THE OUTSIDE AIR TEMPERATURE IS BELOW 50°F.  
2. THE BUILDING IS UNOCCUPIED.



**1 WJ MECHANICAL HVAC SCHEMATIC**  
M-302 SCALE: NTS

REV	DATE	DESCRIPTION	BY



**EDC, INC.**  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
WJ MECH SCHEMATIC & DETAILS

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

M-302

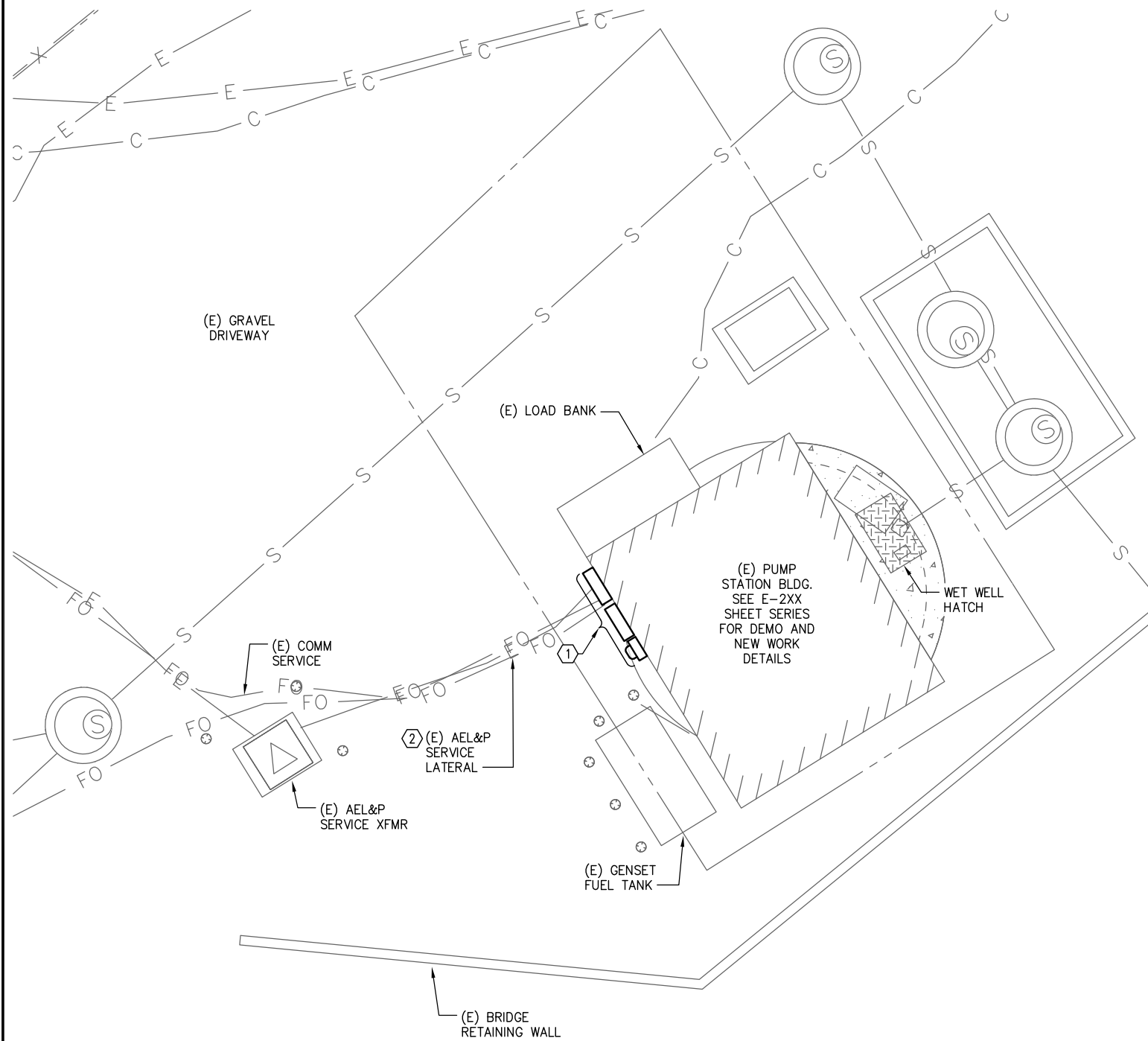
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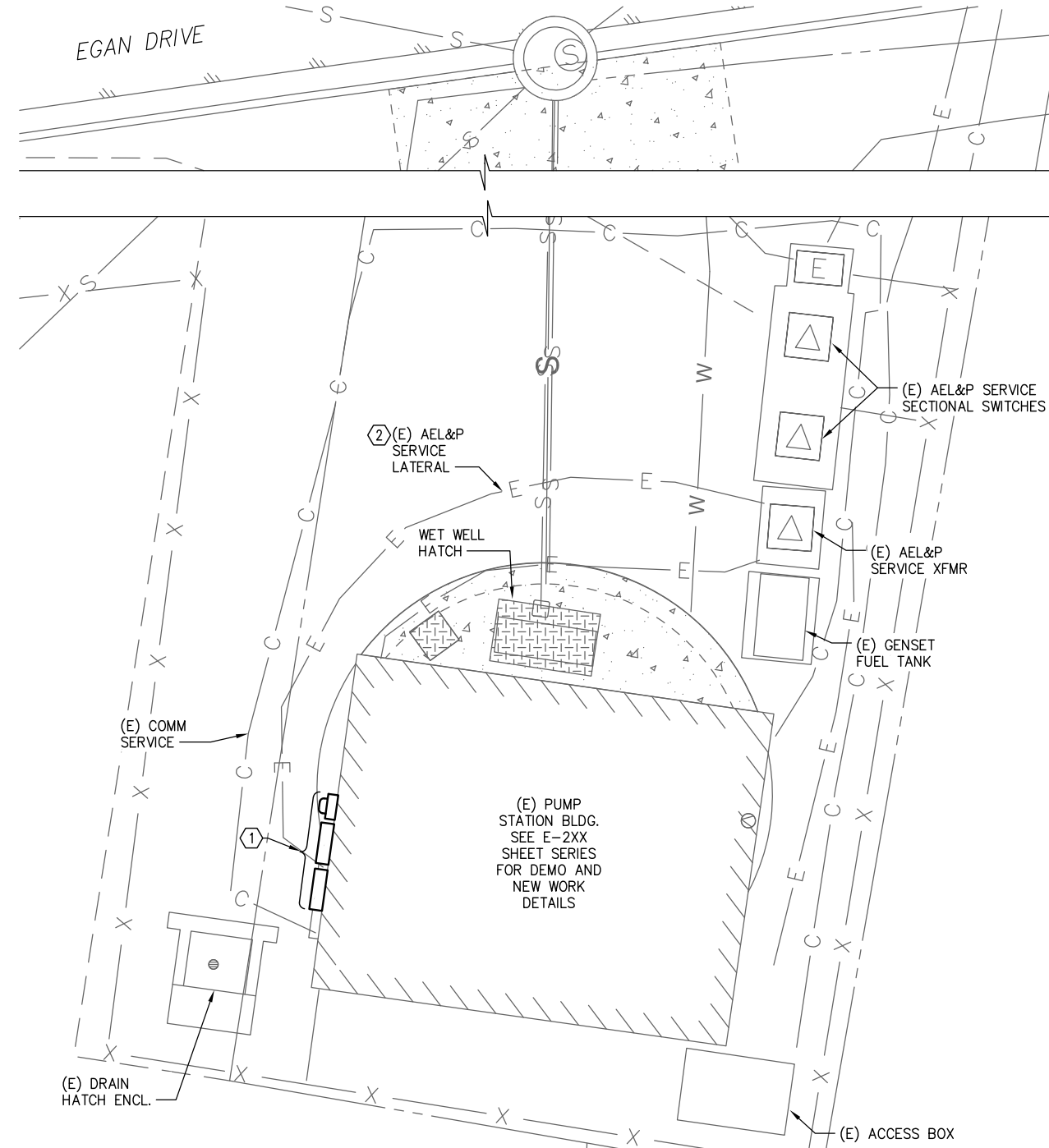
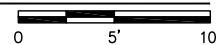
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1 WEST JUNEAU LIFT STATION ELECTRICAL SITE PLAN - NEW WORK

E-101

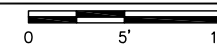
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2 OUTER DRIVE LIFT STATION ELECTRICAL SITE PLAN - NEW WORK

E-101

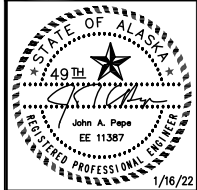
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SHEET NOTES

- ① NEW UTILITY SERVICE EQUIPMENT AND MAIN DISCONNECT SWITCH. MAINTAIN ALL REQUIRED CLEARANCES FROM ADJACENT EQUIPMENT. SEE POWER ONE-LINES ON SHEETS E-302 AND E-303 FOR ELECTRICAL EQUIPMENT DETAILS.
- ② COORDINATE NEW SERVICE LATERALS WITH THE SERVING UTILITY (AEL&P) AS REQUIRED FOR INSTALLATION OF NEW SERVICE EQUIPMENT.

REV	DATE	DESCRIPTION	BY



EDC, INC.  
 213 W. FIREBIRD LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

OD AND WJ ELEC SITE PLAN

PROJECT 1528.50233.01  
 DATE 01/16/2022

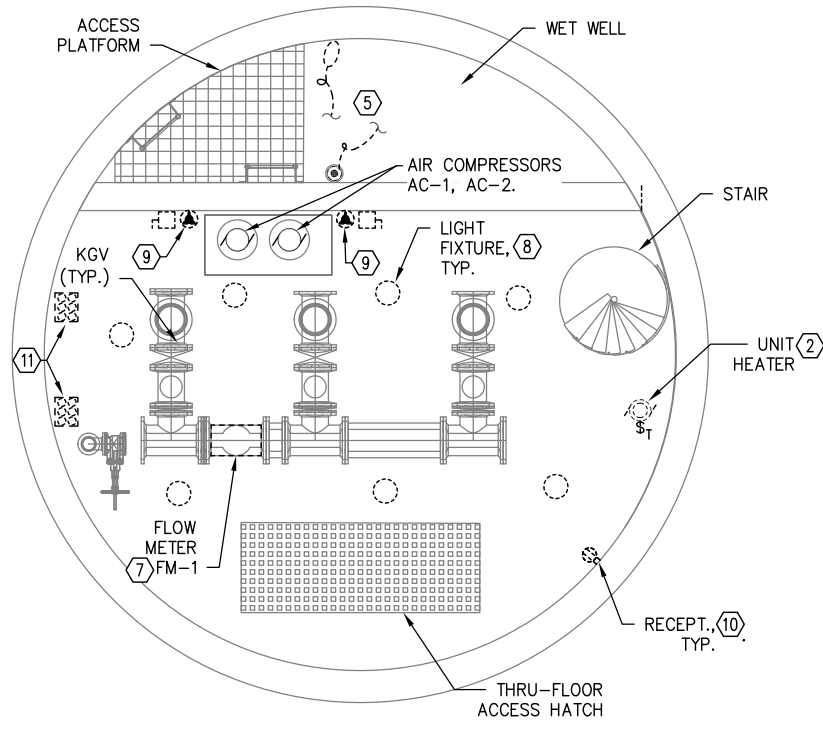
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 SHEET

E-101

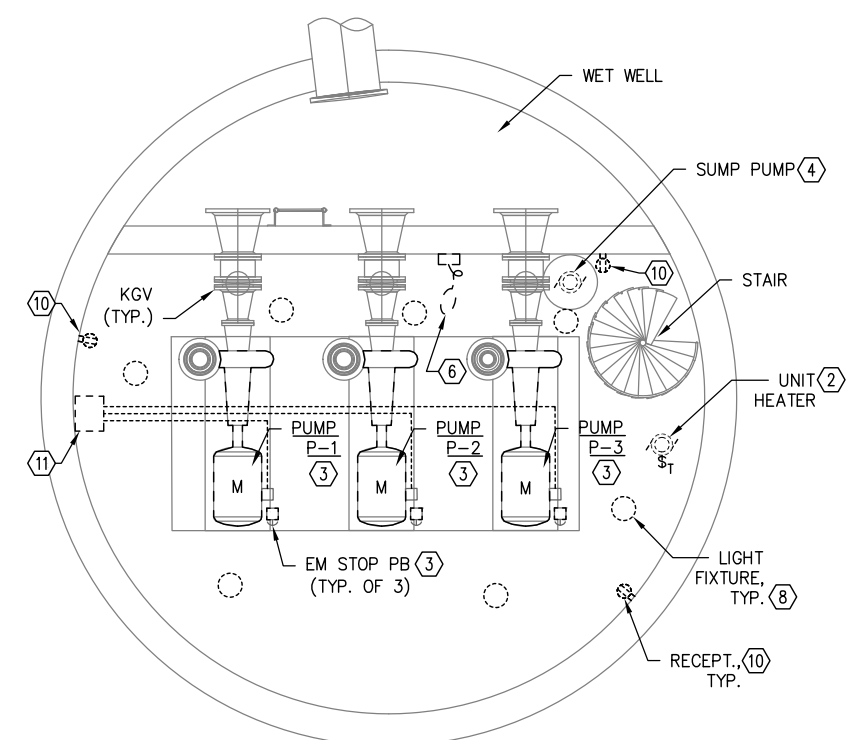
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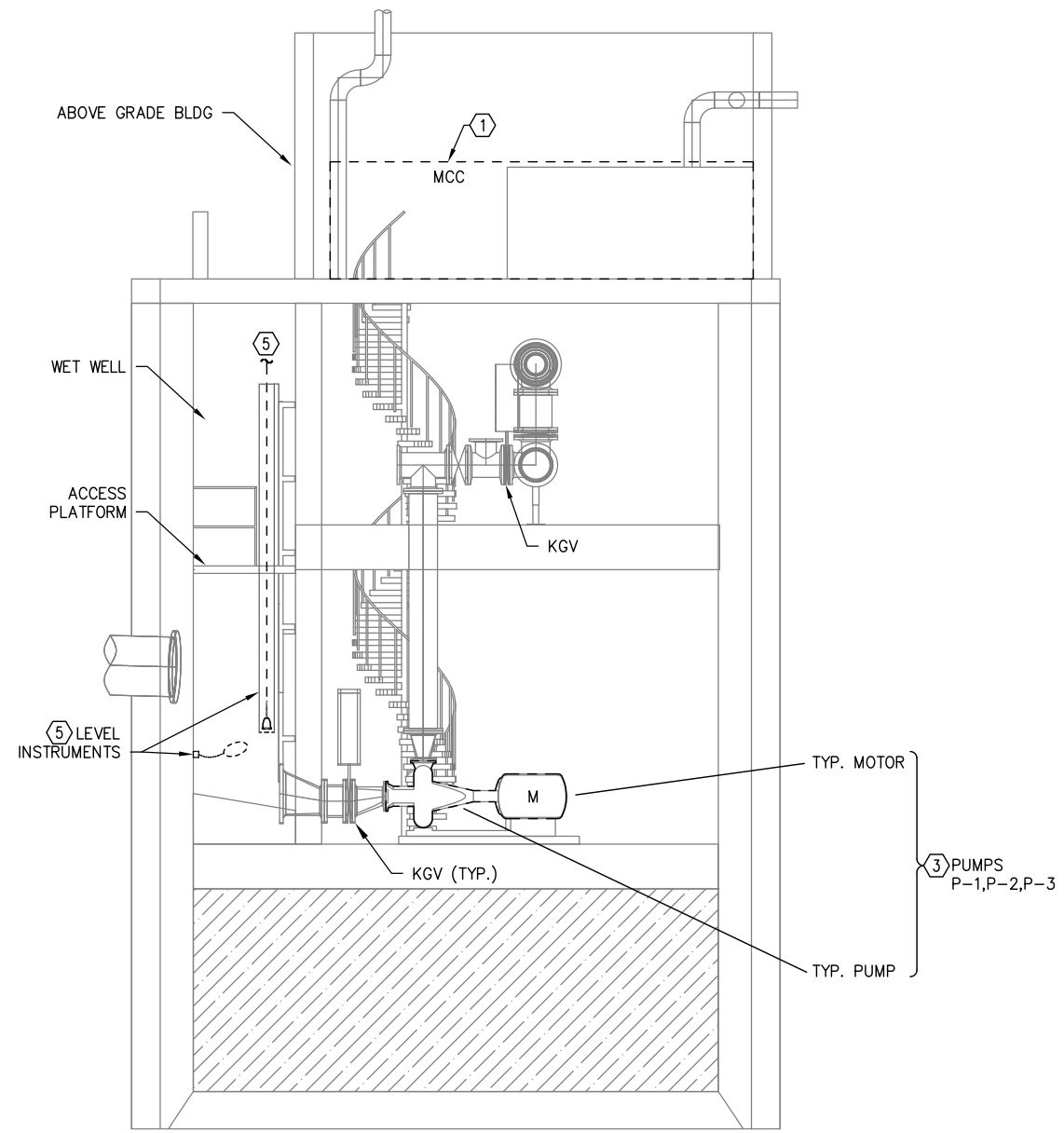
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**1 OD ELECTRICAL DEMOLITION PLAN - VALVE LEVEL**  
 E-202 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**2 OD ELECTRICAL DEMOLITION PLAN - PUMP LEVEL**  
 E-202 SCALE: 1/4" = 1'-0"  
 0 4' 8'



**3 OD ELECTRICAL DEMOLITION - ELEVATION**  
 E-202 SCALE: 1/4" = 1'-0"  
 0 4' 8'

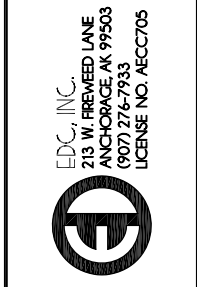
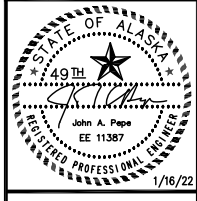
**GENERAL SHEET NOTES**

1. FIELD VERIFY ALL (E) CONTROL/SCADA SYSTEM CONNECTIONS BACK TO CONTROL PANEL. REPLACE ALL (E) CIRCUITS SCHEDULED FOR DEMOLITION.
2. EXISTING CONDUITS AND WIRING MAY NOT BE RE-USED UNLESS OTHERWISE NOTED.
3. ALL EMPTY CONDUITS SHALL BE REMOVED, UON.

**SHEET NOTES**

- 1 DEMOLISH (E) MCC EQUIPMENT SECTIONS AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CABLING. MAINTAIN OR EXPAND (E) SLAB PENETRATIONS TO ALLOW FOR NEW ROUTING AS REQUIRED. SEE SHEET E-301 FOR POWER ONE-LINE DEMOLITION DETAILS. PROVIDE NEW SYSTEM AS INDICATED ON NEW WORK PLANS.
- 2 DEMOLISH (E) EQUIPMENT AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) MCC OR PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 3 DEMOLISH (E) LIFT PUMPS, EQUIPMENT AND ALL ASSOCIATED POWER AND MONITORING CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) MCC. PROVIDE NEW CONNECTIONS AS INDICATED ON NEW WORK PLANS.
- 4 DEMOLISH (E) SUMP PUMP AND ALL ASSOCIATED POWER AND CONTROL CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) PANEL 'L'. PROVIDE NEW PUMPS AND CIRCUITS.
- 5 DEMOLISH ALL (E) LEVEL INSTRUMENTATION WITHIN THE WET WELL BACK TO THE (E) CONTROL PANEL AND BUBBLER SYSTEM CUBICLE. WORK SHALL INCLUDE ALL FUNCTIONAL OR ABANDONED EQUIPMENT, CONDUIT OR CONDUCTORS ASSOCIATED WITH THE LEVEL INSTRUMENTS OR BUBBLER SYSTEM.
- 6 DEMOLISH (E) FLOOD LEVEL SWITCH AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) CONTROL PANEL. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 7 DEMOLISH (E) FLOW METER (FM-1) AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) CONTROL PANEL AND REMOTE DISPLAY. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 8 DEMOLISH (E) LIGHTING FIXTURES AND ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 9 DEMOLISH (E) AIR COMPRESSOR (AC-1, AC-2), 208V, 1Ø RECEPTACLES, DISCONNECTS AND CIRCUITS. PROVIDE NEW 208V, 1Ø DISCONNECTS, CIRCUITS AND RECEPTACLES AS SHOWN ON NEW WORK PLANS.
- 10 DEMOLISH (E) GFI DUPLEX RECEPTACLES AND ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 11 (E) LIFT PUMP POWER AND CONTROL CONDUITS/CONDUCTORS. FLOOR/CEILING CONDUIT PENETRATIONS AT THESE LOCATIONS. CONFIRM ALL CONDUIT ROUTING AND PENETRATIONS WITH ACTUAL SITE CONDITIONS.

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
 OD ELEC EXIST AND DEMO PLAN - VALVE & PUMP LEVELS AND ELEV

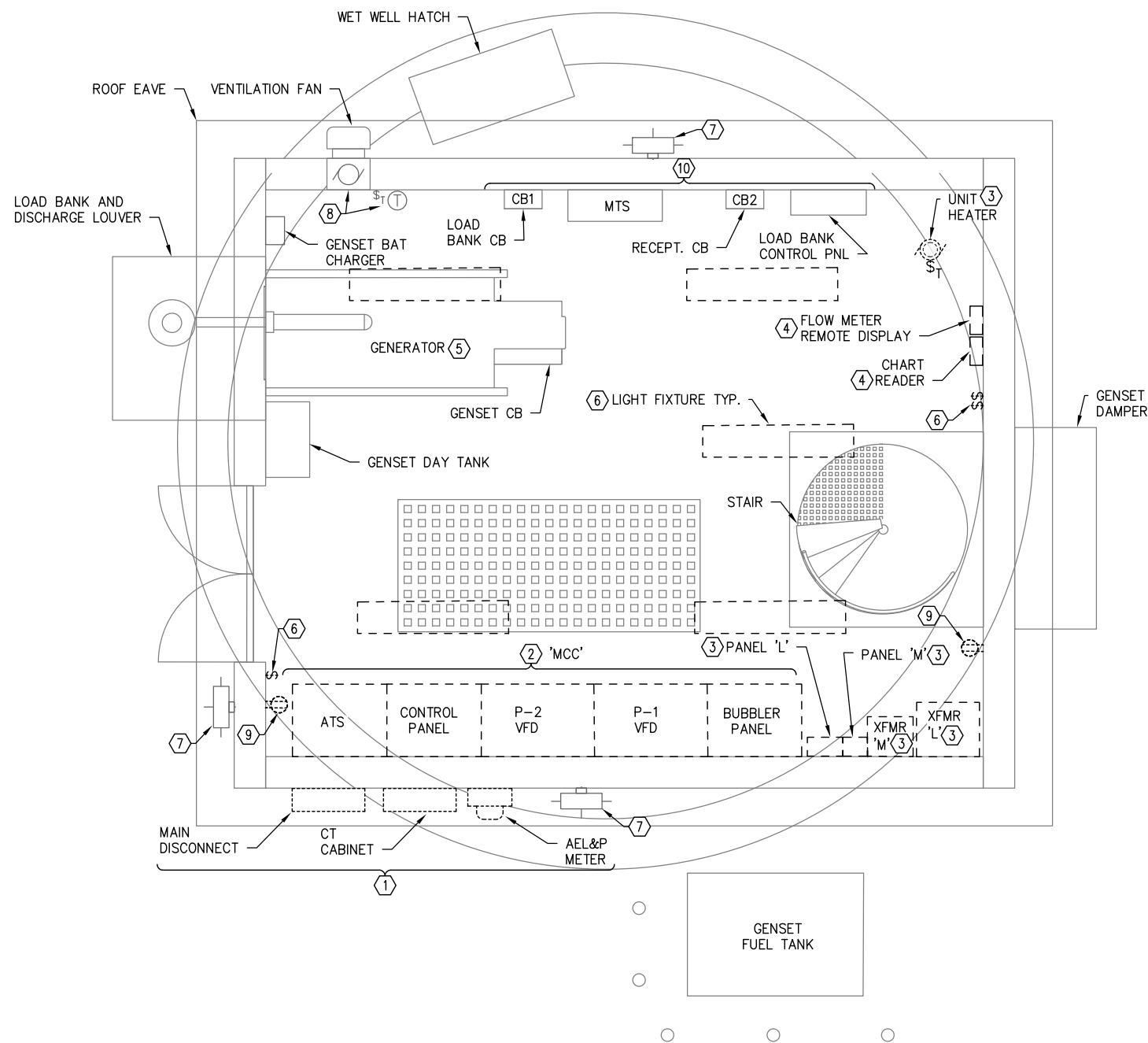
PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

**BID SET**

E-202

F:\Projects\00W\CBU Outer Drive and West Juneau Lift Stations\Drawings\Elec\E-203 WJ Elec Exist and Demo Plan - Ground Level.dwg PLOT DATE 2023-01-16 11:28 SAVED DATE 2023-01-16 10:32



1 WJ ELECTRICAL DEMOLITION PLAN - GROUND LEVEL  
E-203 SCALE: 1/2" = 1'-0"



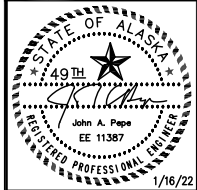
**GENERAL SHEET NOTES**

1. FIELD VERIFY ALL (E) CONTROL/SCADA SYSTEM CONNECTIONS BACK TO CONTROL PANEL. REPLACE ALL (E) CIRCUITS SCHEDULED FOR DEMOLITION AS REQUIRED.
2. EXISTING CONDUITS AND WIRING MAY NOT BE RE-USED, UON.
3. ALL EMPTY CONDUITS SHALL BE REMOVED, UON.

**SHEET NOTES**

- 1 DEMOLISH (E) SERVICE ENTRANCE EQUIPMENT, CONDUCTORS AND CONDUIT. COORDINATE AND SCHEDULE ALL WORK WITH SERVING UTILITY (AEL&P) AS REQUIRED TO MINIMIZE OUTAGES.
- 2 DEMOLISH (E) MCC EQUIPMENT SECTIONS AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CABLING. MAINTAIN OR EXPAND (E) SLAB PENETRATIONS TO ALLOW FOR NEW ROUTING AS REQUIRED. SEE SHEET E-301 FOR POWER ONE-LINE DEMOLITION DETAILS. PROVIDE NEW SYSTEM AS INDICATED ON NEW WORK PLANS.
- 3 DEMOLISH (E) EQUIPMENT AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) MCC OR PANEL 'L/M'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 4 DEMOLISH (E) EQUIPMENT AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) CONTROL PANEL. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 5 (E) GENERATOR SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. PROVIDE CONNECTIONS TO NEW SWITCHGEAR AS SHOWN UNDER NEW WORK PLANS.
- 6 DEMOLISH (E) INTERIOR LIGHTING FIXTURES AND ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 7 MAINTAIN (E) EXTERIOR LIGHTING FIXTURES IN PLACE. PROVIDE NEW DEDICATED CIRCUIT FROM NEW PANEL 'L'.
- 8 MAINTAIN (E) VENTILATION FAN AND CONTROLS IN PLACE. PROVIDE NEW DEDICATED CIRCUIT FROM NEW PANEL 'L'.
- 9 DEMOLISH (E) GFI DUPLEX RECEPTACLES AND ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS, TYPICAL.
- 10 (E) GENERATOR MANUAL TRANSFER SWITCH, LOAD BANK AND ASSOCIATED CIRCUIT BREAKERS TO REMAIN. RE-CONNECT AS SHOWN ON SHEET E-303.

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
WJ ELEC EXIST AND DEMO PLAN - GROUND LEVEL

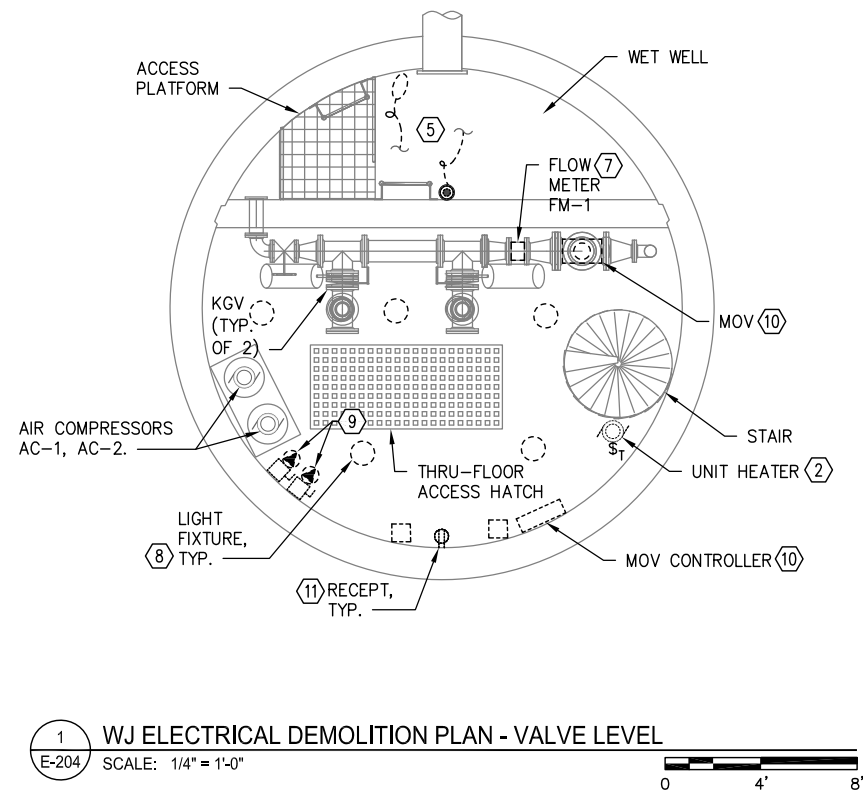
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

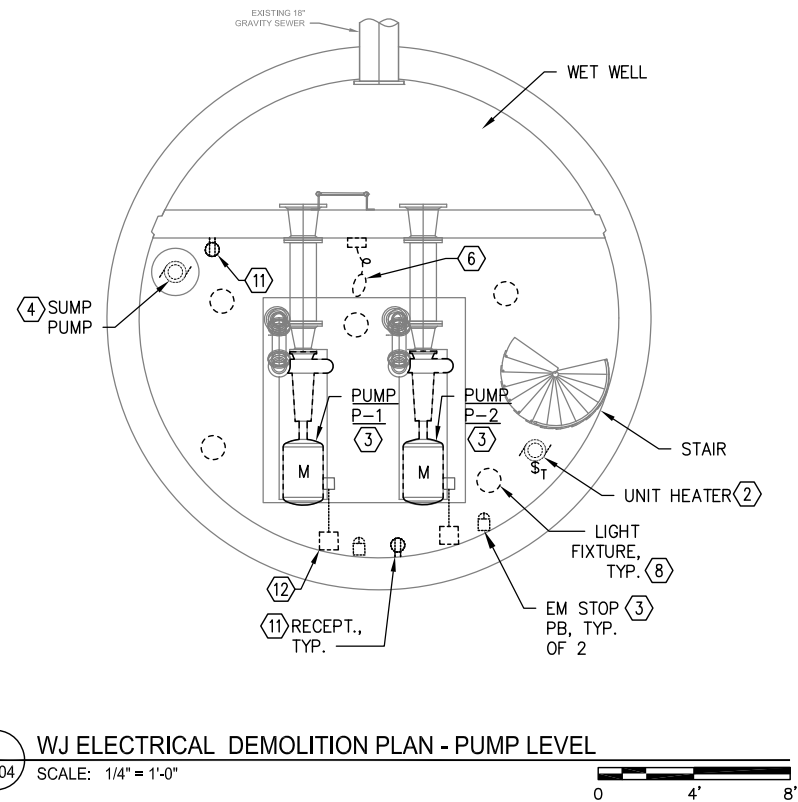
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E-203

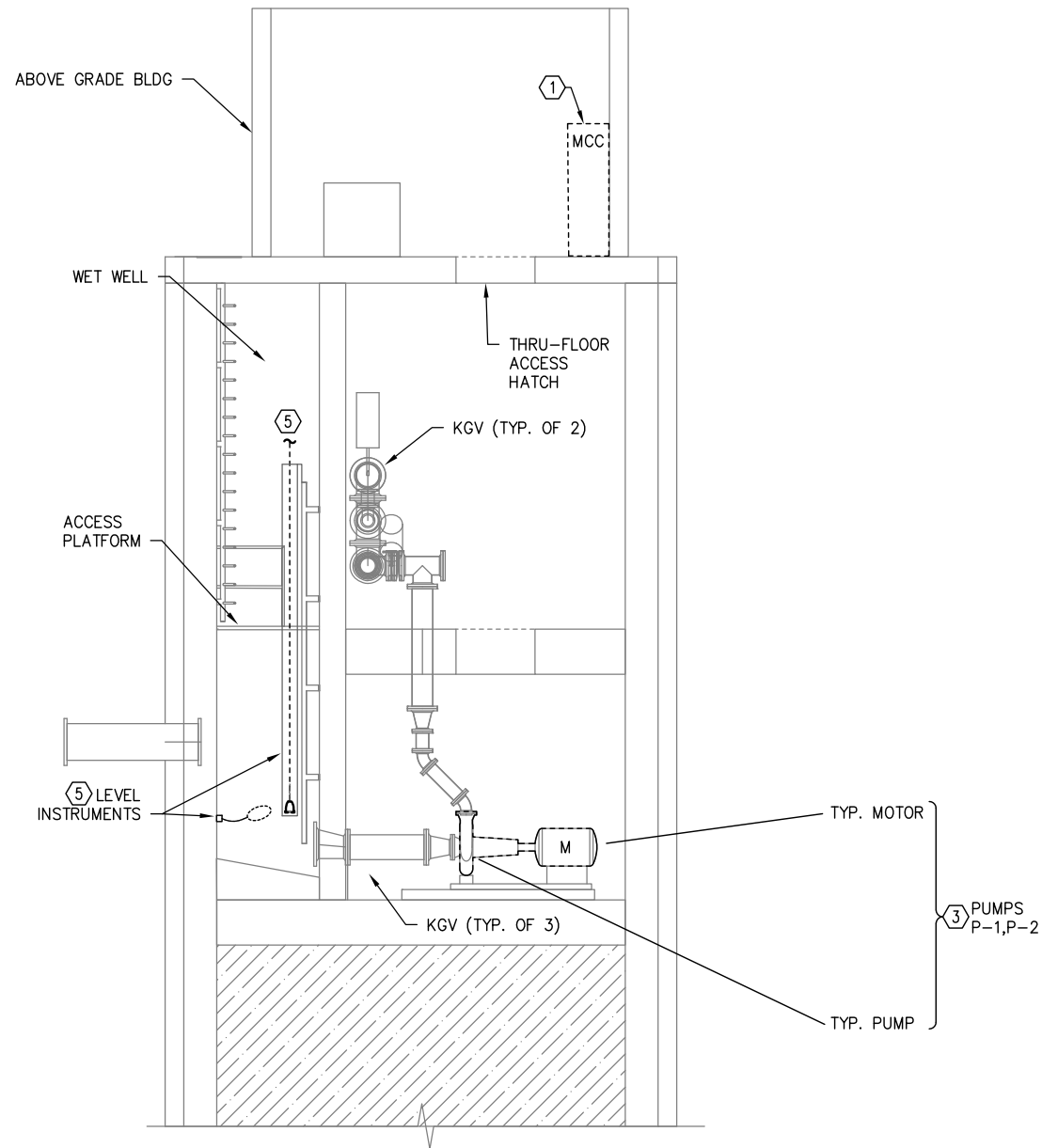
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1 WJ ELECTRICAL DEMOLITION PLAN - VALVE LEVEL  
E-204 SCALE: 1/4" = 1'-0"



2 WJ ELECTRICAL DEMOLITION PLAN - PUMP LEVEL  
E-204 SCALE: 1/4" = 1'-0"



3 WJ ELECTRICAL DEMOLITION - ELEVATION  
E-204 SCALE: 1/4" = 1'-0"

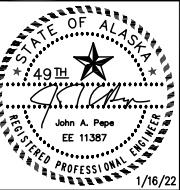
**GENERAL SHEET NOTES**

1. FIELD VERIFY ALL (E) CONTROL/SCADA SYSTEM CONNECTIONS BACK TO CONTROL PANEL. REPLACE ALL (E) CIRCUITS SCHEDULED FOR DEMOLITION AS REQUIRED.
2. EXISTING CONDUITS AND WIRING MAY NOT BE RE-USED UNLESS OTHERWISE NOTED.
3. ALL EMPTY CONDUITS SHALL BE REMOVED, UON.

**SHEET NOTES**

- 1 DEMOLISH (E) MCC EQUIPMENT SECTIONS AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CABLING. MAINTAIN OR EXPAND (E) SLAB PENETRATIONS TO ALLOW FOR NEW ROUTING AS REQUIRED. SEE SHEET E-301 FOR POWER ONE-LINE DEMOLITION DETAILS. PROVIDE NEW SYSTEM AS INDICATED ON NEW WORK PLANS.
- 2 DEMOLISH (E) EQUIPMENT AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) MCC OR (E) PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 3 DEMOLISH (E) LIFT PUMPS, EQUIPMENT AND ALL ASSOCIATED POWER AND MONITORING CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) MCC. PROVIDE NEW CONNECTIONS AS INDICATED ON NEW WORK PLANS.
- 4 DEMOLISH (E) SUMP PUMP AND ALL ASSOCIATED POWER AND CONTROL CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) PANEL 'L'.
- 5 DEMOLISH ALL (E) LEVEL INSTRUMENTATION WITHIN THE WET WELL BACK TO THE (E) CONTROL PANEL AND BUBBLER SYSTEM CUBICLE. WORK SHALL INCLUDE ALL FUNCTIONAL OR ABANDONED EQUIPMENT, CONDUIT OR CONDUCTORS ASSOCIATED WITH THE LEVEL INSTRUMENTS OR BUBBLER SYSTEM.
- 6 DEMOLISH (E) FLOOD LEVEL SWITCH AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) CONTROL PANEL. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 7 DEMOLISH (E) FLOW METER (FM-1) AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO THE (E) CONTROL PANEL AND REMOTE DISPLAY. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 8 DEMOLISH (E) LIGHTING FIXTURES AND ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 9 (E) DEMOLISH AIR COMPRESSOR (AC-1, AC-2). 208V, 1Ø RECEPTACLES, DISCONNECTS AND CIRCUITS. PROVIDE NEW 208V, 1Ø DISCONNECTS, CIRCUITS AND RECEPTACLES AS SHOWN ON NEW WORK PLANS.
- 10 (E) MOTOR OPERATED VALVE (MOV) AND CONTROLLER. DEMOLISH (E) EQUIPMENT AND ASSOCIATED POWER AND CONTROL CIRCUITS. REPLACE WITH NEW SYSTEM AS INDICATED ON NEW WORK PLANS.
- 11 DEMOLISH (E) GFI DUPLEX RECEPTACLES AND ASSOCIATED CONDUCTORS, CONDUIT AND CONNECTIONS BACK TO PANEL 'L'. PROVIDE NEW AS INDICATED ON NEW WORK PLANS.
- 12 (E) LIFT PUMP POWER AND CONTROL CIRCUIT CONDUIT PENETRATION LOCATIONS, TYPICAL OF 2. CONFIRM ALL CONDUIT ROUTING AND PENETRATIONS WITH ACTUAL SITE CONDITIONS.

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
WJ ELEC EXIST AND DEMO PLAN - VALVE & PUMP LEVELS AND ELEV

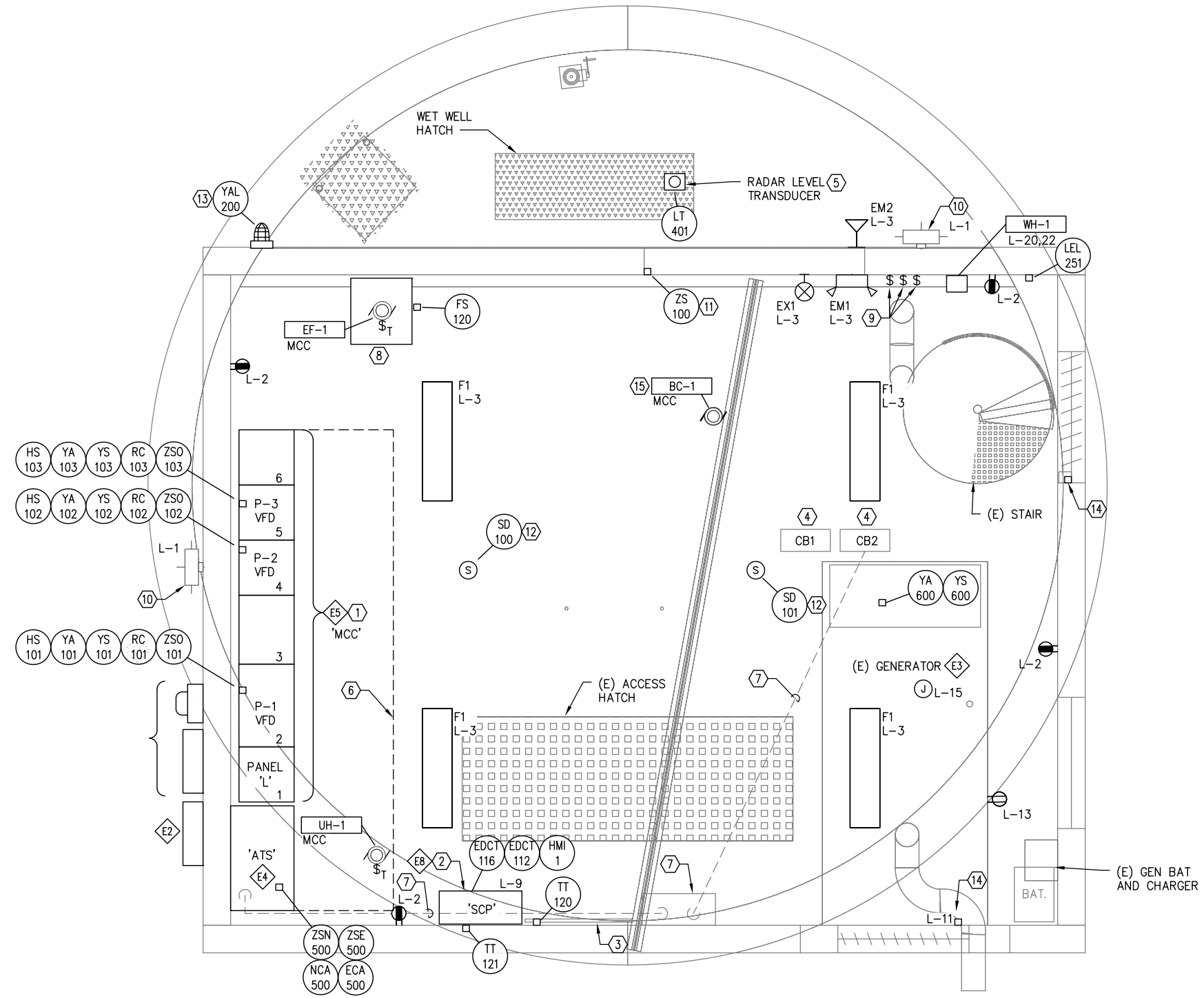
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

**BID SET**

E-204

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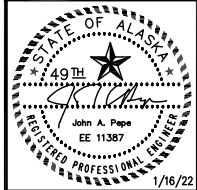
1 OD ELECTRICAL NEW WORK PLAN - GROUND LEVEL  
E-205 SCALE: 1/2" = 1'-0"



**SHEET NOTES**

- ① MOTOR CONTROL CENTER 'MCC'. PROVIDE SECTIONS AS INDICATED ON SHEET E-302.
- ② SCADA CONTROL PANEL 'SCP'. SEE SYSTEM DETAILS ON THE E-5XX SERIES SHEETS.
- ③ RELOCATE (E) TOOLS, BACKBOARDS, ETC. TO ACCOMMODATE NEW SCADA CONTROL PANEL 'SCP' LOCATION AND CIRCUITS.
- ④ (E) CIRCUIT BREAKERS SUPPLYING THE LOAD BANK AND GENERATOR. SEE POWER ONE-LINE ON SHEET E-302 FOR CONFIGURATION OF CONNECTIONS.
- ⑤ PRIMARY RADAR LEVEL SENSOR MOUNTED ADJACENT TO THE NEW WET WELL HATCH. PROVIDE ALL REQUIRED CABLING, CONDUIT AND FITTINGS FOR CONNECTION BACK TO THE SCADA CONTROL PANEL 'SCP'. SEE E-5XX SERIES SHEETS, DIVISION 40 SPECIFICATIONS FOR EQUIPMENT DETAILS AND CIVIL/STRUCTURAL FOR MOUNTING DETAILS.
- ⑥ MAINTAIN 36" WORK CLEARANCE IN FRONT OF SWITCHGEAR AS REQUIRED BY NEC.
- ⑦ DEMOLISHED UNDERSLAB ATS FEEDERS. ABANDON CONDUITS IN PLACE. PROVIDE NEW FEEDERS/CONDUIT FROM ATS TO THE (E) GENERATOR CIRCUIT BREAKER. ROUTE NEW CONDUIT OVERHEAD IN (E) CEILING SPACE. SEE POWER ONE-LINE ON SHEET E-302.
- ⑧ ROOF MOUNTED VENTILATION FAN AND DUCTING TO EACH LEVEL. VENTILATION SYSTEM REDUCES STATION HAZARDOUS CLASSIFICATION TO UNCLASSIFIED. SEE SHEET E-502 FUNCTIONAL NARRATIVE AND MECHANICAL FOR SYSTEM DEFINITION AND FUNCTIONAL REQUIREMENTS. SYSTEM SHALL BE CONTROLLED BY THE SCADA CONTROL PANEL 'SCP'.
- ⑨ LIGHTING CONTROL SWITCHES. PROVIDE NEW SWITCHING TO CONTROL EACH BUILDING LEVEL (GROUND, VALVE AND PUMP) SEPARATELY. REPLACE ALL COMPONENTS (SNAP SWITCH, FACEPLATE AND WIRING) WITH NEW.
- ⑩ MAINTAIN (E) EXTERIOR LIGHTING FIXTURES IN PLACE. PROVIDE NEW DEDICATED CIRCUIT FROM NEW PANEL 'L'.
- ⑪ INTRUSION DETECTION SWITCH. SEE DETAIL 2, SHEET E-601.
- ⑫ SMOKE DETECTOR. SEE SPECIFICATIONS FOR DETAILS.
- ⑬ CRITICAL HIGH LEVEL ALARM STROBE AND SIGNAGE. SEE SPECIFICATIONS AND SHEET E-602 FOR SIGNAGE DETAILS.
- ⑭ RE-CONNECT 120V POWER SUPPLY TO (E) GENERATOR MOTORIZED DAMPERS.
- ⑮ PROVIDE CONNECTION TO BRIDGE CRANE EQUIPMENT PER THE MANUFACTURER'S REQUIREMENTS.
- Ⓔ SEE SHEET E-302 FOR ELECTRICAL EQUIPMENT SCHEDULE.
- Ⓕ SEE SHEETS E-401 FOR INSTRUMENT CONNECTION SCHEDULE.
- Ⓖ-Ⓗ SEE SHEETS E-302 FOR EQUIPMENT SCHEDULE WITH ELECTRICAL CONNECTIONS.

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FIREBIRD LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

OD ELEC NEW WORK PLAN - GROUND LEVEL

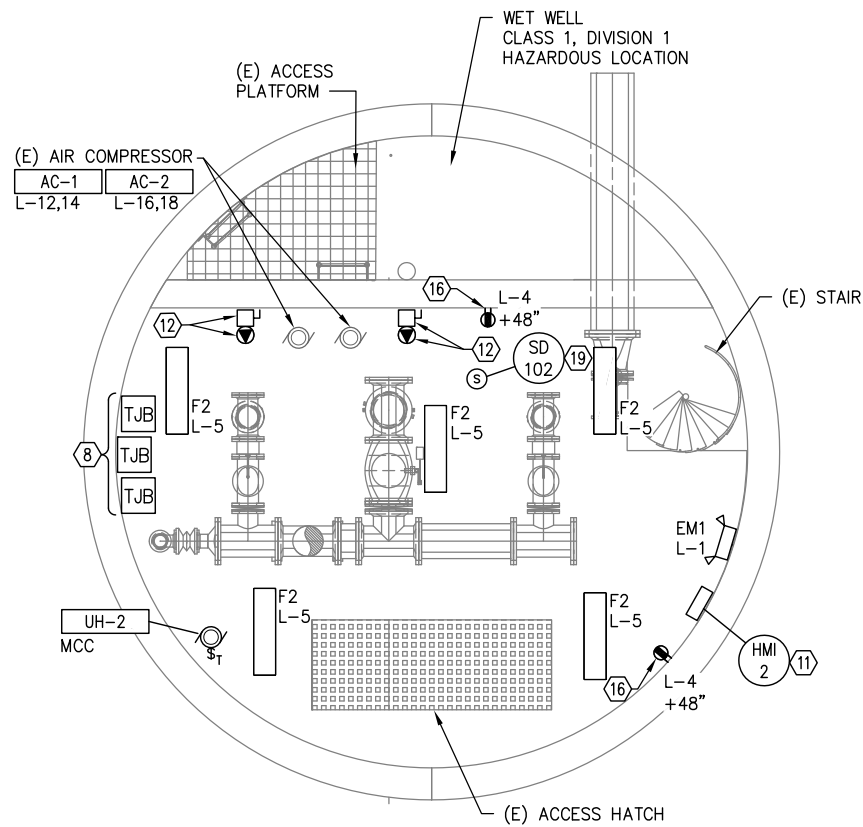
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

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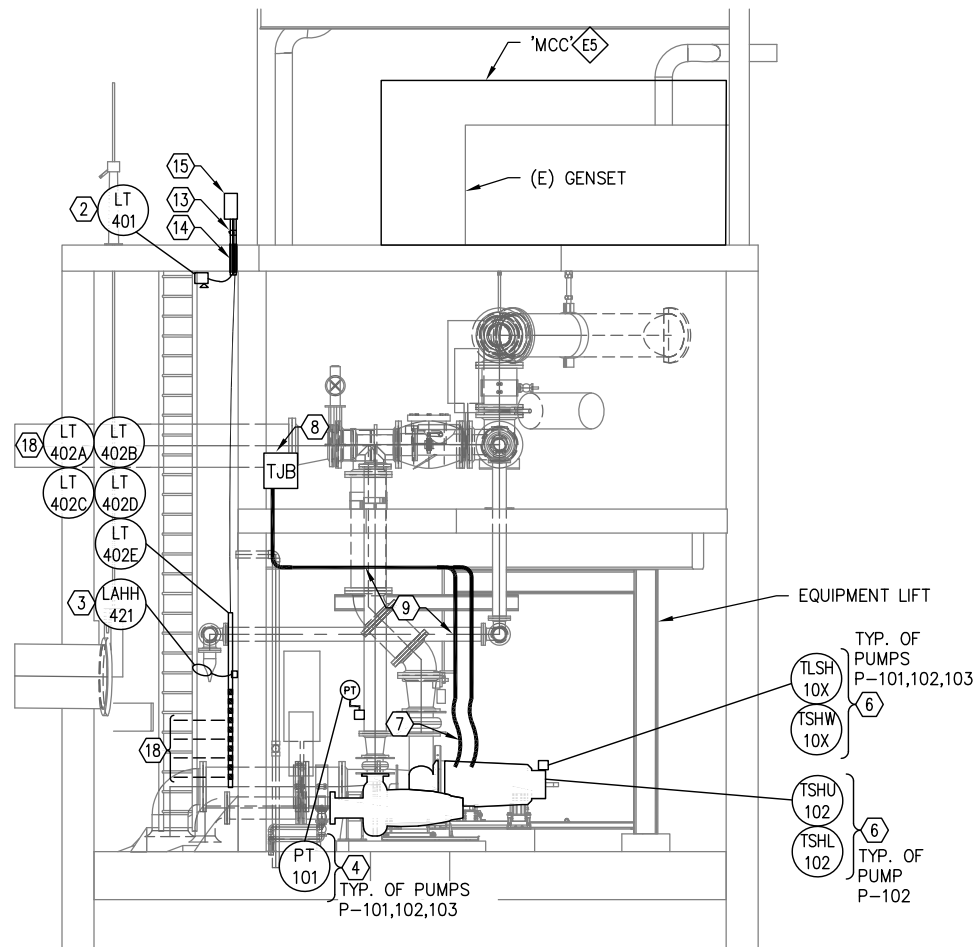
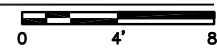
E-205

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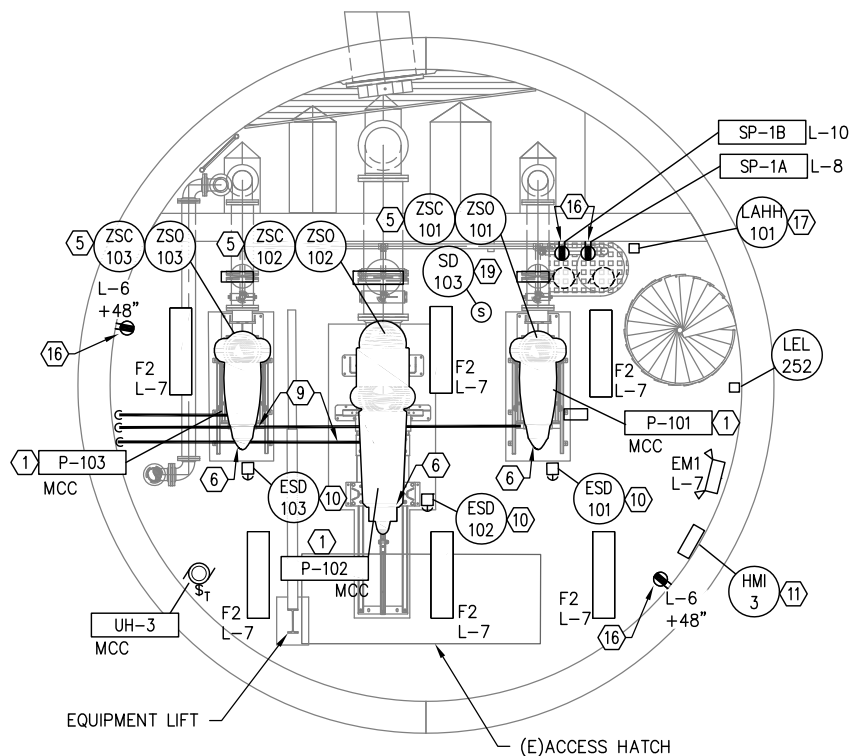
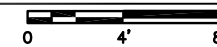
1 OD ELECTRICAL NEW WORK PLAN - VALVE LEVEL

E-206 SCALE: 1/4" = 1'-0"



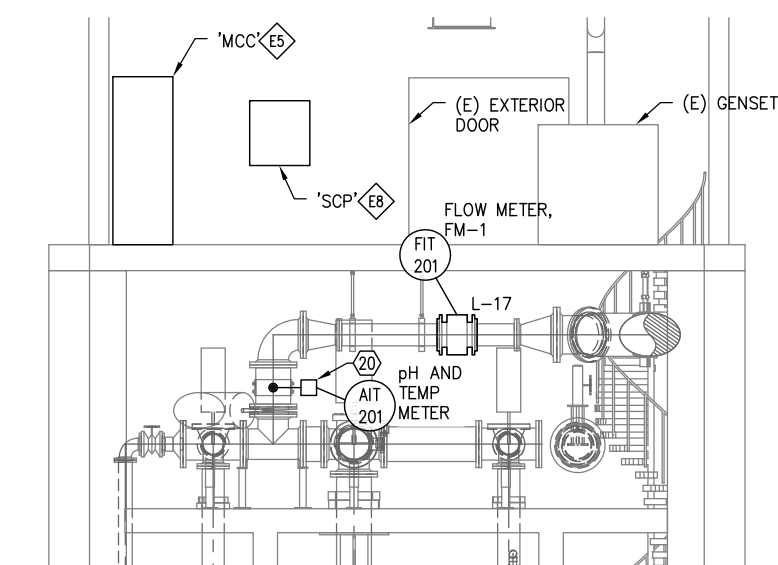
3 OD ELECTRICAL NEW WORK PLAN - ELEVATION

E-206 SCALE: 1/4" = 1'-0"



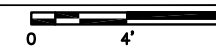
2 OD ELECTRICAL NEW WORK PLAN - PUMP LEVEL

E-206 SCALE: 1/4" = 1'-0"



4 OD ELEVATION NEW WORK PLAN - VALVE LEVEL ELEVATION

E-206 SCALE: 1/4" = 1'-0"



SHEET NOTES

- 1 PUMPS P-101, 102, 103: PROVIDE ALL REQUIRED CONNECTIONS TO POWER, SIGNAL AND SENSOR CIRCUITS AS SHOWN. SEE PUMP SPECIFICATIONS AND SHEET E-302 AND E-405 FOR CONNECTION REQUIREMENTS.
  - 2 RADAR LEVEL SENSOR MOUNTED ADJACENT TO THE NEW WET WELL HATCH. PROVIDE ALL REQUIRED CABLING, CONDUIT AND FITTINGS FOR CONNECTION BACK TO SCADA CONTROL PANEL 'SCP'. SEE E-5XX SERIES SHEETS, DIVISION 40 SPECIFICATIONS FOR EQUIPMENT DETAILS AND CIVIL/STRUCTURAL FOR MOUNTING DETAILS.
  - 3 CRITICAL HIGH LEVEL FLOAT. PROVIDE ALL REQUIRED CABLING, CONDUIT AND FITTINGS FOR CONNECTION BACK TO THE SCADA CONTROL PANEL 'SCP'.
  - 4 PUMPS P-101, 102, 103: PROVIDE DISCHARGE PRESSURE TRANSMITTERS/EQUIPMENT, CONDUIT, CABLING AND UNISTRUT SUPPORT STRUCTURES AS REQUIRED FOR EACH PUMP. SEE SHEET E-601, DETAIL 1.
  - 5 PUMP DISCHARGE CHECK VALVE POSITION SENSOR.
  - 6 PUMPS P-101, 102, 103: PROVIDE NEW CIRCUITS FOR PUMP MOTOR SEAL-FAIL, WINDING OVER-TEMPERATURE AND UPPER AND LOWER BEARING TEMPERATURE SENSOR CIRCUIT ELEMENTS. ROUTE NEW SENSOR CIRCUITS BACK TO THE XYLEM MAS 812 BU MODULE IN THE MCC CUBICLE. PROVIDE CONDUIT/CABLING, UNISTRUT SUPPORT AND CONNECTIONS. SEE SHEET E-405 FOR DETAILS.
  - 7 PUMPS P-101, 102, 103: PROVIDE VFD RATED CABLE IN LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION TO PUMPS. ROUTE CABLE TO THE TERMINAL JUNCTION BOX (TJB). PROVIDE FITTINGS AND SUPPORT TO SECURE CABLE IN ACCORDANCE WITH CODE AND THE MANUFACTURER'S RECOMMENDATIONS.
  - 8 PUMPS P-101, 102, 103: PROVIDE TERMINAL JUNCTION BOX (TJB) FOR MOTOR CABLE CONNECTIONS, NEMA 4X SS. PROVIDE PROPERLY SIZED J-BOX, UL LISTED AS TERMINAL BOX, WITH FACTORY INSTALLED, RATED LUGS. MOUNT BOXES ON UNISTRUT SUPPORT STRUCTURE. PROVIDE TJB(S) AT VALVE LEVEL TO AVOID FLOODING FOR EASE OF ACCESS AND DISCONNECT.
  - 9 ROUTE CABLES/CONDUCTORS IN PVC-COATED RIGID METALLIC CONDUIT THROUGH TJB AND BACK TO NEW MOTOR CONTROL CENTER EQUIPMENT AS REQUIRED, TYPICAL USE (E) PENETRATIONS OR CORE DRILL. PROVIDE NEW PENETRATIONS IN FLOOR SLABS AS REQUIRED. ALL NEW WORK SHALL BE REVIEWED AND APPROVED BY THE PROJECT ENGINEER PRIOR TO STARTING WORK. TYPICAL FOR ALL POWER AND SIGNAL/SENSOR CONDUITS BELOW GRADE.
  - 10 PUMP EMERGENCY SHUTDOWN SWITCH. RED, MUSHROOM HEAD PUSHBUTTON IN NEMA 4X SS ENCLOSURE. SEE SHEET E-602.
  - 11 HUMAN-MACHINE-INTERFACE (HMI) PANEL, NEMA 4X SS. SEE SHEET E-504, E-602 AND DIVISION 40 SPECIFICATIONS FOR DETAILS.
  - 12 PROVIDE NEW 30A, 208V, 1Ø NEMA 4X, SS DISCONNECT AND TWIST-LOCK RECEPTACLE FOR (E) COMPRESSOR EQUIPMENT, AC-1 AND AC-2.
  - 13 TRANSITION FROM CLASS 1, DIVISION 1 ENVIRONMENT. PROVIDE SEAL-OFFS FOR ALL ENTRY AND EXIT CONDUITS FROM THE WET WELL.
  - 14 PROVIDE NEW PENETRATIONS OR CORE DRILLS IN BLDG WALL SLABS, WET WELL WALLS/LIDS AS REQUIRED TO PROVIDE CONDUIT CHASES OF ADEQUATE SIZE PER THE NEC. PROVIDE CONDUIT SEAL-OFFS FOR ALL ENTRY AND EXIT CONDUITS FROM THE WET WELL CLASSIFIED AREA. ALL NEW PENETRATIONS SHALL BE REVIEWED AND APPROVED BY THE PROJECT ENGINEER PRIOR TO STARTING WORK. TYPICAL FOR ALL POWER AND SIGNAL/INSTRUMENTATION CONDUITS BELOW GRADE.
  - 15 PROVIDE ABOVE-GRADE NEMA 4X SS TERMINAL JUNCTION BOX(S) FOR CONNECTION OF LEVEL INSTRUMENTATION. SEAL-OFF FITTING SHALL BE USED FOR ALL CONDUIT TRANSITIONS FROM HAZARDOUS AREAS.
  - 16 PROVIDE NEW DUPLEX RECEPTACLE ON GFI CIRCUIT BREAKERS. PROVIDE RECEPTACLES WITH NEW J-BOX, CONDUIT, WIRING AND METALLIC, WHILE-IN-USE COVERS. SEE PANEL 'L' SCHEDULE FOR CIRCUIT BREAKER DETAILS. TYPICAL OF ALL RECEPTACLES.
  - 17 WALL MOUNTED FLOOD DETECTOR MOUNTED ON GUA J-BOX. SEE SHEET E-601 FOR DETAILS.
  - 18 SUBMERSIBLE LEVEL PROBE IN THE (E) WET WELL (BACK UP LEVEL MEASUREMENT). UNIT SHALL BE MOUNTED ON SELF-CLEANING, STAINLESS STEEL WALL BRACKET. PROVIDE ALL REQUIRED CABLING, CONDUIT AND FITTINGS FOR CONNECTION BACK TO SCADA CONTROL PANEL 'SCP' THROUGH EXTERIOR JUNCTION BOX. MATCH REQUIRED LEAD/LAG AND CRITICAL LOW SETTINGS IN COMPONENT WIRING. SEE DIVISION 40 SPECIFICATIONS FOR EQUIPMENT DETAILS AND CIVIL/STRUCTURAL FOR MOUNTING DETAILS.
  - 19 SMOKE DETECTOR. SEE SPECIFICATIONS FOR DETAILS.
  - 20 pH AND TEMPERATURE SENSOR CONTROLLER. MOUNT ADJACENT TO PROBE INSERTION POINT USING SS UNISTRUT AND HARDWARE. SEE SHEET E-504.
- ◆# SEE SHEET E-302 FOR ELECTRICAL EQUIPMENT SCHEDULE.
- XX YY SEE SHEETS E-401 FOR INSTRUMENT CONNECTION SCHEDULE.
- XX-X SEE SHEETS E-302 FOR EQUIPMENT SCHEDULE WITH ELECTRICAL CONNECTIONS.

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FREEMAN LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC705



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
OD ELEC NEW WORK PLAN - VALVE & PUMP LEVELS AND ELEVATION

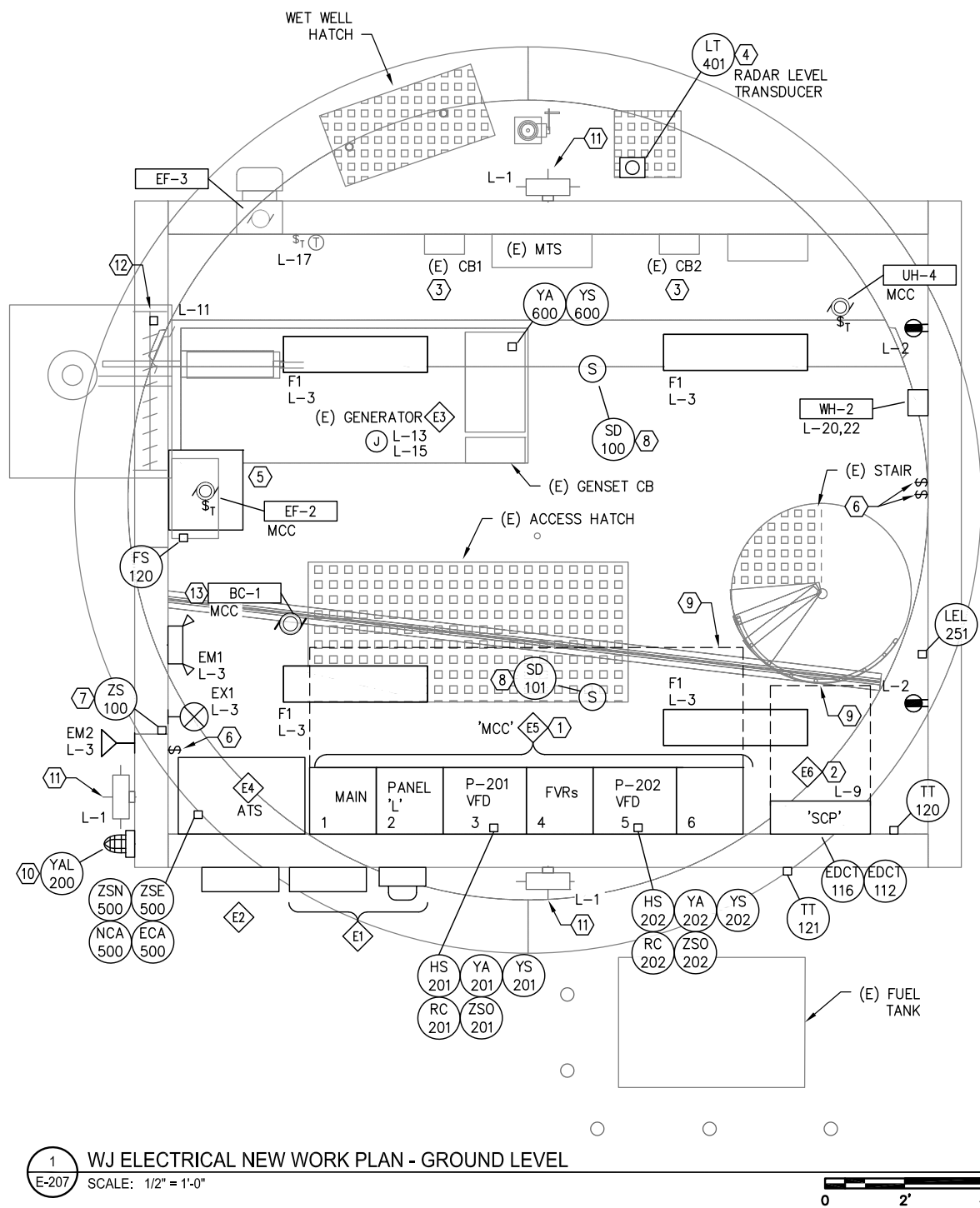
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

**BID SET**

E-206

F:\Projects\DOM\CBU Outer Drive and West Juneau Lift Stations\Drawings\Elec\E-207 WJ Elec New Work Plan - Ground Level.dwg PLOT DATE 2023-01-16 11:28 SAVED DATE 2023-01-16 10:38



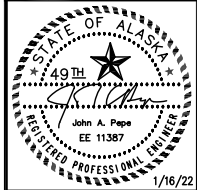
1 WJ ELECTRICAL NEW WORK PLAN - GROUND LEVEL  
E-207 SCALE: 1/2" = 1'-0"



**SHEET NOTES**

- ① MOTOR CONTROL CENTER 'MCC'. PROVIDE SECTIONS AS INDICATED ON SHEET E-303.
- ② SCADA CONTROL PANEL 'SCP'. SEE SYSTEM DETAILS ON THE E-5XX SERIES SHEETS.
- ③ (E) CIRCUIT BREAKERS SUPPLYING THE LOAD BANK AND PORTABLE GENERATOR RECEPTACLE. SEE POWER ONE-LINE ON SHEET E-303 FOR CONFIGURATION OF CONNECTIONS.
- ④ PRIMARY RADAR LEVEL SENSOR MOUNTED ADJACENT TO THE NEW WET WELL HATCH. PROVIDE ALL REQUIRED CABLING, CONDUIT AND FITTINGS FOR CONNECTION BACK TO THE SCADA CONTROL PANEL 'SCP'. SEE E-5XX SERIES SHEETS, DIVISION 40 SPECIFICATIONS FOR EQUIPMENT DETAILS AND CIVIL/STRUCTURAL FOR MOUNTING DETAILS.
- ⑤ ROOF MOUNTED VENTILATION FAN AND DUCTING TO EACH LEVEL. VENTILATION SYSTEM REDUCES STATION HAZARDOUS CLASSIFICATION TO UNCLASSIFIED. SEE SHEET E-503 FUNCTIONAL NARRATIVE AND MECHANICAL FOR SYSTEM DEFINITION AND FUNCTIONAL REQUIREMENTS. SYSTEM SHALL BE CONTROLLED BY THE SCADA CONTROL PANEL 'SCP'.
- ⑥ LIGHTING CONTROL SWITCHES. PROVIDE NEW SWITCHING TO CONTROL EACH BUILDING LEVEL (GROUND, VALVE AND PUMP) SEPARATELY. REPLACE ALL COMPONENTS (SNAP SWITCH, FACEPLATE AND WIRING) WITH NEW.
- ⑦ INTRUSION DETECTION SWITCH. SEE DETAIL 2, SHEET E-601.
- ⑧ SMOKE DETECTOR. SEE SPECIFICATIONS FOR DETAILS.
- ⑨ MAINTAIN 36" WORK CLEARANCE IN FRONT OF SWITCHGEAR AS REQUIRED BY NEC.
- ⑩ CRITICAL HIGH LEVEL ALARM STROBE AND SIGNAGE. SEE SPECIFICATIONS AND SHEET E-602 FOR DETAILS.
- ⑪ MAINTAIN (E) EXTERIOR LIGHTING FIXTURES IN PLACE. PROVIDE NEW DEDICATED CIRCUIT FROM NEW PANEL 'L'.
- ⑫ RE-CONNECT 120V POWER SUPPLY TO (E) GENERATOR MOTORIZED DAMPERS.
- ⑬ PROVIDE CONNECTION TO BRIDGE CRANE EQUIPMENT PER THE MANUFACTURER'S REQUIREMENTS.
- Ⓔ# SEE SHEET E-303 FOR ELECTRICAL EQUIPMENT SCHEDULE.
- XX YY SEE SHEETS E-402 FOR INSTRUMENT CONNECTION SCHEDULE.
- XX-X SEE SHEETS E-303 FOR EQUIPMENT SCHEDULE WITH ELECTRICAL CONNECTIONS.

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

WJ ELEC NEW WORK PLAN - GROUND LEVEL

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

**BID SET**

E-207







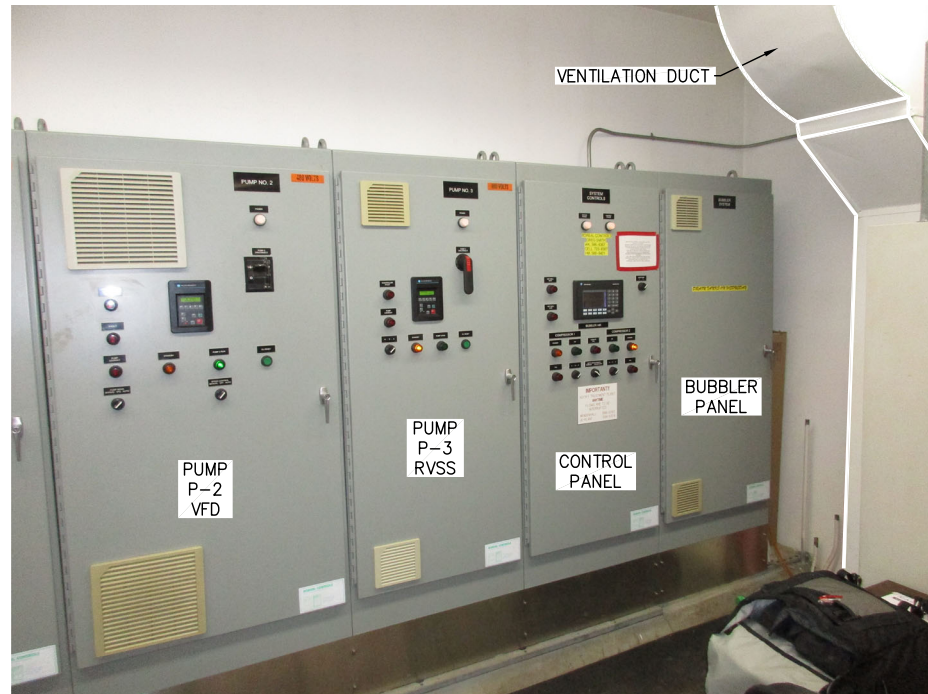
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E-209 SCALE: NTS



3 OD (E) PUMP LEVEL AREA  
E-209 SCALE: NTS



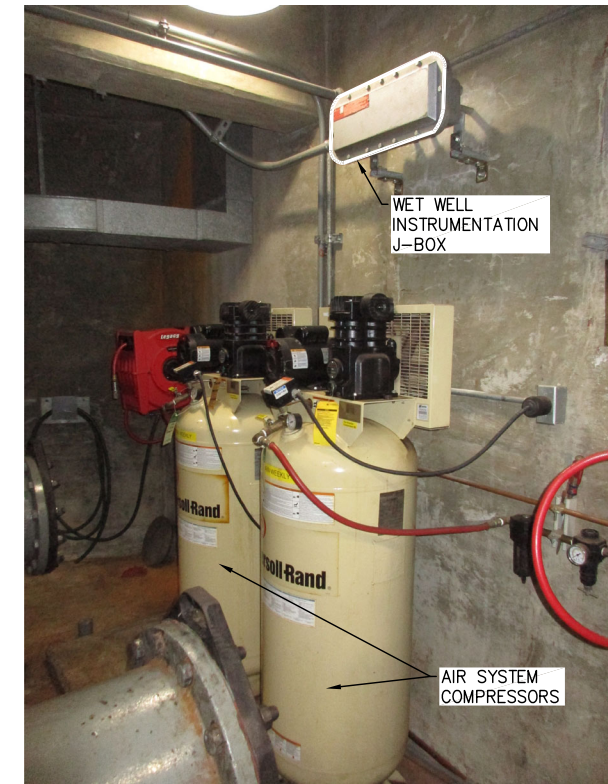
5 OD (E) VALVE LEVEL AREA  
E-209 SCALE: NTS



2 OD (E) MOTOR CONTROL CENTER (MCC)  
E-209 SCALE: NTS

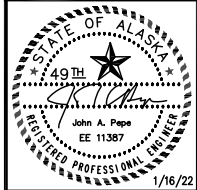


4 OD (E) VALVE AREA  
E-209 SCALE: NTS



6 OD (E) VALVE LEVEL WET WELL PENETRATIONS  
E-209 SCALE: NTS

REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMAN LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

OD PHOTOS OF EXISTING EQUIPMENT

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

E-209

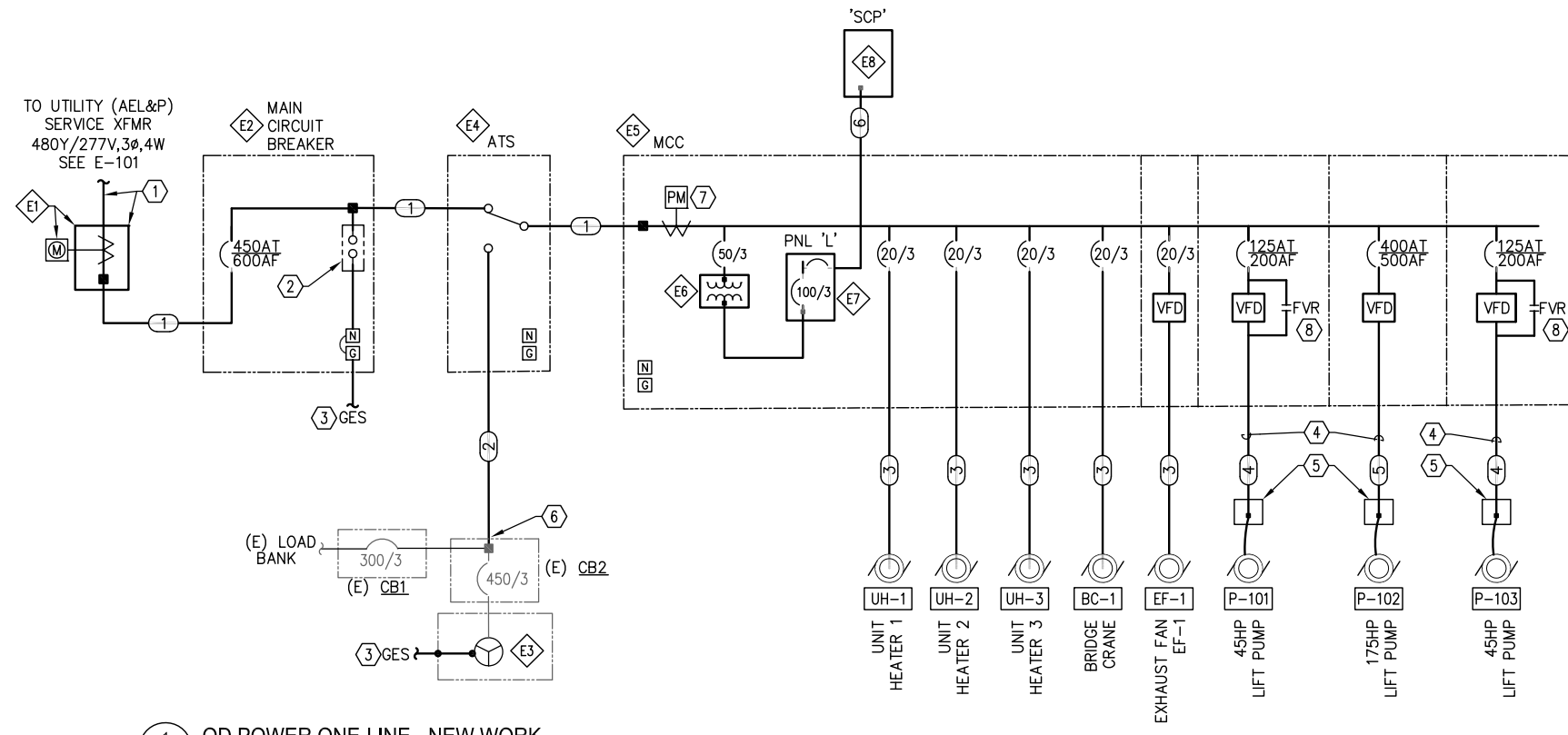
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F:\Projects\00\W\CBU Outer Drive and West Juneau Lift Stations\Dwg\Elec\E-302 OD POWER ONE-LINE - NEW WORK.dwg PLOT DATE 2023-01-13 08:34



1 OD POWER ONE-LINE - NEW WORK  
E-302 SCALE: NTS

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6
1A MAIN LUGS	2A PANEL L	3A VFD	4A	5A FVR	6A FCB
1B VFD			4B		6B FCB
1C	2B XFMR	3A VFD	4C VFD	5B FCB	6C FCB
				5C	
1D	2C	3A VFD	4C VFD	5D FVR	6E VFD
				5E	

OUTER DRIVE 'MCC' ELEVATION  
SCALE: N/A

SPACE	DESCRIPTION
1A	MAIN LUGS
1B	EXHAUST FAN EF-1 VFD
1C	MOTOR PROTECTION
1D	ETHERNET EQUIPMENT
2A	PANEL 'L'
2B	XFMR
2C	SPACE
3A	PUMP P-102 VFD
4A	POWER MONITOR
4B	SPACE
4C	PUMP P-101 VFD
5A	PUMP P-101 FVR WITH BYPASS
5B	BRIDGE HOIST BC-1
5C	SPACE
5D	PUMP P-103 FVR WITH BYPASS
6A	UNIT HEATER UH-1 FCB
6B	UNIT HEATER UH-2 FCB
6C	UNIT HEATER UH-3 FCB
6D	SPACE
6E	PUMP P-103 VFD

TAG	DESCRIPTION
①	2 EACH: 3"C, 4#350 KCML (3H,N), 1#2/0 EGC
②	2 EACH: 2-1/2"C, 4#300 KCML (3H,N), 1#1/0 EGC
③	3/4"C, 3#12 (3H), 1#12 EGC
④	2"C, 3#4 (3H), 1#6 EGC, VFD RATED
⑤	3"C, 3#350 KCML (3H), 1#2 EGC, VFD RATED
⑥	3/4"C, 2#12 (H,N), 1#12 EGC

ITEM NO.	DESCRIPTION
E1	METER BASE AND CT CABINET, NEMA 4X SS. EQUIPMENT SHALL BE IN ACCORDANCE WITH AEL&P STANDARDS.
E2	MAIN CIRCUIT BREAKER (MCB), 600A, 480V, 3Ø, 4-WIRE, NEMA 4X SS. ELECTRONIC TRIP WITH ADJUSTABLE LSIG AND ARC-HAZARD REDUCTION MAINTENANCE MODE.
E3	(E) STANDBY GENERATOR, 300KW/375KVA, 480V, 3Ø.
E4	AUTOMATIC TRANSFER SWITCH (ATS), 600A, 480V, 3Ø, 4-WIRE, 3-POLE, NEMA 12
E5	MOTOR CONTROL CENTER, 'MCC', 600A, 480V, 3Ø, 4-WIRE, NEMA 12.
E6	MCC MOUNTED DRY-TYPE TRANSFORMER 'T-1': 30KVA, 480:208Y/120V, 3Ø, 4-WIRE.
E7	MCC MOUNTED PANEL 'L': 225A, 208Y/120V, 3Ø, 4-WIRE, 42-SPACE.
E8	SCADA CONTROL PANEL 'SCP', 120V, NEMA 4X SS. SEE E-5XX SERIES SHEETS FOR DETAILS.

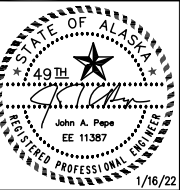
TAG ID	LOAD				CIRCUIT SIZE	NOTES
	KW	HP	V	PH		
AC-1	3.2		208	1	3/4"C, 2#10(2H), 1#12 EGC	1
AC-2	3.2		208	1	3/4"C, 2#10(2H), 1#12 EGC	1
BC-1		2.5	480	3	3/4"C, 3#12(3H), 1#12 EGC	
EF-1		1	480	3	SEE POWER ONE-LINE	2
P-101	45		480	3	SEE POWER ONE-LINE	2
P-102	175		480	3	SEE POWER ONE-LINE	2
P-103	45		480	3	SEE POWER ONE-LINE	2
SP-1A	1/2		120	1	3/4"C, 2#12(H,N), 1#12 EGC	
SP-1B	1/2		120	1	3/4"C, 2#12(H,N), 1#12 EGC	
UH-1	10		480	3	SEE POWER ONE-LINE	
UH-2	7.5		480	3	SEE POWER ONE-LINE	
UH-3	5		480	3	SEE POWER ONE-LINE	
WH-1	4.1		208	1	3/4"C, 2#10(2H), 1#12 EGC	

NOTE:  
1. (E) EQUIPMENT TO BE RECONNECTED. 2. PROVIDE VFD RATED CABLE

SHEET NOTES

- PROVIDE NEW SERVICE ENTRANCE CONDUCTORS AND EQUIPMENT. COORDINATE ALL WORK WITH SERVICE UTILITY (AEL&P) AS REQUIRED. INSTALLATION AND EQUIPMENT SHALL BE IN ACCORDANCE WITH AEL&P STANDARDS.
- PROVIDE MAIN BUS WITH 100KA/PHASE AC SURGE PROTECTION MOUNTED IN THE MCC CABINET. SEE SPECIFICATIONS FOR DETAILS.
- PROVIDE GROUNDING ELECTRODE SYSTEM (GES) IN ACCORDANCE WITH NEC 250. SEE DETAIL 1 ON SHEET E-304.
- PUMPS P-101, 102, 103: PROVIDE VFD RATED CABLE. ROUTE CABLE THROUGH THE TERMINAL JUNCTION BOX (TJB) TO THE MCC CUBICLE.
- PUMPS P-101, 102, 103: PROVIDE TERMINAL JUNCTION BOX (TJB) FOR MOTOR CABLE CONNECTIONS, NEMA 4X SS. PROVIDE PROPERLY SIZED JBOX, UL LISTED AS TERMINAL BOX, WITH FACTORY INSTALLED, RATED LUGS. MOUNT BOXES ON UNISTRUT SUPPORT STRUCTURE.
- PROVIDE RECONNECTION TO (E) STANDBY GENERATOR SYSTEM.
- POWER MONITOR. SEE SPECIFICATIONS AND SHEET E-404 FOR DETAILS.
- PROVIDE FULL VOLTAGE REVERSING (FVR) STARTERS AS BYPASS TO VFDs. UNITS WILL HAVE SEPARATE OVERCURRENT PROTECTION.

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FIREWED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION  
JUNEAU, AK

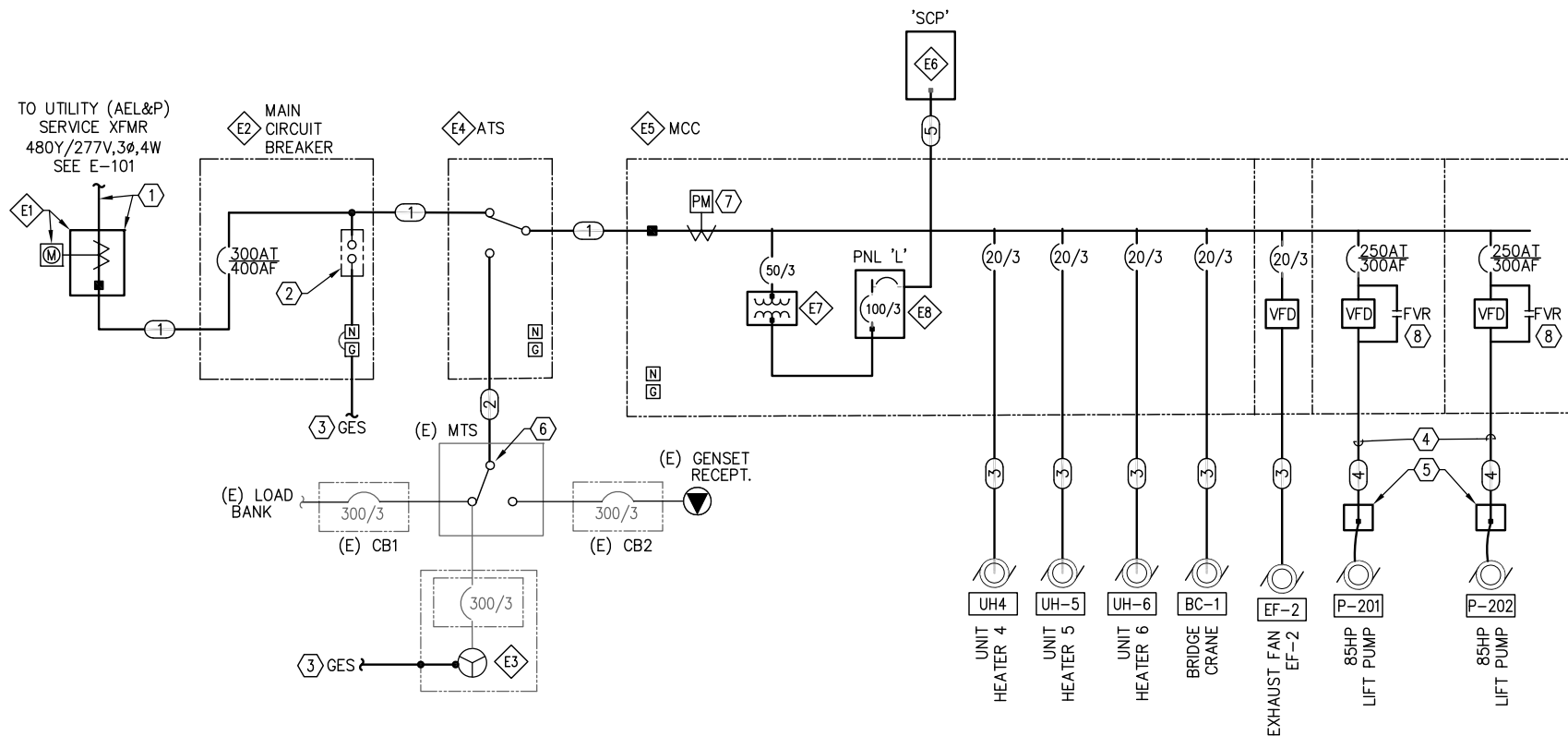
OD POWER ONE-LINE - NEW WORK

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

BID SET

F:\Projects\DOM\CBU Outer Drive and West Juneau Lift Stations\Drawings\Elec\E-303 WJ POWER ONE-LINE - NEW WORK.dwg PLOT DATE 2023-01-16 11:29 SAVED DATE 2023-01-13 08:34



1 WJ POWER ONE-LINE - NEW WORK  
E-303 SCALE: NTS

TAG	DESCRIPTION
①	4"C, 4#600 KCMIL (3H,N), 1#2 EGC
②	3"C, 4#350 KCMIL (3H,N), 1#4 EGC
③	3/4"C, 3#12 (3H). 1#12 EGC
④	2-1/2"C, 3#2/0 (3H). 1#4 EGC, VFD RATED
⑤	3/4"C, 2#12 (H,N). 1#12 EGC

SHEET NOTES

- PROVIDE NEW SERVICE ENTRANCE CONDUCTORS AND EQUIPMENT. COORDINATE ALL WORK WITH SERVICE UTILITY (AEL&P) AS REQUIRED. INSTALLATION AND EQUIPMENT SHALL BE IN ACCORDANCE WITH AEL&P STANDARDS.
- PROVIDE MAIN BUS WITH 100KA/PHASE AC SURGE PROTECTION MOUNTED IN THE MCC CABINET. SEE SPECIFICATIONS FOR DETAILS.
- PROVIDE GROUNDING ELECTRODE SYSTEM (GES) IN ACCORDANCE WITH NEC 250. SEE DETAIL 1 ON SHEET E-305.
- PUMPS P-201, 202: PROVIDE VFD RATED CABLE. ROUTE CABLE THROUGH THE TERMINAL JUNCTION BOX (TJB) TO THE MCC CUBICLE.
- PUMPS P-201, 202: PROVIDE TERMINAL JUNCTION BOX (TJB) FOR MOTOR CABLE CONNECTIONS, NEMA 4X SS. PROVIDE PROPERLY SIZED J-BOX, UL LISTED AS TERMINAL BOX, WITH FACTORY INSTALLED, RATED LUGS. MOUNT BOXES ON UNISTRUT SUPPORT STRUCTURE.
- PROVIDE RECONNECTION TO (E) STANDBY GENERATOR SYSTEM.
- POWER MONITOR. SEE SPECIFICATIONS AND SHEET E-404 FOR DETAILS.
- PROVIDE FULL VOLTAGE REVERSING STARTERS (FVRS) AS BYPASS TO VFDs. UNITS WILL HAVE SEPARATE OVERCURRENT PROTECTION.

REV	DATE	DESCRIPTION

STATE OF ALASKA  
49TH  
John A. Page  
E.E. 11387  
REGISTERED PROFESSIONAL ENGINEER  
1/16/22

EDC, INC.  
213 W. FREEMAN LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

WJ POWER ONE-LINE - NEW WORK

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

E-303

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6
1A MAIN	2A PANEL 'L'	3A VFD	4A FVR	5A VFD	6A
1B					6B
1C					6C
1D	2B XFMR		4B		6D
1E			4C FVR		6E VFD
1F	2C				6F
1G					

WEST JUNEAU 'MCC' ELEVATION  
SCALE: N/A

SPACE	DESCRIPTION
1A	MAIN LUGS
1B	POWER MONITOR
1C	SPACE
1D	INSR
1E	ENPS
1F	ENET SWITCH
1G	SPACE
2A	PANEL 'L'
2B	XFMR
2C	SPACE
3A	PUMP P-201 VFD
4A	PUMP P-201 FVR WITH BYPASS
4B	SPACE
4C	PUMP P-202 FVR WITH BYPASS
5A	PUMP P-202 VFD
6A	UNIT HEATER UH-4 FCB
6B	UNIT HEATER UH-5 FCB
6C	UNIT HEATER UH-6 FCB
6D	BRIDGE CRANE BC-1 FCB
6E	EXHAUST FAN EF-2 VFD AND FCB
6F	SPACE

ITEM NO.	DESCRIPTION
E1	METER BASE AND CT CABINET, NEMA 4X SS.
E2	MAIN CIRCUIT BREAKER (MCB). 300AT/400AF, 480V, 3φ, ELECTRONIC TRIP WITH ADJUSTABLE LSIG AND ARC-HAZARD REDUCTION MAINTENANCE MODE, NEMA 4X SS.
E3	(E) STANDBY GENERATOR, 200KW/250KVA, 480V, 3φ, 60HZ. CUMMINS MODEL #DGFC
E4	AUTOMATIC TRANSFER SWITCH (ATS), 400A, 480V, 3φ, 4-WIRE, 3-POLE, NEMA 12
E5	MOTOR CONTROL CENTER, 'MCC', 400A, 480V, 3φ, 4-WIRE, NEMA 12.
E6	SCADA CONTROL PANEL 'SCP', 120V, NEMA 4X SS. SEE E-500 SERIES SHEETS FOR DETAILS.
E7	MCC MTD DRY-TYPE TRANSFORMER: 30KVA, 480:208Y/120V, 3φ, 4-WIRE.
E8	MCC MOUNTED PANEL 'L' 225A, 208Y/120V, 3φ, 4-WIRE, 42-SPACE

TAG ID	LOAD				CIRCUIT SIZE	NOTES
	KW	HP	V	PH		
AC-1	5		208	1	3/4"C, 2#10(2H), 1#12 EGC	1
AC-2	5		208	1	3/4"C, 2#10(2H), 1#12 EGC	1
BC-1		5	480	3	SEE POWER ONE-LINE	
EF-2		1	480	3	SEE POWER ONE-LINE	
EF-3	0.6		120	1	3/4"C, 2#12(H,N), 1#12 EGC	2
P-201		85	480	3	SEE POWER ONE-LINE	2
P-202		85	480	3	SEE POWER ONE-LINE	2
SP-2A	1/2		120	1	3/4"C, 2#12(H,N), 1#12 EGC	
SP-2B	1/2		120	1	3/4"C, 2#12(H,N), 1#12 EGC	
UH-4	10		480	3	SEE POWER ONE-LINE	
UH-5	10		480	3	SEE POWER ONE-LINE	
UH-6	3		480	3	SEE POWER ONE-LINE	
WH-1	4.1		208	1	3/4"C, 2#10(2H), 1#12 EGC	

NOTE:  
1. (E) EQUIPMENT TO BE RECONNECTED. 2. PROVIDE VFD RATED CABLE.

BID SET









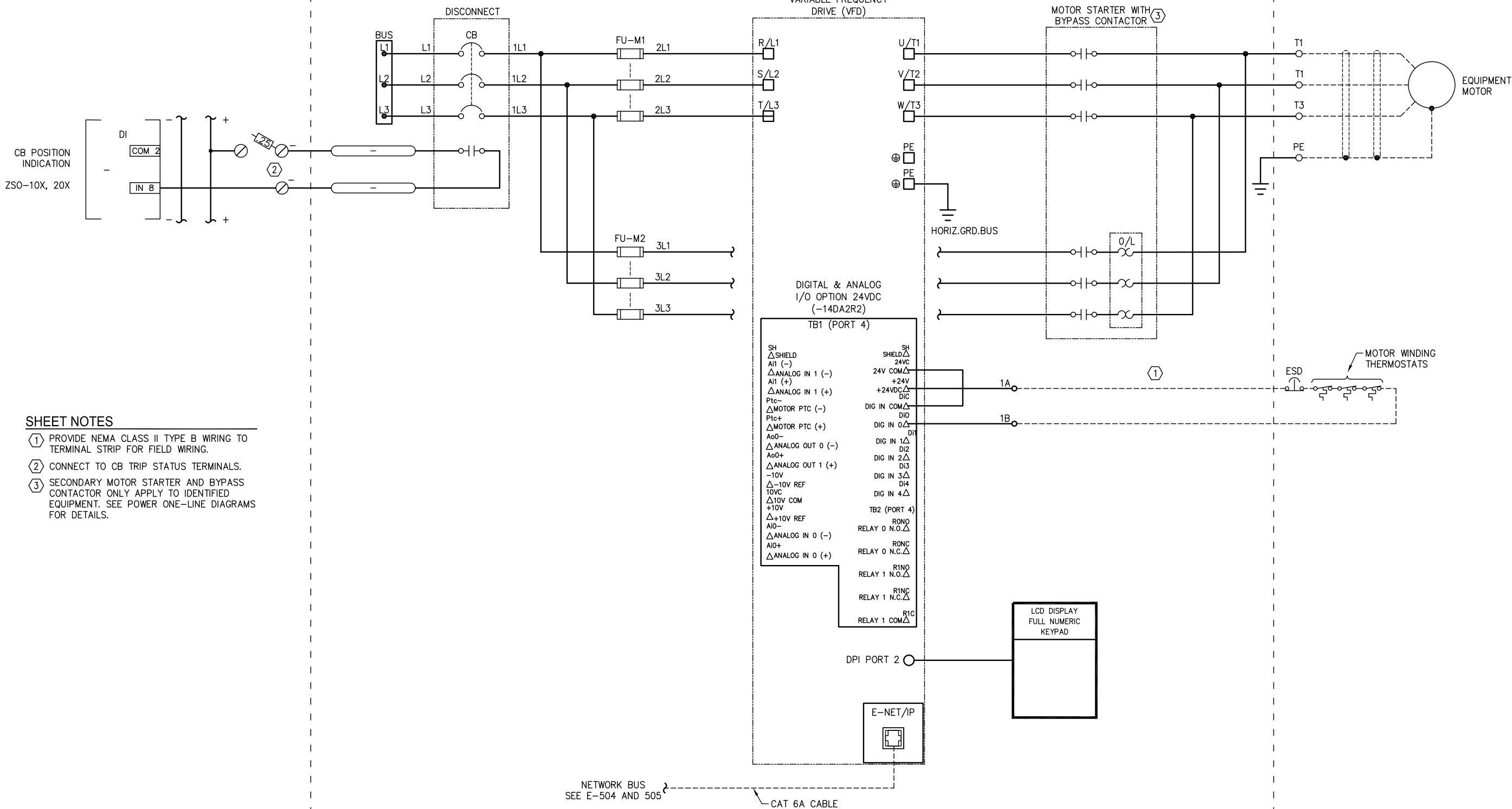


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SCADA CONTROL PANEL 'SCP'

MCC

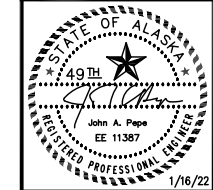
FIELD WIRING



SHEET NOTES

- ① PROVIDE NEMA CLASS II TYPE B WIRING TO TERMINAL STRIP FOR FIELD WIRING.
- ② CONNECT TO CB TRIP STATUS TERMINALS.
- ③ SECONDARY MOTOR STARTER AND BYPASS CONTACTOR ONLY APPLY TO IDENTIFIED EQUIPMENT. SEE POWER ONE-LINE DIAGRAMS FOR DETAILS.

REV	DATE	DESCRIPTION	BY



EDC, INC.  
 213 W. FREEMAN LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK

ELECTRICAL SCHEMATICS

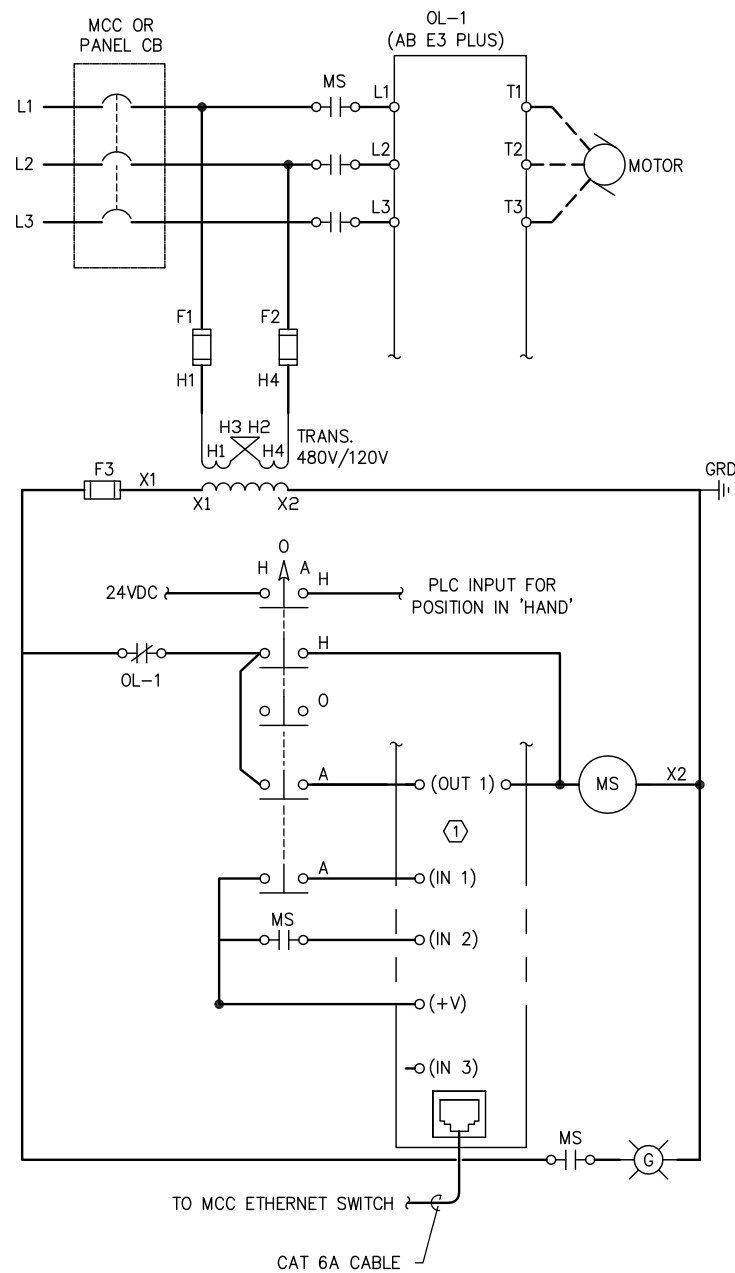
PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

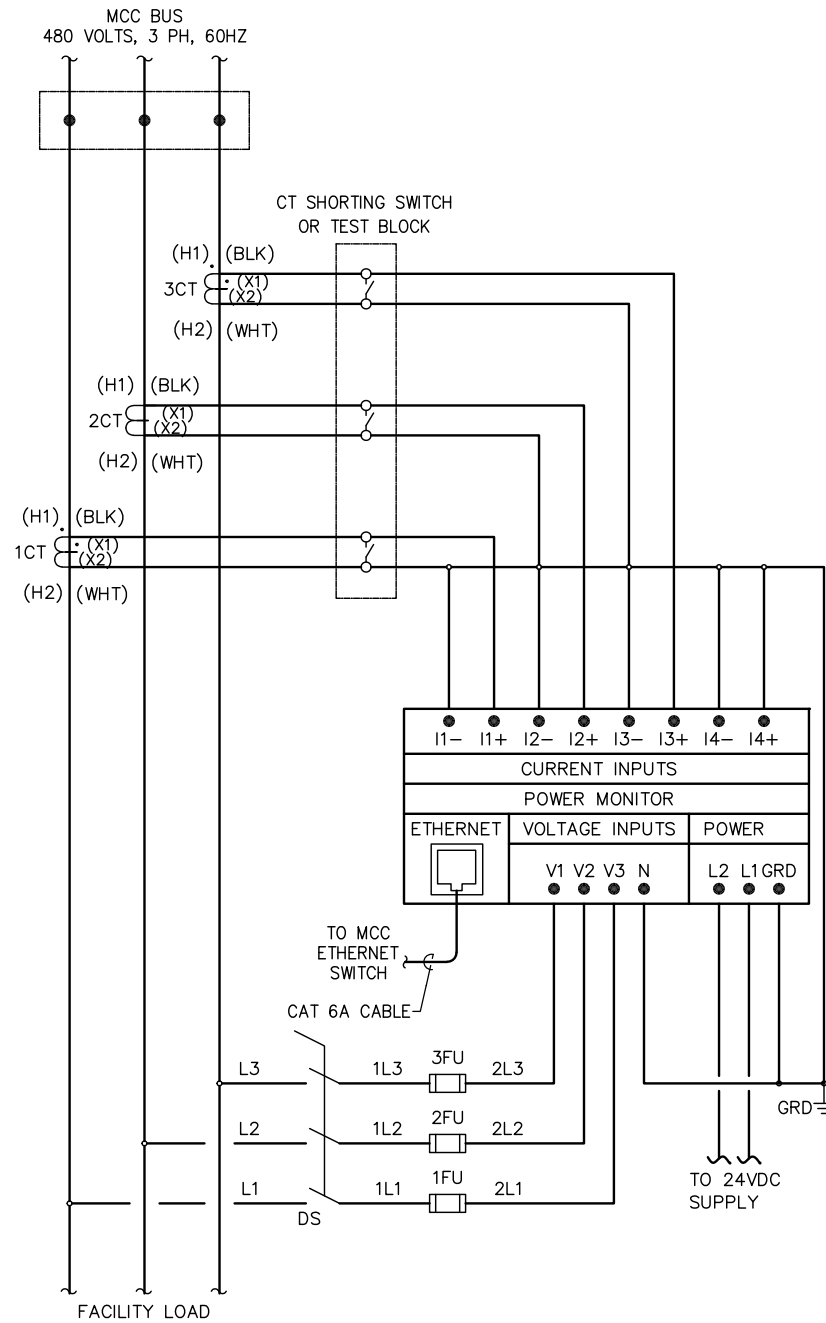
E-403

**BID SET**

F:\Projects\00W\CBU Outer Drive and West Juneau Lift Stations\Draws\Elec\E-404 TYPICAL MOTOR STARTER ELEMENTARY DIAGRAMS.dwg PLOT DATE 2023-1-16 11:30 SAVED DATE 2022-12-20 17:52



1 TYPICAL MOTOR STARTER ELEMENTARY DIAGRAM  
E-404 SCALE: NTS

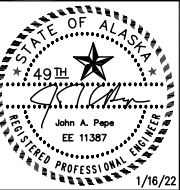


2 MCC POWER MIONITOR DIAGRAM  
E-404 SCALE: NTS

SHEET NOTES

- ① ALLEN BRADLEY E300 ELECTRONIC OVERLOADS.

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FREEMAN LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

TYPICAL MOTOR STARTER  
ELEMENTARY DIAGRAMS

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

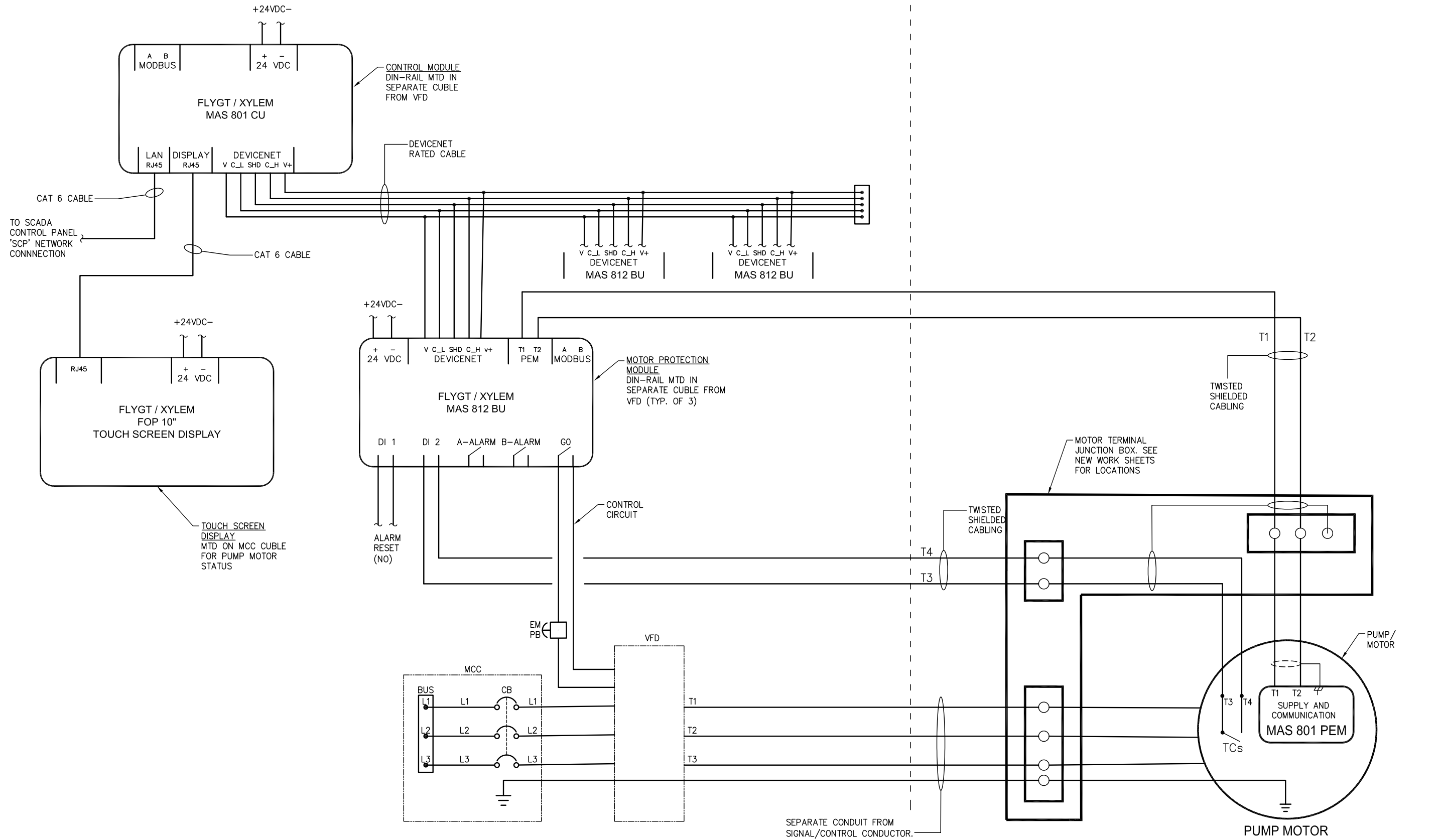
E-404

**BID SET**

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MCC

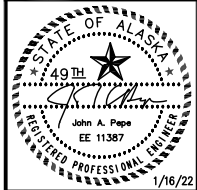
FIELD WIRING



1 OUTER DRIVE PUMP MOTOR PROTECTION SCHEMATIC (PUMP P-101, P-102, P-103)  
E-405 SCALE: NTS

**BID SET**

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705

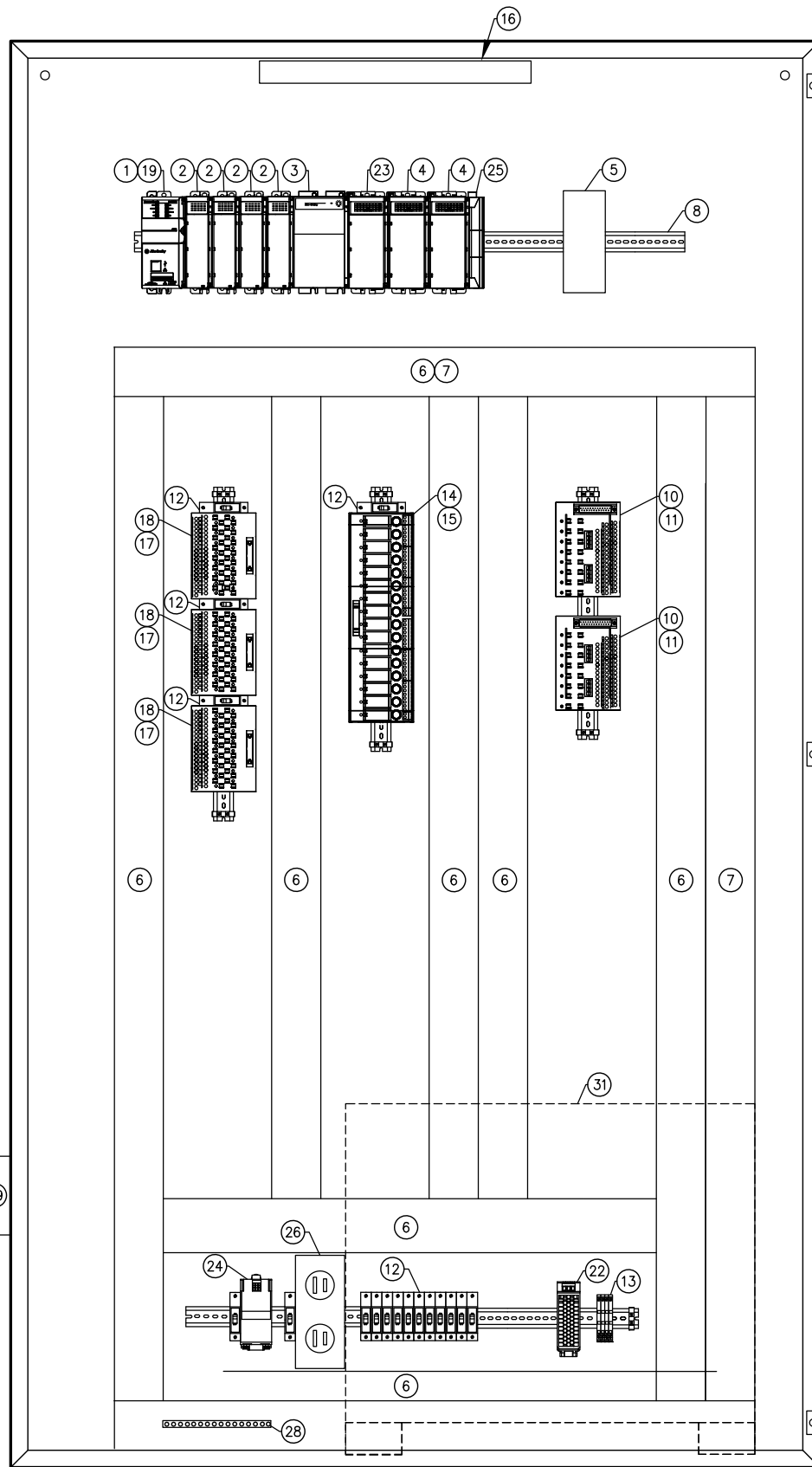
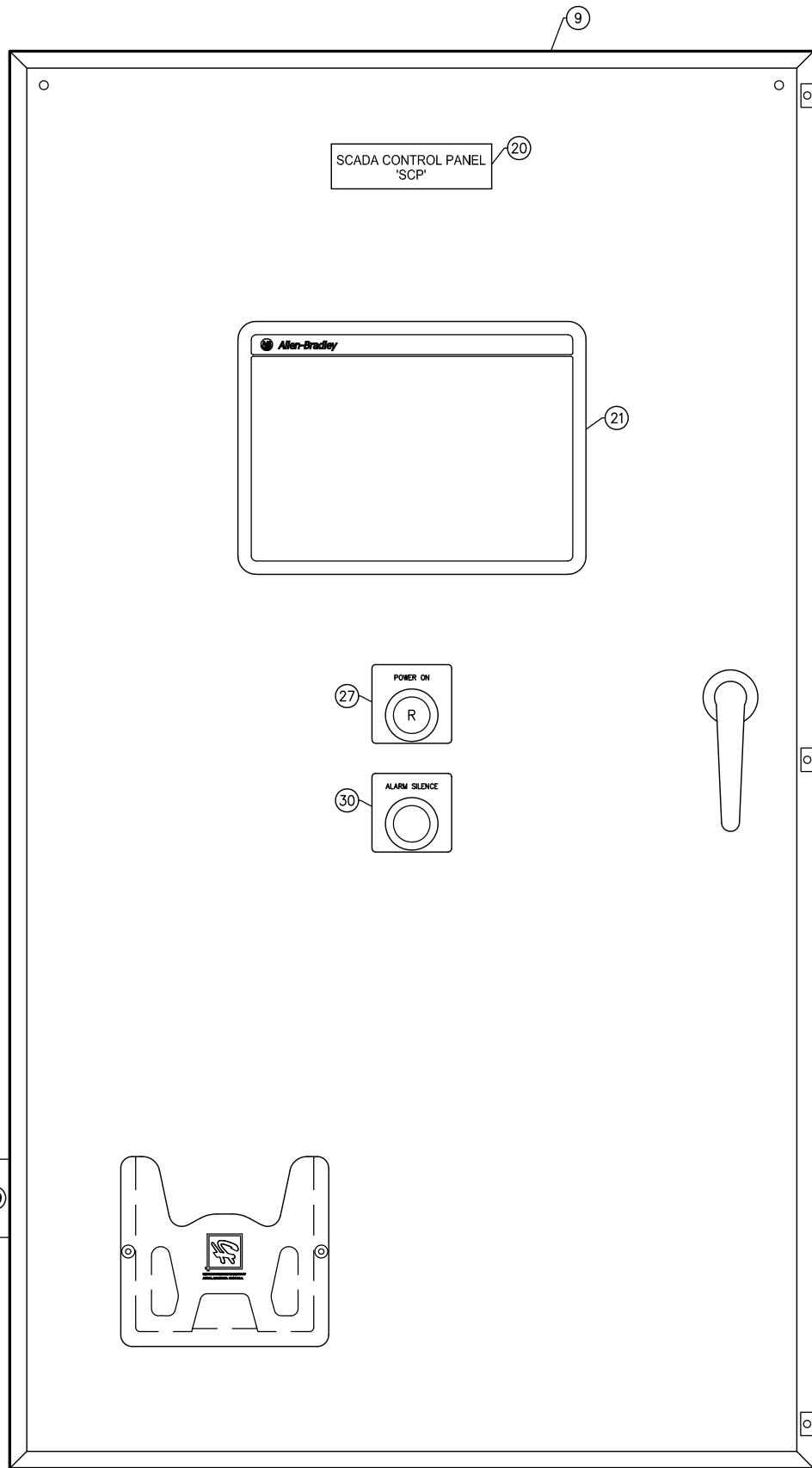
OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

ELECTRICAL SCHEMATICS

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET  
E-405

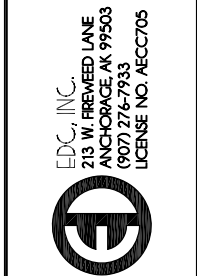
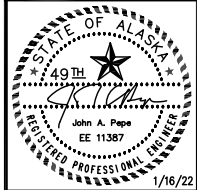
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BILL OF MATERIALS		
ITEM	QTY	DESCRIPTION OR EQUAL
①	AS REQUIRED	ALLEN BRADLEY 1769-L33ER-2MB COMPACT LOGIC PROCESSOR (CPU).
②	AS REQUIRED	1769-IA16 ALLEN BRADLEY - COMPACT LOGIX 16 POINT, 120VAC DISCRETE INPUT MODULE.
③	AS REQUIRED	ALLEN BRADLEY 1769-PA4, 120VAC:24VDC POWER SUPPLY.
④	AS REQUIRED	ALLEN BRADLEY 1769-IF8 COMPACT LOGIX 8 POINT ANALOG INPUT MODULE.
⑤	1	LTE CELLULAR GATEWAY ROUTER - SIERRA WIRELESS RV50X
⑥	AS REQUIRED	PANDUIT - WIRE DUCT, ANALOG WIRING.
⑦	AS REQUIRED	PANDUIT - WIRE DUCT, DISCRETE WIRING.
⑧	AS REQUIRED	ENTRELEC - DIN RAIL.
⑨	1	HOFFMAN - NEMA TYPE 4X WALL MOUNTED WITH BACK PANEL. SIZE AS REQUIRED.
⑩	AS REQUIRED	ALLEN BRADLEY - 1492AIFM8-F-5 ANALOG INPUT WIRING MODULE.
⑪	AS REQUIRED	ALLEN BRADLEY - 1492-ACAB-ED69 CABLE ASSEMBLY.
⑫	AS REQUIRED	ENTRELEC - GMUXXT - DIN RAIL MOUNTED CIRCUIT BREAKER.
⑬	AS REQUIRED	ENTRELEC - M 4/8.SF FUSED TERMINAL BLOCK
⑭	AS REQUIRED	DISCRETE OUTPUT WIRING MODULE W/ (16) 120VAC FUSED RELAYS, ALLEN BRADLEY - 1492-XIM20120-16RF
⑮	AS REQUIRED	ALLEN BRADLEY - 1492-CAB-H69 CABLE ASSEMBLY.
⑯	AS REQUIRED	HOFFMAN - PANELLITE LEDA1S35 - 120VAC LED LIGHT.
⑰	AS REQUIRED	ALLEN BRADLEY 1492-RIFM20F-F120A02 - DISCRETE INPUT WIRING MODULE WITH FUSIBLE INPUTS AND REMOVABLE FIELD TERMINALS.
⑱	AS REQUIRED	ALLEN BRADLEY 1492-CAB-A69 CABLE ASSEMBLY.
⑲	AS REQUIRED	MAINTAIN MANUFACTURER'S CLEARANCES AROUND THE PLC.
⑳	AS REQUIRED	PROVIDE PHENOLIC TAG. BLACK LETTERS ON WHITE BACKGROUND. TEXT SHALL BE 0.75".
㉑	AS REQUIRED	INDUSTRIAL PC, HUMAN-MACHINE INTERFACE (HMI) PANEL. CONNECT CAT-6A PATCH CABLE FROM GATEWAY. SEE SHEETS E-504 AND E-505 FOR DETAILS.
㉒	AS REQUIRED	QUINT4 - PS/1AC/24DC/5 - 2866750 24VDC POWER SUPPLY (5A).
㉓	AS REQUIRED	1769-OA16 ALLEN BRADLEY. COMPACTLOGIX 16-POINT DISCRETE OUTPUT MODULE.
㉔	AS REQUIRED	120V, 20A, SURGE SUPPRESSOR AND FILTER. ALLEN BRADLEY-4983-DC120-20.
㉕	AS REQUIRED	1769-ECL RIGHT END CAP.
⑳	1	20A, 120V, DUPLEX RECEPTACLE. DIN RAIL MOUNT.
㉗	1	ALLEN BRADLEY PANEL MOUNT INDICATOR LIGHT 800L, 30MM, 24 AC/DC.
㉘	AS REQUIRED	GROUND BAR.
㉙	1	ALARM HORN, 120V, FEDERAL SIGNAL MODEL 350-120-30
㉚	1	NORMALLY OPEN PUSHBUTTON, 30MM, NEMA 4/13, BLACK, ALLEN BRADLEY CAT# 800TA2A.
㉛	1	120V, 2000VA, UPS, LIEBERT MODEL# GXT4-2000RT120.

1 OD AND WJ PANEL LAYOUT AND EQUIPMENT LIST  
E-501 SCALE: NTS

REV	DATE	DESCRIPTION



OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
OD AND WJ PANEL LAYOUT AND EQUIPMENT LIST

PROJECT 1528.50233.01  
DATE 01/16/2022

© DOWL 2023  
SHEET

**BID SET**

E-501

OUTER DRIVE PUMP STATION FUNCTIONAL NARRATIVES

LIFT PUMP OPERATION

PUMPS P-101, P-102 AND P-103 ARE CONTROLLED BY THE PLC IN THE SCADA CONTROL PANEL 'SCP'. EACH PUMP IS EQUIPPED WITH HAND-OFF-AUTO CONTROLS AT THE VFD ENCLOSURE. EACH PUMP HAS THE FOLLOWING FAILURE/FAULT ALARMS WHICH WILL SHUT DOWN THE PUMP: OVERCURRENT, OVER/UNDER VOLTAGE, PHASE LOSS, WINDING OVER-TEMPERATURE AND HIGH BEARING TEMPERATURE (P-102). THE PUMPS WILL BE CONTROLLED AS FOLLOWS:

- 1) IN HAND MODE: THE PUMP RUNS CONTINUOUSLY AT A PRE-SET RPM (FULL SPEED AT 60 HZ, MINIMUM SPEED IS 42 HZ) UNLESS A PUMP FAILURE/FAULT ALARM CONDITION OCCURS, IN WHICH CASE THE VFD WILL INITIATE THE SHUTDOWN SEQUENCE:
  - a. THE VFD WILL REDUCE PUMP SPEED FROM THE MANUAL SETPOINT DOWN TO 45 HZ OVER A FIVE (5) SECOND PERIOD (OPERATOR ADJUSTABLE 2-10 SECONDS), AND UPON REACHING 45 HZ THE PUMP WILL BE SHUT DOWN.
- 2) IN OFF MODE: THE PUMP WILL NOT RUN
  - a. WHEN THE PUMP IS RUNNING AND MANUALLY SWITCHED TO THE 'OFF' MODE, THE VFD WILL ENTER A PROGRAMMED VFD SHUTDOWN SEQUENCE DESCRIBED ABOVE.
- 3) IN AUTO MODE:
  - a. THE PUMPS WILL START IN A STAGED, LEAD-LAG-STANDBY, PUMPING SEQUENCE BASED ON LIQUID LEVEL IN THE WET WELL, AS SENSED BY THE PRIMARY LEVEL TRANSMITTER LT-401 AND THE BACKUP LEVEL TRANSMITTER LT-402. INITIALLY, P-101 = LEAD, P-102 = LAG/STANDBY (FOR DRY WEATHER CONDITIONS) AND PUMP P-103 = STANDBY (FOR WET WEATHER CONDITIONS).
  - b. FOR DRY WEATHER CONDITIONS, PUMPS P-101 AND P-103 WILL ALTERNATE BETWEEN 'LEAD' AND 'LAG' AFTER EACH PUMP CYCLE TO EQUALIZE WEAR ON THE PUMP EQUIPMENT. PUMP P-102 WILL REMAIN ON 'STANDBY' UNTIL IT IS CALLED ON EITHER MANUALLY OR BY THE SCADA CONTROL PANEL 'SCP' IF THE CAPACITY OF PUMPS P-101 AND P-103 ARE EXCEEDED. IT WILL OPERATE INDEPENDENTLY OF P-101 AND P-103. THE PUMP LEAD/LAG SETTINGS SHALL BE OPERATOR ADJUSTABLE THROUGH EACH OF THE HUMAN-MACHINE INTERFACES (HMI'S) LOCATED AT THE STATION SCP.
  - c. THE SCADA CONTROL PANEL 'SCP' WILL CONTROL THE LIFT PUMPS BASED ON THE FOLLOWING PROGRAMMED SEQUENCE:
    1. AS THE LIQUID LEVEL IN THE WET WELL RISES ABOVE THE 'LEAD PUMP START' SETPOINT, THE LEAD PUMP WILL START AND RAMP FROM 0 TO 60 HZ IN FIVE (5) SECONDS, IT WILL THEN RUN AT FULL SPEED (60HZ) FOR A TEN (10) SECOND FLUSHING PERIOD.
    2. FOLLOWING THIS FLUSHING PERIOD, THE PUMP WILL RAMP DOWN TO 45 HZ OVER A FIVE (5) SECOND PERIOD AND MAINTAIN THIS SPEED UNTIL THE 'LEAD PUMP HIGH' (WET WELL RISING) OR 'LEAD/LAG PUMP OFF' (WET WELL FALLING) SET POINT LEVEL IS REACHED.
    3. IF THE LIQUID IN THE WET WELL REACHES THE 'LEAD PUMP HIGH' SET POINT AND CONTINUES RISING TO THE 'LAG PUMP START' SET POINT, THE LEAD PUMP WILL RAMP TO FULL SPEED AND THE LAG PUMP WILL START AND RAMP TO FULL SPEED OVER A FIVE (5) SECOND PERIOD (OPERATOR ADJUSTABLE 2-10 SECONDS) UNTIL EITHER THE 'LEAD PUMP START' (WET WELL FALLING) OR 'HIGH HIGH' (WET WELL RISING) SET POINT IS REACHED.
    4. IF THE 'LEAD PUMP START' SET POINT IS REACHED (WET WELL FALLING), THE LAG PUMP WILL BEGIN IT'S SHUTDOWN SEQUENCE. WHEN THE 'LEAD/LAG OFF' SET POINT IS REACHED, BOTH PUMPS WILL BE OFF WHEN THIS LEVEL IS REACHED.
    5. IF THE 'HIGH HIGH' SETPOINT IS REACHED, BOTH THE LEAD AND LAG (DRY WEATHER PUMPS) WILL START THE SHUTDOWN SEQUENCE AND P-102 WILL RAMP FROM 0 TO 60HZ IN FIVE (5) SECONDS FOR A TEN (10) SECOND FLUSHING PERIOD. P-102 WILL THEN RAMP DOWN TO 45 HZ OVER A FIVE (5) SECOND PERIOD (OPERATOR ADJUSTABLE 2-10 SECONDS).
    6. WHEN THE LIQUID LEVEL IN THE WET WELL REACHES THE 'LEAD ON' SET POINT THE VFD WILL INITIATE THE SHUTDOWN SEQUENCE OF RAMPING DOWN FROM 45 HZ TO ZERO IN A 5 SECOND (OR AS REQUIRED) PERIOD TO PREVENT UNWANTED HYDRAULIC SURGE. PUMP P-102 WILL BE OFF WHEN THE 'LEAD/LAG OFF' LEVEL IS REACHED.
    7. REFERENCE GENERAL SHEET G-003 FOR FURTHER PUMP SEQUENCE DETAILS.
  - d. IF THE LIQUID IN THE WET WELL REACHES THE 'LOW ALARM' SET POINT, AN ALARM WILL INDICATE CRITICAL LOW WATER LEVEL AND ANY PUMP REMAINING IN OPERATION WILL IMMEDIATELY BEGIN A SHUTDOWN SEQUENCE.

STATION OPERATION ALARMS

THE STATION ALARMS SENT TO OPERATORS VIA SCADA SHALL INCLUDE BUT ARE NOT LIMITED TO:

- WET WELL: HIGH HIGH LEVEL (LAHH 421)
- WET WELL: CRITICAL LOW LEVEL
- LIFT PUMP P-101 MOTOR FAULT (OVER-TEMP, SEAL-FAIL)
- LIFT PUMP P-101 VFD FAULT
- LIFT PUMP P-102 FAULT (OVER-TEMP, SEAL-FAIL, BEARING TEMP)
- LIFT PUMP P-102 VFD FAULT
- LIFT PUMP P-103 FAULT (OVER-TEMP, SEAL-FAIL)
- LIFT PUMP P-103 VFD FAULT
- DRY WELL: PUMP LEVEL FLOOD CRITICAL HIGH LEVEL (LAHH-101)
- DRY WELL: SMOKE DETECTED (SD-101, 102, 103, 104)
- DRY WELL: GENERATOR FAULT, FAILURE TO START (YA-600)
- DRY WELL: LEL EXPLOSIVE GAS DETECTION (ABOVE SAFE LEVEL)
- BUILDING: LOW TEMPERATURE & INTRUSION
- BUILDING: EXHAUST FAN FAILURE

BUILDING EXHAUST FAN OPERATION

THE STATION VENTILATION FAN (EF-1) SHALL BE CONTROLLED BY THE PLC VIA A VARIABLE FREQUENCY DRIVE (VFD) MOUNTED IN THE MCC. CONTROL INPUTS SHALL INCLUDE A DUCT-MOUNTED FLOW SWITCH (FS-120) ON THE GROUND LEVEL AND AN OUTSIDE AMBIENT TEMPERATURE SENSOR (TT-121). THE VENTILATION SYSTEM SHALL HAVE A SCREEN IN THE HMI THAT INCLUDES STATUS AND MODE CHANGES VIA THE TOUCH SCREEN FOR CONTROL OF THE EXHAUST FAN. THE FAN SHALL BE CONTROLLED AS FOLLOWS:

- 1) IN 'MANUAL' MODE:
  - a. THE FAN WILL RAMP UP TO TO FULL SPEED (AT 60 HZ) AND RUN CONTINUOUSLY UNTIL THE SWITCH IS MOVED TO 'OFF' OR 'AUTO' POSITION.
  - b. IF A FAILURE/FAULT ALARM CONDITION OCCURS, THE VFD WILL SHUTDOWN AND PRODUCE AN ALARM TO NOTIFY STATION PERSONNEL VIA SCADA.
- 2) IN 'OFF' MODE: THE FAN SHALL NOT RUN:
  - a. WHEN THE FAN IS RUNNING AND MANUALLY SWITCHED TO THE 'OFF' MODE, THE VFD WILL SHUTDOWN.
- 3) IN 'AUTO' MODE:
 

HIGH VENTILATION RATE: WHEN IN OCCUPIED MODE (SEE OCCUPANCY STATUS BELOW), THE FAN WILL RAMP TO FULL SPEED (AT 60 HZ) - A VENTILATION RATE OF 6 AIR CHANGES PER HOUR.

  - a. AFTER 30 SECONDS, IF THE FAN HIGH SPEED OPERATION RUNNING SIGNAL SWTCH (FS-120) DOES NOT CLOSE TO VERIFY THE SYSTEM IS IN HIGH SPEED OPERATION, AN EXHAUST FAN HIGH SPEED FAILURE ALARM IS GENERATED THROUGH THE SCADA PANEL.
  - b. THE FAN WILL RUN AT THE HIGH VENTILATION RATE UNTIL THE LIFT STATION IS UNOCCUPIED AS DESCRIBED BELOW.

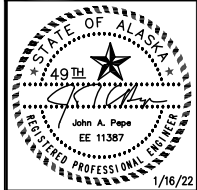
LOW VENTILATION RATE:

  - a. IF THE OUTSIDE TEMPERATURE (TT 121) IS 50 DEG F OR BELOW AND THE LIFT STATION IS UNOCCUPIED, THE FAN SHALL RUN AT THE LOW VENTILATION RATE OR 50% OF THE HIGH VENTILATION RATE (3 AIR CHANGES PER HOUR).
  - b. IF THE OUTSIDE TEMPERATURE RISES ABOVE 50 DEG F OR THE LIFT STATION BECOMES OCCUPIED, THE SYSTEM SHALL RAMP BACK UP TO THE FULL SPEED 'HIGH' VENTILATION RATE.

OCCUPANCY STATUS

WHEN THE LIFT STATION DOOR IS OPENED (AS SENSED BY THE DOOR INTRUSION SWITCH (ZS-100)) A TIMER STARTS AND AN INTRUSION ALARM WILL BE GENERATED UNLESS THE OPERATOR ENTERS AN ACCESS CODE INTO THE CONTROL SYSTEM AT THE SCADA CONTROL PANEL'S HMI BEFORE THE TIMER TIMES OUT. THE OPERATOR SHALL ALSO ENTER AN ANTICIPATED OCCUPANCY TIME NOT TO EXCEED 8-HOURS. THE CONTROL SYSTEM SHALL INDICATE THAT THE LIFT STATION IS OCCUPIED UNTIL THE OCCUPANCY TIMER TIMES OUT. THE STATUS OF THE DOOR INTRUSION SWITCH WILL BE IGNORED DURING THIS TIME. ONCE THE OCCUPANCY TIMER TIMES OUT, THE CONTROL SYSTEM SHALL INDICATE THAT THE LIFT STATION IS UNOCCUPIED AND THE DOOR INTRUSION SWITCH WILL BE MONITORED FOR THE NEXT EVENT. THE OPERATOR MAY ALSO PLACE THE OCCUPANCY STATUS TO UNOCCUPIED AT THE HMI PRIOR TO LEAVING WHICH WILL REDUCE THE REMAINING TIME ON THE OCCUPANCY TIMER TO 2 MINUTES ALLOWING THE OPERATOR TIME TO LEAVE BEFORE RE-ACTIVATING THE DOOR SWITCH.

REV	DATE	DESCRIPTION



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

OD FUNCTIONAL NARRATIVES

PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

**BID SET**

E-502

**WEST JUNEAU PUMP STATION FUNCTIONAL NARRATIVES**

**LIFT PUMP OPERATION**

PUMPS P-201, P-202 ARE CONTROLLED BY THE PLC IN THE SCADA CONTROL PANEL 'SCP'. EACH PUMP IS EQUIPPED WITH HAND-OFF-AUTO CONTROLS AT THE VFD ENCLOSURE. EACH PUMP HAS THE FOLLOWING FAILURE/FAULT ALARMS WHICH WILL SHUT DOWN THE PUMP: OVERCURRENT, OVER/UNDER VOLTAGE, PHASE LOSS, SEAL-FAIL, AND WINDING OVER-TEMPERATURE. THE PUMPS WILL BE CONTROLLED AS FOLLOWS:

- 1) IN HAND MODE: THE PUMP RUNS CONTINUOUSLY AT A PRE-SET RPM (FULL SPEED AT 60 HZ, MINIMUM SPEED IS 42 HZ) UNLESS A PUMP FAILURE/FAULT ALARM CONDITION OCCURS, IN WHICH CASE THE VFD WILL INITIATE THE SHUTDOWN SEQUENCE:
  - a. THE VFD WILL REDUCE PUMP SPEED FROM THE MANUAL SETPOINT DOWN TO 45 HZ OVER A FIVE (5) SECOND PERIOD (OPERATOR ADJUSTABLE 2-10 SECONDS), AND UPON REACHING 45 HZ THE PUMP WILL BE SHUT DOWN.
- 2) IN OFF MODE: THE PUMP WILL NOT RUN
  - a. WHEN THE PUMP IS RUNNING AND MANUALLY SWITCHED TO THE 'OFF' MODE, THE VFD WILL ENTER A PROGRAMMED VFD SHUTDOWN SEQUENCE DESCRIBED ABOVE.
- 3) IN AUTO MODE:
  - a. THE PUMPS WILL START IN A STAGED, LEAD-LAG, PUMPING SEQUENCE BASED ON LIQUID LEVEL IN THE WET WELL, AS SENSED BY THE PRIMARY LEVEL TRANSMITTER LT-401 AND THE BACKUP LEVEL TRANSMITTER LT-402. INITIALLY, P-201 = LEAD, P-202 = LAG/STANDBY.
  - b. PUMPS P-201 AND P-202 WILL ALTERNATE BETWEEN 'LEAD' AND 'LAG' AFTER EACH PUMP CYCLE TO EQUALIZE WEAR ON THE PUMP EQUIPMENT. THE PUMP LEAD/LAG SETTINGS SHALL BE OPERATOR ADJUSTABLE THROUGH EACH OF THE HUMAN-MACHINE INTERFACE (HMI) LOCATED AT THE STATION SCP.
  - c. THE SCADA CONTROL PANEL 'SCP' WILL CONTROL THE LIFT PUMPS BASED ON THE FOLLOWING PROGRAMMED SEQUENCE:
    1. AS THE LIQUID LEVEL IN THE WET WELL RISES ABOVE THE 'LEAD PUMP ON' SET POINT, THE LEAD PUMP WILL START AND RAMP FROM 0 TO 60 HZ IN FIVE (5) SECONDS, IT WILL THEN RUN AT FULL SPEED (60HZ) FOR A TEN (10) SECONDS FLUSHING PERIOD.
    2. FOLLOWING THIS FLUSHING PERIOD, THE PUMP WILL RAMP DOWN TO 45 HZ OVER A FIVE (5) SECOND PERIOD AND MAINTAIN THIS SPEED UNTIL THE 'LAG PUMP ON' (WET WELL RISING) OR THE 'LEAD PUMP OFF' SET POINT LEVEL IS REACHED.
    3. IF THE LIQUID IN THE WET WELL (CONTINUES TO RISE) REACHES THE 'LAG PUMP ON' SET POINT , THE LAG PUMP WILL START AND RAMP TO FULL SPEED OVER A FIVE (5) SECOND PERIOD (OPERATOR ADJUSTABLE 2-10 SECONDS) UNTIL EITHER THE 'LAG OFF' (WET WELL FALLING) OR 'HIGH ALARM' (WET WELL RISING) SET POINT IS REACHED.
    4. IF THE 'LAG OFF' SET POINT IS REACHED (WET WELL FALLING), THE LAG PUMP WILL BEGIN IT'S SHUTDOWN SEQUENCE. WHEN THE 'LEAD OFF' SET POINT IS REACHED (WET WELL FALLING), BOTH PUMPS WILL BE OFF.
    5. IF THE 'HIGH ALARM' SET POINT IS REACHED AND BOTH LEAD AND LAG PUMPS ARE RUNNING AT FULL
    6. SPEED THE PLC WILL GENERATE AN ALARM AND SEND TO OPERATORS VIA SCADA FOR IMMEDIATE ATTENTION.
    7. REFERENCE GENERAL SHEET G-003 FOR FURTHER PUMP SEQUENCE DETAILS.
  - d. IF THE LIQUID IN THE WET WELL REACHES THE 'LOW ALARM' SET POINT, AN ALARM WILL INDICATE CRITICAL LOW WATER LEVEL AND ANY PUMP REMAINING IN OPERATION WILL IMMEDIATELY BEGIN A SHUTDOWN SEQUENCE.

**STATION OPERATION ALARMS**

THE STATION ALARMS SENT TO OPERATORS VIA SCADA SHALL INCLUDE BUT ARE NOT LIMITED TO:

- WET WELL: CRITICAL HIGH LEVEL (LAHH 421)
- WET WELL: CRITICAL LOW LEVEL
- LIFT PUMP P-201 MOTOR FAULT (OVER-TEMP, SEAL-FAIL)
- LIFT PUMP P-201 VFD FAULT
- LIFT PUMP P-202 FAULT (OVER-TEMP, SEAL-FAIL, BEARING TEMP)
- LIFT PUMP P-202 VFD FAULT
- DRY WELL: PUMP LEVEL FLOOD CRITICAL HIGH LEVEL (LSHH-101)
- DRY WELL: SMOKE DETECTED (SD-101, 102, 103, 104)
- DRY WELL: GENERATOR FAULT, FAILURE TO START (YA-600)
- DRY WELL: LEL EXPLOSIVE GAS DETECTION (ABOVE SAFE LEVEL)

**BUILDING EXHAUST FAN OPERATION**

THE STATION VENTILATION FAN (EF-2) SHALL BE CONTROLLED BY THE PLC VIA A VARIABLE FREQUENCY DRIVE (VFD) MOUNTED IN THE MCC. CONTROL INPUTS SHALL INCLUDE A DUCT-MOUNTED FLOW SWITCH (FS-120) ON THE GROUND LEVEL AND AN OUTSIDE AMBIENT TEMPERATURE SENSOR (TT-121). THE VENTILATION SYSTEM SHALL HAVE A SCREEN IN THE HMI THAT INCLUDES STATUS AND MODE CHANGES VIA THE TOUCH SCREEN FOR CONTROL OF THE EXHAUST FAN. THE FAN SHALL BE CONTROLLED AS FOLLOWS:

- 1) IN 'MANUAL' MODE:
  - a. THE FAN WILL RAMP UP TO TO FULL SPEED (AT 60 HZ) AND RUN CONTINUOUSLY UNTIL THE SWITCH IS MOVED TO 'OFF' OR 'AUTO' POSITION.
  - b. IF A FAILURE/FAULT ALARM CONDITION OCCURS, THE VFD WILL SHUTDOWN AND PRODUCE AN ALARM TO NOTIFY STATION PERSONNEL VIA SCADA.
- 2) IN 'OFF' MODE: THE FAN SHALL NOT RUN:
  - a. WHEN THE FAN IS RUNNING AND MANUALLY SWITCHED TO THE 'OFF' MODE, THE VFD WILL SHUTDOWN.
- 3) IN 'AUTO' MODE:
 

HIGH VENTILATION RATE: WHEN IN OCCUPIED MODE (SEE OCCUPANCY STATUS BELOW), THE FAN WILL RAMP TO FULL SPEED (AT 60 HZ) - A VENTILATION RATE OF 6 AIR CHANGES PER HOUR.

  - a. AFTER 30 SECONDS, IF THE FAN HIGH SPEED OPERATION RUNNING SIGNAL SWTCH (FS-120) DOES NOT CLOSE TO VERIFY THE SYSTEM IS IN HIGH SPEED OPERATION, AN EXHAUST FAN HIGH SPEED FAILURE ALARM IS GENERATED THROUGH THE SCADA PANEL.
  - b. THE FAN WILL RUN AT THE HIGH VENTILATION RATE UNTIL THE LIFT STATION IS UNOCCUPIED AS DESCRIBED BELOW.

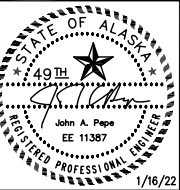
LOW VENTILATION RATE:

  - a. IF THE OUTSIDE TEMPERATURE (TT 121) IS 50 DEG F OR BELOW AND THE LIFT STATION IS UNOCCUPIED, THE FAN SHALL RUN AT THE LOW VENTILATION RATE OR 50% OF THE HIGH VENTILATION RATE (3 AIR CHANGES PER HOUR).
  - b. IF THE OUTSIDE TEMPERATURE RISES ABOVE 50 DEG F OR THE LIFT STATION BECOMES OCCUPIED, THE SYSTEM SHALL RAMP BACK UP TO THE FULL SPEED 'HIGH' VENTILATION RATE.

**OCCUPANCY STATUS**

WHEN THE LIFT STATION DOOR IS OPENED (AS SENSED BY THE DOOR INTRUSION SWITCH (ZS-100)) A TIMER STARTS AND AN INTRUSION ALARM WILL BE GENERATED UNLESS THE OPERATOR ENTERS AN ACCESS CODE INTO THE CONTROL SYSTEM AT THE SCADA CONTROL PANEL'S HMI BEFORE THE TIMER TIMES OUT. THE OPERATOR SHALL ALSO ENTER AN ANTICIPATED OCCUPANCY TIME NOT TO EXCEED 8-HOURS. THE CONTROL SYSTEM SHALL INDICATE THAT THE LIFT STATION IS OCCUPIED UNTIL THE OCCUPANCY TIMER TIMES OUT. THE STATUS OF THE DOOR INTRUSION SWITCH WILL BE IGNORED DURING THIS TIME. ONCE THE OCCUPANCY TIMER TIMES OUT, THE CONTROL SYSTEM SHALL INDICATE THAT THE LIFT STATION IS UNOCCUPIED AND THE DOOR INTRUSION SWITCH WILL BE MONITORED FOR THE NEXT EVENT. THE OPERATOR MAY ALSO PLACE THE OCCUPANCY STATUS TO UNOCCUPIED AT THE HMI PRIOR TO LEAVING WHICH WILL REDUCE THE REMAINING TIME ON THE OCCUPANCY TIMER TO 2 MINUTES ALLOWING THE OPERATOR TIME TO LEAVE BEFORE RE-ACTIVATING THE DOOR SWITCH.

REV	DATE	DESCRIPTION



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK  
 WJ FUNCTIONAL NARRATIVES

PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

**BID SET**

E-503

F:\Projects\00W\OBJ Outer Drive and West Juneau Lift Stations\Dwg\Elec\E-503 WJ FUNCTIONAL NARRATIVES.dwg PLOT DATE 2023-01-16 11:30 SAVED DATE 2023-01-16 10:27

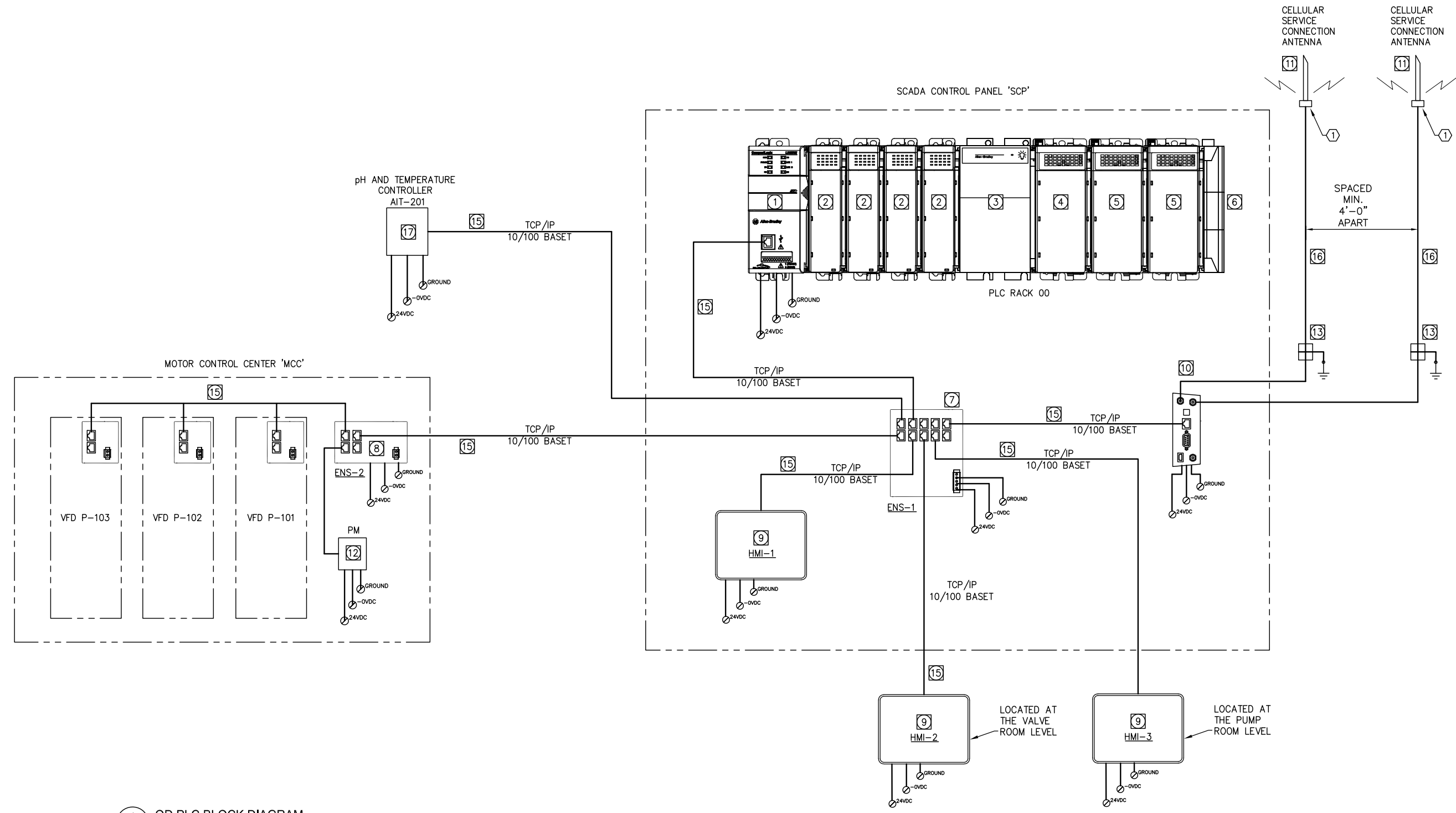


F:\Projects\ODM\CBU Outer Drive and West Juneau Lift Stations\Drawings\Elec\E-504 OD PLC BLOCK DIAGRAM.dwg PLOT DATE 2023-11-16 11:30 SAVED DATE 2022-12-26 15:02

REF	PART NUMBER	MFGR	MODULE USE / TYPE	REF	PART NUMBER	MFGR	MODULE USE / TYPE	REF	PART NUMBER	MFGR	MODULE USE / TYPE
1	1769-L30ER-2MB	AB	COMPACT LOGIX CENTRAL PROCESSOR (CPU)	9	6300P-XXXB	AB	INDUSTRIAL PC, WINDOWS 10/11 OS, MINIMUM 128GB SSD, i5 PROCESSOR, 8GB SO-DIMM DDR4 RAM	16	-	-	50 OHM COAXIAL CABLE, EXTERIOR RATED
2	1769-IA16	AB	16-POINT DISCRETE INPUT MODULE	10	RV50X	SIERRA WL	LTE CELLULAR GATEWAY ROUTER	17	SC4500	HACH	DIGITAL CONTROLLER, RJ45 ETHERNET (10/100 Mbps), pH AND TEMPERATURE METER
3	1769-PA4	AB	120VAC:24VDC POWER SUPPLY	11	A-OMNI-292-V2	POYNTING	2.4GHZ LTE CELLUAR OMNI-DIRECTIONAL ANTENNA	18	-	-	-
4	1769-OA16	AB	16-POINT DISCRETE OUTPUT MODULE	12	-	AB	POWER MONITOR - SEE SHEET E-404	19	-	-	-
5	1769-IF8	AB	8-POINT ANALOG INPUT MODULE	13	-	POLYPHASER	LIGHTNING ARRESTOR	20	-	-	-
6	1769-ECR	AB	RIGHT END CAP	14	-	-	-	21	-	-	-
7	1783 STRATIX 5700	AB	10-PORT NETWORK SWITCH (MANAGED)	15	-	-	CAT6A ETHERNET CABLE, 4PR, RJ45	22	-	-	-
8	1783 STRATIX 5700	AB	4-PORT NETWORK SWITCH (MANAGED)					23	-	-	-

**SHEET NOTES**

1 PROVIDE A ROOF MOUNTED OR POLE MOUNTED SUPPORT STRUCTURE FOR CELLULAR ANTENNAS. STRUCTURE(S) SHALL BE OF ADEQUATE HEIGHT AND POSITION TO ALLOW FOR OPTIMAL SIGNAL RECEPTION AND TRANSMISSION OVER THE CELLULAR SCADA NETWORK. COORDINATE THE INSTALLATION AND TESTING OF THE COMMUNICATIONS SYSTEM WITH CBJ SCADA PERSONNEL.



1 OD PLC BLOCK DIAGRAM  
E-504 SCALE: NTS

**BID SET**

REV	DATE	DESCRIPTION

John A. Pope  
EE 11387  
1/16/22

EDC, INC.  
213 W. FIREWED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

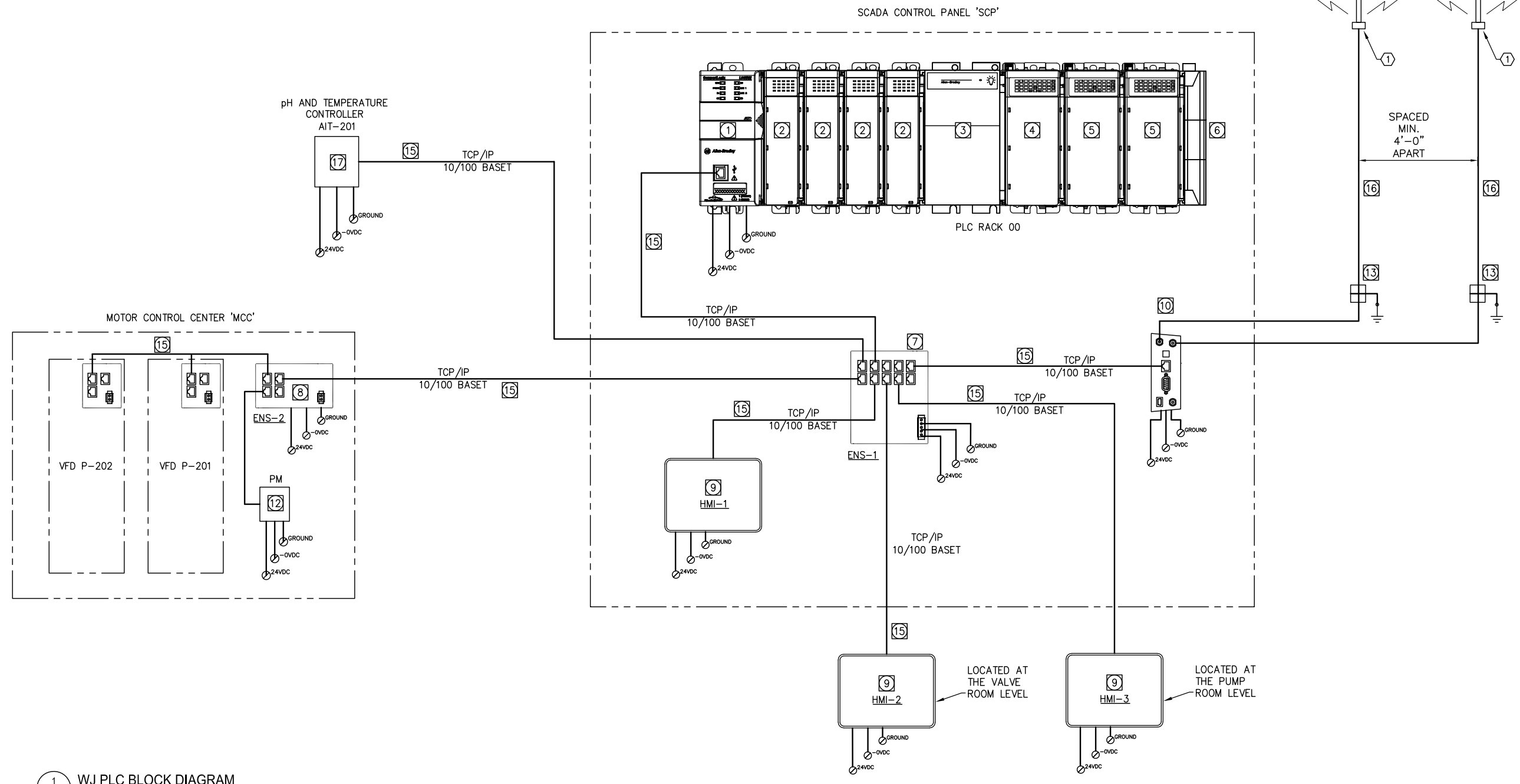
OD PLC BLOCK DIAGRAM

PROJECT	1528.50233.01
DATE	01/16/2022
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SHEET	
E-504	

REF	PART NUMBER	MFGR	MODULE USE / TYPE	REF	PART NUMBER	MFGR	MODULE USE / TYPE	REF	PART NUMBER	MFGR	MODULE USE / TYPE
1	1769-L30ER-2MB	AB	COMPACT LOGIX CENTRAL PROCESSOR (CPU)	9	6300P-XXXB	AB	INDUSTRIAL PC, WINDOWS 10/11 OS, MINIMUM 128GB SSD, i5 PROCESSOR, 8GB S0-DIMM DDR4 RAM	16	-	-	50 OHM COAXIAL CABLE, EXTERIOR RATED
2	1769-IA16	AB	16-POINT DISCRETE INPUT MODULE	10	RV50X	SIERRA WL	LTE CELLULAR GATEWAY ROUTER	17	SC4500	HACH	DIGITAL CONTROLLER, RJ45 ETHERNET IP(10/100 Mbps), pH AND TEMPERATURE METER
3	1769-PA4	AB	120VAC:24VDC POWER SUPPLY	11	A-OMNI-292-V2	POYNTING	2.4GHZ LTE CELLUAR OMNI-DIRECTIONAL ANTENNA	18	-	-	-
4	1769-OA16	AB	16-POINT DISCRETE OUTPUT MODULE	12	-	AB	POWER MONITOR - SEE SHEET E-404	19	-	-	-
5	1769-IF8	AB	8-POINT ANALOG INPUT MODULE	13	-	POLYPHASER	LIGHTNING ARRESTOR	20	-	-	-
6	1769-ECL	AB	RIGHT END CAP	14	-	-	-	21	-	-	-
7	1783 STRATIX 5700	AB	10-PORT NETWORK SWITCH (MANAGED)	15	-	-	CAT6A ETHERNET CABLE, 4PR, RJ45	22	-	-	-
8	1783 STRATIX 5700	AB	4-PORT NETWORK SWITCH (MANAGED)					23	-	-	-

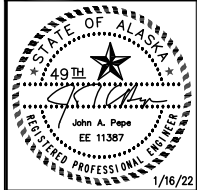
**SHEET NOTES**

1 PROVIDE A ROOF MOUNTED OR POLE MOUNTED SUPPORT STRUCTURE FOR CELLULAR ANTENNAS. STRUCTURE(S) SHALL BE OF ADEQUATE HEIGHT AND POSITION TO ALLOW FOR OPTIMAL SIGNAL RECEPTION AND TRANSMISSION OVER THE CELLULAR SCADA NETWORK. COORDINATE THE INSTALLATION AND TESTING OF THE COMMUNICATIONS SYSTEM WITH CBJ SCADA PERSONNEL.



1 WJ PLC BLOCK DIAGRAM  
E-505 SCALE: NTS

REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FIREBIRD LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK  
WJ PLC BLOCK DIAGRAM

PROJECT 1528.50233.01  
DATE 01/16/2022

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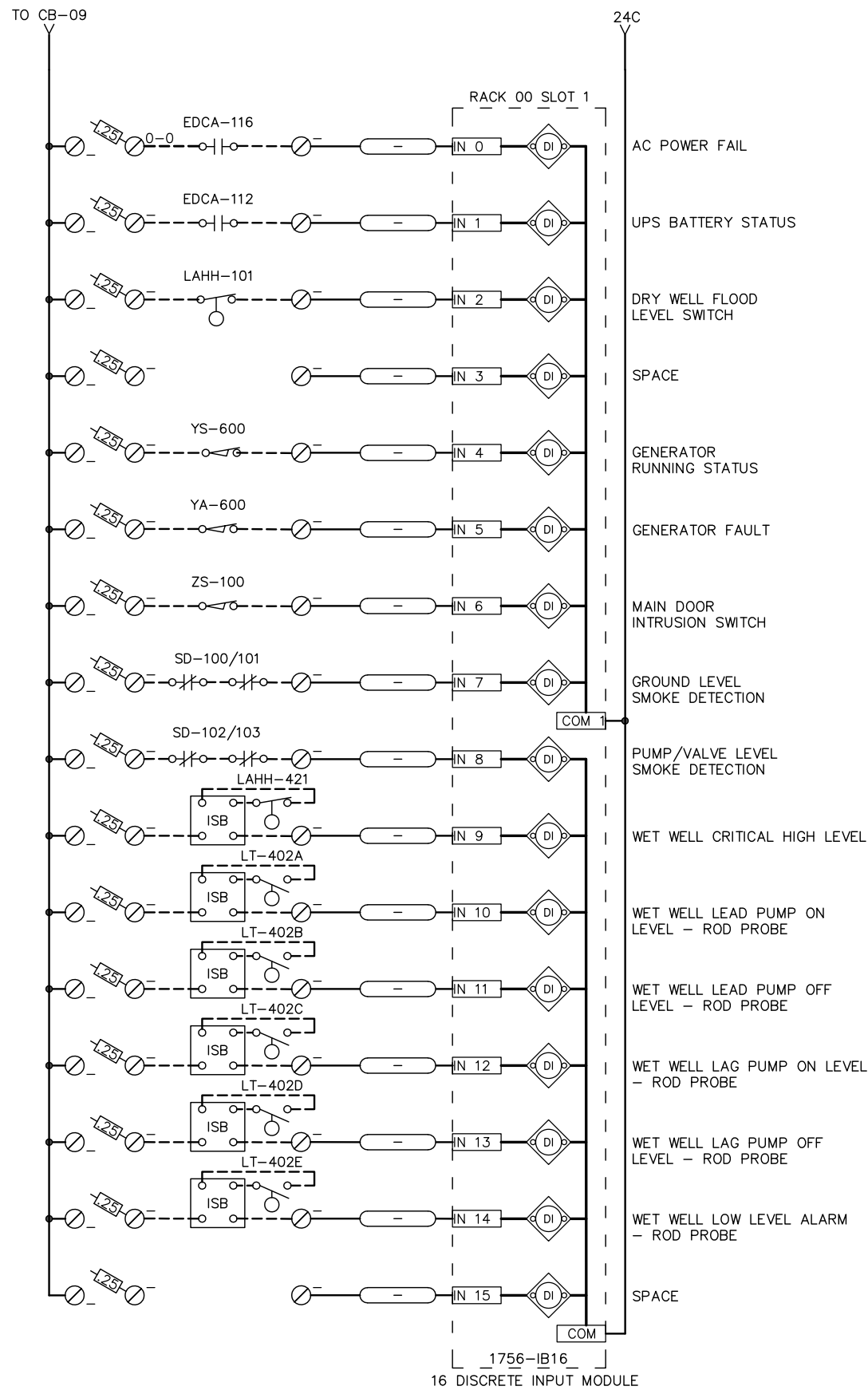
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E-505

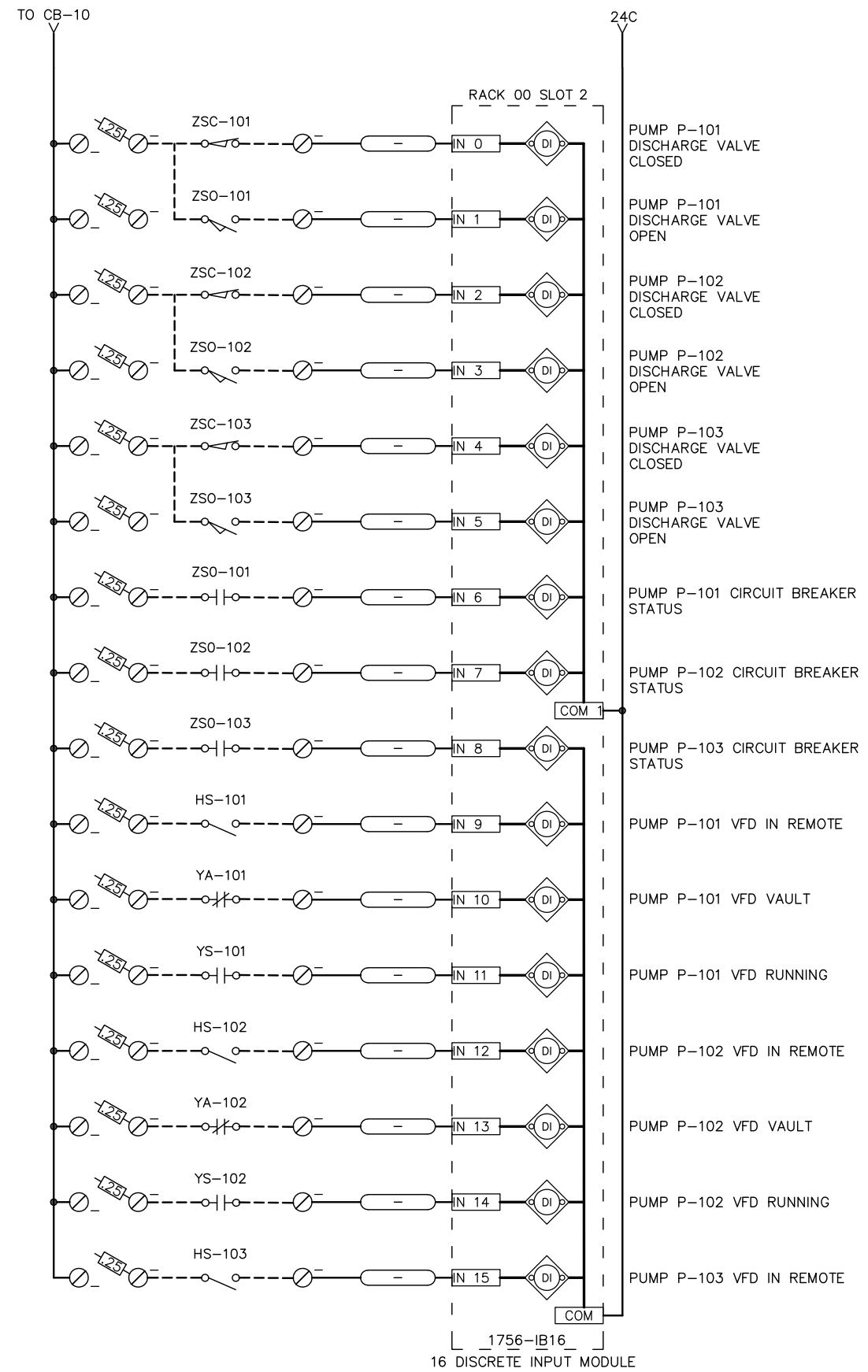
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F:\Projects\ODM\CBU Outer Drive and West Juneau Lift Stations\Drawings\Elec\507 OD PLC DISCRETE INPUTS.dwg PLOT DATE 2023-1-16 11:30 SAVED DATE 2022-12-14 12:35

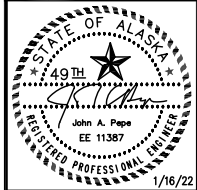


1756-IB16  
16 DISCRETE INPUT MODULE



1756-IB16  
16 DISCRETE INPUT MODULE

REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

OD PLC DISCRETE INPUTS

PROJECT 1528.50233.01  
DATE 01/16/2022

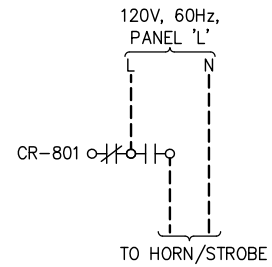
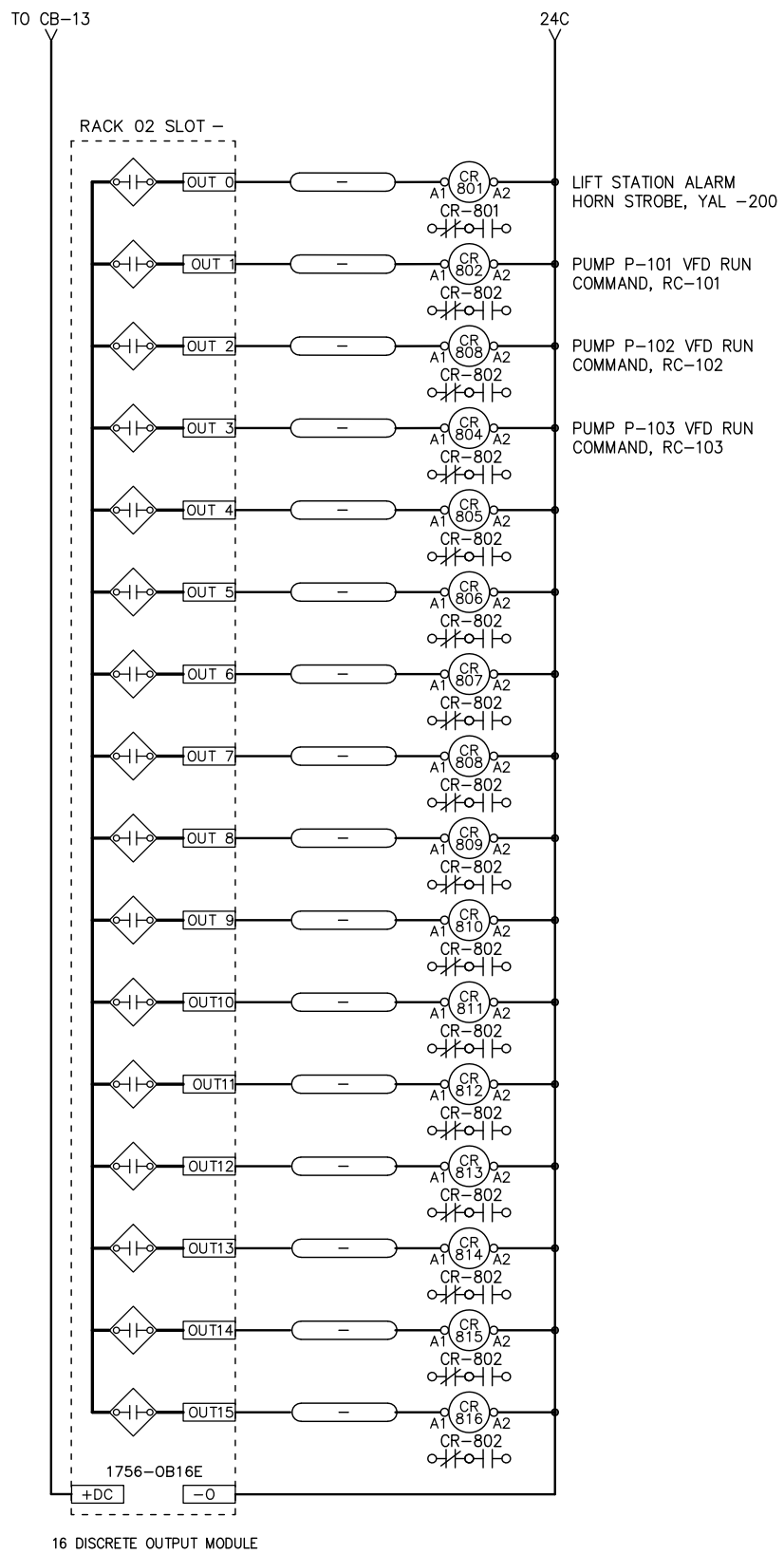
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SHEET

E-507

**BID SET**

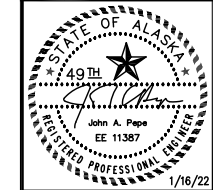


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16 DISCRETE OUTPUT MODULE

REV	DATE	DESCRIPTION	BY



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK

OD PLC DISCRETE OUTPUTS

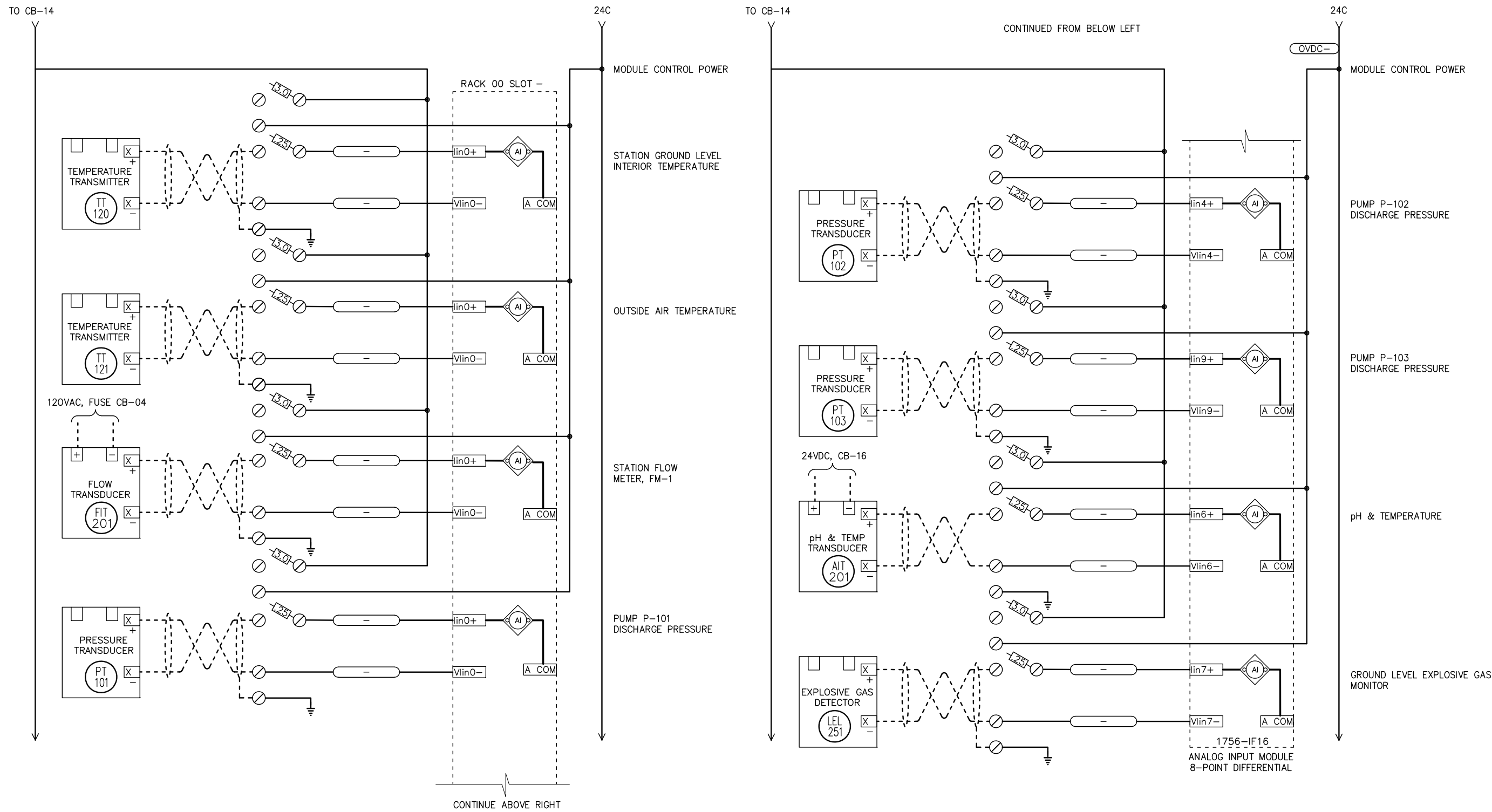
PROJECT 1528.50233.01  
 DATE 01/16/2022

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 SHEET

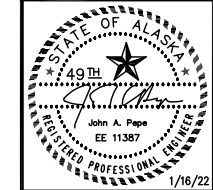
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E-509

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REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC6705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

OD DRIVE PLC ANALOG INPUTS

PROJECT 1528.50233.01  
DATE 01/16/2022

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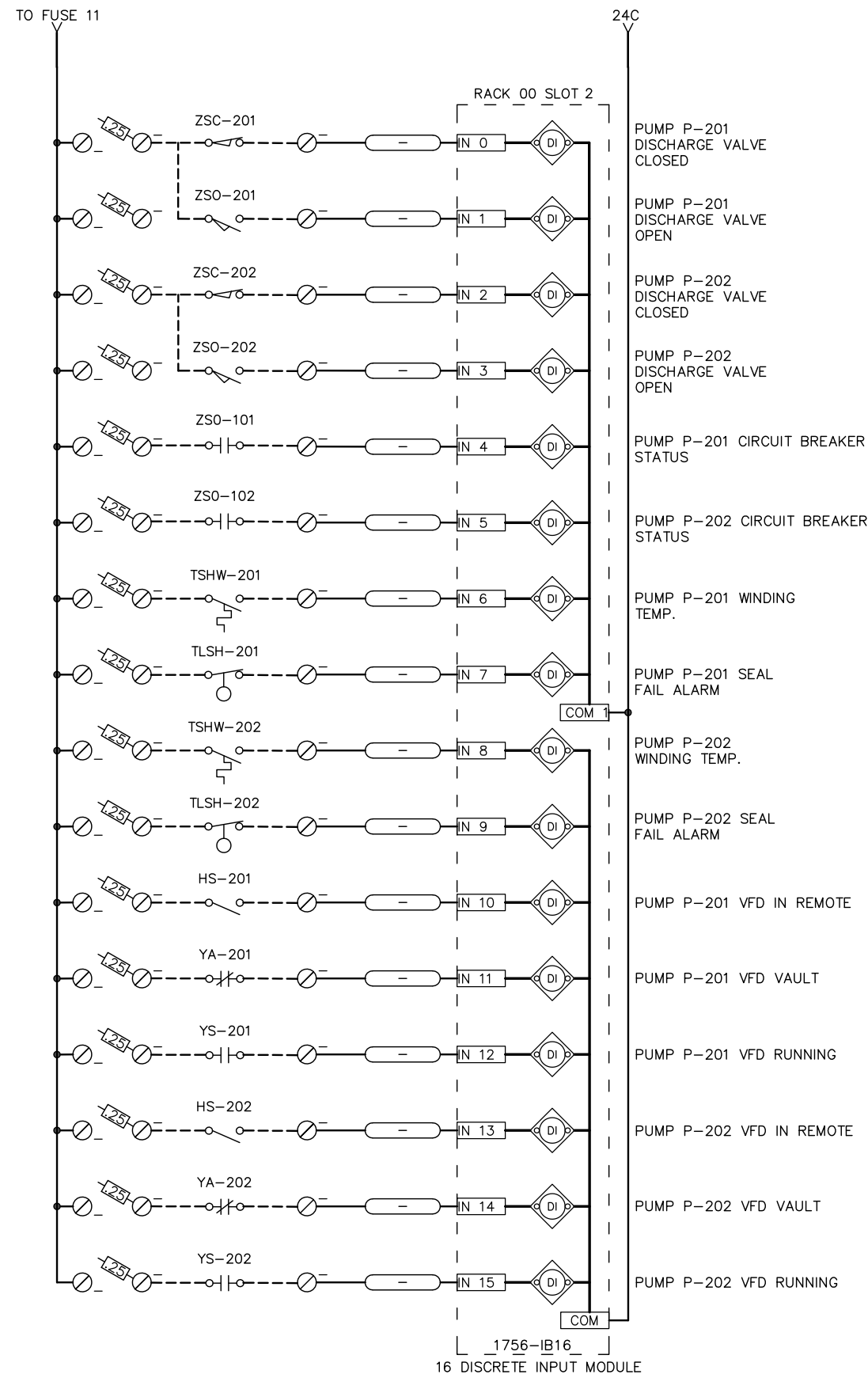
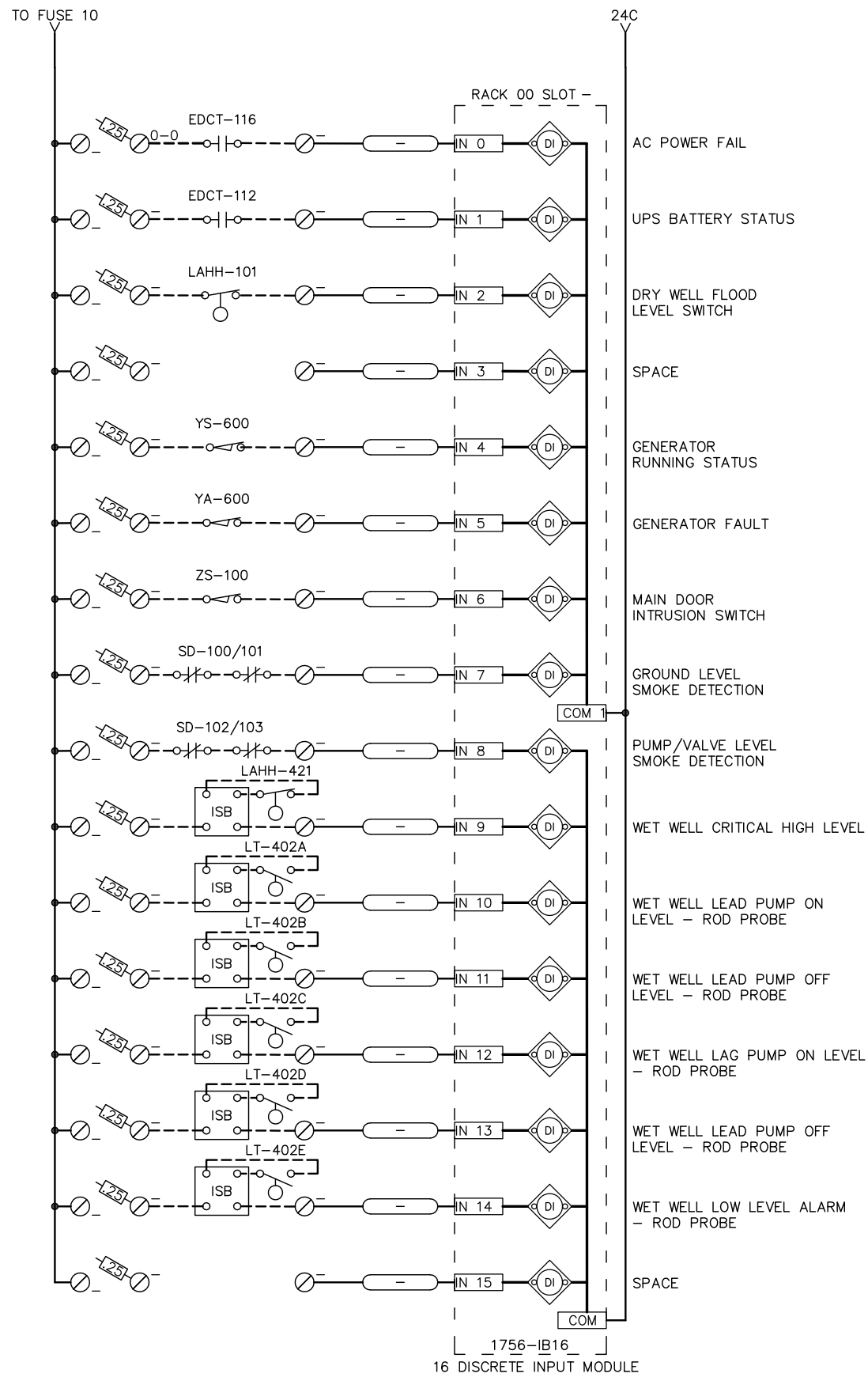
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E-510

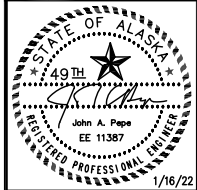




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REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION  
JUNEAU, AK

WJ PLC DISCRETE INPUTS

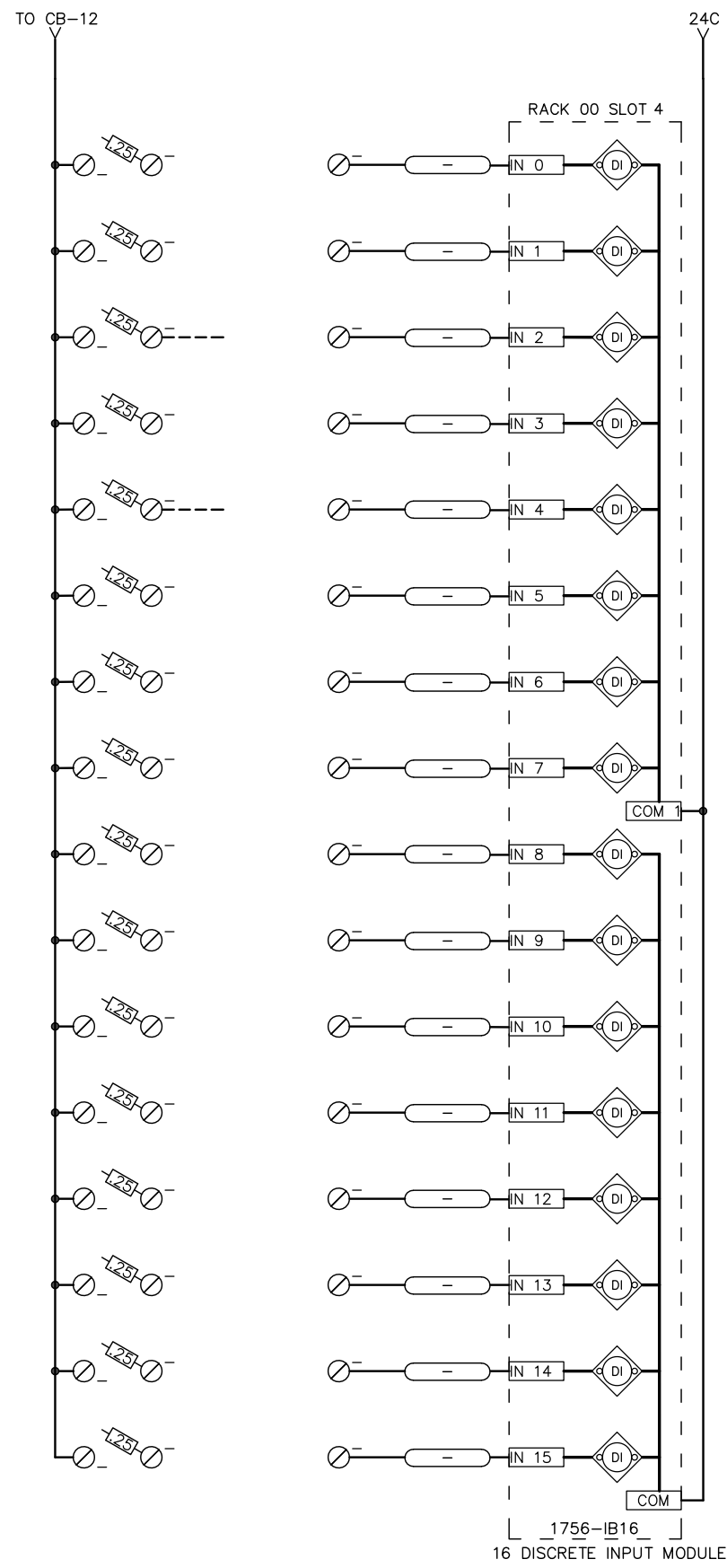
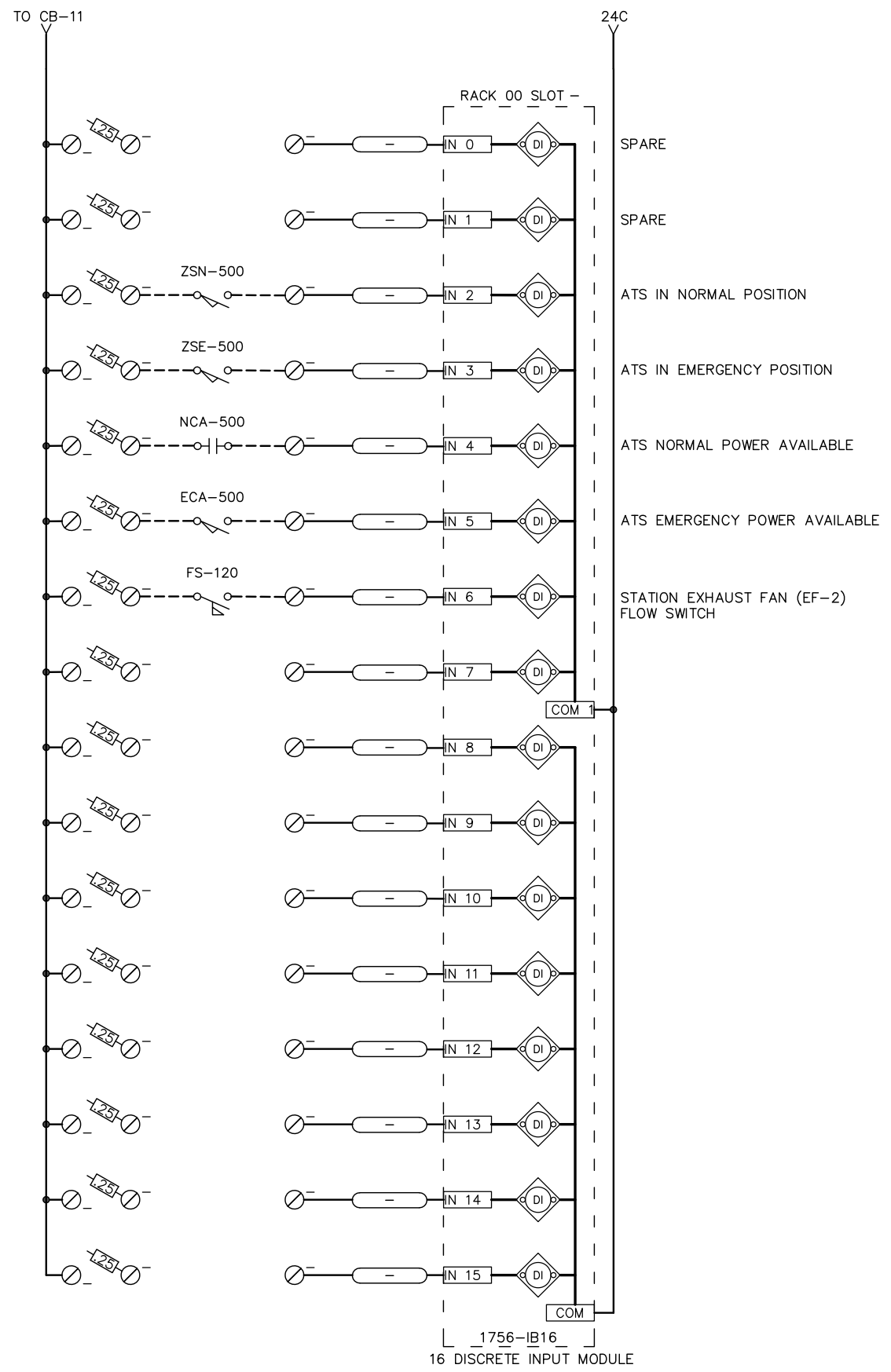
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

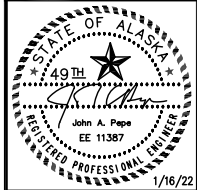
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REV	DATE	DESCRIPTION	BY



EDC, INC.  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AEC0705

OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK

WJ PLC DISCRETE INPUTS

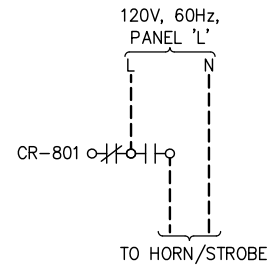
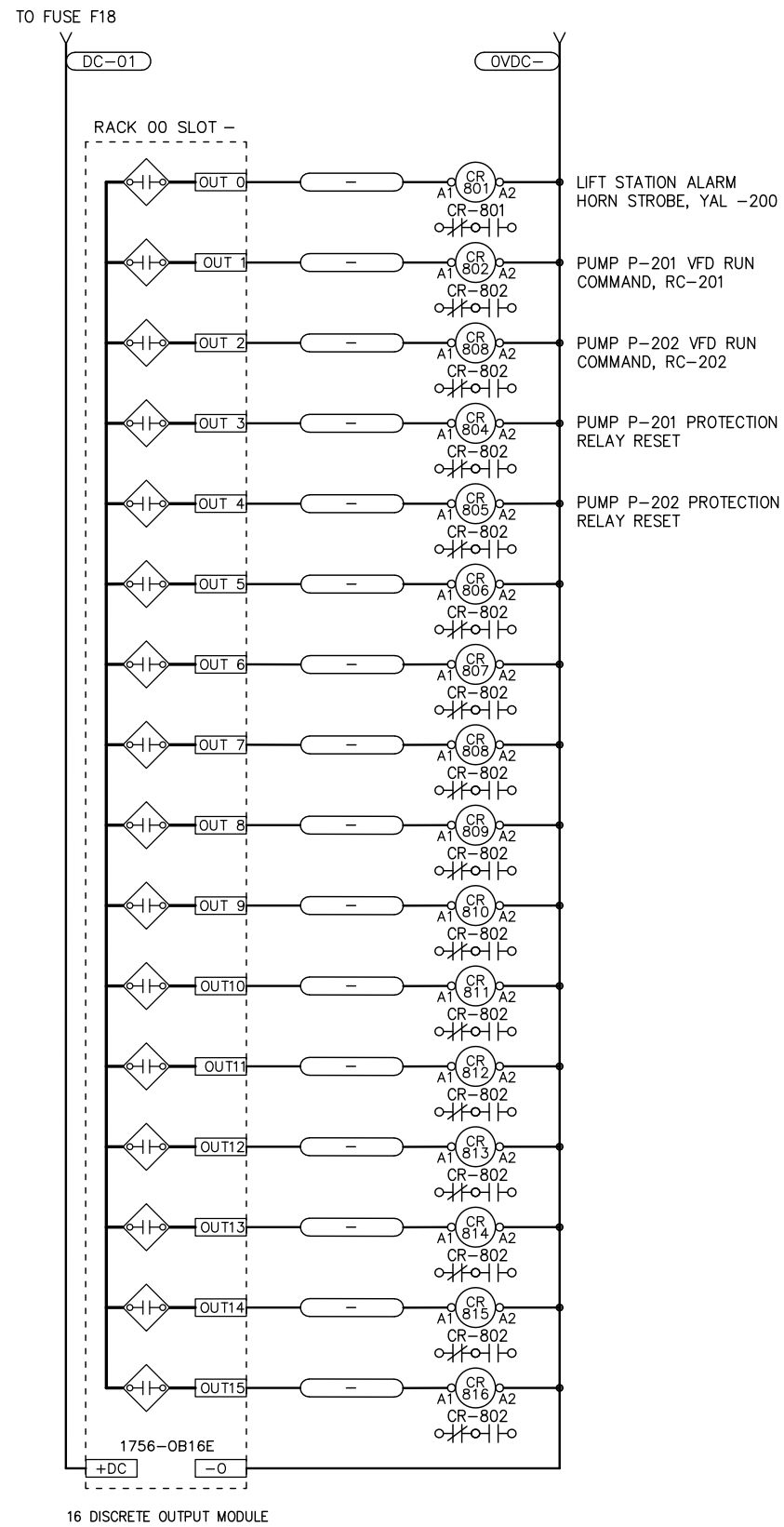
PROJECT 1528.50233.01  
 DATE 01/16/2022

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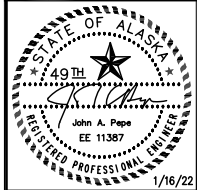
E-513

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REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

WJ PLC DISCRETE OUTPUTS

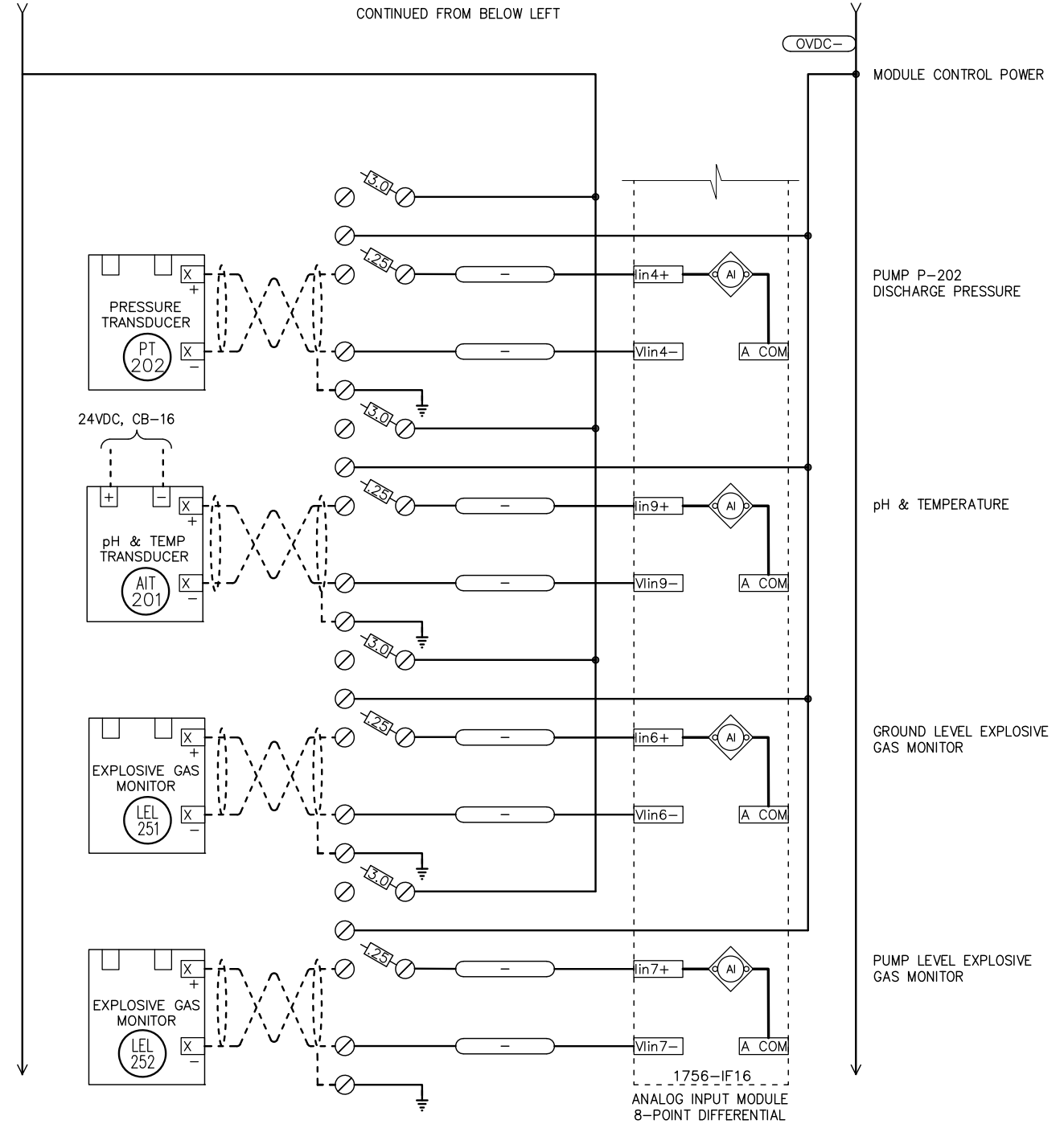
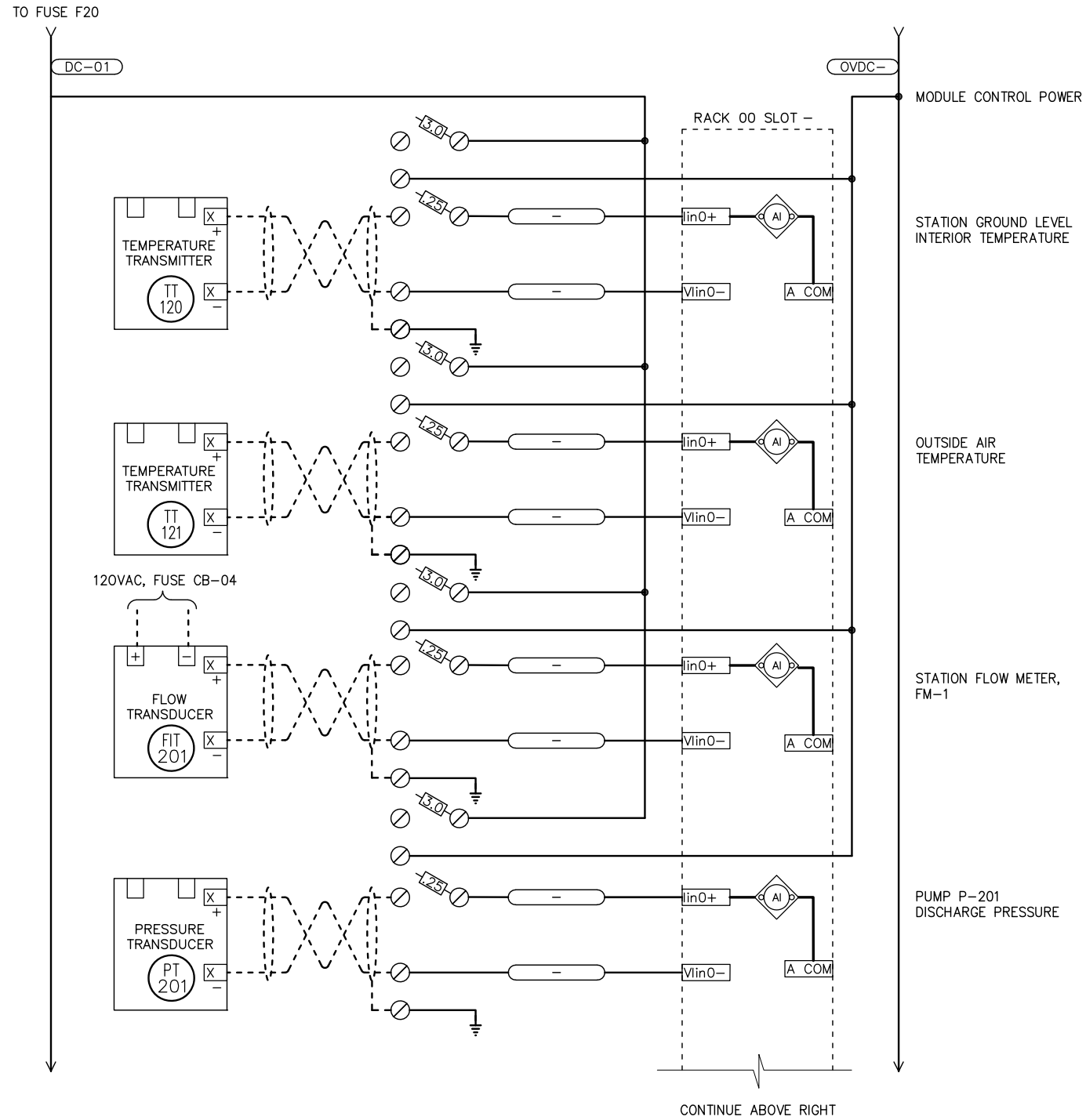
PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

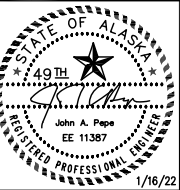
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E-514

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REV	DATE	DESCRIPTION



EDC, INC.  
213 W. FIREBIRD LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AECC705

OUTER DRIVE & WEST JUNEAU PUMP STATION REHABILITATION JUNEAU, AK

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

E-515

**BID SET**



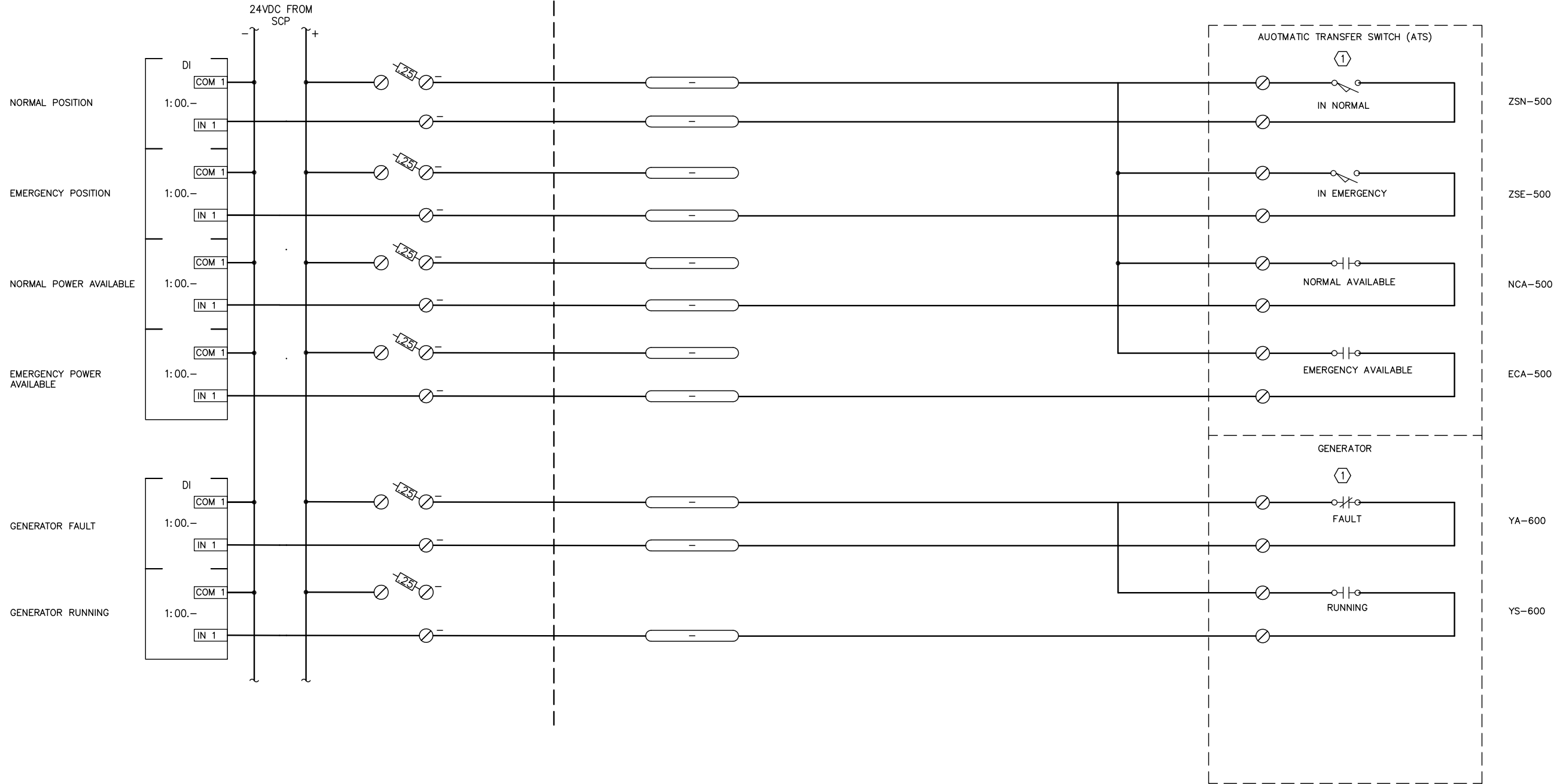
F:\Projects\DOM\CBU Outer Drive and West Juneau Lift Stations\Drawings\Elec\517 GENSET AND ATS INPUTS - OUTPUTS.dwg PLOT DATE 2023-1-16 11:31 SAVED DATE 2022-12-14 13:58

**SHEET NOTES**

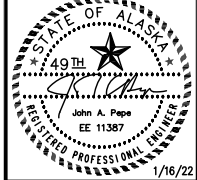
① ACTUAL TERMINAL NUMBERING AND WIRING TO BE DETERMINED BY THE MANUFACTURER IN ACCORDANCE WITH THE SPECIFICATIONS AND THE SUBMITTAL COMMENTS.

**SCADA CONTROL PANEL 'SCP'**

**FIELD WIRING**



REV	DATE	DESCRIPTION	BY



**EDC, INC.**  
 213 W. FREEMED LANE  
 ANCHORAGE, AK 99503  
 (907) 276-7933  
 LICENSE NO. AECC705

**OUTER DRIVE & WEST JUNEAU PUMP  
 STATION REHABILITATION  
 JUNEAU, AK**

**GENSET AND ATS INPUTS - OUTPUTS**

PROJECT 1528.50233.01  
 DATE 01/16/2022

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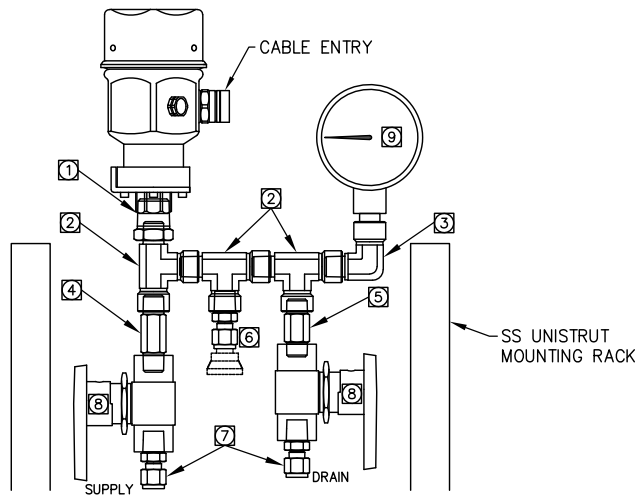
**BID SET**

E-517



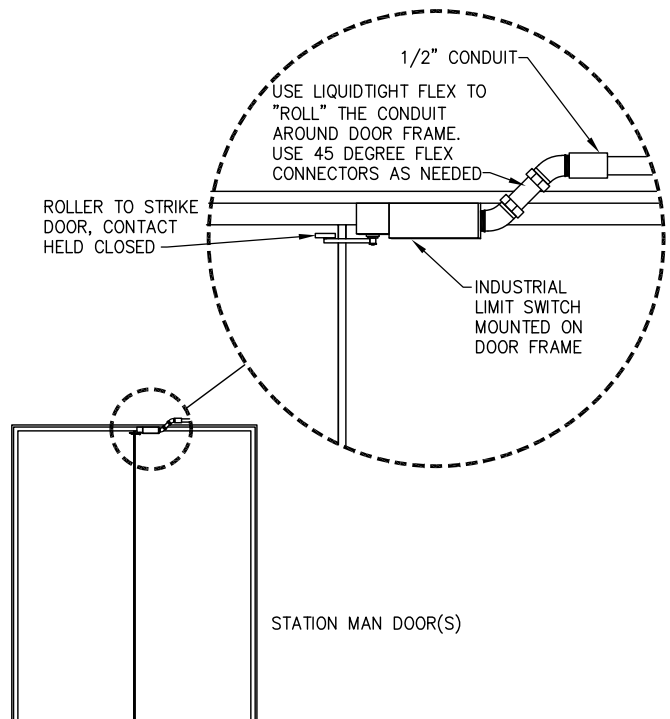




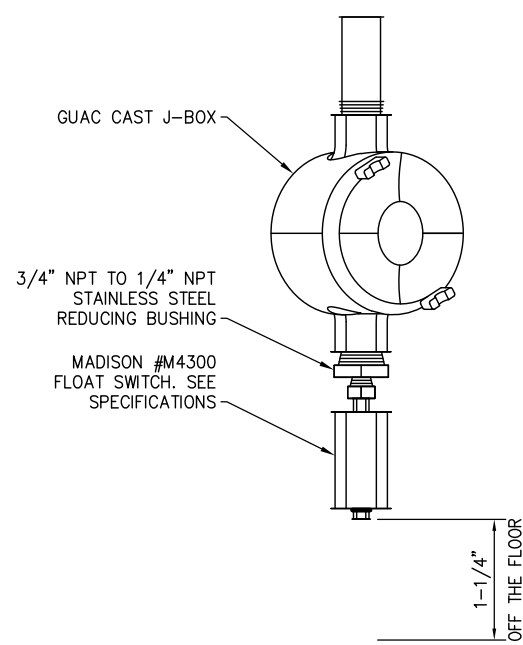


- 1 SWAGELOK SS-8-RB-4 REDUCING BUSHING AS REQUIRED
- 2 SWAGELOK SS-4-ST STREET TEE
- 3 SWAGELOK SS-4-SE STREET ELBOW
- 4 SWAGELOK SS-4-HLN-2.00 NIPPLE
- 5 SWAGELOK SS-4-HLN-1.50 NIPPLE
- 6 SWAGELOK SS-QC4-B-4PM FEMALE QUICK CONNECT
- 7 SWAGELOK SS-400-1-4 TUBING CONNECTOR
- 8 INLINE 204F-02S6-M-01 BALL VALVE
- 9 2 1/2" LIQUID FILLED SS GAUGE, SAME RATING AS INSTRUMENT

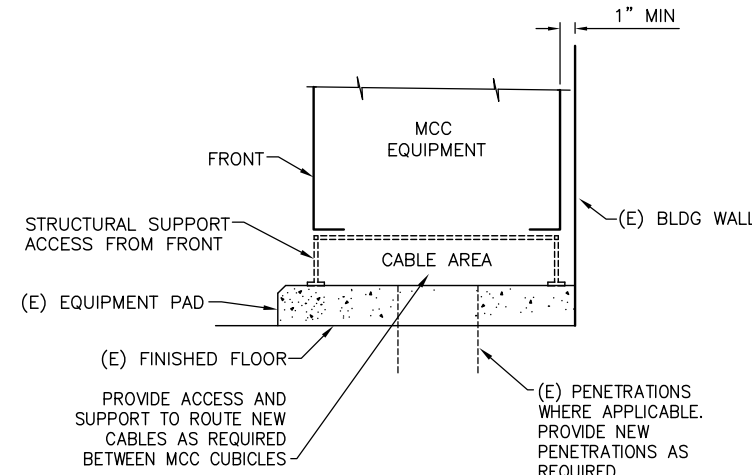
1 PRESSURE TRANSMITTER DETAIL  
E-601 SCALE: NTS



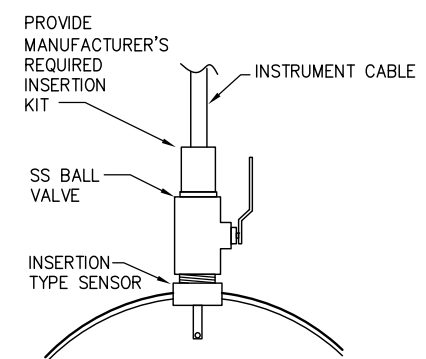
2 INTRUSION SWITCH  
E-601 SCALE: NTS



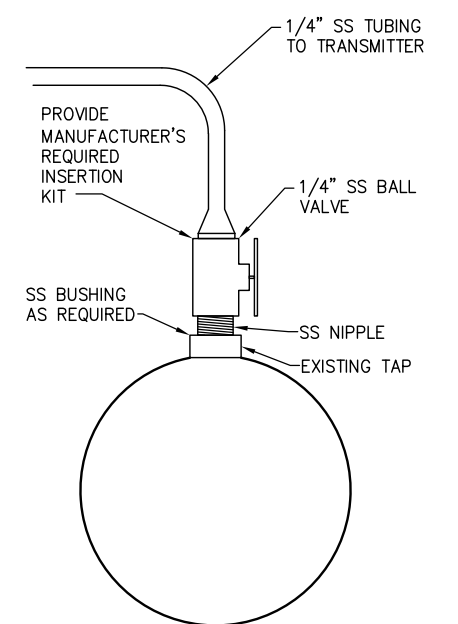
3 FLOOD DETECTOR  
E-601 SCALE: NTS



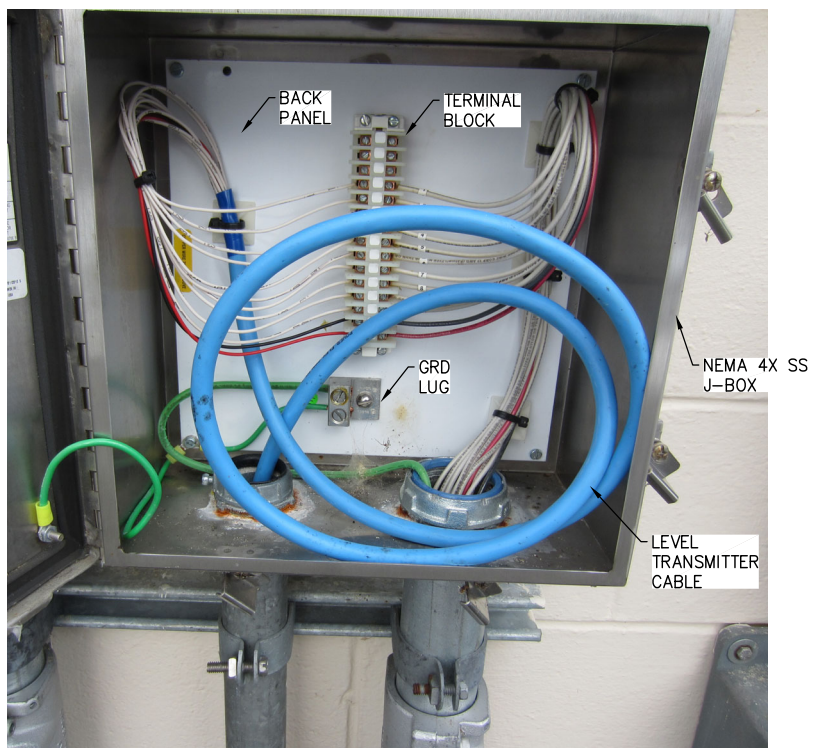
4 MCC MOUNTING AND CABLE CHASE  
E-601 SCALE: NTS



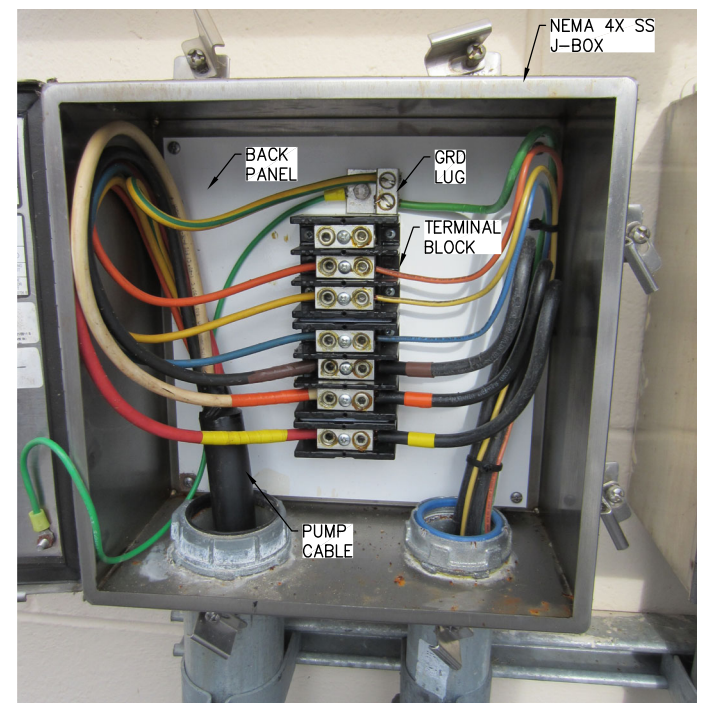
5 PH AND TEMPERATURE SENSOR MOUNTING  
E-601 SCALE: NTS



6 TYPICAL INSTRUMENT PRESSURE TAP  
E-601 SCALE: NTS

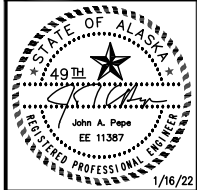


7 CONTROL / INSTRUMENTATION JUNCTION BOX DETAIL  
E-601 SCALE: NTS



8 PUMP POWER JUNCTION BOX DETAIL  
E-601 SCALE: NTS

REV	DATE	DESCRIPTION	BY



EDC, INC.  
213 W. FREEMED LANE  
ANCHORAGE, AK 99503  
(907) 276-7933  
LICENSE NO. AEC0705



OUTER DRIVE & WEST JUNEAU PUMP  
STATION REHABILITATION  
JUNEAU, AK

ELECTRICAL DETAILS

PROJECT 1528.50233.01  
DATE 01/16/2022

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SHEET

E-601

**BID SET**

F:\Projects\00W\00 Outer Drive and West Juneau Lift Stations\Draws\Elec\E-601 ELECTRICAL DETAILS.dwg PLOT DATE 2023-1-16 11:31 SAVED DATE 2022-12-14 15:54

