CITY OF VALDEZ
Project Title: New Well 5 Pumping Station
Project No.: 21-310-2538
Contract No.: 2406

TO: All Recipients **Date: September 26, 2025**

SUBJECT: Addendum No.2

This seventy-one (71) page Addendum forms a part of the project scope documents and modifies the project scope for the above-referenced project. **Acknowledge receipt of this Addendum in the space provided on the Bid Form**. Failure to do so may subject the Bidder to disqualification.

This Addendum makes the following changes and/or clarifications:

1. The bid opening date has been postponed. The new bid opening date is Monday, November 3, 2025 at 3pm.

2. 220700 Plumbing Insulation – Add this section to the project specifications, total four (4) pages attached.

3. Replace existing drawing set with new, revised set of drawings dated September 2025. Total sixty-five (65) pages attached.

Questions & Answers

1. **Question**: This end user's power grid may be an issue for an 18 Pulse VFD. Our experience is that this power system is not evenly balanced. Depending on the customers system an 18 pulse could be problematic and the ULH would be the better solution. A good example is: An 18 pulse is good if all phases are exactly balanced. If all phases are not exactly balanced WRT voltage, the cancelation will not take place properly in the transformer and they will have higher than expected harmonics. An imbalance of only ½% can be enough to cause a significant increase in line harmonics. The ULH is ideal because it doesn't care about input voltage balance. Its harmonics at full load will be 20% lower than the 18 pulse at its ideal condition, and there is no degradation due to line imbalance.

   Answer: An 18-pulse drive is not required. Specification 26 29 23 *Variable Frequency Drives* Parts 2.03.B.1.a, and 2.03.B.2 requirements are changed to a 6-pulse VFD with passive harmonic filtering, which aligns with the requirements of Specification 40 90 10 *Control Strategies* Part 2.03.A and Specification 40 91 00 *Instrumentation, Control and Telemetry Systems* Part 2.01.4.a."

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2. **Question**: Would copper pipe with press fitting be acceptable for Domestic Water Piping above grade per spec section 221000 2.02 in lieu of Polypropylene Pipe?

   Answer: Domestic water piping is to remain polypropylene piping per specifications.

3. **Question**: Are there any exterior coating requirements for the 12" DI pipe spools and fittings above slab inside wellhouse?

   Answer: Federal safety blue Sherwin-Williams Macropoxy epoxy for potable water or equal, 2 coats and 10 mils minimum on all exposed potable water piping and fittings.

4. **Question:** Please confirm no insulation required on domestic water piping inside wellhouse building.

   Answer: Insulation is not required on polypropylene domestic water piping inside wellhouse. Insulation is required on metal pipe fittings. "NOSWEAT" valve wrap insulation is required for valves. See mechanical specification section 22 07 00 Plumbing Insulation.

5. **Question:** Drawing M2 indicates 1-1/2" CW DN to Service Saddle. Drawings appear to indicate line drops into 2" Combination Air Valve. Please confirm size and location of tie-in at 12" DIP. Is the intent for tie-in to be at Item L 1" Service Saddle per C5?

   Answer: 1-1/2" CW connects to item L service saddle, not the 2" combination air valve. Per Civil, the location of the service saddle is to be located after item L on the vertical portion of the 12" DIP. The service saddle is to be 1-1/2". See revised Civil plans moving Item L to the other vertical side of the 12" pipe and upsizing the saddle to 1-1/2". The tie-in is to be at new location of Item L.

End of Addendum

SECTION 220700

PLUMBING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Piping Insulation.

B. Equipment Insulation.

C. Jackets and Accessories.

1.02 RELATED WORK

A. Division 09 - Painting: Painting Insulation Jacket.

B. Section 22 05 00 - Common Work Results for Plumbing.

C. Section 22 10 00 - Plumbing Piping.

D. Section 22 30 00 - Plumbing Equipment.

1.03 REFERENCES

A. ASTM B209 - Aluminum and Aluminum-alloy Sheet and Plate.

B. ASTM C450 - Standard Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping, and Vessel Lagging.

C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

D. ANSI/ASTM C533 - Calcium Silicate Block and Pipe Thermal Insulation.

E. ANSI/ASTM C534 - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.

F. ANSI/ASTM C547 - Mineral Fiber Preformed Pipe Insulation.

G. ANSI/ASTM C552 - Cellular Glass Block and Pipe Thermal Insulation.

H. ANSI/ASTM C553 - Mineral Fiber Blanket Thermal Insulation.

I. ANSI/ASTM C578 – Rigid, Cellular Polystyrene Thermal Insulation.

J. ASTM C585 - Standard Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).

K. ANSI/ASTM C612 - Mineral Fiber Block and Board Thermal Insulation.

L. ASTM C1136 - Flexible, Low Permeance Vapor Retarders for Thermal Insulation.

M. ASTM C1427 – Extruded Preformed Flexible Cellular Polyolefin Thermal Insulation in Sheet and Tubular Form.

N. ASTM D635 - Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.

O. ASTM E84 – Test Method for Surface Burning Characteristics of Building Materials.

P. ASTM E96 - Test Methods for Water Vapor Transmission of Materials.

Q. UL 723 – Test for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

A. Submit product data under provisions of Division 01.

B. Include product description, thermal performance, thickness for each service, and locations.

C. Submit manufacturer's installation instructions.

1.05 QUALITY ASSURANCE

A. Applicator: Company specializing in piping insulation application with three years minimum experience.

B. Pipe insulation manufactured in accordance with ASTM C585 for inner and outer diameters.

C. Materials: Flame spread/smoke developed rating of 25/50 in accordance with UL 723, or ASTM E84.

D. Factory fabricated fitting covers manufactured in accordance with ASTM C450.

1.06 DELIVERY STORAGE AND HANDLING

A. Division 01 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

C. Shipment of materials from manufacturer to installation location shall be in weather tight transportation.

D. Protect insulation from weather and construction traffic, dirt, water, chemical, and damage, by storing in original wrapping.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Install insulation only when ambient temperature and humidity conditions are within range recommended by manufacturer.

1.08 FIELD MEASURMENTS

A. Verify field measurements prior to fabrication.

1.09 WARRANTY

A. Division 01 - Execution and Closeout Requirements: Product warranties and product bonds.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Johns Manville

B. Owens Corning

C. IMCOA.

D. K-Flex USA.

E. Substitutions: Under provisions of Division 01.

2.02 INSULATION - PIPING

A. Type A: Glass fiber, rigid, molded, non-combustible insulation; ANSI/ASTM C547; 'k' value of 0.23 at 75º F, rated from 0º F to 850º F, vapor retarder jacket of Kraft paper bonded to aluminum foil, self-sealing lap and butt strips; Johns Manville "Micro-Lok" or approved equal.

B. Type B: Expanded polystyrene; ANSI/ASTM C578; rigid closed cell; maximum water vapor transmission rating of 0.1 perms; 'k' value of 0.23 at 75º F.

C. Type C: Flexible unicellular polyolefin; ASTM C1427; 'k' value of 0.25 at 75º F ASTM C518; moisture vapor transmission of zero perm-inch ASTM E96; rated to 210º F; IMCOA “Imcolock” or approved equal.

D. Type D: Elastomeric foam; EPDM-based closed-cell flexible foam, ASTM C534; flexible cellular elastomeric in sheet or pre-formed tube, ’k’ value of 0.26 at 75º F, max. service temp - 300º F, ASTM C534; max. flame spread = 50, max. smoke developed = 50, ASTM E84; UV-resistant coating/jacketing if exposed to sunlight; K-FLEX USA “Insul-Tube”, or approved equal.

2.03 INSULATION - EQUIPMENT

A. Type E: Reusable Valve Wrap Insulation Covers: Removable and reusable wraps packaged with a 1" thick fiberglass blanket insert to completely cover the insulated equipment. The outer cover of the shall be made of DuPont Tychem® QC that is secured with a Velcro closure. Tychem® QC consists of a durable Tyvek® substrate quality coated with polyethylene that is impermeable to water. K= .28 @ 100º F; Temperature Limits 0°F to 450°F; Water Vapor Transmission ASTM E 96 0.01 Perms at 37.8C/100F-RH/100%; Breaking Strength Grab (md/cd) ASTM D5034-90 43/49 lbs; Tearing Strength Trapezoid (md/cd) ASTM D1117-80 7/5 lbs; Weatherable Grade; UV resistant; White/gloss finish; UL25/50 rating and are non-combustible per ASTM E 136. NOSWEAT Reusable Valve Wraps or approved equal.

2.04 FIELD APPLIED JACKET

A. PVC Jackets and solvent welding adhesive: One piece, pre-molded type, Johns Manville "Zeston 2000", fitting covers and jacketing material. Johns Manville "Perma-Weld" solvent welding adhesive.

2.05 INSULATION ACCESSORIES

A. Adhesives: Waterproof and fire-retardant type.

B. Joint Tape: Glass fiber cloth, open mesh.

C. FSK Joint Tape; ASTM C1136 Foil-Scrim-Kraft (FSK) lamination coated with solvent acrylic pressure sensitive adhesive; capable of adhering to fibrous and sheet metal surfaces; tri-directionally reinforced 2x3 squares per inch fiberglass scrim; 9.5 mils thick, -40 to 240º F service temperatures; Venture Tape "1525CW" or approved equal.

D. Tie Wire: Annealed steel, 16 gauge.

E. Insulated pipe supports: Calcium silicate with galvanized steel jacket (min. 24 gauge); ANSI/ASTM C533; rigid white; 'k' value of 0.37 at 100º F, rated to 1,200º F; Thermal Pipe Shields "T-2000 Calsil" or equal.

PART 3 EXECUTION

3.01 PREPARATION

A. Install materials after piping and equipment has been tested and approved.

B. Clean surfaces for adhesives.

C. Prepare surfaces in accordance with manufacturer's recommendations.

3.02 INSTALLATION - PIPING

A. Install materials in accordance with manufacturer's recommendations, building codes and industry standards.

B. Continue insulation vapor barrier through penetrations except where prohibited by code.

C. Locate insulation and cover seams in least visible locations.

D. Neatly finish insulation at supports, protrusions, and interruptions.

E. Provide insulated cold pipes conveying fluids below ambient temperature with vapor retardant jackets with self-sealing laps. Insulate complete system, including under fitting jackets.

F. For insulated pipes conveying fluids above ambient temperature, secure jackets with self-sealing lap or outward clinched, expanded staples. Bevel and seal ends of insulation at equipment, flanges, and unions. Insulate complete system, including under fitting jackets.

G. Provide insulated piping supports on piping 1-½" inches diameter larger. Insulated piping supports shall not be less than the following lengths:

1-½" to 2-½" pipe size	10" long

H. Fully insulate all piping including all spaces under jacketing.

I. Jackets:

For pipe exposed in mechanical equipment rooms or in finished spaces below 10 feet above finished floor, finish with PVC jacket and fitting covers or metal jacket.

3.03 SCHEDULE – PIPING

PIPING	TYPE	PIPE SIZE INCH	MINIMUM INSULATION THICKNESS INCH
Domestic Cold Water	A,B,C,D	All Sizes	1”
Vent Through Roof	A,B,C,D	All Sizes	1”

3.04 INSTALLATION - EQUIPMENT

A. Install materials in accordance with manufacturer's instructions.

B. Do not insulate factory insulated equipment.

C. Apply insulation as close as possible to equipment by grooving, scoring, and beveling insulation, if necessary. Secure insulation to equipment with studs, pins, clips, adhesive, wires, or bands. Minimum 2" overlap on blanket material.

D. Fill joints, cracks, seams, and depressions with bedding compound to form smooth surface. On cold equipment, use vapor barrier cement.

E. Do not insulate over nameplate or ASME stamps. Bevel and seal insulation around such.

F. When equipment with insulation requires periodical opening for maintenance, repair, or cleaning, install insulation in such a manner that it can be easily removed and replaced without damage.

3.05 SCHEDULE - EQUIPMENT

EQUIPMENT	INSULATION TYPE	THICKNESS INCH
Domestic Cold Water Valves	E	1"

END OF SECTION

REVISED NEW WELL 5 PUMPING STATION

CITY OF VALDEZ, ALASKA
PROJECT NO. 21-310-2538
CONSTRUCTION CONTRACT NO. 2227
SEPTEMBER 2025

OWNER

CITY OF VALDEZ, ALASKA • OPPORTUNITIES IN EVERY SEASON •

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VALDEZ, AK 99686

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STATE OF ALASKA 49TH
DEAN D. DAY
09/23/2025
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REGISTERED PROFESSIONAL ENGINEER

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LOCATION MAP
VALDEZ, ALASKA

SHEET LIST

BASIS OF BEARINGS:
THE BASIS OF BEARING, COORDINATES, BEARINGS, DISTANCES ARE ALL BASED ON HIGH PRECISION GPS RTK, NAD83 ALASKA STATE PLANE ZONE 3 IN FEET.

BASIS OF ELEVATION:
THE BASIS OF ELEVATION IS BASED ON HIGH PRECISION GPS RTK, NAVD88 GEOID 12b.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "ORANGE BOOK" – STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION.
2. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INCLUDING A BUILDING PERMIT, A DUST CONTROL PERMIT AND A STORMWATER POLLUTION PREVENTION PLAN, AS WELL AS BONDING FROM THE APPROPRIATE AGENCIES PRIOR TO CONSTRUCTION.
3. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT THE WORK PERFORMED UNDER THE CONTRACT SHALL RESULT IN A COMPLETE OPERATING SYSTEM IN SATISFACTORY WORKING CONDITION WITH RESPECT TO THE FUNCTIONAL PURPOSES OF THE INSTALLATION. IF THERE ARE ANY DISCREPANCIES REGARDING THE IMPLIED MEANING OF THESE PLANS, THE CONTRACTOR IS DIRECTED TO CONTACT THE CONSULTING ENGINEER IMMEDIATELY.

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4. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK IN CONNECTION WITH CONSTRUCTION.
5. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE PROSECUTED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.
6. PRIOR TO FINAL ACCEPTANCE, BOND RELEASES, AND NOTICE OF COMPLETION, CERTIFIED LEGIBLE AS–BUILT DRAWINGS MUST BE SUBMITTED TO CITY OF VALDEZ. AS–BUILT DRAWINGS MUST SHOW ALL CHANGES AND ACTUAL FIELD LOCATIONS. IN THE ABSENCE OF CHANGES, A COPY OF APPROVED DRAWINGS WILL BE REQUIRED STATING "INSTALLED AS PER DRAWINGS" AND CERTIFIED AS SUCH BY THE ENGINEER.
7. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITION BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND INGRESS AND EGRESS TO SAID CONSTRUCTION. EXTENT OF TRANSITION TO BE DETERMINED BY THE ENGINEER.
8. BEFORE ANY WORK IS STARTED IN THE ADOT RIGHT–OF–WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE AND MEET ALL REQUIREMENTS OF THE ADOT ENCROACHMENT PERMIT. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING PUBLIC STREETS IMMEDIATELY AFTER THE FIRST GRADING WORK IS ACCOMPLISHED AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "ALASKA TRAFFIC MANUAL" – CURRENT EDITION, AND TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" – CURRENT EDITION, AND BE APPROVED BY THE ADOT ENGINEER BEFORE CONSTRUCTION BEGINS. A COPY OF THE ADOT PERMIT SHALL BE ON SITE AT ALL TIMES.
9. EXISTING UTILITIES ARE LOCATED ON PLANS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR THE PROTECTION OF UTILITIES AND THE DESIGN ENGINEER BEARS NO RESPONSIBILITY FOR UTILITIES NOT SHOWN ON THE PLANS OR NOT IN THE LOCATION SHOWN ON THE PLANS. THIS INCLUDES ALL SERVICE LATERALS OF ANY KIND. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING OVER OR NEAR EXISTING GAS MAINS AND UNDERGROUND POWER AND TELEPHONE LINES.
10. ALL EXCESS OR UNSUITABLE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH CITY OF VALDEZ CODES.
11. PROTECTION AND REPLACEMENT OF SURVEY MONUMENTS OR PROPERTY STAKES NOT DELINEATED ON THE CONTRACT DRAWINGS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. REPLACEMENT OF SURVEY MONUMENTS OR PROPERTY STAKES SHALL BE DONE TO ENGINEER'S SATISFACTION.
12. AT LEAST TWO WORKING DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES THAT MAY HAVE FACILITIES IN THE AREA OF CONSTRUCTION.
13. MODIFICATIONS TO EXISTING UTILITIES SHALL CONFORM TO CITY OF VALDEZ PUBLIC WORKS DESIGN STANDARDS. CONTRACTOR SHALL NOTIFY AFFECTED UTILITY 48 HOURS IN ADVANCE OF ANY WORK.
14. THE CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE AND ALL SUCH IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED OR RECONSTRUCTED TO CITY OF VALDEZ'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
15. CONTRACTOR SHALL POTHOLE EXISTING UTILITIES TO VERIFY DEPTHS, EXISTING MATERIALS AND LOCATION PRIOR TO EXCAVATION.
16. ALL DRAINAGES, ROADWAYS, CULVERTS, SLOPES, DITCHES, CURB & GUTTER & SIDEWALKS, FENCES, UTILITIES, AND STRUCTURES SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION BY THE CONTRACTOR IN ACCORDANCE WITH CITY OF VALDEZ.
17. CONTRACTOR SHALL STABILIZE TRENCHING ACTIVITIES INCLUDING EXISTING WATER AND SEWER LINES, OVERHEAD POWER POLES, EXISTING STRUCTURES AND WHEREVER NECESSARY, SUCH AS AT CROSSINGS AND ADJACENT TO STORM DRAIN HEADWALLS TO MAINTAIN TRENCH STRUCTURAL INTEGRITY.

PUBLIC WORKS UTILITY NOTES

1. ALL WORK AUTHORIZED BY THIS PLAN SHALL CONFORM TO CITY OF VALDEZ DESIGN STANDARDS, LATEST REVISION AND THE SPECIAL PROVISIONS OF THE PROJECT.
2. NO OPEN TRENCH SHALL BE ALLOWED ACROSS ANY STREET OR WITHIN TEN FEET (10') OF ANY TRAVEL–WAY, EXCEPT WHEN WORK IS IN ACTUAL PROGRESS. AREAS COVERED BY ACCEPTABLE STEEL PLATES ARE NOT TO BE CONSTRUCTED AS A TRENCH. NO OPEN TRENCH PERMITTED IN EXCESS OF 500 FEET OR LENGTH NECESSARY TO ACCOMMODATE PIPE INSTALLATION IN A SINGLE DAY, WHICHEVER IS GREATER.
3. ALL PERMITS AND APPROVED PLANS FOR THIS WORK MUST BE ON THE JOB SITE AT ALL TIMES.
4. ALL TRENCH CROSSINGS AND BACKFILL SHALL MEET THE STANDARD SPECIFICATIONS UNLESS OTHERWISE STATED.
5. CONTRACTOR SHALL MAINTAIN AN ON–GOING PROCESS FOR REMOVAL OF ALL SPILLAGE OF EXCAVATED MATERIAL ON ALL PAVED STREETS.
6. INSPECTIONS ARE REQUIRED. THE CONTRACTOR SHALL NOTIFY ALL EFFECTED PUBLIC ENTITIES 48 HOURS MINIMUM PRIOR TO COMMENCEMENT OF WORK.
7. ANY SPECIAL INSPECTIONS SHALL BE AS REQUIRED PER SPECIFICATIONS.
8. COMPACTION TESTS ARE REQUIRED. SOIL TESTING SHALL COMPLY WITH THE STANDARD SPECIFICATIONS.

WATER NOTES

1. ALL PIPE FOR THIS PROJECT SHALL BE HDPE WHERE SHOWN.
2. ALL PIPE SHALL BE FLUSHED AND PRESSURE TESTED PER AWWA C600 (LATEST REVISION).
3. ALL PIPE SHALL BE DISINFECTED PER AWWA C651 (LATEST REVISION).
4. THE CONSTRUCTION OPERATION SEQUENCING FOR MAINTAINING WATER SUPPLY SHALL BE DEFINED BY THE CONTRACTOR AND APPROVED BY THE CITY OF VALDEZ PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY THE CITY OF VALDEZ 48 HOURS IN ADVANCE OF ANY WATER MAIN SHUTDOWNS OR TIE–INS. THE TOTAL TIME OF ANY WATER SERVICE INTERRUPTION IS LIMITED TO 4 HOURS MAXIMUM. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVES.
6. ALL WATER SERVICES 2 INCHES OR LESS SHALL BE IPS, PE PIPE; SERVICES 3 INCHES OR GREATER SHALL BE PVC C900 DR 18 OR AS SPECIFIED ON THE PLANS.
7. MAINTAIN 18 INCHES VERTICAL AND 5 FEET HORIZONTAL SEPARATION BETWEEN ALL UNDERGROUND UTILITY LINES AND WATER LINES. IF WATER LINE IS BELOW POWER LINE OR IS WITHIN 18 INCH VERTICAL SEPARATION OF POWER LINE, POWER/TELEPHONE LINE SHALL BE ENCASED 4 INCHES MINIMUM OF CONCRETE EXTENDING 5 FEET EACH SIDE OF THE CROSSING. CONCRETE ENCASEMENT OF WATER LINES IS NOT ALLOWED.
8. WATER VALVE MARKERS SHALL BE BLUE CARSONITE UTILITY MARKER (CUM–375), 5'–2" WITH WATER VALVE DECAL (WV–XXX) OR APPROVED EQUAL. PLACE MARKER NO MORE THAN FIVE (5) FEET FROM THE VALVE.
9. SATISFACTORY BACTERIOLOGICAL ANALYSIS MUST BE PROVIDED TO ADEC PRIOR TO PLACING A NEW WELL, WATER STORAGE TANK, OR DISTRIBUTION AND TRANSMISSION MAINS INTO SERVICE.
10. CONTRACTOR SHALL SEAL ALL OPENINGS OF UNFINISHED PIPE OR APPURTENANCES AT THE END OF EACH CONSTRUCTION DAY TO PREVENT THE INTRODUCTION OF CONTAMINATION.
11. CONTACT ADEC FOR COORDINATION PRIOR TO DISPOSAL OF HEAVILY CHLORINATED WATER.
12. ALL MATERIALS COMING INTO CONTACT WITH POTABLE WATER SHALL BE NSF 61 LISTED AND CERTIFIED AS LEAD–FREE.
13. THE HDPE PIPE MANUFACTURER WILL CERTIFY THAT THE RESIN CAN BE USED IN THE CITY OF VALDEZ CLIMATE.
14. THE HDPE PIPE MANUFACTURER'S WELDABILITY TESTING RECOMMENDATIONS WILL BE SUBMITTED FOR APPROVAL BY THE ENGINEER AND FOLLOWED BY THE CONTRACTOR.
15. BUTT FUSION OF HDPE JOINTS WILL PER THE MANUFACTURER'S RECOMMENDATIONS, AND A DATA LOGGER WILL RECORD THE FUSION EQUIPMENT TEMPERATURE, TIMES, AND PRESSURES. ALL WELDS SHALL BE ACCOMPLISHED IN THE PRESENCE OF A QUALIFIED INSPECTOR PROVIDED BY THE ENGINEER.
16. HDPE PIPE BUTT FUSION WELDERS SHALL BE CERTIFIED TO OPERATE FUSION EQUIPMENT.
17. HDPE PIPE FUSION SHALL USE CERTIFIED EQUIPMENT. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, AND FOLLOW, EQUIPMENT MANUFACTURER'S QA/QC, MAINTENANCE, AND CALIBRATION.
18. PARTS AND PIPE FOR THIS PROJECT IN CONTACT WITH POTABLE WATER SHALL NOT HAVE MORE THAN 0.25 PERCENT LEAD.
19. CONTRACTOR SHALL PROVIDE CERTIFICATION THAT ALL PARTS AND PIPE IN CONTACT WITH POTABLE WATER ARE NSF–61 CERTIFIED BY AN ANSI ACCREDITED ORGANIZATION.
20. FLUSHING AREA IS SHOWN ON THE PLANS (FROM FIRE HYDRANT). FLUSH WATER SHALL BE FLUSHED USING AN AIR GAP. CHLORINATED FLUSH WATER SHALL BE DECHLORINATED USING A DIFFUSER ON THE HYDRANT THAT CONTAINS SODIUM SULFITE TABLETS. THEN THE FLUSH WATER CAN BE PUT ON THE GROUND AND GRADED TO AVOID DAMAGE TO ADJACENT PROPERTY. FLUSHED WATER MUST MEET THE REQUIREMENTS OF 18 AAC 70.
21. THE WATER SAMPLE TAP FOR BACTERIOLOGICAL SAMPLES SHALL BE OUT OF THE FIRE HYDRANT. TWO SEPARATE SAMPLES TAKEN 24 HOURS APART MUST PASS AS NEGATIVE FOR COLIFORM BACTERIA BEFORE NEW WATER PIPING CAN BE CONNECTED AND PUT INTO SERVICE IN THE WATER SYSTEM.

ABBREVIATIONS

A	AREA
AC	ASPHALTIC CONCRETE
ACP	ABESTOS CEMENT PIPE
ADJ	ADJUST, ADJUSTABLE
AL	ARC LENGTH
AD	AREA DRAIN
BC	BEGINNING OF CURB / BACK OF CURB
BCR	BEGINNING OF CURB RETURN
BDRY	BOUNDARY
BEG	BEGIN
BM	BENCHMARK
BSW	BACK OF SIDEWALK
BVC	BEGINNING OF VERTICAL CURVE
CB	CATCH BASIN / DROP INLET
C&G	CURB AND GUTTER
CF	CURB FACE
CIP	CAST IRON PIPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONST	CONSTRUCT, CONSTRUCTION
DC	DEPRESSED CURB
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DROP MANHOLE
E	EAST
EC	END OF CURVE
ECR	END OF CURB RETURN
EF	ELECTROFUSION
EG	EXISTING GROUND
EL	ELEVATION
EP, EOP	EDGE OF PAVING
EVC	EDGE OF VERTICAL CURVE
EXIST, EX	EXISTING
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOWLINE
FM	FORCEMAIN
G	GAS
GB	GRADE BREAK
GV	GAS VALVE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HGT	HEIGHT
HORIZ.	HORIZONTAL
HP	HIGH POINT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
L	LENGTH
LS	LANDSCAPE
LAT	LATERAL
LF	LINEAL FEET
LT	LEFT
LP	LOW POINT
MAX	MAXIMUM
MB	MAIL BOX
MH	MANHOLE
MIN	MINIMUM
N	NORTH
NO	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHE	OVERHEAD POWER LINE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PP	POWER POLE
POC	POINT OF CONNECTION
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
Q	RATE OF FLOW
RAD	RADIUS
RED	REDUCER
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
R/W, ROW	RIGHT OF WAY
S	SOUTH
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FOOT
SHP	STEEL HIGH PRESSURE
SHT	SHEET
STA	STATION
STD	STANDARD
STL	STEEL
SW	SIDEWALK
T	TANGENT DISTANCE
TBC	TOP BACK OF CURB
TC	TOP OF CURB
TEL	TELEPHONE
TFC	TOP FRONT OF CURB
TOC	TOP OF CONCRETE
TMH	TOP OF MANHOLE
TOW	TOP OF WALL
TRANS	TRANSITION
TSC	TRAFFIC SIGNAL CONDUIT
TSW	TOP OF SIDEWALK
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC LINE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VG	VALLEY GUTTER
W	WEST, WATER
WV	WATER VALVE

LEGEND

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- EXISTING SEWER MAIN
- EXISTING TELEPHONE
- PROPOSED WATER VALVE
- EXISTING WATER VALVE
- PROPOSED AIR VALVE ASSEMBLY
- PROPOSED FIRE HYDRANT
- EXIST FIRE HYDRANT
- PROPOSED SINGLE METER
- PROPOSED DOUBLE METER
- EXISTING METER
- PROPOSED SSMH
- EXISTING SSMH
- FLOW ARROW
- SECTION/ PROPERTY LINE/ EASEMENT LINE
- CENTERLINE
- FENCE
- EDGE OF ROAD
- OVERHEAD POWER LINE
- LIGHT POLE
- TELEPHONE PEDESTAL
- POWER POLE

REVISION	BY	DATE	APPRVL REV

TITLE: **GENERAL NOTES, ABBREVIATIONS, AND LEGEND**

PROJECT: **NEW WELL 5 PUMPING STATION VALDEZ, ALASKA**

STATE OF ALASKA 49 TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423–9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293–1743

BY :
DATE : JUNE 2025
SCALE : AS SHOWN

SHEET C2 OF 8 SHEETS

WHALEN DR.

PIONEER DR.

SEE SHEET C6 FOR WELL 5 TIE-IN TO WELL 4

EXIST 12" WATER MAIN

EXIST 8" WATER MAIN

EXIST PROPERTY LINE

EXIST EASEMENT

EXIST 8" WATER MAIN HDPE WATER

EXIST 12" WATER MAIN HDPE WATER

TIE-IN TO EXIST 8" AND 12" WATER MAINS SEE TIE-IN DETAIL 1/D1

N: 2606161.46
E: 1573719.74

N: 2606162.56
E: 1573731.00

N: 2606149.40
E: 1573727.63

INSTALL 90 LF 12" DIP

NEW 29'-6" x 40'-9" WELL BUILDING FOR BUILDING PIPING PLAN SEE SHEET C5

N: 2606158.90
E: 1573735.45

N: 2606214.28
E: 1573799.30

N: 2606232.91
E: 1573776.40

N: 2606263.96
E: 1573801.66

NEW TRANSFORMER REINFORCED CONCRETE SLAB AND BOLLARDS SEE ELECTRICAL SHEETS

NEW GENERATOR AND LOAD BANK INSTALL NEW 14'x4.5'x12" REINFORCED CONCRETE SLAB AND BOLLARDS SEE DETAIL

SEE ELECTRICAL SHEETS

30'

20'

10'

18'

92'

N: 2606245.33
E: 1573824.56

INSTALL 25 LF 12" DIP

INSTALL 90 LF 12" DIP

N: 2606225.56
E: 1573821.37

12" DI 45° MJ BEND WITH THRUST BLOCK

N: 2606203.03
E: 1573824.03

12" DI 45° MJ BEND WITH THRUST BLOCK

INSTALL 23 LF 12" DIP

N: 2606136.07
E: 1573769.57

12" DI 45° MJ BEND WITH THRUST BLOCK

EXIST 8" AND 12" WATER MAINS ABANDON IN PLACE

6'

10'

20'

EXIST TEST WELL PROTECT IN PLACE

N: 2606139.15
E: 1573792.62

N: 2606131.12
E: 1573770.24

12" DI 45° MJ BEND WITH THRUST BLOCK

INSTALL NEW 8'x8'x6" REINFORCED CONCRETE SLAB AND BOLLARDS SEE WELL CROSS SECTION SHEET C8

NEW WELL SEE SHEET C8

N: 2606124.84
E: 1573778.48

12" DIP DRAIN TO EXIST DRAIN INLET SEE PROFILE ON SHEET C7

TIE FLOOR DRAIN TO EXIST DI SEE SHEET C7

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

CALL 811 BEFORE YOU DIG
811
SAFE DIGGING PARTNER

REVISION	BY	DATE	APPRV.

TITLE: SITE PIPING PLAN

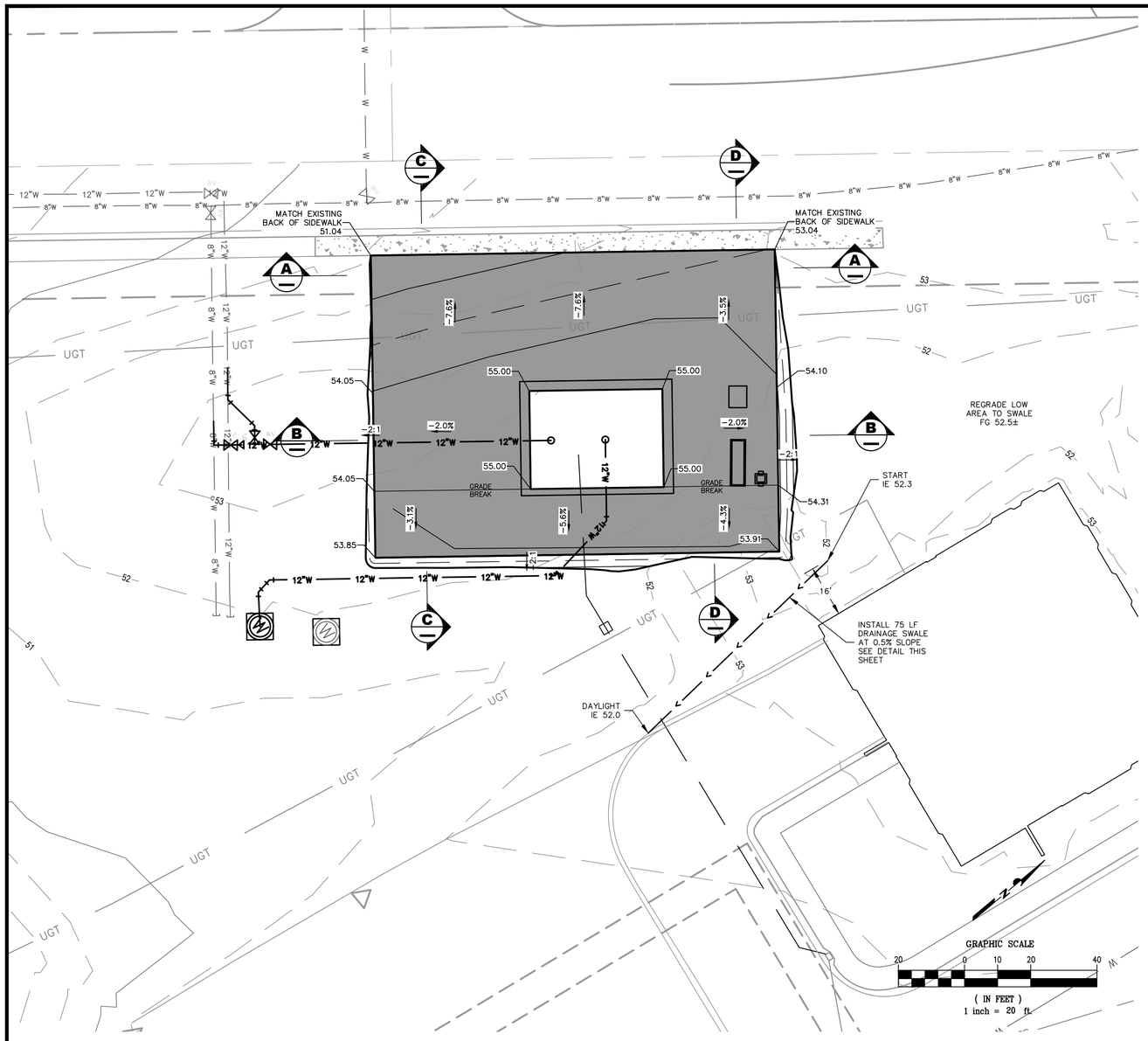
PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

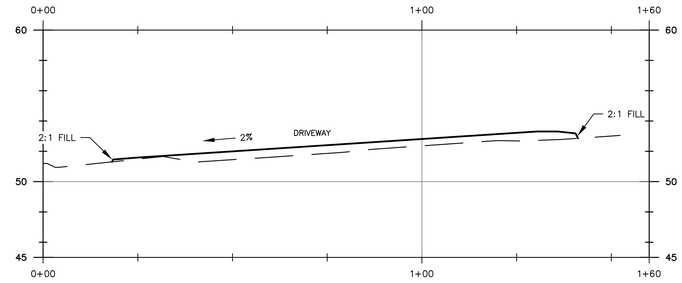
STATE OF ALASKA
49 TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

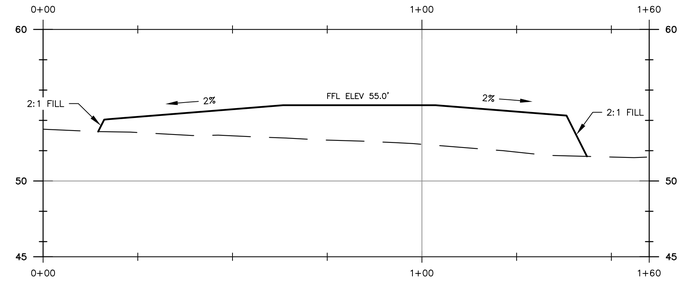
BY :
DATE : JUNE 2025
SCALE : AS SHOWN

SHEET C3 OF 8 SHEETS

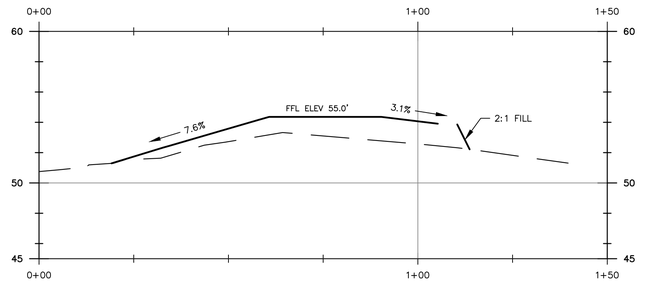




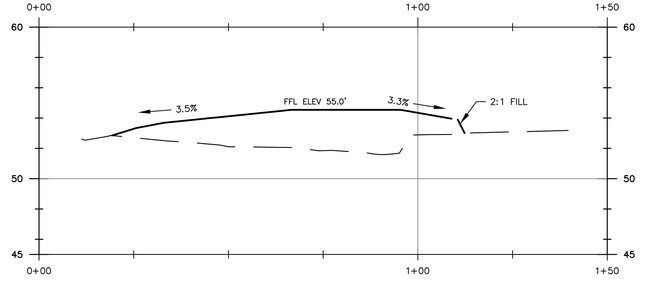
SECTION A
VER SCALE: 1"= 5' HOR SCALE 1"=20'



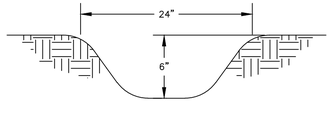
SECTION B
VER SCALE: 1"= 5' HOR SCALE 1"=20'



SECTION C
VER SCALE: 1"= 5' HOR SCALE 1"=20'



SECTION D
VER SCALE: 1"= 5' HOR SCALE 1"=20'



SWALE DETAIL 1
SCALE: N.T.S.

CALL 811 BEFORE YOU DIG
811
SAFE DIGGING PARTNER

REVISION	BY	DATE	APPRV. REV

TITLE
SITE GRADING PLAN

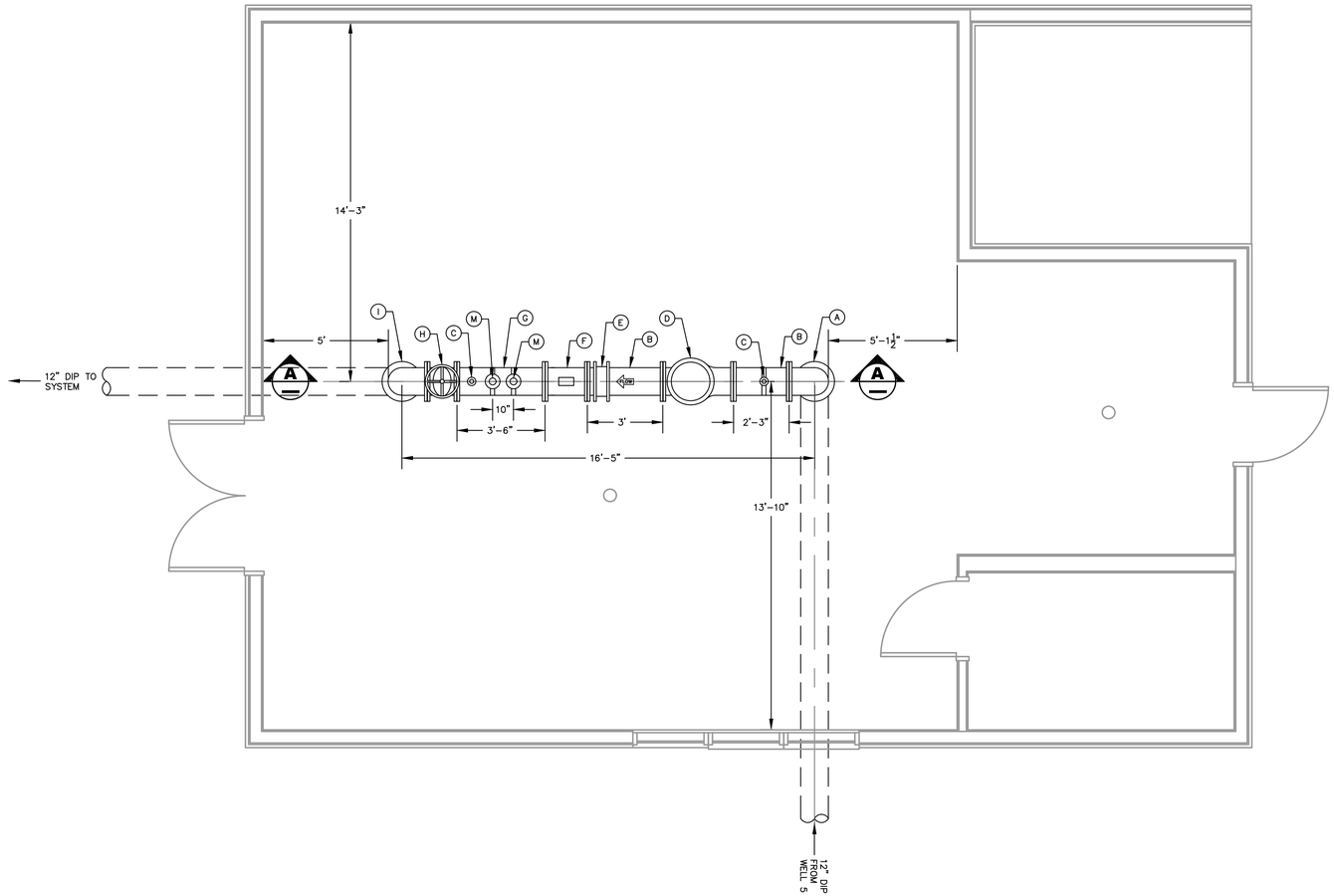
PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49 TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

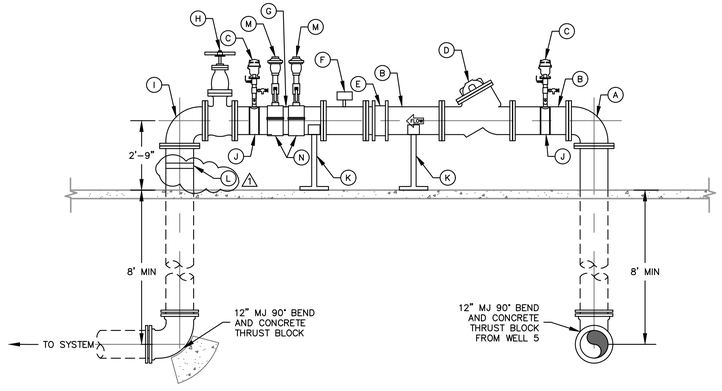
DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

BY :
DATE : JUNE 2025
SCALE : AS SHOWN

SHEET C4 OF 8 SHEETS



PIPING FLOOR PLAN
SCALE: 1"=3'



SECTION A
SCALE: 1"=3'

MATERIALS LIST		
ITEM	**QTY**	**DESCRIPTION**
A	1	12" DI FL 90
B	2	12" DI FLxPE SPOOL
C	2	2" COMBINATION AIR VALVE WITH SAMPLE TAP
D	1	12" CHECK & BOOSTER PUMP CONTROL VALVE (BERMAD 740 EN)
E	1	12" REST. FL ADAPT. (ROMAC RFCA)
F	1	12" MAG METER (BADGER M2000)
G	1	12" DI FLxFL SPOOL
H	1	12" OS&Y FL RES. WEDGE GATE VALVE (AFC 2500)
I	1	12" DI FL 90
J	2	2" DOUBLE STRAP TAPPING SLEEVE
K	1	PIPE SUPPORT
L	1	1 ½" SERVICE SADDLE
M	2	2" BERMAD PRESSURE RELIEF VALVES (SEE DETAIL SHEET 3/D1)
N	2	12"x2" STAINLESS SADDLES

NOTE:
1) SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SHEETS FOR BUILDING DETAILS.
2) FEDERAL SAFETY BLUE SHERWIN-WILLIAMS MACROPOXY EPOXY FOR POTABLE WATER OR EQUAL, 2 COATS AND 10 MILS MINIMUM ON ALL EXPOSED POTABLE WATER PIPING AND FITTINGS. 2

APPRVL	REV	DATE	BY	REVISION
	1	9/3/2025	MU	ITEM L MOVED TO OTHER SIDE OF CHECK VALVE AND CHANGED SIZE
	2	9/23/2025	MU	ADDED NOTE FOR PAINT

TITLE **BUILDING PIPING PLAN AND SECTION**

PROJECT **NEW WELL 5 PUMPING STATION**
VALDEZ, ALASKA

STATE OF ALASKA 49 TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

BY :
DATE : JUNE 2025
SCALE : AS SHOWN

SHEET **C5** OF **8** SHEETS

DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

SHEET C6 OF 8 SHEETS

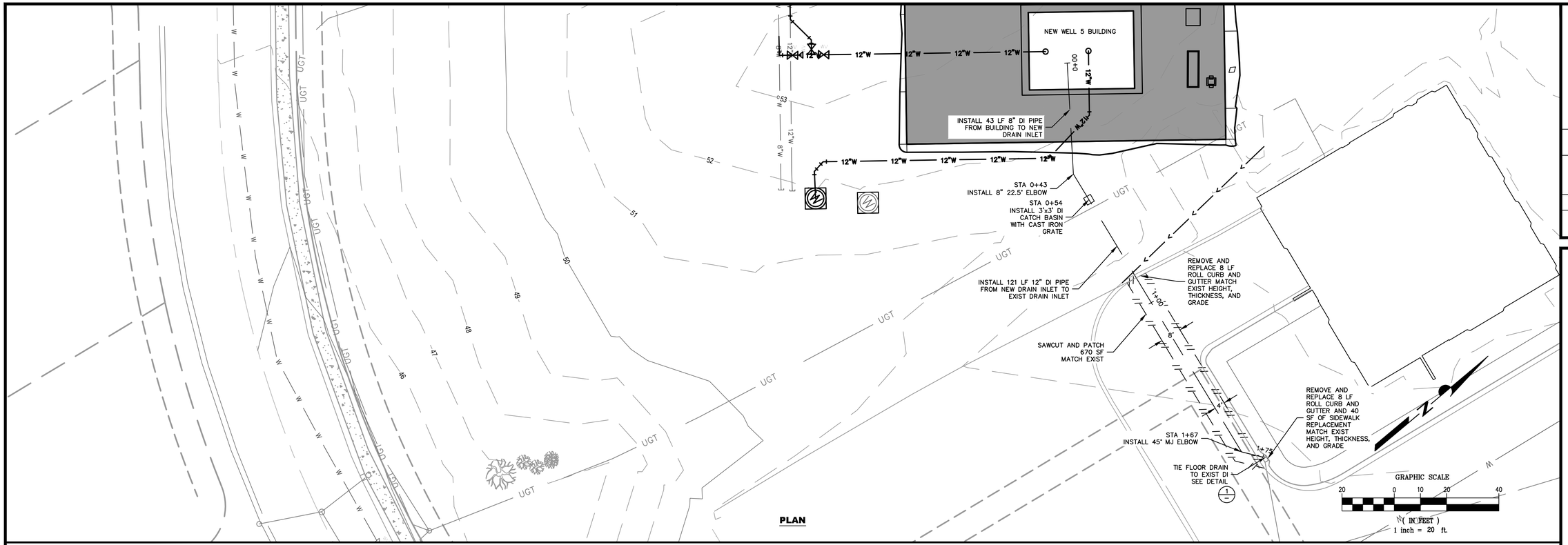
BY :
DATE : JUNE 2025
SCALE : AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
CE No. 7452
DEAN O. DAY
49 TH STATE OF ALASKA

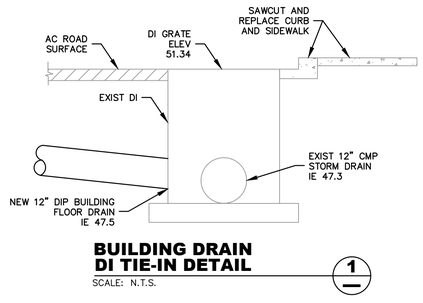
TITLE
WELL 5 TRANSMISSION MAIN

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

APPRVL	REV.	DATE	BY	REVISION



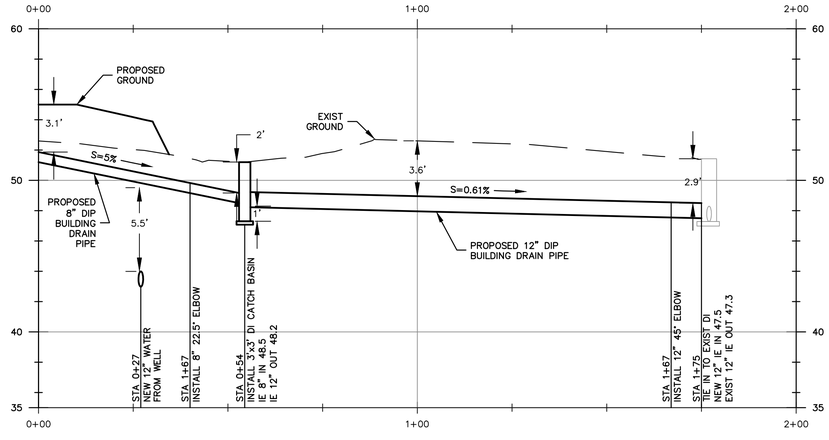
PLAN



BUILDING DRAIN DI TIE-IN DETAIL

SCALE: N.T.S.

1



PROFILE

HOR SCALE: 1"=20'
VER SCALE: 1"=5'

APPRV'L	REV	DATE	BY	REVISION

TITLE **BUILDING DRAIN PLAN AND PROFILE**

PROJECT **NEW WELL 5 PUMPING STATION VALDEZ, ALASKA**

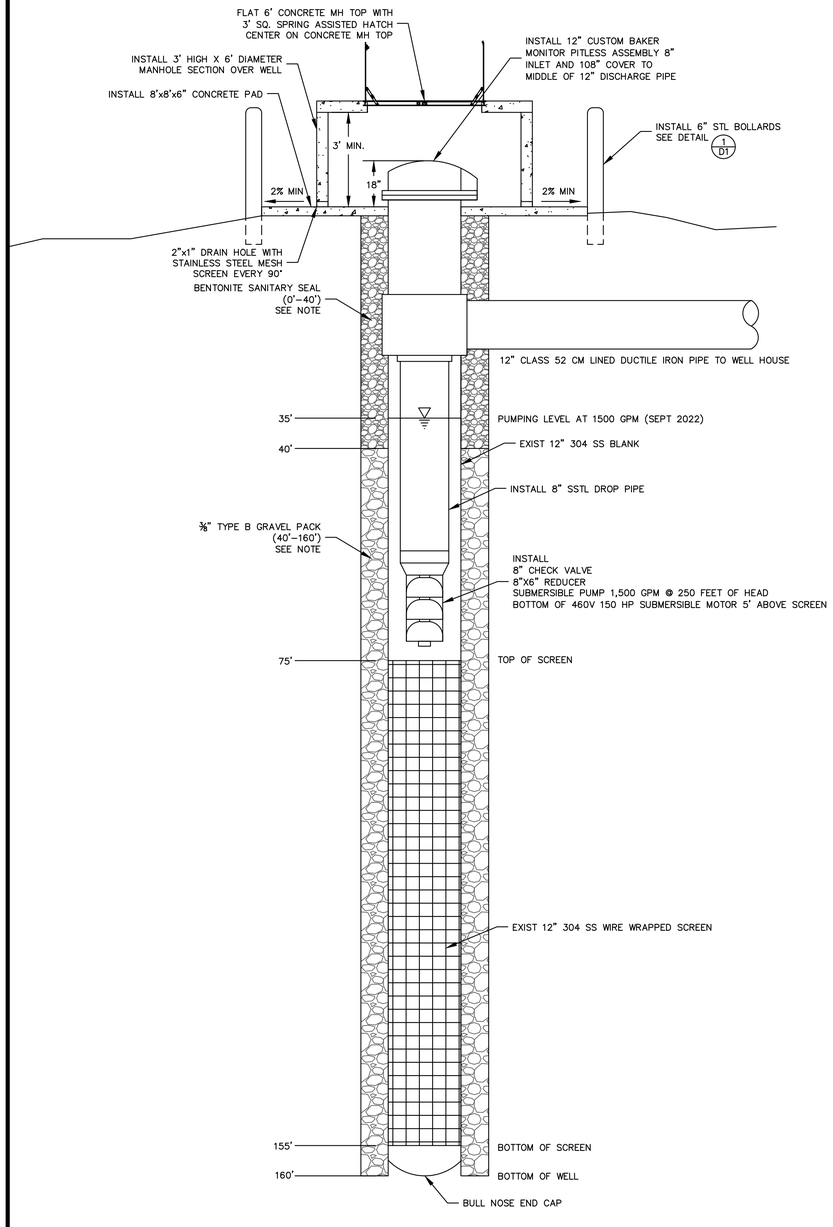
STATE OF ALASKA 49 TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

BY :
DATE : JUNE 2025
SCALE : AS SHOWN

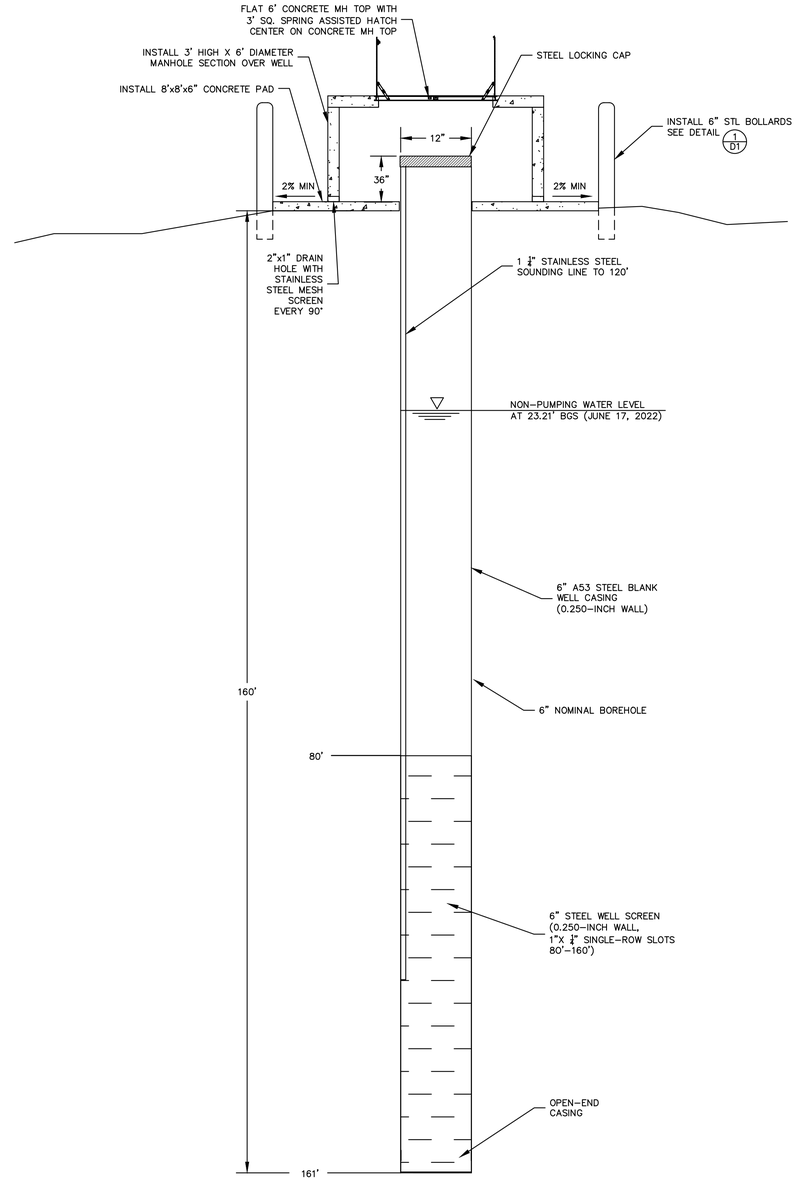
SHEET C7 OF 8 SHEETS

CALL 811 BEFORE YOU DIG 811 SAFE DIGGING PARTNER

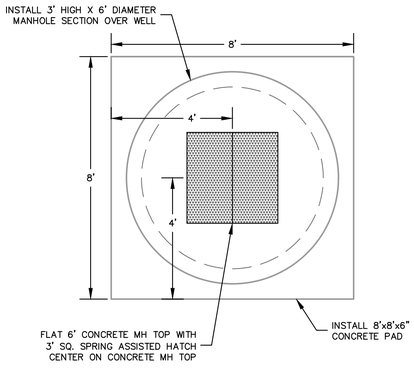


NOTE:
CONTRACTOR TO REPAIR SANITARY SEAL AFTER INSTALLATION OF PITLESS UNIT AND DISCHARGE PIPE.

EXIST WELL SECTION
SCALE: N.T.S.



EXIST MONITORING WELL SECTION
SCALE: N.T.S.



LID DETAIL
SCALE: N.T.S.

REVISION	BY	DATE	APPRV	REV

TITLE: **WELL CROSS SECTION**

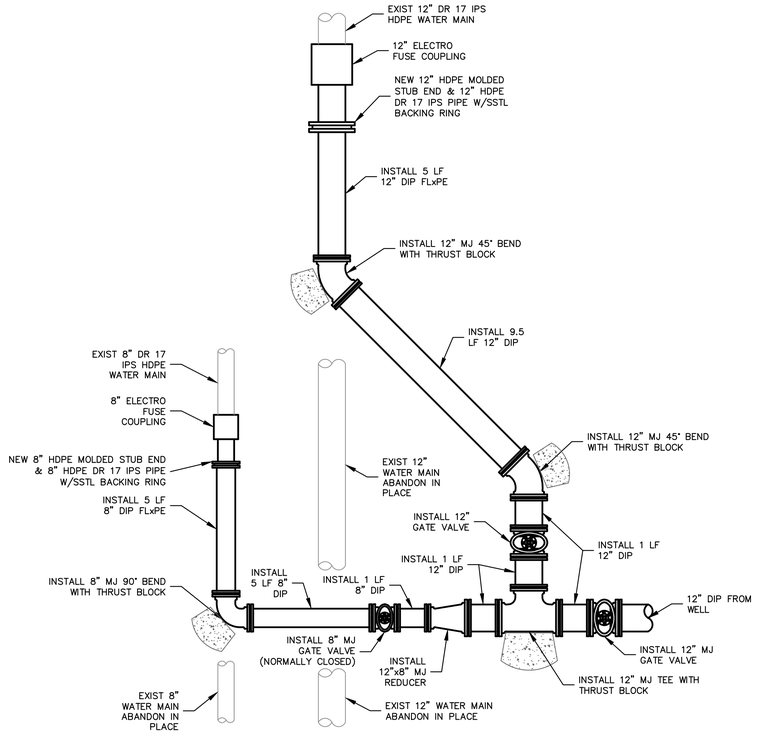
PROJECT: **NEW WELL 5 PUMPING STATION**
VALDEZ, ALASKA

STATE OF ALASKA 49TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

BY :
DATE : JUNE 2025
SCALE : AS SHOWN

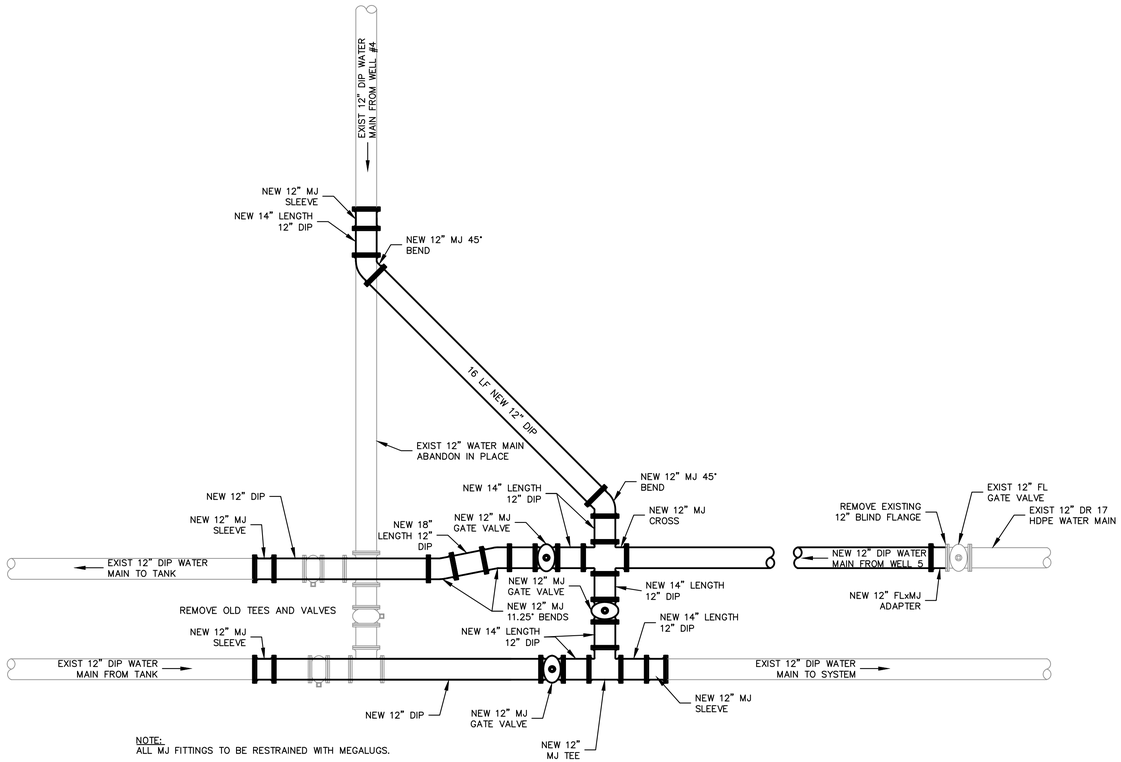
SHEET C8 OF 8 SHEETS



NOTE:
ALL MJ FITTINGS TO BE RESTRAINED WITH MEGALUGS.

EXIST WATER MAIN TIE-IN 1

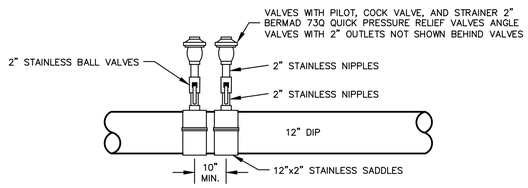
SCALE: N.T.S.



NOTE:
ALL MJ FITTINGS TO BE RESTRAINED WITH MEGALUGS.

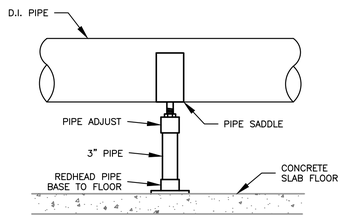
WELL 5 TO WELL 4 TIE-IN 2

SCALE: N.T.S.



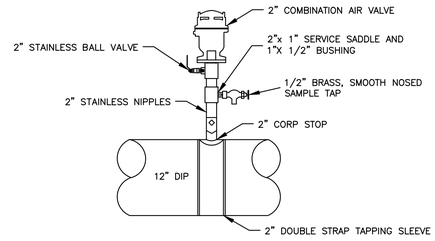
PRESSURE RELIEF VALVE 3

SCALE: N.T.S.



PIPE STAND DETAIL 4

SCALE: N.T.S.



AIR VALVE WITH SAMPLE TAP DETAIL 5

SCALE: N.T.S.

REVISION	BY	DATE	APPRV.	REV

GENERAL DETAILS

TITLE

NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

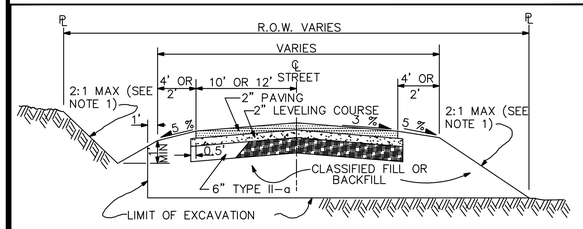
PROJECT

STATE OF ALASKA
49 TH
DEAN D. DAY
01/17/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

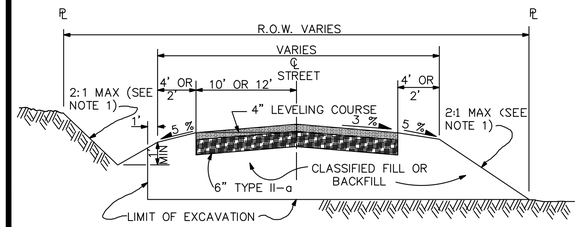
DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

BY :
DATE : JUNE 2025
SCALE : AS SHOWN

SHEET D1 OF 2 SHEETS



TYPICAL SECTION - 20'/24' STRIP PAVING



TYPICAL SECTION - 20'/24 GRAVEL STREET

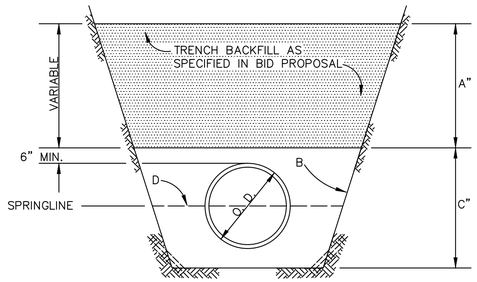
NOTES:

1. MATERIAL TO BE PLACED OR REMOVED AND GRADED IN A NEAT MANNER FROM EXCAVATION LIMITS TO EXISTING ELEVATION AT PROPERTY LINE AS DIRECTED BY THE ENGINEER.
2. DEPTH OF EXCAVATION TO BE DETERMINED BY THE ENGINEER.
3. THE TOP 6" OF CLASSIFIED FILL OR BACKFILL IMMEDIATELY BENEATH THE LEVELING COURSE SHALL BE RESTRICTED TO MINUS 3-INCH MATERIAL.
4. UNLESS OTHERWISE APPROVED, THE ℄ OF STREET WILL BE THE ℄ OF R.O.W.

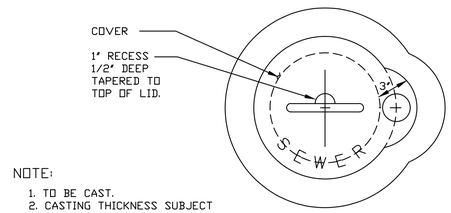
SCALE: NTS	APPROVED:	REVISED: 02/03	TYPICAL SECTIONS FOR 20'/24' STRIP PAVING AND GRAVEL STREETS	SECTION# 20.01 THRU# 20.14	DETAIL # 20-1

NOTES:

(A) TRENCH BACKFILL MATERIAL PLACED AND COMPACTED TO DEPTHS AS DETERMINED BY THE ENGINEER.
(B) TRENCH WALL SLOPES WILL VARY WITH SOIL STRENGTH AND CHARACTER. SLOPES TO CONFORM TO SAFETY STANDARDS.
(C) CLASS "B" OR "C" BEDDING.
(D) BEDDING TO SPRING LINE ONLY WHEN DUCTILE IRON PIPE IS INSTALLED.

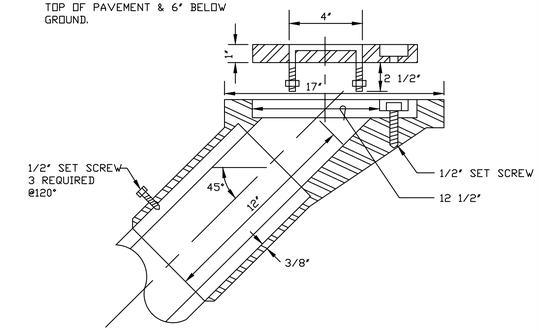


SCALE: NONE	APPROVED:	REVISED: 1/88	TRENCH BACKFILL	SECTION# 20.07	DETAIL # 20-11

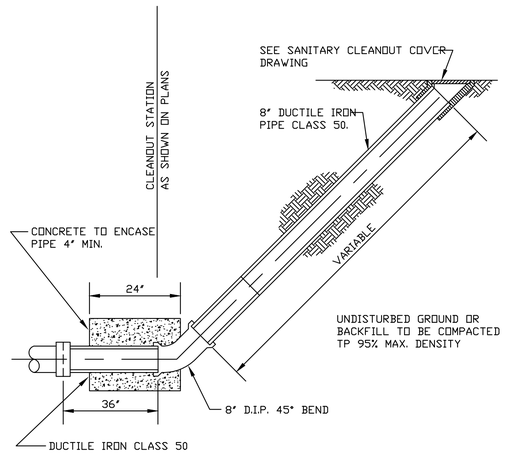


NOTE:

1. TO BE CAST.
2. CASTING THICKNESS SUBJECT TO FOUNDRY REQUIREMENTS.
3. CASTING MUST BE SIZED TO 8" AND OVER, CLASS 22 C.I. OR CLASS 50 D.I. PIPE.
4. COVER SHALL BE 1/4" BELOW TOP OF PAVEMENT & 6" BELOW GROUND.

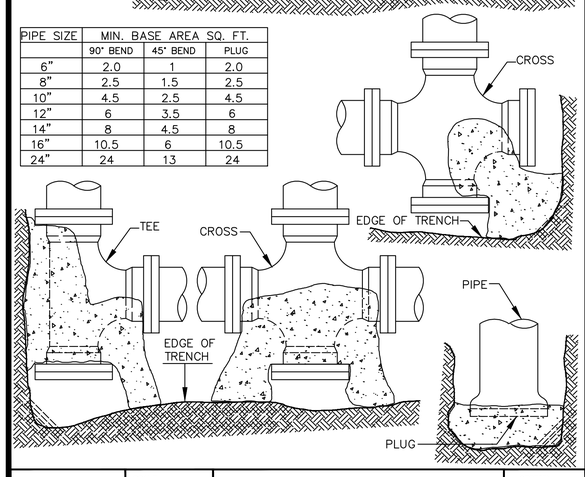


SCALE: 3"=1'-0"	APPROVED:	REVISED: 11/87	SANITARY CLEANOUT COVER	SECTION# 50.12	DETAIL # 50-20



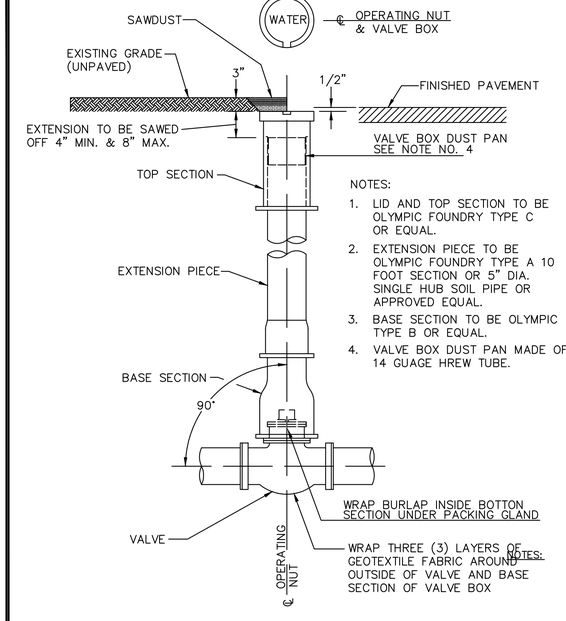
NOTE: WHEN D.I. PIPE WITH MECHANICAL JOINT IS USED CONCRETE ENCASEMENT IS NOT NECESSARY

MUNICIPALITY OF ANCHORAGE	SCALE: 1/2"=1'-0"	APPROVED:	REVISED: 11/87	SANITARY CLEANOUT	SECTION# 50.12	DETAIL # 50-21



PIPE SIZE	MIN. BASE AREA SQ. FT.		
	90° BEND	45° BEND	PLUG
6"	2.0	1	2.0
8"	2.5	1.5	2.5
10"	4.5	2.5	4.5
12"	6	3.5	6
14"	8	4.5	8
16"	10.5	6	10.5
24"	24	13	24

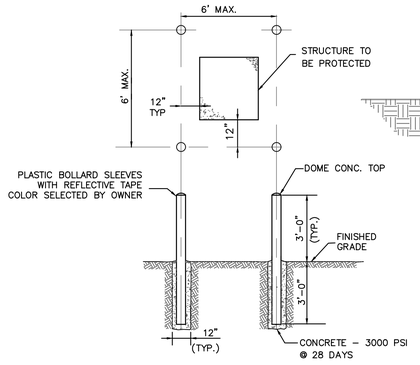
SCALE: NTS	APPROVED:	REVISED: 11/87	THRUST BLOCK	SECTION# 60.02	DETAIL # 60-2



NOTES:

1. LID AND TOP SECTION TO BE OLYMPIC FOUNDRY TYPE C OR EQUAL.
2. EXTENSION PIECE TO BE OLYMPIC FOUNDRY TYPE A 10 FOOT SECTION OR 5" DIA. SINGLE HUB SOIL PIPE OR APPROVED EQUAL.
3. BASE SECTION TO BE OLYMPIC TYPE B OR EQUAL.
4. VALVE BOX DUST PAN MADE OF 14 GUAGE HREW TUBE.

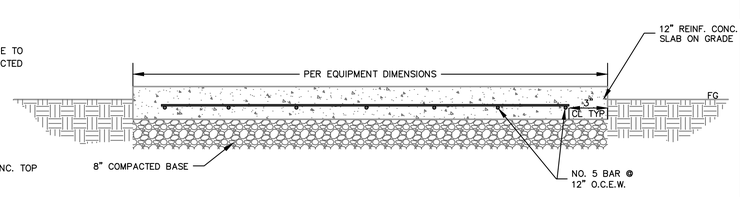
SCALE: NTS	APPROVED:	REVISED: 11/87	TYPICAL VALVE BOX	SECTION# 60.03	DETAIL # 60-4



1. BOLLARDS TO BE 6" SCH. 40 STEEL PIPE, 6'-0" LONG AND FILLED WITH CONCRETE.
2. BOLLARDS ON SIDE NOT ACCESSIBLE TO VEHICLES MAY BE OMITTED.
3. DO NOT BLOCK HOSE CONNECTIONS ON HYDRANT.
4. BOLLARD SPACING PER PLANS.

BOLLARD DETAIL 1

SCALE: N.T.S.



CONCRETE SLAB DETAIL 2

SCALE: N.T.S.

REVISION	BY	DATE	APPRV	REV

TITLE: **GENERAL DETAILS**

PROJECT: **NEW WELL 5 PUMPING STATION VALDEZ, ALASKA**

STATE OF ALASKA 49TH
DEAN D. DAY
09/23/2025
CE No. 7452
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9080
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

BY : DATE : JUNE 2025 SCALE : AS SHOWN

SHEET D2 OF 2 SHEETS

CODE PLAN GENERAL NOTES

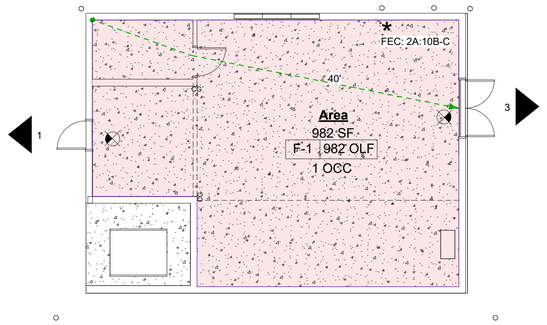
1. SEE MAIN FLOOR PLAN FOR DIMENSIONS, WALL TYPE REFERENCES.
2. SEE DOOR AND RELITE SCHEDULES FOR DOOR HARDWARE AND OTHER FIRE RATING REQUIREMENTS FOR DOORS AND RELITES.
3. SEE ELECTRICAL FOR EXIT SIGNS AND EMERGENCY EGRESS LIGHT FIXTURES.
4. INTERIOR WALL AND CEILING FINISHES SHALL CONFORM TO IBC SECTION 803.5 AND TABLE 803.5 FOR FLAME SPREAD REQUIREMENTS.
5. PORTABLE FIRE EXTINGUISHERS MUST BE PROVIDED WHERE REQUIRED BY NFPA 101.4. WHEN PROVIDED, FIRE EXTINGUISHERS MUST BE LOCATED IN ACCORDANCE WITH NFPA 10. IF PROVIDED IN ELECTRONIC EQUIPMENT AREAS, CLEAN AGENT TYPE PORTABLE FIRE EXTINGUISHERS MUST BE USED. PORTABLE FIRE EXTINGUISHERS UTILIZING CARBON DIOXIDE (CO2) ARE ONLY PERMITTED TO BE USED IN ENCLOSED ROOMS IF THEY EXCEED 1,000SF.

FIRE STOPPING NOTES

ALL PENETRATIONS MADE THROUGH FIRE-RATED WALLS, CEILINGS AND FLOOR ASSEMBLIES, BOTH EMPTY HOLES AND HOLES ACCOMODATING SUCH ITEMS AS DUCTS, PIPES, CONDUIT, AND OTHER PENETRATING ITEMS SHALL BE FIRE- STOPPED. PENETRATIONS SHALL BE FIRE STOPPED TO RETAIN THE INTEGRITY OF THE TIME-RATED CONSTRUCTION BY MAINTAINING AN EFFECTIVE BARRIER AGAINST THE SPREAD OF FLAME, SMOKE, AND GASES, IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 07270 - FIRESTOPPING. MECHANICAL AND ELECTRICAL RELATED PENETRATIONS SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR MAKING THE PENETRATION - SEE MECHANICAL AND ELECTRICAL.

PLAN LEGEND

- 1 HR WALLS; 60 MINUTE OPENINGS OCCUPANCY SEPARATION
- 1 HR WALLS; 20 MINUTE OPENINGS OCCUPANCY SEPARATION
- SMOKE-PROOF ENCLOSURES
- ▲ ## EXIT FROM ROOMS. NUMBER INDICATES THE CALCULATED ACCUMULATED LOAD AT THAT ROOM OR BUILDING EXIT. ARROW INDICATES EXIT DIRECTION.
- ✱ FIRE EXTINGUISHER CABINET, 2A:10B-C



1 FIRST FLOOR CODE PLAN
Scale: 1/8" = 1'-0"

BUILDING CODE ANALYSIS

GOVERNING CODES: 2021 INTERNATIONAL BUILDING CODE (AK AMMENDMENTS)
2017 ICC/ANSI A117.1 (AK AMMENDMENTS)
2021 INTERNATIONAL MECHANICAL CODE (AK AMMENDMENTS)
2021 INTERNATIONAL FUEL AND GAS CODE (AK AMMENDMENTS)
2021 INTERNATIONAL FIRE CODE (AK AMMENDMENTS)
2021 NFPA STANDARD 13 & 72 FIRE PROTECTION
2018 UNIFORM PLUMBING CODE (AK AMMENDMENTS)
2020 NATIONAL ELECTRICAL CODE

CHAPTER 3 OCCUPANCY CLASSIFICATION AND USE

SECTION 306 F-1 MODERATE -HAZARD FACTORY INDUSTRIAL; WATER TREATMENT FACILITY

CHAPTER 4 SPECIAL REQUIREMENTS BASED ON USE/OCCUPANCY

N/A

CHAPTER 5 GENERAL BUILDING HEIGHTS & AREAS

CONSTRUCTION TYPE V-B, SEPARATED OCCUPANCIES

IBC TABLE 504.3 / 504.4 ALLOWABLE NUMBER OF STORIES/HEIGHT ABOVE GRADE PLANE:

OCC.	CONST. TYPE	ALLOW. STORY	ALLOW. HEIGHT/ACTUAL HEIGHT
F-1/NS	V-B	1	40'/20'-8"

IBC TABLE 506.2 ALLOWABLE AREA FACTOR:

OCC.	ALLOWABLE AREA	ACTUAL AREA
F-1	8500 SF	982 SF

508.3 NON-SEPARATED BASED ON PROVISIONS OF 508.3.1 AND 508.3.2
OCCUPANCY SEPARATION NOT REQUIRED

508.4 ACCESSORY OCCUPANCIES--NO ACCESSORY OCCUPANCIES

509 INCIDENTAL OCCUPANCIES--NO INCIDENTAL OCCUPANCIES

CHAPTER 6 TYPES OF CONSTRUCTION

TABLE 601: TYPE VB -- NO FIRE RESISTANT RATING REQUIRED FOR BUILDING ELEMENTS

TABLE 602: FIRE RESISTANCE RATING FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE
F-1 X>/= 30' NO RATING REQUIRED

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

TABLE 716.5 FIRE-RATED ASSEMBLIES:	RATING:	ASSEMBLY:
• STRUCTURAL FRAME	0-HR	N/A
• EXTERIOR BEARING WALLS	0-HR	N/A
• INTERIOR BEARING WALLS	0-HR	N/A
• FLOOR/CEILING	0-HR	N/A
• ROOF/CEILING	0-HR	N/A
• FIRE BARRIERS	NONE REQUIRED	
• FIRE PARTITIONS	NONE REQUIRED	
• DOORS	NONE REQUIRED	
• SMOKE PARTITIONS	NONE REQUIRED	

CHAPTER 9 FIRE PROTECTION SYSTEMS

903 AUTOMATIC SPRINKLER SYSTEMS
F-1 NOT REQUIRED

906 PORTABLE FIRE EXTINGUISHERS
IFC TABLE ORDINARY HAZARD TYPE 2-A WITHIN 75' TRAVEL DISTANCE

907 FIRE ALARM AND DETECTION SYSTEMS
907.2 MANUAL FIRE ALARM NOT REQUIRED
907.2.13.2 F-1 NOT REQUIRED

CHAPTER 10 MEANS OF EGRESS

TABLE 1004.5 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT
OCCUPANT LOAD 1:300=3 OCCUPANTS

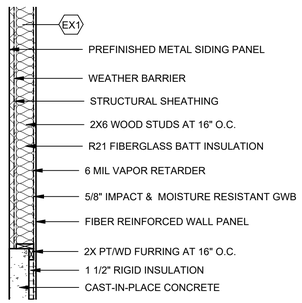
1006.2.1 1 EXIT REQUIRED; 2 PROVIDED
OCCUPANT LOAD <30; MAX
MAX TRAVEL DISTANCE 75'; ACTUAL 40'

CHAPTER 12 VENTILATION

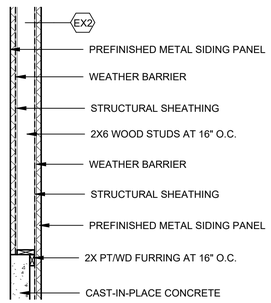
TABLE
12.03.02 PROVIDE 28.3 SQUARE INCHES
OF VENTILATION PER ROOF TRUSS BAY
FOR TOTAL OF 566 SQUARE FEET.
50% AT LOW EAVE - 14SF
50% AT HIGH EAVE - 14SF

TYPICAL CONSTRUCTION ASSEMBLIES

EXTERIOR WALL ASSEMBLIES

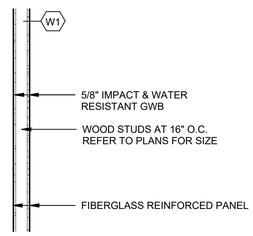


EX1_ 2X6 WALL W/ CONCRETE BASE



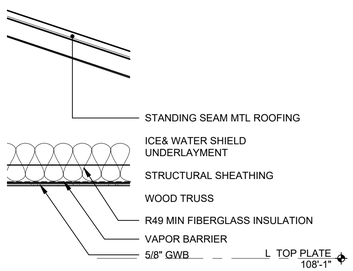
EX2_ 2X6 WALL

INTERIOR WALL ASSEMBLIES



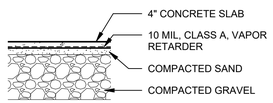
W1_ WALL - 2X STUD

ROOF ASSEMBLY

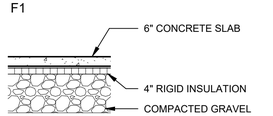


RF_ ROOF/CEILING

FLOOR ASSEMBLY



F1



F2

REVISION	BY	DATE	APPRVL REV

WOLF
ARCHITECTURE

625 S Cobb St Palmer, AK 99645
907.746.6670 | wolfarchitecture.com

TITLE: CODE PLAN

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA 49TH
1.17.25
GARY S. WOLF
A8257
REGISTERED PROFESSIONAL ARCHITECT

DAY ENGINEERING
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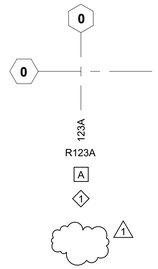
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

BY:
DATE: 6/30/25
SCALE:

SHEET: G1.1

ARCHITECTURAL MATERIALS



GRID LINE

DOOR IDENTIFICATION

RELITE IDENTIFICATION

WINDOW TYPE

LOUVER TYPE

REVISION

MATCH LINE
Shaded area is side considered

WORK POINT, DATUM POINT, CONTROL POINT

DETAIL
Upper mark denotes drawing number
Lower mark denotes sheet

PARTIAL BUILDING SECTION

BUILDING CROSS SECTION

INTERIOR ELEVATION
Elevation number denoted in arrow
Sheet number denoted in box

ROOM IDENTIFICATION

CODED NOTE

WALL TYPE

EQUIPMENT IDENTIFICATION

DASHED LINE
Used to denote items hidden, overhead, not in contract (NIC), or to be removed

BREAK LINE
Material to continue

CENTER LINE, GRID LINES

PROPERTY LINE

EXISTING CONTOUR, DISTURBED

NEW CONTOUR

EXISTING CONTOUR, UNCHANGED

NEW FINISH GRADE

EXISTING GRADE

TOP OF FOOTING

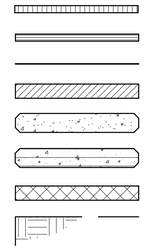
TOP OF WALL

TOP OF CURB

TOP OF PAVEMENT

ARCHITECTURAL MATERIALS

DETAIL INDICATIONS



ACOUSTIC TILE OR BOARD

ASPHALT CONCRETE PAVING

ROOFING

BRICK

CONCRETE

PRECAST CONCRETE

CONCRETE MASONRY UNIT

EARTH / FINISH GRADE

GLASS

GRAVEL

GYPSUM BOARD

INSULATION, BATT

INSULATION, RIGID

MORTAR, PLASTER, SAND

MDF

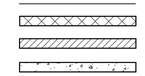
PLYWOOD

WOOD, FINISH

WOOD FRAMING
Continuous member

WOOD FRAMING
Interrupted member

PLAN INDICATIONS



STUD WALL

BRICK

CONCRETE MASONRY UNIT

CONCRETE

ABBREVIATIONS

∠	ANGLE
℄	CENTERLINE
#	POUND, NUMBER
&	AND
@	AT
°	DEGREE
±	PLUS / MINUS
Ø	DIAMETER
A/C	AIR CONDITIONING
AB	ANCHOR BOLT
AC	ASPHALT CONCRETE
ACOUS	ACOUSTICAL
AD	AREA DRAIN
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADJT	ADJACENT
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
AJ	ACCENT JOINT
AL	ALUMINUM
ALT	ALTERNATE
ANC	ANCHOR(AGE)
APC	ACOUSTICAL PANEL CEILING
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
AUTO	AUTOMATIC
AWP	ACOUSTICAL WALL PANEL
BD	BOARD
BET	BETWEEN
BITUM	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOF	BOTTOM OF FRAME
BOM	BOTTOM OF MASONRY
BOTT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BUR	BUILT UP ROOF
C	COURSES
CAB	CABINET
CB	CATCH BASIN, CHALKBOARD
CC	CUBICLE CURTAIN & TRACK
CEM	CEMENT
CER	CERAMIC
CG	CORNER GUARD
CI	CAST IRON
CIP	CAST-IN-PLACE CONCRETE
CJ	CONTROL JOINT
CLG	CEILING
CLKG	CAULKING
CLO	CLOSET
CLR	CLEAR, COLOR
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CLEANOUT
COL	COLUMN
COMBO	COMBINATION TPD, SNR, & SCD
COMP	COMPOSITION, COMPOSITE
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
CW	CURTAIN WALL
D	DEEP, DEPTH
DBL	DOUBLE
DEMO	DEMOLISH, DEMOLITION
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPOSAL
DIV	DIVISION
DN	DOWN
DP	DAMPPROOF(ING)
DR	DOOR
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DWG	DRAWING
DWR	DRAWER
E	EAST
EA	EACH
EHD	ELECTRIC HAND/ HAIR DRYER
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	ENTRY MAT
EMB	ENAMELIZED MARKING BOARD
EMER	EMERGENCY
ENCL	ENCLOSURE
EP	ELECTRICAL PANELBOARD, EPOXY PAINT
EPT	EPOXY PAINT
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EYEWASH
EWC	ELECTRIC WATER COOLER
EXC	EXCAVATE
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXPO	EXPOSED
EXT	EXTERIOR

ABBREVIATIONS

FA	FIRE ALARM
FAB	FABRICATE
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET (RECESSED)
FEC-S	FIRE EXTINGUISHER CABINET (SEMI-RECESSED)
FF	FACTORY FINISHED
FFL	FINISHED FLOOR LINE
FHC	FIRE HOSE CABINET
FIN	FINISH
FLASH	FLASHING
FLR	FLOOR, FLOORING
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOSH	FACE OF SHEATHING
FP	FIREPROOF
FR	FIRE RESISTANT
FRMG	FRAMING
FRP	FIBER REINFORCED PLASTIC
FRTW	FIRE RETARDANT TREATED WOOD
FS	FLOOR SINK
FT	FOOT, FEET
FTG	FOOTING
FURR	FURRING
FUT	FUTURE
FWC	FABRIC WALL COVERING
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GEN	GENERAL
GI	GALVANIZED IRON
GL	GLASS
GLB	GLUE LAMINATED BEAM
GLZ	GLAZING
GMU	GLAZED MASONRY UNIT
GND	GROUND
GR	GRADE
GYP	GYPSUM BOARD (SCHEDULES ONLY)
GYP BD	GYPSUM BOARD
H	HIGH
HB	HOSE BIB
HC	HOLLOW CORE, HANDICAP (ACCESSIBLE)
HD	HEAD
HDW	HARDWARE
HDWD	HARDWOOD
HORIZ	HORIZONTAL
HSS	HOLLOW STEEL SECTION
HT	HEIGHT
HTG	HEATING
HVAC	HEATING/ VENTILATING/ AIR CONDITIONING
HWH(T)	HOT WATER HEATER (TANK)
I/S	INSIDE
ID	INSIDE DIAMETER (DIM)
INCL	INCLUDE
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INTERCOM	INTERCOMMUNICATION
JAN	JANITOR
JST	JOIST
JT	JOINT
KIT	KITCHEN
L	LENGTH, LONG
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LKR	LOCKER
LMS	LIQUID MARKING SURFACE
LN	LINOLEUM
LT	LIGHT, LEFT
LV	LOUVER
MACH	MACHINE
MATL	MATERIAL
MAX	MAXIMUM
MB	MARKING BOARD
MBR	MEMBER
MC	MEDICINE CABINET
MCSP	MINERAL COMPOSITE SCULPTURAL PANEL
MDF	MEDIUM DENSITY FIBERBOARD
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE, MOP HOLDER
MIN	MINIMUM
MIR	MIRROR
MIR-S	MIRROR W/ SHELF
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MT(D)	MOUNT(ED)
MTL	METAL
MUL	MULLION
N	NORTH
NAT	NATURAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE

ABBREVIATIONS

O/S	OUTSIDE
OA	OVERALL
OBS	OBSCURE
OC	ON CENTER
OCC	OCCUPANT, OCCUPANCY
OD	OUTSIDE DIAMETER (DIM)
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFF	OFFICE
OFOI	OWNER FURNISHED OWNER INSTALLED
OH	OVERHEAD
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
PAR	PARALLEL
PB	PEG BOARD
PC	PRECAST
PCC	PORTLAND CEMENT CONCRETE
PCD	PAPER CUP DISPENSER
PERF	PERFORATED
PERP	PERPENDICULAR
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLUMB	PLUMBING
PLYWD	PLYWOOD
PNL	PANEL
POS	POSITIVE
PR	PAIR
PREFAB	PREFABRICATE(D)
PREFIN	PREFINISH(ED)
PROJ	PROJECT
PS	PROJECTION SCREEN
PT	POINT, PAINT
PTD	PAPER TOWEL DISPENSER
PTDR	COMBINATION PAPER TOWEL DISPENSER & RECEPTACLE
PTN	PARTITION
PTR	PAPER TOWEL RECEPTACLE
PVMT	PAVEMENT
PWP	PLASTIC WALL PROTECTION
QT	QUARRY TILE
R	RISER, RADIUS
R&S	CLOSET ROD & SHELF
RAF	RESILIENT ATHLETIC FLOORING
RB	RUBBER BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RDO	ROOF DRAIN; OVERFLOW
REBAR	REINFORCING BAR
RECD	RECEIVED
REF	REFERENCE
REFL	REFLECTED
REFR	REFRIGERATOR
REINF	REINFORCE(D)(ING)
REQD	REQUIRED
RESIL	RESILIENT
RF	ROOF
RFT	RESILIENT FLOORING TILE
RH	ROBE HOOK
RM	ROOM
RO	ROUGH OPENING
RSD	RECESSED SOAP DISPENSER
RST	RUBBER STAIR TREAD
RT	RIGHT
RWL	RAIN WATER LEADER
S	SOUTH
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCHED	SCHEDULE
SD	SOAP DISPENSER
SDG	SIDING
SECT	SECTION
SHR	SHOWER
SHT	SHEET
SHTG	SHEETING / SHEATHING
SIM	SIMILAR
SLR	SEALER
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SPEC	SPECIFICATION
SQ	SQUARE
SS	SOLID SURFACE
SSK	SERVICE SINK
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STN	STAIN
STOR	STORAGE
STRFT	STOREFRONT
STRUCT	STRUCTURAL
SUB	SUBSTITUTE
SUSP	SUSPENDED
SV	SHEET VINYL
SWC	SANITARY WALL COVERING
SYM	SYMMETRICAL
SYS	SYSTEM
T	TREAD, TEE
TB	TOWEL BAR, TACK BOARD
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
TERR	TERRAZZO
TF	TOP OF FOOTING
THK	THICK
THRU	THROUGH
TOF	TOP OF FRAME
TOM	TOP OF MASONRY
TP	TOP OF PAVEMENT
TPD	TOILET PAPER DISPENSER
TR	TOWEL RACK
TS	TUBE STEEL
TV	TELEVISION
TVB	TELEVISION BRACKET
TW	TOP OF WALL
TYP	TYPICAL

ABBREVIATIONS

UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UPT	UNGLAZED PORCELAIN TILE
UR	URINAL
USK	UTILITY SINK
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VENT	VENTILATE
VER	VERIFY
VERT	VERTICAL
VEST	VESTIBULE
VOL	VOLUME
VRB	VENTILATING RUBBER BASE
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
W	WEST, WIDE, WIDTH
W/	WITH
W/D	WASHER/DRYER
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WH	WALL HUNG
WP	WATERPROOF, WALL PADS
WPTL	WOOD PRESERVATIVE TREATED LUMBER
WS	WEATHER STRIPPING
WSCT	WAINSCOT
WT	WEIGHT
WTR	WATER
WWF	WELDED WIRE FABRIC

REVISION	BY	DATE	APPRVL / REV

WOLF
ARCHITECTURE
625 S Cobb St Palmer, AK 99645
907.746.6670 | wolfarchitecture.com

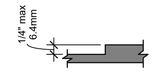
TITLE: ARCHITECTURAL SYMBOLS AND ABBREVIATIONS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

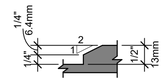
DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

BY:
DATE: 6/30/25
SCALE:

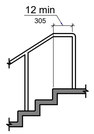
SHEET: G0.01



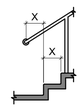
303.2 VERTICAL CHANGE IN LEVEL



303.3 BEVELED CHANGE IN LEVEL

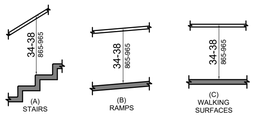


505.10.2
TOP HANDRAIL
EXTENSION AT STAIRS



note: X = tread depth

505.10.3
BOTTOM HANDRAIL
EXTENSION AT STAIRS

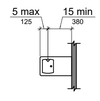


505.4 HANDRAIL HEIGHT

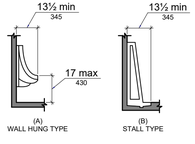
505.5 HANDRAIL
CLEARANCE

505.6 HORIZONTAL
PROJECTIONS BELOW
GRIPPING SURFACE

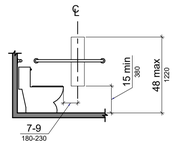
505.7.2 HANDRAIL NON-
CIRCULAR CROSS SECTION



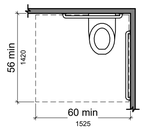
602.5
DRINKING FOUNTAIN
SPOUT LOCATION



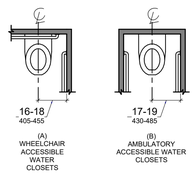
605.2 HEIGHT AND DEPTH OF URINALS



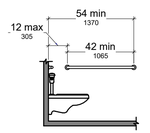
604.7 DISPENSER OUTLET LOCATION



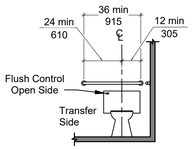
604.3.1 SIZE OF CLEARANCE AT WATER CLOSETS



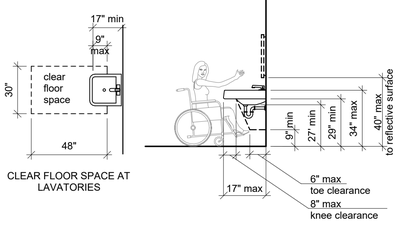
604.2 WATER CLOSET LOCATION



604.5.1 SIDE WALL GRAB BAR
AT WATER CLOSETS

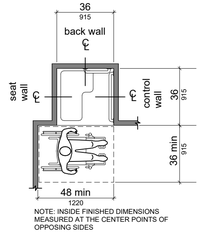


604.5.2 REAR WALL GRAB BAR
AT WATER CLOSETS



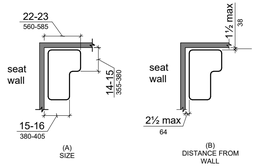
CLEAR FLOOR SPACE AT
LAVATORIES

LAVATORY CLEARANCE

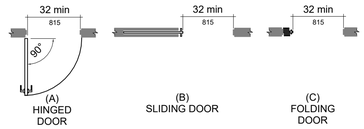


NOTE: INSIDE FINISHED DIMENSIONS
MEASURED AT THE CENTER POINTS OF
OPPOSING SIDES

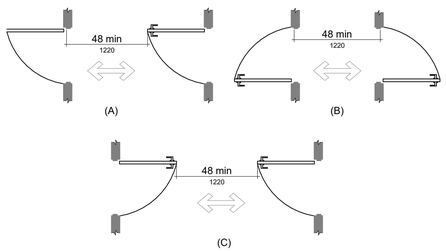
608.2.1 TRANSFER TYPE SHOWER
COMPARTMENT SIZE AND CLEARANCE



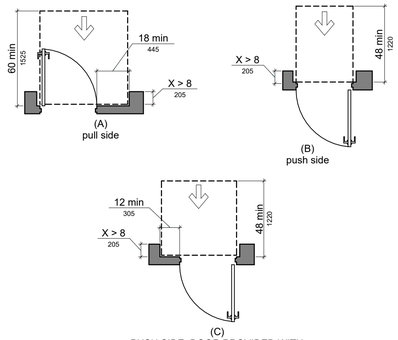
610.3.2 L-SHAPED SHOWER SEAT



404.2.3 CLEAR WIDTH OF DOORWAYS

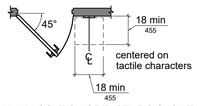


404.2.6 DOORS IN SERIES AND GATES IN SERIES

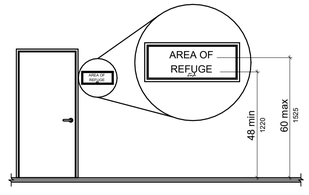


PUSH SIDE, DOOR PROVIDED WITH
BOTH CLOSER AND LATCH

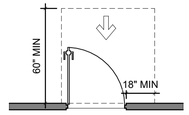
404.2.4.3 MANEUVERING CLEARANCES AT RECESSED DOORS AND GATES

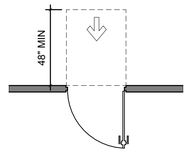


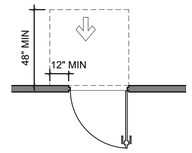
703.4.2 LOCATION OF TACTILE SIGNS AT DOORS

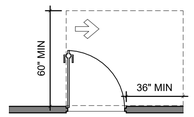


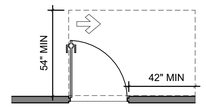
703.4.1 HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR OR GROUND

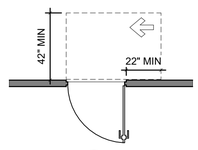


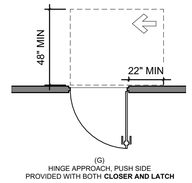


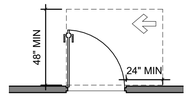


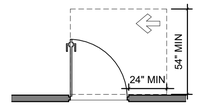


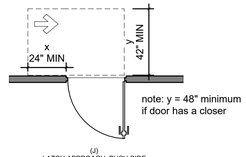


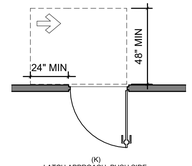




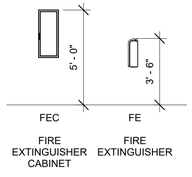




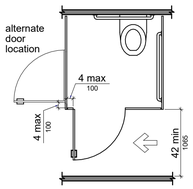




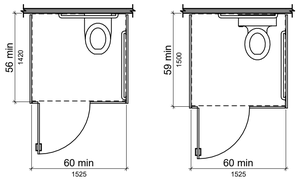
404.2.4.1 MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES



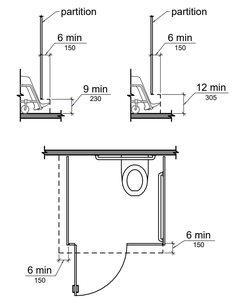
MOUNTING HEIGHTS



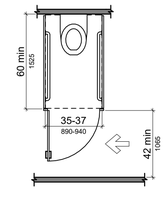
604.8.1.2 WHEELCHAIR ACCESSIBLE TOILET
COMPARTMENT DOORS



604.8.1.1 SIZE OF WHEELCHAIR ACCESSIBLE TOILET
COMPARTMENT



604.8.1.4 WHEELCHAIR ACCESSIBLE TOILET
COMPARTMENT TOE CLEARANCE



604.8.2 AMBULATORY ACCESSIBLE
TOILET COMPARTMENT

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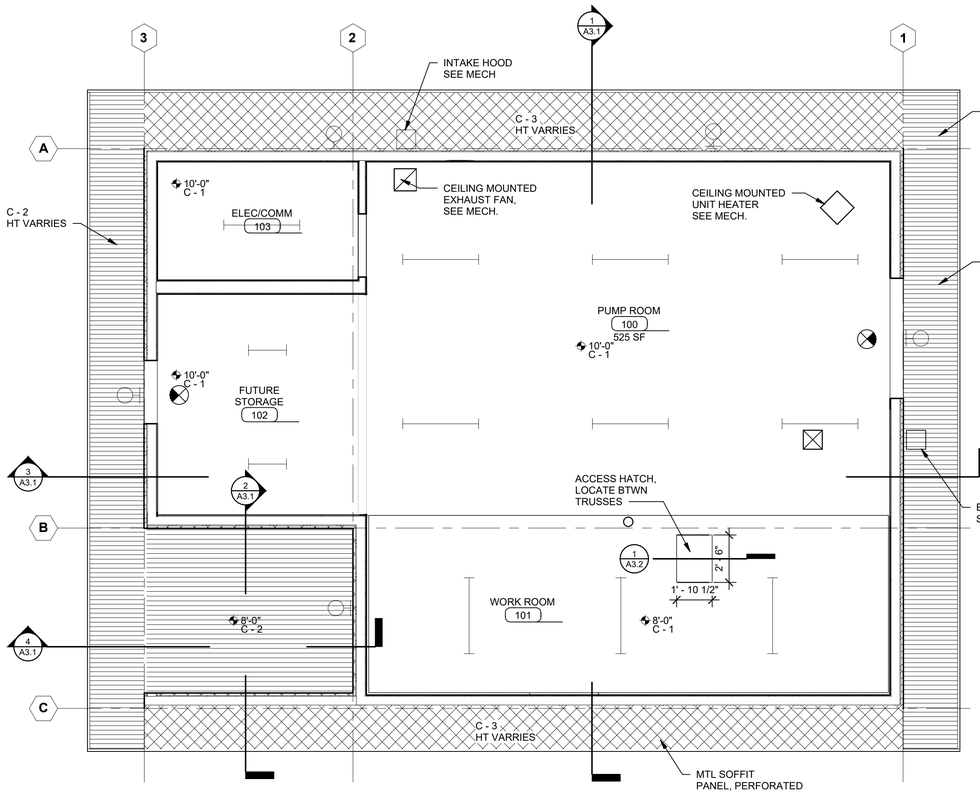
TITLE
TYPICAL ADA DETAILS

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9080
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

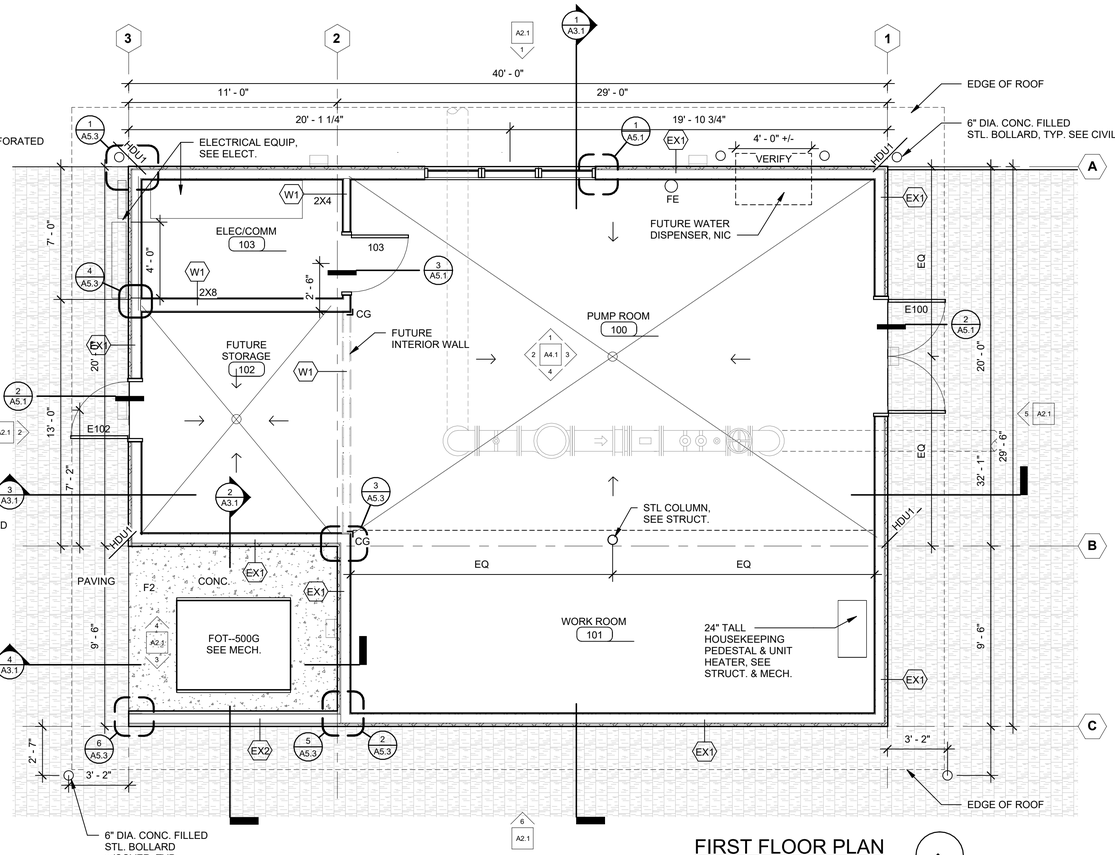
BY:
DATE: 6/30/25
SCALE:

SHEET
G0.02



FIRST FLOOR REFLECTED CEILING PLAN

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



FIRST FLOOR PLAN

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

GENERAL RCP NOTES

1. SEE FINISH SCHEDULE FOR COLORS.
2. ALL GYP BD CEILINGS AND SOFFITS TO BE PAINTED.
3. EXCEPT AT ELECTRICAL UTILITY ROOMS PAINT ALL EXPOSED DUCTWORK, PIPING AND CONDUITS.
4. CEILING HEIGHT TO BE MEASURED FROM FINISH FLOOR LEVEL OF THE ROOM OR THE AREA WHERE CEILING IS IN.

RCP - CODED NOTES

C - 1 5/8" GWB
C - 2 METAL SOFFIT PANEL
C - 3 PERFORATED METAL SOFFIT PANEL

LEGEND

10'-0" C-1	CEILING HEIGHT (HEIGHTS INDICATED ARE RELATIVE TO 100'-0" FLOOR LEVEL).
	STRIPLIGHT - PENDANT OR SURFACE MTD WALL
	SURFACE MOUNTED LIGHT FIXTURES
	SUPPLY DIFFUSERS
	RETURN AIR REGISTER OR EXHAUST FAN
	EXIT LIGHT

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DRAWINGS, DIMENSIONS, SPECIFICATIONS, AND SCHEDULES PRIOR TO PROCEEDING WITH ANY WORK OF FABRICATION. NOTIFY ARCHITECT IMMEDIATELY OF ANY UNCERTAINTY OR DISCREPANCY.
2. DRAWINGS SHALL NOT BE SCALED.
3. WHERE NOTES ON THE DRAWINGS INDICATE A CONDITION AT ONE LOCATION, WHETHER INDICATED AS TYPICAL OR NOT, THE NOTE SHALL APPLY TO ALL SIMILAR LOCATIONS UNLESS NOTED OTHERWISE.
4. SEE SHEET G0.01 FOR SYMBOLS, ABBREVIATIONS, ETC.
5. SEE SHEET G0.02 FOR TYPICAL ADA DETAILS AND CLEARANCES.
6. SEE SHEET G0.02 FOR TYPICAL ACCESSORY MOUNTING HEIGHTS.
7. DIMENSIONS ARE TYPICALLY TAKEN TO GRID LINE, FACE OF STUD WALL, UNLESS NOTED OTHERWISE OR INDICATED ON DETAILS. A DIMENSION NOTING "5'-0" CLEAR" WOULD DENOTE FACE OF FINISH.
8. WALL TYPES W1 UNLESS NOTED OTHERWISE.

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TITLE: FIRST FLOOR & REFLECTED CEILING PLANS

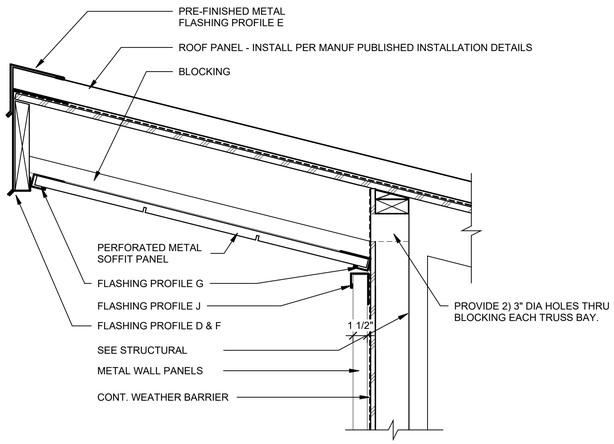
PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49TH
1.17.25
GARY S. WOLF
A8257
REGISTERED PROFESSIONAL ARCHITECT

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

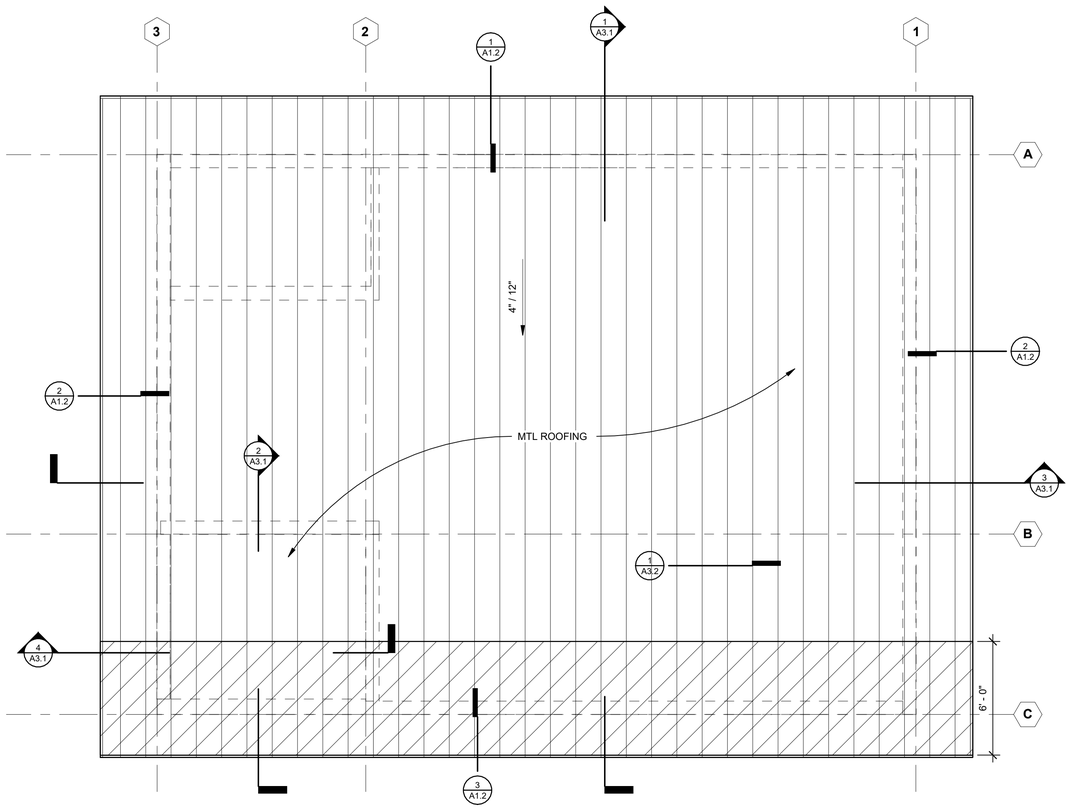
BY:
DATE: 6/30/25
SCALE:

SHEET: A1.1



1 TYP - TOP OF EAVE DETAIL

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



LEGEND

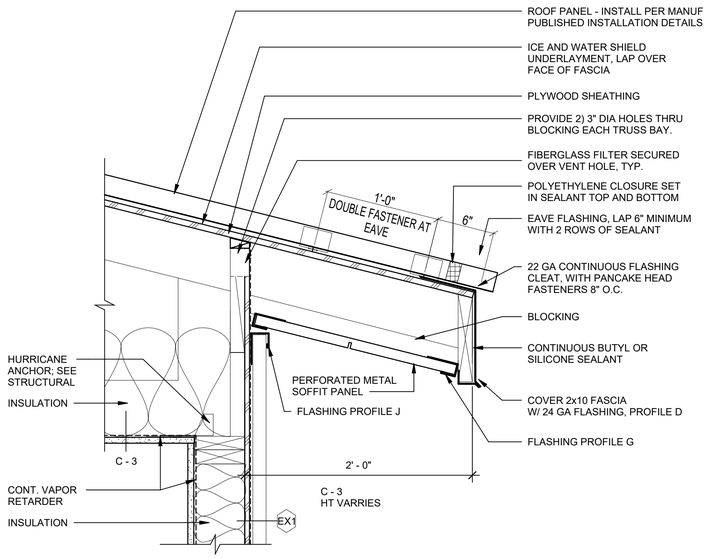
DIRECTION OF SLOPE TO DRAIN

ICE & WATER SHEILD

ROOF PLAN

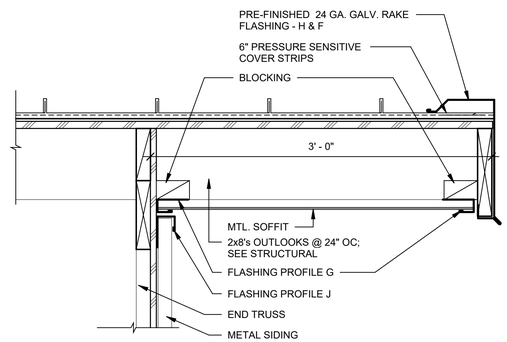
Scale: 1/4" = 1'-0"

N



3 TYP - EAVE DETAIL

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



2 TYP - RAKE DETAIL

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

GENERAL NOTES

1. SEE G SHEETS FOR TYPICAL ROOF CONSTRUCTION
2. VENTS, EXHAUST, & COWLS ARE MECHANICAL PENETRATION ITEMS. SEE MECHANICAL FOR LOCATIONS, TYPES, SIZES AND QUANTITY OF ALL PENETRATIONS. PENETRATIONS SHALL BE MIN 18" FROM ANY RIDGE VALLEY HIP, OR EDGE OF ROOF.
3. ALL FLASHING & ROOFING TIE-INS TO PLUMBING & HVAC PENETRATIONS ARE BY ROOFING CONTRACTOR.
4. PROVIDE MINIMUM R-38 INSUL AT ALL ROOFS OCCURRING ABOVE INTERIOR BUILDING AREA. SEE DETAILS.
5. SEE EXTERIOR ELEVATIONS FOR ADDITIONAL ROOFING DETAIL INDICATIONS.
6. SEE A5.3 FOR FLASHING DETAILS

REVISION	BY	DATE	REV	APPRVL

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TITLE: ROOF PLAN & DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49TH
1.17.25
GARY S. WOLF
AR257
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DAY ENGINEERING
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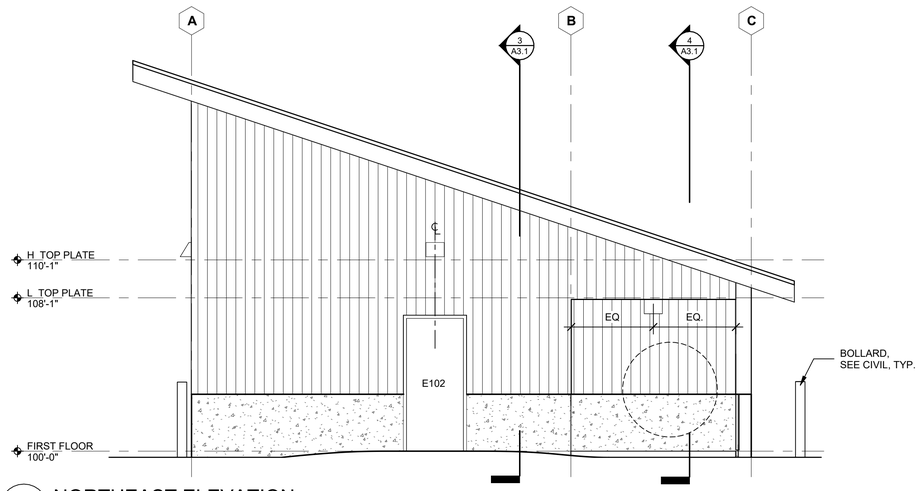
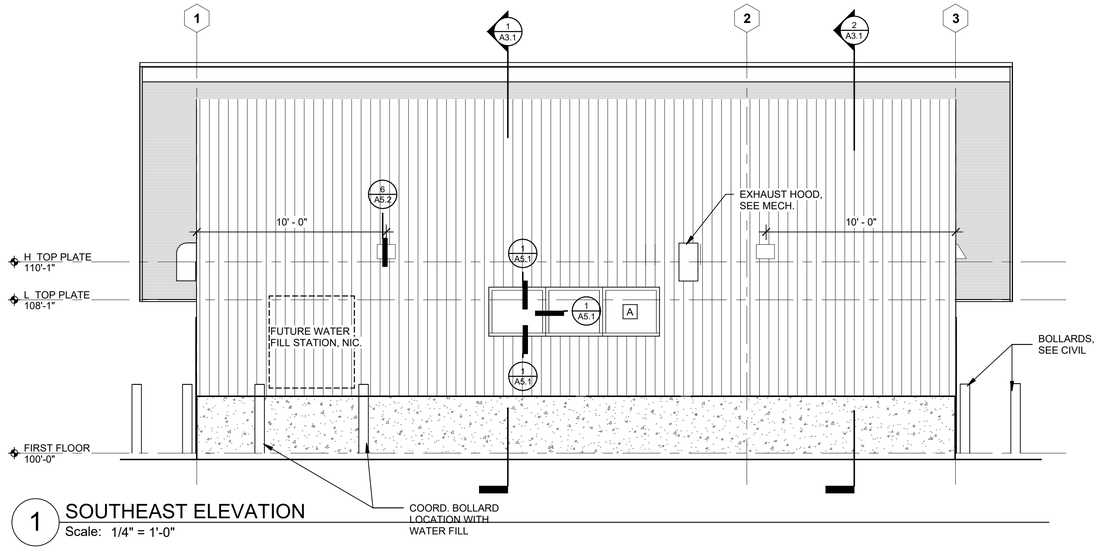
BY:
DATE: 6/30/25
SCALE:

SHEET A1.2



2 NORTHEAST ELEVATION
Scale: 1/4" = 1'-0"



1 SOUTHEAST ELEVATION
Scale: 1/4" = 1'-0"

MATERIALS LEGEND

CAST-IN-PLACE CONCRETE

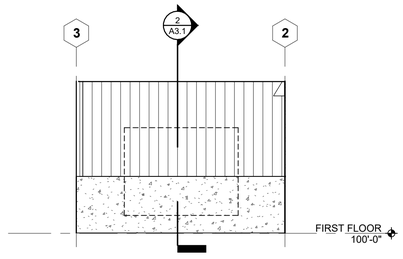
STANDING SEAM METAL ROOFING

VERTICAL METAL SIDING

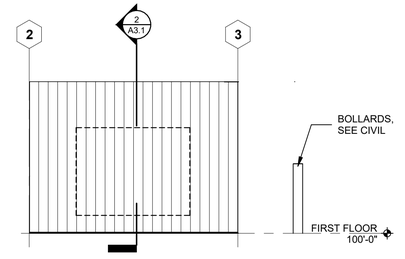
NOTE: THIS LEGEND DOES NOT INCLUDE ALL MATERIALS. SEE NOTES & REFERENCED DETAILS FOR ADDITIONAL INFORMATION.

EXTERIOR ELEVATION GENERAL NOTES

1. LOCATION AND SPACING OF WINDOW MULLIONS, MASONRY CONTROL JOINTS AND COURSE PATTERNS, ETC., ARE TO BE AS SHOWN ON EXTERIOR ELEVATIONS. WHERE NOT DIMENSIONED OR DETAILED, WINDOW MULLIONS AND MATERIAL JOINTS ARE TO BE EQUALLY SPACED AND/OR CENTERED/ALIGNED W/ ADJACENT ELEMENT (MASONRY COLUMN, EDGE OR CENTER LINE OF WINDOW OR DOOR OPENING, ETC.) AS SHOWN.
2. SEE SHEET AX.X FOR ALUMINUM LOUVER TYPES AND SEE MECH FOR COORDINATION WITH DUCTWORK.
3. REFER TO DETAILS FOR DIMENSION REFERENCE POINTS.
4. CJ'S EXTEND FULL HEIGHT OF MASONRY, TYP. WHERE "CJ" IS INDICATED AT INSIDE CORNERS THE JOINT SHALL PENETRATE THE MASONRY SURFACE ON WHICH THE LABEL OCCURS. SEE DETAILS FOR ADDITIONAL CJ LOCATIONS.
5. ALL WINDOW AND LOUVER DIMENSIONS ARE FOR ROUGH OR MASONRY OPENING, UNLESS NOTED OTHERWISE. SEE PLANS FOR ADDITIONAL DIMENSION INFORMATION.
6. 100'-0" IS THE DATUM ELEVATION AND CORRESPONDS TO THE REFERENCED FLOOR SLAB ELEVATION 1078.00'. SEE CIVIL FOR FURTHER INFORMATION.
7. EXTERIOR WALL FINISHES EXTEND FULL HEIGHT TO SOFFITS (NOT SHOWN WHERE EAVES OBSCURE VIEW). SEE BUILDING SECTIONS & DETAILS.
8. SEE REFLECTED CEILING PLANS (RCP) FOR SHEET METAL CLAD SOFFIT COLORS. SHEET METAL CLAD FINS & VERT FACE OF SOFFIT TO MATCH COLOR OF ASSOCIATED SOFFIT AS NOTED ON RCP



4 NW ELEVATION 2
Scale: 1/4" = 1'-0"



3 SE ELEVATION 2
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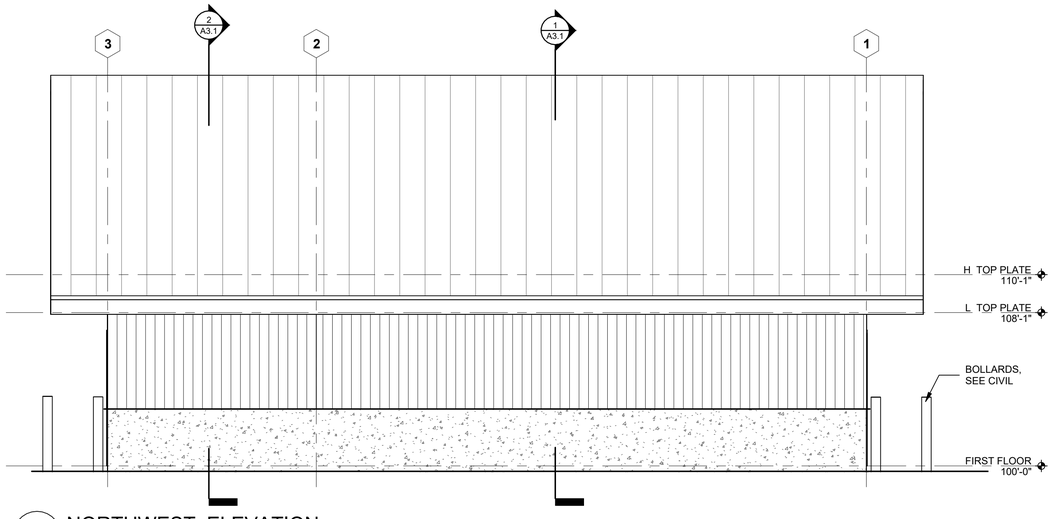
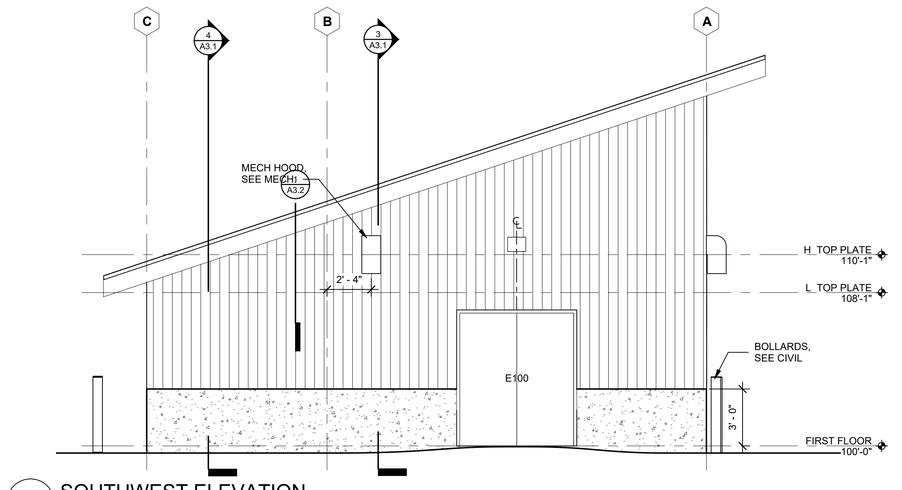


6 NORTHWEST ELEVATION
Scale: 1/4" = 1'-0"



5 SOUTHWEST ELEVATION
Scale: 1/4" = 1'-0"

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TITLE: EXTERIOR ELEVATIONS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA 49TH
1.17.25
GARY S. WOLF
A8257
REGISTERED PROFESSIONAL ARCHITECT

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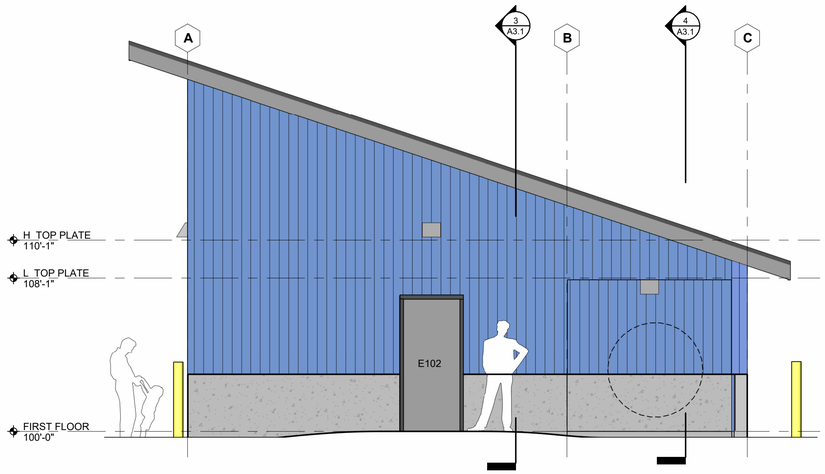
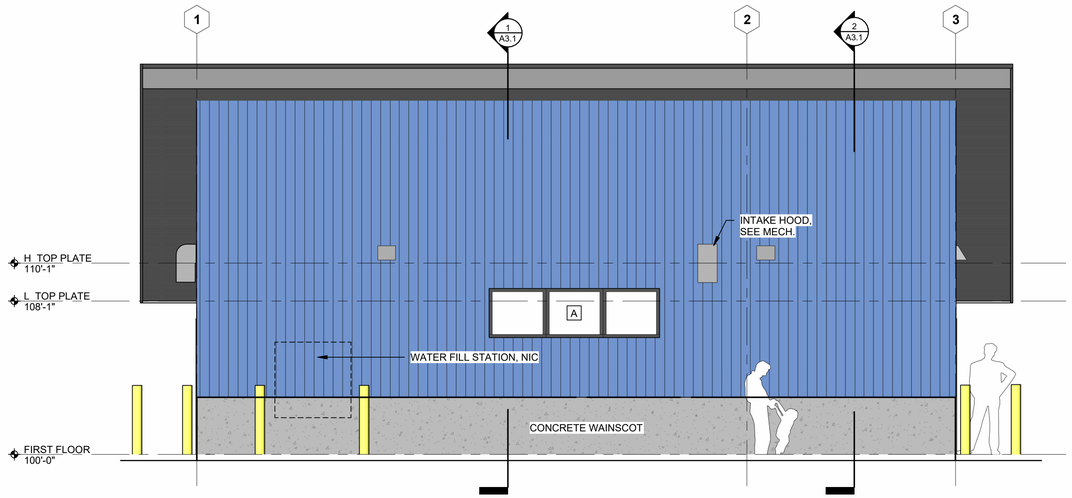
SCALE:

SHEET A2.1



2 NORTHEAST ELEVATION COLOR
Scale: 1/4" = 1'-0"



1 SOUTHEAST ELEVATION COLOR
Scale: 1/4" = 1'-0"

MATERIALS LEGEND

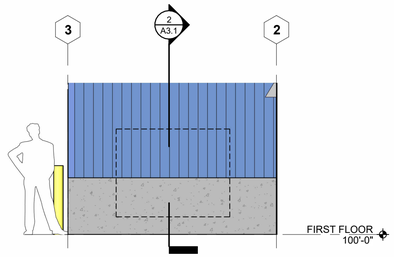
CAST-IN-PLACE CONCRETE

STANDING SEAM METAL ROOFING

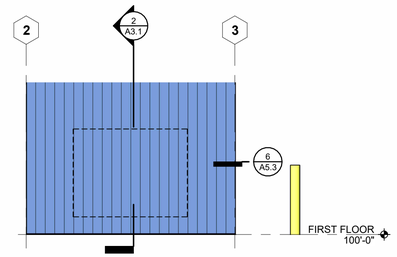
VERTICAL METAL SIDING

NOTE: COLORED ELEVATIONS ARE PROVIDED FOR MATERIAL AND FINISH REFERENCE. CONFIRM COLOR SELECTION WITH ARCHITECT AND OWNER PRIOR TO ORDERING MATERIAL.

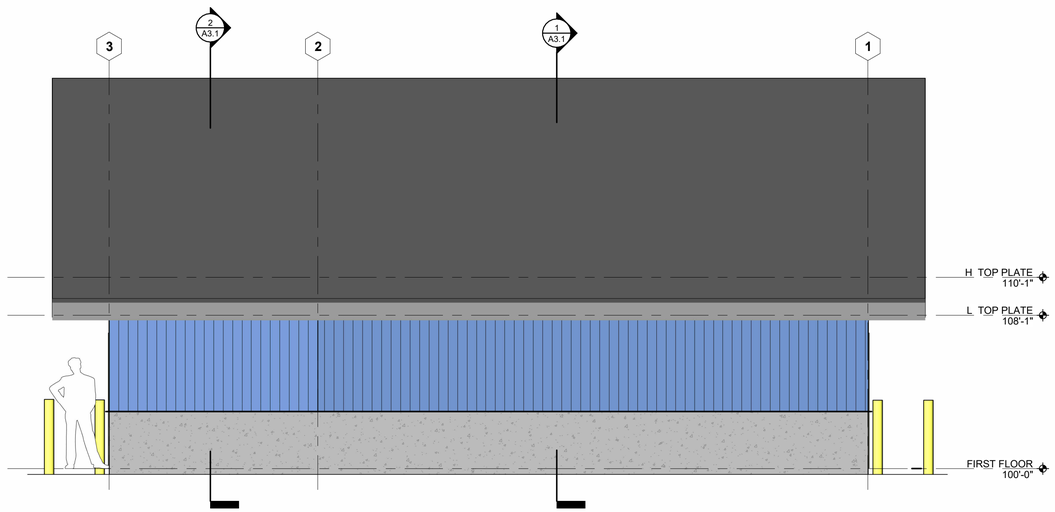
NOTE: THIS LEGEND DOES NOT INCLUDE ALL MATERIALS. SEE NOTES & REFERENCED DETAILS FOR ADDITIONAL INFORMATION.



4 NW ELEVATION 2 COLOR
Scale: 1/4" = 1'-0"



3 SE ELEVATION 2 COLOR
Scale: 1/4" = 1'-0"



6 NORTHWEST ELEVATION COLOR
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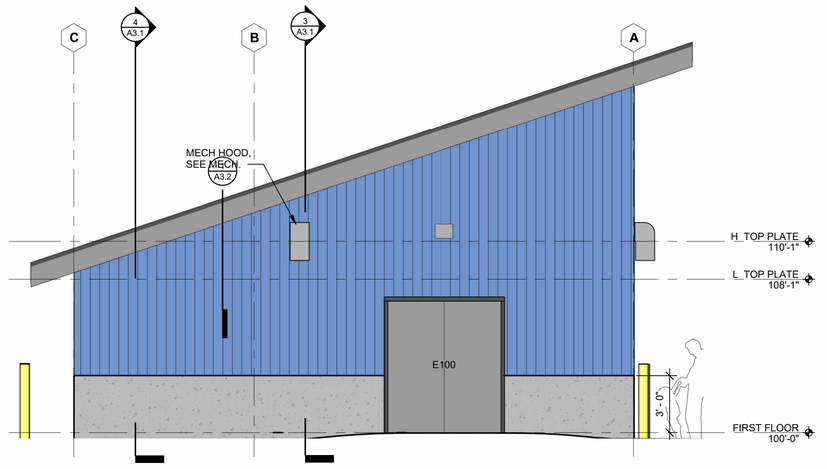

5 SOUTHWEST ELEVATION COLOR
Scale: 1/4" = 1'-0"

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TITLE: ELEVATIONS - COLOR

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA 49TH
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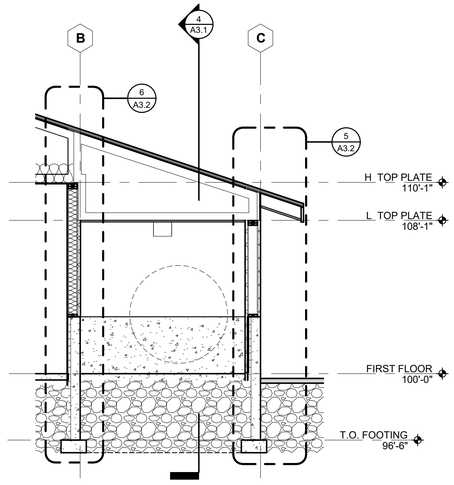
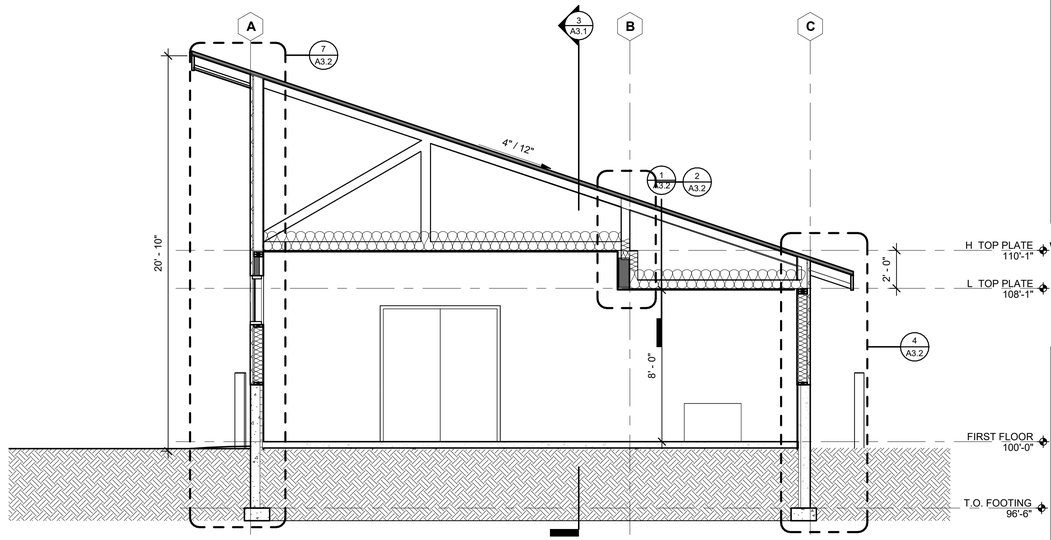
SCALE:

SHEET A2.2



2 BUILDING SECTION 2
Scale: 1/4" = 1'-0"



1 BUILDING SECTION 1
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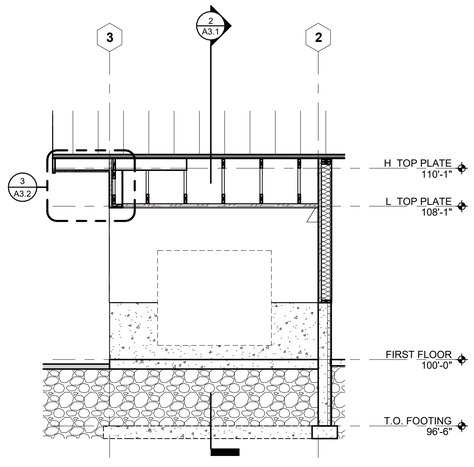

4 BUILDING SECTION 4
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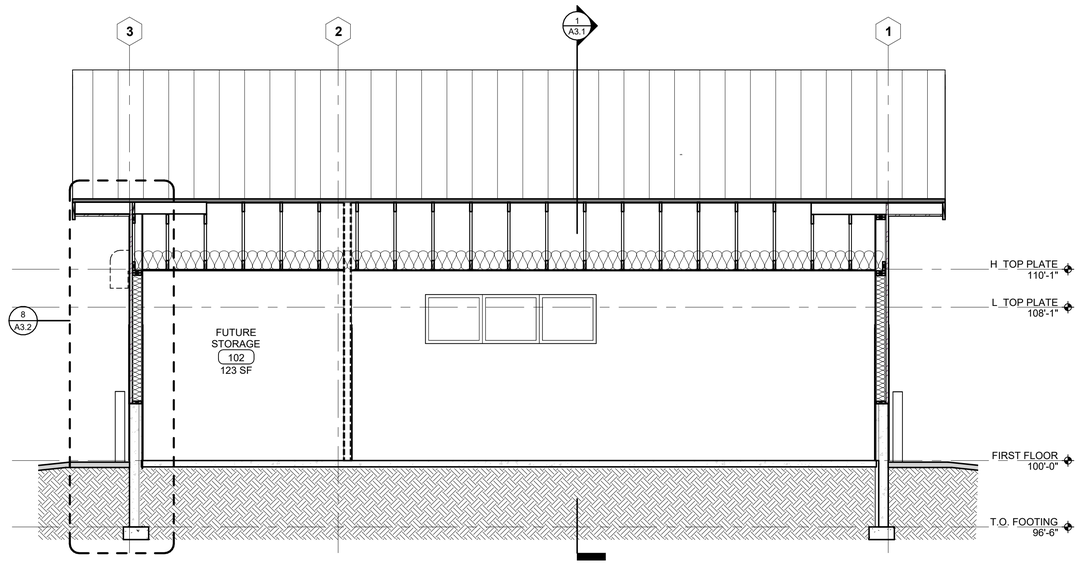

3 BUILDING SECTION 3
Scale: 1/4" = 1'-0"

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TITLE
BUILDING SECTIONS

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
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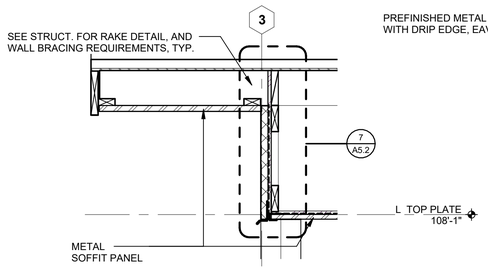
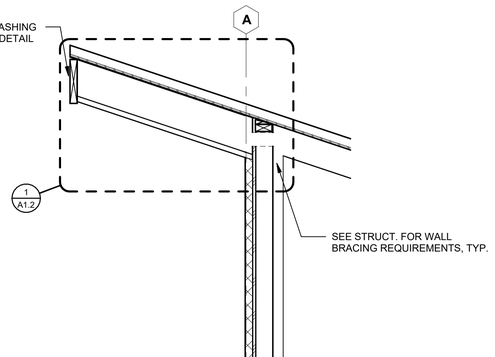
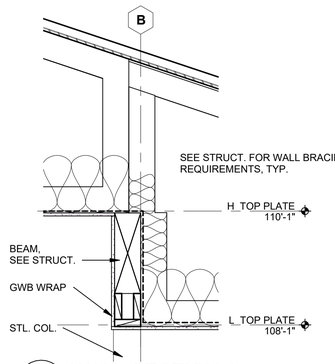
BY:
DATE: 6/30/25
SCALE:

SHEET A3.1



3 WALL SECTION 2
Scale: 3/4" = 1'-0"





2 WALL SECTION 1
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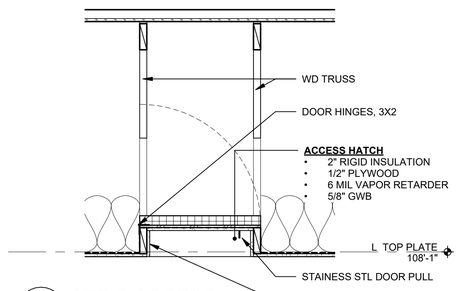
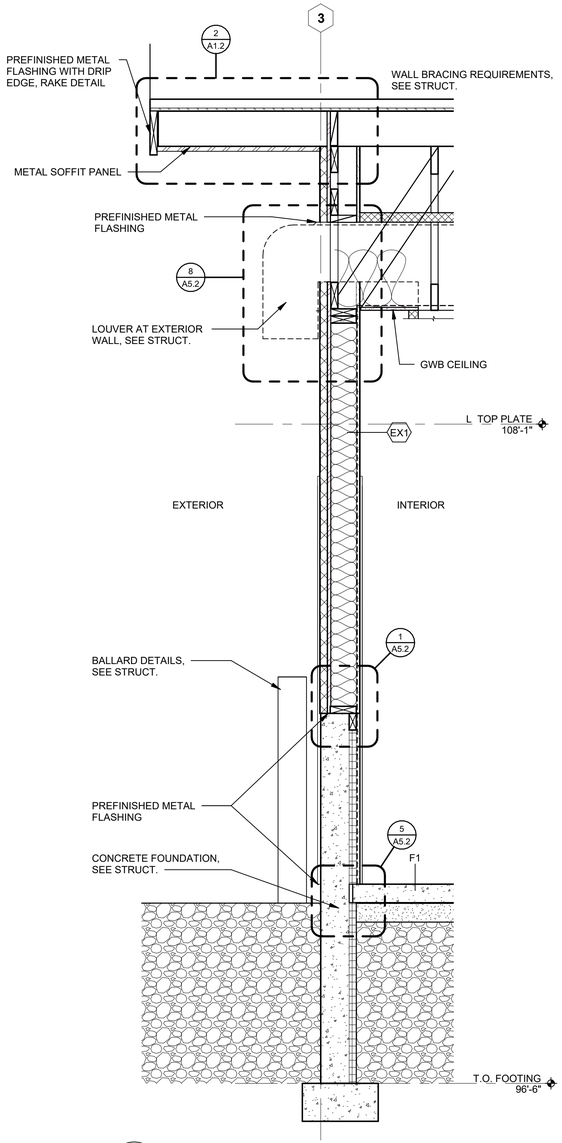


1 ATTIC ACCESS
Scale: 3/4" = 1'-0"

SHEET NOTES:

1. SEE SHEET G1.1 FOR WALL CONSTRUCTION
2. SEE A5.3 FOR FLASHING DETAILS



8 WALL SECTION 8
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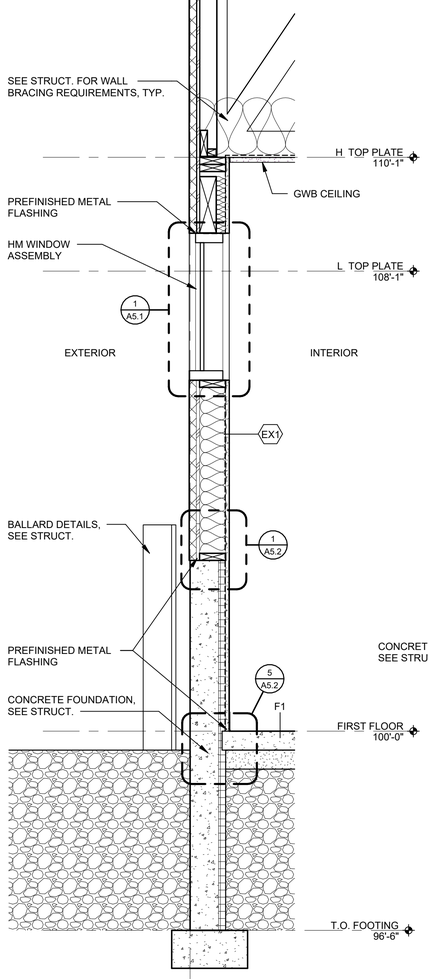

7 WALL SECTION 7
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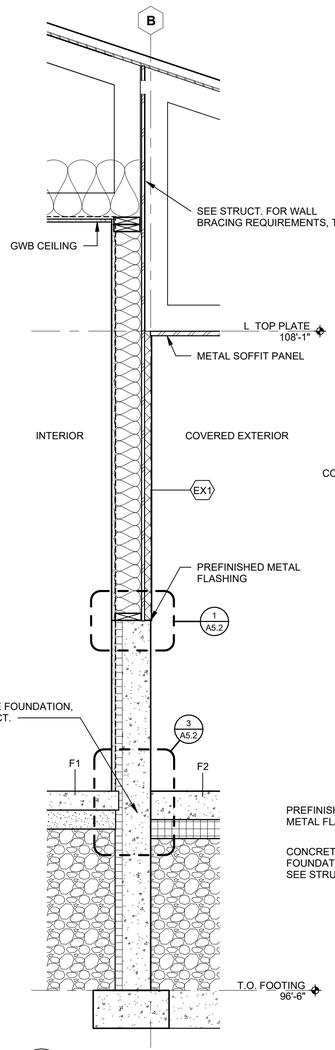
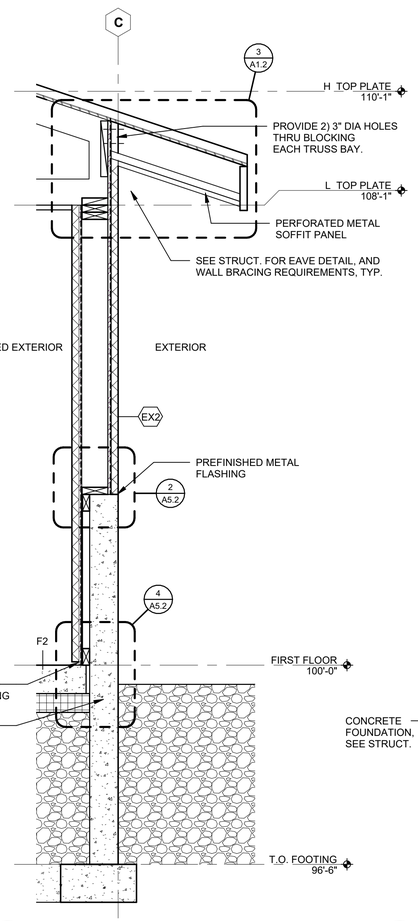


6 WALL SECTION 5
Scale: 3/4" = 1'-0"



5 WALL SECTION 4
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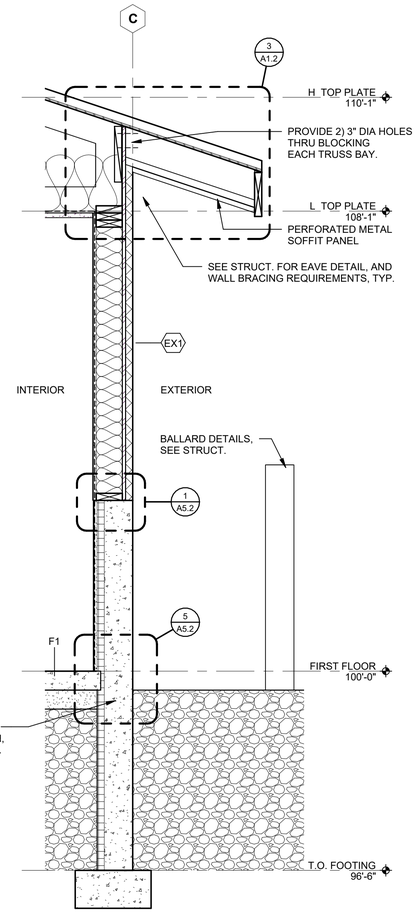

4 WALL SECTION 3
Scale: 3/4" = 1'-0"

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TITLE: WALL SECTIONS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49TH
1.17.25
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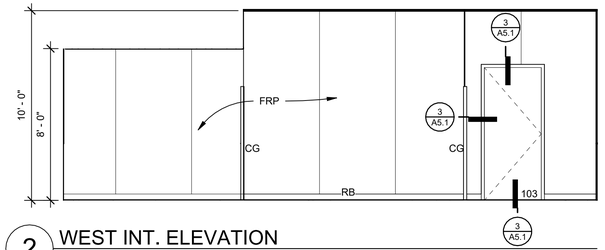
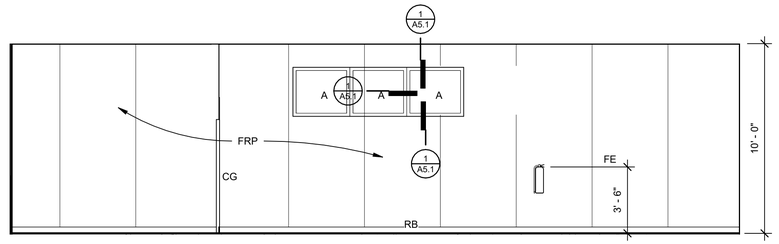
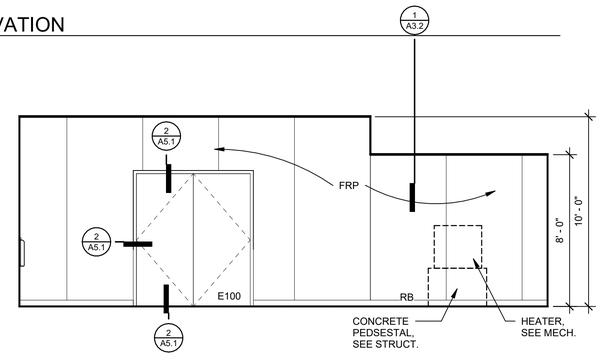
DATE: 6/30/25
SCALE:
SHEET: A3.2



2 WEST INT. ELEVATION
Scale: 1/4" = 1'-0"



1 NORTH INT. ELEVATION
Scale: 1/4" = 1'-0"



3 EAST INT. ELEVATION
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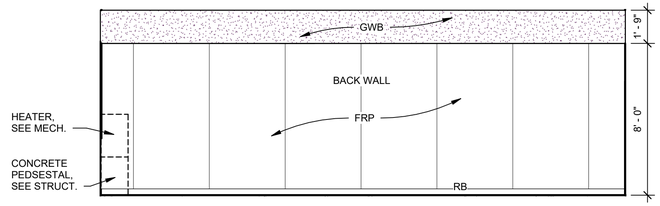

4 SOUTH INT. ELEVATION
Scale: 1/4" = 1'-0"

FINISH MATERIAL SCHEDULE

PAINT	PT-1	SHERWIN WILLIAMS	SW 7649 SILVERPLATE
	PT-2	SHERWIN WILLIAMS	SW 7660 EARL GREY
	PT-3	SHERWIN WILLIAMS	SW 7048 URBANO BRONZE
WALL BASE	RB-1	6" ROPPE	668 NIGHT HAWK
WALL COVERING	FRP	MARLITE STANDARD	LIGHT GREY

FINISH ABBREVIATIONS

AL	ALUMINUM
APC	ACOUSTICAL PANEL CEILING
AWP	ACOUSTICAL WALL PANEL
CLR	COLOR
CONC	CONCRETE
CPT	CARPET
CT	CERAMIC TILE
EM	ENTRY MAT
EP	EPOXY PAINT
EXP	EXPOSED
FF	FACTORY FINISHED
FIN	FINISH
GLZ	GLAZING
GYP	GYPSUM BOARD
LN	LINOLEUM
MATL	MATERIAL
MCSP PANEL	MINERAL COMPOSITE SCULPTURAL
MTL	METAL
PT	PAINT
RAF	RESILIENT ATHLETIC FLOORING
RB	RUBBER BASE
RFT	RESILIENT FLOORING TILE
RSS	RUBBER STAIR STRINGER
SC	SEALED CONCRETE
SLR	SEALER
STL	STEEL
SWC	SANITARY WALL COVERING
SV	SHEET VINYL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VRB	VENTILATING RUBBER BASE
VWC	VINYL WALL COVERING
WP	WALL PADS

ROOM FINISH SCHEDULE

ROOM NUMBER	NAME	CEILING	FLOOR MAT	BASE CLR	NORTH WALL FIN	EAST WALL FIN	SOUTH WALL FIN	WEST WALL FIN	NOTES
100	PUMP ROOM	GWB	SC	RB	FRP	FRP	FRP	FRP	
101	WORK ROOM	GWB	SC	RB	FRP	FRP	FRP	FRP	
102	FUTURE STORAGE	GWB	SC	RB	FRP	FRP	FRP	FRP	
103	ELEC/COMM	GWB	SC	RB	FRP	FRP	FRP	FRP	

INTERIOR FINISH GENERAL NOTES

1. AN ASTERISK (*) IN THE FINISH SCHEDULE REFERENCES CODED NOTES IN THE REMARKS COLUMN.
2. PAINT ALL INTERIOR MECHANICAL LOUVERS AND EQUIPMENT TO MATCH ADJACENT SURFACE, UNLESS NOTED OTHERWISE.
3. PAINT ALL DOORS PAINT COLOR PT-3
4. PAINT ALL DOOR & RELITE FRAMES PAINT COLOR PT-2 UNLESS NOTED OTHERWISE.
5. ALL GYP BD CEILINGS TO BE PAINT PT-1, UNO.
6. FOR ALL PRODUCTS, FOLLOW MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
7. ELEVATED CONCRETE PEDESTAL TO BE SEALED CONCRETE.

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TITLE: INTERIOR ELEVATIONS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

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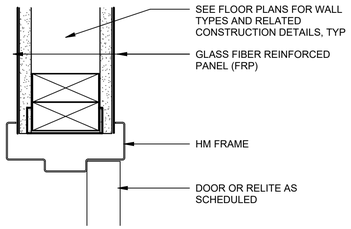
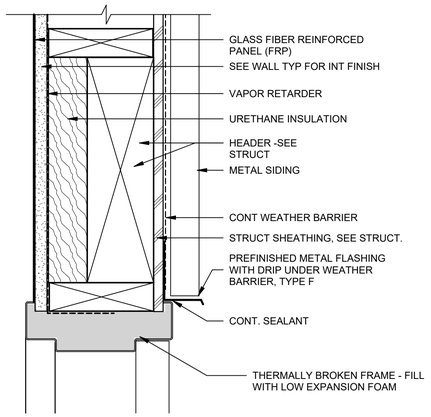
SCALE:

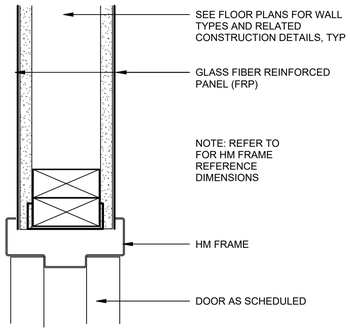
SHEET A4.1



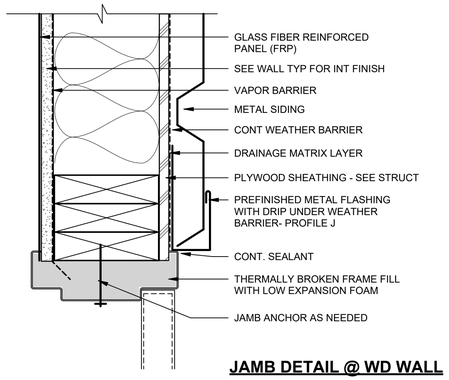
HEAD DETAIL



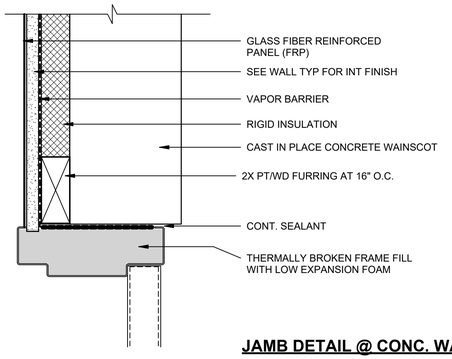
HEAD DETAIL



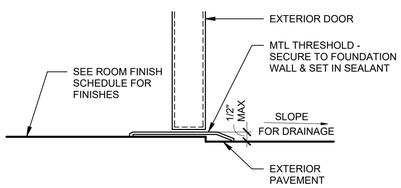
JAMB DETAIL



JAMB DETAIL @ WD WALL



JAMB DETAIL @ CONC. WAINSCOT



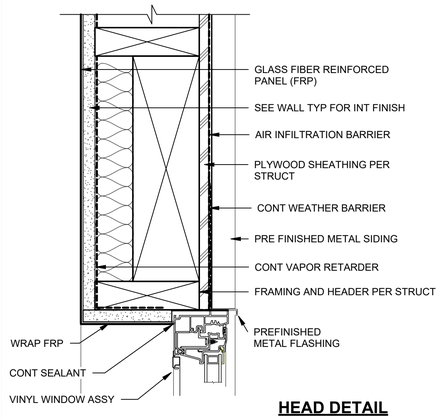
SILL DETAIL

3 INTERIOR DOOR - HM HJS TYP.
Scale: 3" = 1'-0"

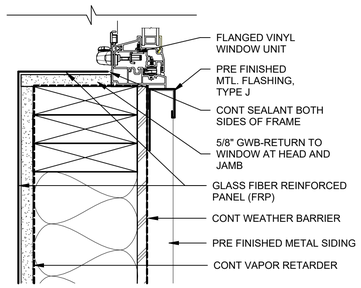
2 EXTERIOR DOOR - HM HJS TYP
Scale: 3" = 1'-0"

SHEET NOTES:

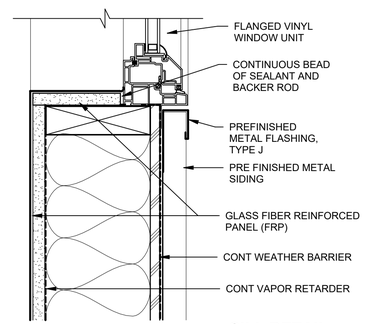
1. SEE SHEET G1.1 FOR WALL CONSTRUCTION
2. SEE A5.3 FOR FLASHING DETAILS



HEAD DETAIL



JAMB DETAIL



SILL DETAIL

1 EXTERIOR WINDOW - VINYL MTL HJS
Scale: 3" = 1'-0"

APPRVL	REV	DATE	BY	REVISION

WOLF
ARCHITECTURE
625 S Cobb St Palmer, AK 99645
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TITLE: WINDOW & DOOR DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA 49TH
1.17.25
GARY S. WOLF
A8257
REGISTERED PROFESSIONAL ARCHITECT

DAY ENGINEERING
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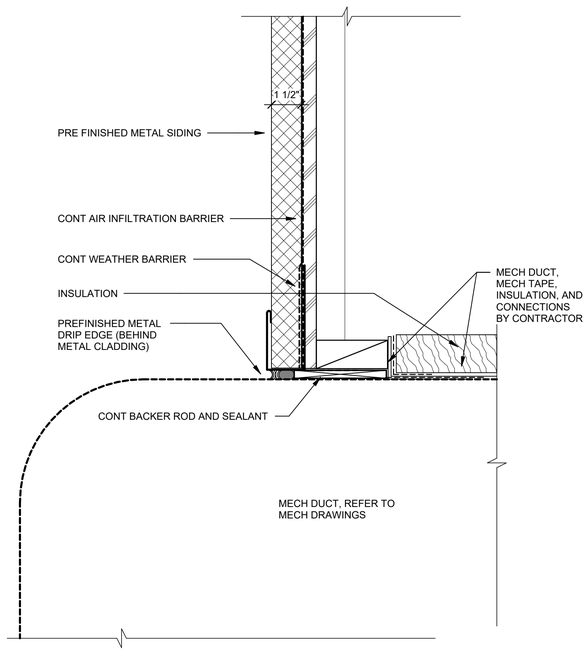
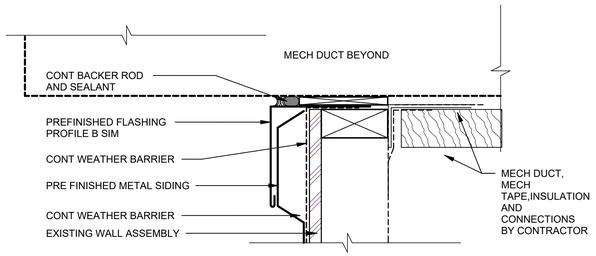
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 253-1743

BY:
DATE: 6/30/25
SCALE:

SHEET: A5.1



HEAD DETAIL



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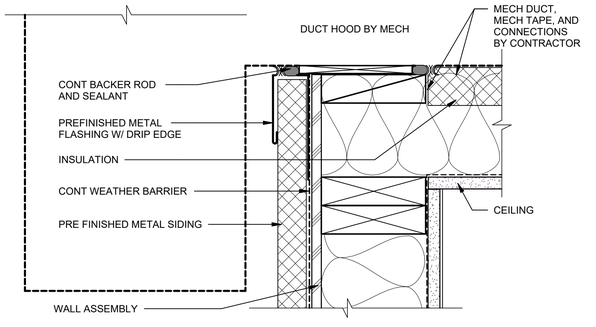
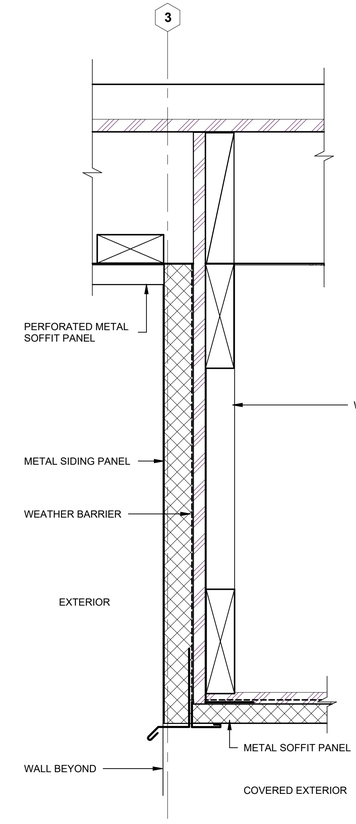


SILL DETAIL

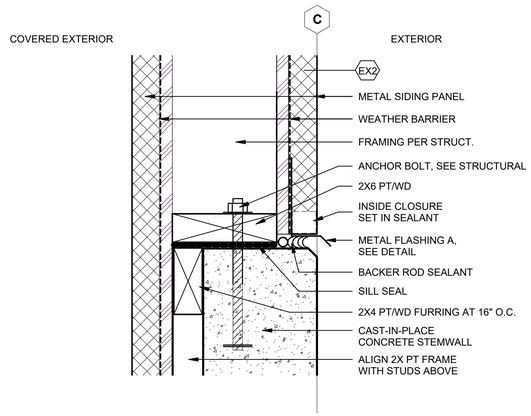
8 LOUVER AT EXTERIOR WALL
Scale: 3" = 1'-0"

SHEET NOTES:

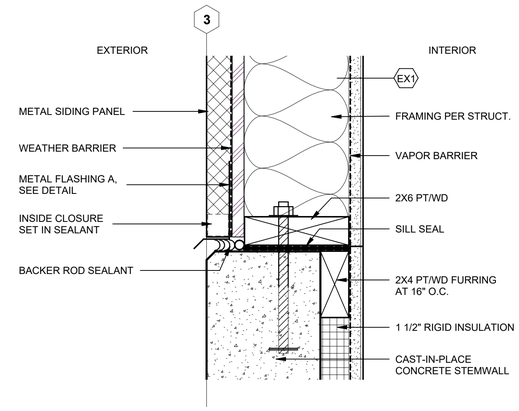
1. SEE SHEET G1.1 FOR WALL CONSTRUCTION
2. SEE A5.3 FOR FLASHING DETAILS



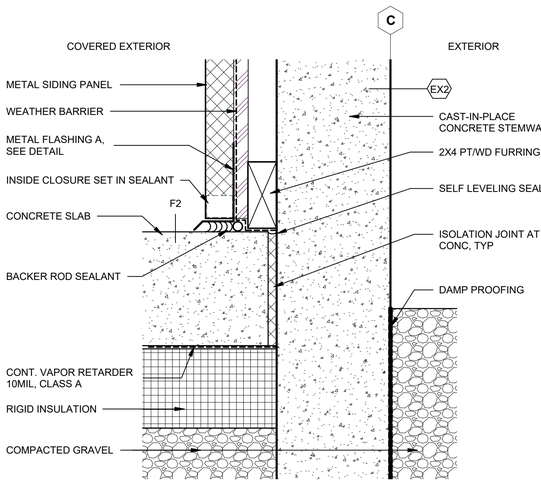
7 WALL DETAIL 7 - RAKE
Scale: 3" = 1'-0"



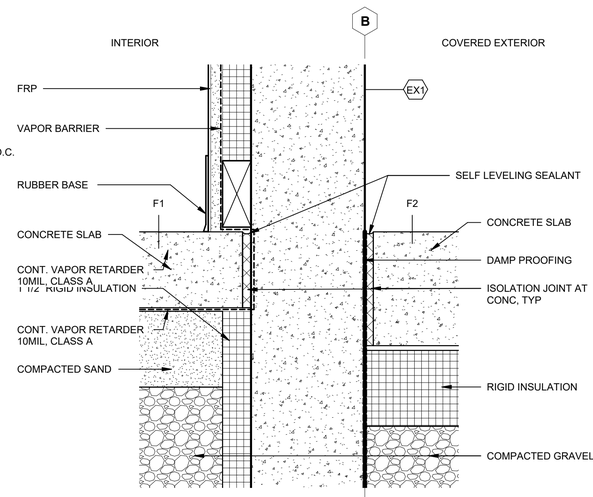
2 EXT. WALL - UPPER
Scale: 3" = 1'-0"



1 WALL DETAIL 1
Scale: 3" = 1'-0"

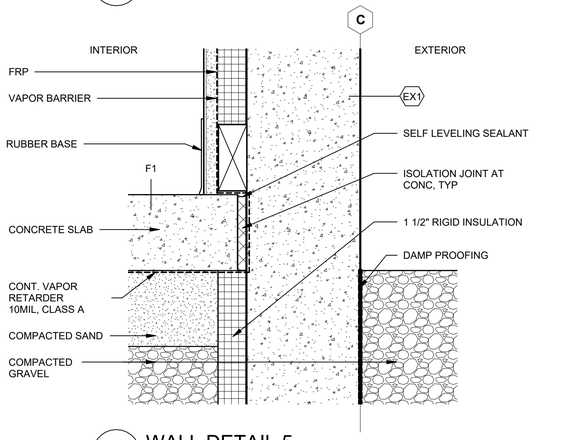


4 EXT. WALL - BASE
Scale: 3" = 1'-0"



3 WALL DETAIL 3
Scale: 3" = 1'-0"

6 LIGHT FIXTURE DETAIL, TYP.
Scale: 3" = 1'-0"



5 WALL DETAIL 5
Scale: 3" = 1'-0"

REVISION	BY	DATE	APPRVL REV

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TITLE: WALL DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
1.17.25
GARY S. WOLF
A8257
REGISTERED PROFESSIONAL ARCHITECT

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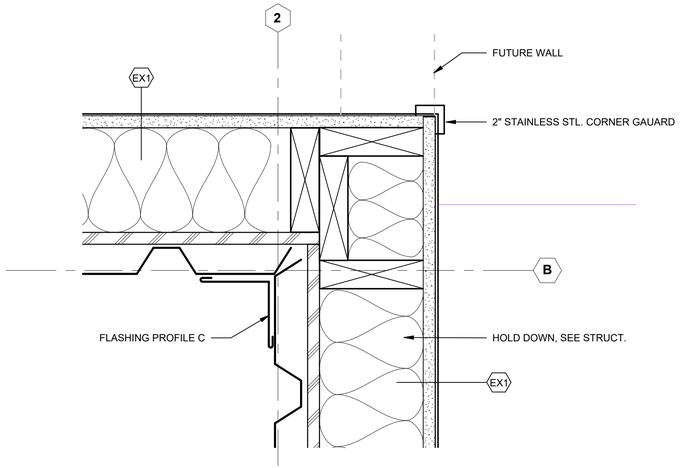
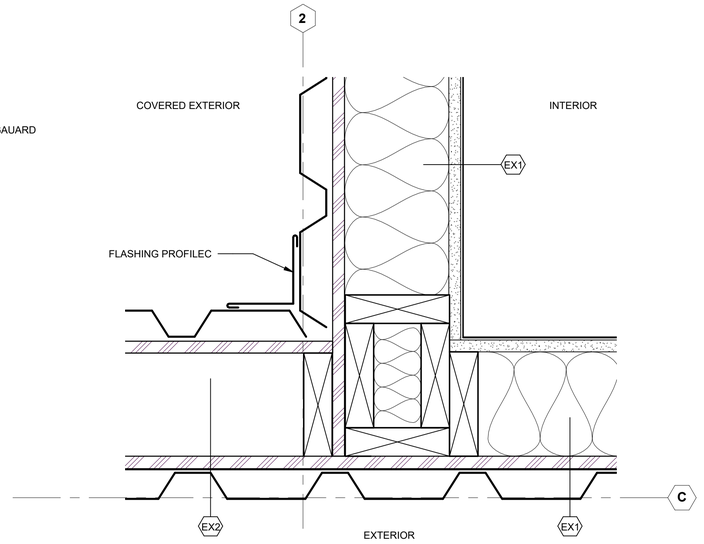
BY:
DATE: 6/30/25
SCALE:

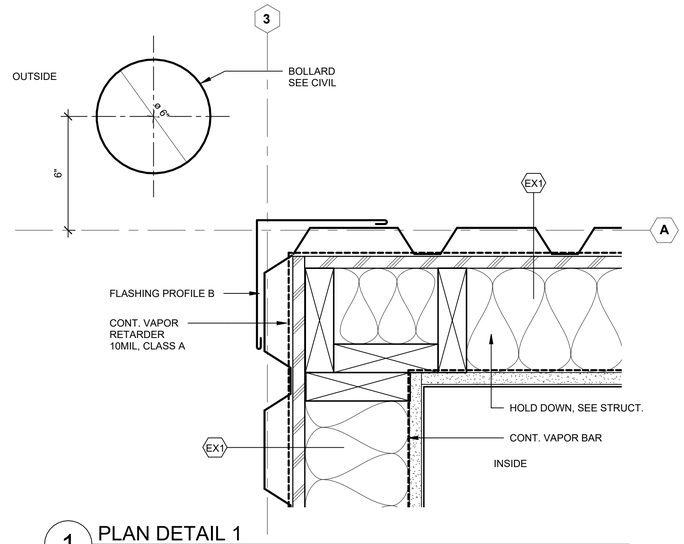
SHEET A5.2



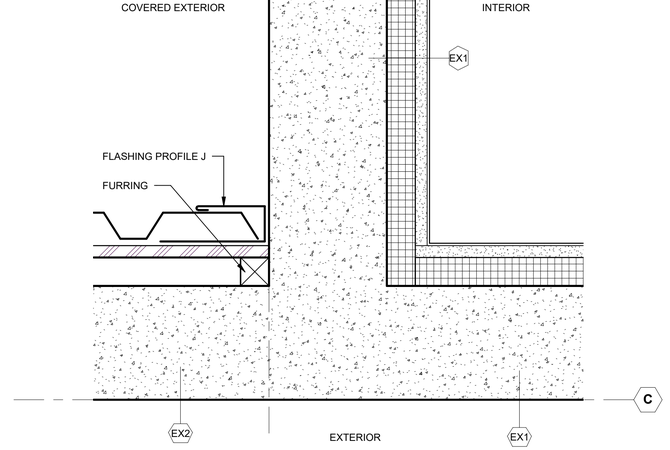
3 PLAN DETAIL 5
Scale: 3" = 1'-0"



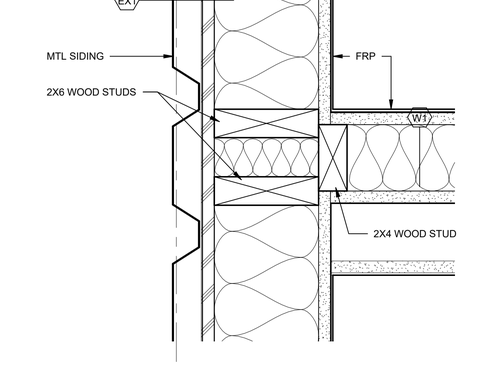
2 PLAN DETAIL 6 UPPER
Scale: 3" = 1'-0"



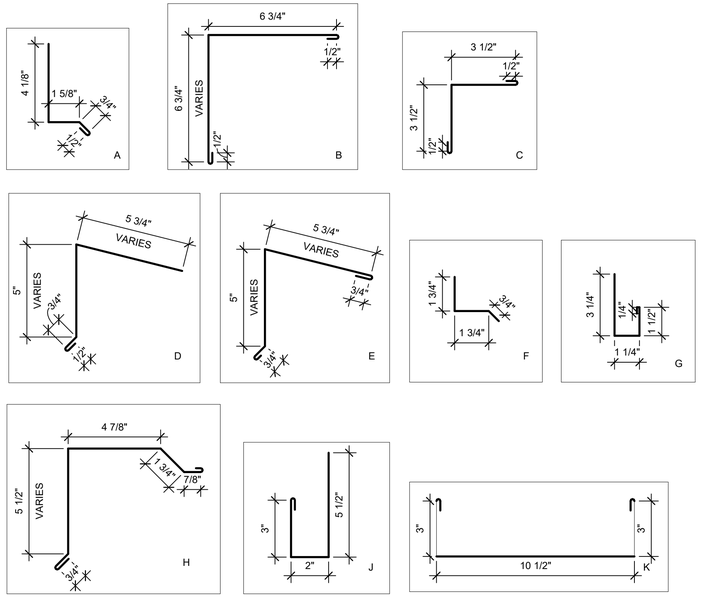
1 PLAN DETAIL 1
Scale: 3" = 1'-0"



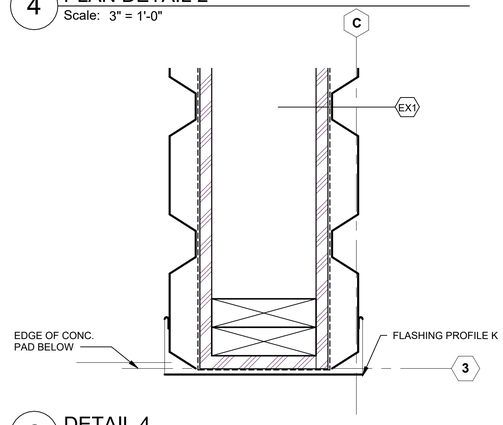
5 PLAN DETAIL 3 LOWER
Scale: 3" = 1'-0"



4 PLAN DETAIL 2
Scale: 3" = 1'-0"



8 FLASHING PROFILES
Scale: 3" = 1'-0"



6 DETAIL 4
Scale: 3" = 1'-0"

APPRVL	REV	DATE	BY	REVISION

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TITLE: PLAN DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49TH
1.17.25
GARY S. WOLF
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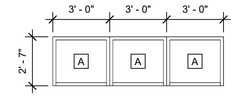
BY:
DATE: 6/30/25
SCALE:

SHEET A5.3



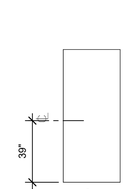
WINDOW TYPE

VINYL WINDOW NOTES:

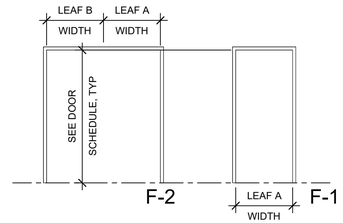
1. BASIS OF DESIGN - JELDWEN, PREMIUM, LOW-E 366, ARGON
   U-VALUE - 0.27 OR LOWER
   SHGC - 0.24 OR LOWER
   VT - 0.55 OR HIGHER
   FINISH - DK BRONZE
2. GLASS TYPE - CARDINAL 366 OR EQUAL

MAN DOOR SCHEDULE

DOOR NO	To Room: Name	PR	DOOR LEAF A	DOOR LEAF B	DOOR HT	DOOR			FRAME			REMARKS / CODED NOTES
						TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	
103	ELEC/COMM		3'-0"	0"	7'-0"	A	STL	PT	F-1	STL	PT	
E100	PUMP ROOM	PR	3'-0"	3'-0"	7'-0"	A	STL	PT	F-2	STL	PT	INSULATED/THERMALLY BROKEN
E102	FUTURE STORAGE		3'-0"	0"	7'-0"	A	STL	PT	F-1	STL	PT	INSULATED/THERMALLY BROKEN



DOOR - TYPES



FRAME TYPES - DOOR

DOOR ABBREVIATIONS

AL ALUMINUM
BOF BOTTOM OF FRAME
FF FACTORY FINISH
GL GLASS
H HINGE (JAMB)
HR HOUR
MFR MANUFACTURER
PL PLASTIC LAMINATE
PR PAIR OF DOORS
PT PAINT
S STRIKE (JAMB)
SST STAINLESS STEEL
STL STEEL
STN STAIN & VARNISH
TOF TOP OF FRAME
WD WOOD

GENERAL DOOR & RELITE NOTES

1. ALL DOORS TO BE 1 3/4" THICK, UNLESS NOTED OTHERWISE
2. SEE SHEET A5.1 FOR INTERIOR STEEL FRAME DOOR AND RELITE DETAILS
3. LABEL COLUMN NUMBERS INDICATES THE RATING IN MINUTES, UNLESS NOTED OTHERWISE
4. GLAZING DIMENSIONS FOR DOOR TYPES ARE TO INSIDE OF FRAME (CLEAR GLAZING AREA). ACTUAL CUTOUT AND TOTAL FRAME WILL BE SLIGHTLY LARGER
5. RELITE GLAZING AND STOP TO OCCUR ON CORRIDOR SIDE OF FRAME, UNLESS NOTED OTHERWISE
6. ALL DOOR HANDLES TO BE LEVER TYPE COMPLYING WITH ADA
7. DOORS AND FRAMES ARE TO BE PAINTED

REVISION	BY	DATE	APPRVL REV

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ARCHITECTURE
625 S Cobb St Palmer, AK 99645
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TITLE: SCHEDULES

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

BY:
DATE: 6/30/25
SCALE:

SHEET A6.1

ABBREVIATIONS

AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
APA	AMERICAN PLYWOOD ASSOCIATION
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWS	AMERICAN WELDING SOCIETY
BLKG	BLOCKING
BM	BEAM
BNDRY	BOUNDARY
BOC	BOTTOM OF CONCRETE
BOD	BOTTOM OF DECK
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BTWN	BETWEEN
CIP	CAST IN PLACE (CONCRETE)
CJP	COMPLETE JOINT PENETRATION
CLR	CLEAR
COL	COLUMN
CONN	CONNECTION
CONT	CONTINUOUS
CVN	CHARPY V NOTCH
DIAM	DIAMETER
DWGS	DRAWINGS
(E)	EXISTING
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATION
EOR	ENGINEER OF RECORD
EW	EACH WAY
EQ	EQUAL
F'C	CONCRETE COMPRESSIVE STRENGTH
F'M	MASONRY COMPRESSIVE STRENGTH
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FT	FEET
FTG	FOOTING
GA	GAGE OR GAUGE
GALV	GALVANIZED
GLB	GLUE-LAMINATED BEAM
HORIZ	HORIZONTAL
HS	HEADED STUD
HSH	HORIZONTAL SLOTTED HOLE
HSS	HOLLOW STRUCTURAL SECTION
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MECH	MECHANICAL
MF	MOMENT FRAME
MIN	MINIMUM
MT	MAGNETIC PARTICLE STRIP
NA	NOT APPLICABLE
NFS	NON FROST SUSCEPTIBLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OWSJ	OPEN WEB STEEL JOIST
PDF	POWER DRIVEN FASTENER
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
REQ'D	REQUIRED
REINF	REINFORCING
RT	RADIOGRAPHIC TEST
SDI	STEEL DECK INSTITUTE
SJI	STEEL JOIST INSTITUTE
SQ	SQUARE
STD	STANDARD
TBD	TO BE DETERMINED
TEMP	TEMPERATURE
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TS	TUBE STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UT	ULTRASONIC
VERT	VERTICAL
W	WIDE FLANGE DESIGNATION
WF	WIDE FLANGE
WP	WORK POINT
WWF	WELDED WIRE FABRIC
W/	WITH

SCHEDULE OF CONSTRUCTION MATERIALS

CONCRETE	LOCATION	28-DAY STRENGTH	MAX. W/C RATIO	AIR ENTRAINMENT
	EXTERIOR CONCRETE (EXPOSED TO FREEZING)	4,500 P.S.I.	0.45	6% +/- 1%
	INTERIOR SLABS (NOT EXPOSED TO FREEZING)	4,000 P.S.I.	0.45	3%
	FOOTINGS, FOUNDATION WALLS	3,000 P.S.I.	0.50	5% +/- 1%
	NOTE: CONCRETE DESIGN PERFORMED USING 3000 P.S.I.			

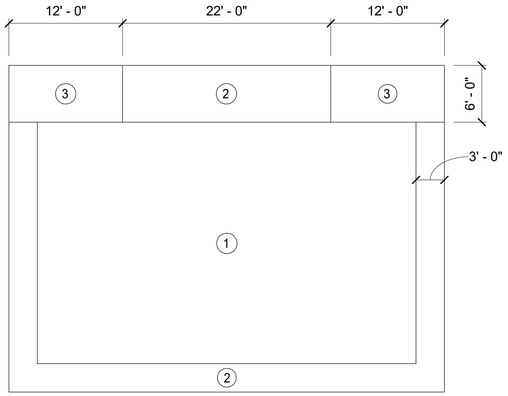
REINFORCING	APPLICATION	TYPE	COMMENTS
	FABRICATED AND STRAIGHT BARS	ASTM A615, GRADE 60	SEE LAP SPLICE SCHEDULE FOR LAP LENGTHS
	FIELD BENT	ASTM A615, GRADE 40	

STRUCTURAL STEEL	APPLICATION	TYPE	GRADE	Fy
	ANCHOR RODS	ASTM F1554	GRADE 36	
	HSS COLUMNS	ASTM A500	GRADE C	46 KSI ROUND
	PLATES	ASTM A572	GRADE 50	50 KSI

WOOD	APPLICATION		SPECIES	GRADE	COMMENTS
	DIMENSION LUMBER	STRUCTURAL WALL STUDS	HEM-FIR	NO. 2	
		PLATES AND LEDGERS	HEM-FIR	NO. 2	
		SAWN BEAMS	DOUG. FIR-LARCH	NO. 1	
		POSTS	DOUG. FIR-LARCH	NO. 1	
		BLOCKING, MISC FRAMING	HEM-FIR	STD & BETTER	

WOOD PANEL SHEATHING	APPLICATION	GRADE	MIN. THICK.	SPAN RATING	EXPOSURE
	ROOF	APA RATED	3/4"	48/24	EXPOSURE 1
	SHEAR WALLS	APA RATED	15/32"	32/16	EXPOSURE 1

ROOF DECK WIND UPLIFT ZONE DIAGRAM



STRUCTURAL DESIGN CRITERIA SCHEDULE

CRITERIA	DESCRIPTION	VALUE	COMMENTS
CODE	IBC 2021		
SEISMIC	ANALYSIS PROCEDURE	ELF	PER ASCE 7-16
	SEISMIC DESIGN CATEGORY	E	
	RISK CATEGORY	II	
	SEISMIC IMPORTANCE FACTOR, IE	1.0	
	SITE CLASS	D-	
	0.2S SPECTRAL RESPONSE ACCELERATION, Ss	1.50	
	1.0S SPECTRAL RESPONSE ACCELERATION, S1	0.77	
	0.2S SPECTRAL RESPONSE COEFFICIENT, Sds	1.20	
	1.0S SPECTRAL RESPONSE COEFFICIENT, Sd1	0.87	
	STRUCTURAL SYSTEM		LIGHT FRAME WOOD WALLS SHEATHED WITH WOOD STRUCTURAL PANELS
	RELIABILITY/REDUNDANCY	1	
	RESPONSE MODIFICATION FACTOR, R	6.5	
	OMEGA	3	
	Cs (STRENGTH DESIGN)	0.185	
	V (STRENGTH DESIGN)	11.7 KIPS	
WIND	BASIC WIND SPEED (3 SECOND GUST)	133 MPH	PER ASCE 7-16 BASIC WIND SPEED MAP
	RISK CATEGORY	II	
	EXPOSURE FACTOR	C	
	INTERNAL PRESSURE COEFFICIENT, GCpi	±0.18	ENCLOSED BUILDING

COMP. & CLADDING PRESSURES		10 Ft²	100 Ft²	
ROOF	INTERIOR - ZONE ①	48.4 PSF	41.9 PSF	WIND VALUES SHOWN ARE ULTIMATE LOADS MULTIPLY BY 0.6 FOR ALLOWABLE LOADS
	PERIMETER - ZONE ②	51.2 PSF	45.1 PSF	VALUES MAY BE NEGATIVE OR POSITIVE
	CORNER - ZONE ③	100.7 PSF	71.3 PSF	VALUES MAY BE INTERPOLATED BETWEEN 10 SQFT AND 100 SQFT
WALL	INTERIOR - ZONE ④	41.8 PSF	36.1 PSF	ZONE 5 EXISTS FOR WALLS WITHIN 3 FT OF WALL CORNERS
	CORNER - ZONE ⑤	51.6 PSF	40.1 PSF	

ROOF LIVE LOADS	GROUND SNOW LOAD	160 PSF	
	SNOW LOAD EXPOSURE FACTOR	1.0	
	THERMAL FACTOR Ct	1.0	
	SNOW IMPORTANCE FACTOR	1.0	
	FLAT ROOF SNOW LOAD	135 PSF	
	SNOW DRIFT LOADS	PER ASCE 7-16	
FLOOR LIVE LOADS	1ST LEVEL SLAB ON GRADE	100 PSF	
FOUNDATIONS	ALLOWABLE SOIL BEARING PRESSURE	3000 PSF	PRESUMPTIVE BEARING PRESSURE PER IBC TABLE 1806.2

DEFERRED SUBMITTALS

DEFERRED SUBMITTAL ITEMS SHALL BE REVIEWED BY THE EOR AND THEN SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CALCULATION AND DRAWINGS STAMPED BY AN ALASKA REGISTERED PROFESSIONAL ENGINEER FOR THE FOLLOWING CONTRACTOR DESIGNED ITEMS:

- PREMANUFACTURED WOOD TRUSSES
- SEISMIC RESTRAINT OF ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS

AS-BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS ON SITE, MODIFIED TO REFLECT ALL DESIGN CHANGES TO THE ORIGINAL DRAWING SET.

REVISION	BY	DATE	APPRVL REV

PND ENGINEERS, INC.
625 South Cobb Street, Suite 202
Palmer, AK 99645
PH 907.707.1081
WWW.PNDENGINEERS.COM
AK. LIC# AECC250

TITLE: DESIGN CRITERIA

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

06.30.25

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 253-1743

BY: DNB
DATE: 06/30/2025
SCALE:

SHEET: S1.1

STATEMENT OF SPECIAL INSPECTIONS

THE FOLLOWING SPECIAL INSPECTIONS SHALL BE PERFORMED BY QUALIFIED PERSONNEL EMPLOYED BY THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT.

SPECIAL INSPECTOR QUALIFICATIONS:
THE SPECIAL INSPECTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING THEIR COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING.

INSPECTION TASKS:
INSPECTION TASKS ARE LISTED IN THE ATTACHED TABLES AND IN THE 2021 EDITION OF THE IBC CHAPTER 17.

REPORT REQUIREMENTS:
REPORTS SHALL BE COMPLETED ON A DAILY BASIS AND DISTRIBUTED ON A WEEKLY BASIS. COPIES OF REPORTS SHALL BE DISTRIBUTED TO THE GENERAL CONTRACTOR, THE ENGINEER OF RECORD AND THE ARCHITECT OF RECORD. REPORTS SHALL INDICATE WHETHER THE WORK WAS OR WAS NOT COMPLETED IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR. IF THEY ARE NOT CORRECTED, DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
A FINAL REPORT DOCUMENTING THE SPECIAL INSPECTIONS PERFORMED AND THE CORRECTION OF ANY DISCREPANCIES SHALL BE DISTRIBUTED AS NOTED ABOVE.

REQUIRED INSPECTION OF SOILS

	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION	REMARKS
1	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	PERIODIC	
2	VERIFY EXCAVATIONS EXTEND TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC	
3	PERFORM CLASSIFICATION AND TESTING OF FILL MATERIALS.	PERIODIC	
4	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	CONTINUOUS	
5	PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY.	PERIODIC	

SPECIAL INSPECTION FOR WIND RESISTANCE

	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION	REMARKS
1	STRUCTURAL WOOD: FIELD GLUING OF ELEMENTS PART OF THE MAIN WINDFORCE-RESISTING SYSTEM NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF ELEMENTS OF THE MAIN WIND FORCE RESISTING SYSTEM INCLUDING: WOOD SHEAR WALLS, DRAG STRUTS, HOLDOWNS AND DIAPHRAGMS.	CONTINUOUS PERIODIC	
2	ARCHITECTURAL COMPONENTS: ROOF AND WALL CLADDING.	PERIODIC	

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE

	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION	REFERENCE FOR CRITERIA	
			REF. STANDARD	IBC REFERENCE
1	INSPECTION OF REINFORCING STEEL AND PLACEMENT	PERIODIC	ACI 318: CH 20, 25.2, 25.3 26.6.1-26.6.3	
2	REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 b. INSPECT SINGLE-PASS FILLET WELDS MAXIMUM 5/16" b. INSPECT ALL OTHER WELDS	 PERIODIC PERIODIC CONTINUOUS	AWS D1.4 ACI 318: 26.6.4	
3	INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED	PERIODIC	ACI 318: 17.8.2	
4	INSPECTION OF ANCHORS POST INSTALLED IN HARDENED CONCRETE MEMBERS a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4. a.	 CONTINUOUS PERIODIC	 ACI 318: 17.8.2.4 ACI 318: 17.8.2	
5	VERIFY USE OF REQUIRED MIX DESIGN	PERIODIC	ACI 318: CH 19, 26.4.3, 26.4.4	1904.1, 1904.2
6	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	CONTINUOUS	ASTM C172 ASTM C31 ACI 318: 26.5, 26.15	
7	INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	CONTINUOUS	ACI 318: 26.5	
8	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TECHNIQUES	PERIODIC	ACI 318: 26.5.3-26.5.5	
9	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	PERIODIC	ACI 318: 26.11.1.2(b)	

SPECIAL INSPECTION FOR SEISMIC RESISTANCE

	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION	REMARKS
1	STRUCTURAL WOOD: FIELD GLUING OF ELEMENTS PART OF THE MAIN WINDFORCE-RESISTING SYSTEM NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF ELEMENTS OF THE MAIN WIND FORCE RESISTING SYSTEM INCLUDING: WOOD SHEAR WALLS, DRAG STRUTS, HOLDOWNS AND DIAPHRAGMS.	CONTINUOUS PERIODIC	
2	ARCHITECTURAL COMPONENTS: ROOF AND WALL CLADDING. INTERIOR AND EXTERIOR NON-BEARING WALLS. INTERIOR AND EXTERIOR VENEER SYSTEMS.	PERIODIC	

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AK. LIC# AECC250

TITLE: SPECIAL INSPECTIONS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49 TH
David Bentti
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

DAY ENGINEERING
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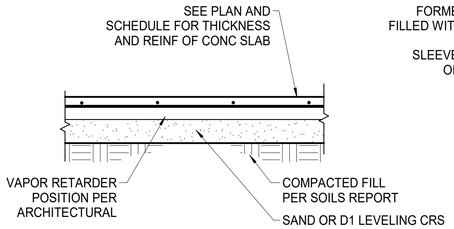
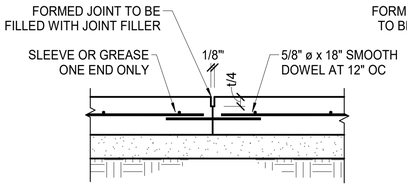
BY: DNB
DATE: 06/30/2025
SCALE:

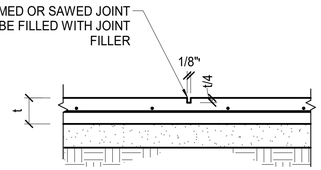
SHEET: S1.2



TYPICAL INTERIOR SLAB ON GRADE



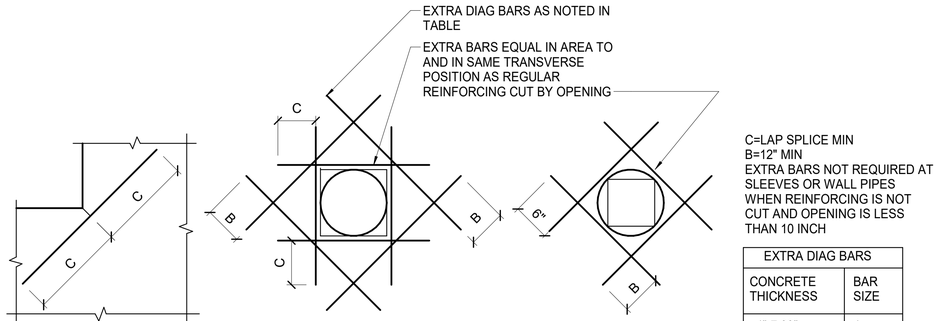
TYPICAL SLAB CONSTRUCTION JOINTS



TYPICAL SLAB CONTROL JOINT

1 TYPICAL SLAB JOINTS

3/4" = 1'-0"



EXTRA DIAG BARS	
CONCRETE THICKNESS	BAR SIZE
4"-7.99"	4
8"-9.99"	5
10"-11.99"	5 T&B
12"-18"	6 T&B

OPENINGS LARGER THAN 21" DIA

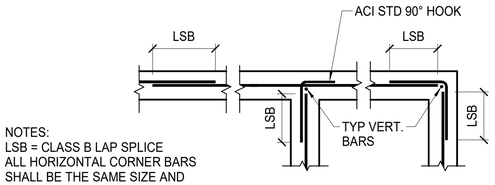
OPENINGS LESS THAN 21" DIA

RE-ENTRANT CORNERS

OPENING REINFORCING

2 TYPICAL WALL OPENING REINFORCING

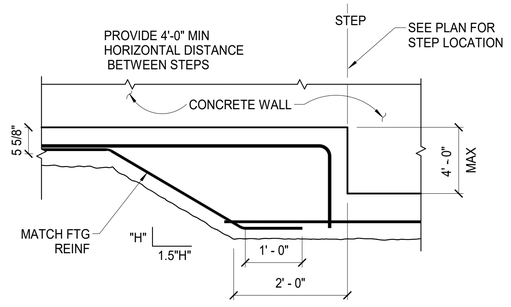
1" = 1'-0"



SINGLE CURTAIN PLAN - 8" WALLS

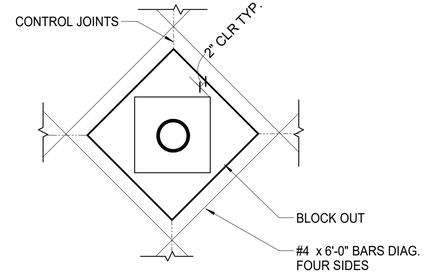
3 TYPICAL WALL CORNER REINFORCING

3/4" = 1'-0"



4 TYPICAL STEP FOOTING

3/4" = 1'-0"



5 COLUMN ISOLATION JOINTS

3/4" = 1'-0"

SLAB REINFORCING SCHEDULE

THICKNESS	TYPE	REINFORCING	CONCRETE COVER
4"	ON GRADE	#3 @ 16" OC EACH WAY	2" FROM TOP
6"	ON GRADE	#3 @ 16" OC EACH WAY	2" FROM TOP

NOTES:

CONCRETE WALL REINFORCING SCHEDULE

MARK	THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING	POSITION	REMARKS
6C	6"	#5 @ 16" OC	#5 @ 12" OC	CENTERED	TYPICAL CONCRETE STEM WALL

NOTES:
ALL HORIZONTAL REINFORCING SHALL TERMINATE AT WALL ENDS, INTERSECTIONS AND JAMBS WITH A STANDARD HOOK.

STRIP FOOTING REINFORCING SCHEDULE

MARK	FTG WIDTH	FTG DEPTH	T.O.F. ELEV.	LONGITUDINAL REINFORCING	TRANSVERSE REINFORCING
SF3	3'-0"	12"	SEE PLAN	(4) #5 TOP & BOTTOM	#5 AT 12" OC

NOTES:

ACI STANDARD 90° HOOK DIMENSIONS

BAR SIZE	#3	#4	#5	#6	#7	#8
MIN. BEND DIAM. (d)	2 1/4"	3"	3 3/4"	4 1/2"	5 1/4"	6"
EXTENSION LENGTH (L)	6"	6"	8"	9"	11"	12"

NOTE: REFERENCE ACI 318-14 SEC. 25.3

LAP SPLICES IN WALLS, FOOTINGS AND SLABS-ON-GRADE (3000 PSI)

BAR SIZE	#3	#4	#5	#6	#7	#8
CLASS B SPLICE	22"	29"	36"	43"	63"	72"

NOTE: INCREASE TABULATED LAP LENGTH BY 20% FOR BUNDLES OF 3 BARS.

REINFORCING CLEARANCE/COVER

EXPOSURE CONDITION		MIN. COVER	TOLERANCE*
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH		3"	-3/8", +1"
EXPOSED TO EARTH OR WEATHER	#5 AND SMALLER BARS:	1 1/2"	-1/4", +1/2"
	#6 AND LARGER BARS:	2"	-1/4", +1/2"
NOT EXPOSED TO EARTH, WEATHER OR IN CONTACT WITH GROUND:		3/4"	-1/4", +3/8"
TIES AND STIRRUPS		1 1/2"	-1/4", +1/2"

NOTES: "-" INDICATES TOLERANCE DECREASE TOWARDS MEMBER FACE. "+" INDICATES AWAY FROM MEMBER FACE.

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AK. LIC# AECC250

TITLE: CONCRETE REINFORCING SCHEDULES AND TYPICAL DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA 49 TH
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

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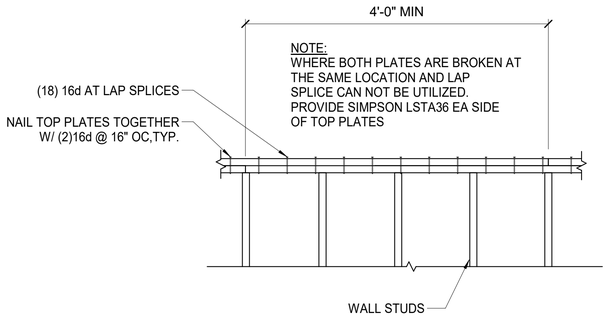
BY: DNB
DATE: 06/30/2025
SCALE:

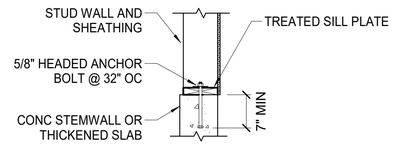
SHEET: S1.3

HEADER SCHEDULE				
MARK	SIZE	TRIMMER STUDS	KING STUDS	NOTES
H1	4x12	(1) 2x6	(2) 2x6	
H2	5.5x12 GLB	(2) 2x6	(4) 2x6	

NOTE: ALL HEADERS ARE LOCATED AT THE TOP OF OPENING.

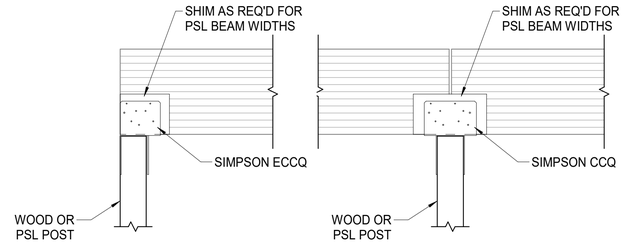


1 TYPICAL TOP PLATE SPLICE
3/4" = 1'-0"

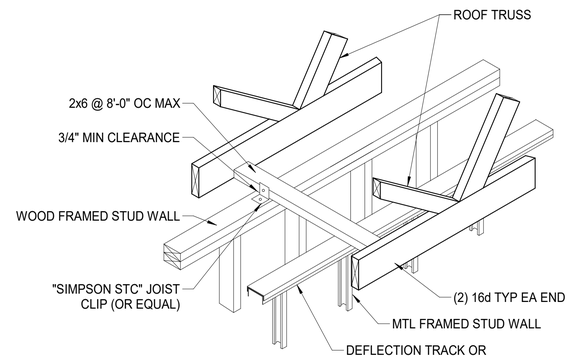


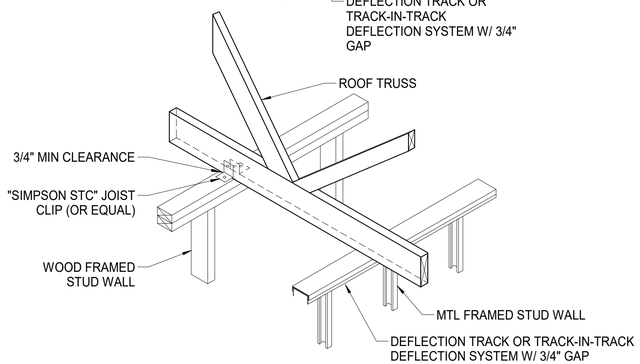
NOTE:
1. ANCHOR SIZE AND SPACING AND SILL PLATE SIZE SPECIFIED THIS DETAIL FOR ALL NON-SHEAR STRUCTURAL BEARING WALLS. SIZE AND SPACING FOR SHEAR WALLS CAN BE FOUND IN THE SHEAR WALL SCHEDULE.
2. ALL ANCHORS SHALL BE HOT-DIPPED GALVANIZED ASTM A307 BOLTS OR THREADED RODS.
3. ALL ANCHORS SHALL HAVE A GALV STD WASHER BETWEEN SILL PLATE AND NUT.
4. ALL ANCHORS SHALL BE PLACED A MINIMUM OF 3" AWAY FROM EDGE OF CONC AND LOCATED NO CLOSER THAN 6" FROM END OF WALL.

2 TYP SILL PL ANCHOR - NON SHEAR WALL
3/4" = 1'-0"

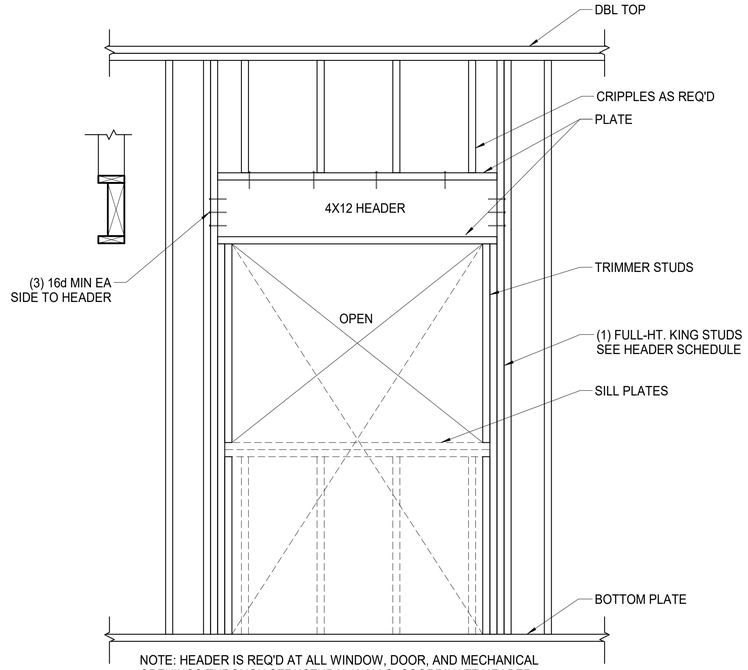


3 TYPICAL TIMBER POST CAP DETAIL
3/4" = 1'-0"



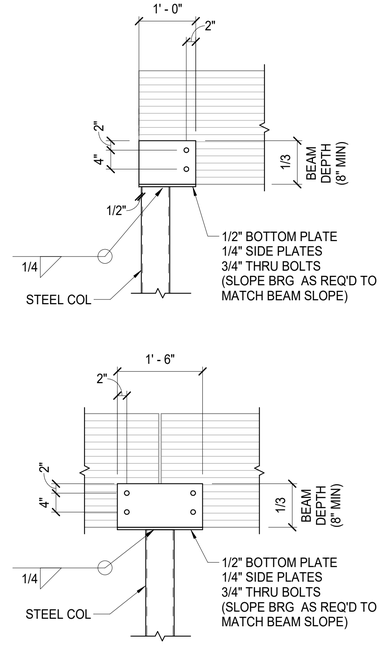


4 NON-BEARING PARTITION DETAILS
3/4" = 1'-0"



NOTE: HEADER IS REQ'D AT ALL WINDOW, DOOR, AND MECHANICAL OPENINGS THROUGH STRUCTURAL WALLS, COORDINATE HEADER POSITION WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

5 TYPICAL HEADER DETAIL
3/4" = 1'-0"



6 TYPICAL GLB COLUMN CAPS
3/4" = 1'-0"

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AK. LIC# AECC250

TITLE: WOOD FRAMING SCHEDULES AND TYPICAL DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49 TH
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

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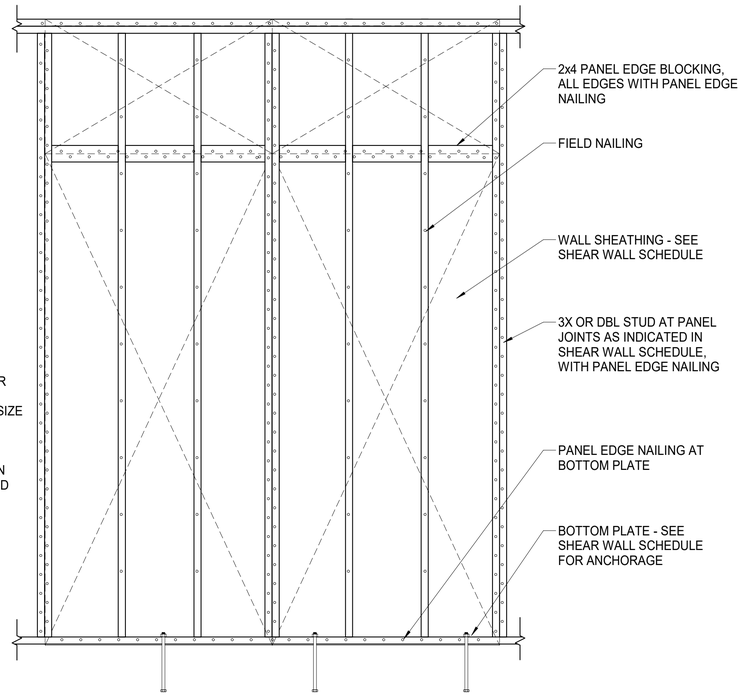
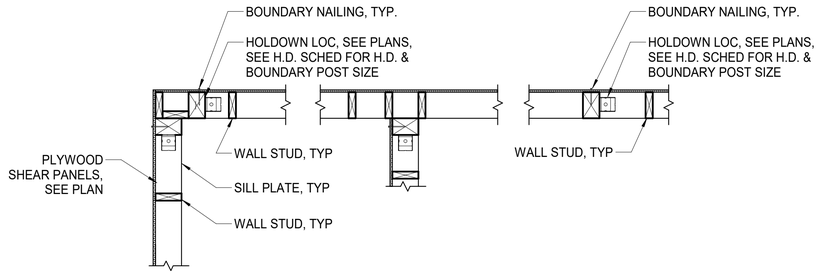
BY: DNB
DATE: 06/30/2025
SCALE:

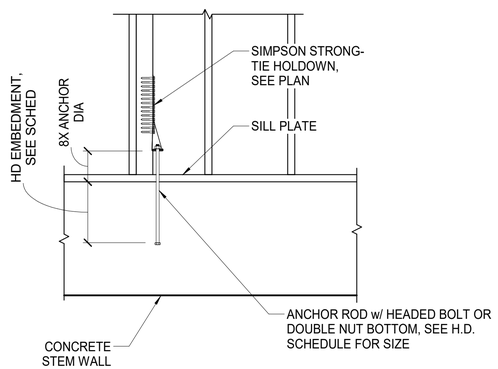
SHEET S1.4

NOTES:
1. PANELS ARE SHOWN VERTICAL, BUT MAY BE PLACED HORIZONTAL.
2. MIN. EDGE DISTANCE FOR NAILS SHALL BE 3/8".
3. MIN. SHEATHING SHEET SIZE SHALL BE 2'-0"x4'-0".
4. NAILS SHALL NOT BE OVERDRIVEN.
5. NAILS SHALL BE COMMON WIRE TYPE OR APPROVED EQUAL.

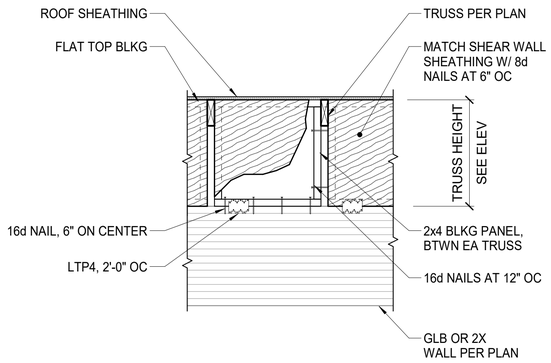


1 SHEAR WALL NAILING DETAIL
3/4" = 1'-0"



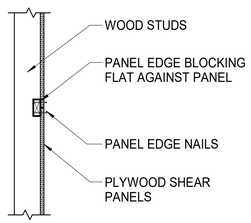


2 TYPICAL HOLDOWN DETAIL AT FOUNDATION
3/4" = 1'-0"



CONTRACTOR OPTION: BLKG PANEL MAY BE SPECIFIED BY TRUSS MFR.

5 SHEAR PANEL
3/4" = 1'-0"



3 PANEL EDGE BLOCKING
3/4" = 1'-0"

WOOD SHEAR WALL SCHEDULE

MARK	WOOD PANELS			NAIL SIZE	NAIL SPACING		PANEL JOINT STUDS	SILL OR BOTTOM PLATE ATTACHMENT					
	APA Grade	Thick.	Span rating		Edges	Field		Fastener	Detail	Dia.	Spacing	Embed.	Washer
6	Sheathing	15/32"	32/16	8d	6"	12"	2x	Anchor Rod	-	5/8"	32"	7"	4 / S1.5
4	Sheathing	15/32"	32/16	8d	4"	12"	2x	Anchor Rod	-	5/8"	16"	7"	4 / S1.5

NOTES:
1. WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR ITS TYPE IN DOC PS1 OR PS2.
2. APPLY SHEATHING TO THE SIDE OF WALL INDICATED BY THE SYMBOL. PANELS MAY BE INSTALLED HORIZONTALLY OR VERTICALLY. DOUBLE SHEATHED WALLS SHALL HAVE PANELS APPLIED TO BOTH FACES.
3. ALL PANEL EDGES SHALL BE LOCATED ON STUDS, BLOCKING LAID FLAT, PLATES OR RIM JOISTS. WHERE SHEATHING IS APPLIED TO BOTH FACES OF WALL, OFFSET PANEL EDGES TO FALL ON DIFFERENT STUDS.
4. STAGGER PANEL EDGE NAILING AT PANEL JOINTS.
5. ANCHOR RODS SHALL BE HOT-DIPPED GALVANIZED ASTM A307 HEADED BOLTS. FIRST AND LAST ANCHORS SHALL BE LOCATED 6" FROM END OF EACH WALL SEGMENT OR END WALL HOLDOWN.
6. SEE TYPICAL PLATE WASHER DETAIL FOR SILL PLATE ANCHOR INSTALL AND LOCATION REQUIREMENTS.
7. SEE HOLDOWN SCHEDULE FOR HOLDOWNS AND BOUNDARY POST SIZES.
8. ANCHOR ROD EMBEDMENT IS THE DISTANCE FROM TOP OF CONCRETE TO TOP OF NUT OR BOLT HEAD.

WOOD DIAPHRAGM SCHEDULE

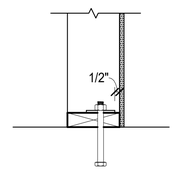
AREA DESCRIPTION	SHEATHING			NAIL SIZE	NAIL SPACING			NOMINAL THICKNESS OF FRAMING MEMBERS	PANEL EDGE BLOCKING
	APA Grade	Thick.	Span Rating		Edges (2,3)	Boundary	Field		
ROOF	Sheathing	3/4"	48/24	8d	6"	6"	12"	2x	NONE

NOTES:
1. APPLY SHEATHING PERPENDICULAR TO FRAMING MEMBERS UNLESS NOTED OTHERWISE.
2. LOCATE PANEL ENDS OVER FRAMING MEMBERS AND STAGGER LOCATION OF ENDS JOINTS BY A MINIMUM OF 2'-0" UNLESS SHOWN OTHERWISE.
3. SEE SCHEDULE FOR PANEL EDGE BLOCKING REQUIREMENTS.
4. STAGGER PANEL EDGE NAILING AT BLOCKED JOINTS.
5. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE EDGES OF PANELS. HEADS OF NAILS SHALL BE DRIVEN FLUSH WITH THE SURFACE.
6. PANELS SHALL NOT BE LESS THAN 4' x 8' EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING WHERE ALL EDGES ARE SUPPORTED BY AND FASTENED TO FRAMING MEMBERS OR BLOCKING.

HOLDOWN SCHEDULE

MARK	HOLDOWN	ANCHOR ROD		BOUNDARY POST SIZE	COMMENTS
		Diam.	Embed.		
HD1	SIMPSON DTT2Z	1/2"	20"	4x6 OR (2) 2x6	

NOTES:
1. HOLDOWNS ARE SIMPSON STRONG-TIE OR EQUAL.
2. ANCHOR RODS SHALL BE GALVANIZED ASTM F1554 GRADE 36 HEADED BOLTS OR ASTM A36 THREADED ROD WITH DBL NUT AT BOTTOM.
3. ROD COUPLERS WITH 125% STRENGTH OF THE ROD MAY BE USED TO EXTEND RODS.
4. BOUNDARY POSTS ARE DF No. 1.



SINGLE-SIDED SHEAR WALL

NOTE: 0.229"x3"x3" MIN SIZE PLATE WASHER TO BE USED FOR EACH SILL PLATE ATTACHMENT BOLT. PLATE WASHER MUST BE WITHIN 1/2" OF SHEATHING FACE. SLOTTED HOLE IN PLATE WASHER PER AWC MAY BE USED PROVIDED A STD CUT WASHER BE PLACED BETWEEN PLATE WASHER AND NUT.

4 TYP SILL PLATE ANCHOR - SHEAR WALLS
1 1/2" = 1'-0"

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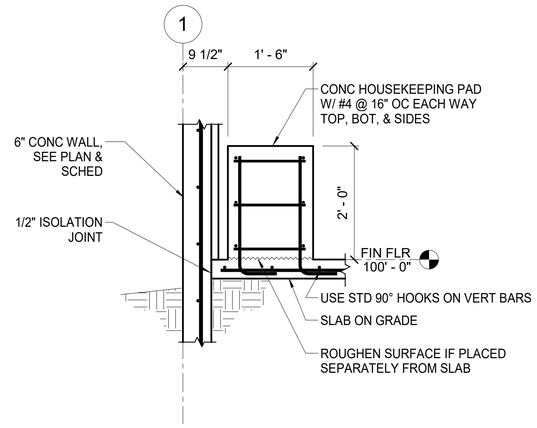
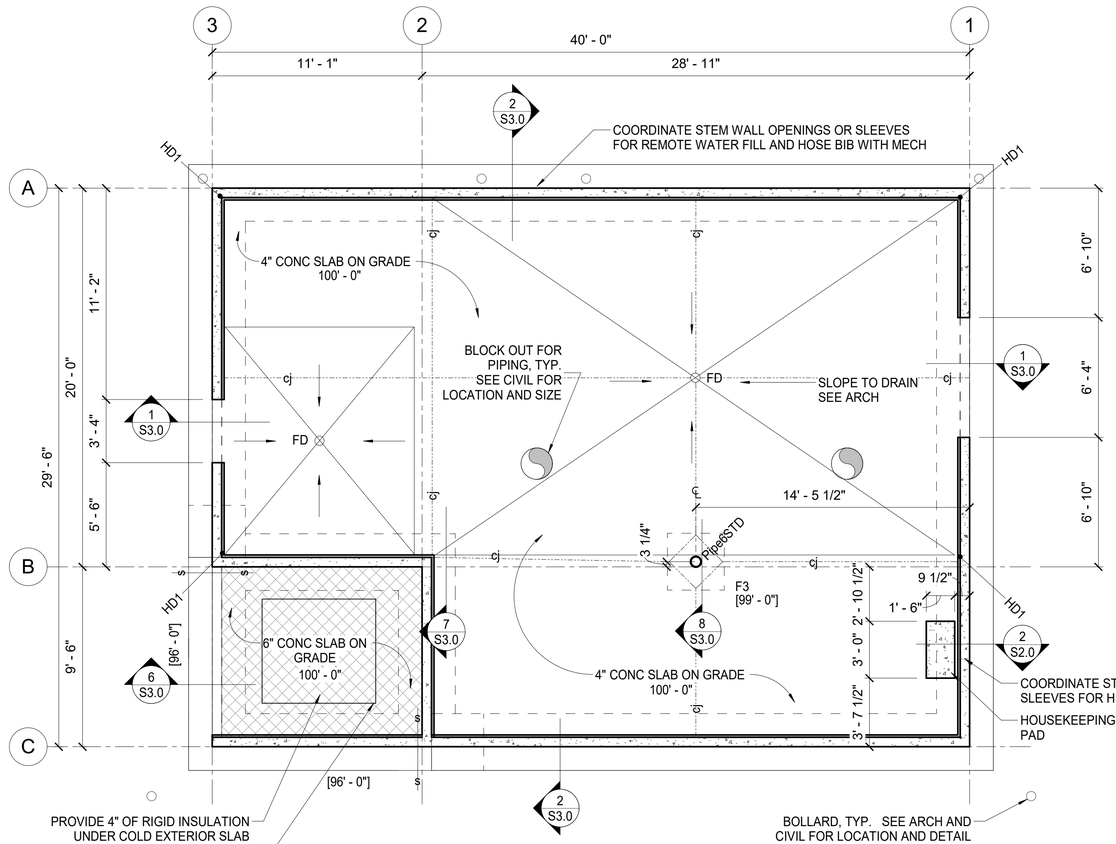
BY: DNB
DATE: 06/30/2025
SCALE:

SHEET: S1.5



2 DETAIL
3/4" = 1'-0"



FOUNDATION SHEET NOTES

1. REFERENCE ELEVATION - TOP OF CONCRETE SLAB ELEVATION = EL. 100'-0". SEE CIVIL FOR ACTUAL ELEVATION.
2. ALL CONCRETE STEM WALLS ARE 6C UNO.
3. ALL STRIP FOOTINGS ARE SF3 UNO. TOP OF STRIP FOOTING IS 97'-0" UNO.
4. INSTALL CONTROL / CONSTRUCTION JOINTS AT 12' OC MAX, EA WAY

LEGEND

[X-XX"]	INDICATES T.O. FOOTING/SLAB ELEVATION
HDx	INDICATES HOLDOWN
FD	INDICATES FLOOR DRAIN
F?	INDICATES SPREAD FOOTING TYPE, SEE SCHED
s s	INDICATES CONC STEP FTG

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

REVISION	BY	DATE	APPRV. REV

PND ENGINEERS, INC.
625 South Cobb Street, Suite 202
Palmer, AK 99645
PH 907.707.1081
WWW.PNDENGINEERS.COM
AK. LIC# AECC250

TITLE: FOUNDATION & SLAB PLAN

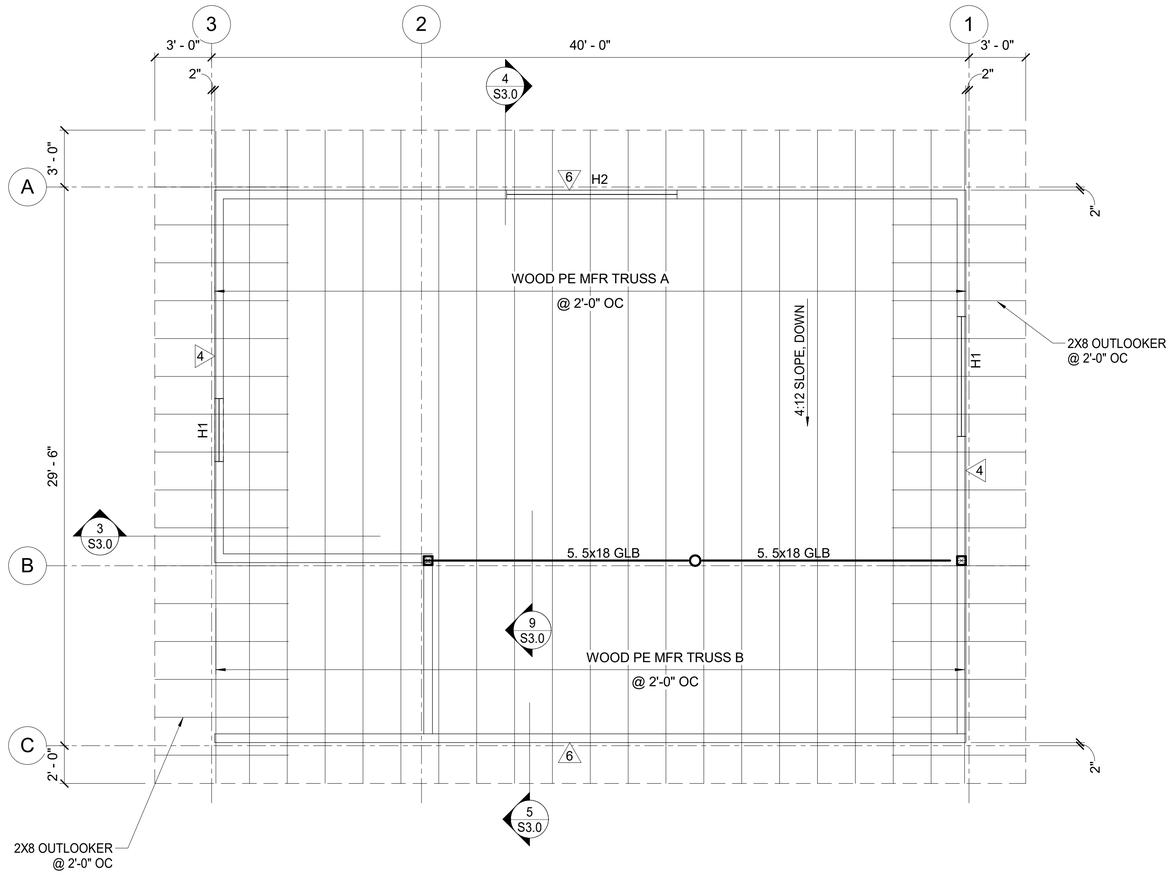
PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49 TH
David Bentti
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 293-1743

BY: DNB
DATE: 06/30/2025
SCALE:

SHEET S2.0



ROOF SHEET NOTES

1. ROOF SHEATHING IS 3/4" PLYWOOD. ORIENT PANELS PERPENDICULAR TO FRAMING MEMBERS. SEE DIAPHRAGM SCHEDULE FOR BLOCKING AND NAILING REQUIREMENTS AT PANEL JOINTS.
2. SEE SECTIONS FOR ROOF ELEVATIONS.

LEGEND

H?	INDICATES HEADER TYPE, SEE SCHED
X	INDICATES SHEAR WALL BELOW, SEE SHEAR WALL SCHED

1 ROOF FRAMING PLAN
1/4" = 1'-0"

REVISION	BY	DATE	APPRV. REV

PND ENGINEERS, INC.
625 South Cobb Street, Suite 202
Palmer, AK 99645
PH 907.707.1081
WWW.PNDENGINEERS.COM
AK. LIC# AECC250

TITLE: ROOF FRAMING PLAN

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49 TH
David Bentti
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

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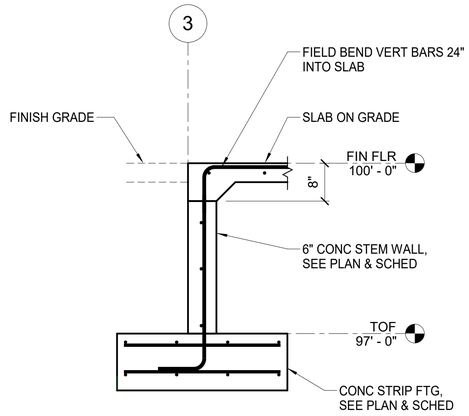
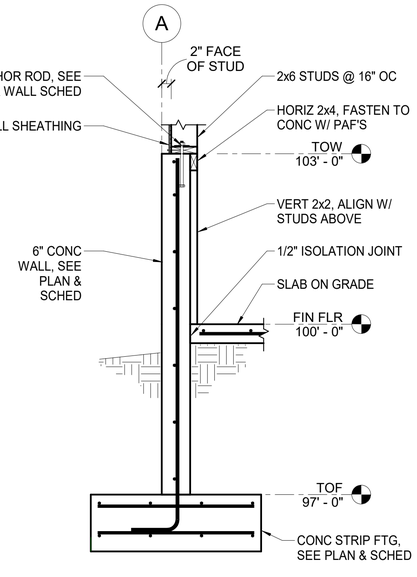
BY: DNB
DATE: 06/30/2025
SCALE:

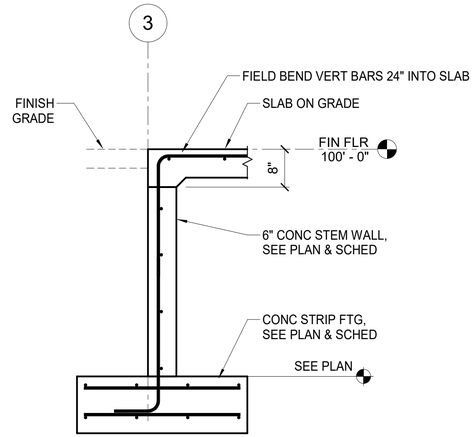
SHEET S2.1



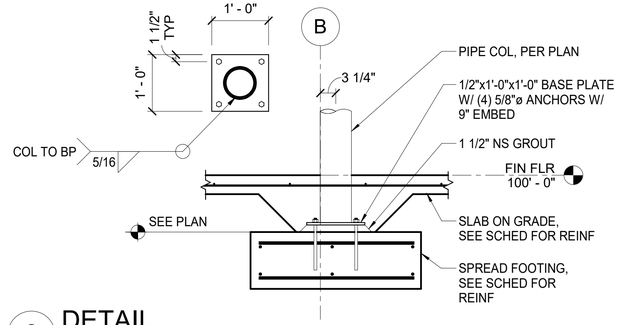
1 DETAIL
3/4" = 1'-0"



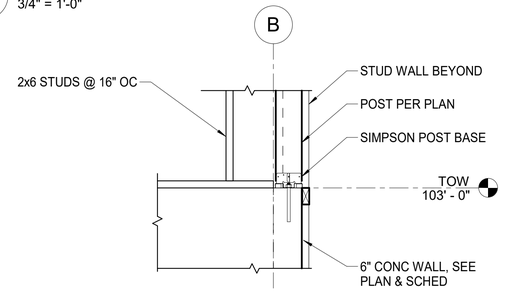
2 DETAIL
3/4" = 1'-0"



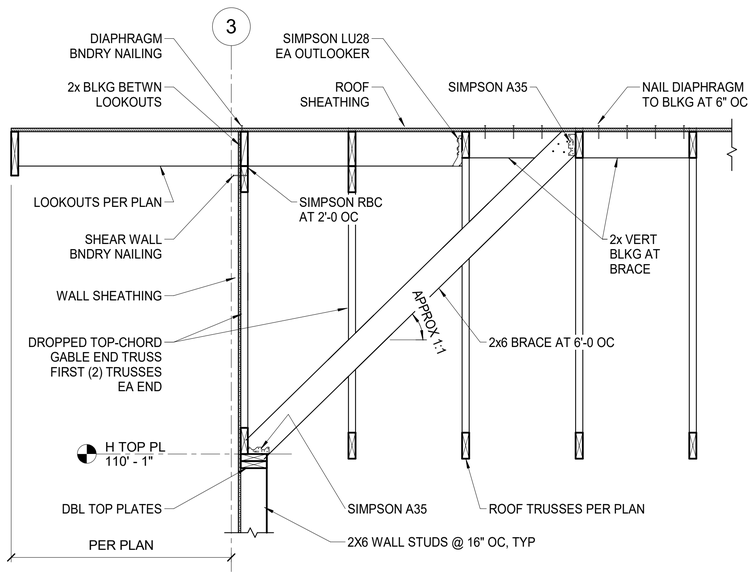
6 DETAIL
3/4" = 1'-0"



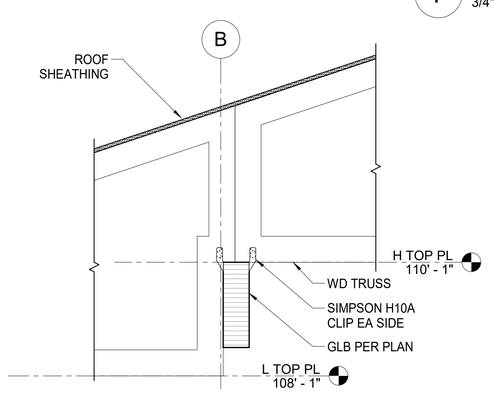
8 DETAIL
3/4" = 1'-0"



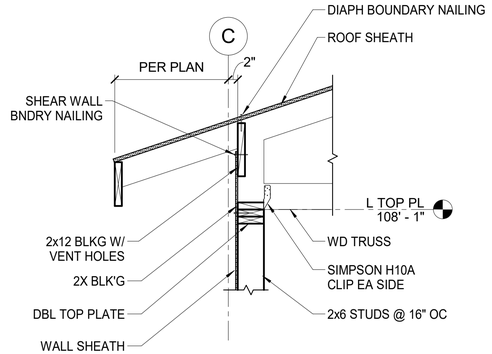
7 DETAIL
3/4" = 1'-0"



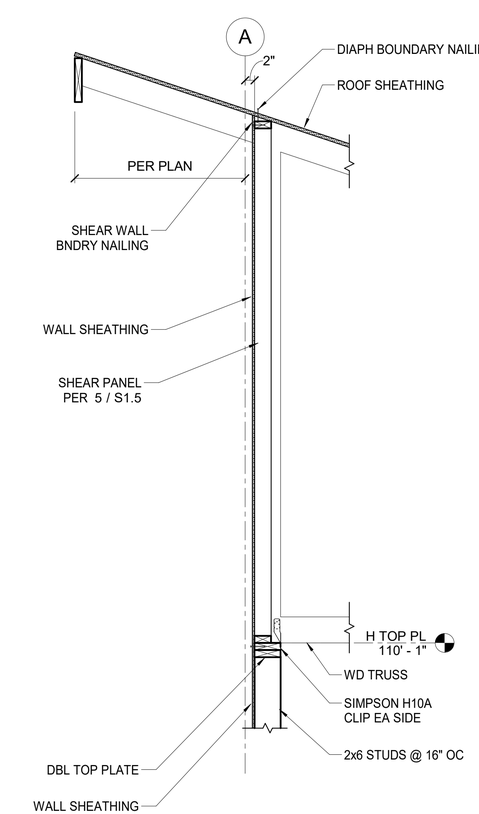
3 DETAIL
3/4" = 1'-0"



9 DETAIL
3/4" = 1'-0"



5 DETAIL
3/4" = 1'-0"



4 DETAIL
3/4" = 1'-0"

REVISION	BY	DATE	APPRVL REV

PND ENGINEERS, INC.
625 South Cobb Street, Suite 202
Palmer, AK 99645
PH 907.707.1081
WWW.PNDENGINEERS.COM
AK. LIC# AECC250

TITLE: DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49 TH
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

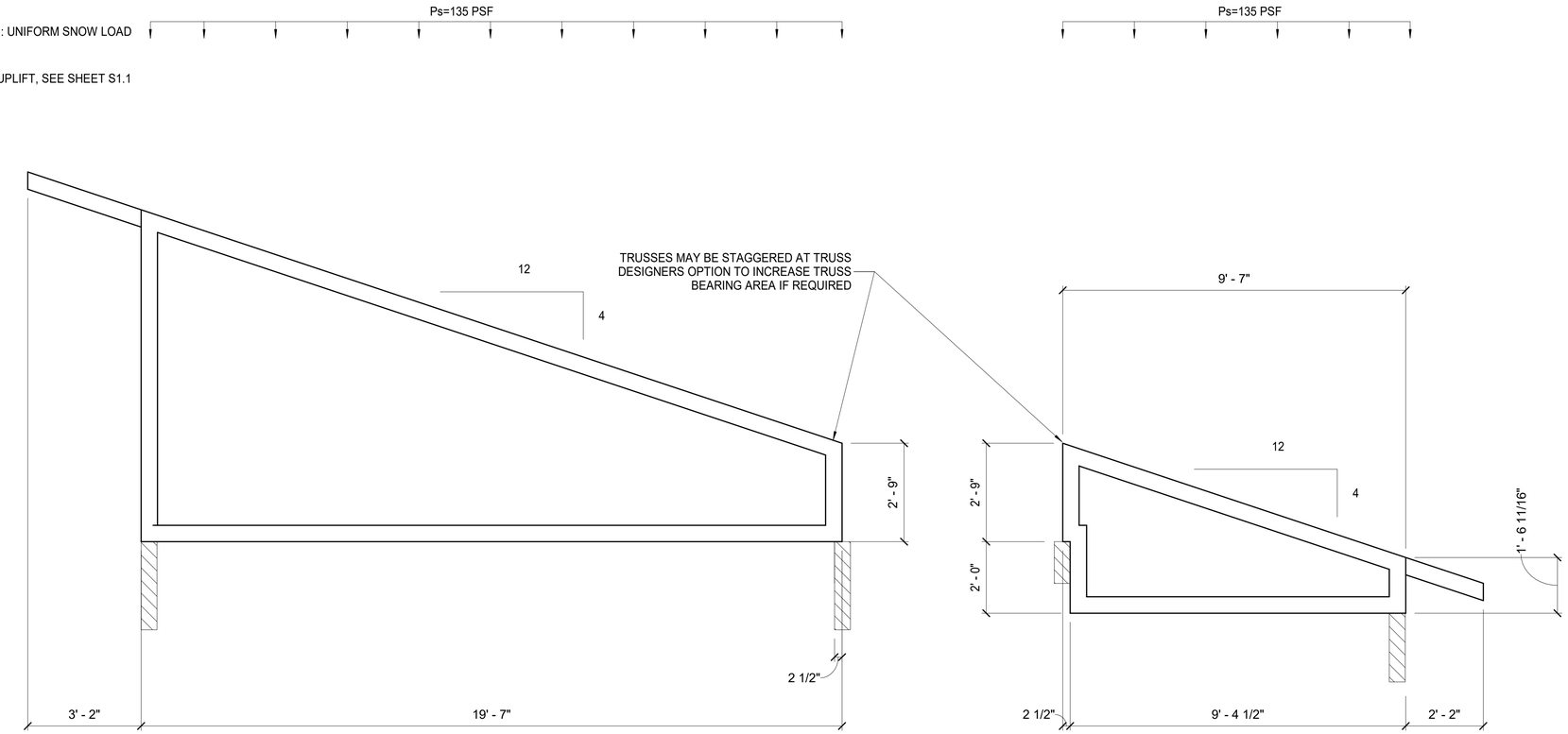
DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
PO BOX 651 • EUREKA, NEVADA 89316 • (775) 253-1743

BY: DNB
DATE: 06/30/2025
SCALE:

SHEET S3.0

LOAD CASE 1: UNIFORM SNOW LOAD

LOAD CASE 2: WIND UPLIFT, SEE SHEET S1.1



TYPE A **TYPE B**

1 TRUSS ELEVATIONS

1/2" = 1'-0"

SHEET NOTES:

ROOF TRUSS DESIGN LOADS

DEAD LOADS
- = 15 PSF TOP CHORD
- = 10 PSF BOTTOM CHORD

SNOW LOADS
- =135 PSF UNIFORM BALANCED SNOW LOAD

WIND UPLIFT
- = PER WIND LOADS ON S1.1

EQUIPMENT LOADS
- = AS INDICATED

PRE-ENGINEERED WOOD TRUSSES

MATERIALS:

1. LUMBER: AS REQUIRED BY THE TRUSS MANUFACTURER. MINIMUM GRADE TO BE HEM-FIR OR DOUGLAS FIR-LARCH NO. 2 KD 15 PERCENT MC, EXCEPT FOR WEBS, WHICH MAY BE MINIMUM GRADE OF HEM-FIR OR DOUGLAS FIR-LARCH NO. 3, KD 15 PERCENT MC.

2. CONNECTIONS: ALL INTERNAL TRUSS CONNECTIONS ARE TO BE DESIGNED BY THE TRUSS MANUFACTURER. CONNECTORS SHALL BE DEFORMED PLATE TYPE, OF MINIMUM 20 GAUGE GALVANIZED STEEL SHEET. ALL JOINTS ARE TO BE DESIGNED USING METHODS AS SET FORTH IN ANSI/TPI STANDARDS 2014.

3. HANGERS: ALL TRUSS TO TRUSS HANGERS SHALL BE MINIMUM 16 GA., AND SHALL BE PROVIDED BY THE TRUSS SUPPLIER. SPECIFICATIONS AND REFERENCE STANDARDS: UNLESS SPECIFICALLY SHOWN OTHERWISE, DESIGN, FABRICATION, ERECTION, HANDLING AND BRACING REQUIREMENTS ARE TO BE GOVERNED BY THE LATEST REVISIONS OF:
   - A. NATIONAL DESIGN SPECIFICATIONS FOR STRESS-GRADE LUMBER AND ITS FASTENINGS.
   - B. TIMBER CONSTRUCTION STANDARDS.
   - C. TPI 1, NATIONAL DESIGN STANDARDS FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION
   - D. TP1 DSB, RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES
   - E. TPI HIB, COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES.

DESIGN:

1. ALL TRUSSES ARE TO BE DESIGNED BY THE TRUSS MANUFACTURER FOR THE LOADS INDICATED ON THE DRAWINGS.

2. WHERE TRUSSES ARE REQUIRED TO FRAME INTO OTHER TRUSSES, DESIGN OF THE HANGERS SHALL BE THE RESPONSIBILITY OF THE TRUSS SUPPLIER. THE TRUSS SUPPLIER SHALL MAKE NECESSARY PROVISIONS IN THE SUPPORTING TRUSS TO ACCEPT THE TYPE OF HANGER REQUIRED.

SUBMITTALS:

1. TRUSS DESIGNS ARE TO BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION. TRUSS SUBMITTAL SHALL INCLUDE THE FOLLOWING INFORMATION:
   - A. DESIGN INFORMATION FOR EACH TYPE OF TRUSS SUPPLIED.
   - B. LAYOUT DRAWING INDICATING LOCATION OF EACH SPECIFIC TRUSS TYPE.
   - C. TRUSS HANGER TYPE AND LOCATION, FOR ALL TRUSSES FRAMING INTO TRUSSES.
   - D. TRUSS DESIGNS AND LAYOUT DRAWING STAMPED BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF ALASKA.

2. SUBMITTALS WHICH DO NOT INCLUDE THE ABOVE LISTED INFORMATION WILL BE RETURNED TO THE CONTRACTOR PRIOR TO REVIEW.

APPRVL	REV	DATE	BY	REVISION

PND ENGINEERS, INC.
625 South Cobb Street, Suite 202
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WWW.PNDENGINEERS.COM
AK. LIC# AECC250

TITLE: TRUSS ELEVATION AND NOTES

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA 49 TH
David Bentti
David N. Bentti
SE121348
REGISTERED STRUCTURAL ENGINEER
06.30.25

DAY ENGINEERING
5 EAST PARK STREET • FALLON, NEVADA 89406 • (775) 423-9090
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BY: DNB
DATE: 06/30/2025
SCALE:

SHEET S4.0

LEGEND

	HOT WATER
	COLD WATER
FOS	FUEL OIL SUPPLY
	PIPE UP
	PIPE DOWN
	TEE UP
	TEE DOWN
	CAP
	UNION
	DIRECTION OF FLOW
	ISOLATION VALVE
	CHECK VALVE
	PRESSURE/TEMPERATURE RELIEF VALVE
	HOSE BIBB
	FLOOR CLEANOUT
	FLOOR DRAIN
	SUPPLY AIR UP & DOWN
	RETURN AIR UP & DOWN
	EXHAUST AIR UP & DOWN
5 / M2	DETAIL NUMBER / SHEET LOCATED ON
1	SHEET NOTES
T	THERMOSTAT
H	HUMIDISTAT

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AMPS	AMPERES
APD	AIR PRESSURE DROP
BDD	BACKDRAFT DAMPER
BLDG	BUILDING
BTUH	BRITISH THERMAL UNIT/HOUR
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATING
CONT	CONTINUED
CO	CLEANOUT
CONN	CONNECTION
CU	COPPER
CW	COLD WATER
dB	DECIBLES
DEG	DEGREE
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DWG	DRAWING
(E)	EXISTING
E/A	EXHAUST AIR
EFF	EFFICIENCY
EF-X	EXHAUST FAN DESIGNATOR
EH-X	ELECTRIC HEATER DESIGNATOR
ENT	ENTERING
ET-X	EXPANSION TANK DESIGNATOR
EXH	EXHAUST
F	FAHRENHEIT
FLA	FULL LOAD AMPS
FOT-X	FUEL OIL TANK DESIGNATOR
FPM	FEET PER MINUTE
FT	FEET
GA	GAUGE
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB-X	HOSE BIBB DESIGNATOR
HP	HORSEPOWER
HW	HOT WATER
IN	INCHES
KW	KILOWATTS
MAX	MAXIMUM
MBH	THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MFGR	MANUFACTURER
MPT	MALE PIPE THREAD
MTD	MOUNTED
NC	NOISE CRITERIA
NO.	NUMBER
NTS	NOT TO SCALE
O/A	OUTSIDE AIR
PH	PHASE
PSI	POUND PER SQUARE INCH
R/A	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
S/A	SUPPLY AIR
SH-X	SPACE HEATER DESIGNATOR
SPVB	SPILL-RESISTANT PRESSURE VACUUM BREAKER
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
T'STAT	THERMOSTAT
TYP	TYPICAL
W/	WITH
W.C.	WATER COLUMN
WH-X	WATER HEATER DESIGNATOR

ELECTRIC HEATER SCHEDULE

			CAPACITY		ELECTRICAL DATA			
SYMBOL	MANUFACTURER	MODEL	MBH	CFM	AMPS	KW	VOLTS/PHASE	REMARKS
EH-1	QMARK	MWUH7504	19.2	270	27.1	5.6	208/1	HORIZONTAL ELECTRIC UNIT HEATER W/ INTEGRAL THERMOSTAT AND THERMAL OVERHEAT PROTECTION. PROVIDE W/ WALL MOUNTING BRACKET.
EH-2	QMARK	CWH1202DSF	5.1	65	7.3	1.5	208/1	RECESSED WALL ELECTRIC HEATER W/ INTEGRAL THERMOSTAT AND THERMAL OVERHEAT PROTECTION. PROVIDE W/ RECESS MOUNTING FRAME.

FAN SCHEDULE

						TSP		MOTOR DATA					
SYMBOL	MANUFACTURER	MODEL	TYPE	SERVICE	CFM	IN W.C.	RPM	HP	VOLTAGE/PHASE	DRIVE	SONES	REMARKS
EF-1	GREENHECK	SQ-90-VG	EXHAUST	PUMP HOUSE	500	0.29	1,505	1/6	120/1	DIRECT	7.0	INLINE DIRECT DRIVE FAN, VARIGREEN MOTOR, PROVIDE WITH INTEGRAL BACKDRAFT DAMPER.

HOSE BIBB SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CW	SERVICE	FINISH	REMARKS
HB-1	WOODFORD	B65	3/4"	PUMP HOUSE	CHROME	ANTI-SIPHON AND FROST-PROOF, CHROME PLATED LOCKABLE RECESSED BOX, REMOVABLE KEY, MPT OUTLET CONNECTION.

SPACE HEATER SCHEDULE

								ELECTRICAL		
SYMBOL	MANUFACTURER	MODEL	LOCATION	HEATING CAPACITY	FUEL TYPE	FUEL GPH	EXHAUST	WATTS	VOLTS/PHASE	REMARKS
SH-1	TOYOSTOVE	L-731	PUMP HOUSE	40 MBH (HIGH)	FUEL OIL #1	0.30 (HIGH)	DIRECT VENT	260	120/1	DIRECT VENT THROUGH WALL HEATER W/ DIRECT VENT KIT, CORD AND PLUG CONNECTION, PROVIDE WITH TOYOTOMI OIL LIFTEX PUMP MODEL OPT-91UL.

TANK SCHEDULE

							TANK CAPACITY				
SYMBOL	MANUFACTURER	MODEL	LOCATION	FUNCTION	MEDIUM	MATERIAL	(GAL)	DIAMETER	LENGTH	LABEL	REMARKS
FOT-1	GREER TANK	500 GAL	PUMP HOUSE	FUEL STORAGE	FUEL OIL #1	STEEL	500	4'-2"	6'-0"	UL-142	DOUBLE WALL, SADDLE MOUNTED, TRIM PER PLANS.

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MANUFACTURER	MODEL	WASTE	VENT	TRAP	ELECTRICAL	TRIM/REMARKS
FD-1	FLOOR DRAIN	J.R. SMITH	2005	4"	4"	4"	N/A	SQUARE TOP.
FS-1	FLOOR SINK	J.R. SMITH	9812-880-CB24	8"	6"	8"	N/A	FIBERGLASS CATCH BASIN, PROVIDE W/ GALVANIZED STEEL GRATE, 8" PIPE ADAPTOR.
TP-1	TRAP PRIMER	PPP INC.	MPB-500-115V	--	--	--	120V/6.3W	SURFACE MOUNT ELECTRIC TRAP PRIMER W/ BOX, PROVIDE W/ DISTRIBUTION UNIT.

AIR INLET/OUTLET SCHEDULE

SYMBOL	MANUFACTURER	MODEL	TYPE	USE	MATERIAL	FINISH	CFM	FACE SIZE (IN.)	NC	REMARKS
A	TITUS	50F	EGGCRATE	O/A	ALUMINUM	WHITE	PER PLANS	PER PLANS	<25	1/2" X 1/2" X 1/2" GRID CORE, SURFACE MOUNTED FRAME, BORDER TYPE I.

REVISION	BY	DATE	APPRVL REV

RSA
Mechanical and Electrical Consulting Engineers
670 West Firewood Lane, Suite 200
Anchorage, AK 99503
(907)258-2420
Corporate No.: AECC542

RSA JOB # M4082

TITLE
MECHANICAL LEGEND, ABBREVIATIONS, AND SCHEDULE

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
BRIAN P. PEKAR
ME-11249
6/6/25
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
P.O. BOX 15178 • ELY, NEVADA 89315 • (775) 289-5353
83 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

BY : JMC
DATE : 06/30/2025
SCALE : AS NOTED

SHEET **M1** OF **3** SHEETS

GENERAL NOTES

A. ALL INTERIOR AND EXTERIOR HOODS, DUCTWORK, GRILLES, AND PIPING SHALL BE SHOP PRIMED AND PAINTED TO MATCH ADJOINING FINISHES.

SHEET NOTES

1. SH–1, INSTALL PER MANUFACTURER INSTRUCTIONS WITH OIL LIFTEX PUMP. MAINTAIN CLEARANCES TO COMBUSTIBLES. MOUNT SH–1 A MINIMUM OF 24" AFF.
2. EH–1,2, INSTALL PER MANUFACTURER INSTRUCTIONS. MAINTAIN CLEARANCES TO COMBUSTIBLES. MOUNT EH–1 A MINIMUM OF 6" FROM CEILING.
3. EXTEND FOT–1 VENT BEYOND EAVE AND MINIMUM 12' AFG AND 3' ABOVE ROOF.
4. EXTEND SIDE WALL VENT 6" FROM EDGE OF SIDING, AHAP. TRIM AND PAINT TO MATCH SIDING.
5. TRANSITION FROM 6" V TO 8" V BEFORE VENT TEE.
6. PLUMBING VENT IN ATTIC SPACE, ROUTE AROUND ELEC/COMM ROOM.
7. SLEEVE CONCRETE FOR EXHAUST TO ENSURE PROPER ANGLE/DRAINAGE FOR INSTALL.
8. PROVIDE WATTS LF008PCQT SPILL–RESISTANT PRESSURE VACUUM BREAKER TO HOSE BIBB HB–1, AND INTERIOR HOSE CONNECTION.

SECTION 23 09 93 – SEQUENCE OF OPERATION

ELECTRIC HEATERS – EH–1, EH–2:

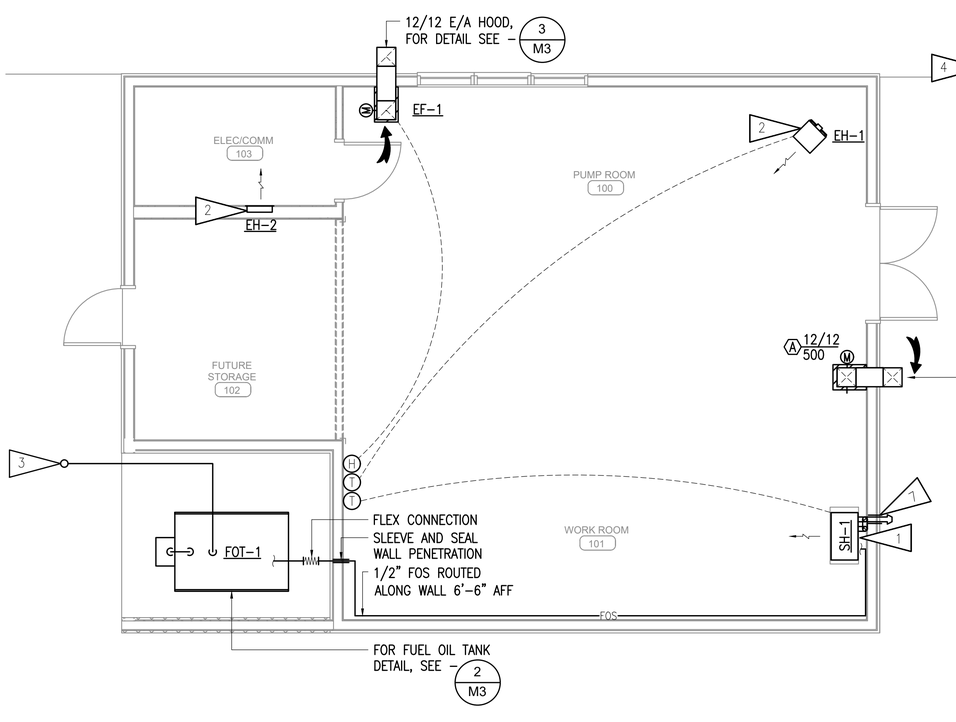
A. UNIT SHALL OPERATE TO MAINTAIN ROOM TEMPERATURE SETPOINT OF 55 DEG F. FAN AND HEATER SHALL CYCLE ON/OFF TO MAINTAIN SETPOINT.

SPACE HEATER – SH–1:

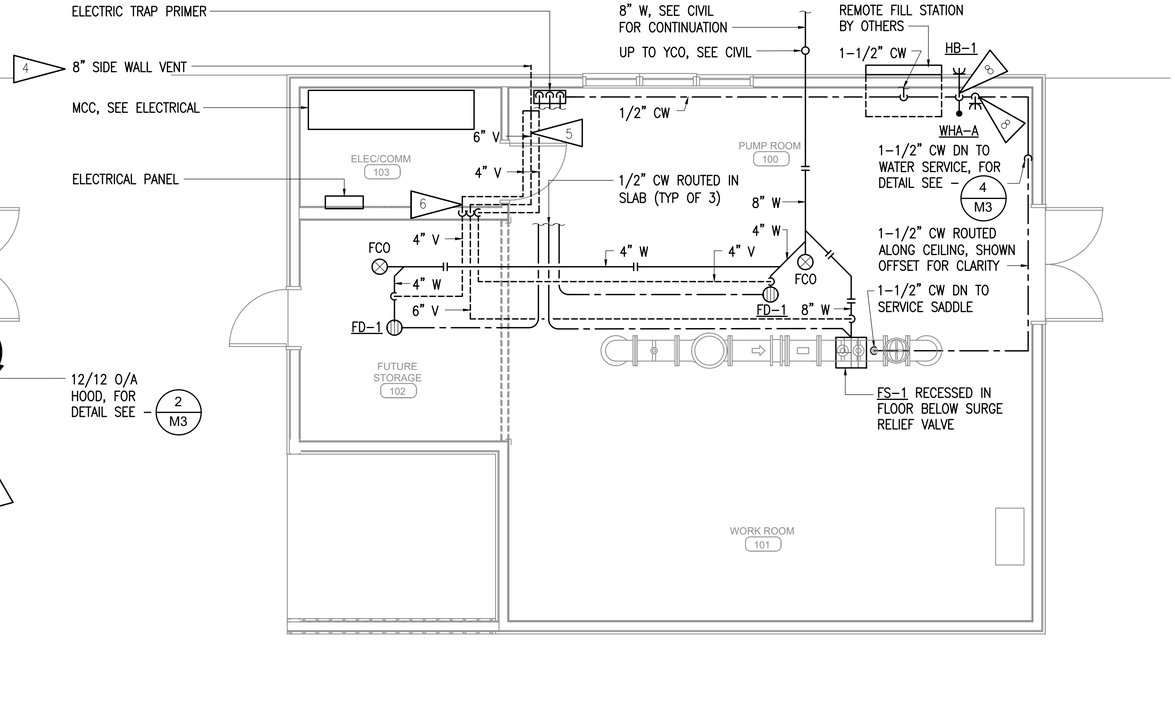
A. UNIT SHALL OPERATE TO MAINTAIN ROOM TEMPERATURE SETPOINT OF 65 DEG F. FAN AND HEATER SHALL CYCLE ON/OFF TO MAINTAIN SETPOINT.

EXHAUST FANS– EF–1:

A. WHEN HUMIDITY IS GREATER THAN 60% RH, FAN SHALL BE IN OPERATION.
B. THE EXHAUST FAN MAY BE PLACED INTO MANUAL OVERRIDE USING A SPRING–WOUND TIMER LOCATED IN THE PUMP ROOM.



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



2 PLUMBING PLAN
1/4" = 1'-0"

REVISION	BY	DATE	APPRVL REV

RSA
Mechanical and Electrical Consulting Engineers
670 West Firewood Lane, Suite 200
Anchorage, AK 99503
(907) 258-2520
Corporate No.: AECC542

RSA JOB # M4082

TITLE: MECHANICAL PLAN

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
BRIAN P. PEKAR
ME–11249
6/6/25
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
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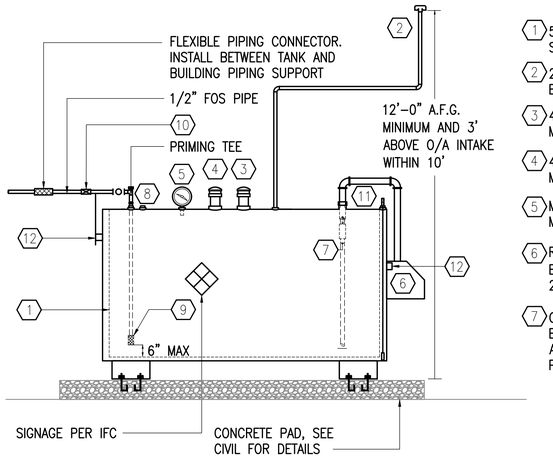
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348–8624

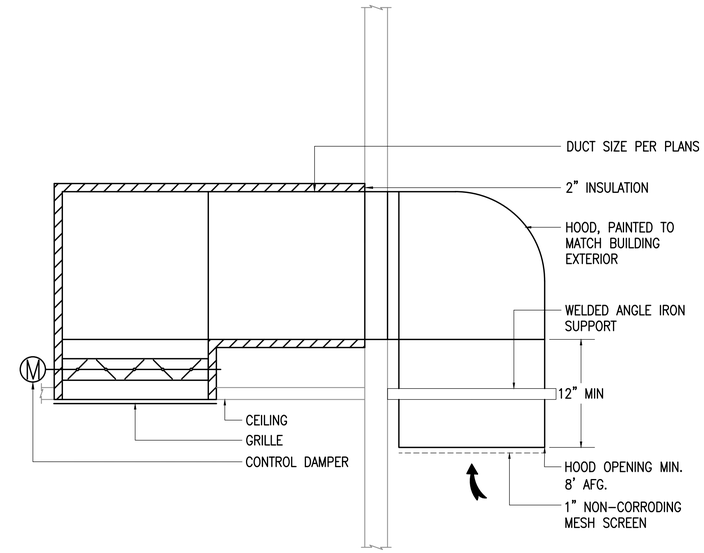
BY : JMC
DATE : 06/30/2025
SCALE : AS NOTED

SHEET M2 OF 3 SHEETS

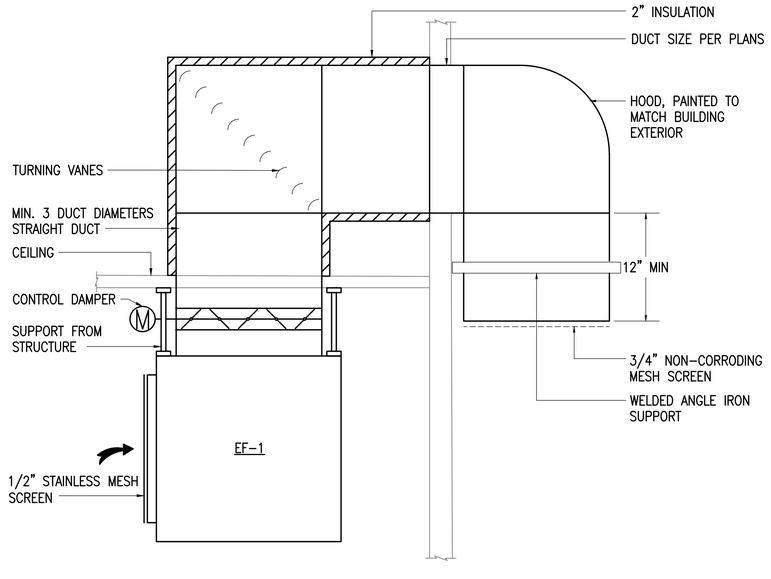


1. 500 GALLON DOUBLE WALL FUEL OIL STORAGE TANK.
2. 2" PRIMARY TANK VENT, MORRISON BROTHERS FIG. 922.
3. 4" PRIMARY TANK EMERGENCY VENT, MORRISON BROTHERS FIG. 244
4. 4" SECONDARY TANK EMERGENCY VENT, MORRISON BROTHERS FIG. 244.
5. MECHANICAL CLOCK TYPE TANK GAUGE, MORRISON BROTHERS FIG. 818.
6. REMOTE SPILL CONTAINER, MORRISON BROTHERS FIG. 515. PROVIDE W/ FIG. 246, 800A, 800DC, AND 691B.
7. OVERFILL PREVENTION VALVE, MORRISON BROTHERS FIG. 9095. COORDINATE APPROPRIATE FLOW RATE WITH LOCAL PURVEYOR OF FUEL.
8. 4" FPT TAPPING, W/PLUG.
9. PROVIDE 3/4" SINGLE POPPET FOOT VALVE OPW MODEL 99-0033 OR APPROVED EQUAL, PROVIDE TANK BUSHING AS REQUIRED FOR CONNECTION TO 3/4" FOS DROP TUBE.
10. ANTI SIPHON VALVE, MORRISON BROTHERS FIG. 912. PROVIDE (1) PER FOS LINE. COORDINATE REQUIRED RELIEF PRESSURE WITH SITE ELEVATION.
11. KRUEGER SENTRY LEAK GAUGE
12. MOUNTING CLIPS

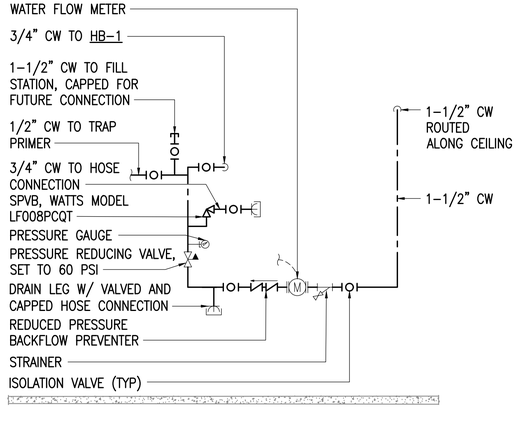
1 FUEL TANK DETAIL
NOT TO SCALE



2 EXTERIOR WALL HOOD DETAIL
NO SCALE



3 EXHAUST FAN HOOD DETAIL
NO SCALE



4 WATER SERVICE PIPING DETAIL
NO SCALE

APPRVL	REV	DATE	BY	REVISION

RSA
Mechanical and Electrical Consulting Engineers
670 West Firewood Lane, Suite 200
Anchorage, AK 99503
(907)258-2420
Corporate No.: AECC542
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TITLE
MECHANICAL DETAILS

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
BRIAN P. PEKAR
ME-11249
5/5/25
REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
PO BOX 151178 • ELY, NEVADA 89315 • (775) 289-5353
63 KEYSTONE AVENUE #206 • RENO, NEVADA 89503 • (775) 348-8624

BY : JMC
DATE : 06/30/2025
SCALE : AS NOTED

SHEET **M3** OF **3** SHEETS

LEGEND

P	PHOTOCELL	$F	FRACTIONAL HORSEPOWER MOTOR STARTER
	LIGHT FIXTURE – SURFACE MTD ON WALL		DISCONNECT SWITCH
	STRIPLIGHT – PENDANT OR SURFACE MTD CLG	VFD	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT
A	FIXTURE TAG (LETTER INDICATES TYPE)	1	NOTE TAG (No. INDICATES NOTE)
$	SINGLE POLE SWITCH	AFF	ABOVE FINISHED FLOOR
$a	SINGLE POLE SWITCH (LOWERCASE LETTER INDICATES SWITCHING)	AFG	ABOVE FINISHED GRADE
$3	THREE WAY SWITCH	C	CONDUIT
	CONDUIT, CONCEALED	EM	DENOTES EMERGENCY POWER
#10	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
A-2	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)	K	KELVIN
—UG/E—	UNDERGROUND ELECTRICAL LINE	LED	LIGHT EMITTING DIODE
—UG/COM—	UNDERGROUND COMMUNICATION LINE	LM	LUMENS
	PANEL	NEC	NATIONAL ELECTRICAL CODE
	DUPLEX RECEPTACLE	TYP	TYPICAL
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER	UON	UNLESS OTHERWISE NOTED
J	JUNCTION BOX	WP	WEATHERPROOF
	MOTOR (SIZED AS NOTED)	XFMR	TRANSFORMER

LIGHT FIXTURE SCHEDULE

TYPE	LOCATION	MANUFACTURER AND CATALOG NUMBER (OR APPROVED EQUAL)	LUMINAIRE DESCRIPTION	MOUNTING TYPE	MOUNTING HEIGHT	LAMPS	BALLAST/DRIVER	TOTAL INPUT WATTS
A1	BUILDING INTERIORS NON–HAZARD	LITHONIA #ZL1D L48 5000LM FST MVOLT 40K 80CRI WH	48" LED STRIP LIGHT, LENSED, WHITE HOUSING. PROVIDE WITH OPTION #E7W WHERE SPECIFIED AS EMERGENCY ON PLANS.	SURFACE	CEILING	5,541LM 4000K	120/277V LED	41
A2	ELECTRICAL ROOM	LITHONIA #ZL1D L48 7000LM FST MVOLT 40K 80CRI WH	SAME AS TYPE A1 EXCEPT HIGHER LUMEN OUTPUT. PROVIDE WITH OPTION #E7W WHERE SPECIFIED AS EMERGENCY ON PLANS.	SURFACE	CEILING	7,596LM 4000K	120/277V LED	59
B1	BUILDING EXTERIOR	LITHONIA #WDGE2 LED P2 40K 80CRI VW MVOLT SRM PBBW DDBXD	LED WALLPACK WITH –40°C RATING, WIDE DISTRIBUTION, SURFACE–MOUNTED BACK BOX, AND DARK BRONZE HOUSING.	WALL	10'–0" AFG	2,076LM 4000K	120/277V LED	15
B2	BUILDING EXTERIOR	LITHONIA #WDGE2 LED P1 40K 80CRI VW MVOLT SRM PBBW DDBXD	SAME AS TYPE B1 EXCEPT LOWER LUMEN OUTPUT.	WALL	8'–0" AFG	1,289LM 4000K	120/277V LED	10
C	BUILDING INTERIORS	HOLOPHANE #EMXH L24 7000LM FPFL MD MVOLT GZ10 40K 80CRI DWHXD CR	24" LINEAR LED FIXTURE FOR CORROSIVE AREAS, CAST AND EXTRUDED ALUMINUM HOUSING WITH FROSTED POLYCARBONATE LENS AND WHITE FINISH.	SURFACE	CEILING	5,442LM 4000K	120/277V LED	46.3

MOTOR CONTROL CENTER 'MCC-WH5

MFR/MODEL: SIEMENS MCC — VOLTS: 277/480V,3PH,4W — ENCLOSURE: NEMA 1 — 400 A

MTG SPACE: AS REQUIRED — VOLT-AMPS — MTG: PAD MOUNTED

NOTE	POLE	AMPS	SERVICE	TYPE	A	B	C	TYPE	SERVICE	AMPS	POLE	NOTE
a	3	*	PANEL 'LS' VIA 30KVA XFMR	FEDR	5442 49883			MOTR	WELL PUMP	*	3	a
a	3	*	^^^	FEDR		5402 49883		MOTR	^^^	*	3	a
a	3	*	^^^	FEDR			3885 49883	MOTR	^^^	*	3	a
	3	-	SPACE						SPACE	-	3	
	3	-	^^^						^^^	-	3	
	3	-	^^^						^^^	-	3	
	3	-	SPACE						SPACE	-	3	
	3	-	^^^						^^^	-	3	
	3	-	^^^						^^^	-	3	
			TOTAL V-A		55325	55285	53768		164,379	VA		
			TOTAL AMPS		200	200	194		198	A		

MINIMUM RECOMMENDED AIC RATING: 18,000 A.I.C.

TOTRE	LTG	REC	MOTR	LG MTR	MISC	KIT	HEAT	SPEC	TOTAL	AMPS
CONNECTED LOAD IN KVA (THIS PANEL)	0.00	0.00	149.65	37.41	0.00	0.00	0.00	0.00	149.6 KVA	180 A
CONNECTED LOAD IN KVA (BRANCH PANELS)	0.59	2.35	0.86	0.22	1.77	0.00	9.16	0.00	14.7 KVA	18 A
TOTAL CONNECTED LOAD IN KVA:	0.59	2.35	150.51	37.41	1.77	0.00	9.16	0.00	164.4 KVA	198 A
DEMAND LOAD IN KVA:	0.74	2.35	150.51	37.41	1.77	0.00	11.44	0.00	204.2 KVA	246 A

PANEL NOTES:
a SEE ONE-LINE DIAGRAM FOR BREAKER SIZE

PANEL OPTIONS:
MAIN LUGS ONLY
INTEGRAL SPD
POWER MONITORING

PANEL 'LA'

MFR/MODEL: INTEGRAL TO MCC — VOLTS: 120/208V,3PH,4W — ENCLOSURE: NEMA 1 — 100 A

VOLT-AMPS — MTG: MCC

NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A	B	C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE
	1	1	20	LTG - INTERIOR & EXTERIOR	LTG	591 2818			HEAT	EH-1	35	2	2	
	3	1	20	RECP - S. EXT, ELEC/COM, STOR.	RECP		720 2818		HEAT	^^	35	2	4	
	5	1	20	RECP - WORK RM 101	RECP			900 759	HEAT	EH-2	15	2	6	
	7	1	20	RECP - SH-1 & WELL PUMP	MISC	274 759			HEAT	^^	15	2	8	
	9	1	15	EF-1	MOTR		864		MISC	ELECTRIC TRAP PRIMER	20	1	10	
	11	1	20	RECP - N. EXT, PUMP RM, TRAP PRIMER	RECP			726 500	MISC	RTU	20	1	12	
	13	1	20	SPARE		1000			MISC	GENERATOR BATTERY CHARGER	20	1	14	
	15	1	20	SPARE			1000		HEAT	GENERATOR BLOCK HEATER	20	2	16	
	17	1	-	SPACE				1000	HEAT	^^	20	2	18	
	19	1	-	SPACE						SPACE	-	1	20	
	21	1	-	SPACE						SPACE	-	1	22	
	23	1	-	SPACE						SPACE	-	1	24	
	25	1	-	SPACE						SPACE	-	1	26	
	27	1	-	SPACE						SPACE	-	1	28	
	29	1	-	SPACE						SPACE	-	1	30	
				TOTAL V-A		5442	5402	3885		14,730	VA			
				TOTAL AMPS		45	45	32		41	A			

MINIMUM RECOMMENDED AIC RATING: 10,000 A.I.C.

	LTG	RECP	MOTR	LG.MT	MISC	KIT	HEAT	SPEC	TOTAL	AMPS
TOTAL CONNECTED LOAD IN KVA:	0.59	2.35	0.86	0.22	1.77	0.00	9.16	0.00	14.7 KVA	41 A
DEMAND LOAD IN KVA:	0.74	2.35	1.08	0.22	1.77	0.00	11.44	0.00	17.6 KVA	49 A

PANEL NOTES:

PANEL OPTIONS:
MAIN CIRCUIT BREAKER (SEE ONE-LINE FOR SIZE)
INTEGRAL SPD

REVISION	BY	DATE	APPRVL REV

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(907) 276-0520
Corporate No.: AECC542
RSA JOB # M4082

TITLE: ELECTRICAL LEGEND AND SCHEDULE

PROJECT: NEW WELL 5 PUMPING STATION VALDEZ, ALASKA

STATE OF ALASKA — 49TH — DAVIN K. BLUBAUGH — EE–13893 — 7/1/25 — REGISTERED PROFESSIONAL ENGINEER

DAY ENGINEERING
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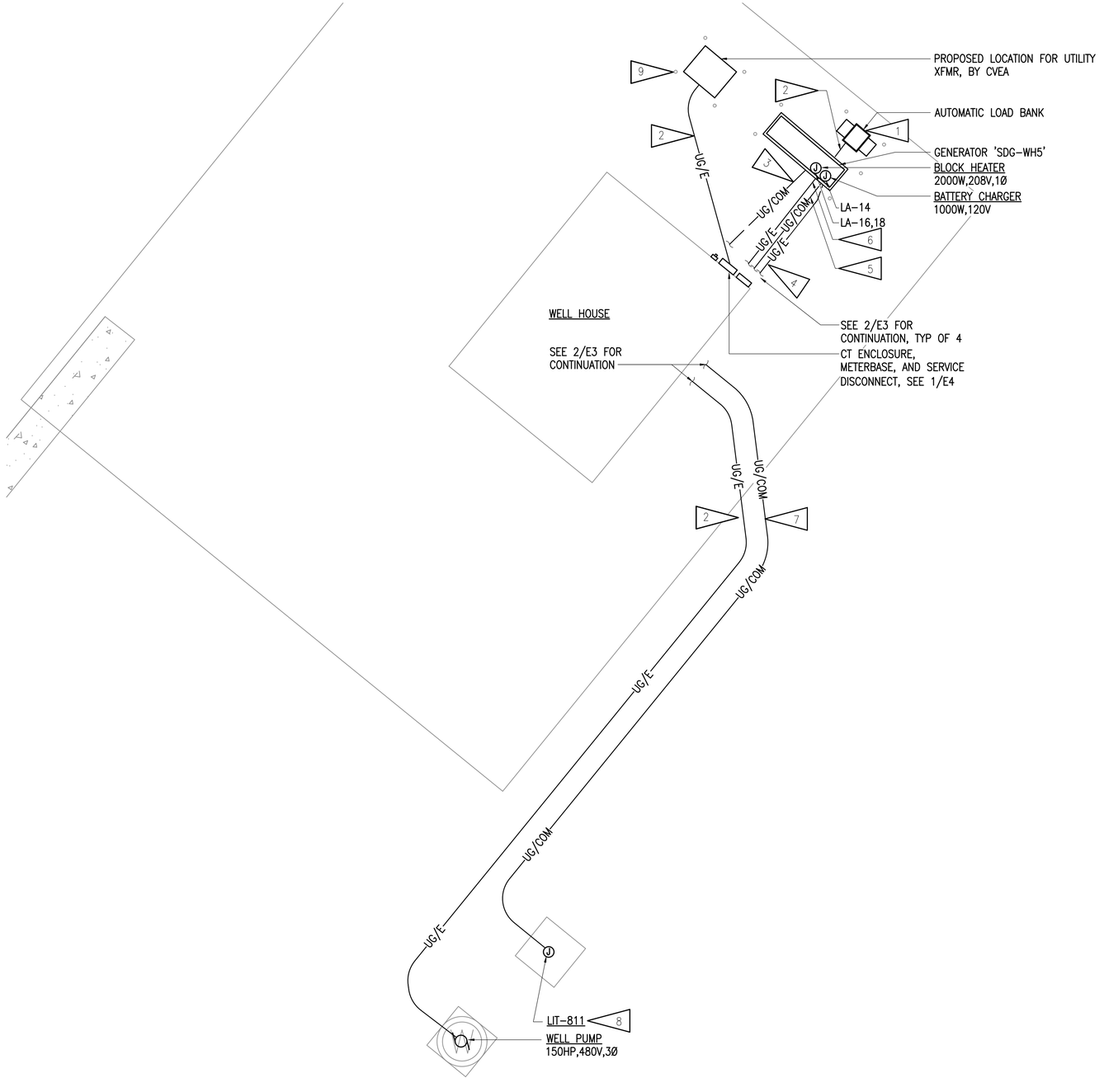
SHEET E1 OF 5 SHEETS — BY : CSZ,DB — DATE : 06/30/2025 — SCALE : AS NOTED



1 ELECTRICAL SITE PLAN - PUMP STATION 5
1" = 10'-0"

GENERAL NOTES:

A. REFERENCE AND COORDINATE WITH THE CITY OF VALDEZ STANDARD SPECIFICATIONS FOR APPLICABLE REQUIREMENTS PRIOR TO BEGINNING WORK.

B. REFERENCE 3/E4 FOR TRENCHING REQUIREMENTS.

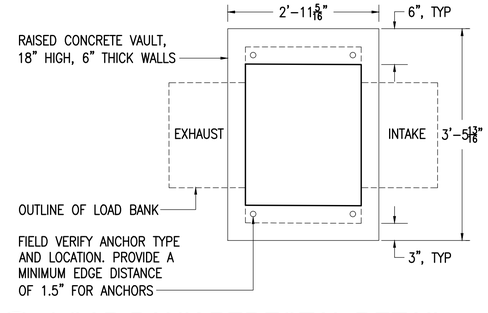
C. CONDUIT AND CONDUCTORS BETWEEN THE BUILDING, GENERATOR, AND LIFT PUMP SHALL BE ROUTED UNDERGROUND AND STUB UP BELOW THE EQUIPMENT.

D. CONDUIT AND WIRING ASSOCIATED WITH ALL INSTRUMENTATION, CONTROL, AND SIGNALING ARE NOT SHOWN ON THESE SHEETS. REFERENCE THE INSTRUMENTATION DRAWINGS FOR REQUIREMENTS. PROVIDE CONDUIT AND WIRING AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

E. FIELD COORDINATE WITH COPPER VALLEY ELECTRIC ASSOCIATION (CVEA) FOR NEW ELECTRICAL SERVICE TO BUILDING. EXACT LOCATION AND ROUTING TO BE DETERMINED BY UTILITY.

SHEET NOTES: (#)

1. PROVIDE NEW RAISED CONCRETE PEDESTAL BELOW LOAD BANK AS SHOWN WITHIN DETAIL 2. ORIENT LOAD BANK TO PEDESTAL SUCH THAT THE EXHAUST END IS FACING AWAY FROM THE SIDEWALK.
2. UNDERGROUND ELECTRICAL LINE. SEE 1/E4 FOR CONDUIT AND WIRE SIZE.
3. PROVIDE (2)1" UNDERGROUND CONDUIT WITH PULL STRING FROM GENERATOR CONTROL PANEL TO RTU IN BUILDING. SEE 2/E3 FOR CONTINUATION. COORDINATE WITH INSTRUMENTATION DRAWINGS FOR CABLING REQUIRED.
4. PROVIDE (2) 1" UNDERGROUND CONDUIT WITH 3#10 AWG, CU, XHHW EACH FROM PANEL 'LA' TO GENSET FOR CONNECTION TO GENERATOR BATTERY CHARGER AND ENGINE BLOCK HEATER.
5. UNDERGROUND CONDUIT FROM ATS TO GENSET FOR START/STOP WIRING. SEE 1/E4 FOR DETAILS.
6. UNDERGROUND CONDUIT FROM ATS TO GENERATOR FOR STANDBY POWER CONNECTION. SEE 1/E4 FOR CONDUIT AND WIRE SIZE.
7. PROVIDE 1" UNDERGROUND CONDUIT WITH PULL STRING FROM JUNCTION BOX INSIDE TO JUNCTION BOX FOR LIT-811 CABLING. COORDINATE WITH INSTRUMENTATION DRAWINGS FOR CABLING REQUIRED.
8. COORDINATE LOCATION AND CONNECTION REQUIREMENTS WITH INSTRUMENTATION DRAWINGS PRIOR TO ROUGH-IN.
9. BOLLARDS, TYP. SEE CIVIL PLANS FOR DETAILS.



2 LOAD BANK PEDESTAL DETAIL
SCALE AS SHOWN

APPRVL/REV	DATE	BY	REVISION

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Corporate No.: AECC542
RSA JOB # M4082

TITLE: ELECTRICAL SITE PLAN - PUMP STATION 5

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
DAVIN K. BLUBAUGH
EE-13893
2/1/26
REGISTERED PROFESSIONAL ENGINEER

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SHEET E2 OF 5 SHEETS
BY : CSZ,DB
DATE : 06/30/2025
SCALE : AS NOTED

GENERAL NOTES:

A. SEE SHEET E2 FOR ADDITIONAL GENERAL NOTES.

B. ALL INTERIOR AND EXTERIOR LIGHTING SHALL BE CONNECTED TO PANEL 'LA' CIRCUIT 1.

C. ROUTE EXTERIOR LIGHTING CIRCUIT THROUGH PHOTOCELL LOCATED ON EXTERIOR OF THE BUILDING.

D. MOUNT ALL RECEPTACLES ON THE INTERIOR OR EXTERIOR OF THE EXTERIOR WALLS OF THE BUILDING AT +48" AFF, TO AVOID CONFLICTS WITH CONCRETE WALL.

E. CONDUIT AND WIRING ASSOCIATED WITH ALL INSTRUMENTATION, CONTROL, AND SIGNALING ARE NOT SHOWN ON THESE SHEETS. REFERENCE THE INSTRUMENTATION DRAWINGS FOR REQUIREMENTS. PROVIDE CONDUIT AND WIRING AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

F. LIGHTING CONTROL WIRING NOT SHOW BUT SHALL BE PROVIDED BY THE CONTRACTOR TO COMPLY WITH SPECIFICATIONS. CIRCUIT NUMBERS, AND LIGHTING CONTROLS SHOWN IN EACH ROOM.

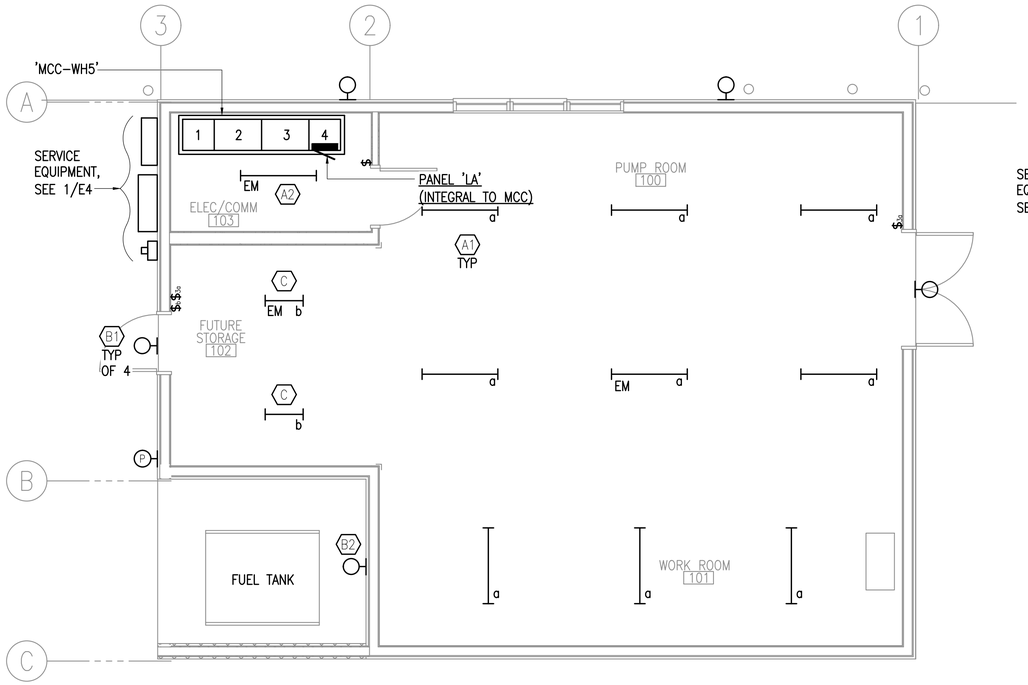
G. CONNECT ALL EMERGENCY LIGHTING TO UNSWITCHED LEG OF LOCAL LIGHTING CIRCUIT.

H. OCCUPANCY AND EXIT REQUIREMENTS PER IBC DO NOT REQUIRE EMERGENCY LIGHTING FOR THIS BUILDING. EMERGENCY LIGHTS ARE FOR CONVENIENCE OF OCCUPANTS IN CASE OF POWER LOSS.

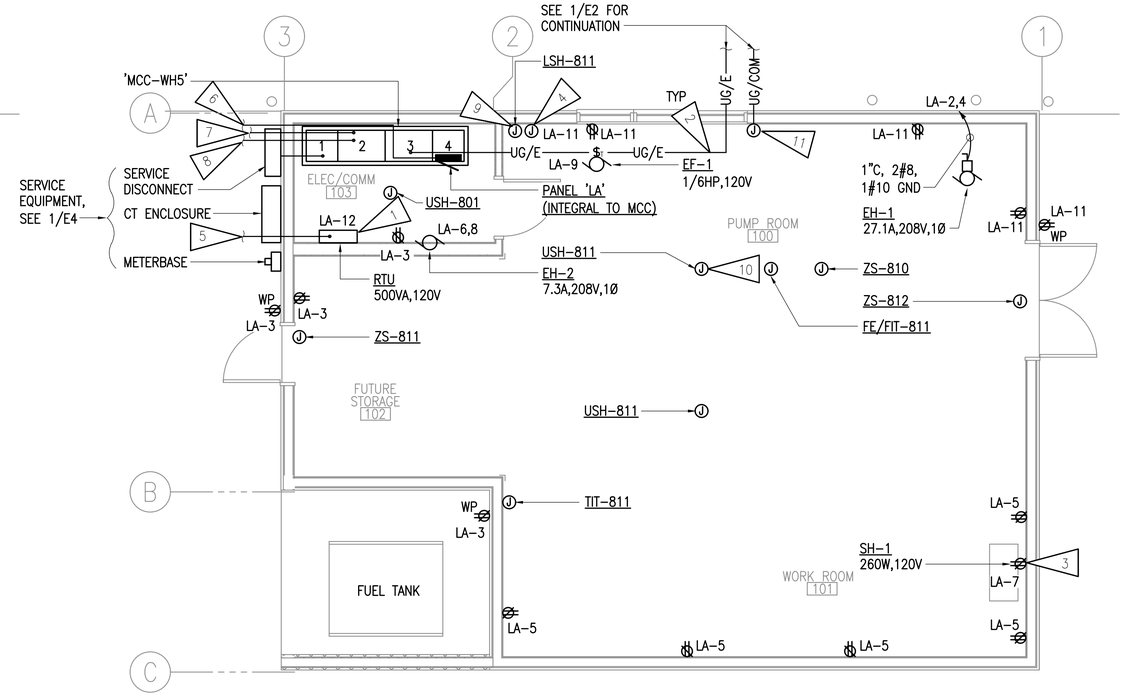
I. COORDINATE LOCATION AND CONNECTION REQUIREMENTS OF ALL DEVICES ENDING IN "–811" AND "–801" WITH INSTRUMENTATION DRAWINGS PRIOR TO ROUGH–IN.

SHEET NOTES: <#>

1. ROUTE 1.5" CONDUIT WITH PULL STRING FROM CONTROL PANEL TO ROOF FOR CONNECTION TO NEW CELLULAR/WIRELESS ANTENNA. COORDINATE WITH INSTRUMENTATION DRAWINGS FOR ANTENNA CONNECTION PRIOR TO ROUGH–IN.
2. UNDERGROUND ELECTRICAL LINE. SEE 1/E4 FOR CONDUIT AND WIRE SIZE.
3. SH–1 LIFT PUMP SHALL UTILIZE RECEPTACLE FOR POWER REQUIREMENTS.
4. JUNCTION BOX FOR CONNECTION TO ELECTRIC TRAP PRIMER. COORDINATE WITH MECHANICAL FOR EXACT LOCATION PRIOR TO ROUGH–IN.
5. UNDERGROUND CONDUIT FOR CONNECTION TO GENERATOR CONTROL PANEL, SEE 1/E2 FOR CONTINUATION.
6. UNDERGROUND CONDUIT FOR CONNECTION TO GENERATOR BATTERY CHARGER AND ENGINE BLOCK HEATER, SEE 1/E2 FOR CONTINUATION.
7. UNDERGROUND CONDUIT FROM ATS TO GENSET FOR ATS/GENERATOR CONTROL WIRING. SEE 1/E4 FOR DETAILS. SEE 1/E2 FOR CONTINUATION.
8. UNDERGROUND CONDUIT FOR CONNECTION TO GENERATOR SEE 1/E2 FOR CONTINUATION.
9. FIELD COORDINATE JUNCTION BOX MOUNTING LOCATION TO BE 1" AFF.
10. MOUNT ON DISCHARGE SIDE OF PCV.
11. PROVIDE 6"X6"X6" JUNCTION BOX FOR INSTRUMENTATION EQUIPMENT LIT–811 CABLING.



1 ELECTRICAL LIGHTING PLAN
1/4" = 1'-0"



2 ELECTRICAL POWER AND SIGNAL PLAN
1/4" = 1'-0"

APPRVL	REV	DATE	BY	REVISION

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Corporate No.: AECC542
RSA JOB # M4082

TITLE: ELECTRICAL PLANS - PUMP STATION 5

PROJECT: NEW WELL 5 PUMPING STATION VALDEZ, ALASKA

STATE OF ALASKA
DAWN K. BLUBAUGH
EE–13893
6/1/25
REGISTERED PROFESSIONAL ENGINEER

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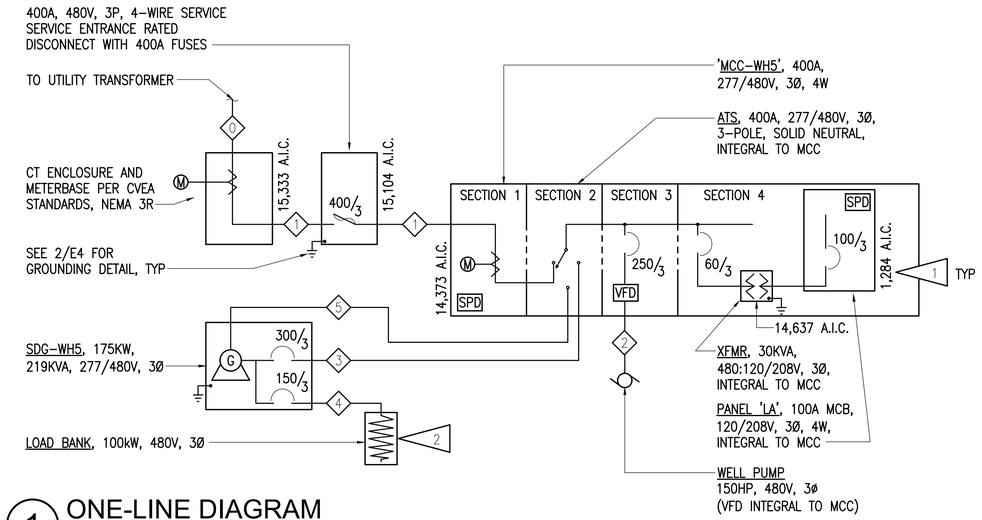
BY: CSZ,DB
DATE: 06/30/2025
SCALE: AS NOTED

SHEET E3 OF 5 SHEETS



1 ONE-LINE DIAGRAM
NO SCALE

FEEDER SCHEDULE	
FEEDER TAG	CONDUIT AND CONDUCTOR SIZE AND QUANTITY
◇0	CONDUIT ONLY, SIZED AS REQUIRED BY CVEA, CONDUCTORS BY CVEA
◇1	(2) 2"C, 4#3/0 AWG, 1#2 AWG GND CU, XHHW
◇2	2"C, 3#4/0 AWG, 1#4 AWG GND CU, XHHW
◇3	3"C, 4#350 KCMIL, 1#4 AWG GND CU, XHHW
◇4	1.5"C, 3#1/0 AWG, 1#6 AWG GND CU, XHHW
◇5	1"C AND GENERATOR START/STOP WIRING PER MANUFACTURER

GENERAL NOTES:

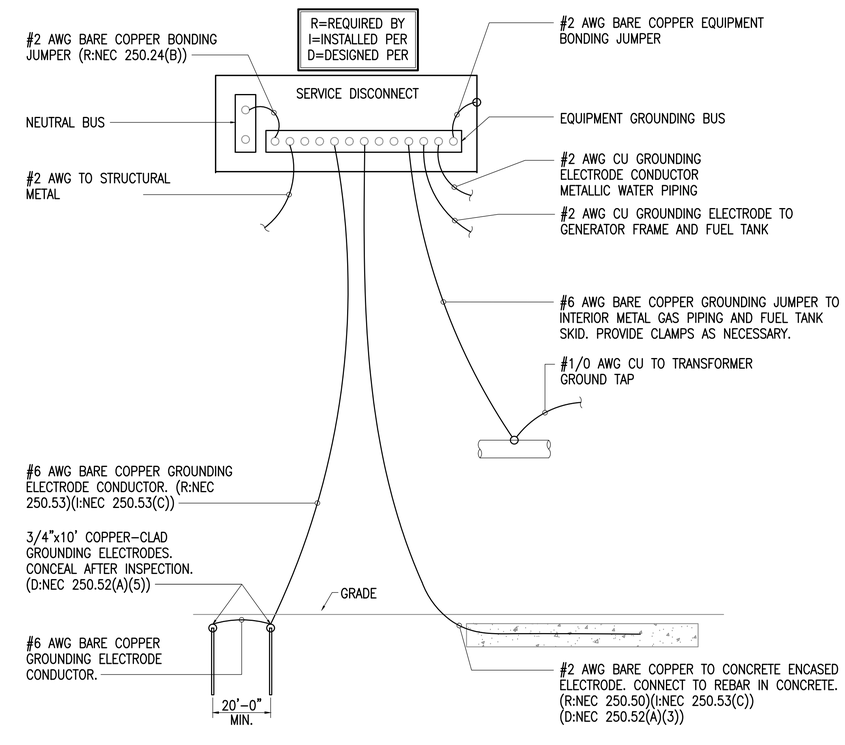
A. SEE SHEET E2 FOR GENERAL NOTES.

B. SERVICE ENTRANCE EQUIPMENT SHALL BE ASSEMBLED IN CONFORMANCE WITH THE LOCAL SERVING UTILITY'S STANDARDS. THE CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS OF WITH CVEA.

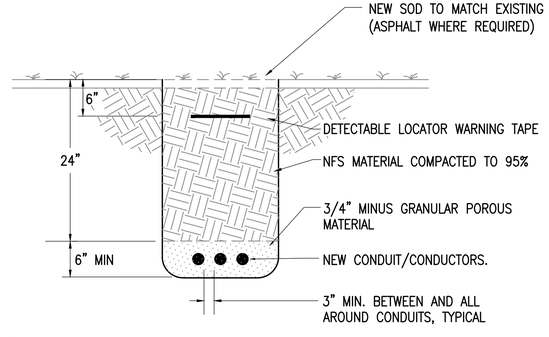
SHEET NOTES: ◁#

1. EQUIPMENT CALCULATED AIC. PANELBOARDS SHALL HAVE CALCULATED AIC INSTALLED ON NAMEPLATES.

2. PROVIDE ADDITIONAL CONTROL AND SIGNAL WIRING BETWEEN LOAD BANK AND GENERATOR IN ACCORDANCE WITH LOAD BANK MANUFACTURER'S INSTRUCTIONS.



2 GROUNDING DETAIL
NO SCALE



3 TRENCHING DETAIL
NO SCALE

CALL BEFORE YOU DIG	
THE CONTRACTOR SHALL NOTIFY ALL AREA UTILITY COMPANIES PRIOR TO COMMENCEMENT OF EXCAVATION. THE FOLLOWING IS A PARTIAL LIST:	
LOCATE CALL CENTER OF ALASKA	278-3121
COPPER VALLEY ELECTRIC ASSOCIATION	811

REVISION	BY	DATE	APPRVL REV

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TITLE
ELECTRICAL DETAILS

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
49TH
DAVIN K. BLUBAUGH
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BY : CSZ,DB
DATE : 06/30/2025
SCALE : AS NOTED

SHEET **E4** OF **5** SHEETS

GENERAL NOTES:

A. SEE SHEET E2 FOR GENERAL NOTES.

B. IN-GRADE PULL BOXES ARE NOT SHOWN BUT SHALL BE PROVIDED AT A MAXIMUM OF 200FT INTERVALS. PROVIDE ADDITIONAL PULL BOXES AS REQUIRED.

SHEET NOTES: (#)

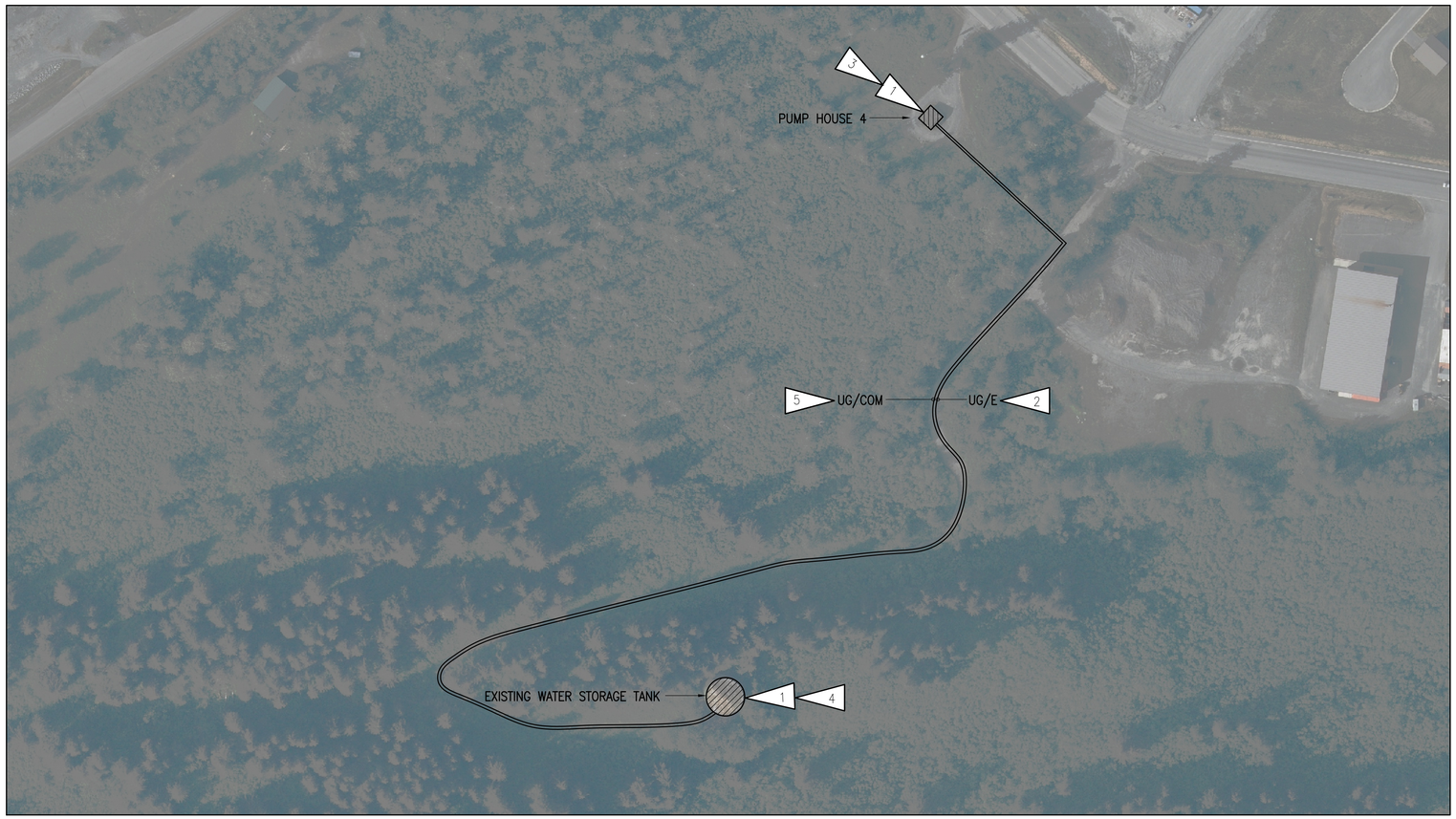
1. PROVIDE 0.5"C, 3#12 AWG CU XHHW FROM SPLICE BOX TO SPARE 20A, 1-POLE BREAKER IN EXISTING PANELBOARD IN THE BUILDING.

2. PROVIDE 2"C, 3#4 AWG CU XHHW FROM SPLICE BOX IN PUMP HOUSE 4 TO THE EXISTING WATER TOWER.

3. PROVIDE JUNCTION BOX FOR SPLICING #3 AWG CONDUCTORS TO #12 AWG.

4. PROVIDE 0.5"C, 3#12 AWG CU XHHW FROM SPLICE BOX TO EQUIPMENT IN WATER STORAGE TANK. COORDINATE WITH OWNER FOR EXACT EQUIPMENT REQUIRING CONNECTION.

5. PROVIDE 2"C WITH PULL STRINGS FROM THE EXISTING PUMP HOUSE 4 TO THE EXISTING WATER STORAGE TANK.



1 ELECTRICAL SITE PLAN - PUMP STATION 4
NOT TO SCALE

REVISION	BY	DATE	APPRVL REV

RSA
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RSA JOB # M4082

TITLE
ELECTRICAL DETAILS

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

STATE OF ALASKA
DAWN K. BLUBAUGH
EE-13893
6/1/25
REGISTERED PROFESSIONAL ENGINEER

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SHEET E5 OF 5 SHEETS

BY : CSZ,DB
DATE : 06/30/2025
SCALE : AS NOTED

#.#

XXXXXX - XXX - XXXX - XXX . XXXXX

DELIMITER
SCADA EXTENSION
EQUIPMENT ID NUMBER
EQUIPMENT CODE OR ISA TAG
PROCESS DESIGNATION
FACILITY/AREA CODE

WWSS FACILITY / AREA CODE DESIGNATION EXAMPLE

NAMED FACILITY	**CODE**	**AREA**	**CODE**
WELL 5	W5	CHEMICAL	CHM

RESULTING CODE:
WELL 5 CHEMICAL W5CHM

W5	WELL 5 GENERAL

#.#

ANSI / ISA DESIGNATION

FIRST LETTER				SECOND OR SUCCEEDING LETTERS					
MEASURED OR INITIATING VARIABLE		MODIFIER		READOUT OR PASSIVE FUNCTION		OUTPUT FUNCTION		MODIFIER FUNCTION	
A	ANALYSIS	D	DIFFERENTIAL	A	ALARM	B	USER'S CHOICE	B	USER'S CHOICE
B	BURNER, COMBUSTION	F	RATIO (FRACTION)	B	USER'S CHOICE	C	CONTROL	H	HIGH
C	USER'S CHOICE	J	SCAN	E	SENSOR (PRIMARY ELEMENT)	K	CONTROL STATION	L	LOW
D	USER'S CHOICE	K	TIME RATE OF CHANGE	G	GLASS, VIEWING DEVICE	N	USER'S CHOICE	M	MIDDLE, INTERMEDIATE
E	VOLTAGE	M	MOMENTARY	I	INDICATION	S	SWITCH	N	USER'S CHOICE
F	FLOW RATE	Q	INTEGRATE, TOTALIZER	L	LIGHT	T	TRANSMIT	U	MULTIFUNCTION
G	USER'S CHOICE	S	SAFETY	N	USER'S CHOICE	U	MULTIFUNCTION	X	UNCLASSIFIED
H	HAND	X	X- AXIS	O	ORIFICE, RESTRICTION	V	VALVE, DAMPER, LOUVER		
I	CURRENT (ELECTRICAL)	Y	Y-AXIS	P	POINT (TEST CONNECTION)	X	UNCLASSIFIED		
J	POWER	Z	Z-AXIS	R	RECORD	Y	RELAY, COMPUTE, CONVERT		
K	TIME, TIME SCHEDULE			U	MULTIFUNCTION	Z	DRIVER, ACTUATOR		
L	LEVEL			W	WELL				
M	USER'S CHOICE			X	UNCLASSIFIED				
N	USER'S CHOICE								
O	USER'S CHOICE								
P	PRESSURE, VACUUM								
Q	QUANTITY								
R	RADIATION								
S	SPEED, FREQUENCY								
T	TEMPERATURE								
U	MULTIVARIABLE								
V	VIBRATION, MECHANICAL ANALYSES								
W	WEIGHT, FORCE								
X	UNCLASSIFIED								
Y	EVENT, STATE OR PRESENCE								
Z	POSITION, DIMENSION								

GENERAL SHEET NOTES

LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM
File Name: 23830-208__Well_5

REVISION BY DATE REV APPRVL

S & B inc.
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13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sb-inc.com service@sb-inc.com

TITLE
STANDARDS SHEET

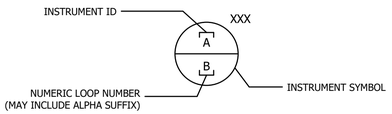
PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9090

BY : JES
DATE : 06/30/2025
SCALE : NTS

SHEET I1 OF 24 SHEETS

#.# INSTRUMENTATION CALL-OUT



6.3 SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	XXX A B	XXX A B	XXX A B
PROGRAMMABLE LOGIC CONTROL	XXX A B	XXX A B	XXX A B

ANALOG INPUT
ANALOG OUTPUT
DISCRETE INPUT
DISCRETE OUTPUT
ELECTRIC SIGNAL
INTERNAL SYSTEM LINK
(SOFTWARE OR DATA LINK)

#.# COLOR PLAN

COLOR	GENERIC MEANING	ELEMENT ASSOCIATION
BLACK	BACKGROUND	
RED	EMERGENCY	A) STOP B) HIGHEST PRIORITY ALARM
YELLOW	CAUTION	A) ABNORMAL CONDITION B) SECOND PRIORITY ALARM C) CLOSED
GREEN	SAFE	A) NORMAL OPERATION B) START C) OPEN C) ON
CYAN (LIGHT BLUE)	STATIC & SIGNIFICANT	A) PROCESS EQUIPMENT IN SERVICE B) MAJOR LABELS
BLUE	NONESSENTIAL	A) STANDBY PROCESS EQUIPMENT B) LABELS, TAGS, ETC.
MAGENTA (PURPLE)	ANALYTICAL	A) RADIATION ALARMS B) QUESTIONABLE VALUES
WHITE	DYNAMIC DATA	A) MEASUREMENTS & STATE INFORMATION B) SYSTEM MESSAGES C) TREND D) ACTIVE SEQUENTIAL STEP
GRAY	INACTIVE	A) OFF B) NOT MONITORED

#.# WIRE NUMBERING

GENERAL SHEET NOTES

LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM
File Name: 23830-208__Well_5

APPRVL	REV	DATE	BY	REVISION

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TITLE
STANDARDS SHEET

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

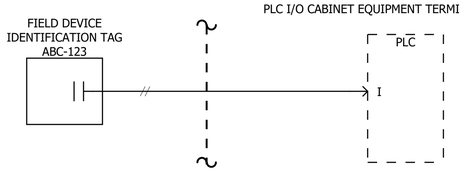
ENGINEERING
5 EAST FARR STREET FALLON, NEVADA 89406 (775) 423-9999

BY : JES
DATE : 06/30/2025
SCALE : NTS

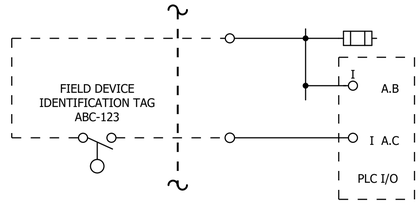
SHEET 12 OF 24 SHEETS

LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM
File Name: 23830-208_Well_5

DETAIL A

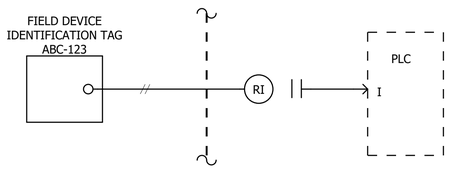


DISCRETE INPUT: DRY CONTACT IN FIELD DEVICE +24VDC SUPPLY VOLTAGE FROM PLANT I/O SYSTEM.

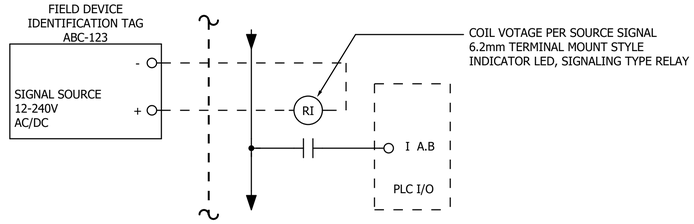


PLC INPUT CARD, DENOTED WITH BYTE.BIT MEMORY LOCATION. SUPPLY CURRENT LIMITING FUSE FOR EACH UNLESS INPUT CARD PRIVIDED PROTECTION. EXTERNAL TRANSZORB PROTECTION FOR OUTDOOR MOUNTED FIELD DEVICES FOR EQUIPMENT PROTECTION.

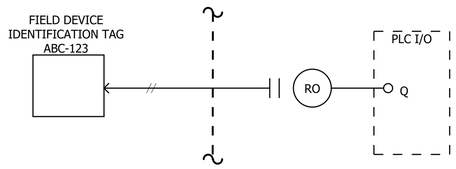
DETAIL B



FOREIGN VOLTAGE INPUT: FIELD DEVICE SOURCE VOLTAGE MATCHED BY RELAY INPUT COIL SPECIFICATION. PLANT I/O SYSTEM SIGNALED BY INTERNAL 24Vdc SUPPLY.



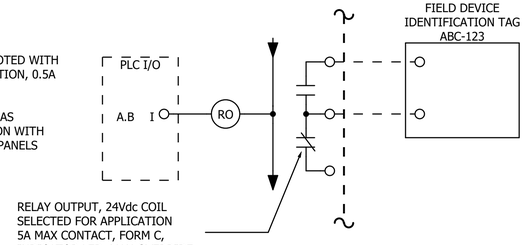
DETAIL C



PLC OUTPUT SHOWN AS RELAY OUPUT: +24Vdc SOURCE FROM OUTPUT CARD TO CONTROL RELAY IN I/O PANEL. RELAY CONTACT TO FIELD DEVICE RATED 24-120V AT 10A MAX

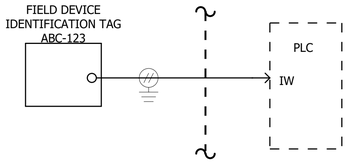
PLC OUTPUT CARD, DENOTED WITH BYTE.BIT MEMORY LOCATION, 0.5A MAX.

RELAY INTERPOSE USED AS REQUIRED FOR ISOLATION WITH THIRD PARTY CONTROL PANELS AND FIELD DEVICES.



RELAY OUTPUT, 24Vdc COIL SELECTED FOR APPLICATION 5A MAX CONTACT, FORM C, INDICATOR LED, MAN OVERRIDE, TERMINAL MOUNT STYLE UNLESS OTHERWISE SPECIFIED.

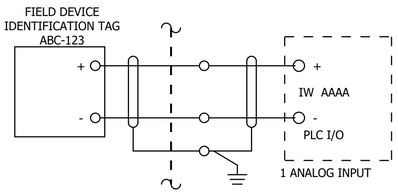
DETAIL D



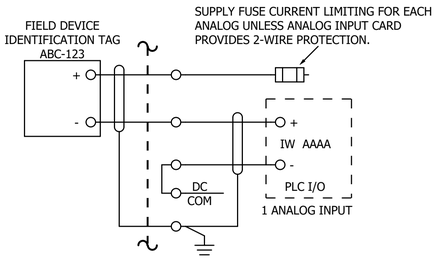
ANALOG INPUT: 4-20mAdc SIGNAL (0-10Vdc OPTIONAL). TWO-WIRE FIELD TRANSMITTERS HAVE NEGATIVE SIGNAL COMMON WITH 24Vdc POWER SYSTEM.

TYPICAL 2-WIRE DEVICE

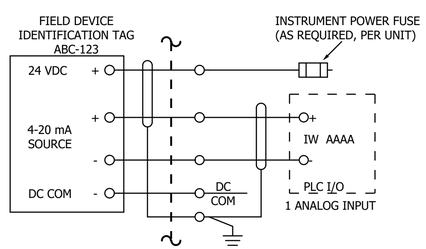
(USING PLC CARD'S INTERNAL CURRENT LIMITING)



TYPICAL 2-WIRE DEVICE

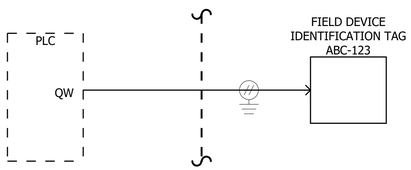


TYPICAL 4-WIRE DEVICE



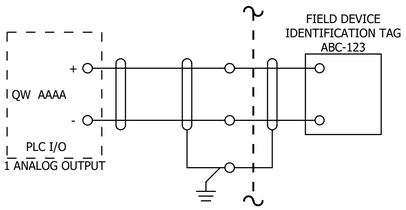
DETAIL E

ANALOG OUTPUT: 4-20mAdc SIGNAL (0-10Vdc OPTIONAL). TWO-WIRE FIELD TRANSMITTERS HAVE NEGATIVE SIGNAL COMMON WITH 24Vdc POWER SYSTEM.

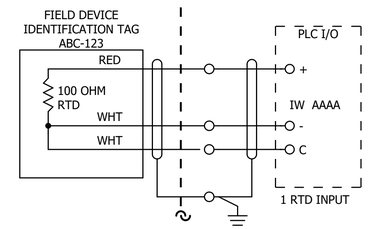


PLC ANALOG OUTPUT CARD, 4PT OR 8PT, DENOTED WITH WORD MEMORY LOCATION. 4-20mAdc OUTPUT (HARDWARE SELECTABLE TO 0-10Vdc). 15 BIT RESOLUTION.

COMMON NEGATIVE RETURN FOR ALL OUTPUT CHANNELS UNLESS SPECIFICALLY IDENTIFIED.



TYPICAL RTD DEVICE



KEY PLAN

WIRE TYPE SPECIFICATIONS

- DENOTES 2 SINGLE CONDUCTORS
- DENOTES SHIELDED PAIR CABLE
- PN — DENOTES PROFINET CABLE, SIEMENS 6XV18402AH10
- DP — DENOTES PROFIBUS CABLE, SIEMENS 6XV18300EH10
- SINGLE MODE FIBER
- CAT5e/CAT6 COPPER

GENERAL SHEET NOTES

A. WIRING CONNECTIONS ARE SHOWN AS SYMBOLIC INTERCONNECTIONS IN THE INSTRUMENTATION BLOCK DIAGRAM DRAWINGS, WIRE TYPE AND QUANTITY ARE DEFINED IN THE BLOCK DIAGRAM, CONDUCTOR PROPERTIES ARE DEFINED IN THE ELECTRICAL SPECIFICATION SECTION. BLOCK DIAGRAMS PROVIDE INTERCONNECTION REQUIREMENTS BETWEEN FIELD EQUIPMENT AND CONTROL PANELS AND ARE NOT INTENDED TO PROVIDE DIRECTION ON CONDUIT SIZE OR ROUTING.

B. FIELD AND PANEL TERMINATION OF NETWORK. DISCRETE AND ANALOG SIGNAL WIRING SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR AND VERIFIED BY THE SYSTEM INTERGRATOR PRIOR TO ENERGIZATION.

C. FIELD WIRING CONDUCTORS ARE IDENTIFIED BY PERMANENT MARKING METHODS DEFINED IN THE ELECTRICAL SPECIFICATIONS.

D. PLC/SCADA SYSTEM ABBREVIATIONS:

I:	DIGITAL INPUT(24Vdc UNLESS OTHERWISE DENOTED)
Q:	DIGITAL OUTPUT (24Vdc), TYP 0.5A MAX
IW:	ANALOG INPUT (INPUT WORD), 4-20mA
QW:	ANALOG OUTPUT (OUTPUT WORD), 4-20mA
Pn:	PROFINET NETWORK CONNECTION
ETH:	PROFINET INDUSTRIAL ETHERNET CONNECTION
HMI:	HUMAN MACHINE INTERFACE, TOUCH SCREEN FOR PROCESS VISUALIZATION
PN:	PROFINET

REVISION	BY	DATE	REV	APPRVL

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TITLE: WIRING INTERFACE GENERAL DETAILS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9300

BY : JES
DATE : 06/30/2025
SCALE : NTS

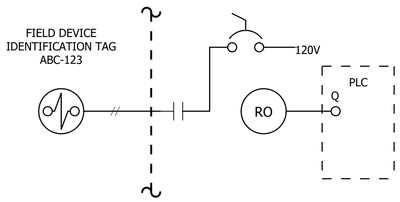
SHEET 13 OF 24 SHEETS

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

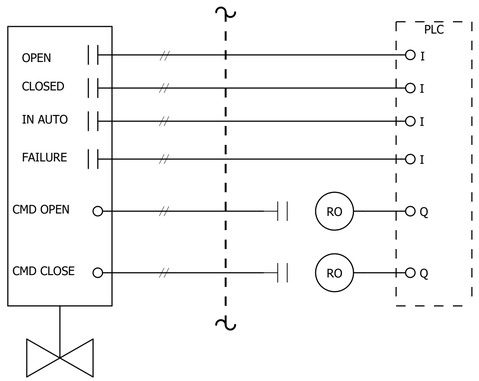
File Name: 23830-208_Well_5

DETAIL F

SOLENOID VALVE



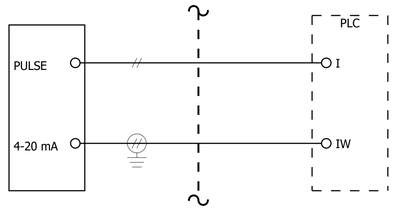
DISCRETE VALVE



APPLICATION: SPECIAL PURPOSE MOTORIZED BALL VALVES
PLC SYSTEM POSITIONS VALVE IN AUTOMATIC MODE, PROVIDES ALARM NOTIFICATION ON FAILURE TO REACH POSTION WITHIN ALLOTTED TIME, AND FOR A PROCESS FLOW VIOLATION. SCADA PROVIDES VISUALIZATION OF VALVE STATUS AND ALARM CONDITIONS, AUTO OPERATION SETTINGS, AND SUPERVISORY CONTROL OVERRIDE OF VALVE

DETAIL G

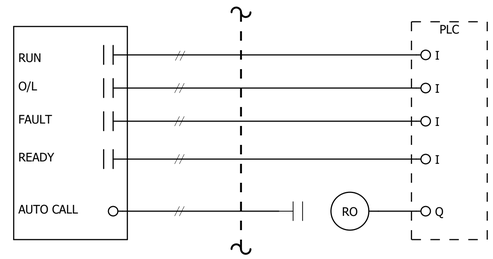
DISCRETE FLOW METER



APPLICATION: SPECIAL PURPOSE FLOWS, PLC SYSTEM MONITORS FLOW RATE AND ACCUMULATES FLOW TOTAL. RATE IS CONTINUOUSLY ANALYZED FOR CONSISTENCY. ALARMS CALCULATED FOR INVALID mA SIGNAL AND RAPID CHANGE IN FLOW. PLC STORES DAILY FLOW TOTAL, LIFETIME ACCUMULATED TOTAL, AND INSTANTANEOUS FLOW RATE. SCADA PROVIDES INDICATION OF VALUES, HISTORICAL TREND AND DAILY TOTAL FLOW ARCHIVE.

DETAIL H

DISCRETE STARTER



APPLICATION: SPECIAL PURPOSE MOTOR STARTERS FOR FRACTIONAL HORSEPOWER INSTALLATIONS.
PLC SYSTEM MONITORS AUTOMATIC MODE, PROVIDES CONTROL (WHERE DEFINED BY P&ID). PROVIDES ALARM NOTIFICATION ON FAILURE TO COMMAND WITHIN ALLOTTED TIME, AND FOR A PROCESS LOGIC VIOLATION. SCADA PROVIDES VISUALIZATION OF MOTOR STATUS AND ALARM CONDITIONS, AUTO OPERATION SETTINGS, AND SUPERVISORY CONTROL OVERRIDE.

NETWORK CABLING NOTES

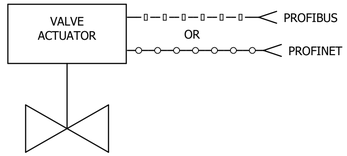
GENERAL PLANT CABLING CAN CARRY HIGH VOLTAGES AND CURRENTS. RUNNING PROFIBUS CABLES PARALLEL TO SUCH CABLES CAN LEAD TO INTERFERENCE PICKUP AND DATA TRANSMISSION ERRORS. MINIMIZE RISK OF INTERFERENCE BY FOLLOWING "INSTALLATION GUIDELINE FOR CABLING AND ASSEMBLY" AVAILABLE ONLINE AT WWW.PROFIBUS.ORG.

USE CARE TO AVOID COMMON PROFINET INSTALLATION PROBLEMS INCLUDING: OVERSTRESSED PULL TENSION, FAILURE TO FOLLOW END TAP LENGTHS IN EXCESS OF 1 METER AND FAILURE TO FOLLOW POLARITY, GROUNDING SPECIFICATIONS.

PROFINET / INDUSTRIAL ETHERNET CABLING REQUIRES HOME RUN TO NETWORK SWITCH FOR EACH DEVICE AND USE OF INDUSTRIAL CABLING AND CONNECTOR ASSEMBLIES.

DETAIL I

NETWORKED VALVE ACTUATOR



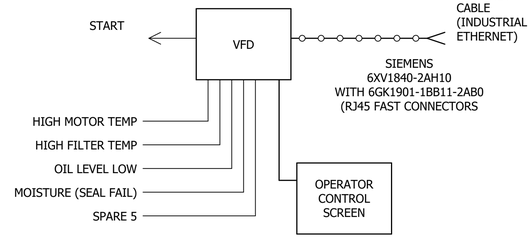
VIRTUAL I/O

VALVE POSITION XXX.X %
TORQUE APPLIED XXX FT-LBS
ACTUATOR TEM XXX DegF
FULLY CLOSED
FULLY OPEN
VALVE SELECTOR IN STOP
VALVE SELECTOR IN REMOTE
VALVE SELECTOR IN LOCAL
VALVE IN PLC CONTROL
VALVE MOTOR RUNNING
VALVE TORQUE STOPPED
VALVE OVERLOAD
CMD ERROR

APPLICATION: ALL VALVES UNLESS SPECIFICALLY IDENTIFIED. PLC SYSTEM POSITIONS VALVE IN AUTOMATIC MODE, PROVIDES ALARM NOTIFICATION ON FAILURE TO MEET SETPOINT, PROCESS FLOW VIOLATION, AND ALL VALVE INITIATED ALARM STATES. SCADA PROVIDES VISUALIZATION OF VALVE STATUS AND ALARM CONDITIONS, AUTO OPERATION SETTINGS, AND SUPERVISORY CONTROL OVERRIDE OF VALVE. PROCESS FIELDBUS MAY BE PROFINET (PREFERRED) OR PROFIBUS. SEE NETWORK DIAGRAM FOR DETAILS THAT PRESCRIBE ROUTING TO DEVICE.

DETAIL J

NETWORKED VFD, SUBMERSIBLE MOTOR



VIRTUAL I/O

IN AUTO / IN HAND
CALL
RUNNING
READY
AT SPEED
FAULT-VFD FAULT ALARM
ALARM-VFD WARNING
OVERLOAD-MOTOR OVERLOAD
TEMPERATURE-VFD/MOTOR OVERTEMP

SPEED FEEDBACK
SPEED COMMAND
DC LINK VOLTAGE
MOTOR HP
MOTOR VOLTS
MOTOR AMPS
MOTOR TORQUE
LAST FAULT CODE
LAST ALARM CODE

APPLICATION: VARIABLE FREQUENCY DRIVE MOTOR STARTERS
PLC SYSTEM MONITORS MOTOR CONTROLLER VIA PROFIBUS NETWORK. VFD CONTOLLER PROVIDES ON BOARD LOGIC FOR LOCAL (HAND) AND REMOTE AUTO CONTROL, PROVIDES CONTROL (AS DEFINED BY P&ID), PROVIDES ALARM NOTIFICATION ON FAILURE TO COMMAND WITHIN ALLOTTED TIME, FOR A PROCESS LOGIC VIOLATION AND ALL ALARM CONDITIONS GENERATED BY THE VFD CONTROL UNIT. POWER INFORMATION IS MONITORED FOR OVER AND UNDER LOAD CONDITIONS AS EARLY WARNING INDICATION OF PROCESS ABNORMALITIES. SCADA PROVIDES VISUALIZATION OF MOTOR STATUS AND ALARM CONDITIONS, AUTO OPERATION SETTING, AND SUPERVISORY CONTROL OVERRIDES (HAND/OFF/AUTO). SCADA PROVIDES INDICATION OF ALL NETWORK DERIVED INFORMATION, ARCHIVES RUNTIME, SPEED, kW LOAD AND ALARM CONDITION.

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www.sbinc.com service@sbinc.com

TITLE: EQUIPMENT WIRING FOR DISCRETE AND VIRTUAL DATA

PROJECT: NEW WELL 5 PUMPING STATION VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-5090

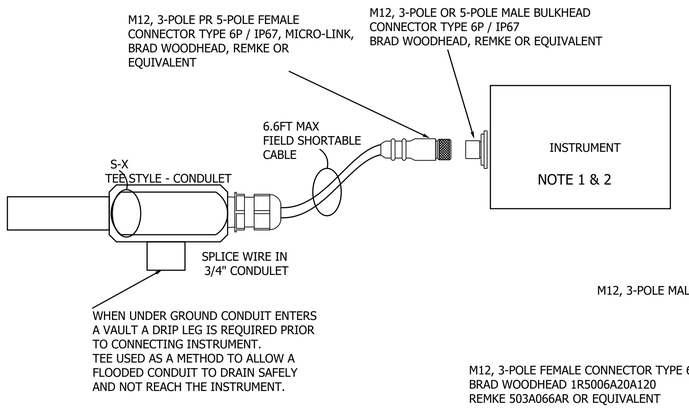
BY: JES
DATE: 06/30/2025
SCALE: NTS

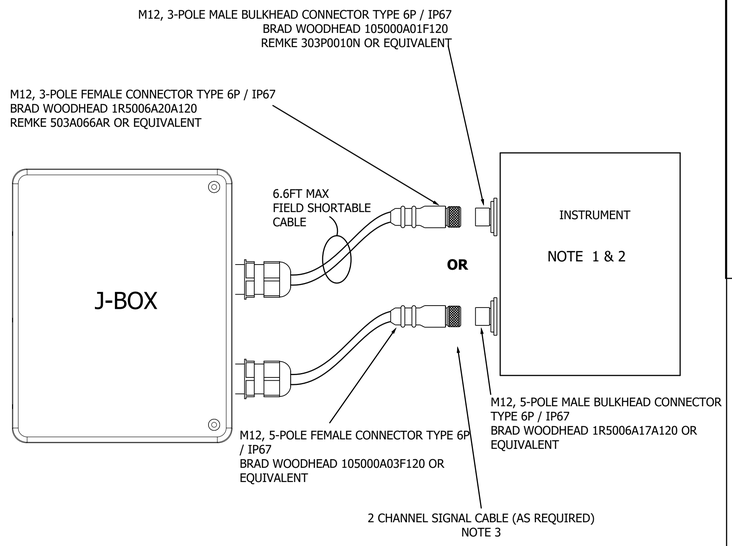
SHEET I4 OF 24 SHEETS

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

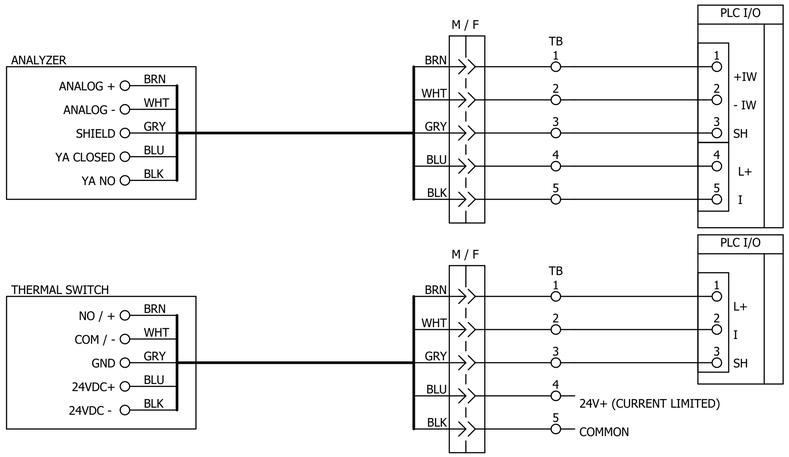
File Name: 23830-208_Well_5

DETAIL G1
TYPICAL INSTRUMENT CONNECTION DETAIL





	PINS		
3-POLE	② ① ⑤ ③ ④	1 - BROWN 2 - NOT USED 3 - BLUE 4 - BLACK 5 - NOT USED	ANALOG + ANALOG - SHIELD
5-POLE	② ① ⑤ ③ ④	1 - BROWN 2 - WHITE 3 - BLUE 4 - BLACK 5 - GRAY	ANALOG + ANALOG - YA CLOSED YA NO SHIELD



GENERAL SHEET NOTES

1. INSTRUMENTS USING 3-POLE M12 CONNECTORS ARE:
   -PRESSURE SWITCHES
   -LEVEL SWITCHES
   -LIMIT SWITCHES
   -FLOW SWITCHES
   2-WIRE TRANSMITTERS W/O FAILURE CONTACT
   -ALL ANALOG PRESSURE INSTRUMENTS
   -ULTRASONIC LEVEL PROBE
   -RADAR LEVEL PROBES
   4-WIRE TRANSMITTERS USING 120V PRIMARY POWER

2. INSTRUMENTS USING 5-POLE M12 CONNECTORS ARE:
   -ALL WATER QUALITY ANALYZERS
   DUAL ANALOG OUTPUT INSTRUMENTS ANALOG + FAIL
   THERMAL DISPERSION FLOW SWITCH
   4-WIRE TRANSMITTERS USING 24VDC PRIMARY POWER

3. AN EXAMPLE, DUAL CHANNEL INSTRUMENT IS A pH SENSOR WITH TEMPERATURE MEASUREMENT.

4. 120VAC POWER CABLES USE NEMA L5-15 LOCKING STYLE PLUG CONNECTION.

REVISION	BY	DATE	REV	APPRVL

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Stead & Associates
13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

TITLE: QUICK CONNECT CABLING STANDARDS

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

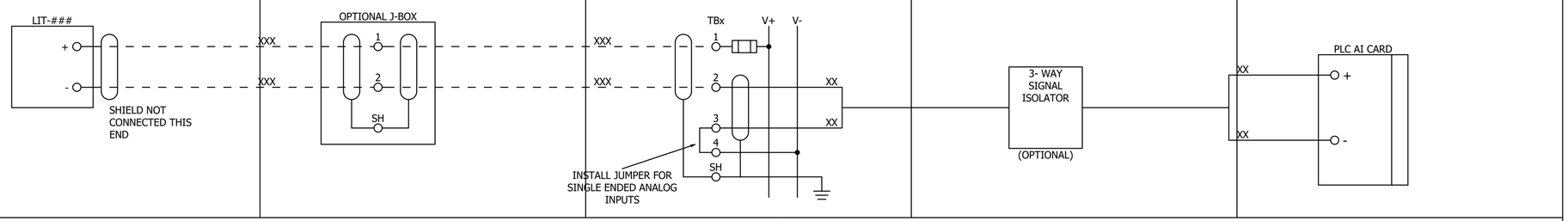
ENGINEERING
5 EAST MAIN STREET FALLON, NEVADA 89406 (775) 423-5090

BY: JES
DATE: 06/30/2025
SCALE: NTS

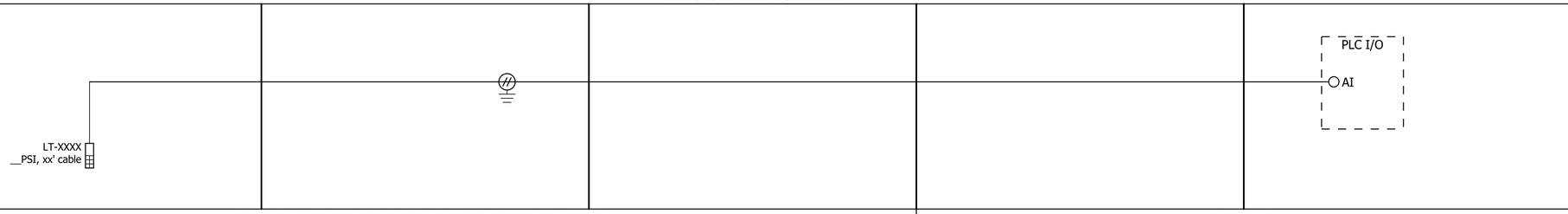
SHEET 15 OF 24 SHEETS

LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM

WIRING DIAGRAM



BLOCK DIAGRAM



SCADA INTERFACE REPRESENTATION

SCADA FACEPLATE

Current Value	9999.99	Ft
High High Alarm	+9999.99	Ft
High Alarm	+9999.99	Ft
Low Alarm	+9999.99	Ft
Low Low Alarm	+9999.99	Ft

DETAILS Show All

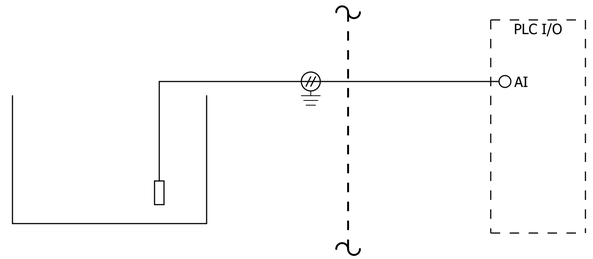
Broken Transmitter

Min EU	+9999.99	Ft
Max EU	+999999.99	Ft
Smoothing	9.99	
Deadband	99.999	

SCADA EXTENSION

DETAIL

DISCRETE LEVEL TRANSMITTER



P&ID REPRESENTATION

GENERAL SHEET NOTES:

REVISION	BY	DATE	REV	APPRVL

S & B inc.
Stead & Associates
13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

TITLE: Submersible Probe (Discrete) Detail

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-5999

BY: JES
DATE: 06/30/2025
SCALE: NTS

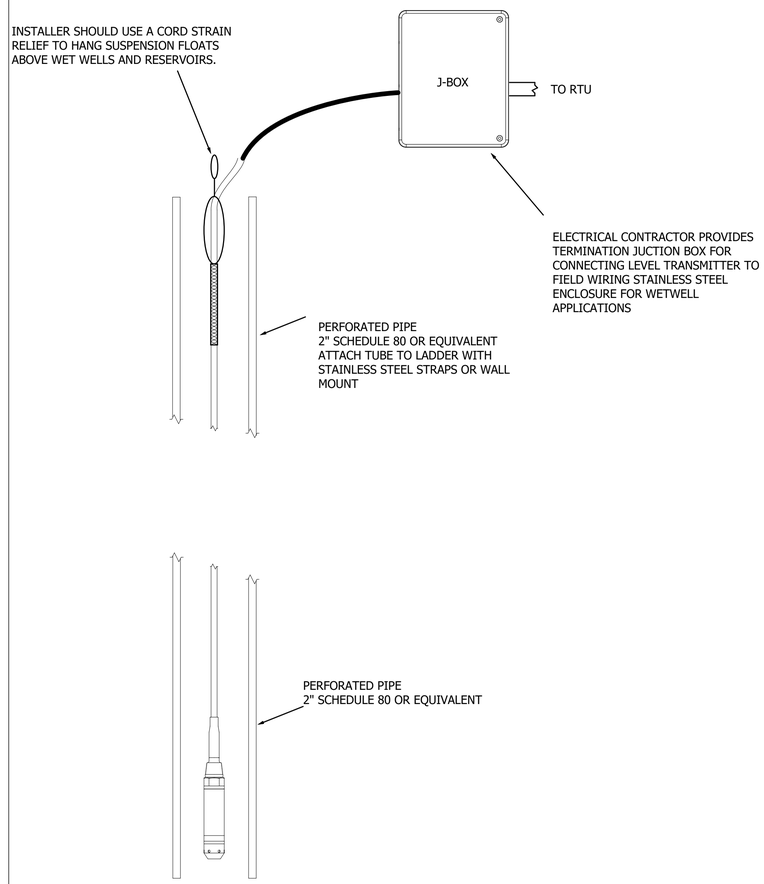
SHEET I6 OF 24 SHEETS

File Name: 23830-208__Well_5

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

File Name: 23830-208_Well_5

AQUIFER STILLING WELL APPLICATION



NOTES:

REVISION	DATE	BY	REV	APPRVL

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Stead & Associates
13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-5312
www.sbinc.com service@sbinc.com

TITLE: Submersible Probe Installation

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

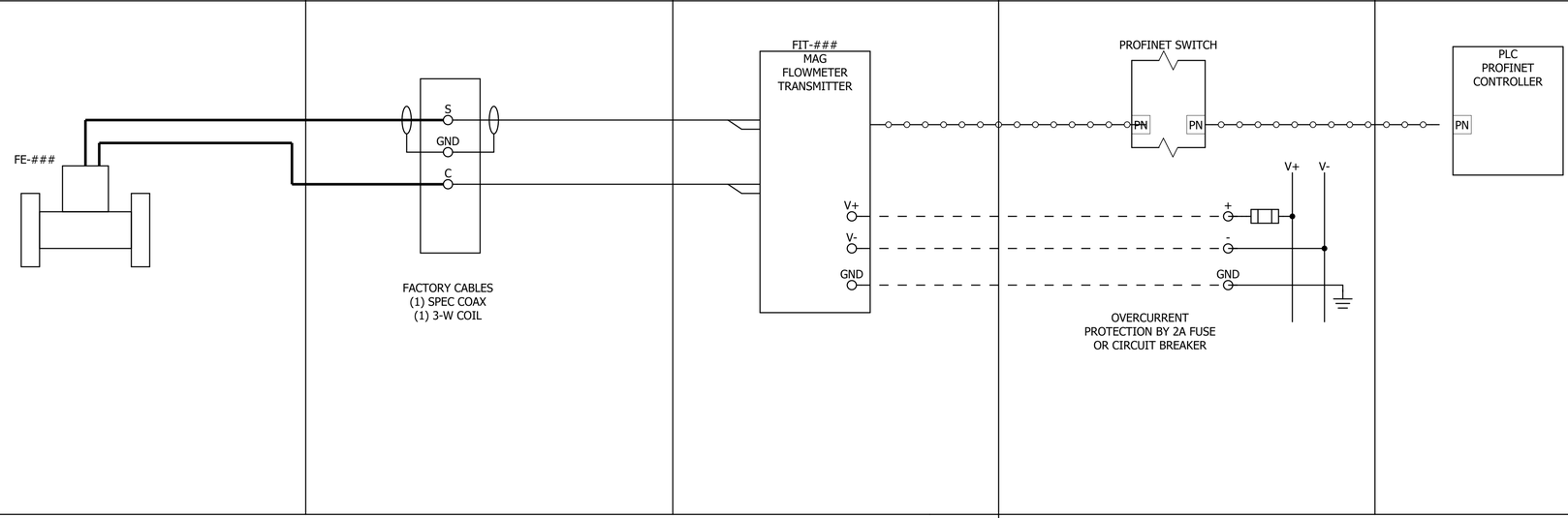
T ENGINEERING
5 EAST MAPE STREET FALLON, NEVADA 89406 (775) 423-5090

BY : JES
DATE : 06/30/2025
SCALE : NTS

SHEET 17 OF 24 SHEETS

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

WIRING DIAGRAM



GENERAL SHEET NOTES:

1. ALL MAGMETERS. PLC SYSTEM MONITORS FLOW RATE, TOTALIZERS, DIRECTION AND DIAGNOSTIC DATA. RATE IS CONTINUOUSLY ANALYZED FOR CONSISTENCY AND SMOOTHED BY PLC. ALARMS CALCULATED FOR INVALID DATA SIGNAL AND RAPID CHANGE IN FLOW. PLC READS AND RESETS DAILY FLOW TOTAL, READS LIFETIME ACCUMULATED TOTAL, AND INSTANTANEOUS FLOW RATE FROM FLOWMETER. SCADA PROVIDES INDICATION OF VALUES, HISTORICAL TREND AND DAILY TOTAL FLOW ARCHIVE.

2. ANY FLOW METER IN A VAULT SHALL BE SUPPLIED WITH A SUBMERGENCE KIT FOR FLOOD DAMAGE MITIGATION

3. USE GROUNDING RINGS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS

4. PROFINET OPERATION VIA GSMDL SPECIFICATION FILE. UNLESS SPECIFICALLY DIRECTED CONTRARY IN THE SPECIFICATIONS, CONFIGURE FLOW RATE VARIABLE TO DISPLAY IN GPM, SECONDARY VARIABLE AS RESETABLE TOTALIZER 1 AND TERTIARY VARIABLE AS LIFETIME TOTALIZER 2. CONFIGURE EQUIPMENT ERROR AND OPERATING STATUS DATA BITS FOR DIAGNOSTICS. PROVIDE INDICATION OF NETWORK HEALTH.

REVISION	BY	DATE	REV	APPRVL

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13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

SCADA INTERFACE REPRESENTATION

SCADA FACEPLATE

Title of Instrument xxxxxxx				Alarms	In Test Mode
{tag ID}	10000	GPM		DP_Fail	
				EQ_Fail	
			Lifetime	568.000	MG
Current Hr:	2.000	MG	Today	56.000	MG
Last Hr:	2.200	MG	Yesterday	6.000	MG

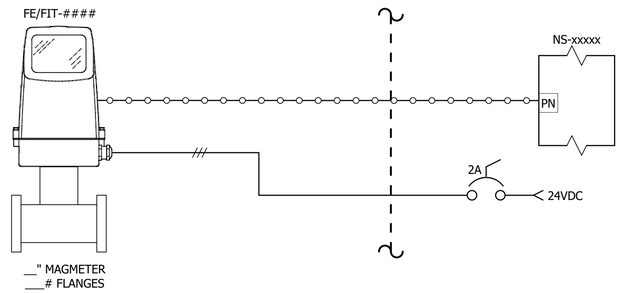
SCADA EXTENSION

Fieldbus_Network_Err
EQ_Err
Flow_Rate
Flow_Total_CurDay
Flow_Total_CurHr
Flow_Total_LastHr
Flow_Total_Yday
Flow_Total_Life
Test_Mode

Today:	99999.9	kG
Yesterday:	99999.9	kG
Current Hour:	99999.9	kG
Last Hour:	99999.9	kG
Lifetime:	99999.9	MG

Flow_Total_CurDay
Flow_Total_CurHr
Flow_Total_LastHr
Flow_Total_Yday
Flow_Total_Life

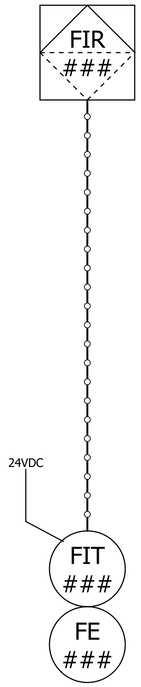
BLOCK DIAGRAM REPRESENTATION



MINIMUM REQUIRED I/O VARIABLES

FLOW RATE +/- XXXXX.X GPM
FLOW TOTAL 1 X,XXX.XXX MG
FLOW TOTAL 2 X,XXX.XXX MG
FLOWMETER ERROR

P&ID REPRESENTATION



TITLE: MAG Flowmeter (Networked)

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PAWS STREET FALLON, NEVADA 89406 (775) 423-9990

BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET 18 OF 24 SHEETS

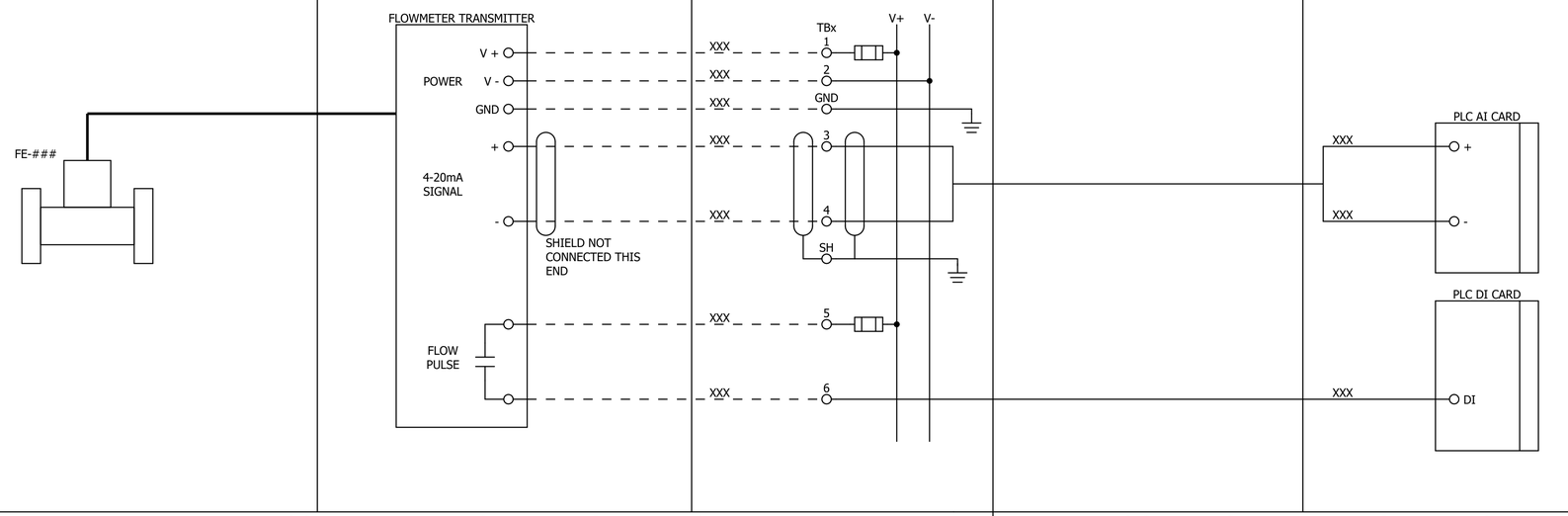
File Name: 23830-208_Well_5

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

WIRING DIAGRAM

FIELD | CONTROL PANEL

FIELD DEVICE	JUNCTION BOX	FIELD TERMINALS	AUXILIARY DEVICES	CONTROLLER



GENERAL SHEET NOTES:

1. APPLICATION:
   ALL MAGMETERS. PLC SYSTEM MONITORS FLOW RATE, TOTALIZERS, DIRECTION AND DIAGNOSTIC DATA. RATE IS CONTINOUSLY ANALYZED FOR CONSISTENCY AND SMOOTHED BY PLC. ALARMS CALCULATED FOR INVALID DATA SIGNAL AND RAPID CHANGE IN FLOW. PLC READS AND RESETS DAILY FLOW TOTAL, READS LIFETIME ACCUMULATED TOTAL, AND INSTANTANEOUS FLOW RATE FROM FLOWMETER. SCADA PROVIDES INDICATION OF VALUES, HISTORICAL TREND AND DAILY TOTAL FLOW ARCHIVE.

2. ANY FLOW METER IN A VAULT SHALL BE SUPPLIED WITH A SUBMERGENCE KIT FOR FLOOD DAMAGE MITIGATION

REVISION	BY	DATE	REV	APPRVL

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13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-5312
www.sbinc.com service@sbinc.com

SCADA INTERFACE REPRESENTATION

SCADA FACEPLATE

Current Value	9999.99	GPM
High High Alarm	+9999.99	GPM
High Alarm	+9999.99	GPM
Low Alarm	+9999.99	GPM
Low Low Alarm	+9999.99	GPM

DETAILS Show All

Broken Transmitter

Min EU	+9999.99	GPM
Max EU	+999999.99	GPM
Smoothing	9.99	
Deadband	99.999	

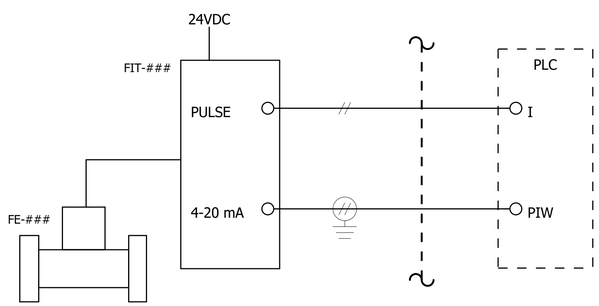
SCADA EXTENSION

Today:	99999.9	kG
Yesterday:	99999.9	kG
Current Hour:	99999.9	kG
Last Hour:	99999.9	kG
Lifetime:	99999.9	MG

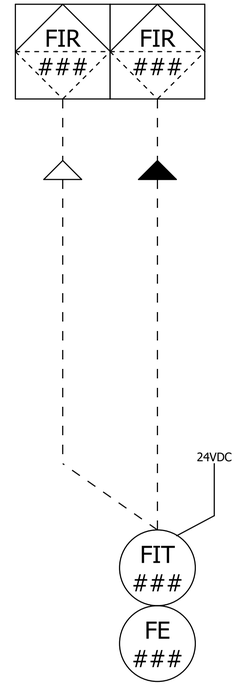
Flow_Total_CurDay
Flow_Total_CurHr
Flow_Total_LastHr
Flow_Total_Yday
Flow_Total_Life

BLOCK DIAGRAM REPRESENTATION

DISCRETE WIRED FLOW METER



P&ID REPRESENTATION



TITLE: MAG Flowmeter (Discrete) Detail

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-5000

BY : JES
DATE : 06/30/2025
SCALE : NTS

SHEET I9 OF 24 SHEETS

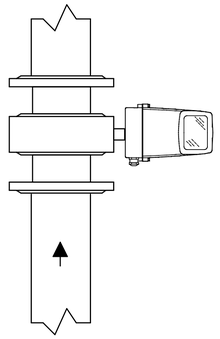
File Name: 23830-208__Well_5

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

File Name: 23830-208_Well_5

MAG METER VERTICAL PIPE INSTALLATION

Installation in vertical pipes
Recommended flow direction: upwards. This minimizes the effect on the measurement of any gas/air bubbles in the liquid.

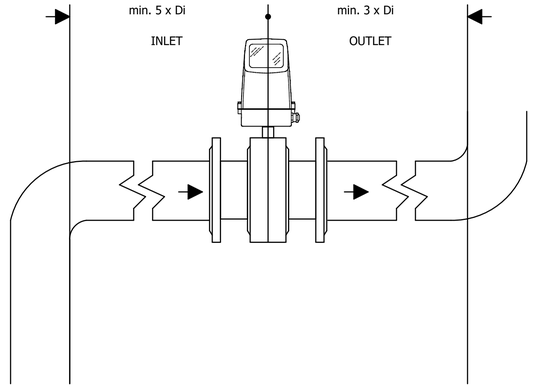


NOTES:

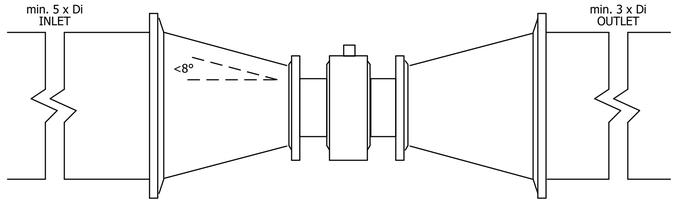
THIS IS PREFERRED MOUNTING FOR FLOWMETER DIAMETERS 1" AND LESS. HIGHLY RECOMMENDED FOR CHEMICAL FLOW MEASUREMENT AND SIMILAR APPLICATIONS WITH PULSATING FLOWS.

TYPICAL MAG METER INSTALLATION REQUIREMENTS

Inlet and outlet conditions
To achieve accurate flow measurement it is essential to have straight lengths of inlet and outlet pipes and a certain distance between pumps and valves. It is also important to centre the flowmeter in relation to pipe flanges and gaskets.



SPECIAL CONDITIONS



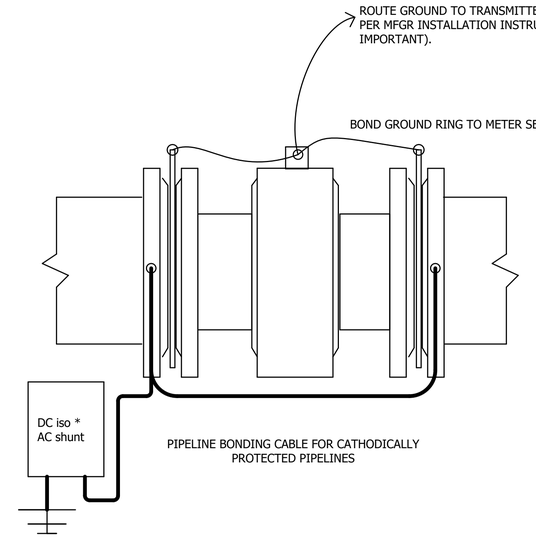
NOTES:

FLOWMETER MUST HAVE FULL PIPE CONDITIONS FOR MEASUREMENT AND BE MOUNTED WITH ELEVATION INCREASING OR FLAT IN DIRECTION OF FLOW.

INLET AND EXIT FLOW CONDITIONS MAY VARY BY MANUFACTURER, CONFIRM ACCURACY OF PROPOSED EQUIPMENT WITH APPLICATION CONDITIONS DEFINED IN MECHANICAL DRAWINGS.

SPECIAL CONDITIONS: CONCENTRIC REDUCERS MAY BE APPLIED DIRECTLY TO FLOWMETER, HOWEVER DIAMETERS ARE CALCULATED AT LARGEST DIAMETER. (I.E. 16"X12" REDUCER WILL REQUIRE 80" INLET AND 48" OUTLET).

GROUNDING AND CATHODIC PROTECTION METHODS



*DAIRYLAND MODEL PCR DECOUPLER RECOMMENDED TO MITIGATE INDUCED AC WHILE MAINTAINING DC ISOLATION. FIELD VERIFY PRESENCE OF AC VOLTAGE ON PIPELINE AND APPLY IF LEVELS EXCEED 1 VAC.

NOTES:

Magmeter technology requires a stable ground potential reference. Special attention must be given to systems with cathodic currents passing through the pipeline in which the meter sensor is mounted. Provide DC isolation, AC shunt to mitigate external induced AC voltage.

Grounding rings supplied with flowmeters must be connected to the meter transmitter as specifically diagrammed by the meter manufacturer. Confirm that gaskets do not extend within 1/8" of the inner ring of the grounding ring. Conductor size shall be no less than 10ga. For meter sensors supplied with integral grounding electrodes, ground rings are not required.

Pipelines with cathodic protection require the meter sensor to be electrically isolated from the pipeline. Provide isolation bushings for each flange bolt and gaskets between all flanges. Provide #4cu AWG conductor bridging the segmented pipeline at 3 and 9 o'clock positions along the pipeline.

REVISION	BY	DATE	REV	APPRVL

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13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

TITLE: MAG Meter Installation

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

T ENGINEERING
5 EAST MAPLE STREET FALLON, NEVADA 89406 (775) 423-5090

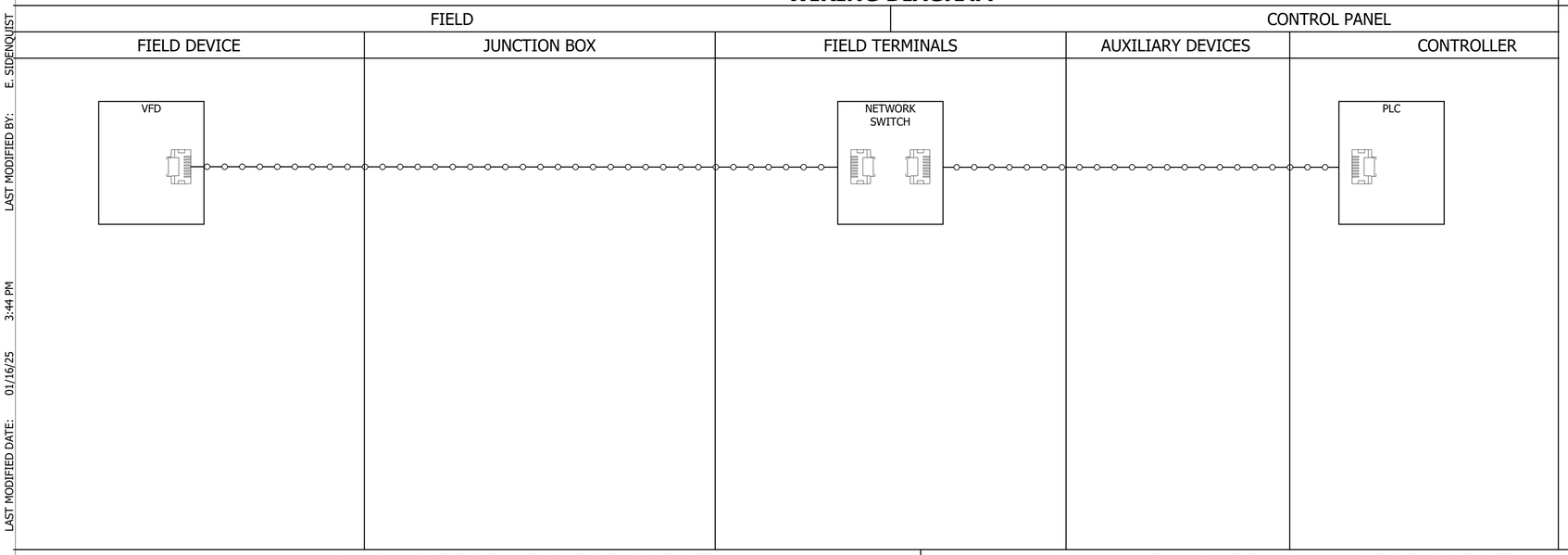
BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET 10 OF 24 SHEETS

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

File Name: 23830-208_Well_5

WIRING DIAGRAM



GENERAL SHEET NOTES:

APPLICATION:
VARIABLE FREQUENCY DRIVE MOTOR STARTERS PLC SYSTEM MONITORS MOTOR CONTROLLER VIA PROFINET NETWORK. VFD CONTOLLER PROVIDES ON BOARD LOGIC FOR LOCAL (HAND) AND REMOTE AUTO CONTROL, PROVIDES CONTROL (AS DEFINED BY P&ID), PROVIDES ALARM NOTIFICATION ON FAILURE TO COMMAND WITHIN ALLOTTED TIME, FOR A PROCESS LOGIC VIOLATION AND ALL ALARM CONDITIONS GENERATED BY THE VFD CONTROL UNIT. POWER INFORMATION IS MONITORED FOR OVER AND UNDER LOAD CONDITIONS AS EARLY WARNING INDICATION OF PROCESS ABNORMALITIES. SCADA PROVIDES VISUALIZATION OF MOTOR STATUS AND ALARM CONDITIONS, AUTO OPERATION SETTING, AND SUPERVISORY CONTROL OVERRIDES (HAND/OFF/AUTO). SCADA PROVIDES INDICATION OF ALL NETWORK DERIVED INFORMATION, ARCHIVES RUNTIME, SPEED, kW LOAD AND ALARM CONDITION.

VIRTUAL I/O

IN AUTO / IN HAND	SPEED FEEDBACK
CALL	SPEED COMMAND
RUNNING	DC LINK VOLTAGE
READY	MOTOR HP
AT SPEED	MOTOR VOLTS
FAULT-VFD FAULT ALARM	MOTOR AMPS
ALARM-VFD WARNING	MOTOR TORQUE
OVERLOAD-MOTOR OVERLOAD	LAST FAULT CODE
TEMPERATURE-VFD/MOTOR OVERTEMP	LAST ALARM CODE

APPVL	REV	DATE	BY	REVISION

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13200 S.E. 30th St.
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www.sb-inc.com service@sb-inc.com

TITLE: VFD (Networked) Detail

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

SCADA INTERFACE REPRESENTATION

SCADA FACEPLATE

Title of Instrument xxxxxxx
FIT 3-2-1

SCADA Ctrl Mode: Off/Local

Control Select: Hand | OFF | Auto

Required: {Required}
Status: {Run/Not Running}
Call to Run: {Called/No}
Speed: Ramping
Availability: {Ready}
Control Mode: {AutoStat}

Speed 100.0 %
Speed SP 100.0 %

Alarms:

Start Fail	Fault
Stop Fail	Lockout
Start Limit	Temp
Warning	Overload

Warnings: Restart Delay, Low Torque

In Test Mode

Pumping Mode: **Closed Loop ON**

DETAILS

Last Start Time: 4/9/1900 12:00:00 AM
Last Stop Time: 4/9/1900 12:00:00 AM
Last Auto Selected: 4/9/1900 12:00:00 AM
Last Time Called: 4/9/1900 12:00:00 AM

Runtime Hours

Lifetime:	1.0
Current Hr:	1.0
Last Hr:	1.0
Today:	1.0
Yesterday:	1.0

Speed	100.0 %	Frequency:	60.0 Hz	RPM	1800
Pump HP	888.88 HP	DC link	60.0 V	Torque	1100.00 Nm
Current HP	88.88 HP	Volts out	60.0 V	Amps	277.00 A
Start Speed	100.0 %	Motor Load:	100.0 %		

Fail Timers/Counters

	Preset	Current
Start Fail:	100.0	100.0
Stop Fail:	100.0	100.0
Starts:	100	100

PID Loop {status}

Integral Status Selector: On / Off

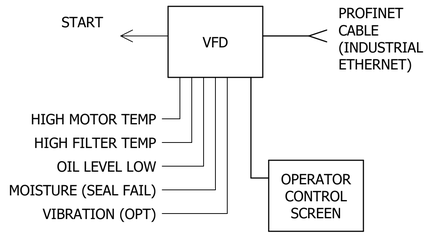
PID Gain	0.001
Integral-T	150.0
Error	0.500
SP	9999.9
PV	9999.9

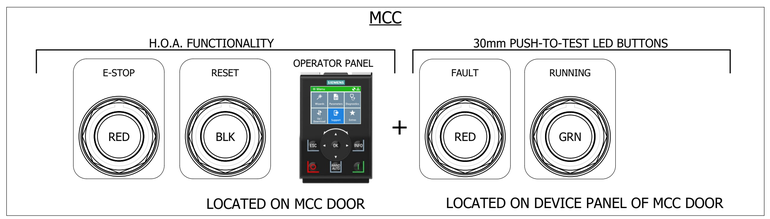
SCADA EXTENSION

Call	Alarms	Rated_HP
StopLoop	Start Fail	PID_Gain
InAuto	Stop Fail	PID_TI
IntegralOff	Start Limit	PID_error
StartFail_SP	Warning	Date_Start
StopFail_SP	Fault	Date_Auto
Starts_SP	Lockout	Date_Called
ProcessVar	Overtemp	Date_Stopped
Speed SP	Overload	Test Mode
PZD_Status	Restart Delay	
PZD_Speed	Low Torque	
PZD_Command	High Disch. PSI	
PZD_Setpoint	Low Suct. PSI	
HOA_Switch	VFD_Setpoint	
Status	VFD_Speed	
Required	VFD_Starts	
Running	VFD_StartsFail	
Called	VFD_StopFail	
Ramping	VFD_MinSpeed	
Ready	VFD_StartSpeed	
Auto	Motor_RPM	
	Motor_Freq	
	Motor_Volts	
	Motor_Amps	
	Motor_Torque	
	Motor_HP	
	Motor_DClink	

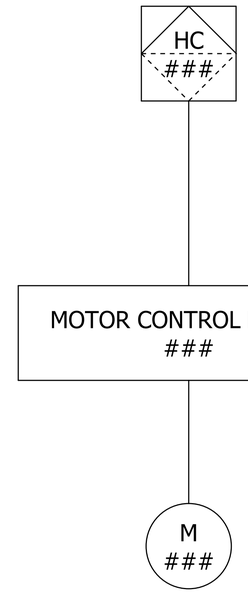
BLOCK DIAGRAM REPRESENTATION

NETWORKED VFD, NON-SUBMERSIBLE MOTOR





P&ID REPRESENTATION



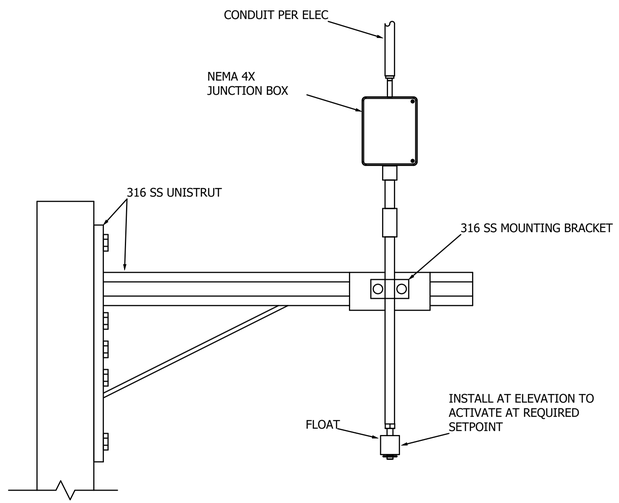
ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-6000

BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET I11 OF 24 SHEETS

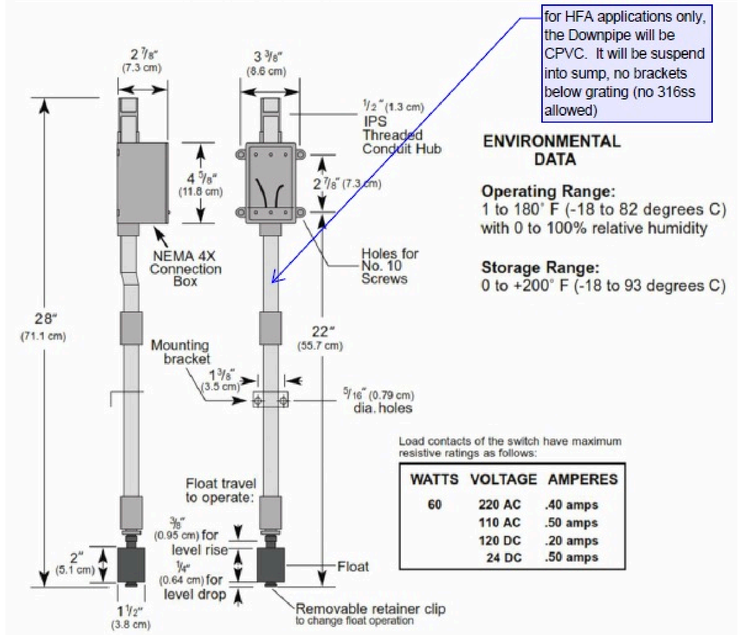
LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

VERTICAL TOP MOUNT LIQUID LEVEL SWTICH
(OPEN VESSEL MOUNT APPLICATION)



NOTES:

VERTICAL TOP MOUNT LIQUID LEVEL SWITCH
(WALL MOUNT APPLICATION)



NOTES:

NOTES:

REVISION	BY	DATE	REV	APPVL

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Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sb-inc.com service@sb-inc.com

TITLE
FLOOD SWITCH DETAIL

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-6999

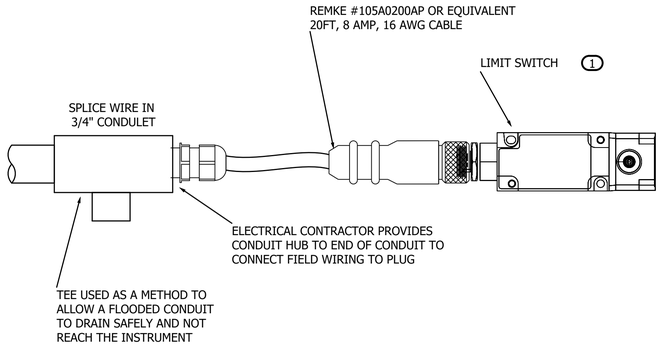
BY : JES
DATE : 06/30/2025
SCALE : NTS

SHEET 12 OF 24 SHEETS

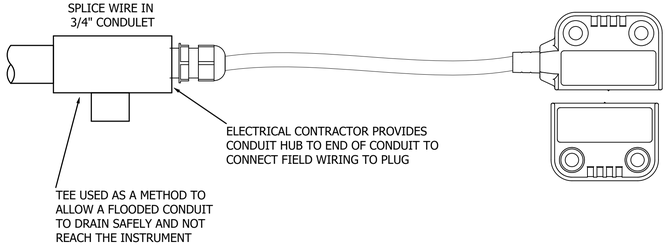
File Name: 23830-208__Well_5

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

LIMIT SWITCH DEVICES



MAGNETIC LIMIT SWITCH



NOTES:

1 FOR STATION DOOR AJAR, USE SIEMENS 3SE03-AR1 LIMIT SWITCH
FOR VAULT / HATCH AJAR, USE SIEMENS 3SE03-AR16P LIMIT SWITCH

NOTES:

NOTES:

APPRVL	REV	DATE	BY	REVISION

S & B inc.
Stead & Associates
13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

TITLE: **Intrusion Limit Switch Detail**

PROJECT: **NEW WELL 5 PUMPING STATION**
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-6000

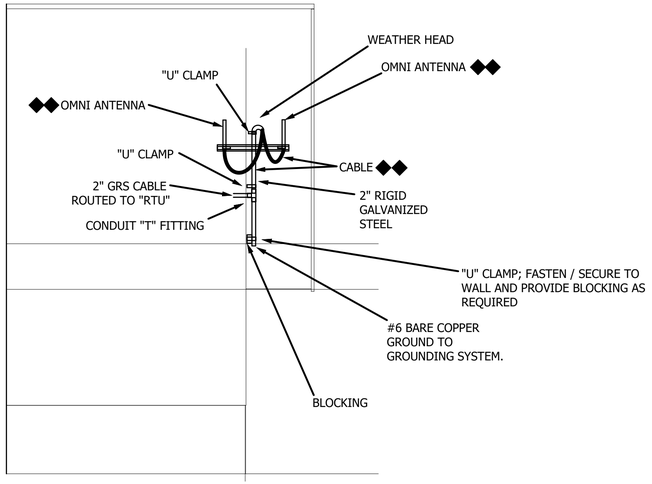
BY : JES
DATE : 06/30/2025
SCALE : NTS

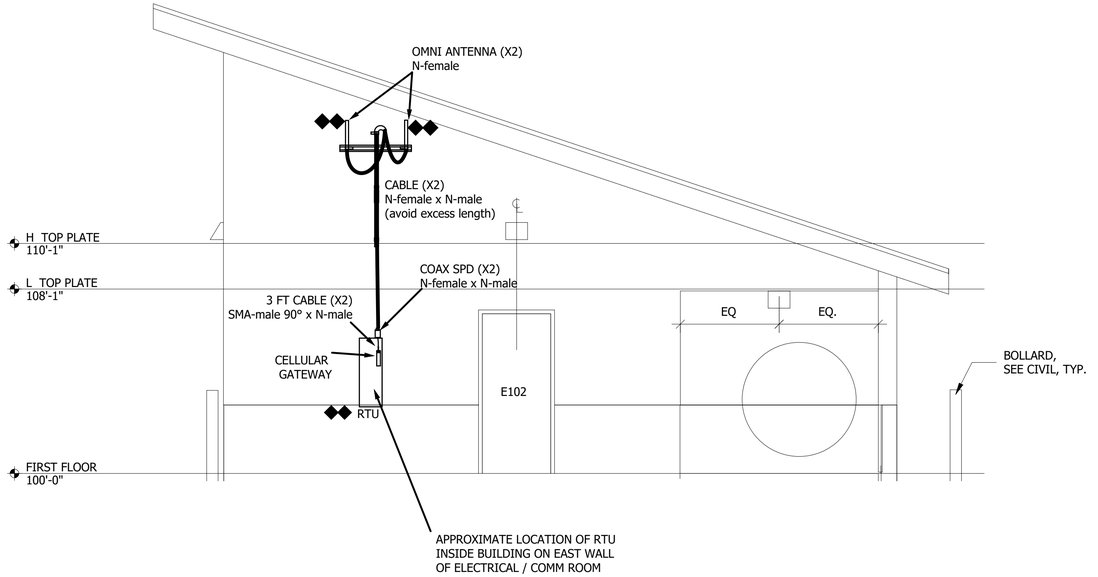
SHEET I13 OF 24 SHEETS

File Name: 23830-208_Well_5

NOTES:

1. EXAMPLE OF BUILDING WITH EXTERIOR MAST FOR CELLULAR ANTENNA. BUILDING IS GENERIC IN NATURE AND INTENDED ONLY TO REPRESENT RECOMMENDED CLEARANCE AND SPACING FOR ANTENNA SYSTEM, AND NOT TO REPRESENT ACTUAL BUILDING DESIGN.
2. MAST AND ANTENNA LOCATION DETERMINED BY CELLULAR NETWORK SIGNAL ANALYSIS
3. MAST IS RECOMMENDED TO AVOID ROOF PENETRATIONS ON RETROFIT APPLICATIONS, ANY ROOF PENETRATION REQUIRES WEATHERTIGHT PROTECTION FOR THE STRUCTURE. RECOMMEND SIDE WALL MOUNTED MAST AND EXTENDING MAST VERTICAL TO CLEARANCES SHOWN ABOVE ROOFLINE.
4. SURGE PROTECTION FOR THE ANTENNA SYSTEM SHALL BE SUPPLIED FOR ALL SYSTEMS WITH OUTDOOR MOUNTED ANTENNA. SURGE UNIT IS LOCATED ON OR ADJACENT TO THE RTU, IN CLOSE PROXIMITY TO THE CELLULAR MODEM.





◆◆ INDICATES EQUIPMENT INCLUDED IN SYSTEM INTEGRATOR SCOPE OF SUPPLY AND FURTHER DEFINED IN SECTION 40 61 00.

APPRVL	REV	DATE	BY	REVISION

S & B inc.
Stead & Associates
13200 S.E. 30th St.
Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-5312
www.sbinc.com service@sb-inc.com

TITLE: Station Antenna Installation Detail

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9990

BY: JES
DATE: 06/30/2025
SCALE: NTS

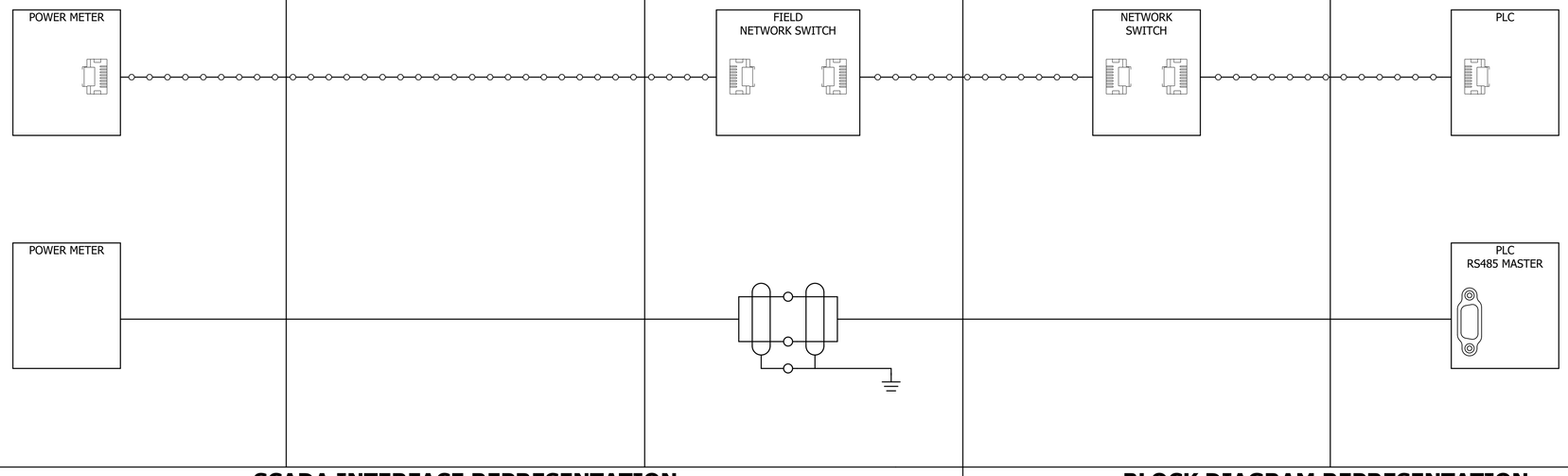
SHEET I14 OF 24 SHEETS

LAST MODIFIED BY:
LAST MODIFIED DATE: 01/17/25 5:36 PM
File Name: 23830-208_Well_5

WIRING DIAGRAM

FIELD | CONTROL PANEL

FIELD DEVICE | JUNCTION BOX | FIELD TERMINALS | AUXILIARY DEVICES | CONTROLLER



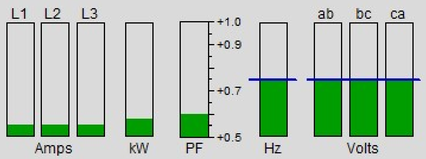
GENERAL SHEET NOTES:

SCADA INTERFACE REPRESENTATION

SCADA FACEPLATE

{Power Meter in MCC-11}

	Ave.	L1	L2	L3	
Voltage L-L:	45656	45656	45656	45656	V
Voltage L-N:	45	45	45	45	V
Current:	45	45	45	45	A
Harmonic Distortion L-L:		45.23	45.23	45.23	%
Total Watts:	45.230	KW			
Total VARS:	+45.230	kVARS			
Total Volt Amps:	45.230	kVA			
Volts Unbalanced:	45.23	%			
Amps Unbalanced:	45.23	%			
Power Factor:	+45.23				
Frequency:	45.23	Hz			



SCADA EXTENSION

V_ln1
V_ln2
V_ln3
V_lnAvg
V_L12
V_L23
V_L31
V_LLavg
I_1
I_2
I_3
I_avg
kW
Vars_Total
VA_Total
V_unbal
I_unbal
PF
Freq
THD_L12
THD_L23
THD_L31

BLOCK DIAGRAM REPRESENTATION

P&ID REPRESENTATION

APPRVL	REV	DATE	BY	REVISION

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Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

TITLE: Power Meter (Networked)

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST MAIN STREET FALLON, NEVADA 89406 (775) 423-5090

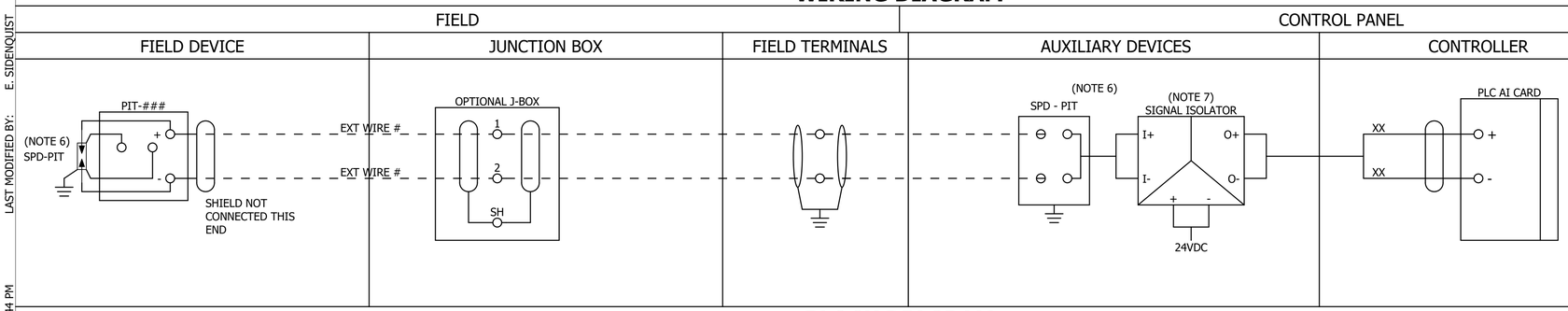
BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET 15 OF 24 SHEETS

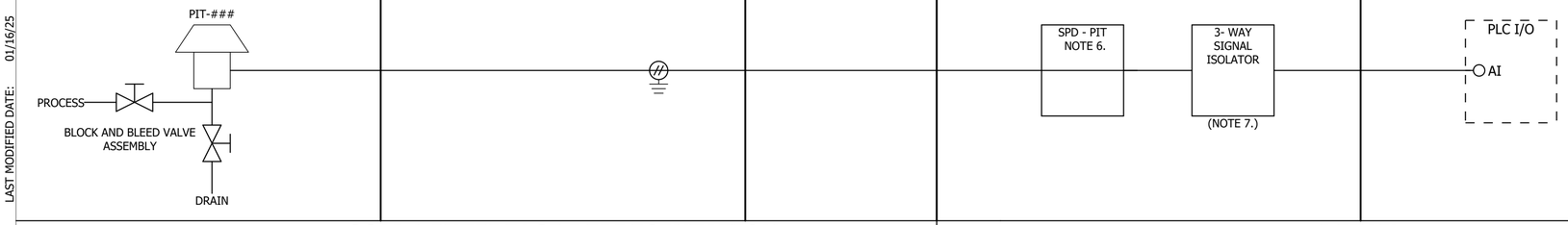
LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM
File Name: 23830-208__Well_5

LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM
File Name: 23830-208_Well_5

WIRING DIAGRAM

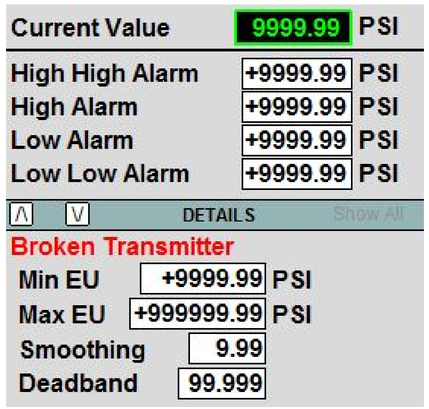


BLOCK DIAGRAM



SCADA INTERFACE REPRESENTATION

SCADA FACEPLATE



SCADA EXTENSION

RAWVALUE
MINEU
MAXEU
HH_SP
HI_SP
LO_SP
LL_SP
ALARMS
- HIGH-HIGH ALARM
- HIGH ALARM
- LOW ALARM
- LOW-LOW ALARM
- BROKEN TRANSMITTER
- SIGNAL LOSS
- SIGNAL HELD WHILE IN ERROR
- RATE OF CHANGE

DBAND
SMOOTHING
RATE OF CHANGE EU/SAMPLE
RATE OF CHANGE NUMBER OF SAMPLES
PV_REAL

DETAIL

ANALOG DEVICE TYPICAL FIELD WIRE

P&ID REPRESENTATION

GENERAL SHEET NOTES:

1) PRESSURE OR LEVEL CONTINUOUS MEASUREMENT. INSTRUMENT RANGE SELECTED TO SPAN ZERO TO MAXIMUM PRESSURE IN NORMAL OPERATION. INSTRUMENT PRESSURE LIMIT SHALL BE GREATER THAN MAXIMUM POSSIBLE IN THE PROCESS. BLOCK AND BLEED VALVE SUITABLE FOR PROCESS FLUID. MAY BE CONFIGURED FOR HART DATA IN ADDITION TO 4-20MA ANALOG SIGNAL WHEN TEMPERATURE OR REMOTE CALIBRATION IS SPECIFIED.
2) SUPPLY FUSE CURRENT LIMITING FOR EACH ANALOG UNLESS ANALOG INPUT CARD PROVIDES 2-WIRE PROTECTION.
3) PROCESS CONNECTIONS ROUTED TO PREVENT ENTRAINED AIR AND TO SELF-PURGE WHERE POSSIBLE.
4) WHERE HART PROTOCOL SHOWN, ANALOG INPUT SHALL BE HART COMPATIBLE. NO SIGNAL ISOLATOR SHALL BE REQUIRED. REPEATED ANALOG SIGNALS SHALL BE FROM PLC ANALOG OUTPUT.
5) TRANSMITTERS MOUNTED REMOTELY FROM THE MAIN PROCESS PIPE OR VESSEL SHALL BE SECURED WITH A PIPE OR WALL MOUNT BRACKET. USE NON-METALLIC FLEXIBLE TUBING BETWEEN THE PROCESS AND THE INSTRUMENT.
6) PROVIDE SURGE PROTECTION DEVICE (SPD) AT INSTRUMENT AND CONTROL PANEL TERMINAL BLOCK WHERE INSTRUMENT IS LOCATED IN SEPARATE BUILDING, VAULT OR GROUND PLANE FROM CONTROL PANEL.
7) PROVIDE SIGNAL ISOLATOR WHEN 4-20mA SIGNAL IS ROUTED TO MORE THAN ONE CONTROL PANEL. TWO-WIRE TRANSMITTER IS POWERED BY CONTROL PANEL WITH LONGEST DURATION 24V UPS.

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www.sbinc.com service@sbinc.com

TITLE: Gauge Pressure Transmitter

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

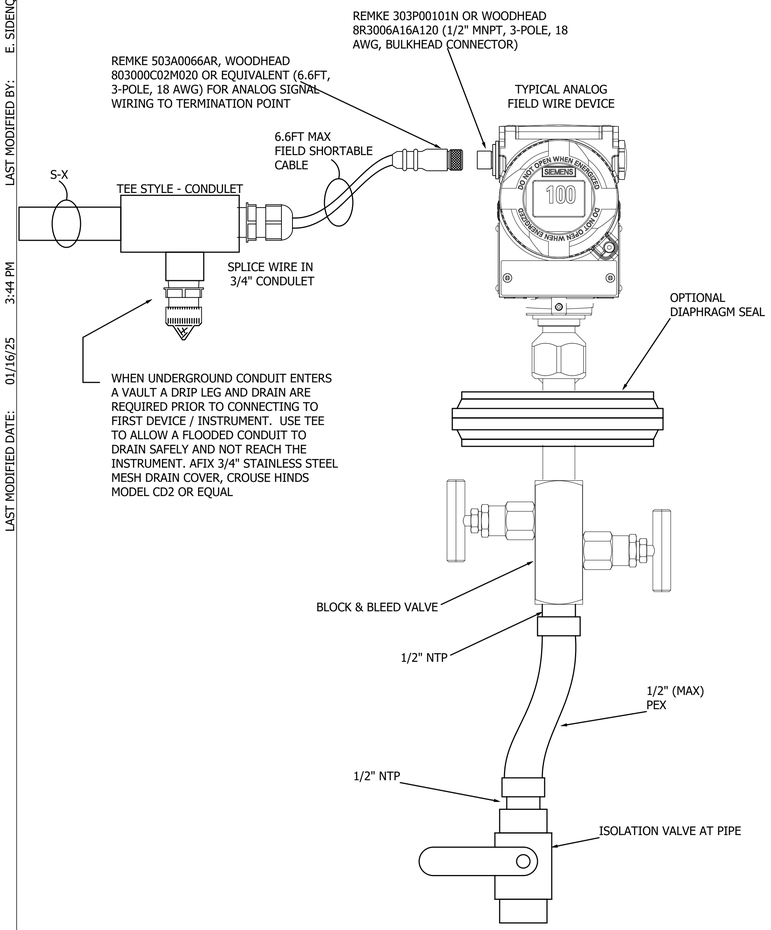
ENGINEERING
5 EAST MAIN STREET FALLON, NEVADA 89406 (775) 423-5999

BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET 16 OF 24 SHEETS

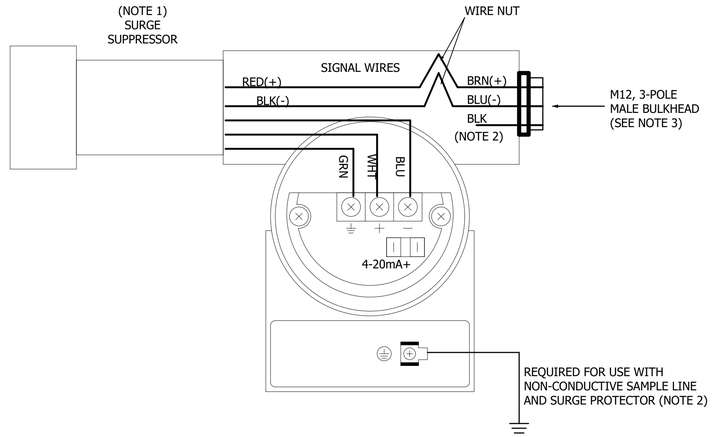
LAST MODIFIED BY: E. SIDENQUIST
LAST MODIFIED DATE: 01/16/25 3:44 PM

PRESSURE TRANSMITTER

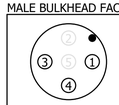


PRESSURE TRANSMITTER DETAIL (CONTINUED)

SURGE PROTECTOR WIRING.
FOR: CITEL TSP15M-P-24D3 SURGE DEVICE



MALE BULKHEAD FACE VIEW

PINS			
3-POLE		1 - BROWN 2 - NOT USED 3 - BLUE 4 - BLACK 5 - NOT USED	ANALOG + ANALOG - NOT USED

NOTES:

1. FOR AREA SUBJECT TO LIGHTNING, NON-CONDUCTIVE SAMPLE LINE IS RECOMMENDED TO MINIMIZE RISK OF DAMAGE.
2. SUPPLY DRIP LEG IN CONDUIT TO PREVENT WATER BUILDUP. USE CONDULET FOR WIRE TRANSITION FROM TWISTED SHIELDED PAIR TO M12 FEMALE CORD.
3. SIEMENS P320 PRESSURE TRANSMITTER WITH INTEGRAL LCD DISPLAY. 7MF90114FA BLOCK AND BLEED VALVE RECOMMENDED TO PROVIDE ISOLATION FROM PROCESS PRESSURE FOR CALIBRATION AND AIR PURGING.

   FOR PROCESS FLUIDS WITH SUSPENDED SOLIDS, UTILIZE DIAPHRAGM SEAL AND OMIT BLOCK AND BLEED VALVE.
4.

NOTES:

1. SURGE PROTECTION OPERATES IN SERIES WITH SIGNAL CONDUCTORS. RECOMMENDED FOR INSTALLATIONS WHERE CONDUCTORS EXTEND TO VAULT OR ADJACENT BUILDING STRUCTURE.
2. BLACK CONDUCTOR IS NOT CONNECTED. WHEN USING OPTIONAL SURGE PROTECTION, INSTALLATION REQUIRES SEPARATE GROUND CONDUCTOR, CONNECTED TO EXTERNAL PORTION OF PRESSURE TRANSMITTER AND BONDED TO ELECTRICAL SYSTEM GROUND
3. M12, 3-POLE MALE BULKHEAD CONNECTOR TYPE 6P / IP67 BRAD WOODHEAD 105000A01F120, REMKE 303P0010N OR EQUAL.

REVISION	BY	DATE	REV	APPRVL

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Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

TITLE: Pressure Transmitter Details

PROJECT: NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9999

BY : JES
DATE : 06/30/2025
SCALE : NTS

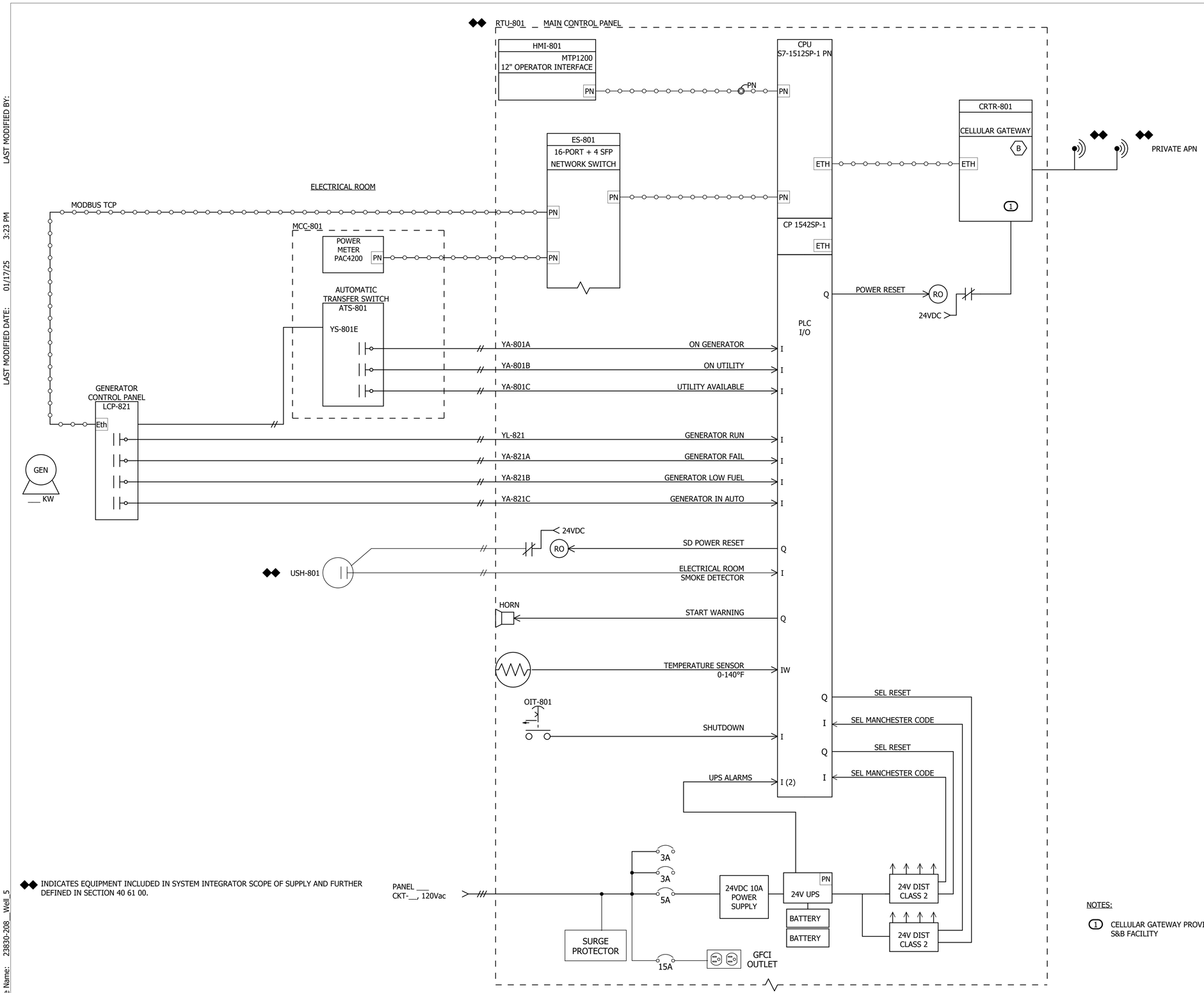
SHEET I17 OF 24 SHEETS

File Name: 23830-208__Well_5

LAST MODIFIED BY:

LAST MODIFIED DATE: 01/17/25 3:23 PM

File Name: 23830-208__Well_5



◆◆ INDICATES EQUIPMENT INCLUDED IN SYSTEM INTEGRATOR SCOPE OF SUPPLY AND FURTHER DEFINED IN SECTION 40 61 00.

NOTES:

1. CELLULAR GATEWAY PROVIDED BY CITY TO S&B FOR INSTALLATION INTO RTU AT S&B FACILITY

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Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sb-inc.com

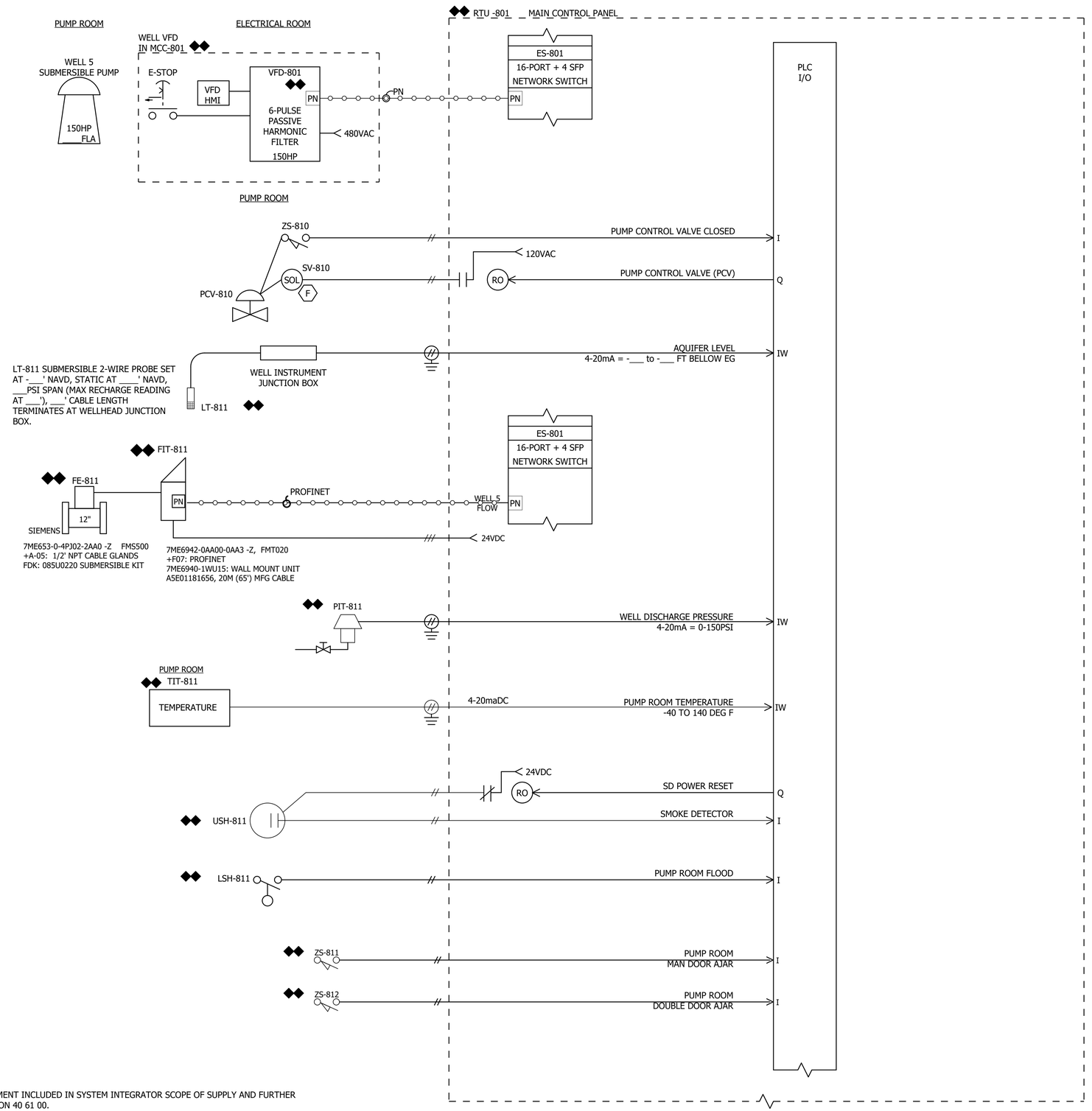
TITLE: **BLOCK DIAGRAM AUTOMATION POWER & ANCILLARY SYSTEMS**

PROJECT: **NEW WELL 5 PUMPING STATION VALDEZ, ALASKA**

V ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-5050

BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET 18 OF 24 SHEETS



LAST MODIFIED BY:

LAST MODIFIED DATE: 01/17/25 3:35 PM

File Name: 23830-208__Well_5

APPRVL	REV	DATE	BY	REVISION

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Stead & Associates
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Bellevue, Washington 98005
(425) 644-1700 Fax: (425) 746-9312
www.sbinc.com service@sbinc.com

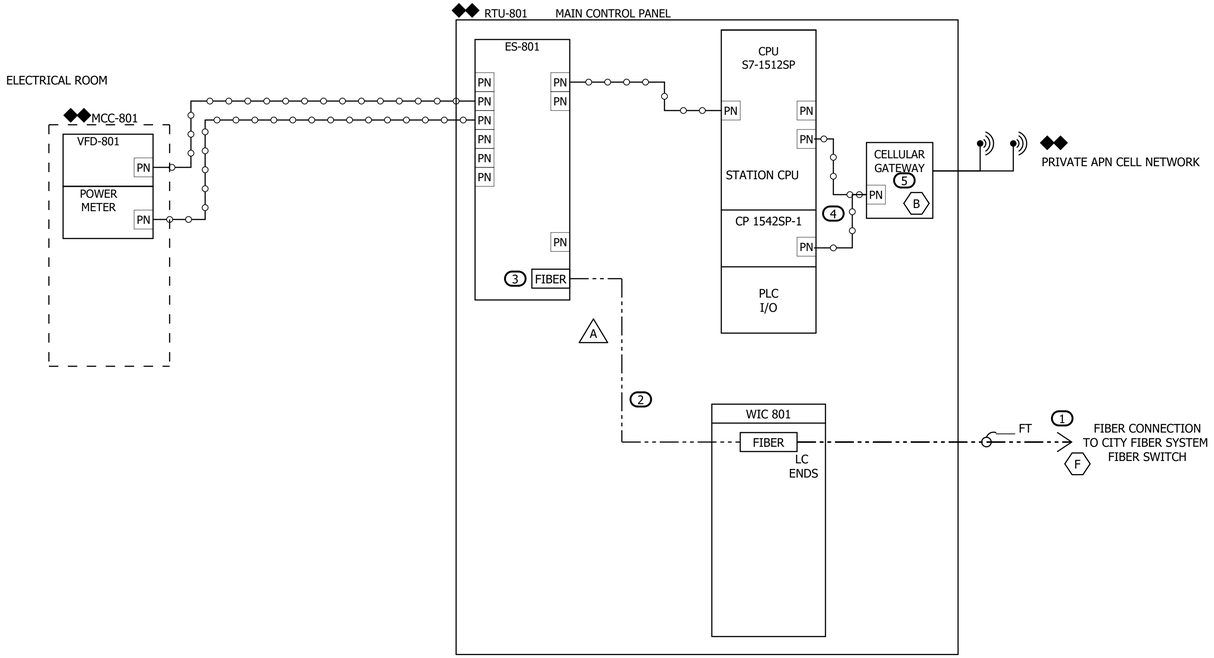
TITLE
RTU BLOCK DIAGRAM
PUMP ROOM
WELL OPERATIONS

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

V ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-0590

BY: JES
DATE: 06/30/2025
SCALE: NTS

SHEET **I19** OF **24** SHEETS



◆◆ INDICATES EQUIPMENT INCLUDED IN SYSTEM INTEGRATOR SCOPE OF SUPPLY AND FURTHER DEFINED IN SECTION 409100.

1. FUTURE PROVISION FOR CITY TO PROVIDE SINGLE MODE FIBER TO NEW WELL 5 BUILDING. FIBER CABLE SHALL BE SUPPLIED BY CITY WITH LC ENDS ON AT LEAST ONE END, USED FOR THE CONNECTION AT THE WELL 5 STATION RTU.
2. FUTURE PROVISION FOR FIBER WIC WITH LC CONNECTIONS AND FIBER PATCH CABLE, 2M, SM, LC TO LC.
3. FUTURE PROVISION LC SFP MODULE SUPPLIED WITH SWITCH IN RTU
4. FUTURE FIBER IS INSTALLED, DISCONNECT CELLULAR FROM PLC AND CONNECT CELLULAR TO CP1542SP-1 CARD
5. CITY PROVIDES S&B CRADLEPOINT CELLULAR GATEWAY FOR INSTALLATION INTO THE RTU AT S&B'S FACILITY IN BELLEVUE WA.

LAST MODIFIED DATE: 01/16/25 3:44 PM LAST MODIFIED BY: E. SIDENQUIST

File Name: 23830-208_Well_5

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Bellevue, Washington 98005
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www.sbinc.com service@sbinc.com

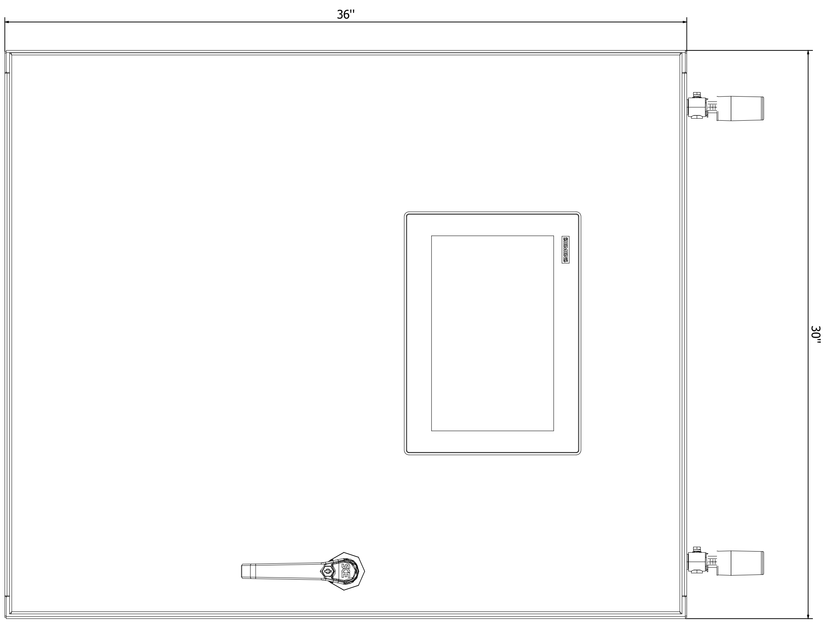
TITLE
BLOCK DIAGRAM
CONTROL SYSTEM NETWORK DIAGRAM

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

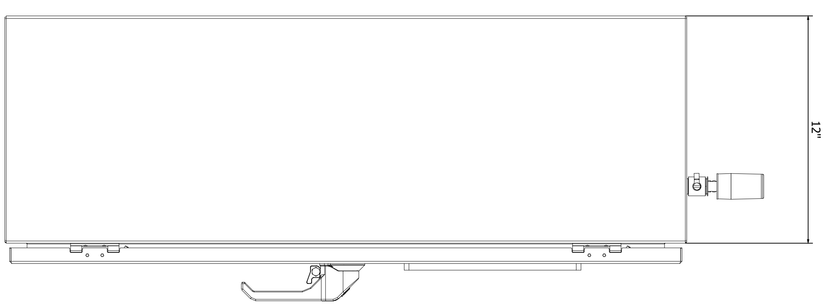
ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9000

BY : JES
DATE : 06/30/2025
SCALE : NTS

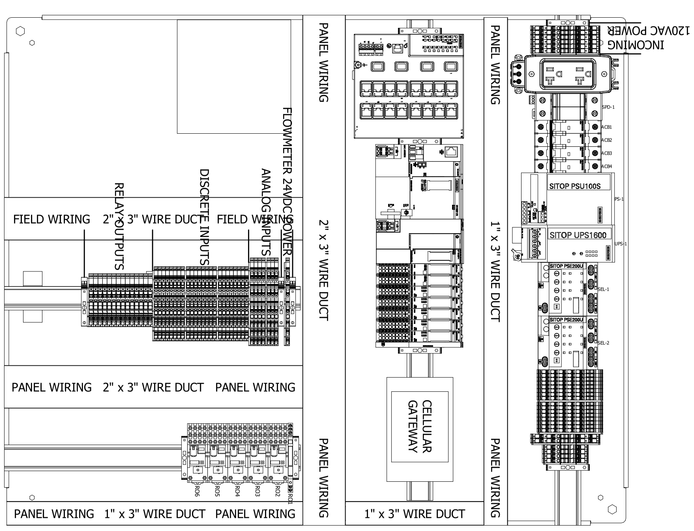
SHEET **T20** OF **24** SHEETS



SAGINAW SCE-36EL3012LPPL ENCLOSURE
PAINTED RAL5015 BLUE
FRONT VIEW



SAGINAW SCE-36EL3012LPPL ENCLOSURE
PAINTED RAL5015 BLUE
LEFT SIDE VIEW



PANEL WIRING 2" x 3" WIRE DUCT PANEL WIRING

PANEL WIRING 1" x 3" WIRE DUCT PANEL WIRING

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 422-9090

SHEET 21 OF 24 SHEETS

BY : JES
DATE : 06/30/2025
SCALE : NTS

TITLE
WELL 5 BACK PANEL PRESENTATION

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

S & B inc.
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Bellevue, Washington 98005
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www.sb-inc.com service@sb-inc.com

APPRVL	REV	DATE	BY	REVISION

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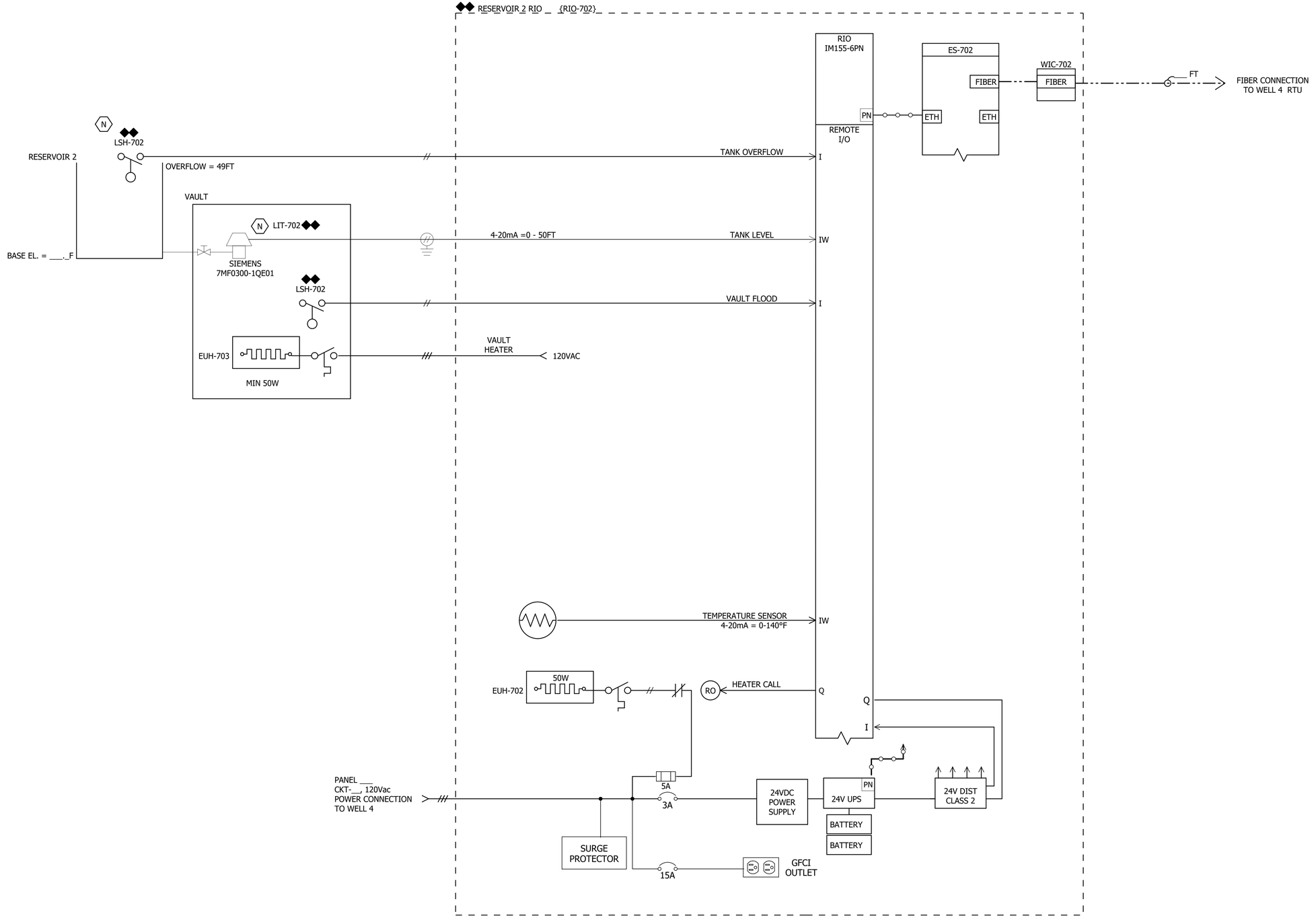
File Name: 23830-208__Well_5



REVISION	DATE	BY	APPROV.	REV

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Bellevue, Washington 98005
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www.sbinc.com service@sbinc.com

TITLE
WELL 4 / RESERVOIR 2 BLOCK DIAGRAM
RIO PANEL

PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

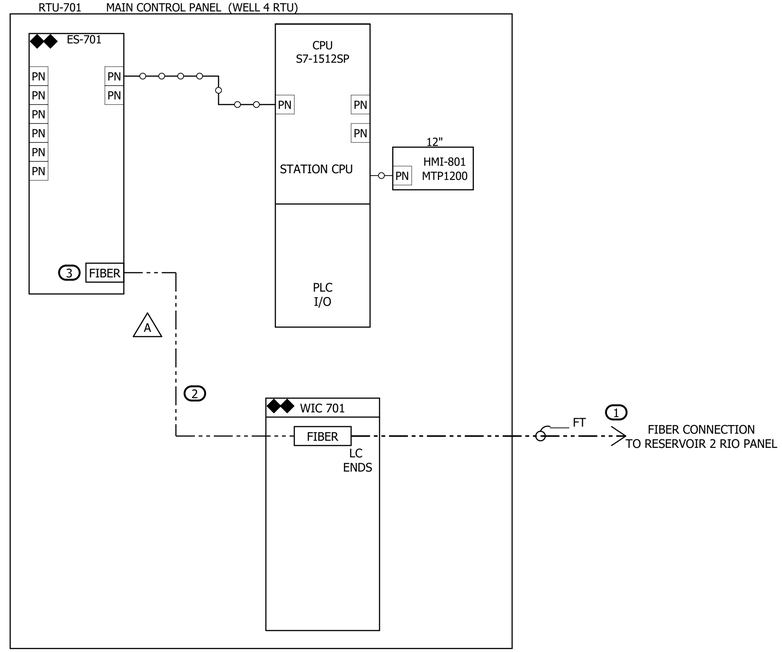
ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9999

BY : JES
DATE : 06/30/2025
SCALE : NTS

SHEET I22 OF 24 SHEETS

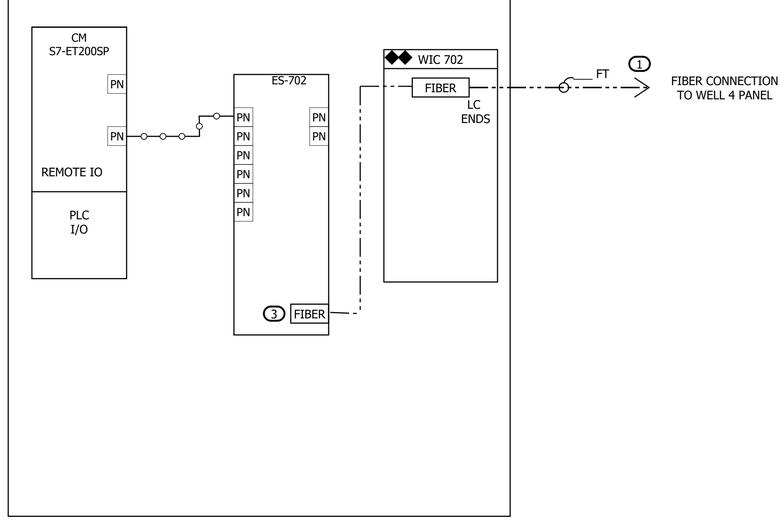
E

RTU-701 MAIN CONTROL PANEL (WELL 4 RTU)



N

RIO-702 REMOTE I/O PANEL (RESERVOIR 2)



1. NEW FIBER INSTALLED AS PART OF THIS CONTRACT BETWEEN WELL 4 RTU AND RESERVOIR 2 RIO. FIBER CABLE SHALL BE SUPPLIED WITH LC ENDS
2. FIBER WIC WITH LC CONNECTIONS AND FIBER PATCH CABLE, 2M, SM, LC TO LC.
3. LC SFP MODULE SUPPLIED WITH SWITCH IN RTU

◆◆ INDICATES EQUIPMENT INCLUDED IN SYSTEM INTEGRATOR SCOPE OF SUPPLY AND FURTHER DEFINED IN SECTION 409100.

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TITLE
WELL 4 / RESERVOIR 2 BLOCK DIAGRAM
CONTROL SYSTEM NETWORK DIAGRAM

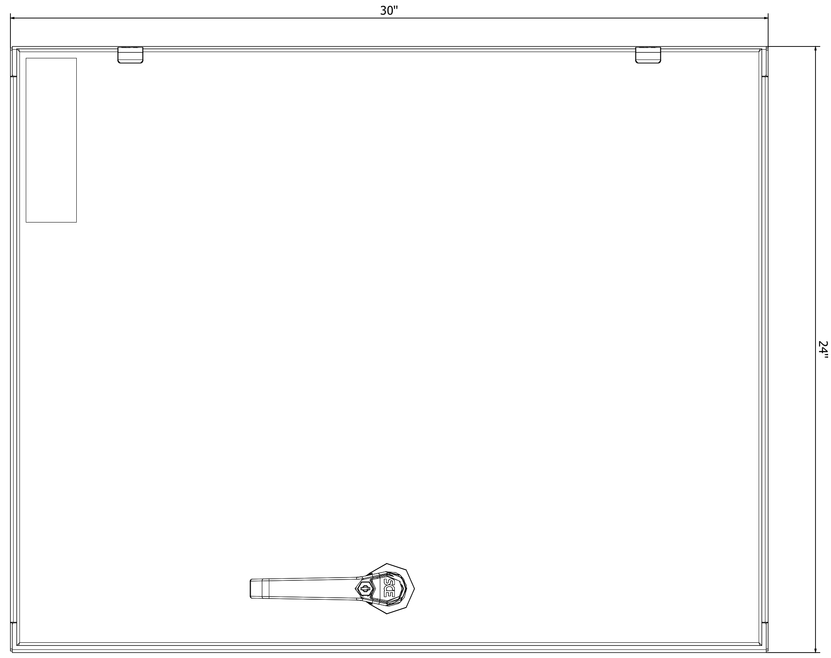
PROJECT
NEW WELL 5 PUMPING STATION
VALDEZ, ALASKA

ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 423-9000

BY : JES
DATE : 06/30/2025
SCALE : NTS

SHEET I23 OF 24 SHEETS

File Name: 23830-208__Well_5



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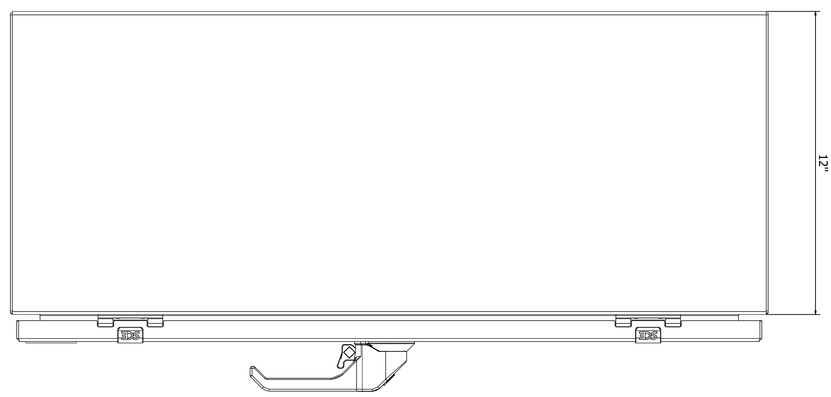
FRONT VIEW



SAGINAW SCE-30EL2412LPPL ENCLOSURE
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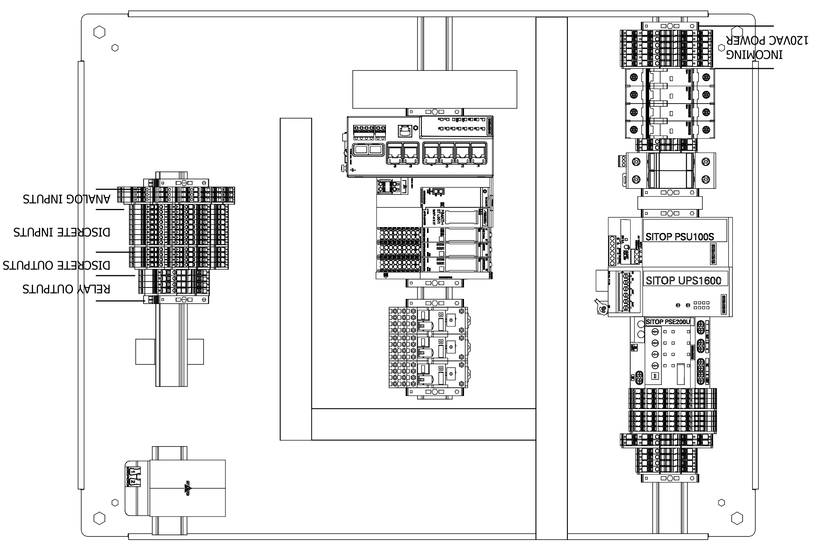
LEFT SIDE VIEW



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www.sb-inc.com service@sb-inc.com

Y ENGINEERING
5 EAST PARK STREET FALLON, NEVADA 89406 (775) 422-9090

SHEET 24 OF 24 SHEETS

BY :	JES
DATE :	06/30/2025
SCALE :	NTS

TITLE

WELL 4 / RESERVOIR 2 I/O BACK PANEL PRESENTATION

PROJECT

NEW WELL 5 PUMPING STATION VALDEZ, ALASKA

JES	A	09/26/24		UPDATED ENCLOSURE SIZE
APPRVL	REV	DATE	BY	REVISION