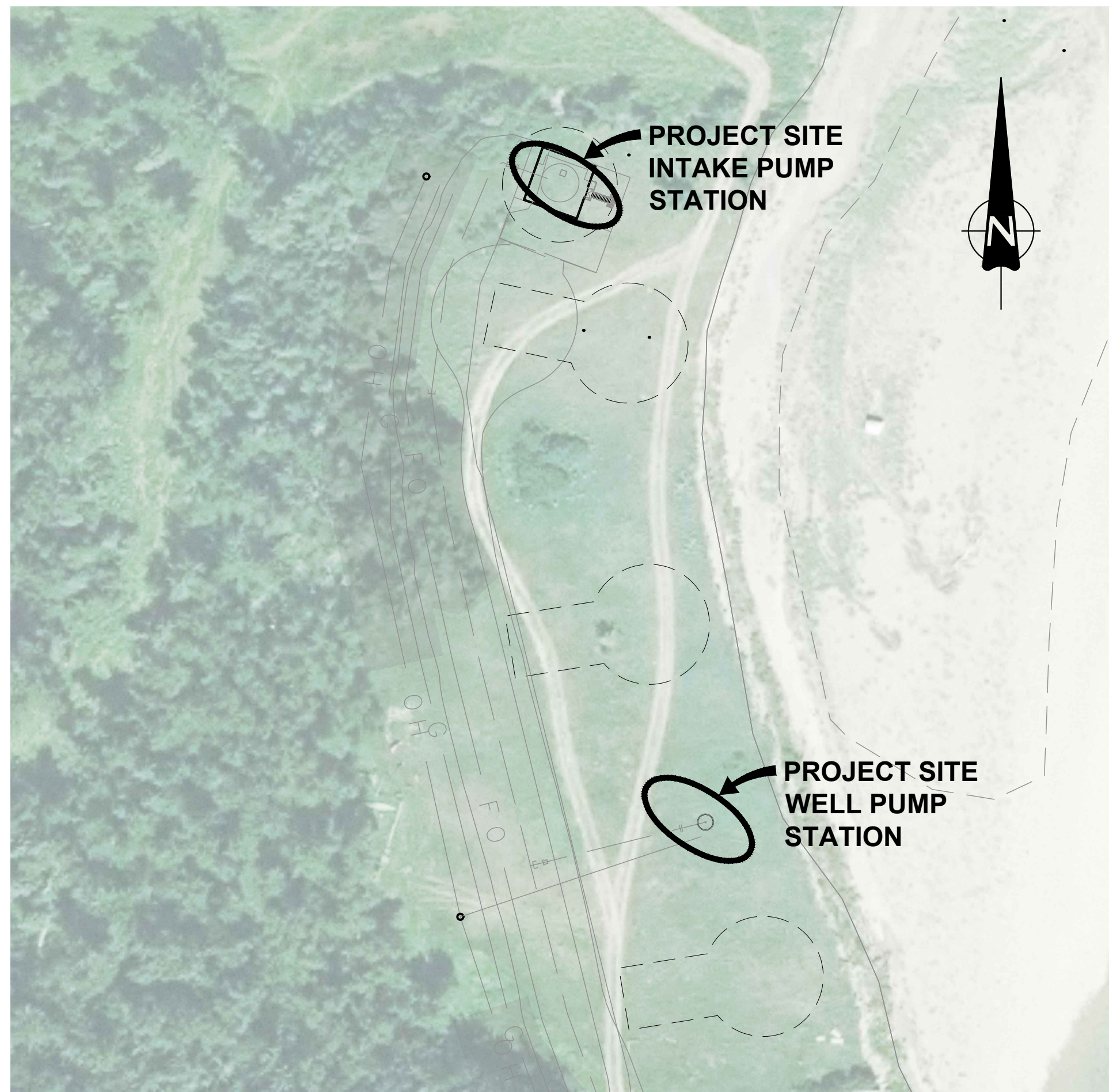
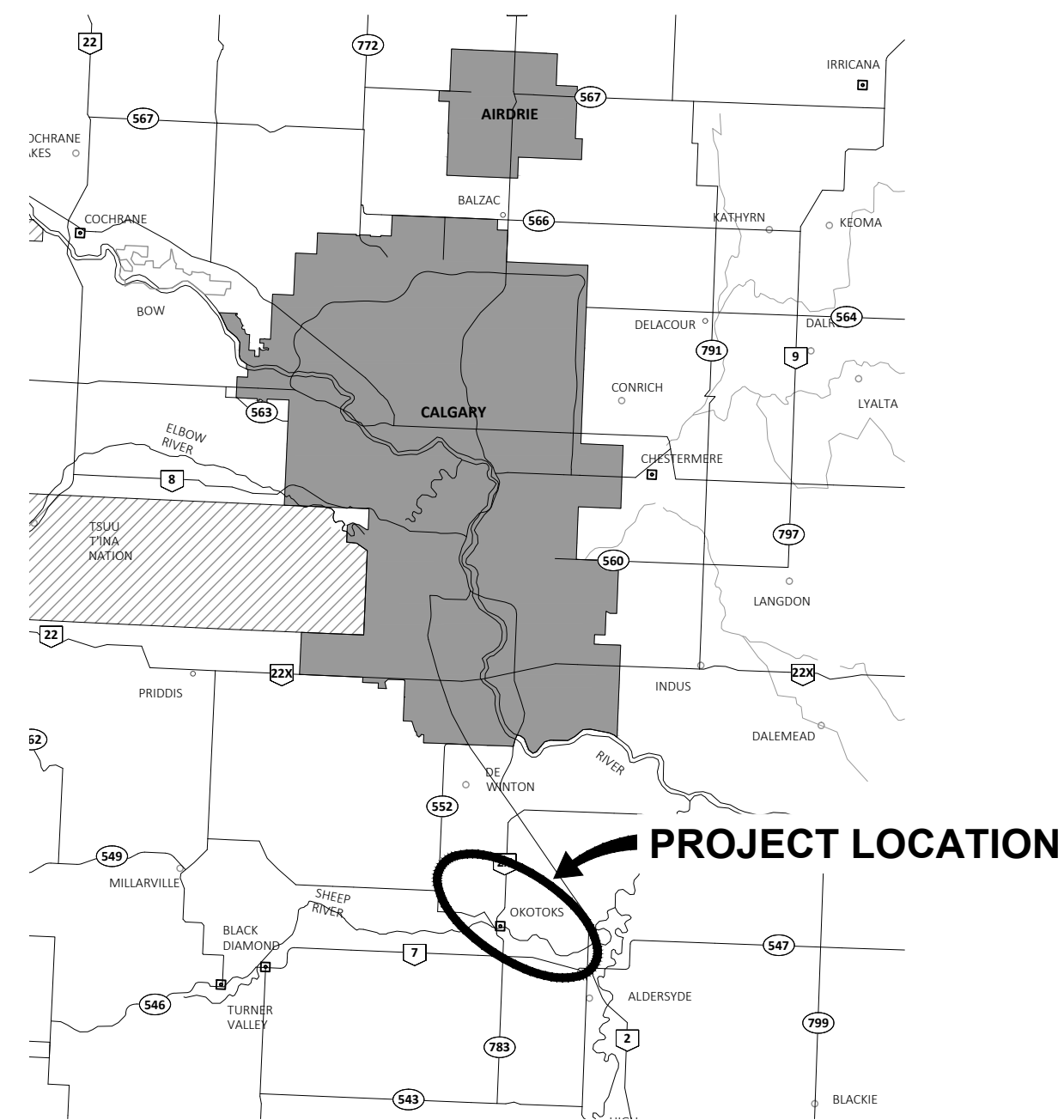




FOOTHILLS OKOTOKS INTAKE PUMP STATION ISSUED FOR DESIGN ASSIST RFP 29121-005-09



DRAWING NUMBER

CIVIL:

FORWP-01-C-GE-001	CIVIL LEGEND
FORWP-01-C-SP-001	SITE PLAN
FORWP-01-C-DET-001	FLANGED GATE VALVE DETAILS
FORWP-01-C-DET-002	BURIED GATE VALVE AND PIPING DETAILS
FORWP-01-C-DET-003	THRUST BLOCK DETAILS
FORWP-01-C-DET-004	PIG LAUNCH STATION
FORWP-01-C-DET-005	CONCRETE ANCHOR DETAIL

ARCHITECTURAL:

A0.01	CODE REVIEW
A0.02	ENERGY CODE
A2.01	CAISSON WELL
A2.02	MAIN FLOOR
A2.03	ROOF PLAN
A3.01	ELEVATIONS
A3.02	ELEVATIONS
A3.03	3D ELEVATIONS
A4.01	TYPICAL SECTION
A4.02	STAIR DETAILS
A4.03	STAIR SECTION
A6.01	EXTERIOR DETAILS
A8.01	CONSTRUCTION TYPES
A8.02	OPENING SCHEDULES
A9.01	STANDARD NOTES

STRUCTURAL:

S1.0	GENERAL NOTES
S2.0	MAIN FLOOR PLAN
S2.1	ROOF PLAN
S3.0	ELEVATIONS
S4.0	SECTIONS AND DETAILS

MECHANICAL:

FORWP-02-M-SCH-01	LEGEND AND GENERAL NOTES
FORWP-02-M-GA-01	VENTILATION AND GAS PLAN
FORWP-02-M-GA-02	DRAINAGE PLAN

PROCESS:

FORWP-01-P-GE-001	PROCESS & INSTRUMENTATION LEGEND AND SYMBOL SHEET 1
FORWP-01-P-GE-002	PROCESS & INSTRUMENTATION LEGEND AND SYMBOL SHEET 2
FORWP-01-P-GE-003	PROCESS & INSTRUMENTATION LEGEND AND SYMBOL SHEET 3
FORWP-01-P-PID-001	PROCESS AND INSTRUMENTATION DIAGRAM INTAKE PUMP STATION
FORWP-01-P-PID-002	PROCESS AND INSTRUMENTATION DIAGRAM WELL PUMP STATION
FORWP-01-P-PID-003	PROCESS AND INSTRUMENTATION DIAGRAM PUMP MOTOR TYPICAL
FORWP-01-P-PID-004	PROCESS AND INSTRUMENTATION DIAGRAM BUILDING AUXILIARIES

DRAWING NUMBER

PROCESS:

FORWP-01-P-LAY-001	PLAN VIEW 16 FT CASING 5 x HLP
FORWP-01-P-LAY-002	SECTION A
FORWP-01-P-LAY-003	SECTION B
FORWP-01-P-LAY-004	SECTION C
FORWP-01-P-LAY-005	SECTION D
FORWP-01-P-LAY-006	WELL No.2 PUMP SECTION
FORWP-01-P-DET-001	MISCELLANEOUS DETAILS 1 OF 2
FORWP-01-P-DET-002	MISCELLANEOUS DETAILS 2 OF 2

ELECTRICAL:

FORWP-01-E-GE-001	ELECTRICAL LEGEND
FORWP-01-E-GE-002	INSTRUMENT WIRING TYPICALS
FORWP-01-E-SP-001	OVERALL SITE PLAN
FORWP-01-E-SP-002	PUMP STATION SITE PLAN
FORWP-01-E-SP-003	WELL 2 SITE PLAN
FORWP-01-E-DET-001	WELL 2 DETAILS
FORWP-01-E-LAY-001	EQUIPMENT LAYOUT
FORWP-01-E-LAY-002	MCC LAYOUT
FORWP-01-E-LAY-003	GATE AREA SITE PLAN
FORWP-01-E-DET-001	GATE CARD READER PEDESTAL DETAILS
FORWP-01-E-SLD-001	SINGLE LINE DIAGRAM
FORWP-01-E-SCH-001	PANEL AND LIGHTING SCHEDULES
FORWP-01-E-WD-001	PUMP VFD SCHEMATIC TYPICAL
FORWP-01-E-WD-002	FULL VOLTAGE MOTOR STARTER TYPICAL
FORWP-01-E-WD-003	WELL 2 PUMP SCHEMATIC
FORWP-01-E-SCH-002	CABLE SCHEDULE
FORWP-01-E-CSA-001	CONTROL ARCHITECTURE
FORWP-01-E-CSA-002	VIDEO MONITORING SYSTEM
FORWP-01-E-LAY-003	CONTROL PANEL LAYOUT
FORWP-01-E-SCH-003	CONTROL PANEL BILL OF MATERIALS AND LABEL SCHEDULE
FORWP-01-E-SCH-004	PLC LAYOUT
FORWP-01-E-SCH-005	CONTROL PANEL TERMINAL STRIP LAYOUT 1 OF 2
FORWP-01-E-SCH-006	CONTROL PANEL TERMINAL STRIP LAYOUT 2 OF 2
FORWP-01-E-SCH-007	CONTROL PANEL POWER DISTRIBUTION 120VAC
FORWP-01-E-SCH-008	CONTROL PANEL POWER DISTRIBUTION 24VDC
FORWP-01-E-WD-004	ANALOG INPUT MODULE 1 AND 2
FORWP-01-E-WD-005	ANALOG INPUT MODULE 3
FORWP-01-E-WD-006	ANALOG OUTPUT MODULE 1
FORWP-01-E-WD-007	ANALOG INPUT MODULE 4
FORWP-01-E-WD-008	ANALOG INPUT MODULE 5
FORWP-01-E-WD-009	ANALOG INPUT MODULE 6
FORWP-01-E-WD-010	ANALOG INPUT MODULE 7
FORWP-01-E-WD-011	DIGITAL INPUT MODULE 1 AND 2
FORWP-01-E-WD-012	DIGITAL OUTPUT MODULE 1



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PROPOSED	LEGAL SURVEY AND CONTROL	EXISTING
	ALBERTA SURVEY CONTROL MONUMENT CONTROL POINT IRON PIN PROPERTY LINE UTILITY RIGHT OF WAY EASEMENT	◉ ASCM No. ● CP No. ◉ IP _____ _____
PROPOSED	SURFACE FEATURES	EXISTING
	ABBREVIATION ELEVATION	
	ASPHALT SWALE	
	BOLLARD	
	BOREHOLE	
	BUSH	
	BUS PAD	
	BUS SHELTER	
	CONCRETE SWALE	
	CURB AND GUTTER	
	DRAINAGE DITCH	
	DRAINAGE SWALE	
	DRAINAGE SWALE BACKFILLED	
	EDGE OF PAVEMENT	
	ELECTRICAL TRANSFORMER	
	FENCE BARBED WIRE	
	FENCE CHAIN LINK	
	FENCE TO BE REMOVED	
	GUY WIRE	
	GRADE BREAK	
	LIGHT STANDARD	
	MAIL BOX	
	MONOLITHIC SIDEWALK	
	PEDESTAL	
	POWER POLE	
	RAILWAY	
	ROAD MARKING DELINEATION	
	ROAD RECONSTRUCTION	
	SEPARATE SIDEWALK	
	SIGN	
	SILT FENCE	
	TRAFFIC SIGNAL	
	TREE	

PROPOSED	SHALLOW UTILITIES	EXISTING
	CABLE	
	FIBRE OPTIC	
	GAS	
	GAS ABANDONED	
	OVERHEAD POWER	
	TELEPHONE	
	UNDERGROUND POWER	
PROPOSED	FITTINGS	EXISTING
	BELLxBELL ADAPTER	
	BELLxFLANGE ADAPTER	
	COUPLER	
	CROSS	
	ELBOW 90°	
	ELBOW 45°	
	LOT SERVICE	
	MANHOLE	
	PLUG	
	REDUCER	
	TEE	
	VAULT	

PROPOSED	WATERWORKS	EXISTING
	BUTTERFLY VALVE	
	GATE VALVE	
	HYDRANT	
	CURB STOP	
	WATER MAIN	
	WATER MAIN ABANDONED	
PROPOSED	SEWERS	EXISTING
	CATCH BASIN	
	CULVERT	
	CLEANOUT	
	INLET STRUCTURE	
	LANDSCAPE CATCH BASIN	
	OUTFALL STRUCTURE	
	PLUG VALVE	
	SANITARY	
	SANITARY ABANDONED	
	STORM	
	STORM ABANDONED	
	TILE DRAIN	

- NOTES:
- ALL ELEVATION AND STATIONS IN METRES, PIPE LENGTHS, DIMENSIONS AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.
 - ALL BOLD ITEMS INDICATE WORK TO BE DONE AND ALL LIGHT ITEMS INDICATE EXISTING CONDITIONS.

Professional Seals

Date	Issue / Revision	App
A 24-08-27	ISSUED FOR 60% REVIEW	R.K.F.
B 24-11-14	ISSUED FOR 75% REVIEW	R.K.F.
C 24-11-29	ISSUED FOR DESIGN ASSIST RFP	R.K.F.



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N.A.M.
M.K.G.

FOOTHILLS OKOTOKS INTAKE
PUMP STATION
CIVIL LEGEND

Sheet Number
Project Number
29121-005-09
Drawing Number
FORW-01-C-GE-001

of ##
Revision
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- NOTES:
1. INTAKE PUMP STATION CONTRACTOR WILL BE RESPONSIBLE FOR THE HDPE TIE-INS FOR THE 600mm AND 200mm PIPELINES.
 2. ALL PIPING CONNECTIONS, FITTINGS, VALVES, TO BE RATED TO CLASS 150. ENSURE CLASS 150 FLANGES USED FOR STAINLESS TO HDPE PIPING TRANSITION.
 3. ALL BURIED STAINLESS STEEL PIPE TO BE WRAPPED IN TWO LAYERS OF POLYKEN TAPE.
 4. ALL BOLTS, NUTS, WASHERS FOR BURIED FLANGES AND VALVES TO BE STAINLESS STEEL AND WRAPPED IN DENSO TAPE.
 5. ENSURE ALL PIPELINES ARE BURIED WITH MINIMUM 2.8m COVER. ALL PIPING INSTALLED ON UNDISTURBED GROUND OR NON-SHRINK FILL.
 6. TIE-IN ELEVATION FOR 600mm HDPE LINE TO BE 947.93m. CONTRACTOR TO INSTALL FUSED CAP ON END OF PIPELINE TO ALLOW FOR PRESSURE TEST. AFTER SUCCESSFUL PRESSURE TEST, CONTRACTOR TO CUT OFF CAP AND TIE TO EXISTING HDPE PIPELINE WITH FUSED CONNECTION.
 7. CONTRACTOR TO REPLACE IN KIND ANY GRAVELS FOR ACCESS ROAD AND PARKING LOT THAT ARE REQUIRED TO BE EXCAVATED TO ALLOW FOR INSTALLATION OF DEEP UTILITIES. CONTRACTOR TO REPLACE IN KIND ANY CHAIN-LINK FENCING REQUIRED TO BE TEMPORARILY REMOVED TO ALLOW FOR INSTALL OF DEEP UTILITIES.
 8. CONTRACTOR TO PRESSURE TEST 200MM LINE WITH FUSED CAP. AFTER SUCCESSFUL TEST, CUT OFF THE CAP AND TIE TO EXISTING LINE.

Professional Seals

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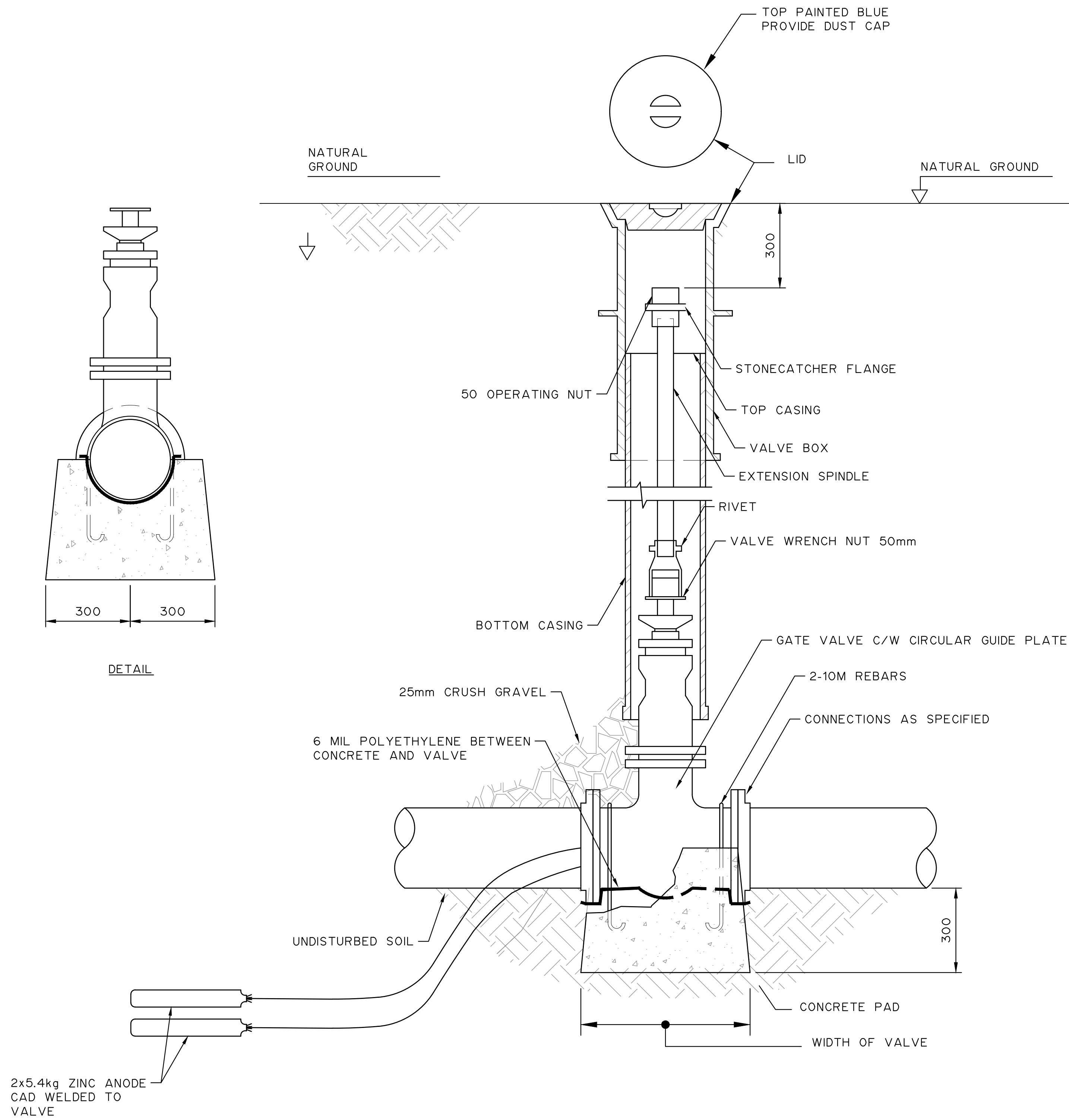
FOOTHILLS OKOTOKS INTAKE
PUMP STATION
SITE PLAN

Sheet Number
Project Number
29121-005-09
Drawing Number
FORW-01-C-SP-001

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Revision
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FLANGED GATE VALVE 600mm

NOTES:

1. FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, SYMBOLS AND ABBREVIATIONS REFER TO THE LEGEND AND ABBREVIATIONS DRAWINGS.
2. ALL ELEVATIONS ARE IN METERS. ALL DIMENSIONS AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THRUST BLOCK CONCRETE SHALL BE 25MPa SULFATE RESISTANT (TYPE HS).
4. 2 PLY OF 0.15mm (6MIL) POLYETHYLENE SHALL BE PLACED BETWEEN PIPE AND CONCRETE.

Professional Seals

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C 24-11-29	ISSUED FOR DESIGN ASSIST RFP	R.K.F.



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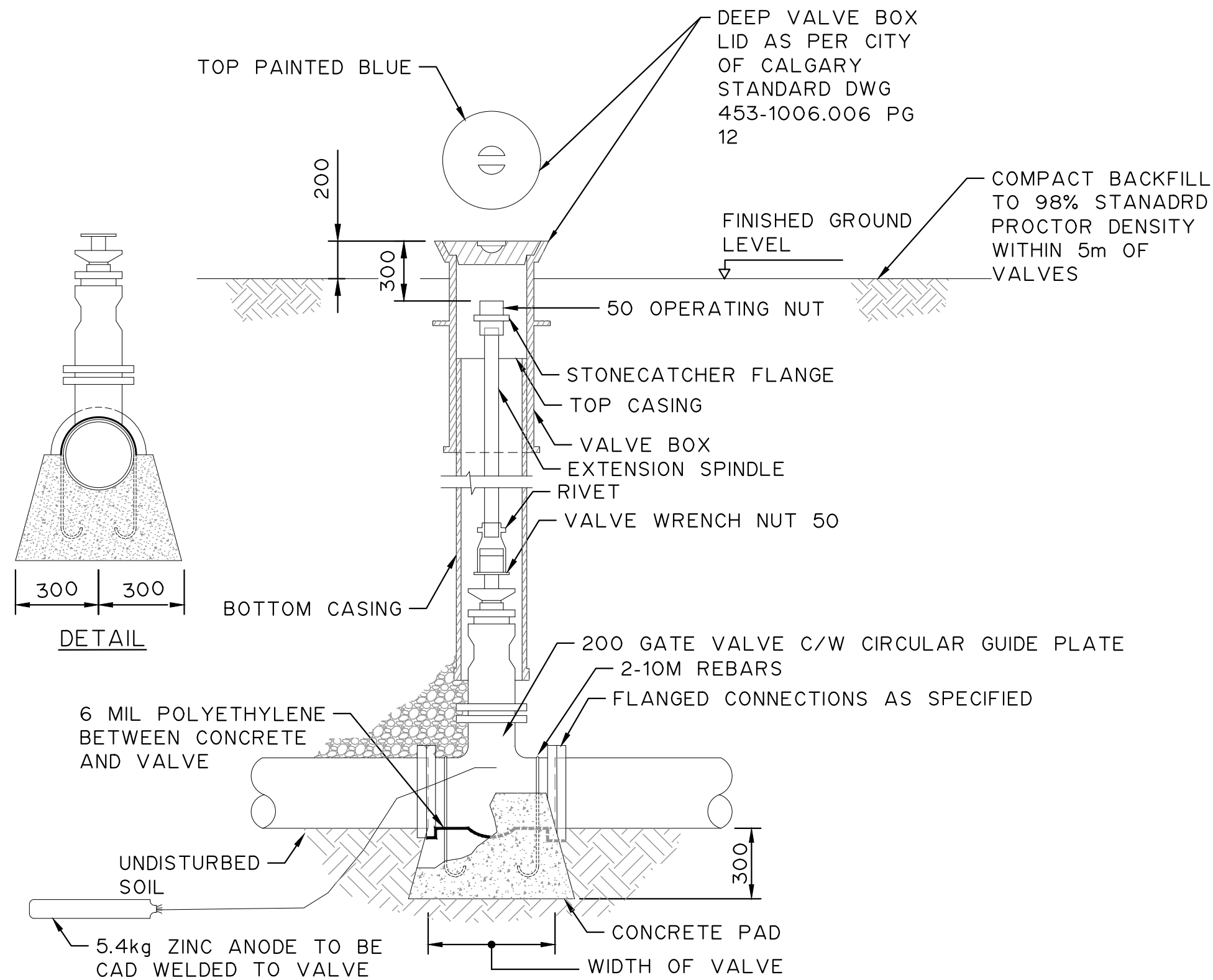
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FOOTHILLS OKOTOKS INTAKE
PUMP STATION
FLANGED GATE VALVE DETAILS

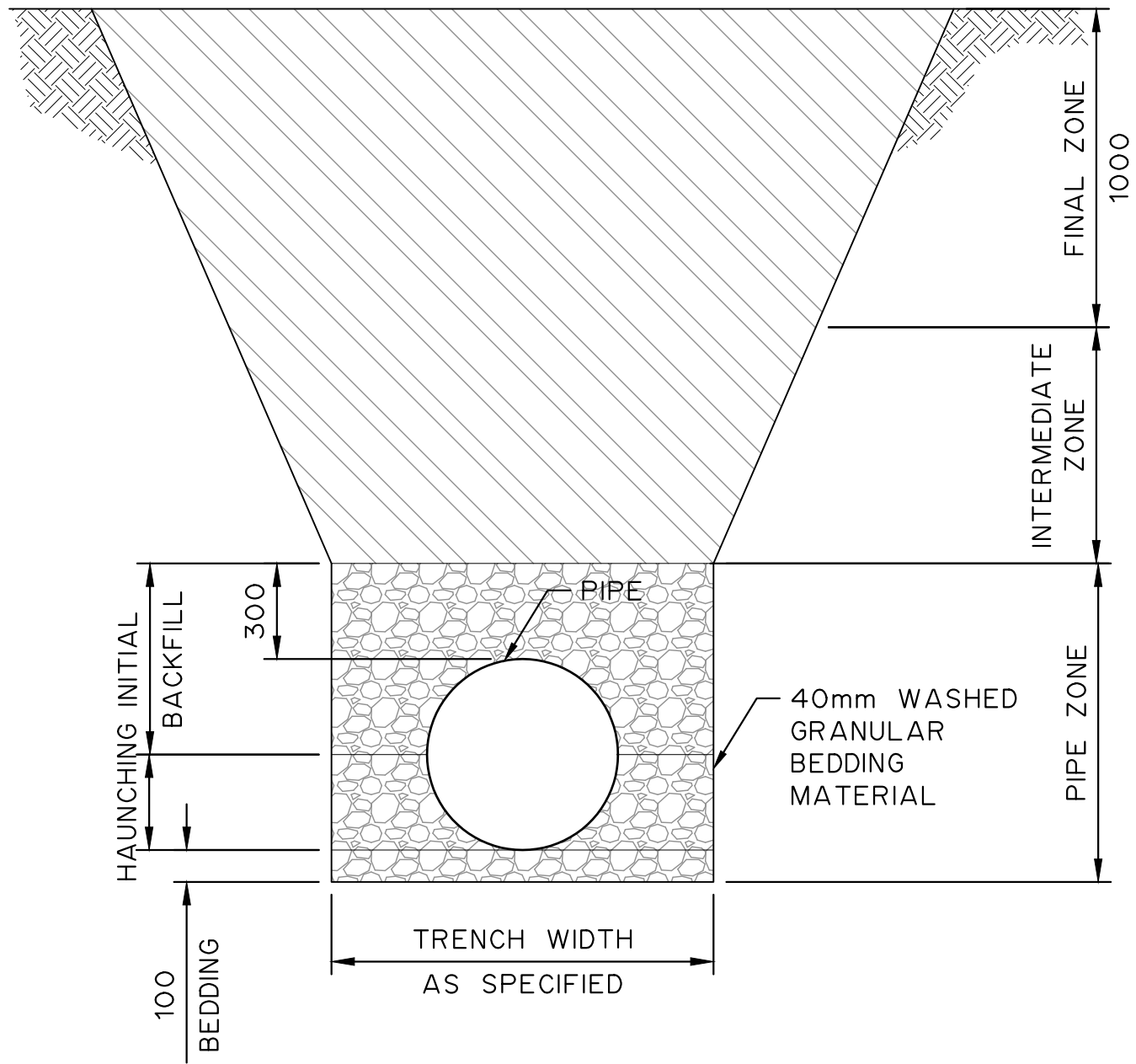
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Project Number	
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Drawing Number	Revision
FORW-01-C-DET-001	C

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FLANGED GATE VALVE 200mm
NTS



TYPICAL TRENCH BEDDING AND BACKFILL REQUIREMENTS
NTS

NOTES:

1. ALL ELEVATIONS, STATIONS, PIPE LENGTHS AND DIMENSIONS IN METERS AND PIPE SIZES IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. THRUST BLOCK CONCRETE SHALL BE 25MPa SULFATE RESISTANT (TYPE HS).
3. 2 PLY OF 0.15mm (6MIL) POLYETHYLENE SHALL BE PLACED BETWEEN PIPE AND CONCRETE.

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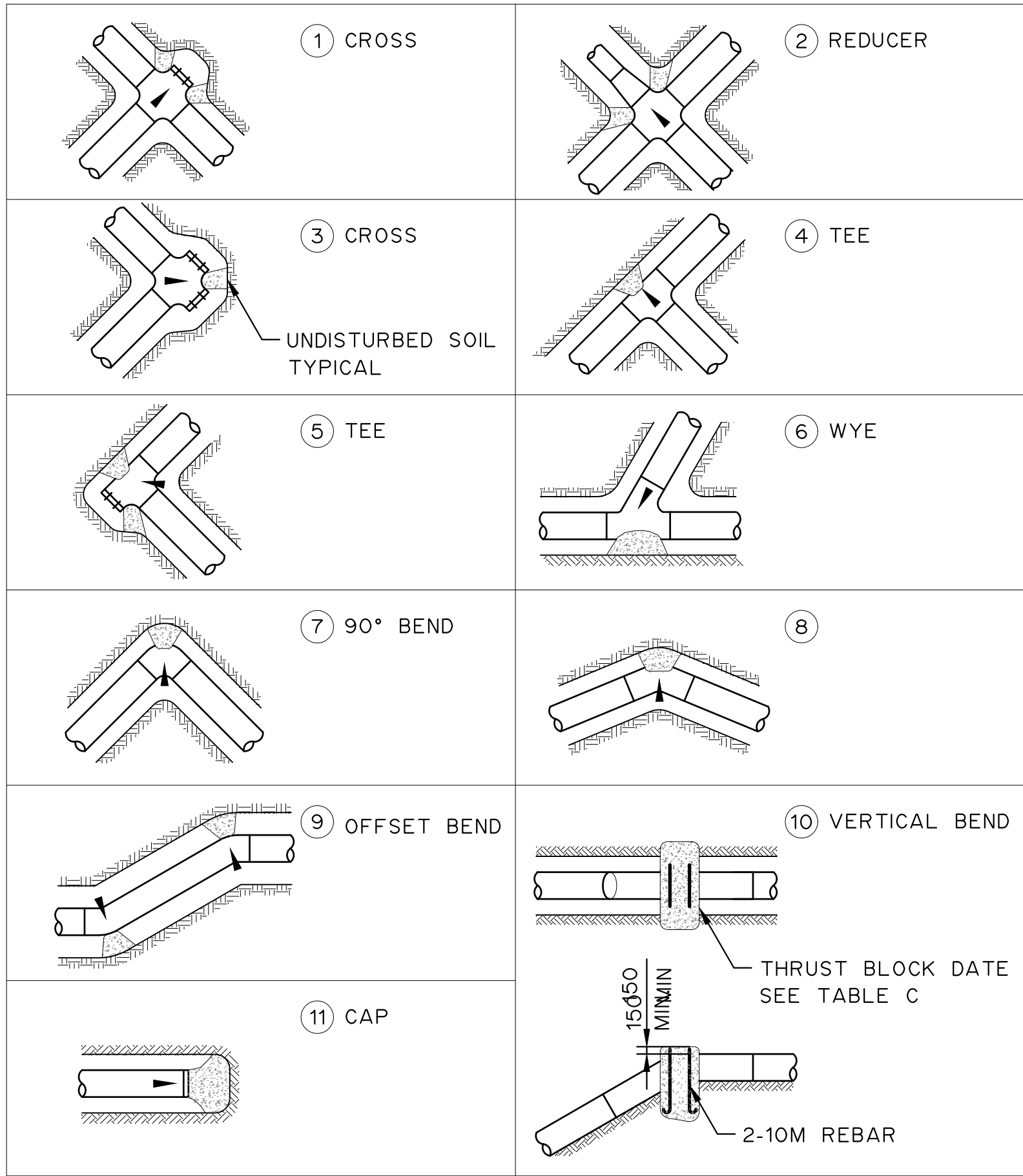
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FOOTHILLS OKOTOKS INTAKE
PUMP STATION
BURIED GATE VALVE AND PIPING DETAILS

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORW-01-C-DET-002	C

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THRUST BLOCK LOCATIONS

TABLE 'A'						
THRUST BLOCK FACE AREA IN SQ METRES AT FITTING FOR CL 150 PIPE @ 1000 kPa AND SOIL BEARING CAPACITY OF 100 kPa						
PIPE SIZE IMPERIAL	PIPE SIZE METRIC	DEAD ENDS OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4"	100	0.12	0.17	0.10	0.10	0.10
6"	150	0.25	0.35	0.19	0.10	0.10
8"	200	0.43	0.60	0.33	0.17	0.10
10"	250	0.70	0.99	0.54	0.27	0.14
12"	300	1.00	1.40	0.75	0.39	0.19
14"	350	1.35	1.90	1.03	0.52	0.26
16"	400	1.75	2.47	1.34	0.68	0.34
18"	450	2.24	3.15	1.72	0.87	0.44
20"	500	2.77	3.90	2.12	1.07	0.54
24"	600	4.00	5.64	3.07	1.55	0.78
30"	750	6.26	8.83	4.81	2.44	1.22
36"	900	9.03	12.70	7.58	3.51	1.76

TABLE 'B'	
SOIL TYPE	SAFE BEARING LOAD (kPa)
SOFT CLAY, LOOSE SAND	50
MEDIUM SOFT CLAY, DENSE SAND	100
DENSE CLAY TILL AND GRAVEL	150
HARD SHALE	500

TABLE 'C'							
DEAD WEIGHT REQUIREMENTS FOR VERTICAL BENDS CUBIC METRES OF CONCRETE (m³)							
TYPE OF BEND	SIZE (mm)						
	100	150	200	250	300	350	400
90° BEND	0.75	1.50	2.75	4.25	6.00	8.50	11.00
45° BEND	0.50	1.00	1.50	2.25	3.50	4.75	6.00
22.5° BEND	0.25	0.50	0.75	1.25	1.50	2.25	3.00
11.25° BEND	0.25	0.25	0.50	0.75	1.00	1.25	1.50

THRUST BLOCK DATA

NOTES:

- FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, SYMBOLS AND ABBREVIATIONS REFER TO THE LEGEND AND ABBREVIATIONS DRAWINGS.
- ALL ELEVATIONS ARE IN METERS. ALL DIMENSIONS AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.
- THRUST BLOCK CONCRETE SHALL BE 25MPa SULFATE RESISTANT (TYPE HS).
- 2 PLY OF 0.15mm (6MIL) POLYETHYLENE SHALL BE PLACED BETWEEN PIPE AND CONCRETE.

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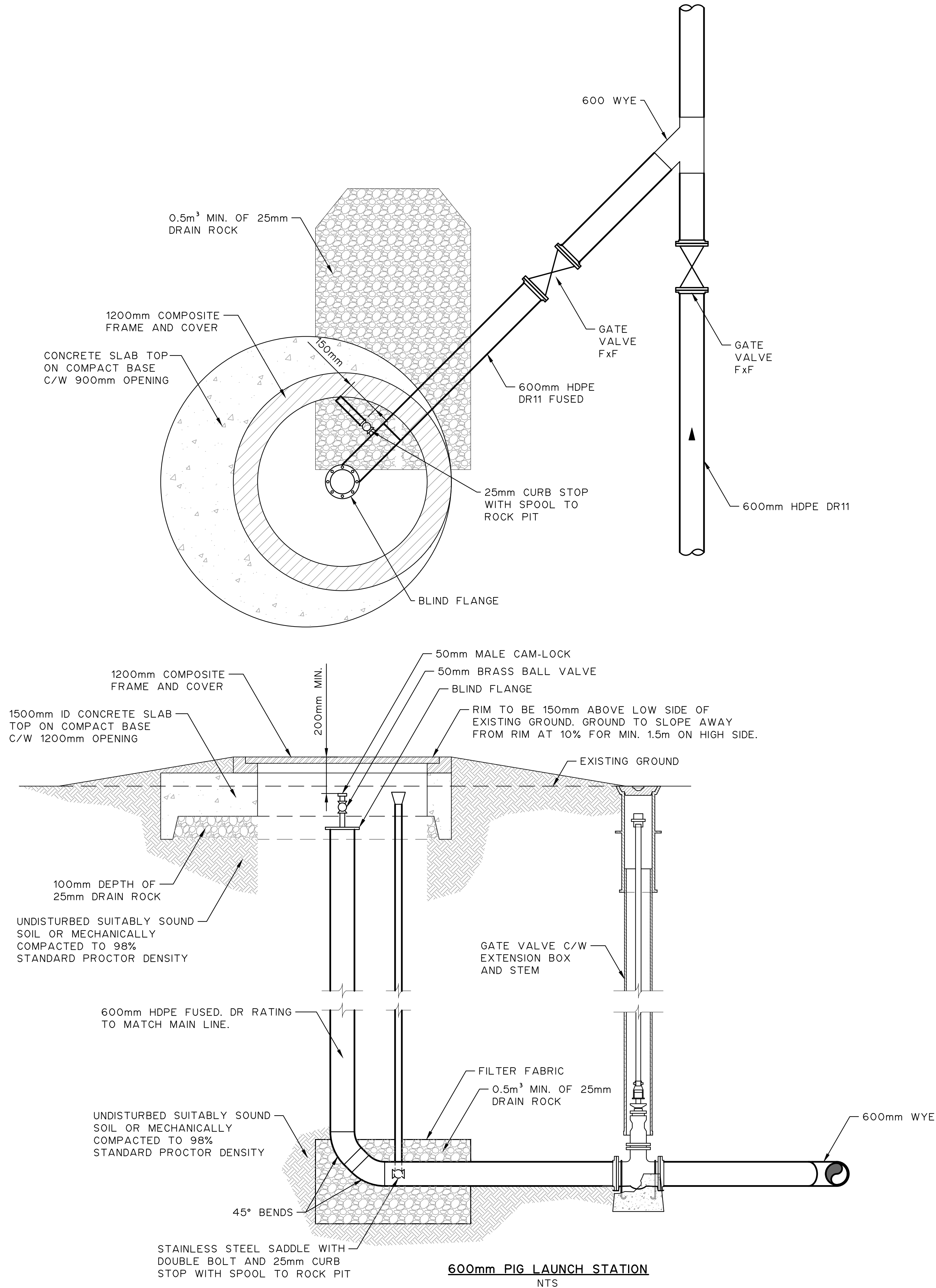
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FOOTHILLS OKOTOKS INTAKE PUMP STATION
THRUST BLOK DETAILS

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORW-01-C-DET-003	C

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Professional Seals

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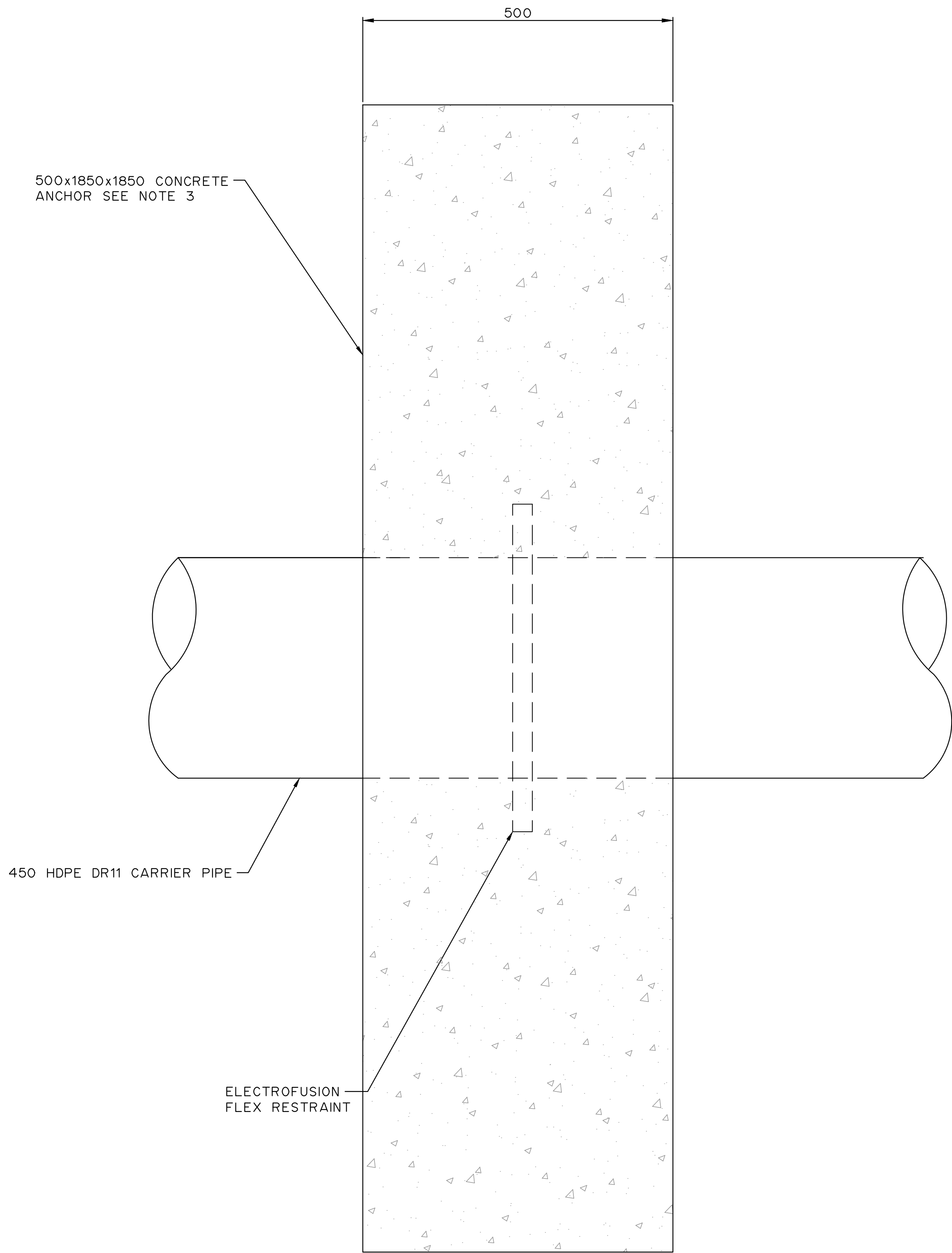
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**FOOTHILLS OKOTOKS INTAKE
PUMP STATION
PIG LAUNCH STATION**

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORW-01-C-DET-004	C

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CONCRETE ANCHOR DETAILS

NOTES:

1. FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, SYMBOLS AND ABBREVIATIONS REFER TO THE LEGEND AND ABBREVIATIONS DRAWINGS.
2. ALL ELEVATIONS ARE IN METERS. ALL DIMENSIONS AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. CONCRETE ANCHOR AS PER CITY OF CALGARY WATERWORKS CONSTRUCTION SHEET 58.

Professional Seals

Date	Issue / Revision	App
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FOOTHILLS OKOTOKS INTAKE
PUMP STATION
CONCRETE ANCHOR DETAIL

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORW-01-C-DET-005	C

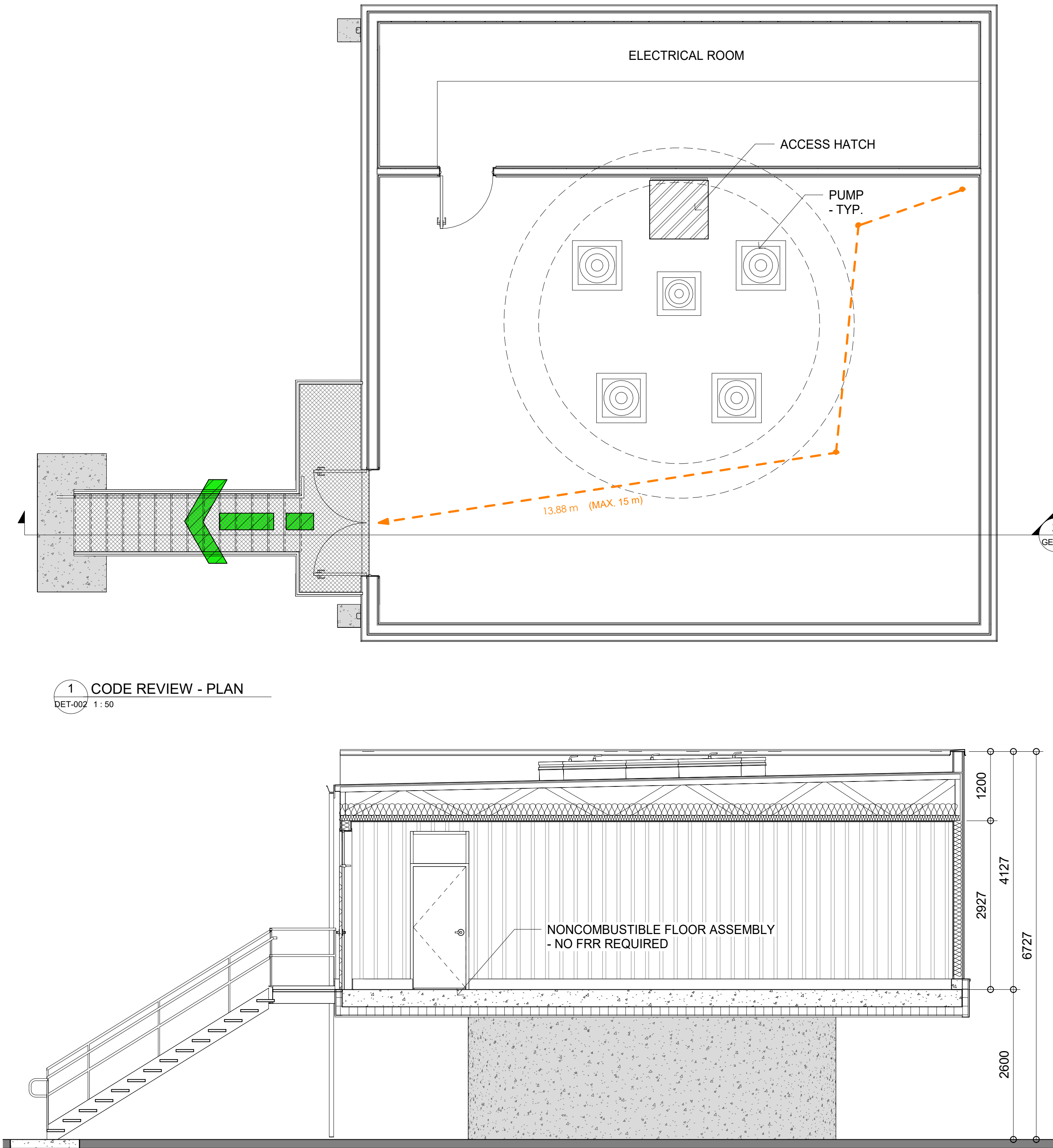
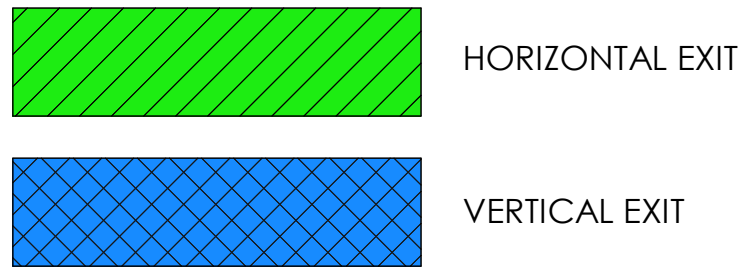
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O			
	WHEN SEPARATE SPECIFICATIONS ARE PROVIDED THOSE SPECIFICATIONS SUPERCEDE THE STANDARD NOTES																	
1	FIRE STOPPING : PRODUCT OPTIONS & SUBSTITUTIONS : VAPOUR & AIR BARRIERS : SHOP DRAWINGS : FIELD REPORTS :															1		
	GENERAL REQUIREMENTS				PRODUCT OPTIONS AND SUBSTITUTIONS				VAPOUR BARRIER				REGULAR FIELD PROGRESS REPORTS					
2	1. Provide firestopping systems to meet the requirements of the current building code referenced in code review.				1. Any proposed changes to the Contract / Construction documents by the contractor shall be submitted to the Architect for acceptance before being ordered or installed.				1. Polyethylene Film: to CAN/CGSB-51.34, 0.15 mm thick.				1. Shop drawings provide technical data specially prepared for work of this Contract; including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.			1. The contractor is responsible to provide regular progress reports with record photographs to the prime coordinating professional. Reports shall include current progress and the anticipated construction progress up to the next progress report.		
	2. STANDARDS				2. In making a substitution Contractor represents that:				2. Staples: to CAN/CSA B111, galvanized wire, minimum 6 mm leg.				2. Present shop drawings in a clear and thorough manner to appropriately illustrate the work.			CHANGES ON SITE		
	1. Underwriters Laboratories of Canada (ULC):				1. THEY have investigated substitute product or manufacturer, or both, and has determined that it meets this criteria:				3. Sealing Tape: minimum 60 mm width, polypropylene sheathing tape with acrylic adhesive, or duct tape of same width.				3. Identify field dimensions on drawings.			1. Construction on site that is not detailed on the consultant's drawings or accepted by the local approving authorities (development permit and building permit) shall not proceed until reviewed by the owner and consultants.		
	2. CAN/ULC S115-05 STANDARD METHOD OF FIRE TESTS OF FIRESTOP SYSTEMS				2. substitute products shall be the same type as, be capable of performing the same functions as, and meet or exceed the standards of quality and performance of the named product or products. Substitutions shall not require revisions to Contract Documents nor to work of Other Contractors.				4. Polyurethane Sealant: use one of the following:				4. Identify shop drawings by appropriate references to sheet, detail, schedule or room numbers.					
	2. ULC-FS-09 FIRESTOP SYSTEMS AND COMPONENTS 2009 EDITION				2. substitute manufacturers shall have capabilities comparable to those of the named Manufacturer(s). Substitutions shall not require revisions to Contract Documents nor to work of Other Contractors.				1. One component, to CAN/CGSB-19.13, class 2, low temperature and having VOC content less than the VOC limits of State of California's South Coast Air Quality Management District Rule #1168, June 2006.				SUBMITTAL PREPARATION					
3	3. Warnock Hersey (WH) Certification Listings, current edition				3. THEY waive claims for additional costs and time caused by substitution which may subsequently become apparent.				2. Multi-component, to CAN/CGSB-19.24, type 2 and having VOC content less than the VOC limits of State of California's South Coast Air Quality Management District Rule #1168, June 2006.				1. Review, date and sign, shop drawings, product data and samples, prior to submission.			FIELD REVIEWS GENERAL NOTES		
	4. REQUIREMENTS				3. Submission procedure:				INSTALLATION				2. Determine and verify:			1. The intent of field reviews is to review the work at appropriate intervals in order to ensure the design will comply with the applicable Building Code and other regulations made pursuant to the Safety Codes Act and applicable codes.		
	1. Firestopping shall provide a rating EQUAL TO THE FIRE RATING OF THE ASSEMBLY, when tested to ULC S115, for a rating period applicable to the fire separation.				1. Contractor shall submit all information after contractor has reviewed all substitution information on the same basis as shop drawings.				1. Install sheet polyethylene where indicated on drawings, as required to form a continuous vapour retarder on warm side of the building envelope directly beneath and supported by interior finish materials.				1. Field measurements.			2. The conducting of field reviews does not relieve the contractor of the responsibility to construct the work in accordance with the requirements of the contract documents and all applicable codes.		
	2. Firestopping of electrical and communications cables shall be easily re-enterable and re-sealable with negligible risk of damage to cables, and shall not require de-rating of electrical cables.				2. Contractor shall note all required modifications necessitated by the substitution.				2. Use sheets of largest practical size to minimize joints. Join sheets over solid, continuous backing, lapping sheets minimum 150 mm.				2. Field construction criteria.			3. Field reviews do not replace inspections by the authority having jurisdiction.		
	3. Firestopping used to fill voids in floors having openings 100 mm diameter or larger, and which are accessible to the public, shall support floor design loading.				3. Submit the substitution in the same way as a Shop drawing are submitted, noting that it is a proposed substitution.				3. Mechanically fasten or adhere polyethylene sheet to substrates.				3. Catalogue numbers and similar data.			4. A minimum of 2 working days' notice is required and the work should be substantially complete at the time of inspection. Additional inspection costs required by incomplete work shall be borne by the contractor.		
4	4. COORDINATION:								4. Repair punctures and tears with sealing tape. Where punctures and tears are extensive replace entire damaged section, overlapping perimeter framing on all sides.				4. Conformance with Contract Documents.			5. Completion of foundations and foundation wall insulation prior to backfill.		
	1. Coordinate construction of fire separations and penetrations through fire separations with work of this Section.								5. Seal sheet polyethylene to air/vapour hats installed over electrical boxes and other semi-recessed devices, using sealing tape or 15 mm diameter bead of polyurethane sealant.				3. Coordinate each submittal with requirements of work and Contract documents. Individual drawings will not be reviewed until all related shop drawing and product data are available.			6. Completion of Radon membrane, cage, piping & venting prior to pouring main floor slab.		
	2. Ensure penetrations have been completed prior to installing firestopping.								6. Seal penetrations through air/vapour hats using polyurethane sealant. Ensure sealant extrudes to both sides of penetrations.				4. Notify the consultant, in writing, on the submittal and at the time of submission, of deviations from requirements of Contract Documents.			7. Pre-Occupancy review prior and completion of any deficiencies.		
	3. Install firestopping prior to insulation of piping, unless insulation is part of a tested firestop system meeting requirements.								7. Seal along full perimeter and edges with polyurethane sealant.				3. Submittals shall include:			8. Unless deficiencies have been reviewed on site and confirmed to be completed in previous field reviews the contractor shall submit photographs of all completed deficiencies prior to the release of professional schedules.		
	5. Submit shop drawings of ALL firestopping systems and include manufacturer's printed product literature, specifications and data sheets for each firestopping system to be used Confirming the fire rating and testing standard.								8. Windows and storefront frame perimeters: Lap vapour retarder into all exterior rough openings and extend to at least 25mm past interior face of window and storefront frames. Maintain continuous barrier in all corners of rough opening. Seal with sealant and staples.				1. Date.					
	6. DELIVERY, STORAGE, AND HANDLING								9. Wall Roof Junction: Lap vapour retarder from wall to roof vapour retarder with minimum100mm lap. Seal with sealant and staple.				2. Project title and number.					
	1. Deliver materials in original, unopened packaging bearing manufacturer's seals and labels intact.								10. Press steel frame perimeters: trim vapour retarder to the rough opening and seal to SBS membrane with vapour barrier tape. SBS membrane should have already been installed to the full perimeter of the rough opening and should be installed over the full depth of the wall studs.				3. Contractor's name and address.					
	2. Store materials off ground, under cover and away from moisture.												4. Number of each shop drawing, product data and sample submitted.					
	PRODUCTS								AIR BARRIERS				5. Other pertinent data.					
5	1. SYSTEMS AND MATERIALS								The installation of the air barriers are to follow manufacturers instruction and recommendations.				3. Submittals shall include:			REQUIRED ARCHITECTURAL FIELD REVIEWS		
	1. Firestopping systems as listed under ULC-FS-09 Firestop Systems and Components 2009 Edition, or as listed in WH Listings under "Through-Penetration Firestopping Systems".								Self-adhered air barriers				1. Date and revision dates.			1. Completion of foundations and foundation wall insulation prior to backfill.		
	2. Firestopping materials, whether used in a tested system or not, shall be:								1. Henry Blueskin VP160 Air barrier system .				2. Project title and number.			2. (Where a basement is part of a project) Completion of waterproofing membrane and weeping tile, prior to installing drainage or protection board over the waterproofing membrane and gravel over the weeping tile.		
	1. listed under ULC-FS-09 or under WH Listings,								2. Soprema Sopraseal Stick VP.				3. Name of:			3. Completion of Radon membrane, cage, piping & venting prior to pouring main floor slab.		
	2. labeled with applicable ULC or WH label, and								Liquid applied air barriers:				1. Contractor.			4. One window installation mock-up prior to installing windows.		
	3. compatible with applicable substrates and openings.								1. Dryvit Backstop NT and Aquaflash in combination with Dryvit EIFS system.				2. Subcontractor.			1. Installation mock-up of window to show all required flashings, caulking detailing, air and vapour barrier components relationships for the approval by the Consultant.		
6	3. Provided that all other specified requirements can be met, use any of the following products, either singly or in combination:								2. DuraBond Durex Blue Shield in combination with DuraBond EIFS system.				3. Supplier.			2. Mock-up may become part of the finished product.		
	1. Elastomeric sealant.								3. DuRock Cement Bear and Polar Bear in combination with DuRock PUCCS EIFS system				4. Manufacturer.			3. One (1) mock-up is required each phase of the project if construction ceases between completed phases or if installation crew changes.		
	2. Elastomeric coating.								Mechanically fastened air barriers:				5. Name of detailer when details not prepared by Contractor, sub-contractor, or supplier.			4. Window manufacturer must be present at window mock-up evaluation.		
	3. Mineral fibre.								1. Typar Metrowrap functioning as an air barrier assembly with approved fasteners and tape to all joints, overlaps and perimeter edges of the membrane.							5. Completion of exterior wall framing with insulation and vapour barrier complete prior to applying gypsum board.		
	4. Mortar.								2. Hal-Tex "60 minute" building paper, two-layer application, with approved fasteners tape to all joints, overlaps and perimeter edges of the paper.							6. Completion of exterior air barrier / rain resistive membrane and flashings prior to installation of exterior finishes.		
	5. Intumescent putty.															7. Pre-Occupancy review prior and completion of any deficiencies.		
	6. Poured-in-place silicone foam.															8. Unless deficiencies have been reviewed on site and confirmed to be completed in previous field reviews the contractor shall submit photographs of all completed deficiencies prior to the release of professional schedules.		
	7. Preformed silicone foam.																	
	8. Multi-cable transit system.																	
	9. Any other product which meets all other specified requirements.																	
	4. Primer: as recommended by firestopping manufacturer for applicable substrate.																	
7	EXECUTION												RESPONSIBILITY FOR ERRORS, OMISSIONS AND DEVIATIONS					
	1. VERIFICATION OF CONDITIONS												1. The review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents and building code requirements.					
	1. Examine condition of voids to be filled to ensure suitability for firestop systems.																	
	2. Verify installation of service penetrations and adjacent construction has been completed.																	
8	2. PREPARATION																	
	1. Prepare substrates and surfaces to a clean, dry, and frost free condition, ready to receive firestopping.																	
	2. Prime substrates and surfaces to manufacturer's recommendations.																	
	3. INSTALLATION																	
	1. Provide tested firestopping systems meeting the fire rating of the assembly it is penetrating wherever the continuity of a fire separation is interrupted by mechanical, electrical or other service penetrations, or by any other openings, gaps or discontinuities.																	
	2. Install tested firestopping systems in accordance with manufacturer's recommendations and in strict conformance with tested systems.																	
	3. In locations for which there are no applicable tested firestopping systems, provide firestopping materials where indicated and as detailed on drawings. Install materials in accordance with manufacturer's recommendations.																	
	4. Where applicable, neatly tool or trowel firestopping surfaces remaining exposed and make flush with surrounding exposed surfaces.																	
9																		

NATIONAL BUILDING CODE - 2023 ALBERTA EDITION DATA										BUILDING CODE REFERENCE
1	PART 3 / 9		☒ PART 3 APPLIES ☐ PART 9 APPLIES							
1	PROJECT DESCRIPTION:		☒ NEW							

LEGEND :

- FIRE SEPARATION WITH 45 MIN. FIRE RESISTANT RATING
- - - FIRE SEPARATION WITH 1 HR. FIRE RESISTANT RATING
- ... FIRE SEPARATION WITH 2 HR. FIRE RESISTANT RATING
- > PATH OF TRAVEL



1 CODE REVIEW - PLAN
DET-002 1 : 50

2 CODE REVIEW - SECTION
GE-002 1 : 50

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Ian Moxon
Architect

MPE
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#	Date	Issue/ Revision	App.
A	240716	CLIENT REVIEW	IM
B	240815	60% REVIEW	IM
C	241009	CLIENT REVIEW	IM
D	241127	ISSUED FOR 75%	IM
E	241129	FOR DESIGN ASSIST RFP	IM

FOOTHILLS COUNTY
Okotoks
Historic Place Subdivision Phase 1

URBAN
systems
Scale As indicated
Quality Control by IM
Designed by KP
Drawn by

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CODE REVIEW
Sheet Number of
Project Number
29121-005-09
Drawing Number Revision
FORWP-02-A-GE-002 E

NOT FOR CONSTRUCTION

NATIONAL BUILDING CODE - 2020 NATIONAL ENERGY CODE DATA MATRIX				BUILDING CODE REFERENCE
3.01	PROJECT DESCRIPTION:	☒ NEW ☐ ADDITION ☐ RENOVATION		
3.02	COMPLIANCE PATH:	☐ PRESCRIPTIVE ☒ TRADE-OFF ☐ PERFORMANCE PATH		
3.03	LOCATION:	SEE DATA TABLE		
3.04	ZONE:	SEE DATA TABLE		
3.05	FENESTRATION & DOOR AREA:	SEE DATA TABLE		
3.06	ABOVE GROUND OPAQUE ASSEMBLIES:	WALL ROOF FLOORS	0.240 W/(m2.K) (4.17 RSI) MIN. 0.138 W/(m2.K) (7.25 RSI) MIN. 0.156 W/(m2.K) (6.41 RSI) MIN.	
3.07	ASSEMBLIES IN CONTACT WITH THE GROUND:	WALL ROOF FLOORS	0.284 W/(m2.K) (3.52 RSI) MIN. 0.284 W/(m2.K) (3.52 RSI) MIN. 0.757 W/(m2.K) MIN. FOR 1.2M AROUND THE PERIMETER (1.32RSI)	
3.08	FENESTRATION:	1.73 W/(m2.K) (0.58 RSI) MIN.		
3.09	DOORS	1.90 W/(m2.K) (0.53 RSI) MIN.		
3.10	ACCESS HATCHES	1.90 W/(m2.K) (0.53 RSI) MIN.		
3.11	SKYLIGHTS	2.41 W/(m2.K) (0.41 RSI) MIN.		

4	
---	--

DATA TABLE			
LOCATION			
OKOTOKS, AB	HDD =	4920	
	ZONE =	6	
	FDWR =	0.339	

VERTICAL AREAS	(SF)	(SM)
NORTH ELEVATION OPAQUE WALL AREA	338.80	31.48
NORTH ELEVATION FDN WALL ABOVE GRADE AREA	0.00	0.00
NORTH ELEVATION WINDOW AREA	0.00	0.00
NORTH ELEVATION ALUMINUM DOOR AREA	0.00	0.00
NORTH ELEVATION STEEL DOOR AREA	0.00	0.00
NORTH ELEVATION OVERHEAD DOOR AREA	0.00	0.00
TOTAL NORTH ELEVATION AREA	338.80	31.48

EAST ELEVATION OPAQUE WALL AREA	280.70	26.08
EAST ELEVATION FDN WALL ABOVE GRADE AREA	0.00	0.00
EAST ELEVATION WINDOW AREA	0.00	0.00
EAST ELEVATION ALUMINUM DOOR AREA	0.00	0.00
EAST ELEVATION STEEL DOOR AREA	58.10	5.40
EAST ELEVATION OVERHEAD DOOR AREA	0.00	0.00
TOTAL EAST ELEVATION AREA	338.80	31.48

HORIZONTAL AREAS	(SF)	(SM)
FLOOR SLAB AREA	0.00	0.00
FLOOR AREA ABOVE GRADE	932.60	86.64
TOTAL FLOOR AREA	932.60	86.64
ROOF AREA	1171.80	108.86
SKYLIGHT AREA	0.00	0.00
HATCH AREA	73.00	6.78
TOTAL ROOF AREA	1244.80	115.65

LINEAR THERMAL BREAKS	(F)	(M)
TOTAL NORTH WALL FENESTRATION PERIMETER	0.00	0.00
TOTAL NORTH WALL VERTICAL CORNER	19.20	5.85
TOTAL NORTH WALL INTERMEDIARY FLOOR	35.30	10.76
TOTAL EAST WALL FENESTRATION PERIMETER	24.30	7.41
TOTAL EAST WALL VERTICAL CORNER	19.20	5.85
TOTAL EAST WALL INTERMEDIARY FLOOR	35.30	10.76
TOTAL SOUTH WALL FENESTRATION PERIMETER	0.00	0.00
TOTAL SOUTH WALL VERTICAL CORNER	19.20	5.85
TOTAL SOUTH WALL INTERMEDIARY FLOOR	35.30	10.76
TOTAL WEST WALL FENESTRATION PERIMETER	0.00	0.00
TOTAL WEST WALL VERTICAL CORNER	19.20	5.85
TOTAL WEST WALL INTERMEDIARY FLOOR	35.30	10.76

ASSEMBLY USED IN CALCULATIONS			
		RSI	U
WALL ABOVE GRADE	W3	2.987	0.335
ROOF	R1	7.411	0.135
FLOOR ABOVE GRADE	F1	4.417	0.226

VERTICAL AREAS	(SF)	(SM)
SOUTH ELEVATION OPAQUE WALL AREA	338.80	31.48
SOUTH ELEVATION FDN WALL ABOVE GRADE AREA	0.00	0.00
SOUTH ELEVATION WINDOW AREA	0.00	0.00
SOUTH ELEVATION ALUMINUM DOOR AREA	0.00	0.00
SOUTH ELEVATION STEEL DOOR AREA	0.00	0.00
SOUTH ELEVATION OVERHEAD DOOR AREA	0.00	0.00
TOTAL SOUTH ELEVATION AREA	338.80	31.48

WEST ELEVATION OPAQUE WALL AREA	338.80	31.48
WEST ELEVATION FDN WALL ABOVE GRADE AREA	0.00	0.00
WEST ELEVATION WINDOW AREA	0.00	0.00
WEST ELEVATION ALUMINUM DOOR AREA	0.00	0.00
WEST ELEVATION STEEL DOOR AREA	0.00	0.00
WEST ELEVATION OVERHEAD DOOR AREA	0.00	0.00
TOTALWEST ELEVATION AREA	338.80	31.48

TOTAL AREAS	(SF)	(SM)
VERTICAL OPAQUE	1297.10	120.50
VERTICAL DOORS	58.10	5.40
VERTICAL FENESTRATIONS	0.00	0.00
VERT. FENESTRATIONS/DOORS	58.10	5.40
% VERT. OPENINGS	4.3%	
HORIZONTAL OPAQUE	2104.40	195.51
HORIZ. FENESTRATIONS/DOORS	73.00	6.78
% HORIZ. OPENINGS	3.4%	

THERMAL POINT BREAKS	NUMBER
NORTH ELEVATION THERMAL POINT BREAKS	
EAST ELEVATION THERMAL POINT BREAKS	
SOUTH ELEVATION THERMAL POINT BREAKS	
WEST ELEVATION THERMAL POINT BREAKS	

THERMAL BRIDGING EFFECTIVE RSI			
		RSI	U
NORTH ELEVATION		2.929	0.341
EAST ELEVATION		2.555	0.391
SOUTH ELEVATION		2.929	0.341
WEST ELEVATION		2.929	0.341

NOTE: ALL SHOP DRAWINGS TO PROVIDE ENERGY CODE INFORMATION IN METRIC UNITS		
3.12	AIR LEAKAGE:	3.2.4
3.12.1	THE BUILDING ENVELOPE SHALL BE DESIGNED AND CONSTRUCTED WITH A CONTINUOUS AIR BARRIER SYSTEM TO CONTROL AIR LEAKAGE INTO AND OUT OF THE CONDITIONED SPACE AT A NORMALIZED RATE NOT MORE THAN 1.5 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. OR AIR BARRIER ASSEMBLIES SHALL HAVE AN AIR LEAKAGE RATE OF NOT MORE THAN 0.20 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. FENESTRATIONS 1. METAL AND GLASS WALLS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 0.20 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. 2. FIXED WINDOWS AND SKYLIGHTS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 0.20 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. 3. OPERABLE WINDOWS AND SKYLIGHTS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 0.50 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. DOORS 1. UNLESS SPECIFIED IN (2. & 3.) ALL DOORS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 0.50 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. 2. REVOLVING DOORS, AUTOMATIC COMMERCIAL SLIDING DOORS (INCLUDING RESPECTIVE FIXED SECTIONS) AND OVERHEAD DOORS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 5.0 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. 3. MAIN EXTERIOR DOORS ARE PERMITTED TO HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 5.0 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa PROVIDED THAT THE TOTAL AREA OF SUCH DOORS DOES NOT EXCEED 2% OF THE GROSS WALL AREA. 4. LOADING DOCKS THAT INTERFACE WITH TRUCK BOXES SHALL HAVE WEATHER SEALS THAT SEAL THE TRUCK BOX TO THE BUILDING. 5. ROOF HATCHES TO COMPLY WITH DOOR AIR LEAKAGE RATE NOT GREATER THAN 0.50 L/(s*m²) AT A PRESSURE DIFFERENTIAL OF 75Pa. FIREPLACE DOORS FIREPLACES SHALL BE EQUIPPED WITH DOORS OR ENCLOSURES TO RESTRICT AIR MOVEMENT THROUGH THE CHIMNEY WHEN THE FIREPLACE IS NOT IN USE.	

STATEMENT OF COMPLIANCE - NATIONAL ENERGY CODE OF CANADA FOR BUILDINGS 2020 SIMPLE TRADE-OFF CALCULATIONS FOR ABOVE-GROUND BUILDING ENVELOPE ASSEMBLIES

DESCRIPTION OR IDENTIFICATION OF BUILDING ENVELOPE ASSEMBLY	VERTICAL PORTIONS		HORIZONTAL PORTIONS				MAXIMUM ALLOWABLE THERMAL TRANSMITTANCE OF ASSEMBLY IN REFERENCE BUILDING (PRESCRIPTIVE VALUES): Uir W/(m2k)	THERMAL TRANSMITTANCE OF ASSEMBLY IN PROPOSED BUILDING Uip W/(m2k)	AREA OF ASSEMBLY IN REFERENCE BUILDING Air (m2) OPAQUE = TOTAL WALL AREA X (1- FDWR) WINDOWS = TOTAL WALL AREA X FDWR	AREA OF ASSEMBLY IN PROPOSED BUILDING Air (m2)	REFERENCE UirX Air (W/K)	PROPOSED UipX Aip (W/K)	UirX Air - UipXAip
	WALL	FENESTRATION	DOOR	ROOF	HATCH	SKYLIGHT							
NORTH OPAQUE WALL	W						0.240	0.331	20.82	31.48	5.00	10.42	-5.42
NORTH FDN WALL	W						0.240	0.000		0.00	0.00	0.00	0.00
NORTH WALL WINDOWS		G					1.730	1.900	10.66	0.00	18.44	0.00	18.44
NORTH WALL ALUMINIUM DOORS			D				1.900	3.100		0.00	0.00	0.00	0.00
NORTH WALL STEEL DOORS							1.900	1.900		0.00	0.00	0.00	0.00
NORTH WALL OVERHEAD DOORS			D				1.900	1.900		0.00	0.00	0.00	0.00
EAST OPAQUE WALL	W						0.240	0.381	20.82	26.08	5.00	9.93	-4.94
EAST FDN WALL	W						0.240	0.000		0.00	0.00	0.00	0.00
EAST WALL WINDOWS		G					1.730	1.900	10.66	0.00	18.44	0.00	18.44
EAST WALL ALUMINIUM DOORS			D				1.900	3.100		0.00	0.00	0.00	0.00
EAST WALL STEEL DOORS							1.900	1.900		5.40	0.00	10.26	-10.26
EAST WALL OVERHEAD DOORS			D				1.900	1.900		0.00	0.00	0.00	0.00
SOUTH OPAQUE WALL	W						0.240	0.331	20.82	31.48	5.00	10.42	-5.42
SOUTH FDN WALL	W						0.240	0.000		0.00	0.00	0.00	0.00
SOUTH WALL WINDOWS		G					1.730	1.900	10.66	0.00	18.44	0.00	18.44
SOUTH WALL ALUMINIUM DOORS			D				1.900	3.100		0.00	0.00	0.00	0.00
SOUTH WALL STEEL DOORS							1.900	1.900		0.00	0.00	0.00	0.00
SOUTH WALL OVERHEAD DOORS			D				1.900	1.900		0.00	0.00	0.00	0.00
WEST OPAQUEWALL	W						0.240	0.331	20.82	31.48	5.00	10.42	-5.42
WEST FDN WALL	W						0.240	0.000		0.00	0.00	0.00	0.00
WEST WALL WINDOWS		G					1.730	1.900	10.66	0.00	18.44	0.00	18.44
WEST WALL ALUMINIUM DOORS			D				1.900	3.100		0.00	0.00	0.00	0.00
WEST WALL STEEL DOORS							1.900	1.900		0.00	0.00	0.00	0.00
WEST WALL OVERHEAD DOORS			D				1.900	1.900		0.00	0.00	0.00	0.00
TOTALS									125.90	125.90	93.75	51.44	42.31
VERTICAL TRADE OFF RESULTS											>0 OK, <0 NG		OK
ROOF			R				0.138	0.13	198.24	108.86	27.36	14.69	12.67
SKYLIGHTS					S		2.41	1.90	4.05	0.00	9.75	0.00	9.75
HATCH					H		1.3	0.28	0.00	6.78	0.00	1.93	-1.93
EXTERIOR FLOOR ABOVE GRADE						F	0.156	0.23	0.00	86.64	0.00	19.61	-19.61
TOTALS									202.29	202.29	37.11	36.23	0.88
HORIZONTAL TRADE OFF RESULTS											>0 OK, <0 NG		OK
IS BUILDING ENVELOPE COMPLIANT WITH SIMPLE TRADE-OFF PATH? (Uip x Aip <= TOTAL Uir x Air AND Aip = Air)													
YES													

11	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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Professional Seals

#	Date	Issue/ Revision	App.
A	240716	CLIENT REVIEW	IM
B	240815	60% REVIEW	IM
C	241009	CLIENT REVIEW	IM
D	241127	ISSUED FOR 75%	IM
E	241129	FOR DESIGN ASSIST RFP	IM



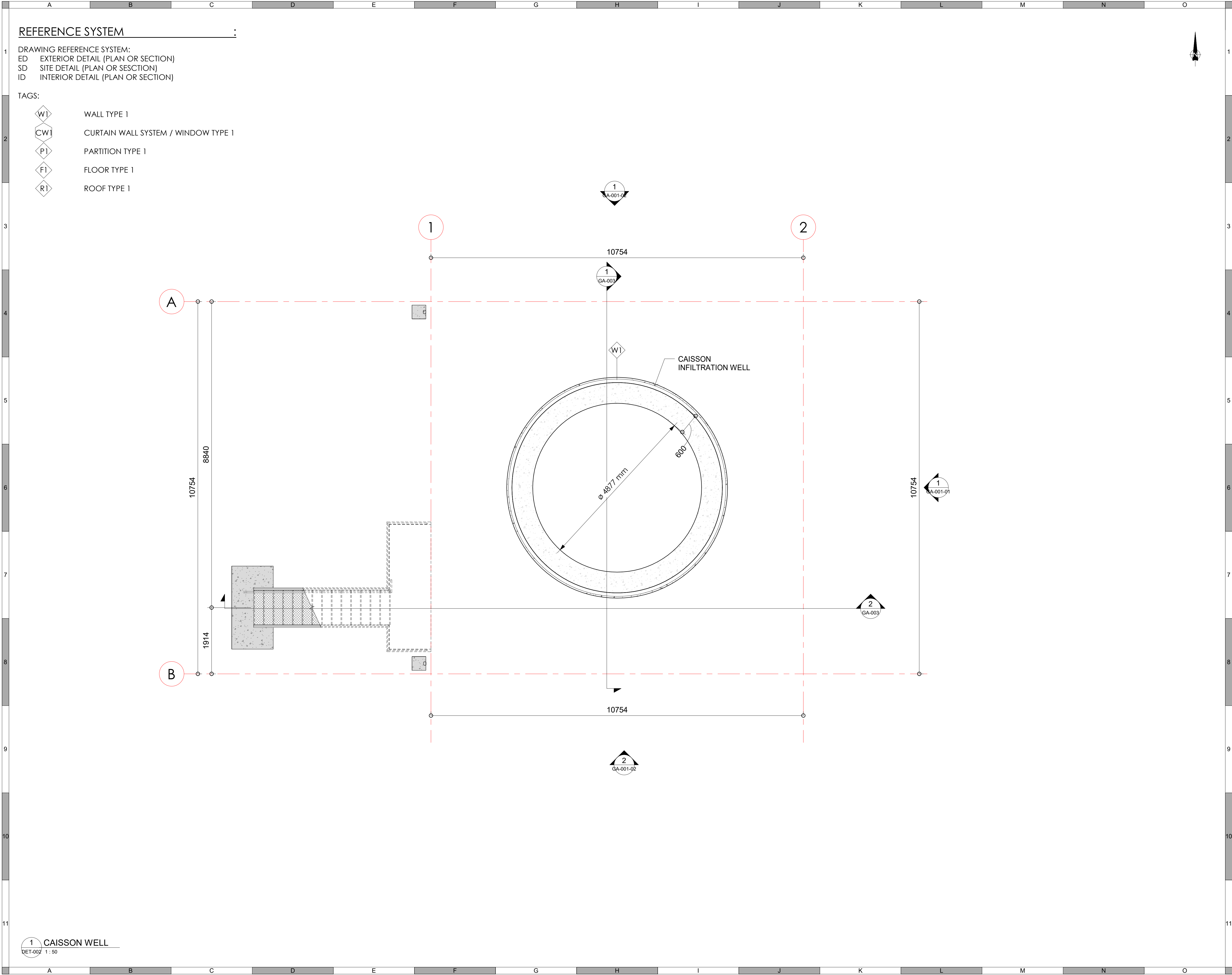
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Quality Control by IM
Designed by KP
Drawn by

FOOTHILLS OKOTOKS INTAKE PUMP STATION
ENERGY CODE

Sheet Number of
Project Number
29121-005-09
Drawing Number Revision
FORWP-02-A-GE-003 E

NOT FOR CONSTRUCTION



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E	241129	FOR DESIGN ASSIST RFP	IM



URBAN systems	
Scale	As indicated
Quality Control by	IM
Designed by	
Drawn by	KP

FOOTHILLS OKOTOKS INTAKE PUMP STATION CAISSON WELL	
Sheet Number	of
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-02-A-LAY-001	E

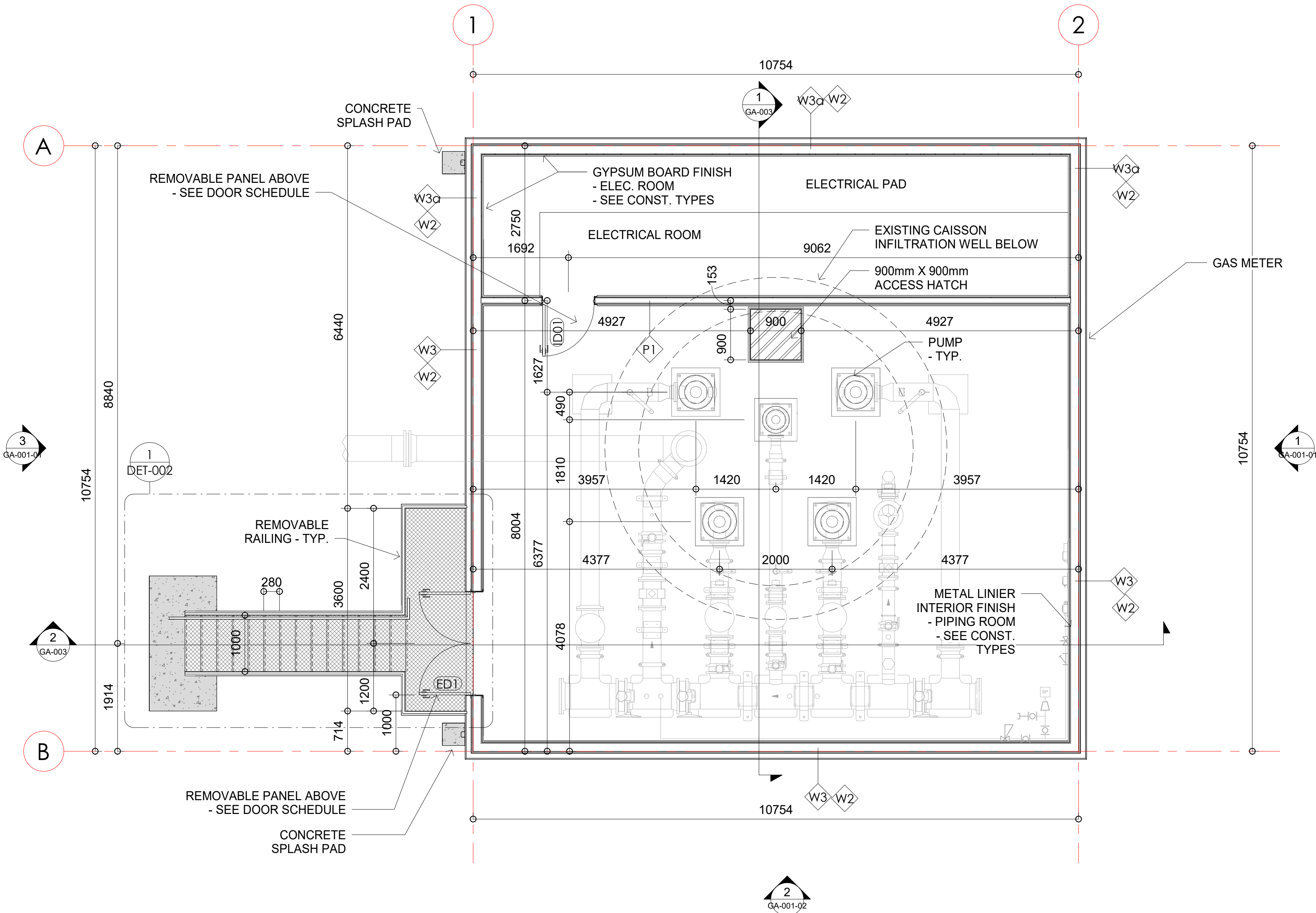
NOT FOR CONSTRUCTION

REFERENCE SYSTEM :

DRAWING REFERENCE SYSTEM:
ED EXTERIOR DETAIL (PLAN OR SECTION)
SD SITE DETAIL (PLAN OR SECTION)
ID INTERIOR DETAIL (PLAN OR SECTION)

TAGS:

- W1 WALL TYPE 1
CW1 CURTAIN WALL SYSTEM / WINDOW TYPE 1
P1 PARTITION TYPE 1
F1 FLOOR TYPE 1
R1 ROOF TYPE 1



1 MAIN FLOOR
DET-002 1:50

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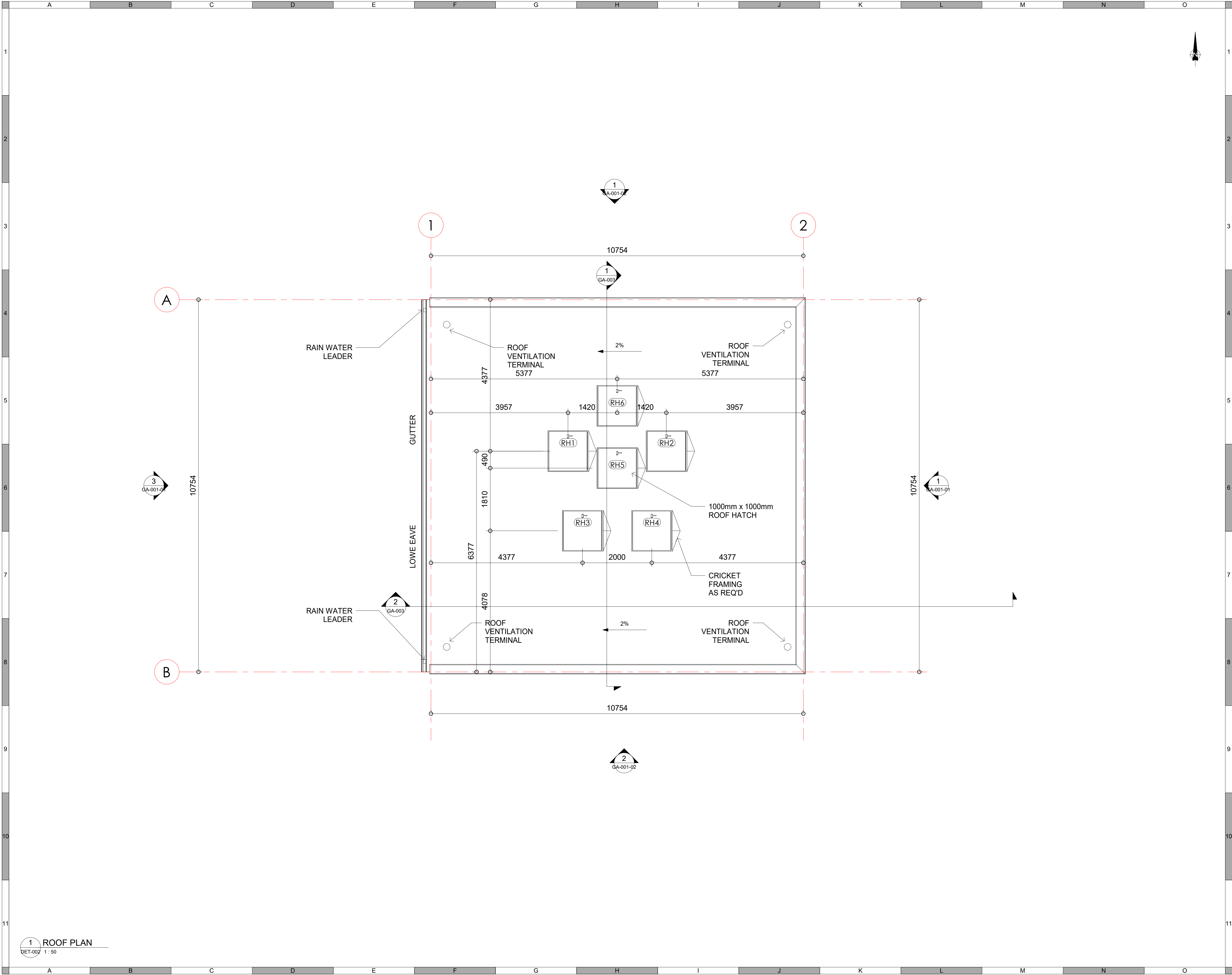
#	Date	Issue/ Revision	App.
A	240716	CLIENT REVIEW	IM
B	240815	60% REVIEW	IM
C	241009	CLIENT REVIEW	IM
D	241127	ISSUED FOR 75%	IM
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systems
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Drawn by

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
MAIN FLOOR
Sheet Number of
Project Number
29121-005-09
Drawing Number Revision
FORWP-02-A-LAY-002 E

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1 ROOF PLAN
DET-002 1 : 50

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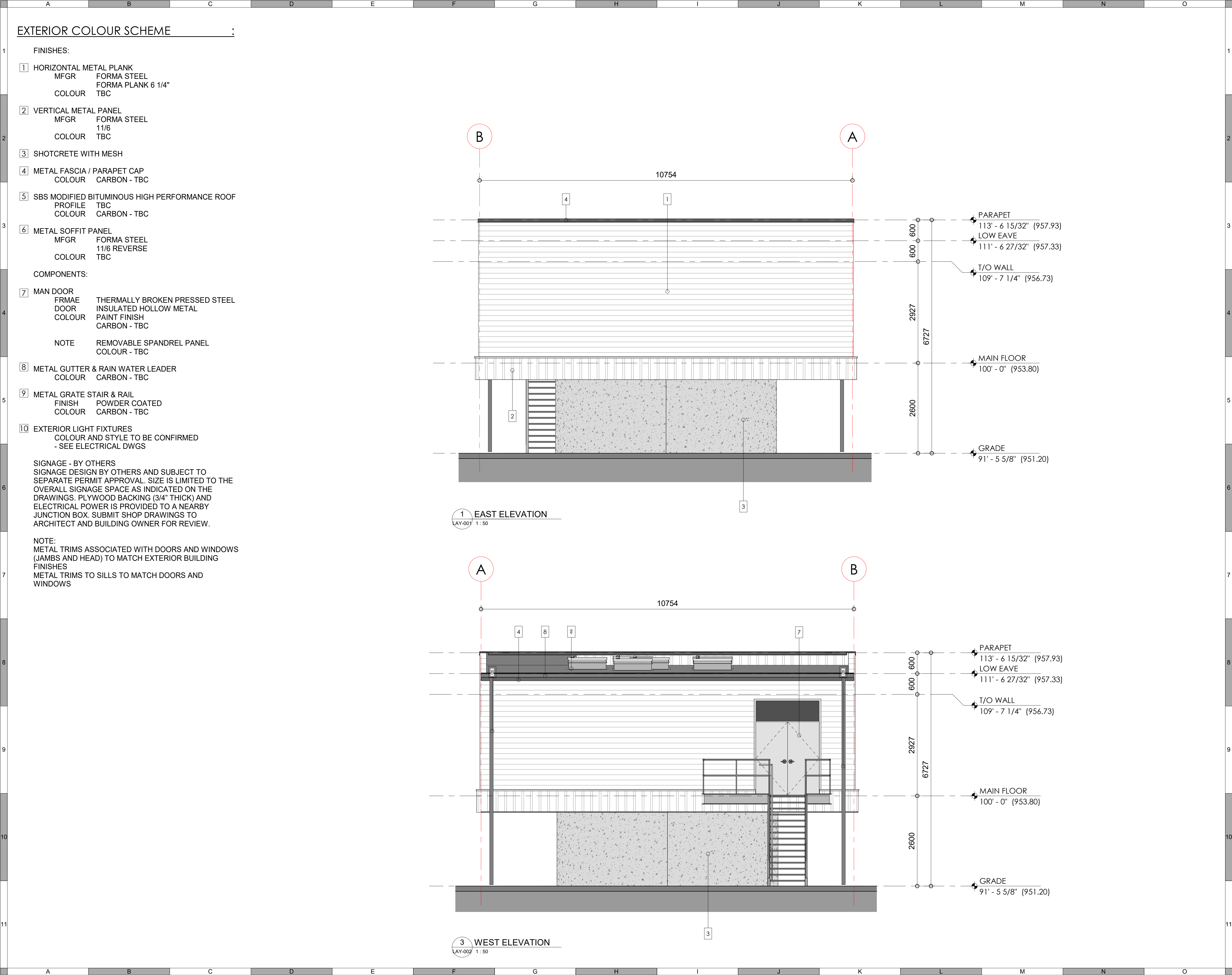


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FOOTHILLS OKOTOKS INTAKE PUMP STATION ROOF PLAN	
Sheet Number	of
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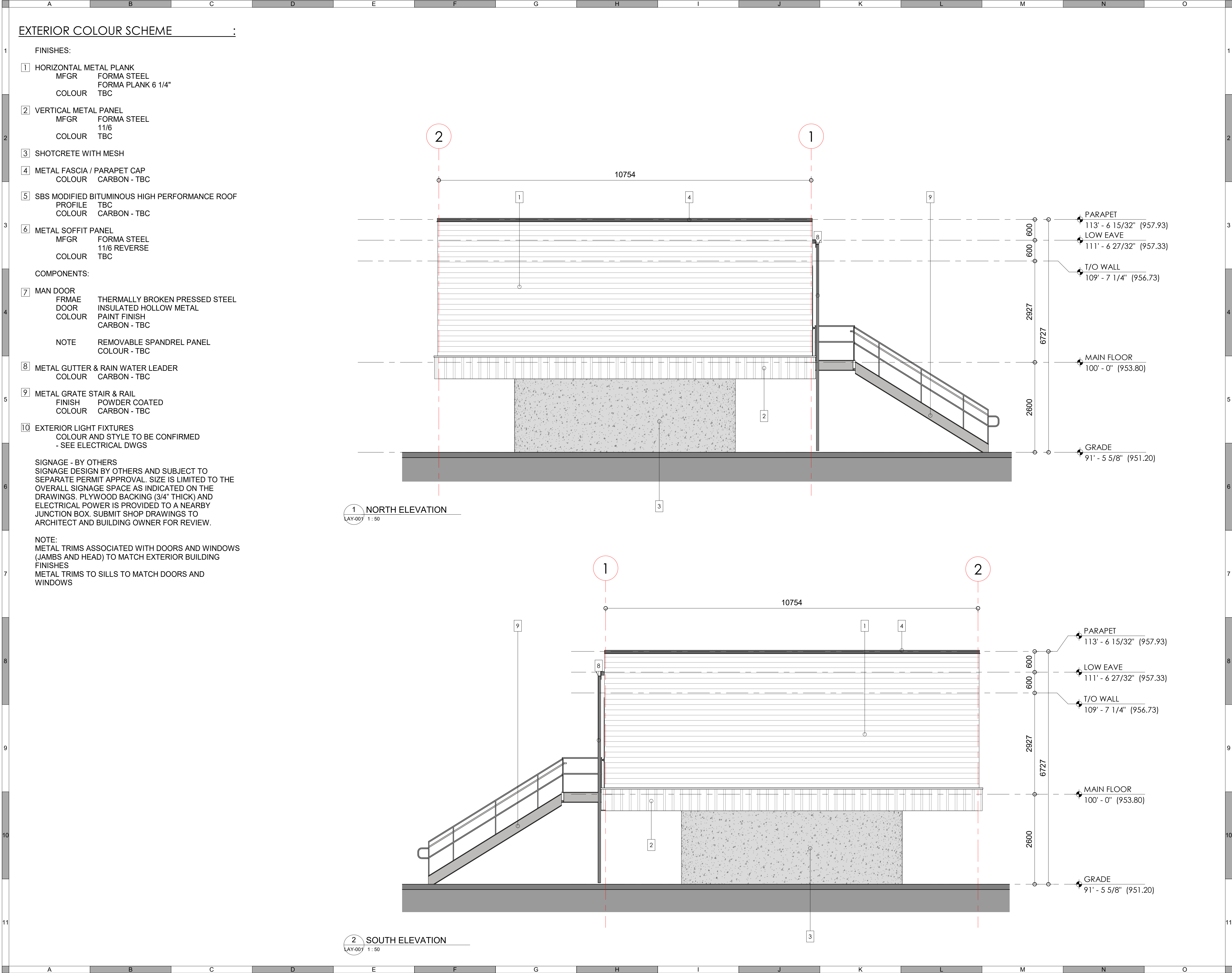
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FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ELEVATIONS

Sheet Number of
Project Number
29121-005-09
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FOOTHILLS
COUNTY
Okotoks
Historic Place, Outstanding Future

URBAN
systems

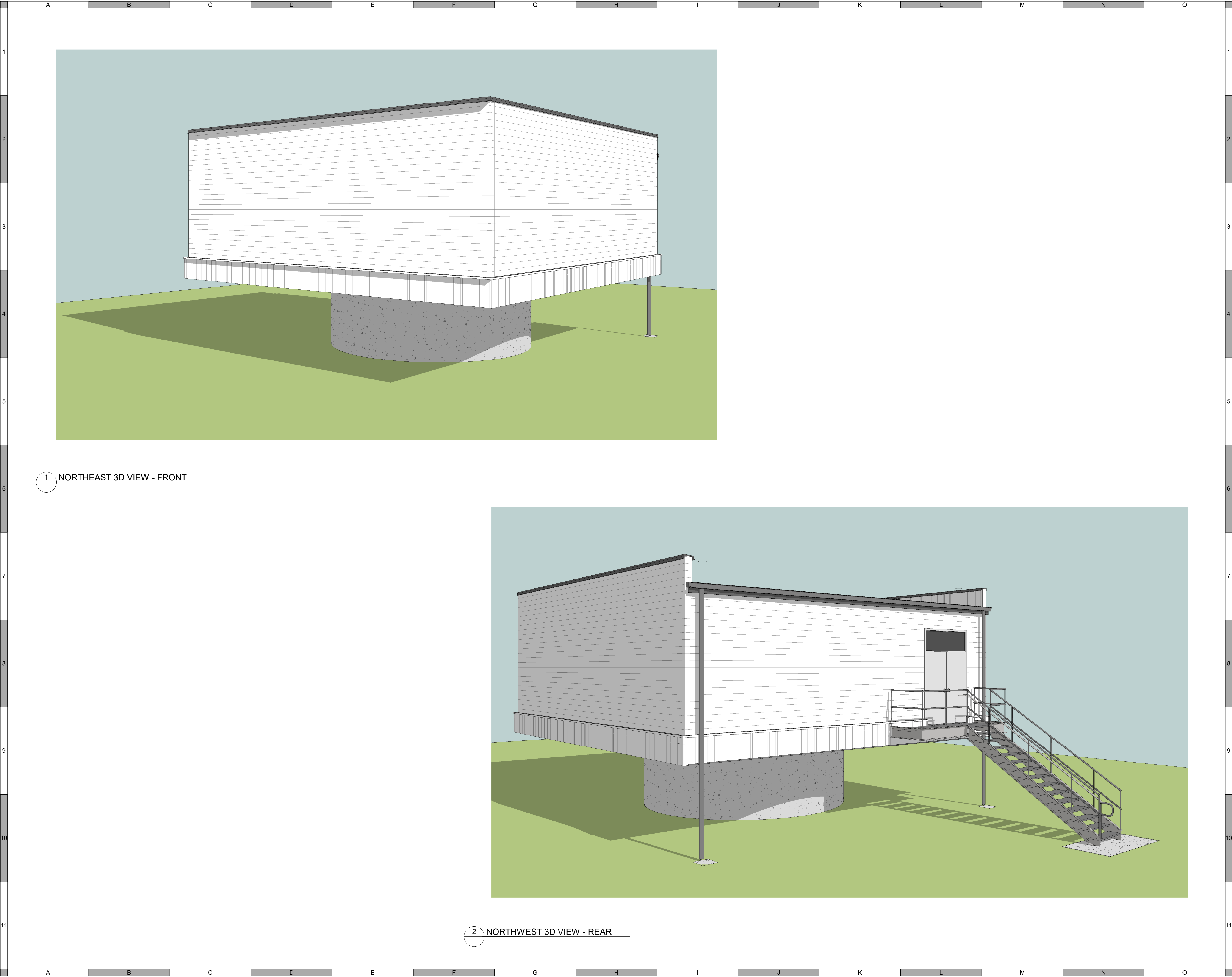
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INTAKE PUMP STATION
ELEVATIONS

Sheet Number of
Project Number
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Drawing Number Revision
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1 NORTHEAST 3D VIEW - FRONT

2 NORTHWEST 3D VIEW - REAR

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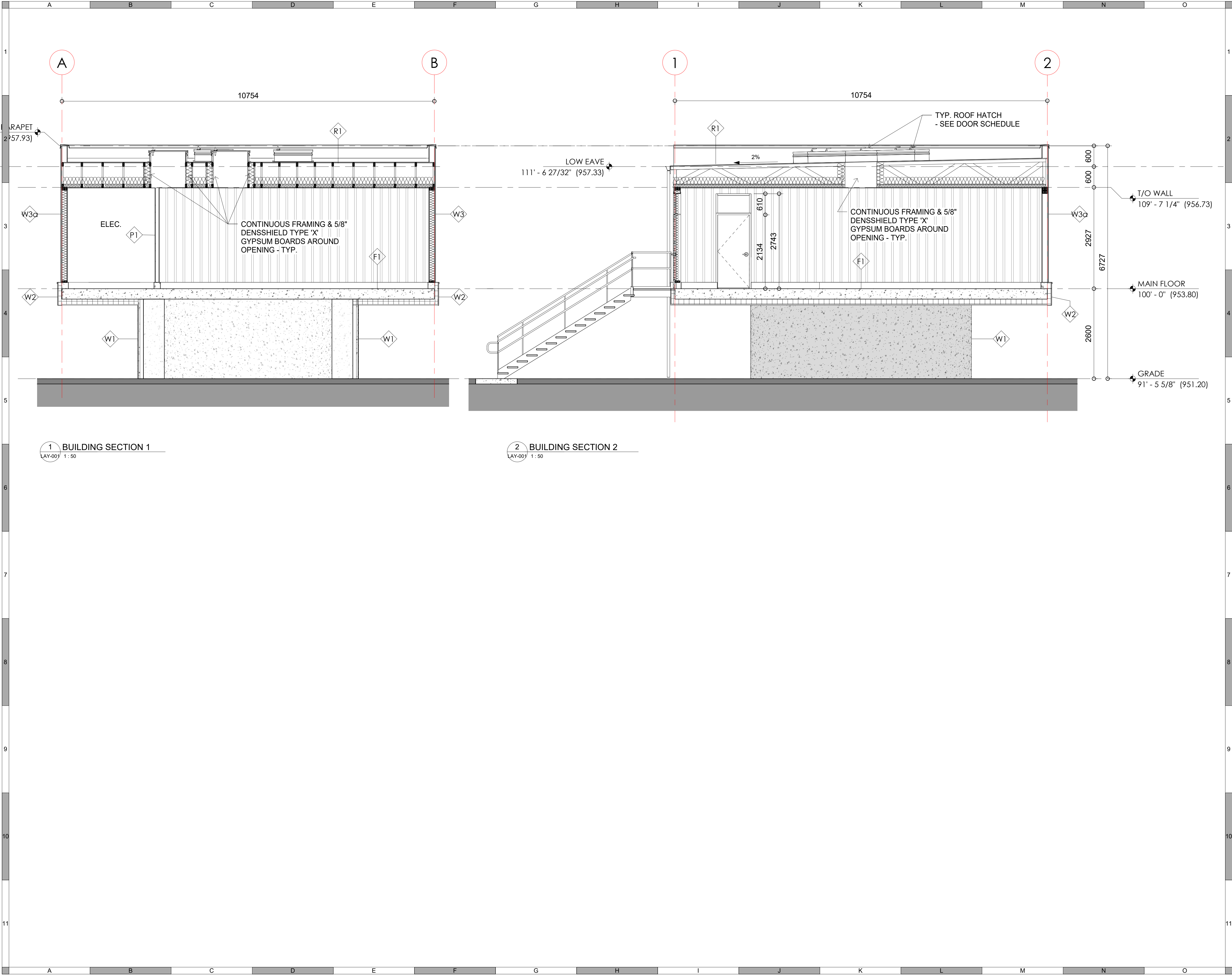
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FOOTHILLS COUNTY
Okotoks
Historic Place, Sustainable Future

URBAN
systems
Scale
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FOOTHILLS OKOTOKS
INTAKE PUMP STATION
3D ELEVATION
Sheet Number of
Project Number
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Scale
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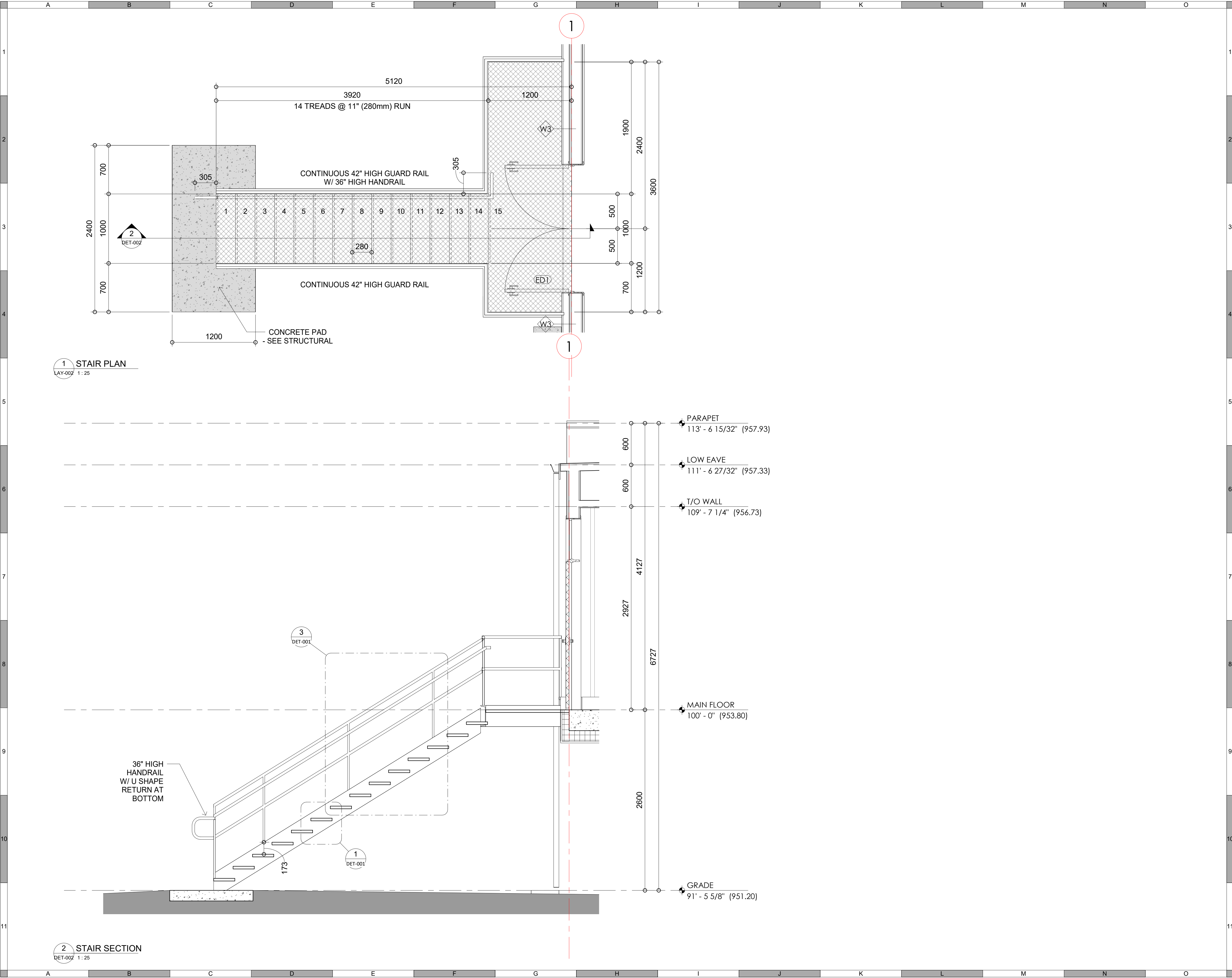
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FOOTHILLS OKOTOKS
INTAKE PUMP STATION
TYPICAL SECTION

Sheet Number of
Project Number
29121-005-09
Drawing Number
FORWP-02-A-GA-003
Revision
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Scale

1 : 25

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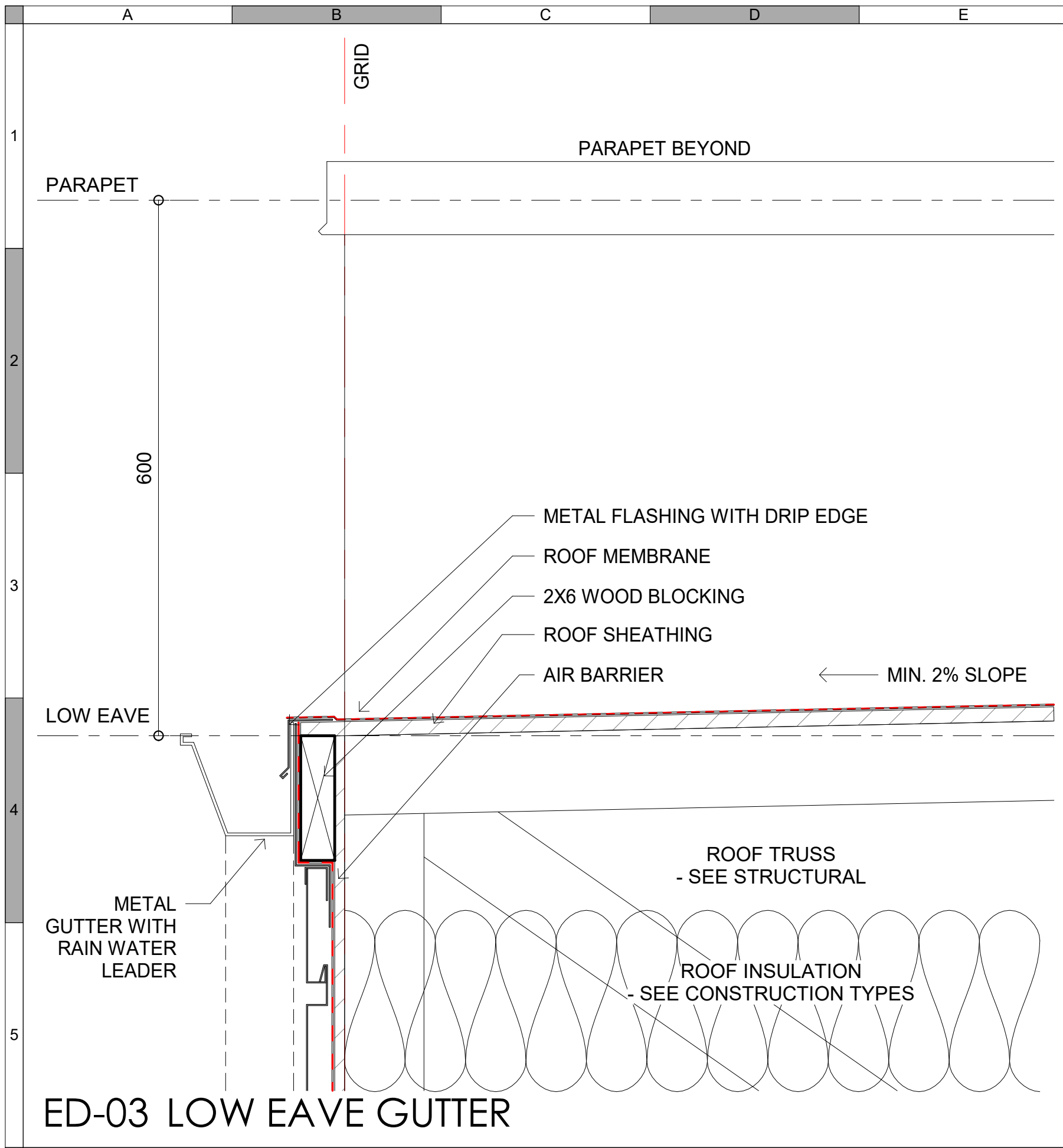
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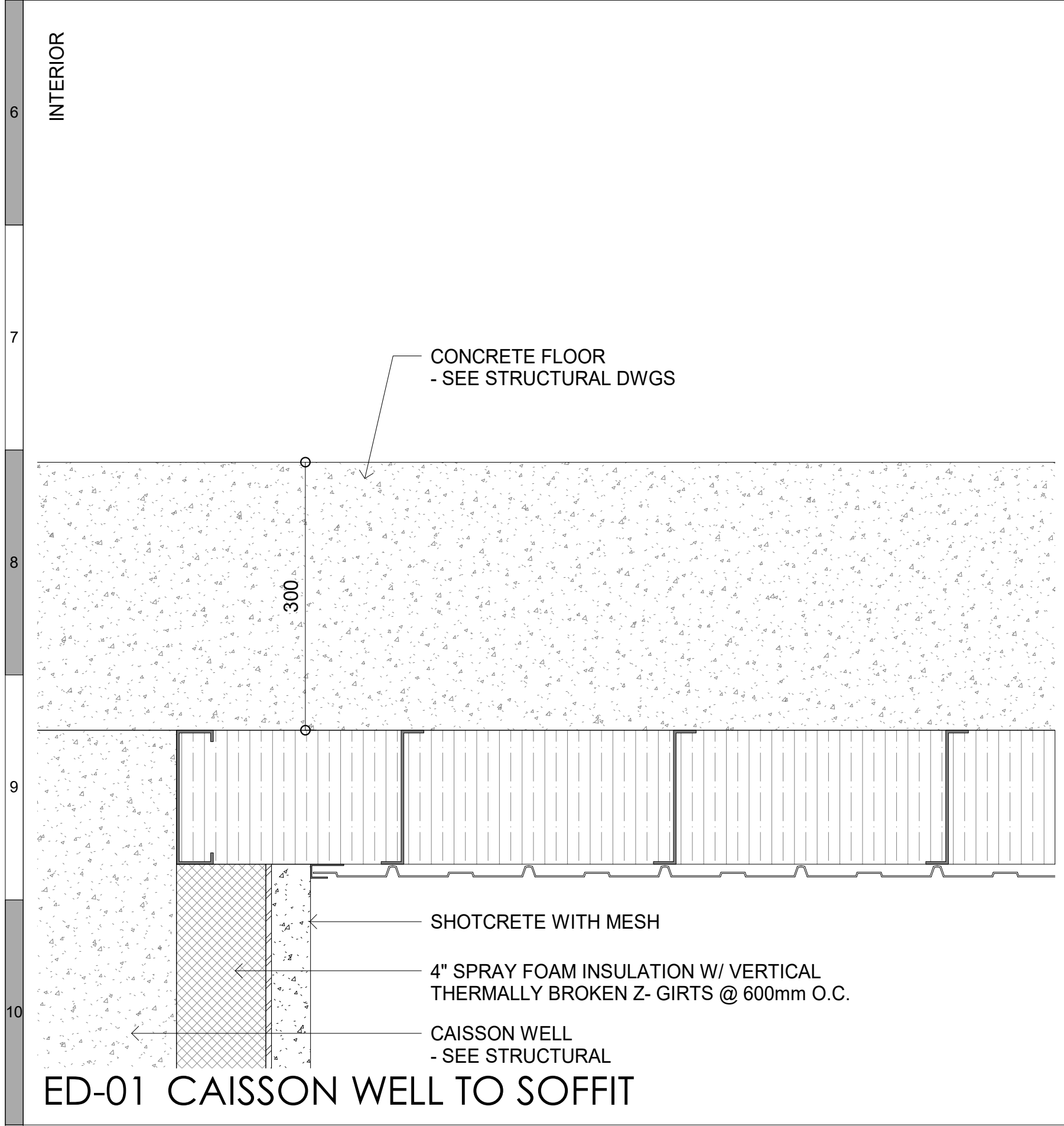
KP

FOOTHILLS OKOTOKS INTAKE PUMP STATION STAIR SECTION	
Sheet Number	of
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-02-A-DET-002	E

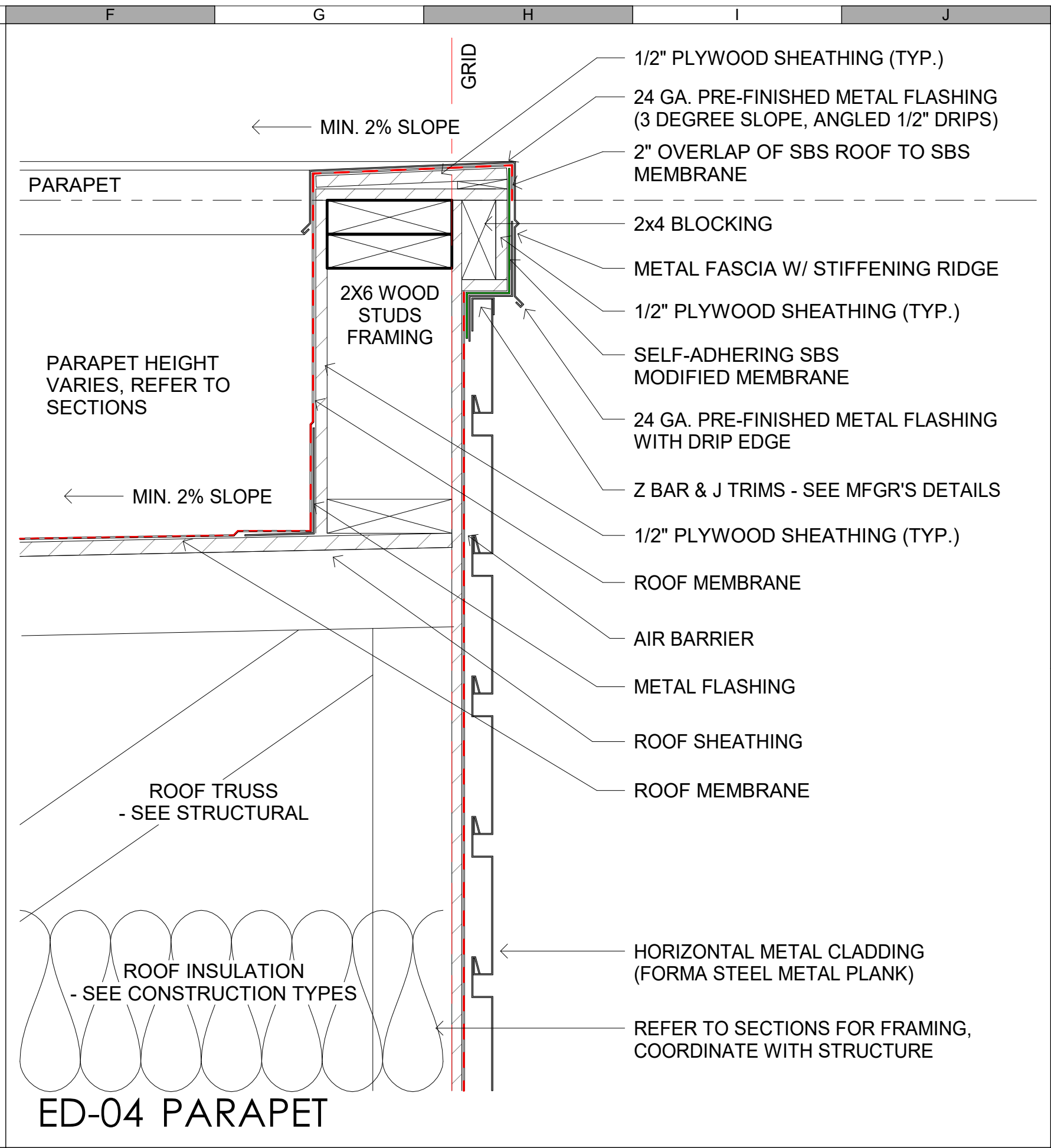
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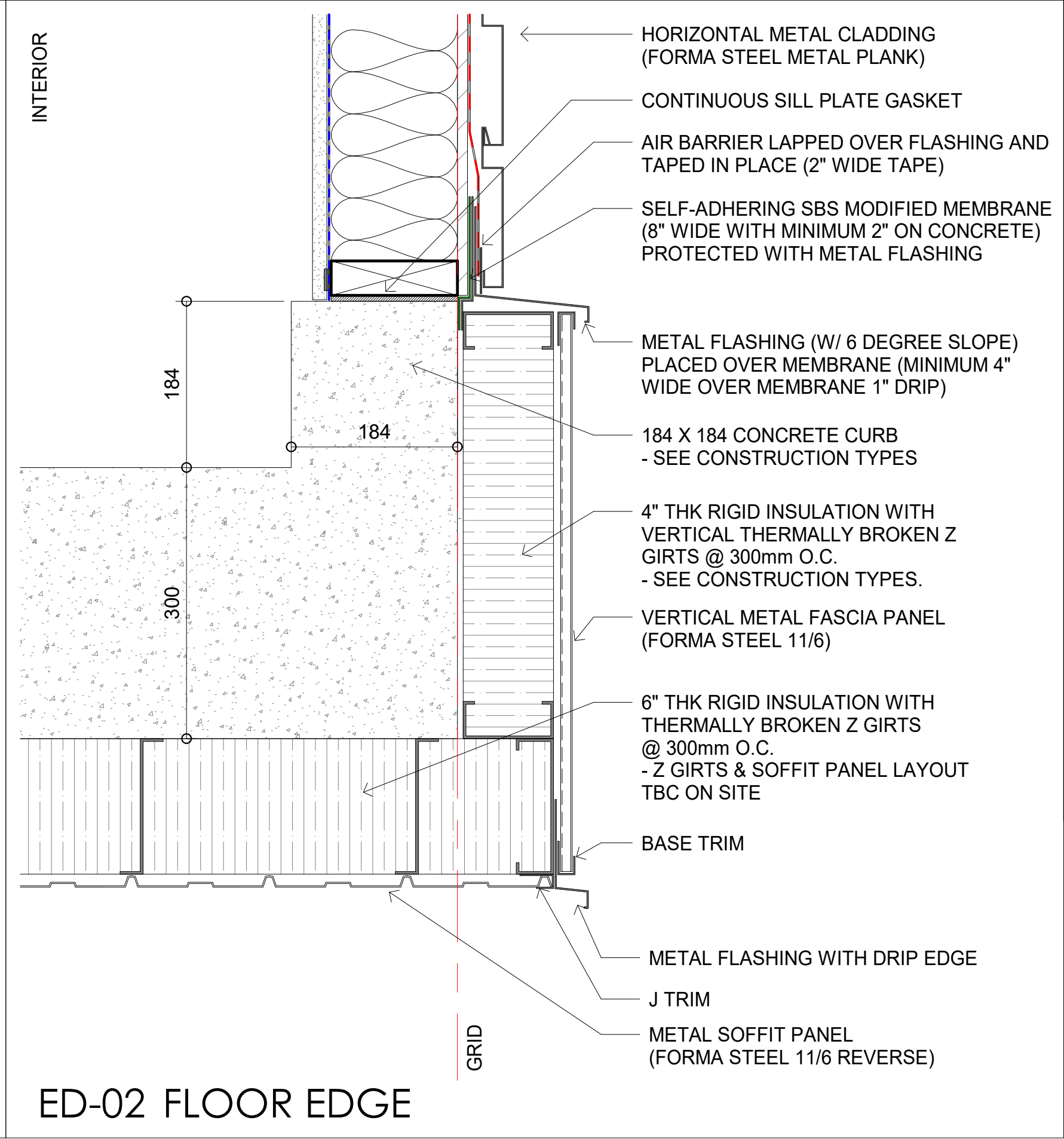
ED-03 LOW EAVE GUTTER



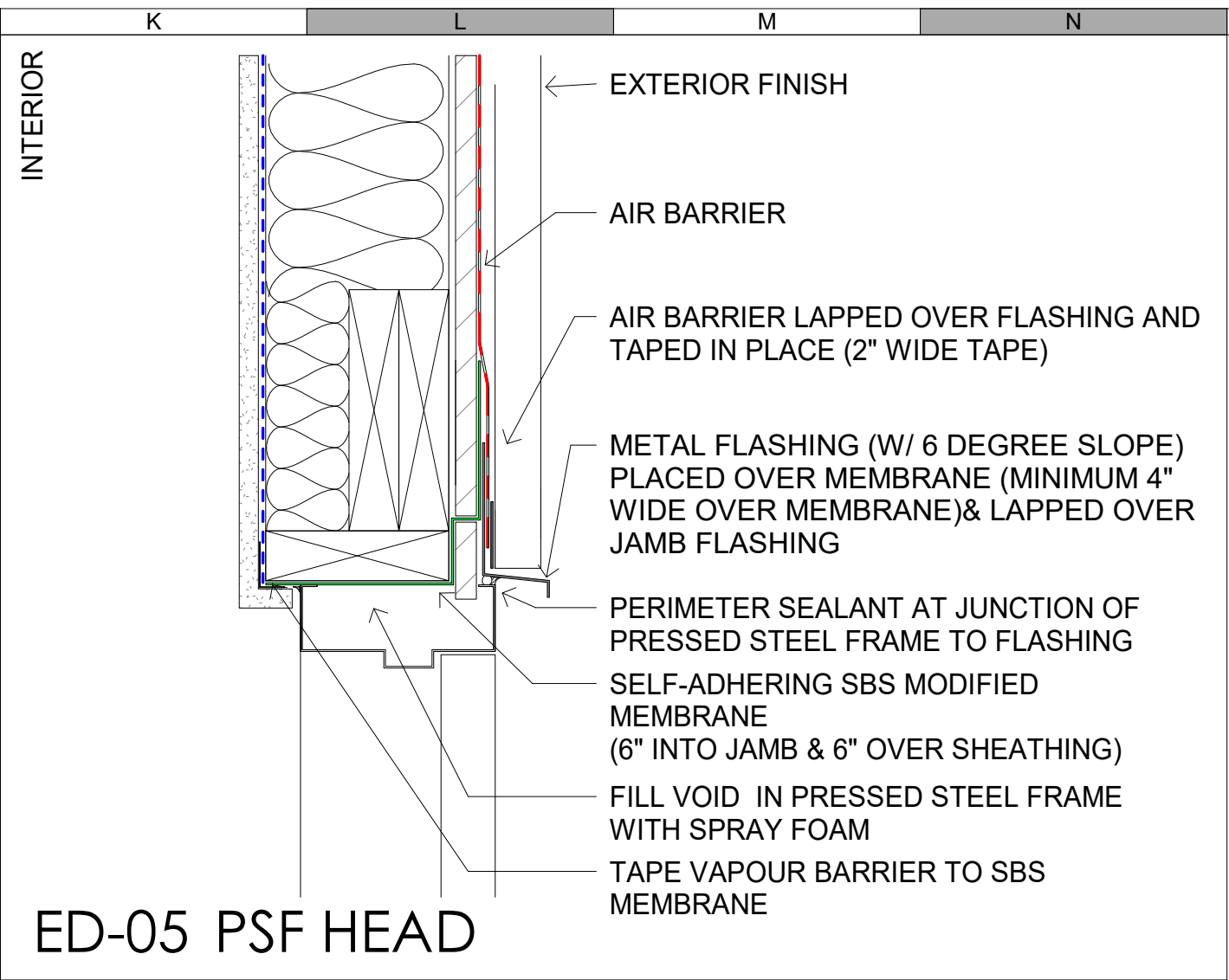
ED-01 CAISSON WELL TO SOFFIT



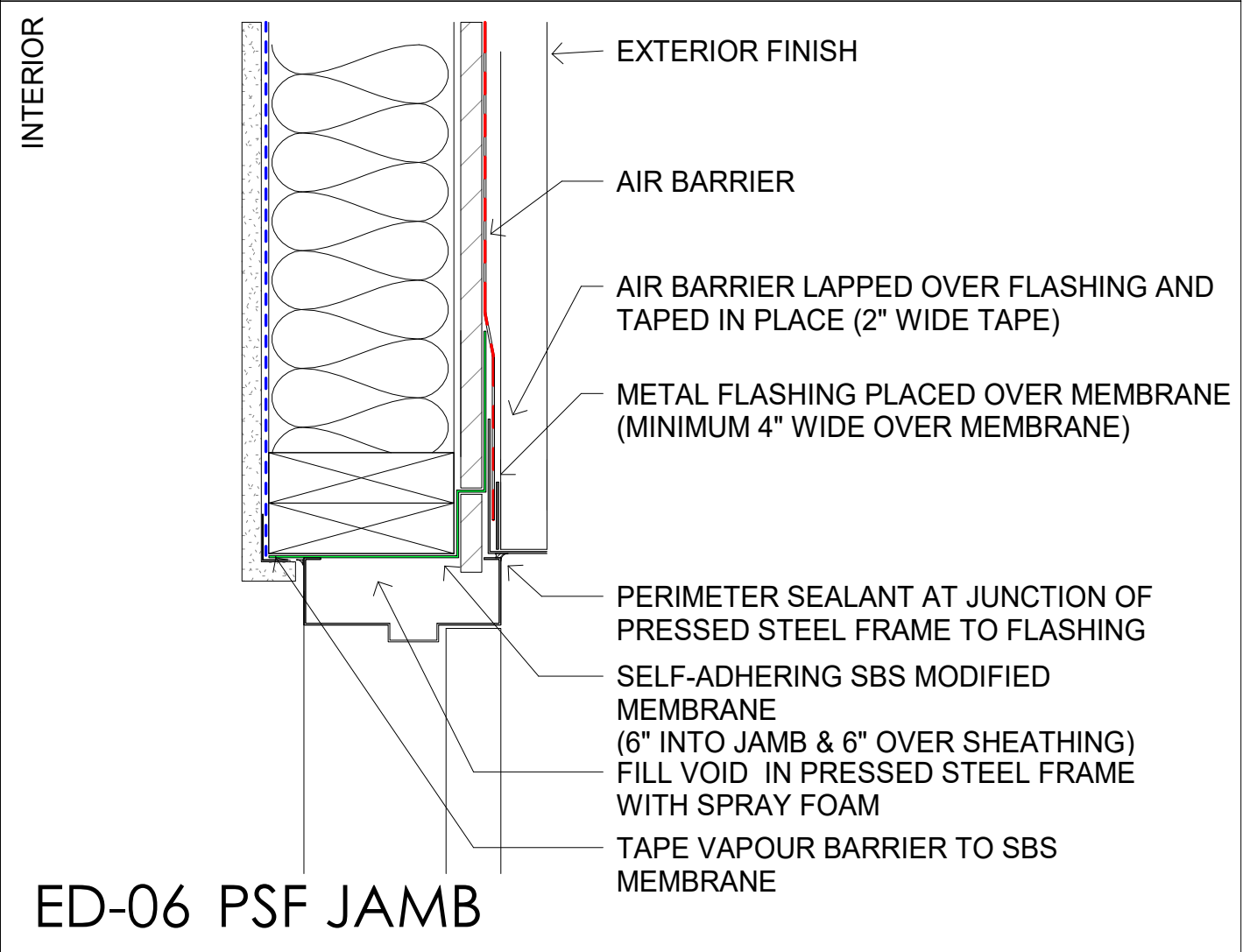
ED-04 PARAPET



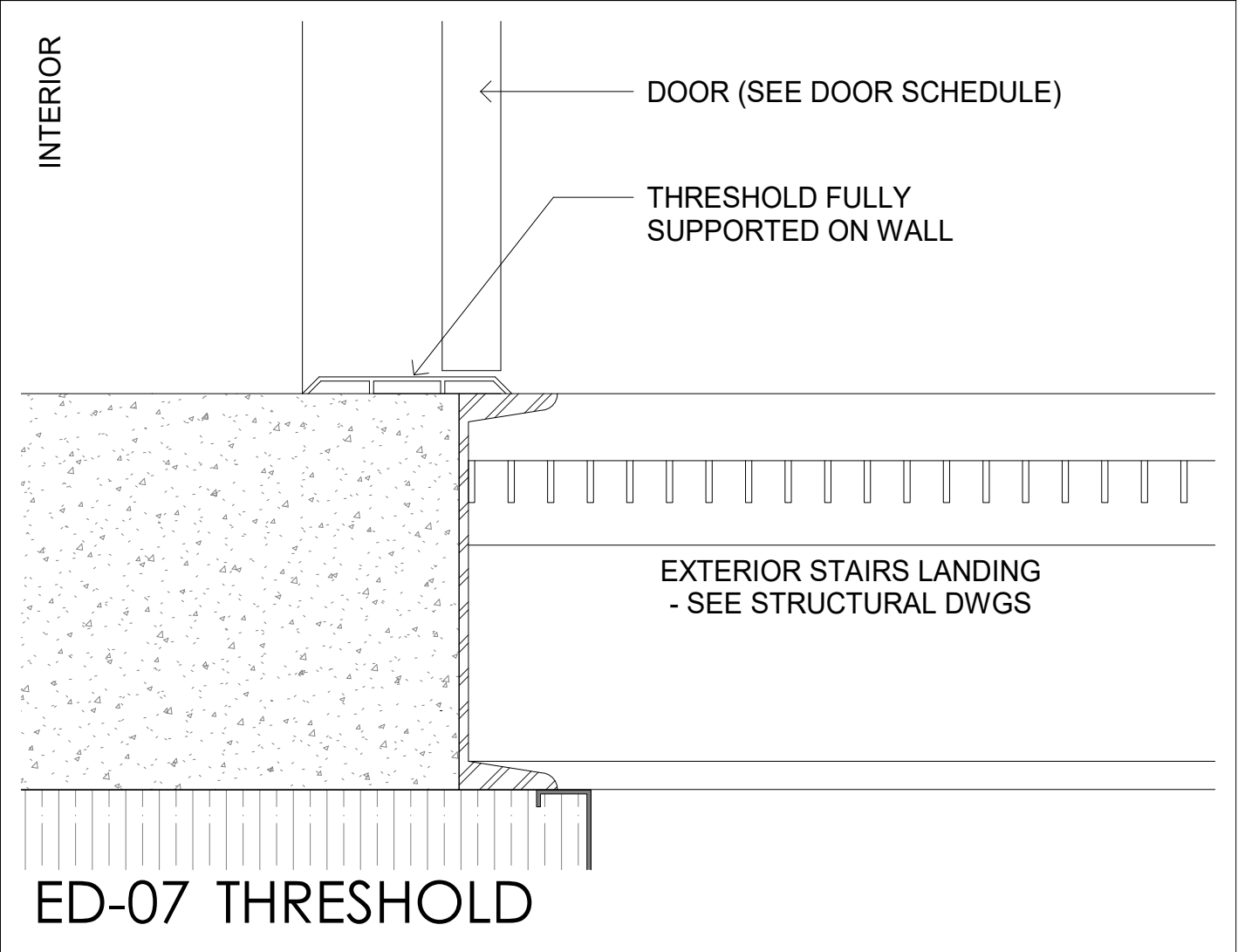
ED-02 FLOOR EDGE



ED-05 PSF HEAD



ED-06 PSF JAMB



ED-07 THRESHOLD

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FOOTHILLS OKOTOKS
INTAKE PUMP STATION
EXTERIOR DETAILS

Sheet Number of
Project Number
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Drawing Number Revision
FORWP-02-A-DET-003 E

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WALL - W1

(NOTE: GRIDLINES ARE TO THE OUTSIDE / EXTERIOR FACE OF STUDS)

INTERIOR

W1

EXTERIOR

FIRE RESISTANCE RATING: N/A

STC RATING: N/A

CODE REFERENCE: N/A

LOADBEARING

ASSEMBLY (EXTERIOR TO INTERIOR)	THK (IN)	THK (mm)	RSI/mm	RSI VALUE
EXTERIOR AIR FILM				0.03
SHOTCRETE WITH MESH	2	50		0.00
POLYURETHANE SPRAY FOAM (MED. DENSITY) WITH THERMALLY BROKEN Z GIRTS	4	100	0.036	3.66
REINFORCED CONCRETE (SEE STRUCTURAL)	24	600		0.00
INTERIOR AIR FILM				0.12
PROPOSED ASSEMBLY EFFECTIVE RSI =				3.808
PROPOSED ASSEMBLY EFFECTIVE U VALUE =				0.263
REQUIRED EFFECTIVE RSI =				4.167
REQUIRED U VALUE =				0.240

WALL - W2 (CURB)

(NOTE: GRIDLINES ARE TO THE OUTSIDE / EXTERIOR FACE OF STUDS)

INTERIOR

W2

EXTERIOR

FIRE RESISTANCE RATING: N/A

STC RATING: N/A

CODE REFERENCE: N/A

LOADBEARING

ASSEMBLY (EXTERIOR TO INTERIOR)	THK (IN)	THK (mm)	RSI/mm	RSI VALUE
EXTERIOR AIR FILM				0.03
VERTICAL METAL FASCIA PANEL (FORMA STEEL 11/6)	1/2	13		0.00
EPS RIGID INSULATION BOARD WITH VERTICAL THERMALLY BROKEN Z GIRTS @ 300mm O.C.	4	102	0.026	2.64
REINFORCED CONCRETE (SEE STRUCTURAL)	7 1/4	184		0.00
INTERIOR AIR FILM				0.12
PROPOSED ASSEMBLY EFFECTIVE RSI =				2.792
PROPOSED ASSEMBLY EFFECTIVE U VALUE =				0.358
REQUIRED EFFECTIVE RSI =				4.167
REQUIRED U VALUE =				0.240

PARTITION - P1

(NOTE: DIMENSIONS ARE TO THE CENTERLINE OF PARTITIONS)

PROCESS PIPING

P1

ELECTRICAL ROOM

FIRE RESISTANCE RATING: N/A

STC RATING: N/A

CODE REFERENCE: N/A

LOADBEARING/NON-LOADBEARING

ASSEMBLY (ELEC. TO PIPING)	THK (IN)	THK (mm)	
INTERIOR WALL FINISH			
TYPE X GYPSUM BOARD	5/8	16	
WOOD STUDS @ 400mm O.C.	3 1/2	89	
INTERIRO LINER PANEL	3/4	19	

WALL - W3 & W3a

(NOTE: GRIDLINES ARE TO THE OUTSIDE / EXTERIOR FACE OF STUDS)

INTERIOR

W3

EXTERIOR

W3a

'W3' WITH 5/8" DENSSHIELD TYPE 'X' GYPSUM BOARD INSTEAD OF METAL LINER PANEL

- LOCATION: ELECTRICAL ROOM

FIRE RESISTANCE RATING: N/A

STC RATING: N/A

CODE REFERENCE: N/A

LOADBEARING

ASSEMBLY (EXTERIOR TO INTERIOR)	THK (IN)	THK (mm)	RSI/mm	RSI VALUE
EXTERIOR AIR FILM				0.03
HORIZONTAL METAL PLANK	7/8	22	0.003	0.07
AIR BARRIER			0.152	0.00
OSB SHEATHING (SEE STRUCTURAL)	7/16	11	0.0098	0.11
CALCULATION 1				2.66
2X6 WOOD STUD @ 400mm O.C. (SEE STRUCT.)				
R24 BATT INSULATION				
6 MIL VAPOUR BARRIER		0.152		0.00
INTERIOR METAL LINER PANEL	3/4	16		0.10
INTERIOR FINISH (SEE FINISHES SCHEDULE)		0		0.00
INTERIOR AIR FILM				0.12

INTERIOR FINISH				0.12
PROPOSED ASSEMBLY EFFECTIVE RSI =				2.987
PROPOSED ASSEMBLY EFFECTIVE U VALUE =				0.335
REQUIRED EFFECTIVE RSI =				4.167
REQUIRED U VALUE =				0.240
CALCULATION 1 - EFFECTIVE RSI				
2X6 WOOD STUD @ 400mm O.C. (SEE STRUCT.)		WITH	R24 BATT INSULATION	
	THK (IN)	THK (mm)	RSI/mm	RSI VALUE
2X6 WOOD STUD @ 400mm O.C. (SEE STRUCT.)	5 1/ 2	140	0.0085	1.19
R24 BATT INSULATION	5 1/ 2	140		4.23
EFFECTIVE RSI-VALUE CALCULATION				

EFFECTIVE RSI-VALUE CALCULATION

100

23

1.19

+

77

4.23

=

2.66

FLOOR - F1

(NOTE: DIMENSIONS ARE TO THE TOP OF THE FLOOR ASSEMBLY BEFORE INTERIOR FINISHES ARE APPLIED)

F1

FIRE RESISTANCE RATING: N/A

STC RATING: N/A

CODE REFERENCE: N/A

ASSEMBLY (TOP TO BOTTOM)	THK (IN)	THK (mm)	RSI/mm	RSI VALUE
INTERIOR AIR FILM				0.12
INTERIOR FLOOR FINISH (SEE FINISHES SCHEDULE)				0.00
REINFORCED CONCRETE (SEE STRUCTURAL)	12	300		0.00
EPS INSULATION BOARD WITH THERMALLY BROKEN Z GIRTS @ 300mm O.C.	6	152	0.028	4.27
METAL SOFFIT PANEL (FORMA STEEL 11/6 REVERSE)	7/8	22		0.00
EXTERIOR AIR FILM				0.03
PROPOSED ASSEMBLY EFFECTIVE RSI =				4.417
PROPOSED ASSEMBLY EFFECTIVE U VALUE =				0.226
REQUIRED EFFECTIVE RSI =				6.410
REQUIRED U VALUE =				0.156

ROOF - R1

(NOTE: DIMENSIONS ARE TO THE TOP OF ROOF DECK / SHEATHING)

R1

FIRE RESISTANCE RATING: N/A

STC RATING: N/A

CODE REFERENCE: N/A

ASSEMBLY (TOP TO BOTTOM)	TH (IN)	THK (mm)	RSI/mm	RSI VALUE
EXTERIOR AIR FILM				0.03
SBS MODIFIED BITUMINOUS HIGH PERFORMANCE ROOF: 20 YEAR WARRANTY, CAP SHEET AND COMBINED BASE SHEET/ SMARTBOARD, FULLY ADHEARED (AARS)				0.00
SHEATHING (SEE STRUCTURAL)	3/4	19	0.0063	0.12
R28 BATT INSULATION ABOVE BOTTOM CHORD	8	203		4.93
CALCULATION 1				2.12
ENGINEERED RAISED HEEL TRUSS @ 600mm O.C.				
R14 BATT INSULATION				
6 MIL VAPOUR BARRIER		0.152		0.00
DENSSHIELD TYPE X GYPSUM BOARD	5/8	16	0.0061	0.10
INT. CEILING FINISH (SEE FINISHES SCHEDULE)		0		0.00
INTERIOR AIR FILM				0.11

PROPOSED ASSEMBLY EFFECTIVE RSI =	7.411
PROPOSED ASSEMBLY EFFECTIVE U VALUE =	0.135
REQUIRED EFFECTIVE RSI (NEBC 2011) =	7.246
REQUIRED U VALUE (W/m2*K) =	0.138

CALCULATION 1 - EFFECTIVE RSI			
ENGINEERED RAISED HEEL TRUSS @ 600mm O.C.	WITH	R14 BATT INSULATION	
	THK (IN)	THK (mm)	RSI/mm
ENGINEERED RAISED HEEL TRUSS @ 600mm O.C.	3 1/2	89	0.0085
R14 BATT INSULATION	3 1/2	89	2.46

EFFECTIVE RSI-VALUE CALCULATION

100

7

0.76

+

93

2.46

=

2.12

DESIGN WIND LOADS					
https://nrc.canada.ca/en/research-development/products-services/software-applications/wind-load-calculators-roof-cladding-vegetated-roof-assembly/app/calculator-selection.html					
	PSF	kPa		FEET	METERS
CORNER	-47	-2.3	END ZONE WIDTH	3.5	1.1
EDGE	-24	-1.1			
FIELD	-19	-0.9			

ROOF DESIGN CRITERIA	
BUILDING TYPE	LOW RISE
ROOF TYPE	LOW SLOPE WITHOUT PARAPET
BUILDING HEIGHT (REFERENCE HEIGHT)	30 FT (9 M)
BUILDING WIDTH (SMALLER PLAN DIMENSION)	35 FT (10.7 M)
BUILDING LENGTH	35 FT (10.7 M)
BUILDING EXPOSURE	ROUGH
BUILDING OPENINGS CATEGORY	2
BUILDING IMPORTANCE	LOW

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FOOTHILLS OKOTOKS INTAKE PUMP STATION CONSTRUCTION TYPES	
Sheet Number	of
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-02-A-SCH-001	E

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DOOR SCHEDULE														
MARK	DOOR					DOOR		FRAME			FIRE RATING	GLAZING	HARDWARE GROUP	COMMENTS
	MEASUREMENTS			OPERATION	STYLE	MATERIAL	FINISH	MATERIAL	FINISH	DETAIL				
WIDTH	HEIGHT	THICKNESS												
ED1	1829	2134	1 3/4"	SWING	FLUSH	IHM	P	TB-PSF	P	WS-PSF	-	-	1	
ID01	914	2134	1 3/4"	SWING	FLUSH	HM	P	PSF	P	WS-PSF	-	-	3	
RH1	1000	1000			PRE-F	PRE-F	PRE-F	PRE-F	PRE-F	-		-	2	
RH2	1000	1000			PRE-F	PRE-F	PRE-F	PRE-F	PRE-F	-		-	2	
RH3	1000	1000			PRE-F	PRE-F	PRE-F	PRE-F	PRE-F	-		-	2	
RH4	1000	1000			PRE-F	PRE-F	PRE-F	PRE-F	PRE-F	-		-	2	
RH5	1000	1000			PRE-F	PRE-F	PRE-F	PRE-F	PRE-F	-		-	2	
RH6	1000	1000			PRE-F	PRE-F	PRE-F	PRE-F	PRE-F	-		-	2	

LEGEND:

DOOR MATERIAL:

HM HOLLOW METAL

IHM INSULATED HOLLOW METAL

FRAME MATERIAL:

TB-PSF THERMALLY BROKEN PSF

PSF PRESSED STEEL FRAME

DOOR/ FRAME FINISH:

P PAINTED/OPAQUE

DRY METHOD INSTALLATION

NOTES:

1. FIRE RATED DOORS TO 'NFPA 80'

HARDWARE GROUPS

GROUP 1:

6 BUTT HINGES

1 LOCKSET

2 DOOR CLOSERS W/HOLD OPEN

FLUSH BOLT (TOP AND BOTTOM)

THRESHOLD

WEATHER STRIPPING SET

GROUP 2:

ROOF ACCESS HATCH

HARDWARE AS PER SUPPLIER

GROUP 3:

3 BUTT HINGES

1 LOCKSET

NOTES:

1. HARDWARE STYLE AND FINISH TO BE DETERMINED BY BUILDING OWNER.

DOOR TYPE

WIDTH

HEIGHT

SEE ELEV.

REMOVABLE SPANDREL PANEL

FLUSH PANEL

F (FLUSH) - DOUBLE DOOR

WIDTH

HEIGHT

SEE ELEV.

REMOVABLE SPANDREL PANEL

FLUSH PANEL

F (FLUSH) - SINGLE DOOR

FRAME DETAIL (DOOR)

1/2" MIN.

WIDTH / HEIGHT

1.

1. PRESSED STEEL FRAME ANCHORED TO WOOD STUDS

NOTES:

1. COMPLETELY FILL ALL GAPS BETWEEN FRAME AND ROUGH OPENING WITH MINERAL WOOL.

2. WIDTH OF FRAME TO SUITE PARTITION WIDTH.

3. ALL RATED DOORS TO HAVE MIN. 1/2" OVERLAP OF GYPSUM BOARD BY FRAME.

INTERIOR - JAMB/NON-LOADBEARING HEAD

WS-PSF

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#	Date	Issue/ Revision	App.
A	240716	CLIENT REVIEW	IM
B	240815	60% REVIEW	IM
C	241009	CLIENT REVIEW	IM
D	241127	ISSUED FOR 75%	IM
E	241129	FOR DESIGN ASSIST RFP	IM



URBAN systems	
Scale	
As indicated	
Quality Control by	IM
Designed by	
Drawn by	KP

FOOTHILLS OKOTOKS INTAKE PUMP STATION OPENING SCHEDULES	
Sheet Number	of
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-02-A-SCH-002	E

NOT FOR CONSTRUCTION

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	GENERAL REQUIREMENTS 1. THESE DRAWINGS ARE PREPARED TO GENERALLY ACCEPTED STANDARDS OF PROFESSIONAL CARE. THE DESIGN AND DRAWINGS ARE PREPARED FOR EXPERIENCED CONTRACTORS WHO ARE COMPETENT AND FOLLOW THE APPLICABLE CODES AND STANDARDS. ALL WORK NOT EXPLICITLY SHOWN OR OUTLINED IN THE APPLICABLE STANDARDS AND CODES SHALL BE COMPLETED TO GENERALLY ACCEPTED LEVELS OF GOOD PRACTICE. 2. DRAWING NOTES AND SPECIFICATIONS ARE INSTRUCTIONS TO THE CONTRACTOR AND APPLY GENERALLY TO ALL THE WORK UNLESS MORE SPECIFIC INFORMATION IS SHOWN ELSEWHERE ON THE DRAWINGS. 3. THESE DRAWINGS REPRESENT THE COMPLETED STRUCTURE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, BRACING, FORMWORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY (INCLUDING UTILITIES) DURING CONSTRUCTION. THE STRUCTURE SHALL NOT BE LOADED IN EXCESS OF THE DESIGN LOADS. 4. VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS ON SITE AND IN THE DRAWINGS. INFORM THE ENGINEER OF RECORD (EOR) IN WRITING OF ANY DISCREPANCIES OR OMISSIONS. ANY DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMEDIATED, WHERE REQUIRED. 5. WHERE REFERENCES ARE MADE TO CODES OR STANDARDS, THESE SHALL BE THE EDITION REFERENCED IN THE GOVERNING BUILDING CODE OR LATEST RELEASE, WHICHEVER IS THE MOST STRINGENT. 6. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS. ANY DISCREPANCIES WITHIN THESE DOCUMENTS SHALL BE IDENTIFIED IN WRITING TO THE EOR PRIOR TO CONSTRUCTION WITH SUFFICIENT TIME FOR REMEDIATION. 7. THESE DRAWINGS SHALL NOT BE USED FOR PRICING, TENDERING OR CONSTRUCTION UNLESS SPECIFICALLY STATED IN THE REVISION COLUMN AND ARE STAMPED BY A PROFESSIONAL ENGINEER. 8. THE STRUCTURE REQUIRES INSPECTIONS BY THE EOR AT KEY POINTS DURING CONSTRUCTION. THESE POINTS ARE NOT LIMITED TO THE FOLLOWING: 8.1. REINFORCING INSPECTIONS, PRIOR TO CONCRETE POURS. 8.2. WOOD AND STEEL FRAMING INSPECTIONS, PRIOR TO APPLICATIONS OF FINISHES. 8.3. FINAL BUILDING INSPECTIONS PRIOR TO OCCUPANCY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE EOR A MINIMUM OF 2 WORKING DAYS PRIOR TO THESE CRITICAL TIMES AND ACCOMMODATE THEIR, OR APPROVED DESIGNATES, INSPECTIONS. 9. DO NOT SCALE DRAWINGS. IF DIMENSION OR SIZES ARE NOT IDENTIFIED ON THE DRAWINGS, CONTRACTOR SHALL CONTACT EOR. ADHESIVE ANCHORS 1. ADHESIVE ANCHOR INSTALLERS TO BE TRAINED BY THE ANCHOR MANUFACTURER PRIOR TO INSTALLATION OF ANCHORS AND SHALL PROVIDE WRITTEN CONFIRMATION OF TRAINING.														
	BASIS FOR DESIGN GOVERNING BUILDING CODE: NATIONAL BUILDING CODE PROJECT LOCATION: 2023 ALBERTA EDITION BUILDING IMPORTANCE CATEGORY: HIGH RIVER, ALBERTA BUILDING IMPORTANCE CATEGORY: POST-DISASTER GRAVITY LOADS ROOF: DEAD LOAD: 1.0 kPa LIVE LOAD: 1.0 kPa SNOW LOAD: 1.43 kPa FLOOR: DEAD LOAD: 7.05 kPa LIVE LOAD (HEAVY PUMP ROOM): 4.8 kPa WALL: DEAD LOAD: 0.70 kPa LATERAL EARTH LOADS SNOW DESIGN IMPORTANCE FACTOR (I_s): 1.25 (ULS) 0.9 (SLS) GROUND SNOW LOAD (S_g): 1.3 kPa ASSOCIATED RAIN LOAD (S_r): 0.1 kPa Cb: 0.8 Cw: 1.0 DRIFT: N/A ONE DAY RAIN: 97 mm WIND DESIGN IMPORTANCE FACTOR (I_w): 1.25 (ULS) 0.75 (SLS) HOURLY WIND PRESSURE (q 1/50): 0.65 kPa EXPOSURE: OPEN TERRAIN Ct: 1.0 SEISMIC LOAD DESIGN IMPORTANCE FACTOR (I_e): 1.5 (ULS) S_{sd}(0.2): 0.197 S_{sd}(0.5): 0.0974 S_{sd}(1.0): 0.0463 S_{sd}(2.0): 0.0218 S_{sd}(5.0): 0.00995 S_{sd}(10.0): 0.00745 PGA: 0.0932 POV: 0.0565 SITE CLASS: D (ASSUMED) TIMBER - NAILED SHEAR WALL: WOOD BASED PANEL Rd: 3.7 CONCENTRATED LOADS WHERE NOT IDENTIFIED ARE EQUAL TO THOSE SPECIFIED IN TABLE 4.1.5.9 OF THE BUILDING CODE. WELDING 1. ALL WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF CAN/CSA W59.1, PERFORMED BY A CWS CERTIFIED WELDER IN A SHOP CERTIFIED TO W47.1. CERTIFICATION SHALL BE MADE AVAILABLE UPON REQUEST. 2. ALL COMPLETE JOINT PENETRATION (CJP) WELDS SHALL BE TESTED AND CERTIFIED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. 3. ALL WELDING ELECTRODES SHALL MEET THE REQUIREMENTS OF CSA STANDARD W48, AS APPLICABLE. 4. WELD LENGTHS CALLED OUT ON PLANS OR DETAILS ARE MINIMUM NET EFFECTIVE LENGTHS. 5. ALL FILLET WELDS SHALL BE A MINIMUM OF 6 mm. 6. ALL MISC. FILLET WELDS NOT NOTED, INCLUDING THOSE FOR STIFFENERS, MISC., ETC., SHALL BE PER CISC AND CAN/CSA-S16.														
	REINFORCING 1. REINFORCING SHALL MEET CSA G30.18 GRADE 400W AND INSTALLED MEETING THE REQUIREMENTS OF CSA A23.1. 2. CHAIR SLAB REINFORCING NO FURTHER THAN 1.0m IN EITHER DIRECTION. SUPPLY SUPPORT BARS, CHAIRS AND CARRIERS AS REQUIRED. 3. DOWELS AND ANCHOR BOLTS SHALL BE SECURED IN POSITION BY MEANS OF TEMPLATES BEFORE CONCRETE IS POURED. "WET DOWELING" IS NOT PERMITTED. 4. NOTIFY EOR WHERE PLACEMENT OF REINFORCING STEEL CONFLICTS WITH WORK OF OTHER TRADES, PRIOR TO POUR FOR ALTERNATE SOLUTION. 5. REINFORCING TIES SHALL BE USED TO SECURE REINFORCING AT MINIMUM EVERY OTHER INTERSECTION. 6. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW 1 WEEK PRIOR TO CONSTRUCTION TO ENSURE DESIGN INTENT. STANDARD REINFORCING IS EXPECTED FOR THE PROJECT THOUGH NOT NECESSARILY SHOWN. 7. ALL REINFORCING SHALL BE DESIGNED WITH CLASS B TENSION LAP SPICES, STANDARD HOOKS AND COMPRESSION & TENSION EMBEDMENT AS REQUIRED BY CSA A23.3. CONCRETE COVER CONDITION SPECIFIED COVER FORMED EDGES NOT EXPOSED TO SOIL 40mm FORMED EDGES EXPOSED TO SOIL 60mm CONCRETE CAST AGAINST SOIL 75mm SLAB TOP REINFORCEMENT 25mm STRUCTURAL SLAB BOTTOM REINFORCEMENT 40mm CONCRETE MIX CRITERIA LOCATION EXPOSURE CLASS CEMENT TYPE MAX. W/C RATIO MINIMUM COMPRESSIVE STRENGTH (MPa) NOMINAL MAX. AGG. SIZE (mm) % AIR MIN. CURING REQUIREMENTS INTERIOR CONCRETE N GU 0.5 25 @ 28 DAYS 20 <4% 3 DAY CURE OR 40% OR STRENGTH EXTERIOR EXPOSED CONCRETE C-2 / S-2 H6 0.45 32 @ 28 DAYS 20 5-8% 7 DAY CURE OR 70% OF STRENGTH & 14 DAYS BEFORE LOADING														
	STRUCTURAL STEEL 1. ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH CAN/CSA-S16. 2. STRUCTURAL STEEL MEMBERS AND MATERIAL SHALL CONFORM WITH CAN/CSA G40.20/G40.21. STEEL ITEMS MEMBER GRADE/ SPEC YIELD STRENGTH (MPa) CHANNELS & ANGLES 300W 300 BARs AND PLATES 300W 300 BOLTS ASTM A325 (ASTM F3125) -- NUTS ASTM A563 -- WASHERS ASTM F436 -- ANCHOR BOLTS ASTM F1554 -- 3. ALL STEEL FABRICATION IS REQUIRED TO BE COMPLETED BY AN APPROVED STEEL FABRICATOR. 4. PRIOR TO PRIMING STEEL, PREPARE ALL SURFACES IN CONFORMANCE WITH SSPC-SP-3 - POWER TOOL CLEANING FOR ALL AREAS. 5. PROVIDE 1 COAT OF SHOP PRIMER PRIOR TO ERECTION CISC/CPMA 1-73A. AFTER ERECTION PRIME ALL WELDS, ABRASIONS, BOLTED CONNECTIONS AND ALL SURFACES NOT SHOP PRIMED, EXCEPT SLIP CRITICAL SURFACES AND THOSE IN CONTACT WITH CONCRETE. 6. MAX DEFLECTION LIMITS SHALL BE AS FOLLOWS: DEFLECTION LIMITS LOCATION LIVE /SNOW /WIND LOAD TOTAL LOAD VERTICAL ROOF SPAN/360 SPAN/180 FLOOR SPAN/360 SPAN/180 HORIZONTAL BUILDING DRIFT HEIGHT/500 -- 7. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. FABRICATION WITH REVIEW AND RESUBMIT RETURNED ON THE SHOP DRAWINGS IS AT CONTRACTORS RISK. SHOP DRAWINGS SHALL NOT BE A REPLICA OF THE EXISTING STRUCTURAL DRAWINGS BUT SHALL BE PREPARED BY THE FABRICATOR. 8. STEEL SUPPLIER SHALL DESIGN AND SUPPLY CONNECTIONS FOR STEEL MEMBERS TO RESIST THE LOADS PROVIDED ON THE DRAWINGS OR 70% OF THE SHEAR CAPACITY OF THE MEMBER. CONNECTIONS SHALL BE DESIGNED AS PINNED WITH A MINIMUM OF (2) 19mm (¾") DIA. BOLTS, UNLESS NOTED OTHERWISE. 9. PROVIDE A MINIMUM OF 10mm STIFFENER AT ALL BEAM CONNECTIONS AND LOAD POINTS. WOOD CONSTRUCTION 1. WOOD DESIGN AND FRAMING SHALL BE IN ACCORDANCE WITH CSA O86 AND PART 9 OF THE BUILDING CODE, UNLESS NOTED OTHERWISE[UNO]. 2. LUMBER SHALL BE A MINIMUM OF SPRUCE-PINE-FIR (SPF) No. 2 OR BETTER, UNO. 3. BUILT-UP WOOD COLUMNS OR GANG STUDS SHALL BE CONSTRUCTED OF FULL-LENGTH MEMBERS, WITH NO SPLICES. FASTENING OF PLYS, UNO, SHALL BE AS FOLLOWS: 3.1. FOR 38x89 - A SINGLE STAGGERED COLUMN OF 76mm COMMON NAILS @ 200mm ON CENTRE(OC). 3.2. FOR 38x140 OR LARGER - 2 COLUMNS OF 76mm COMMON NAILS @ 200mm OC. 4. COLUMNS SHALL BE CONSTRUCTED OF JACK STUDS AND AT LEAST 1 KING STUD. 5. COLUMNS AND POINT LOADS SHALL BE CONTINUOUS TO THE FOUNDATION OR TRANSFER BEAMS. WHERE FLOORS OR OTHER FRAMING INTERRUPT THE COLUMN, PROVIDE BLOCKING EQUAL TO THE COLUMN. 6. WHERE A COLUMN BEARS ON, OR PARTIALLY ON AN I-JOIST, THE WEB MUST BE BLOCKED, WITH 3mm GAP ABOVE THE BOTTOM CHORD. 7. TRUSSES AND I-JOISTS ON THE DRAWINGS NOTED "AS PROVIDED BY MANUFACTURER", SHALL BE DESIGNED FOR THE LOADINGS EXPECTED AND MINIMUMS IDENTIFIED ON THE DRAWINGS. THE MANUFACTURER SHALL PROVIDE SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER WITH A STAMP IN THE AREA OF THE PROJECT. COORDINATE MECHANICAL AND ELECTRICAL AFFECTING STRUCTURE WITH DRAWINGS AND CONSTRUCTION TEAM. 8. EXCEPT WHERE DETAILED ON THE DRAWINGS, CUTTING, NOTCHING, DRILLING HOLES IN STRUCTURAL COMPONENTS IS NOT PERMITTED, UNO. 9. A MAXIMUM OF 4 ELECTRICAL WIRING HOLES THROUGH WALL STUDS, AND COLUMNS SHALL BE SMALLER THAN 20 DIAMETER, CENTERED IN THE WIDTH AND A MINIMUM 300 FROM THE TOP OR BOTTOM. HOLES SHALL BE SPACED MINIMUM 200 OC. 10. PROVIDE EQUIPMENT PADS BENEATH CONDENSER UNITS MADE UP OF 38x140 PRESSURE TREATED LUMBER LAMINATED TOGETHER WITH TWO ROWS OF GALVANIZED 75 SPIRAL NAILS, WITH NAILS AT 100 OC EACH ROW. EACH PAD TO HAVE DIMENSIONS EQUAL TO THE OVERALL DIMENSIONS OF THE CONDENSER UNITS. 11. STUD SPACING: 38x140 AT 406 OC UNO. 12. SHEATHING SHALL BE AS FOLLOWS: 12.1. ROOFS (SLOPED) - 12 THK EXTERIOR GRADE OSB OR PLYWOOD FASTENED WITH 64 LG. COMMON NAILS AT 150 OC AROUND PERIMETER AND 300 IN FIELD OF EACH SHEET. BLOCKING OF EDGES, AS NOTED. 12.2. EXTERIOR AND SHEAR WALLS - 9.5 THK PLYWOOD FASTENED WITH 64 LG. COMMON NAILS AT 150 OC AROUND PERIMETER AND 300 IN FIELD OF EACH SHEET. 12.3. FLOORS - 19 THK PLYWOOD FASTENED WITH 64 LG. COMMON NAILS AT 150 OC AROUND PERIMETER AND 300 IN FIELD OF EACH SHEET.														
	LIST OF ABBREVIATIONS ALT ALTERNATE GB GRADE BEAM ARCH ARCHITECTURAL GL GRIDLINE BCE BOTTOM CHORD EXTENSION MAX MAXIMUM BOT BOTTOM MECH MECHANICAL BRDG BRIDGING MIN MINIMUM C/W COMPLETE WITH No NUMBER OMU CONCRETE MASONRY UNIT WALL OC ON CENTRE CL CENTER LINE OPP OPPOSITE CO CLEAR COVER PL PLATE CONT CONTINUOUS REINF REINFORCEMENT CP COMPLETE PENETRATION R/W REINFORCE WITH DP DEEP SDL SUPERIMPOSED DEAD LOAD DBL DOUBLE SOG SLAB ON GRADE DWG DRAWING STG STAGGERED EF EACH FACE TCE TOP CHORD EXTENSION EL ELEVATION T/O TOP OF ELEC ELECTRICAL UNO UNLESS NOTED OTHERWISE ES EACH SIDE U/S UNDERSIDE EW EACH WAY WWM WELDED WIRE MESH EX EXISTING @ AT % PERCENT FTG FOOTING ° DEGREE														

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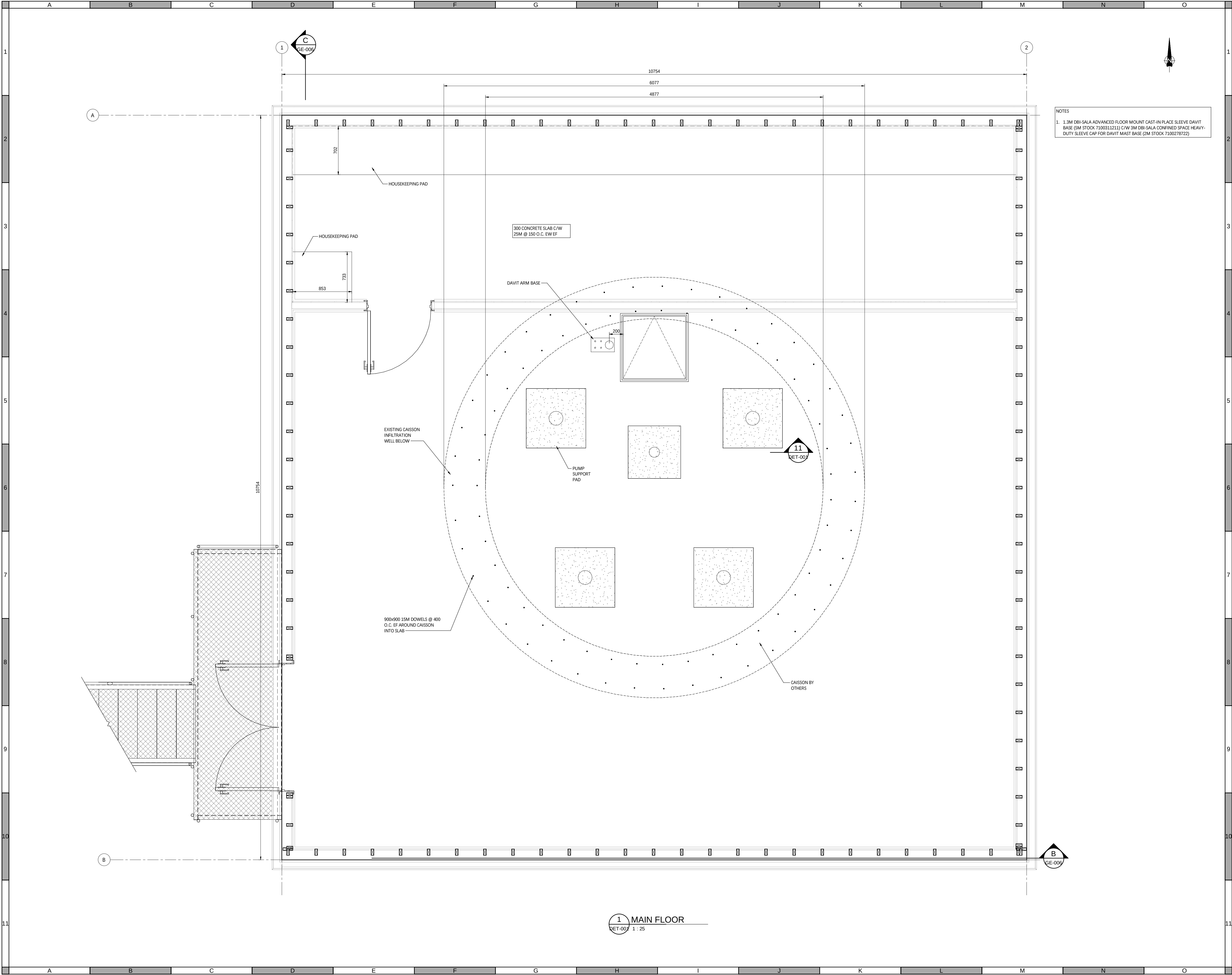
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1	24-11-29	ISSUED FOR DESIGN ASSIST RFP	



URBAN systems		
Scale 1 : 1		
Quality Control by		BDL
Designed by		BDL
Drawn by		BHG

FOOTHILLS OKOTOKS INTAKE PUMP STATION GENERAL NOTES	
Sheet Number	of
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-02-S-GE-001	1

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NOTES

1. 1.3M DBI-SALA ADVANCED FLOOR MOUNT CAST-IN PLACE SLEEVE DAVIT BASE (SM STOCK 7100311211) C/W 3M DBI-SALA CONFINED SPACE HEAVY-DUTY SLEEVE CAP FOR DAVIT MAST BASE (2M STOCK 7100278722)

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URBAN
systems

Scale
1 : 25

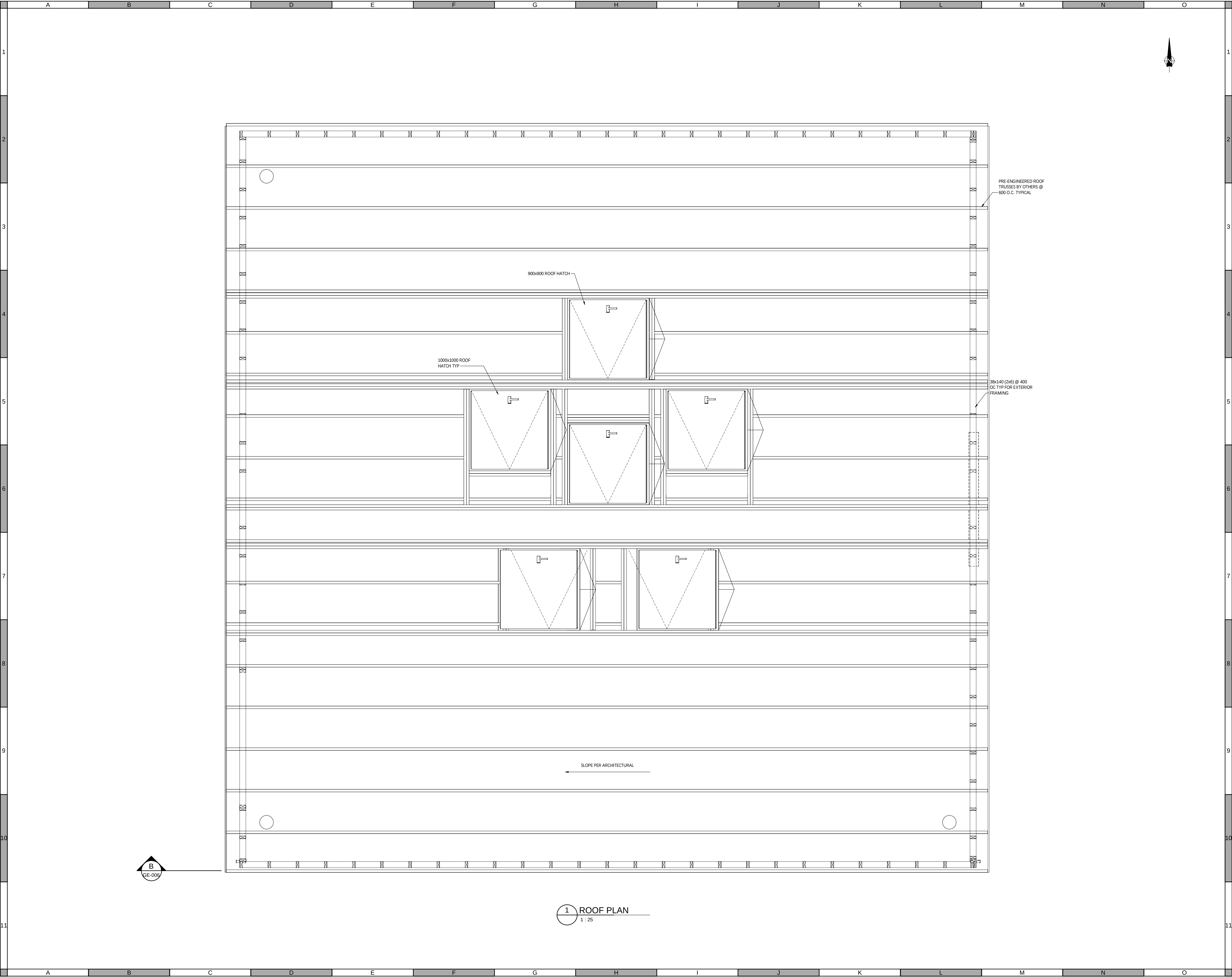
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Designed by BDL
Drawn by BHG

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
MAIN FLOOR PLAN

Sheet Number of
Project Number
29121-005-09
Drawing Number Revision
FORWP-02-S-GE-003 1

1 MAIN FLOOR
RET-007 1 : 25

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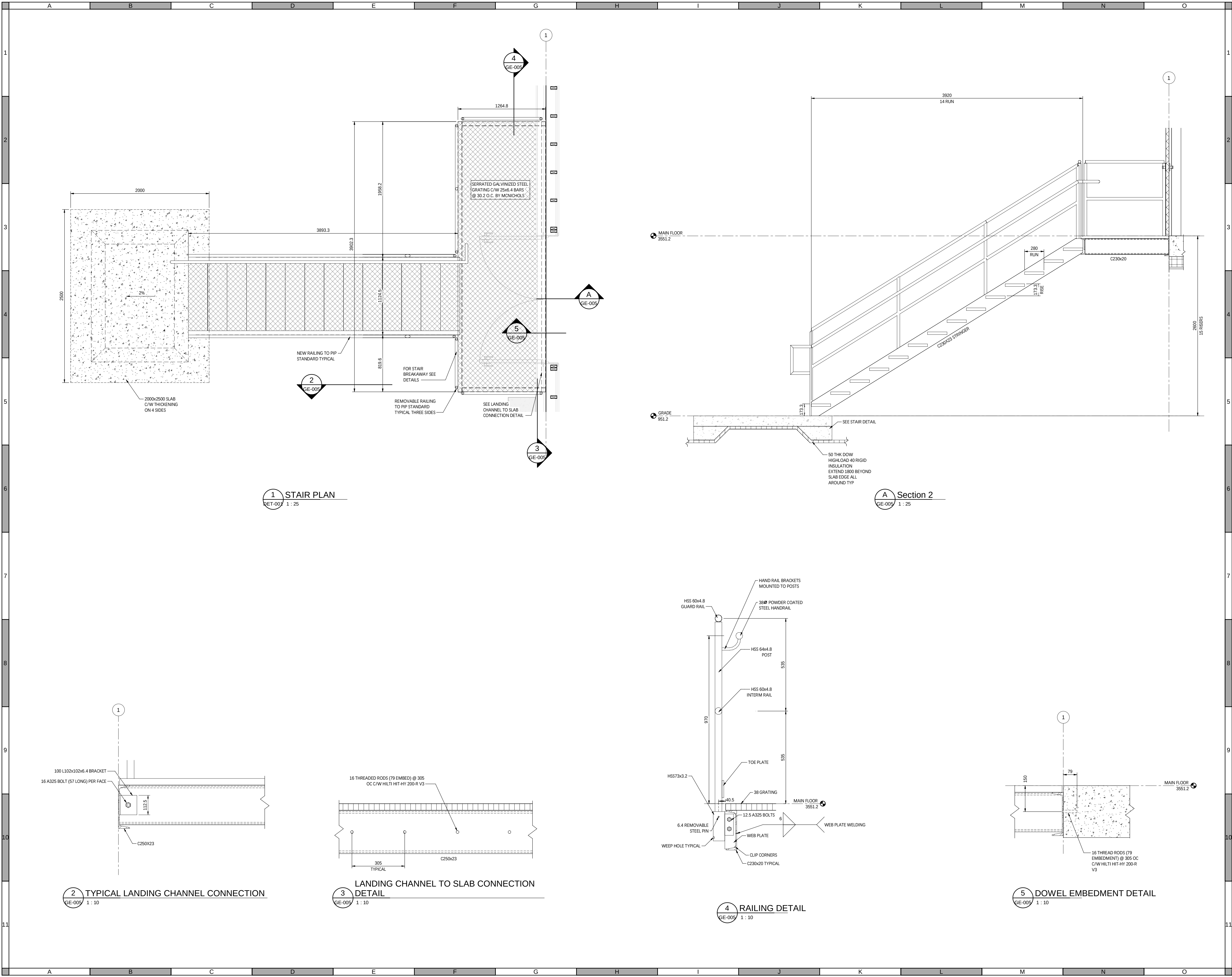
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FOOTHILLS OKOTOKS INTAKE PUMP STATION ROOF PLAN	
Sheet Number	of
Project Number	
29121-005-09	
Drawing Number	Revision
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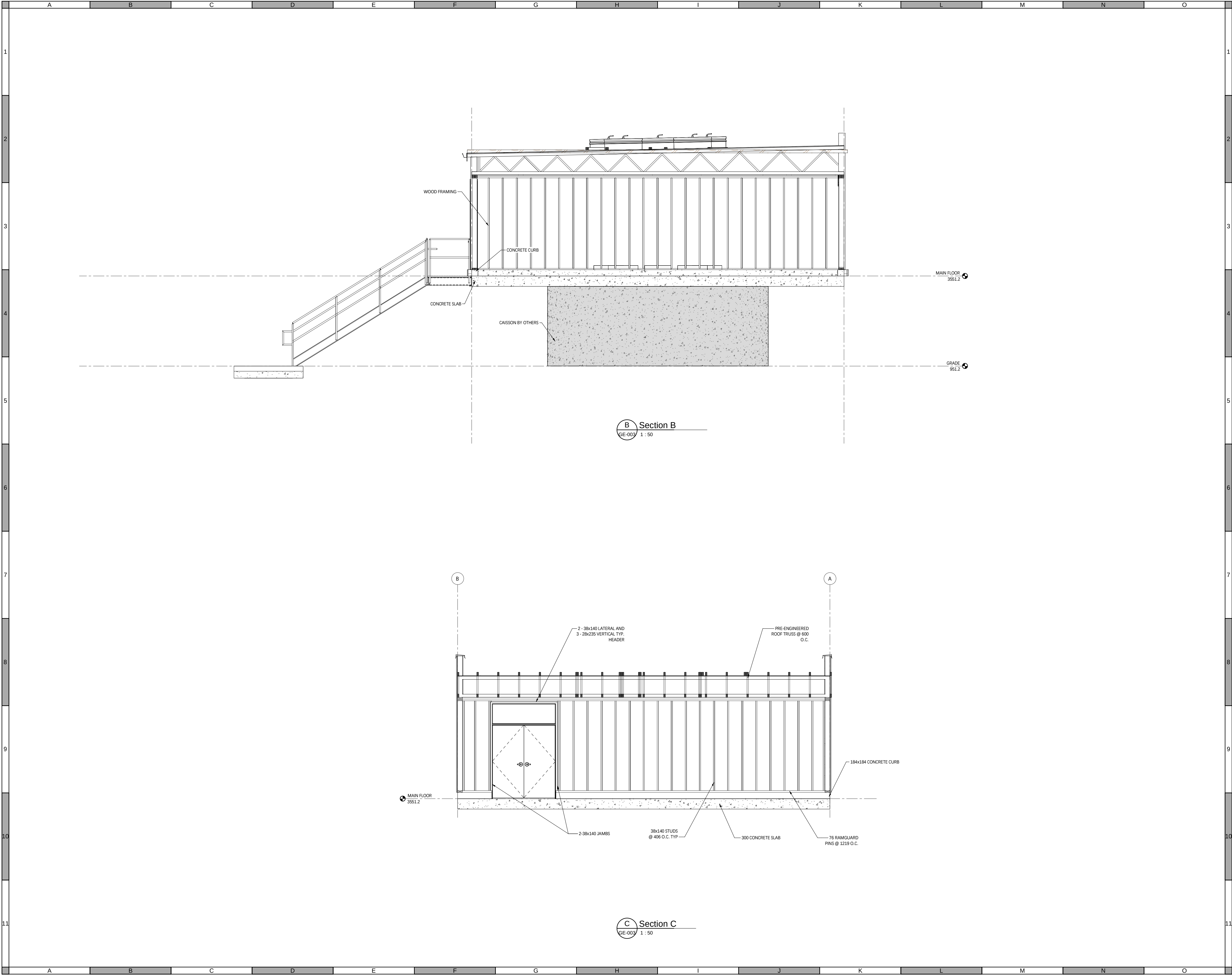
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URBAN systems	
Scale	As indicated
Quality Control by	BDL
Designed by	MHD
Drawn by	BHG

FOOTHILLS OKOTOKS INTAKE PUMP STATION STAIR PLAN & DETAILS	
Sheet Number	of
Project Number	
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Drawing Number	Revision
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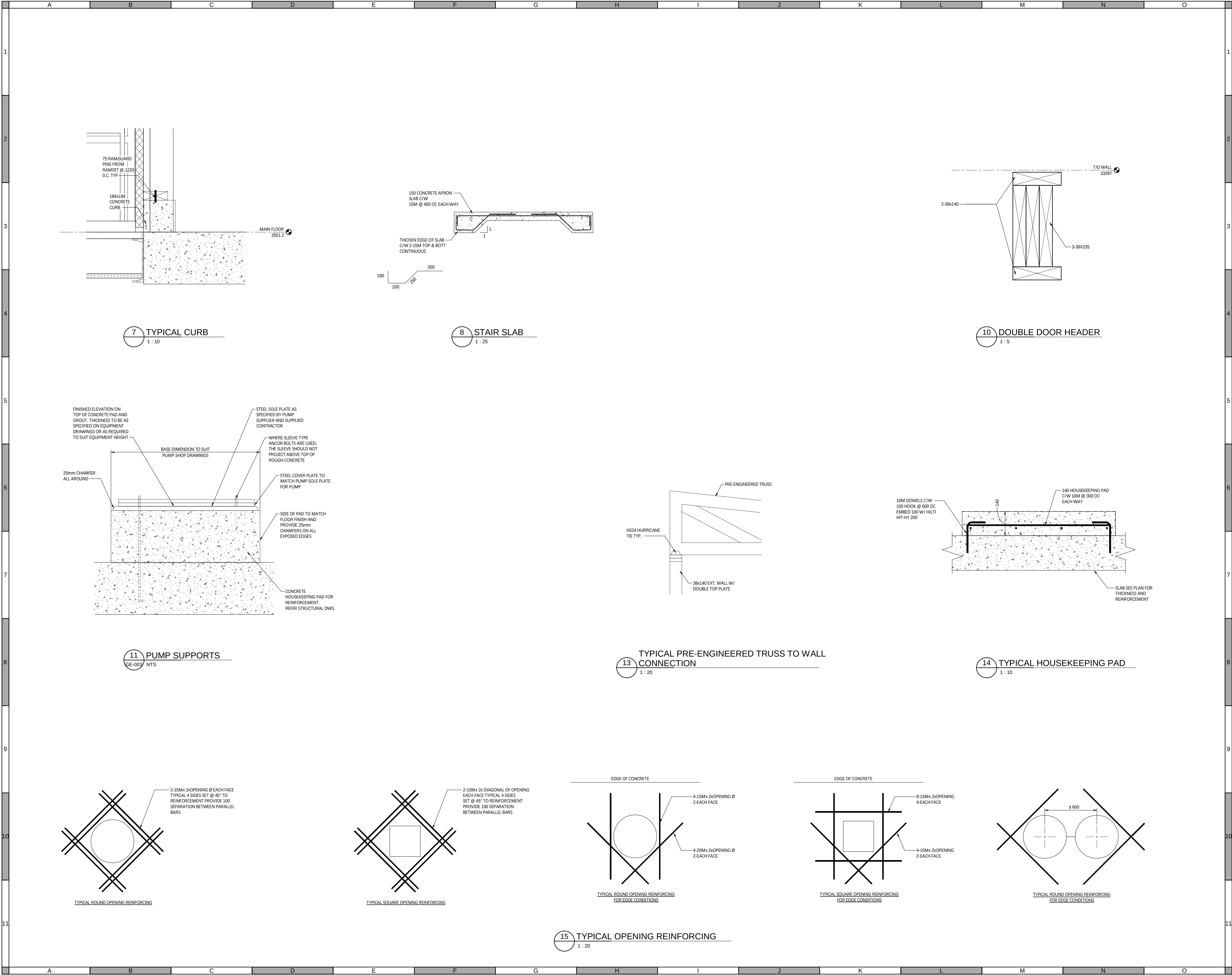
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1	24-11-29	ISSUED FOR DESIGN ASSIST RFP	



URBAN systems	
Scale	1 : 50
Quality Control by	BDL
Designed by	BDL
Drawn by	BHG

FOOTHILLS OKOTOKS INTAKE PUMP STATION ELEVATIONS	
Sheet Number	of
Project Number	
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Drawing Number	Revision
FORWP-02-S-GE-006	1

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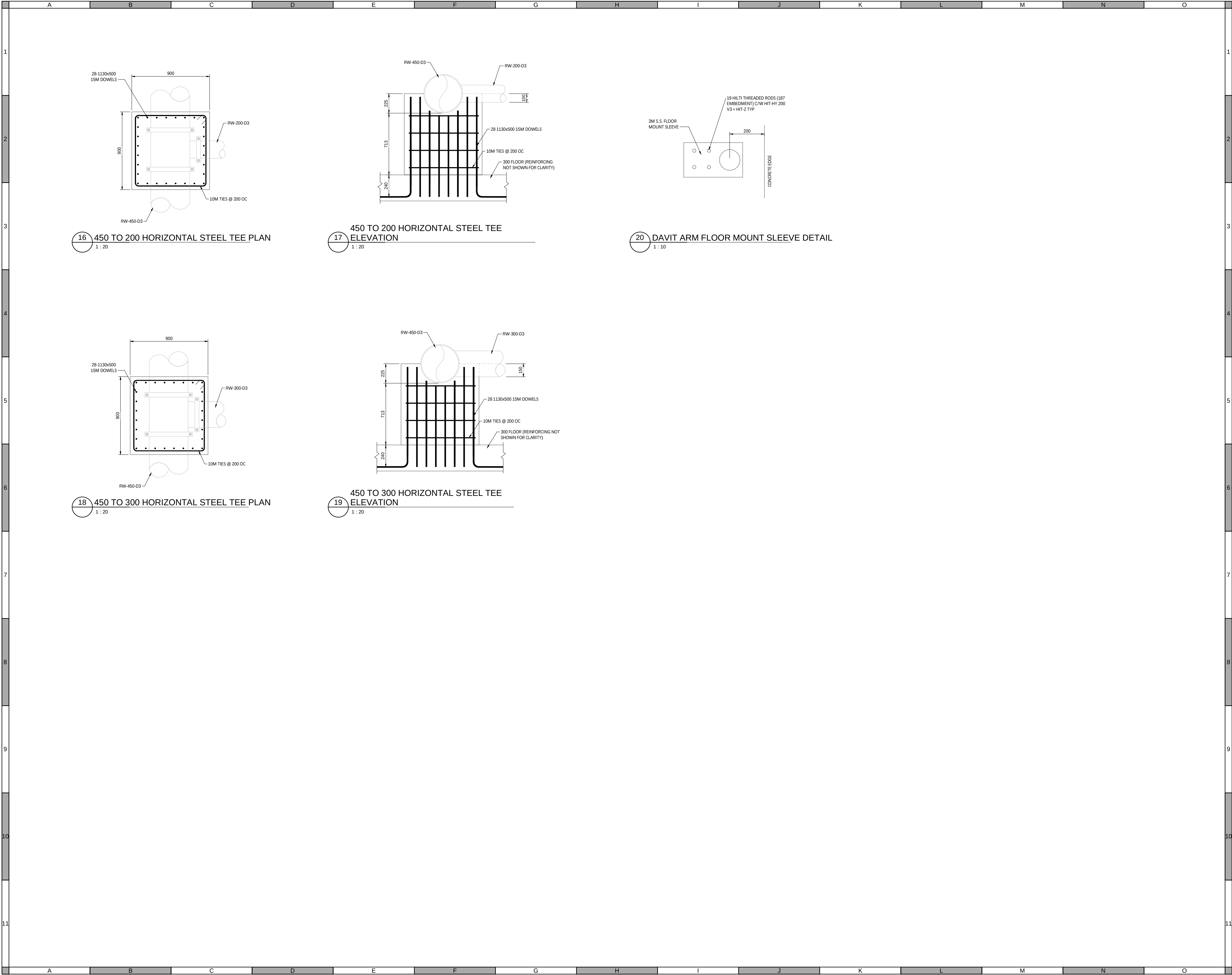
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URBAN systems	
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FOOTHILLS OKOTOKS INTAKE PUMP STATION SECTIONS AND DETAILS	
Sheet Number	of
Project Number	
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Drawing Number	Revision
FORWP-02-S-DET-001	1

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FOOTHILLS OKOTOKS INTAKE PUMP STATION SECTIONS A & B	
Sheet Number	of
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Drawing Number	Revision
FORWP-02-S-DET-002	1

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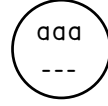
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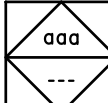
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IDENTIFICATION LETTERS				
FIRST-LETTER		SUCCEEDING LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	INPUT/OUTPUT FUNCTION	MODIFIER
A ANALYSIS		ALARM		AUTO
B BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE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

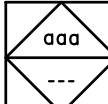
INSTRUMENT/DEVICE IDENTIFICATION EXAMPLES (aaa)

	AIT	ANALYZER INDICATOR TRANSMITTER
	FCV	FLOW CONTROL VALVE
	FIT	FLOW INDICATOR TRANSMITTER
	LIT	LEVEL INDICATOR TRANSMITTER
	PCV	PRESSURE CONTROL VALVE
	PI	PRESSURE INDICATOR TRANSMITTER
	PI	PRESSURE INDICATOR (PRESSURE GAGE)
	TSH	TEMPERATURE SWITCH HIGH (HEAT DETECTOR)
	TSL	TEMPERATURE SWITCH LOW (HEAT DETECTOR)
	ZSC	POSITION SWITCH CLOSE (DOOR CONTACT)

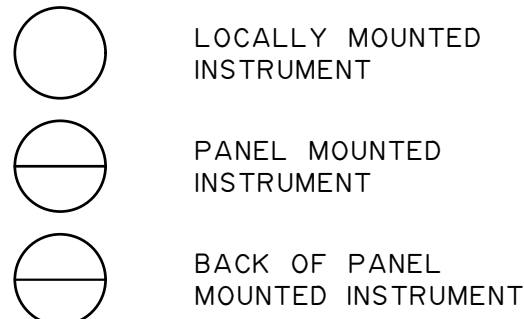
MOTOR FUNCTION EXAMPLES (aaa)

	HSA or HA	HAND STATUS AUTO (AUTO SIGNAL FROM THE HAND-OFF-AUTO SWITCH) - DI
	MCR or YS	MOTOR CONTROL RUN (START) - DO
	MSR or YC	MOTOR STATUS RUN - DI
	MSF or YA	MOTOR STATUS FAULT (OVERLOAD) - DI
	SY or SC	SPEED COMPUTE/CONVERT (CONTROL) - AO
	ST or SI	SPEED TRANSMIT (FEEDBACK) - AI
	TSH or YA	TEMPERATURE STATUS HIGH (THERMISTOR) - DI
	LSH or YA	LEVEL STATUS HIGH (LEAKAGE IN SUBMERSIBLE PUMP SEAL) - DI

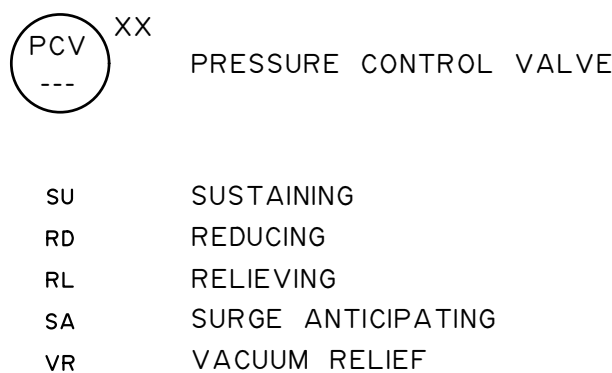
VALVE FUNCTION EXAMPLES (aaa)

	ZY or ZC	POSITION COMPUTE/CONVERT (CONTROL) - AO
	ZT or ZI	POSITION TRANSMIT (FEEDBACK) - AI
	ZCO or YSO	POSITION CONTROL OPEN - DO
	ZCC or YSC	POSITION CONTROL CLOSE - DO
	ZSO	POSITION STATUS OPEN - DI
	ZSC	POSITION STATUS CLOSE - DI

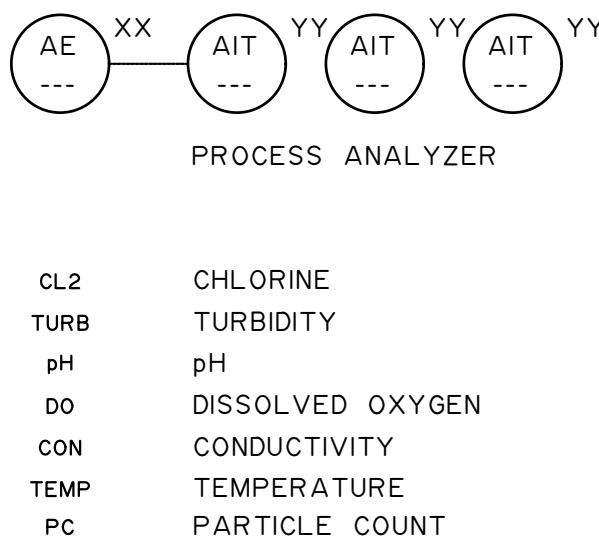
EQUIPMENT TAG



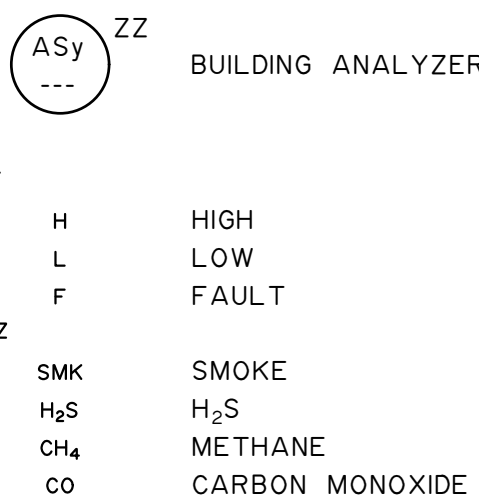
PRESSURE CONTROL VALVE LEGEND (XX)



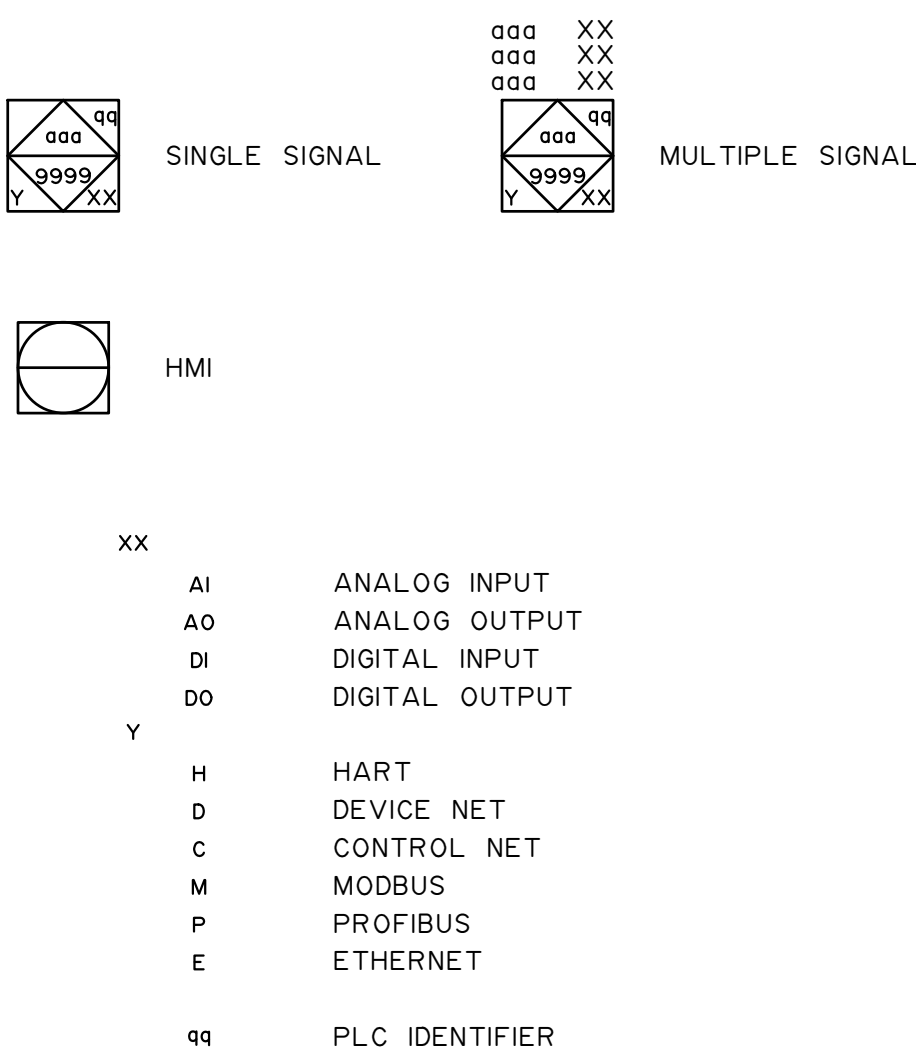
ANALYZING ELEMENT/ALARM LEGEND (YY)



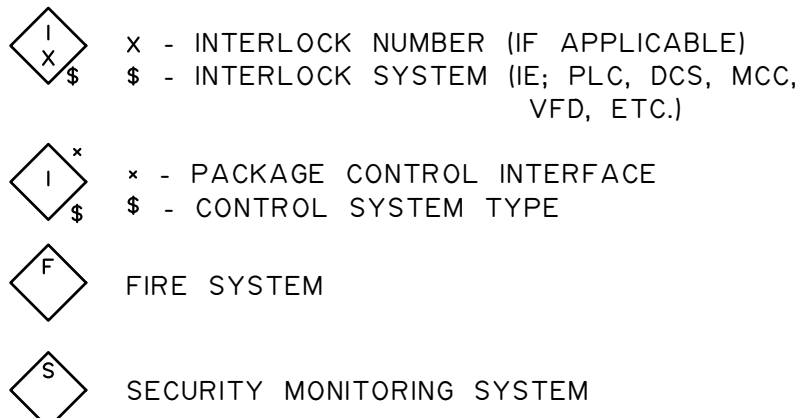
BUILDING ANALYZING ELEMENT/ALARM LEGEND



FUNCTION BLOCK



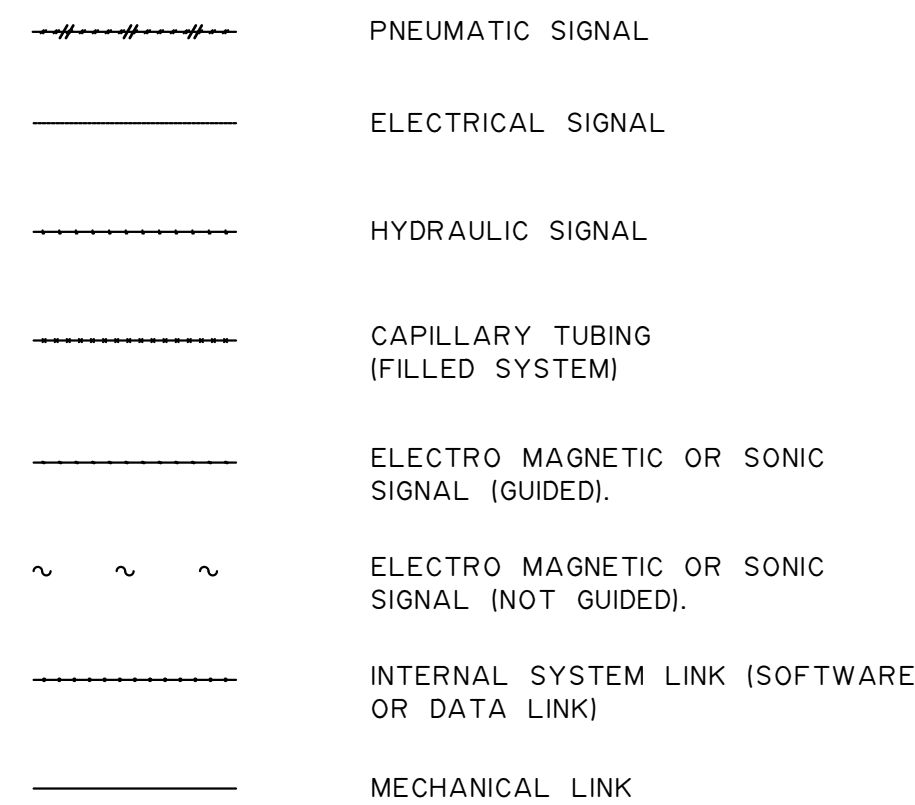
INTERLOCK



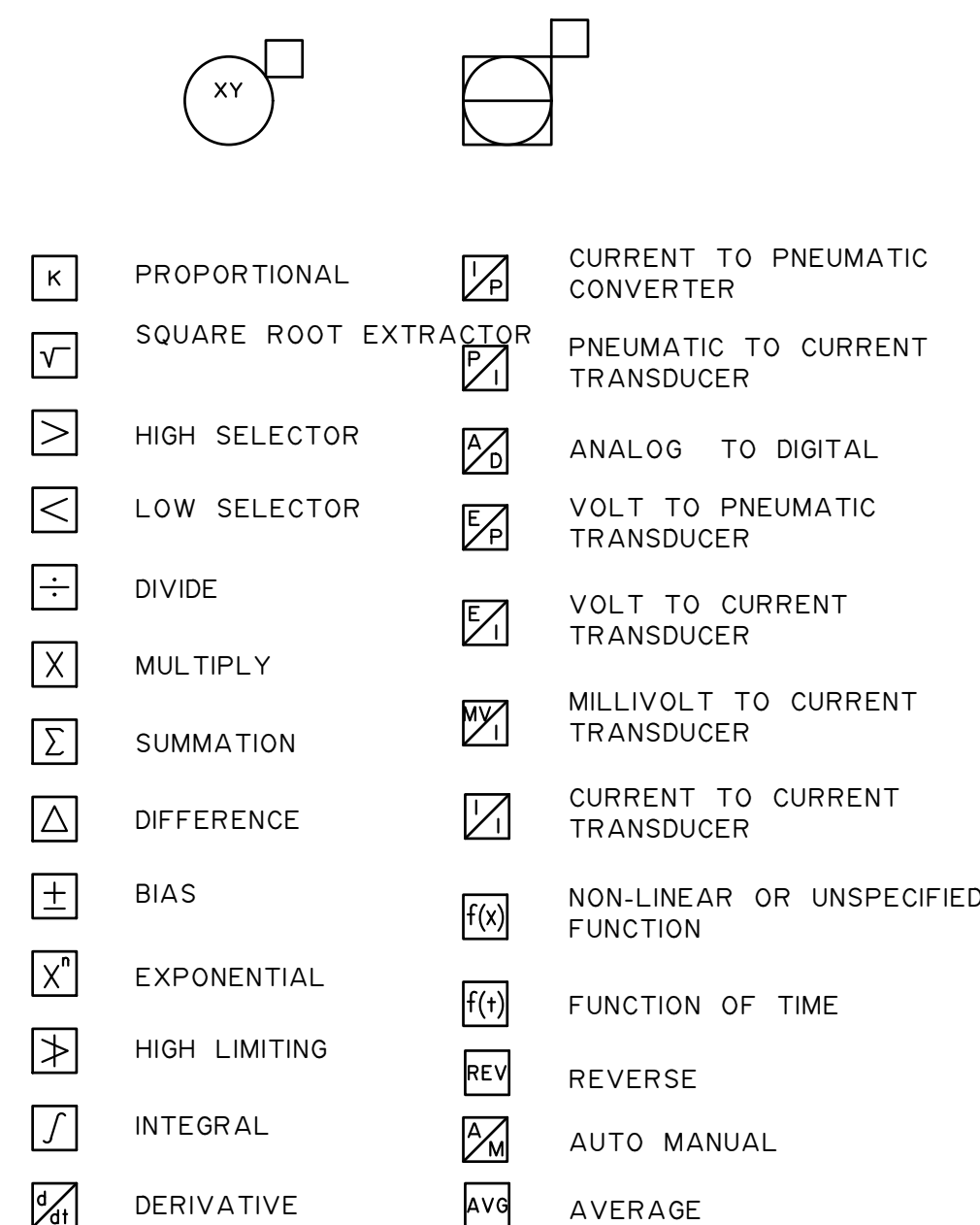
POWER SUPPLY AND PURGE FLUIDS LEGEND

AS	AIR SUPPLY	HS	HYDRAULIC SUPPLY
IS	INSTRUMENT AIR SUPPLY	NS	NITROGEN SUPPLY
PS	PLANT AIR SUPPLY	SS	STEAM SUPPLY
ES	ELECTRICAL SUPPLY	WS	WATER SUPPLY
GS	GAS SUPPLY		

LINE TYPES



FUNCTION SYMBOLS



NOTES:

- ALL DIMENSIONS AND PIPE SIZES ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL ITEMS SHOWN AS BOLD INDICATE WORK TO BE DONE AND ALL ITEMS SHOWN AS LIGHT INDICATE EXISTING CONDITIONS.

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Scale NOT TO SCALE

Quality Control by
Designed by
Drawn by

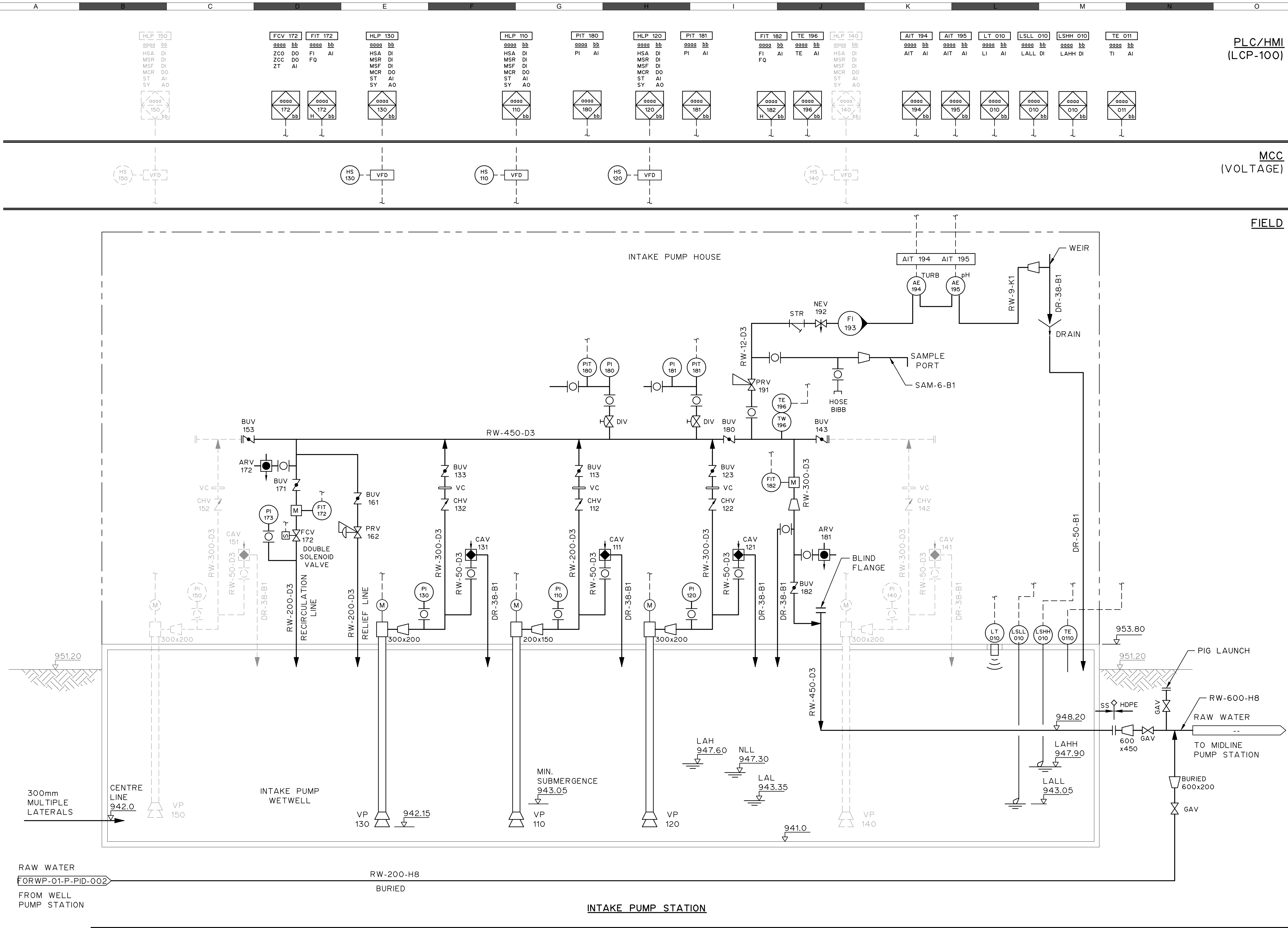
R.K.F.
Y.F.S.

FOOTHILLS OKOTOKS INTAKE
PUMP STATION
PROCESS & INSTRUMENTATION
LEGEND AND SYMBOL
SHEET 3

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-P-GE-003	C

NOT FOR CONSTRUCTION

M:\N-Data\201\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\FORWP-01-P-PID-001.dwg, FORWP-01-P-PID-001, 2024/11/29 04:46 pm ysheng



VP 110
TYPE: VERTICAL TURBINE
DESIGN: 33.0 L/S AT 126m TDH @ 1770 RPM (PHASE 2)
35.0 L/S AT 92m TDH @ 1650 RPM (PHASE 1)
POWER: 55.9 kW (75HP)
575 VAC/3 PH/60 Hz

VP 120/VP 130
TYPE: VERTICAL TURBINE
DESIGN: 81.0 L/S AT 126m TDH @ 1770 RPM (PHASE 2)
81.0 L/S AT 92m TDH @ 1930 RPM (PHASE 1)
POWER: 149.1 kW (200HP)
575 VAC/3 PH/60 Hz

VP 140/VP 150
TYPE: VERTICAL TURBINE
DESIGN: 81.0 L/S AT 126m TDH @ 1770 RPM (PHASE 2)
81.0 L/S AT 92m TDH @ 1930 RPM (PHASE 1)
POWER: 149.1 kW (200HP)
575 VAC/3 PH/60 Hz

NOTES:

- ALL ELEVATIONS ARE IN METERS, ALL DIMENSIONS AND PIPE SIZES ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- PUMPING STATION DESIGN CAPACITIES: PHASE 1: 10,000 m³/d
PHASE 2: 28,000 m³/d
- IT IS ASSUMED THAT LATERALS CREATE 0.5m PRESSURE DROP UNDER NEW CONDITION, MAXIMUM DRAW DOWN OF 3.5m IS MAINTAINED BY LAL1 THROUGH LAL2 WHEN THE LATERAL FILTERS GET PLUGGED.
- ALL TAGS ARE PREFIXED BY "01".

DESIGN CRITERIA

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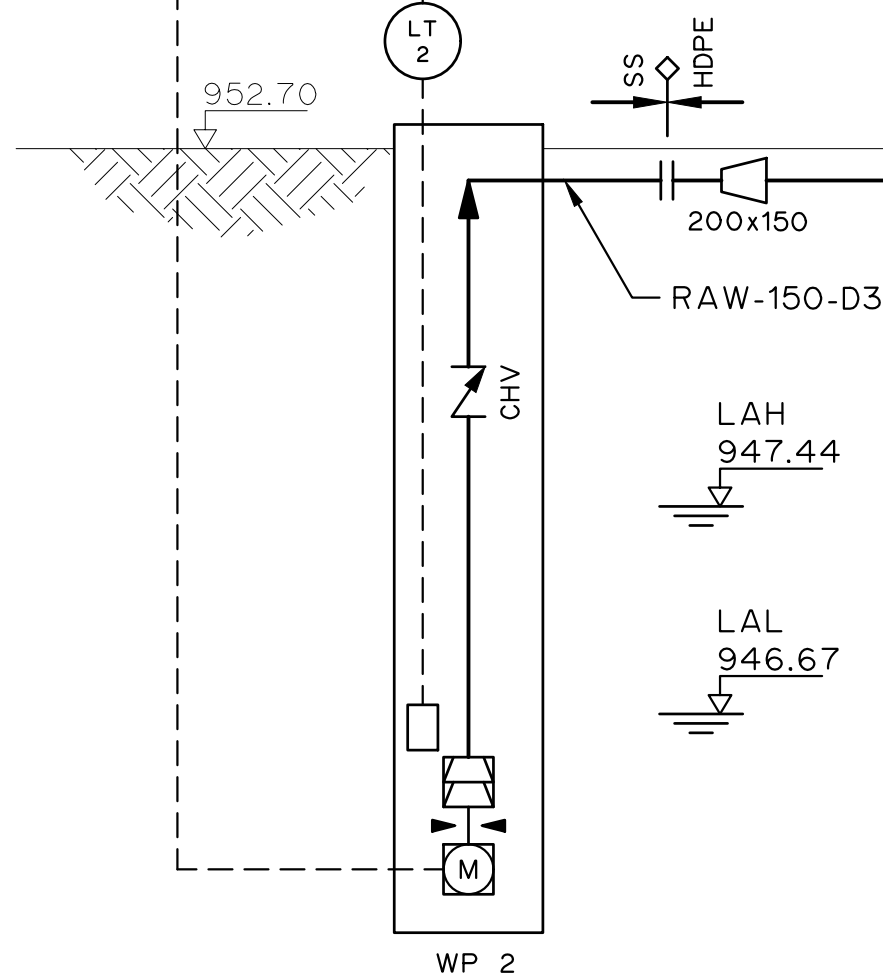
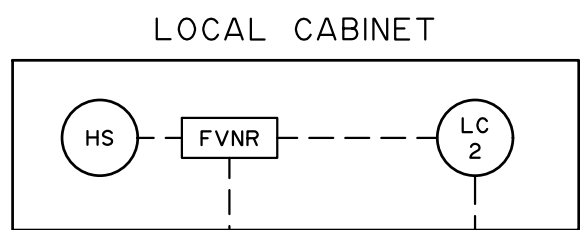
FOOTHILLS OKOTOKS INTAKE PUMP STATION
PROCESS & INSTRUMENTATION DIAGRAM
INTAKE PUMP STATION

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-PID-001

of ##
Revision
C

NOT FOR CONSTRUCTION

M:\N-Data\2012\1 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\FORWP-01-P-PID-001 to 004 P&ID.dwg, FORWP-01-P-PID-002, 2024/11/29 04:46 pm ysheng



WP 2
TYPE: SUBMERSIBLE WELL PUMP
DESIGN: 29.0 L/S AT 121m TDH (PHASE 2)
29.0 L/S AT 90m TDH (PHASE 1)
POWER: 55.9 kW (75HP)
575 VAC/3 PH/60 Hz

PLC/HMI
(LCP-100)

MCC
(VOLTAGE)

FIELD

RAW WATER
TO RAW WATER
FORCEMAIN

RW-200-H8

FORWP-01-P-PID-001

200x150

RAW-150-D3

LAH 947.44

LAL 946.67

WP 2

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Scale
NOT TO SCALE

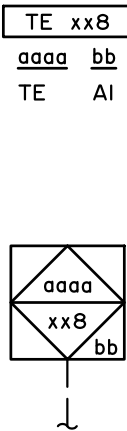
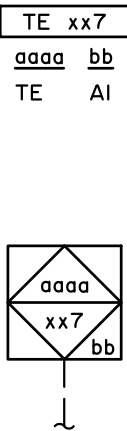
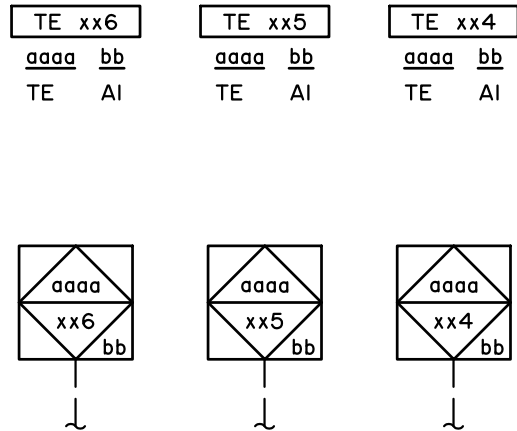
Quality Control by
Designed by
Drawn by
E.M.
Y.F.S.

FOOTHILLS OKOTOKS INTAKE
PUMP STATION
PROCESS & INSTRUMENTATION DIAGRAM
WELL PUMP STATION

Sheet Number	# of ##
Project Number 29121-005-09	
Drawing Number FORWP-01-P-PID-002	Revision C

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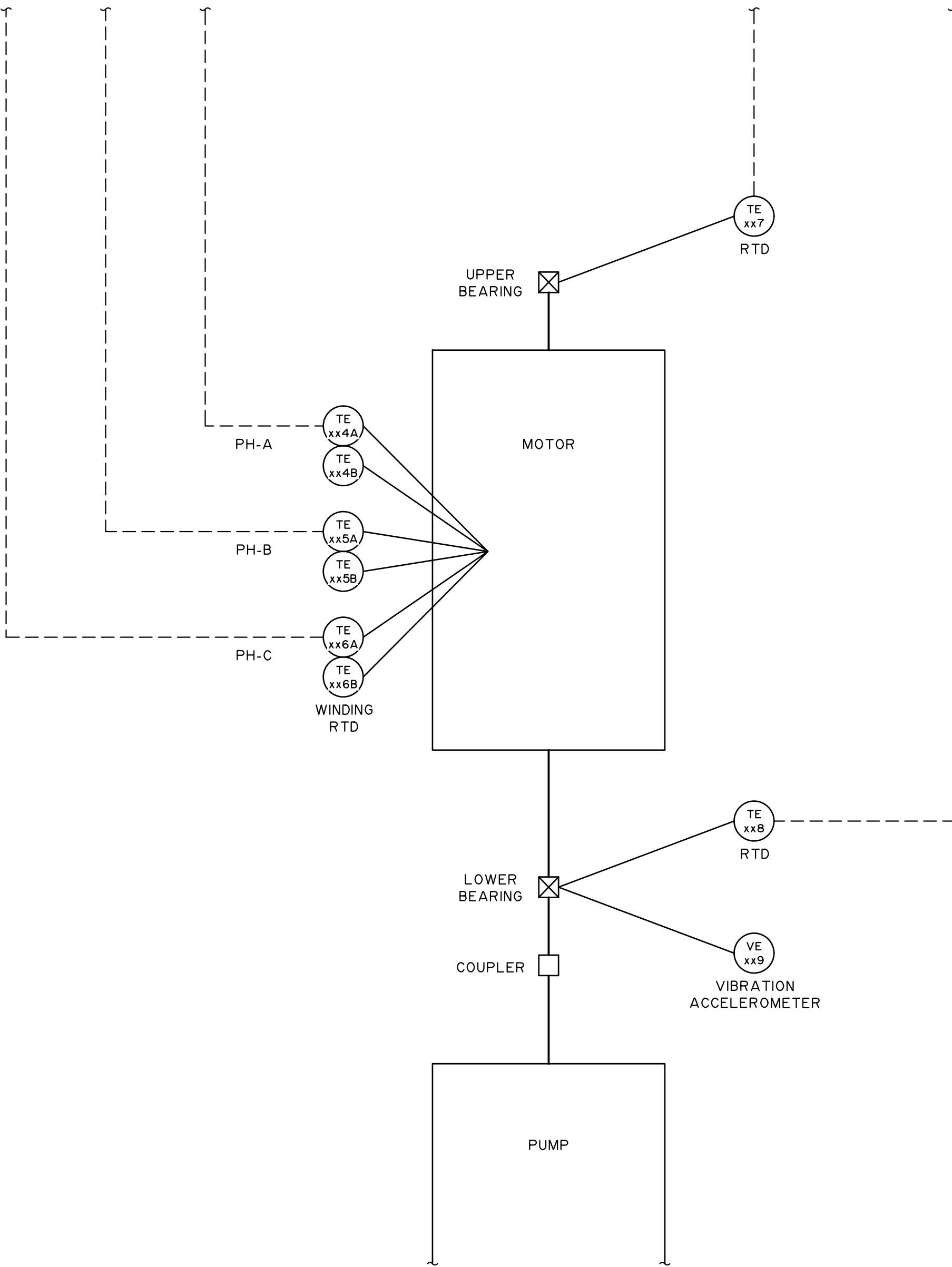
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PLC/HMI
(LCP-100)

MCC
(VOLTAGE)

FIELD



	VP120	VP130	VP140	VP150
MOTOR STATOR RTD PHASE A	TE124A TE124B	TE134A TE134B	TE144A TE144B	TE154A TE154B
MOTOR STATOR RTD PHASE B	TE125A TE125B	TE135A TE135B	TE145A TE145B	TE155A TE155B
MOTOR STATOR RTD PHASE C	TE126A TE126B	TE136A TE136B	TE146A TE146B	TE156A TE156B
MOTOR UPPER REARING RTD	TE127	TE137	TE147	TE157
MOTOR LOWER REARING RTD	TE128	TE138	TE148	TE158
MOTOR LOWER REARING ACCELEROMETER	VE129	VE139	VE149	VE159

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Scale
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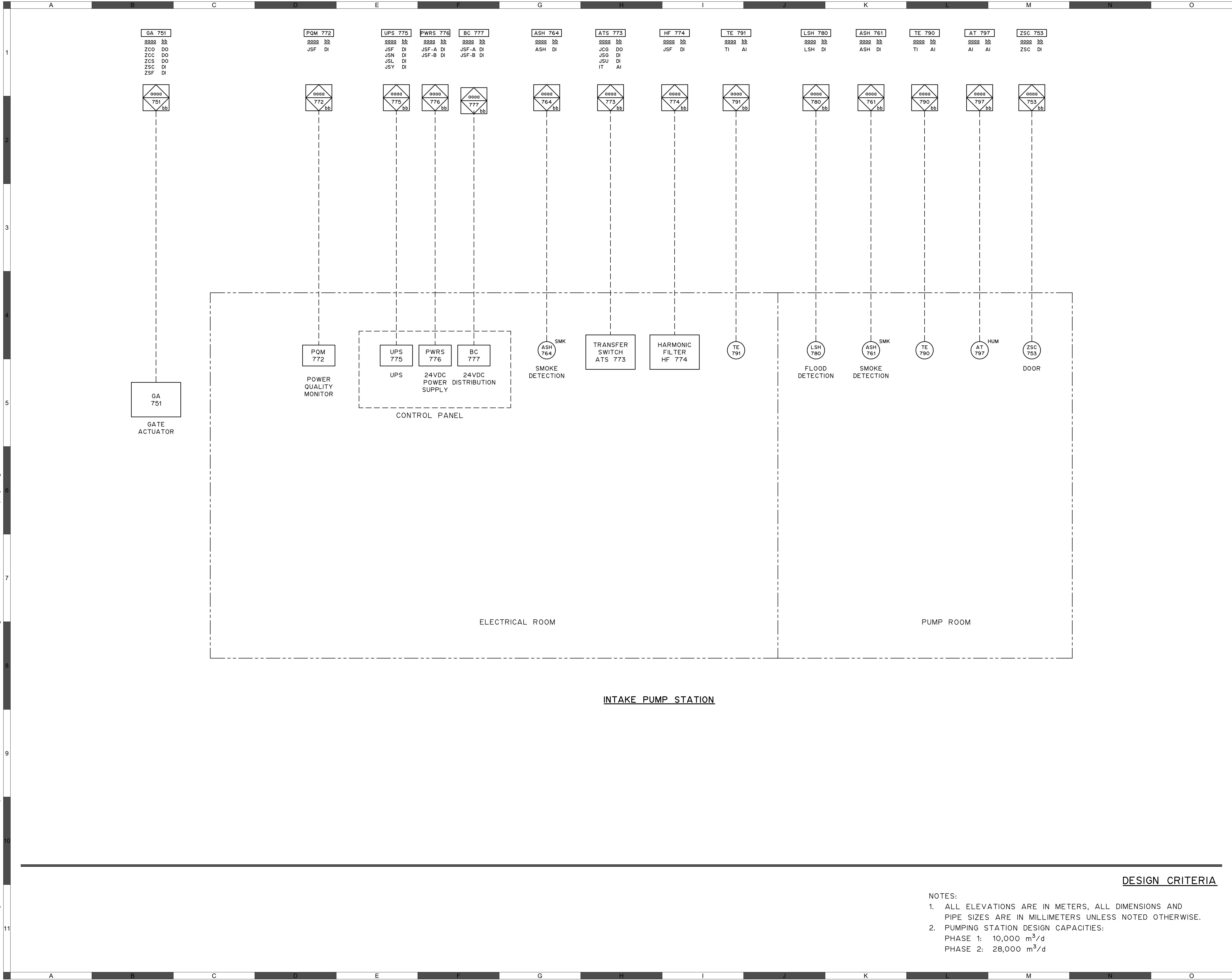
G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS INTAKE
PUMP STATION
PROCESS & INSTRUMENTATION DIAGRAM
PUMP MOTOR TYPICAL

Sheet Number	# of ##
Project Number 29121-005-09	
Drawing Number FORWP-01-P-PID-003	Revision C

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Okotoks
Historic Past. Sustainable Future.

MPE
a division of Englobe

Scale: NOT TO SCALE

Quality Control by: G.B.P.
Designed by: Y.F.S.
Drawn by:

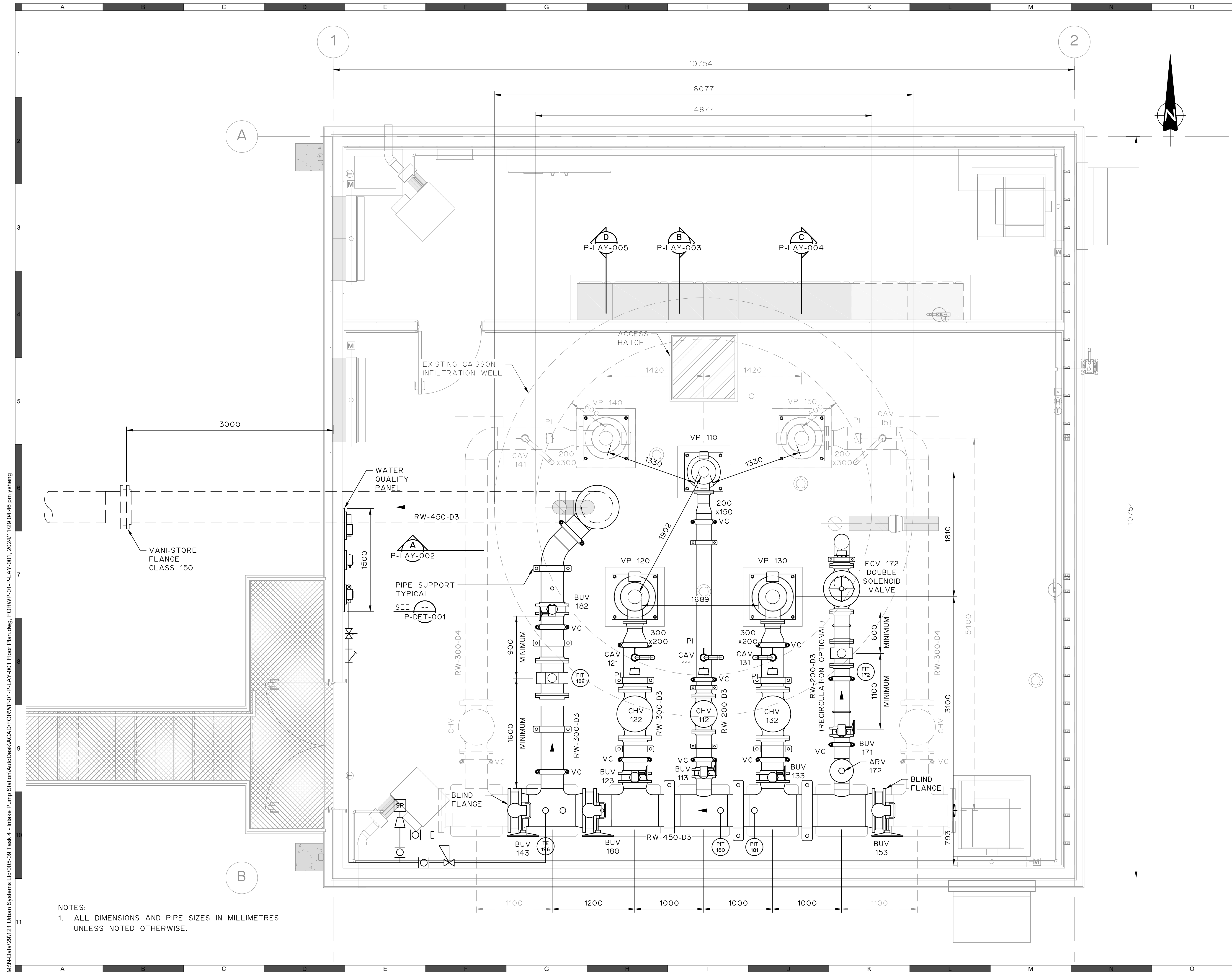
FOOTHILLS OKOTOKS INTAKE PUMP STATION

PROCESS & INSTRUMENTATION DIAGRAM
BUILDING AUXILIARIES

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-P-PID-004	C

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M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\FORWP-01-P-LAY-001 Floor Plan.dwg, FORWP-01-P-LAY-001, 2024/11/29 04:46 pm ysheng



NOTES:
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UNLESS NOTED OTHERWISE.

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Scale 0 0.25m 0.25 0.5 0.75

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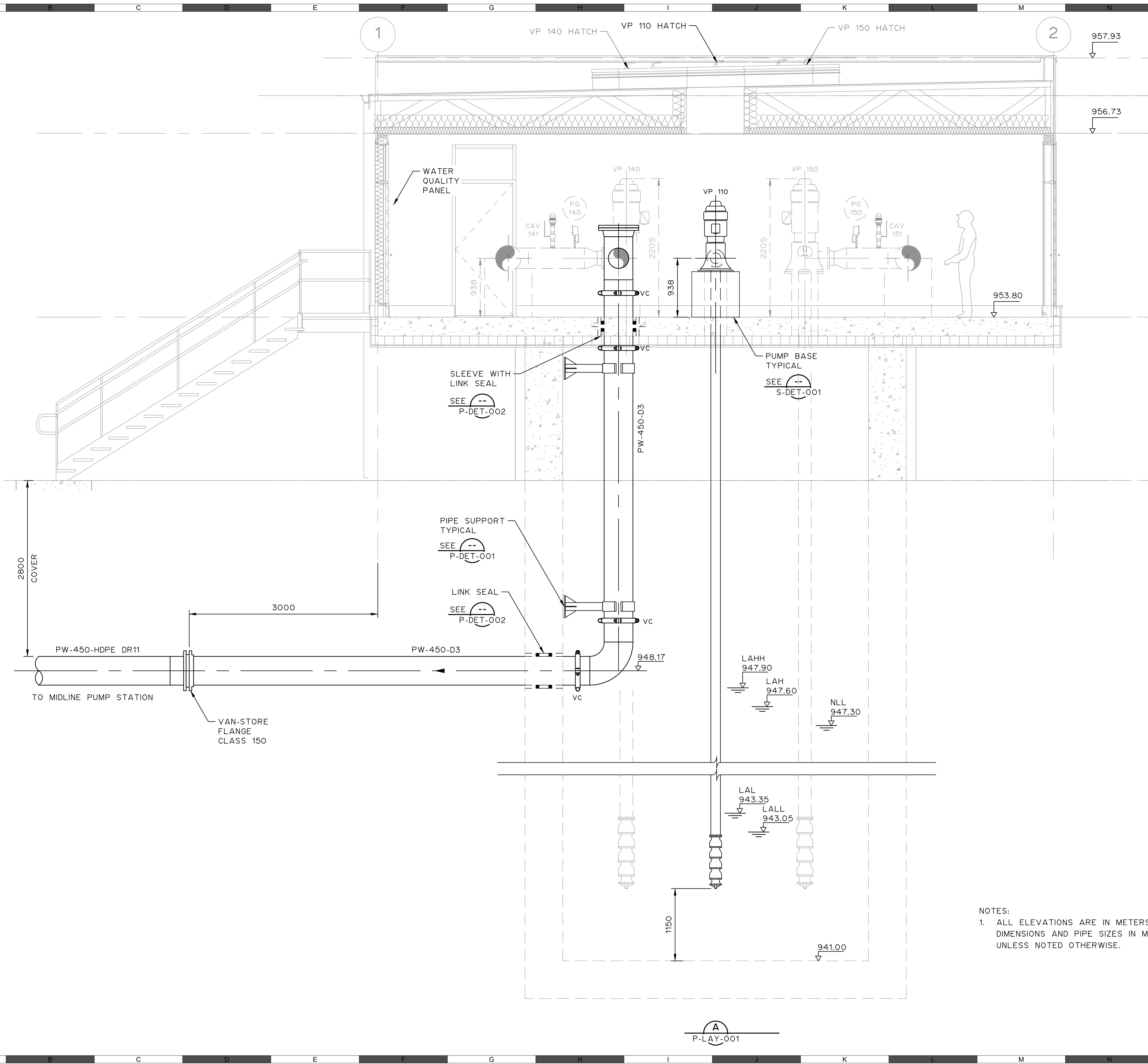
**FOOTHILLS OKOTOKS INTAKE
PUMP STATION
PLAN VIEW 16 FT CASING 5 x HLP**

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-LAY-001

of ##
Revision
C

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M:\N-Data\2012\1 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\FORWP-01-P-LAY-002 - 005 SECTIONS.dwg, FORWP-01-P-LAY-002, 2024/11/20 04:46 pm ysheng



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Scale 0 0.25m 0.25 0.5 0.75

Quality Control by
Designed by
Drawn by

R.K.F.
Y.F.S.

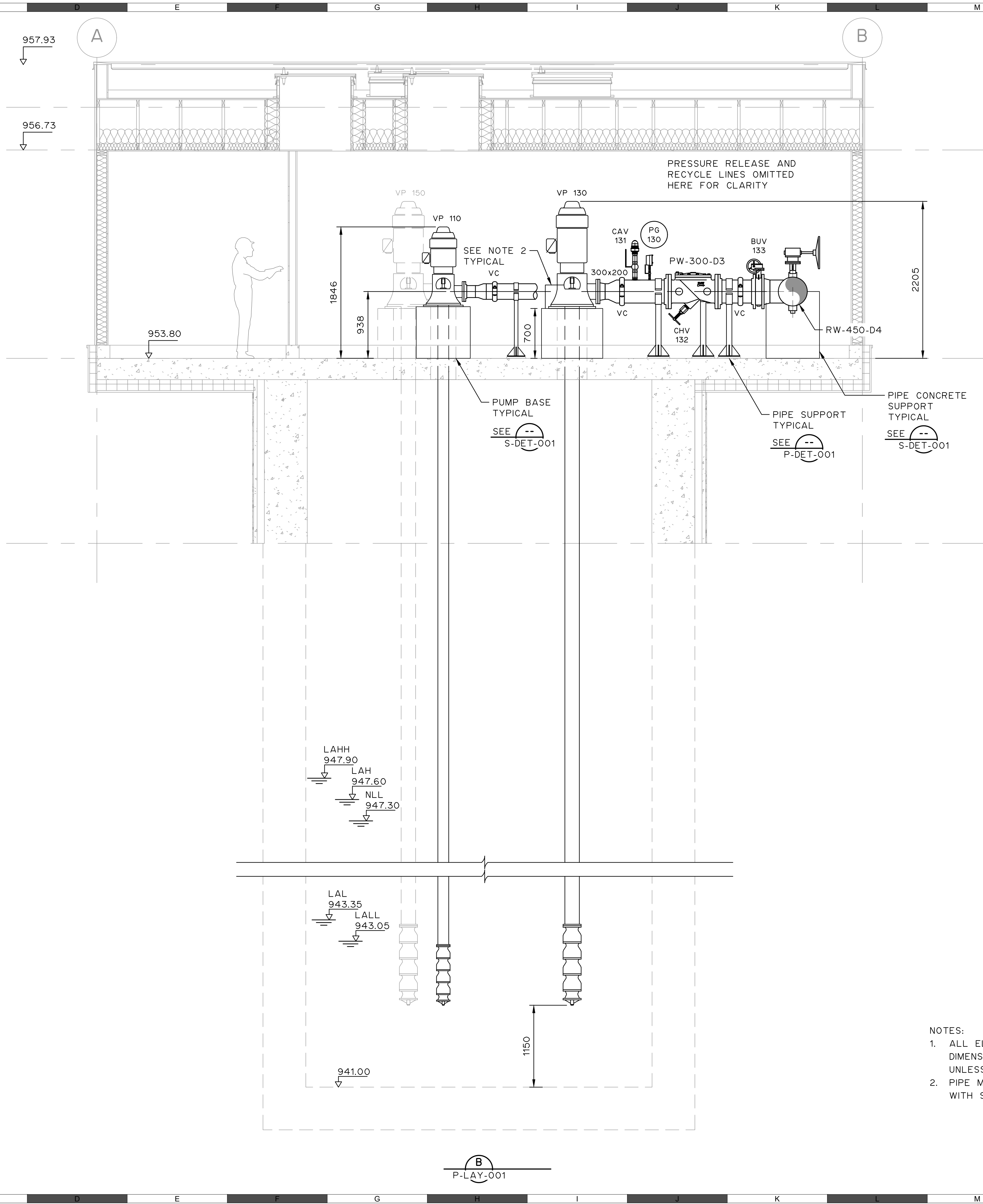
**FOOTHILLS OKOTOKS INTAKE
PUMP STATION
SECTION A**

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-LAY-002

of ##
C

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- NOTES:
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 2. PIPE MECHANICAL SEAL BACK TO CLEAR WELL WITH STAINLESS STEEL PIPING.

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Scale 0 0.25m 0.25 0.5 0.75

Quality Control by
Designed by
Drawn by

R.K.F.
Y.F.S.

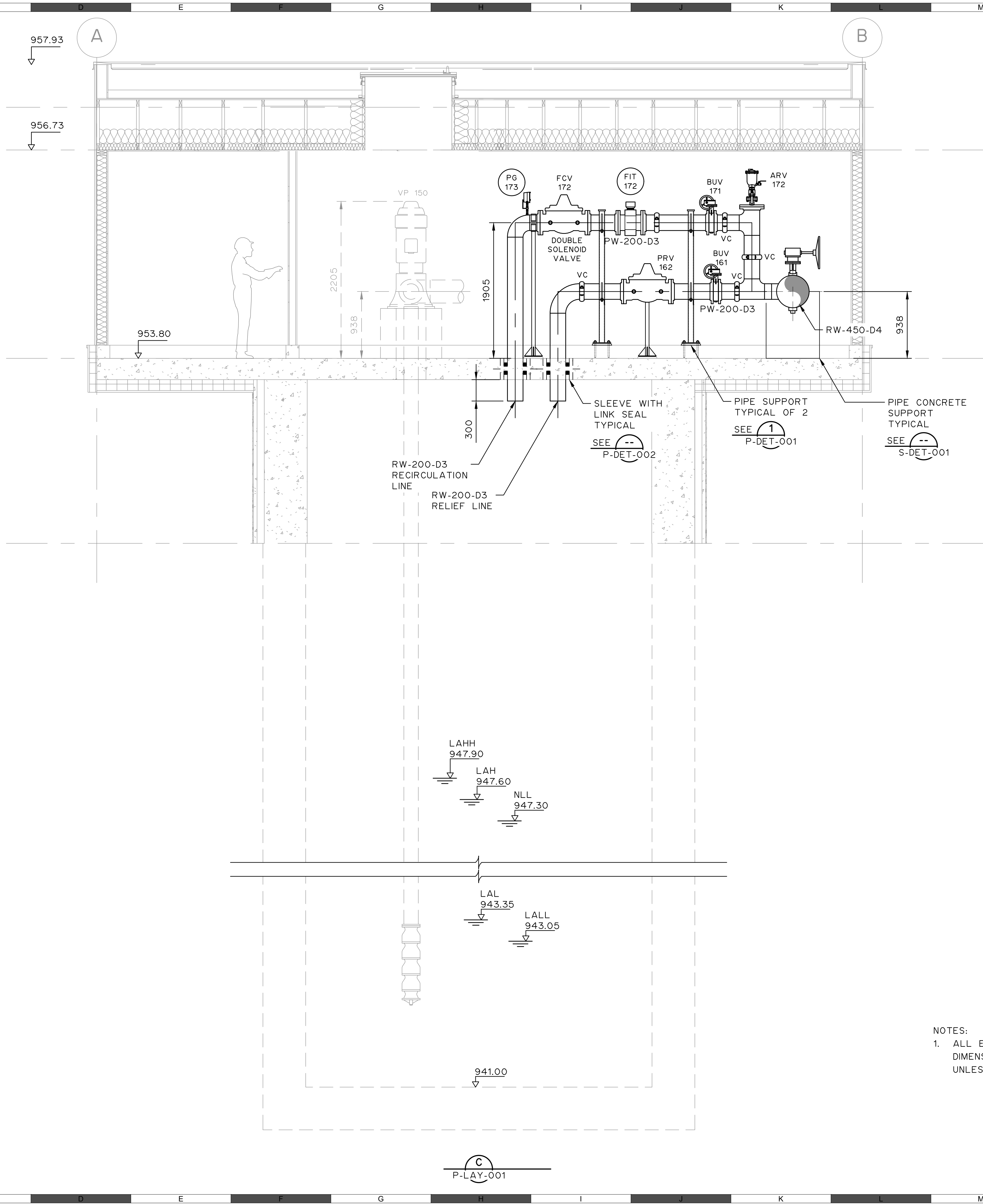
**FOOTHILLS OKOTOKS INTAKE
PUMP STATION
SECTION B**

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-LAY-003

of ##
Revision
C

NOT FOR CONSTRUCTION

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Scale 0 0.25 0.5 0.75

Quality Control by
Designed by
Drawn by

R.K.F.
Y.F.S.

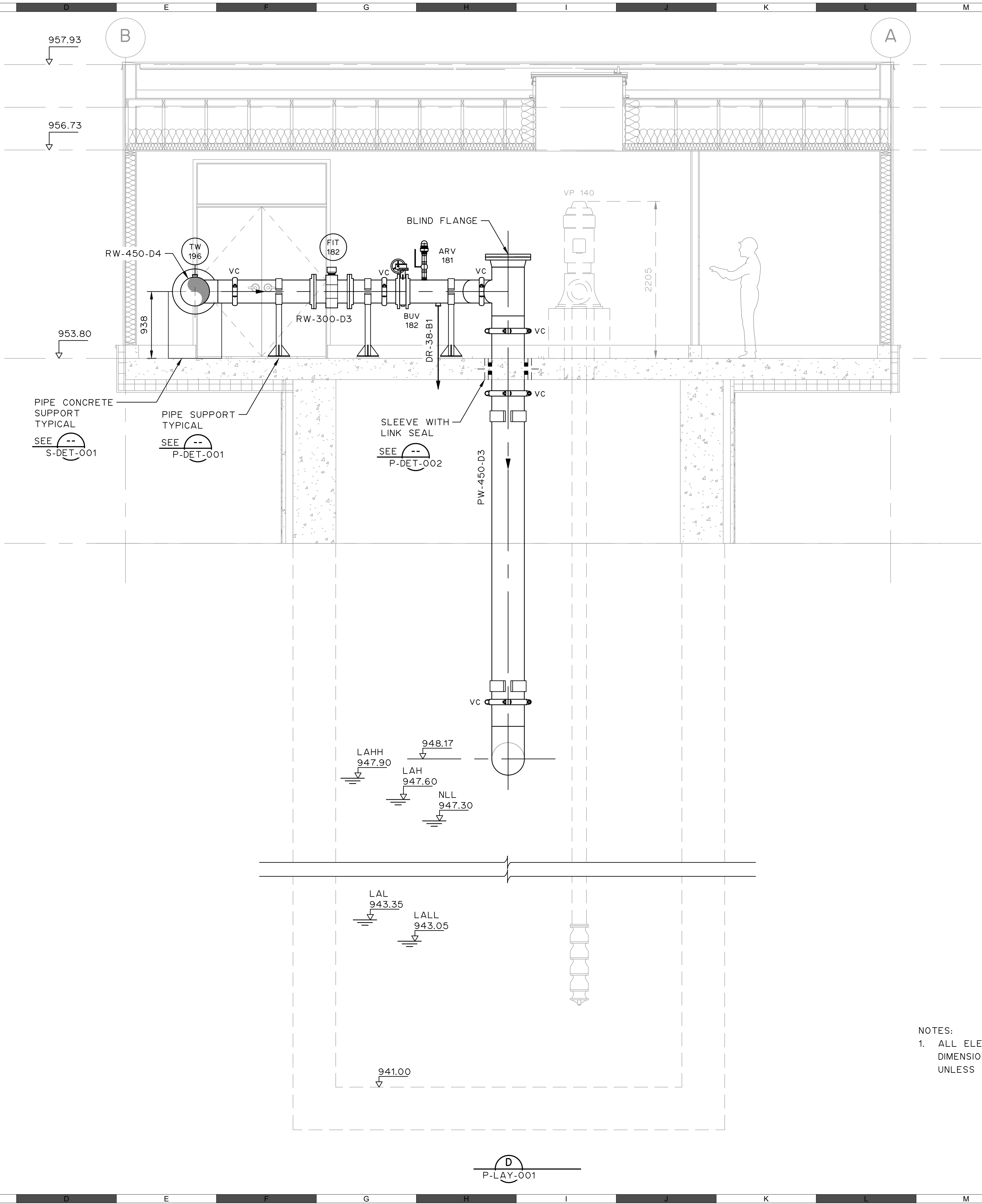
FOOTHILLS OKOTOKS INTAKE PUMP STATION
SECTION C

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-LAY-004

of ##
Revision
C

NOT FOR CONSTRUCTION

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NOTES:
1. ALL ELEVATIONS ARE IN METERS. ALL DIMENSIONS AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.

ATTENTION
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Professional Seals

#	Date	Issue / Revision	App
A	24-08-27	ISSUED FOR 60% REVIEW	R.K.F.
B	24-11-14	ISSUED FOR 75% REVIEW	R.K.F.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	R.K.F.



Scale 0 0.25m 0.25 0.5 0.75

Quality Control by
Designed by
Drawn by

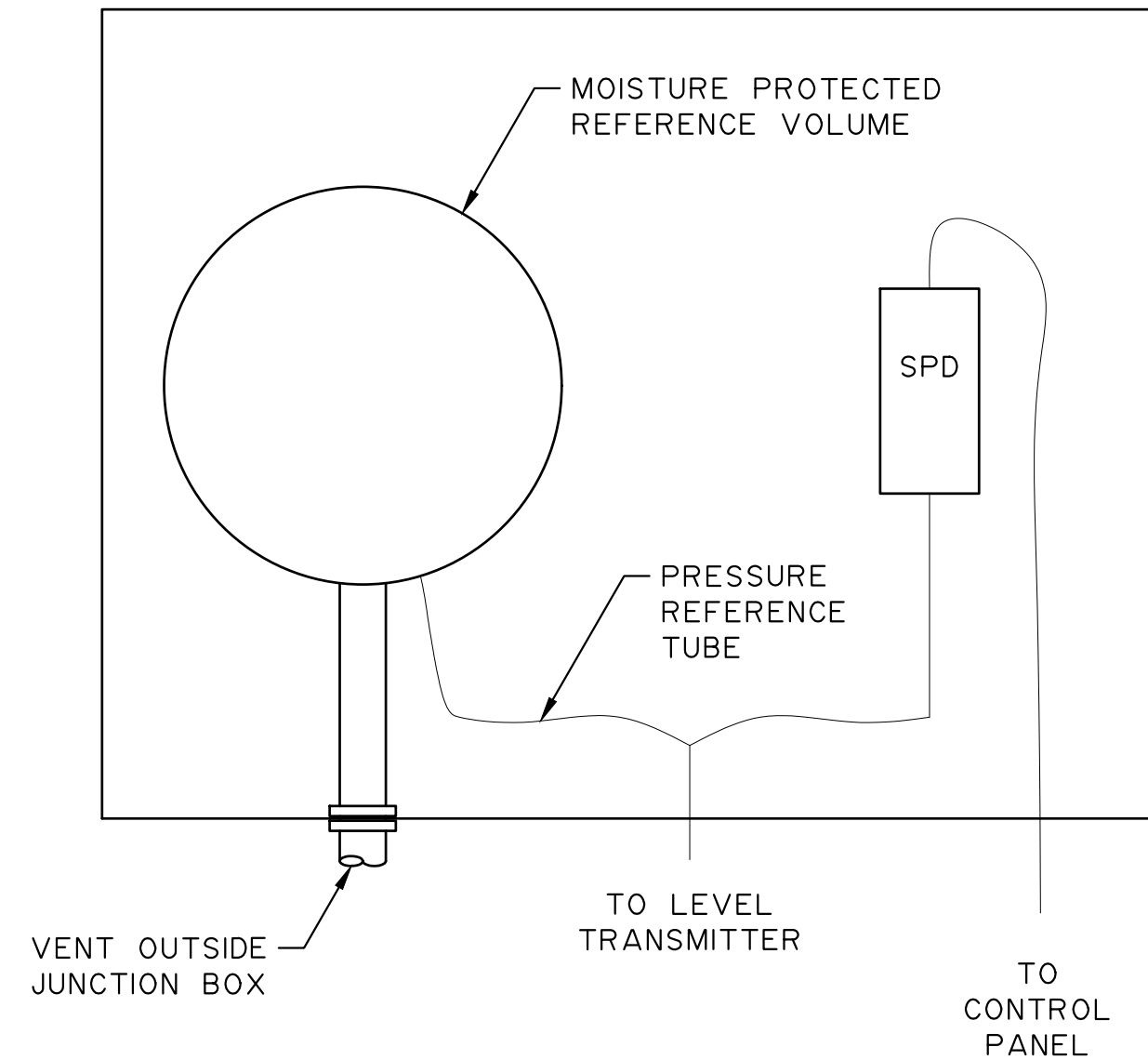
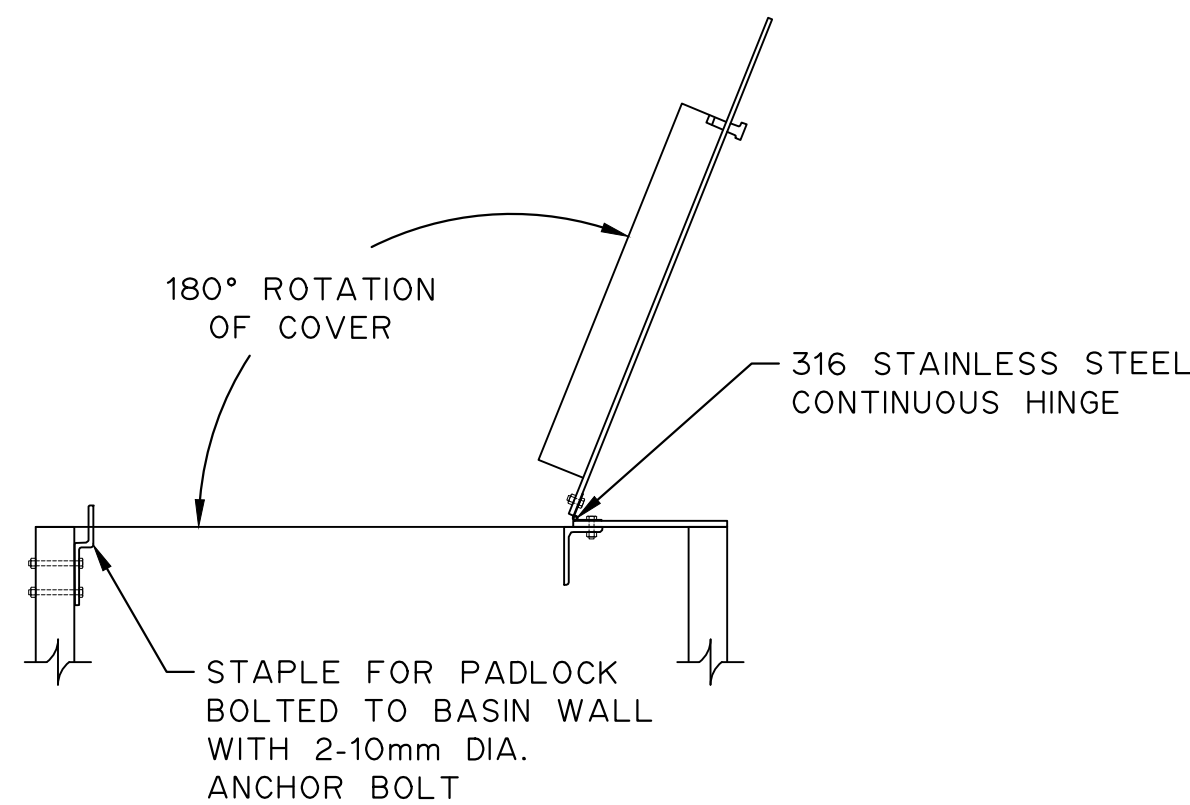
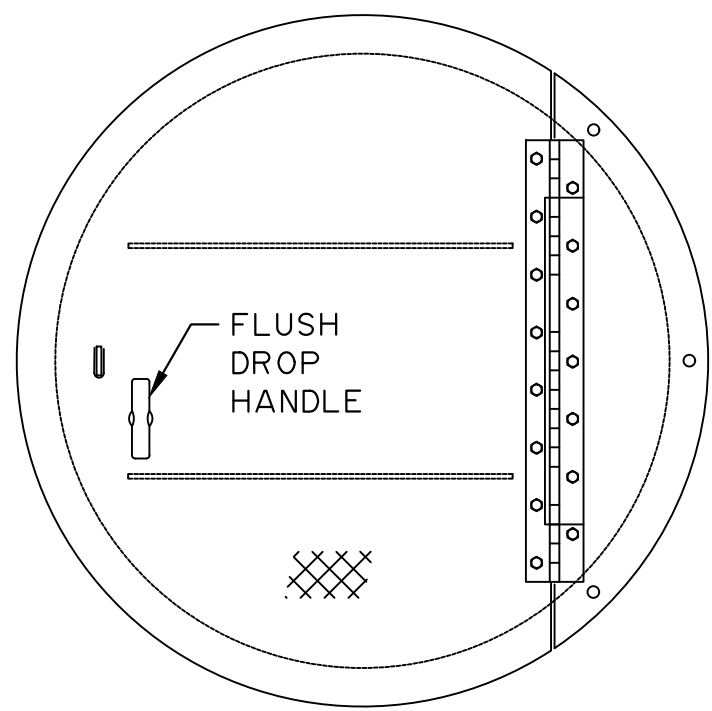
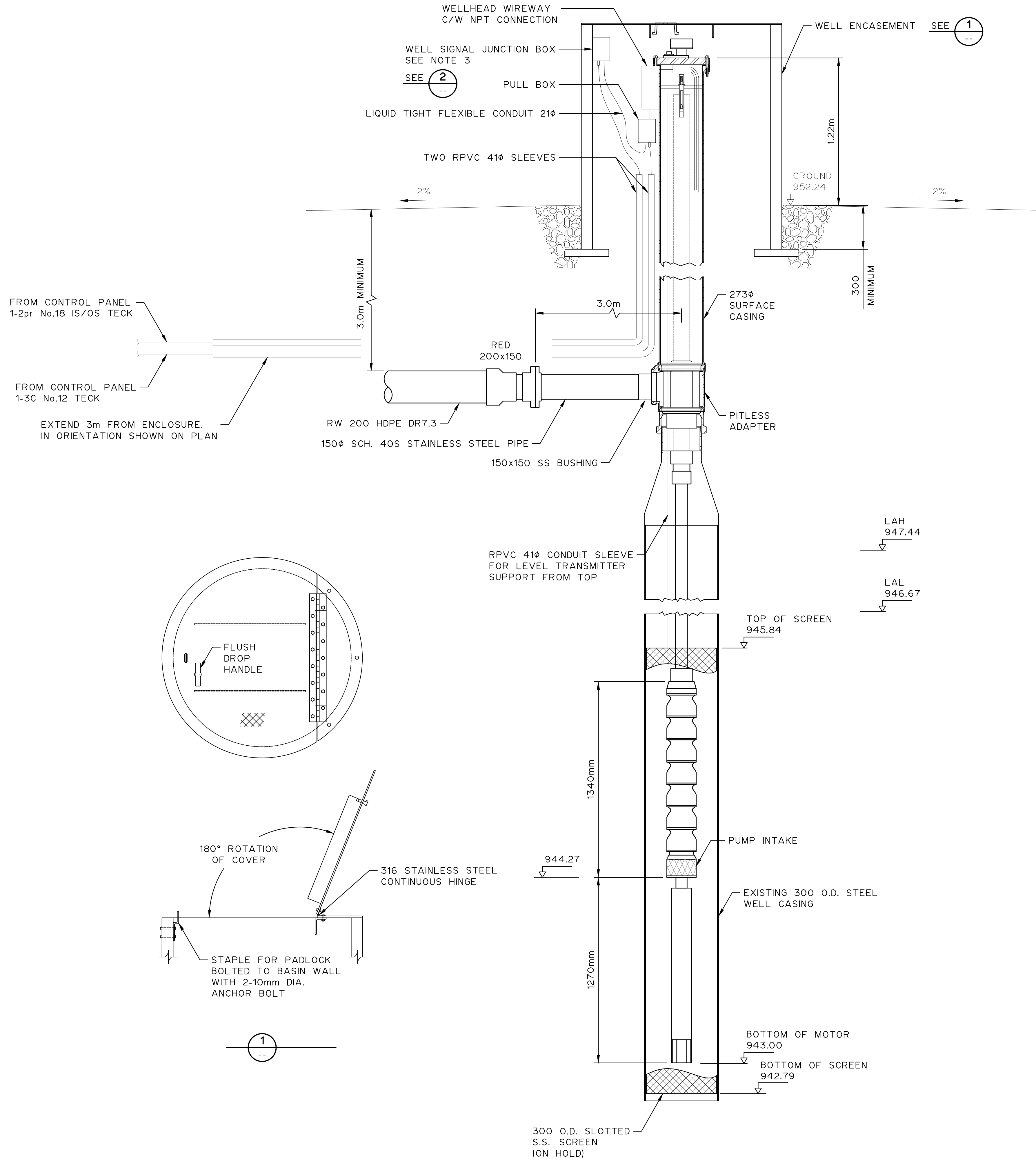
R.K.F.
Y.F.S.

FOOTHILLS OKOTOKS INTAKE
PUMP STATION
SECTION D

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-P-LAY-005	C

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WELL SIGNAL JUNCTION BOX DETAIL

NOTES:

1. ALL ELEVATIONS ARE IN METERS. ALL DIMENSIONS AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. PITLESS ADAPTER TO BE MAASS MB WITH WATER TIGHT CAP.

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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	R.K.F.



Scale 0 0.25m 0 0.25 0.5 0.75

Quality Control by
Designed by E.M.
Drawn by Y.F.S.

**FOOTHILLS OKOTOKS INTAKE
PUMP STATION**
WELL No.2 PUMP SECTION

Sheet Number # of ##
Project Number
29121-005-09
Drawing Number Revision
FORWP-01-P-LAY-006 C

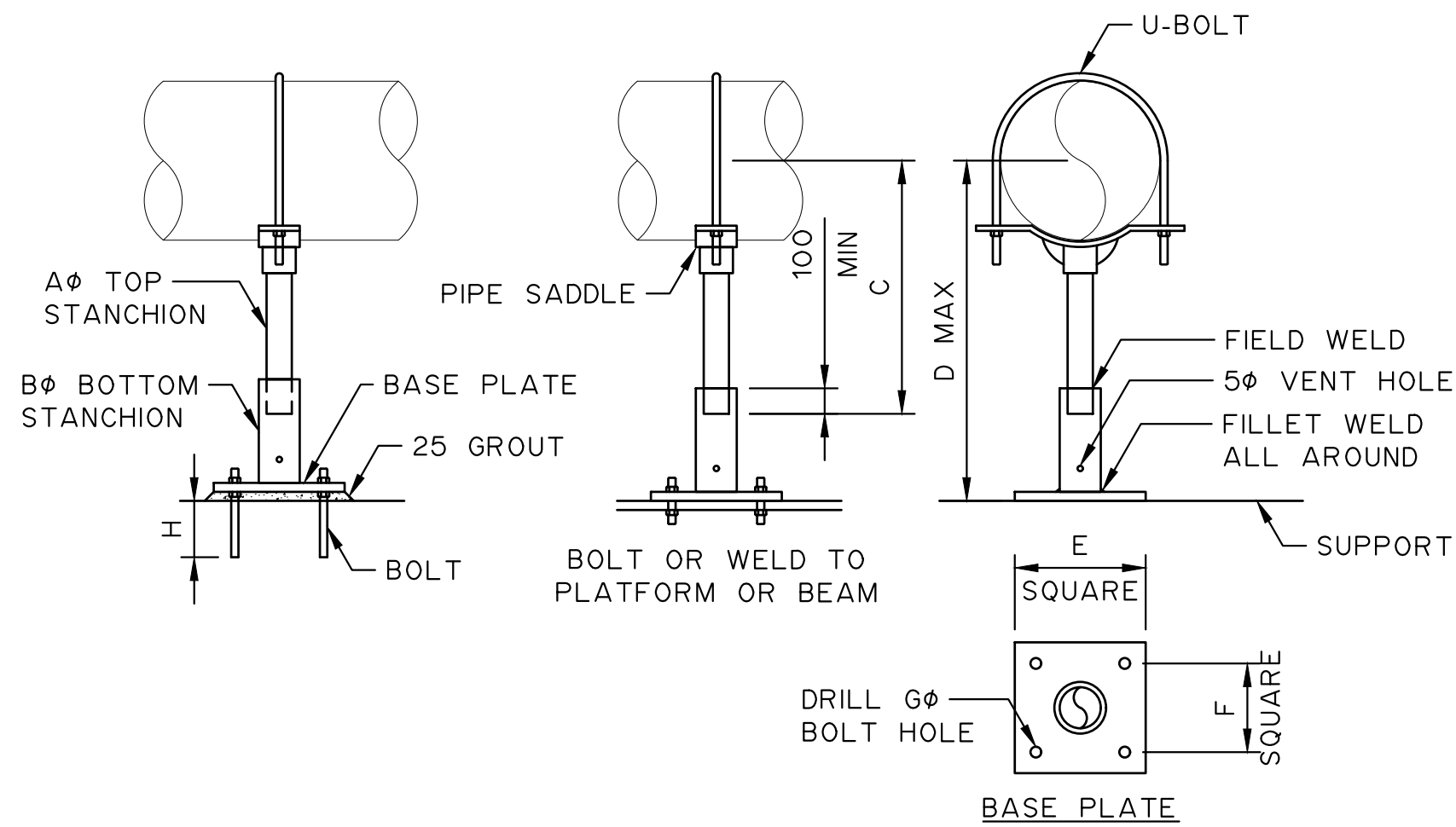
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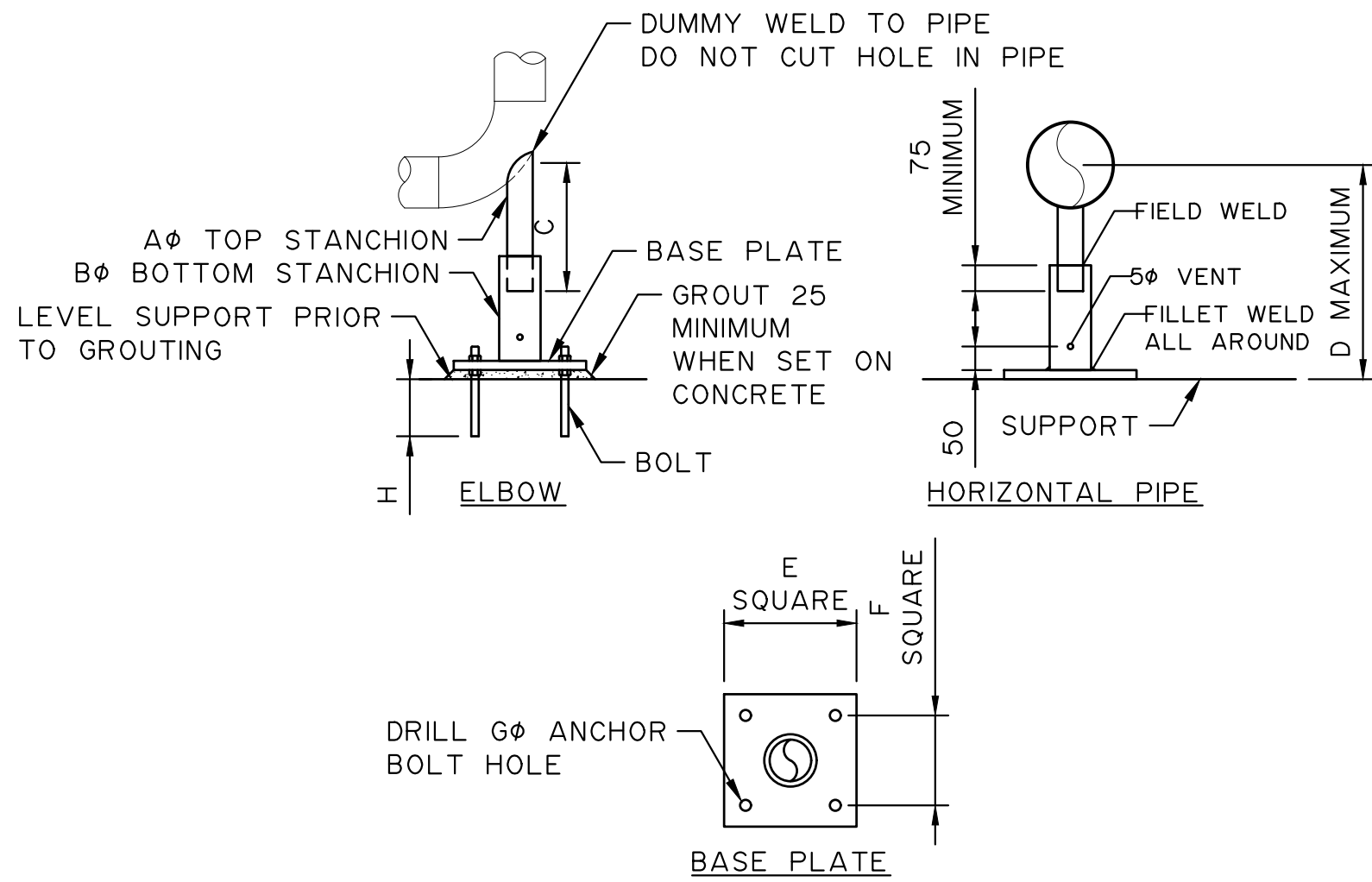
PIPE SIZE		65	80	100	125	150	200	250	300	350	400	450	500	600
A		40	65	65	65	75	75	75	100	100	100	150	150	150
B		65	75	75	75	100	100	100	150	150	150	200	200	200
C	MIN	200	210	235	250	270	300	350	380	410	450	500	530	600
	MAX	330	340	350	375	390	420	460	500	530	570	610	650	720
D MAX		1000	1200	1200	1200	1500	1500	1500	1800	1800	1800	2000	2000	2000
THICK x		8	8	8	8	12	12	12	12	12	12	16	16	16
E SQUARE		150	150	200	200	200	200	250	250	250	300	300	300	300
F SQUARE		100	100	150	150	150	150	150	190	190	240	240	240	240
G Ø x		15Ø x 4			20Ø x 4					25Ø x 4				
No. HOLES		M12x100 HILTI HIT HY-200			M16x150 HILTI HIT HY-200					M20x150 (MIN) HILTI HIT HY-200				
BOLT ØxH														

NOTES:

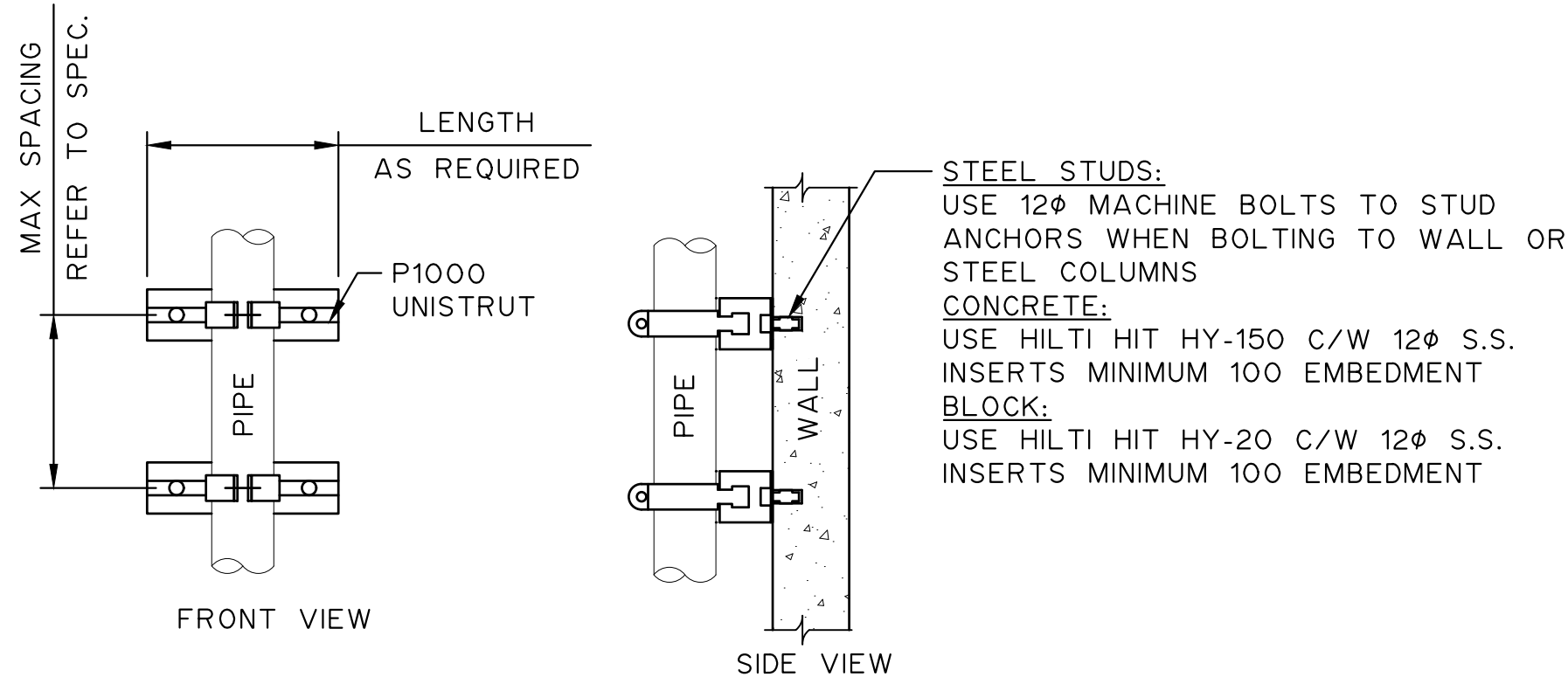
- STANCHION MATERIAL SCH. 40 316 STAINLESS STEEL PIPE, OR AS PER SPECIFICATIONS.
BASE PLATE - 316 STAINLESS STEEL
PIPE STANCHION SADDLE - MAY BE MYATT FIG. 306 OR ANVIL FIG. 259



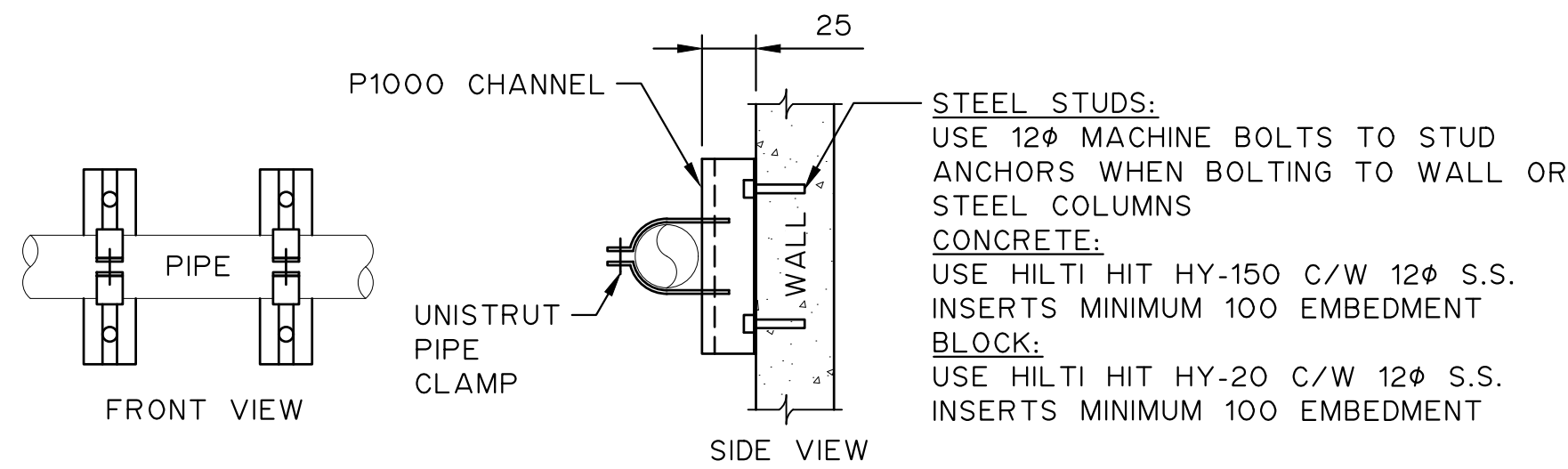
TYPICAL ADJUSTABLE STANCHION W/ SADDLE
PIPE SUPPORT



TYPICAL ADJUSTABLE STANCHION-FIELD WELD
PIPE SUPPORT

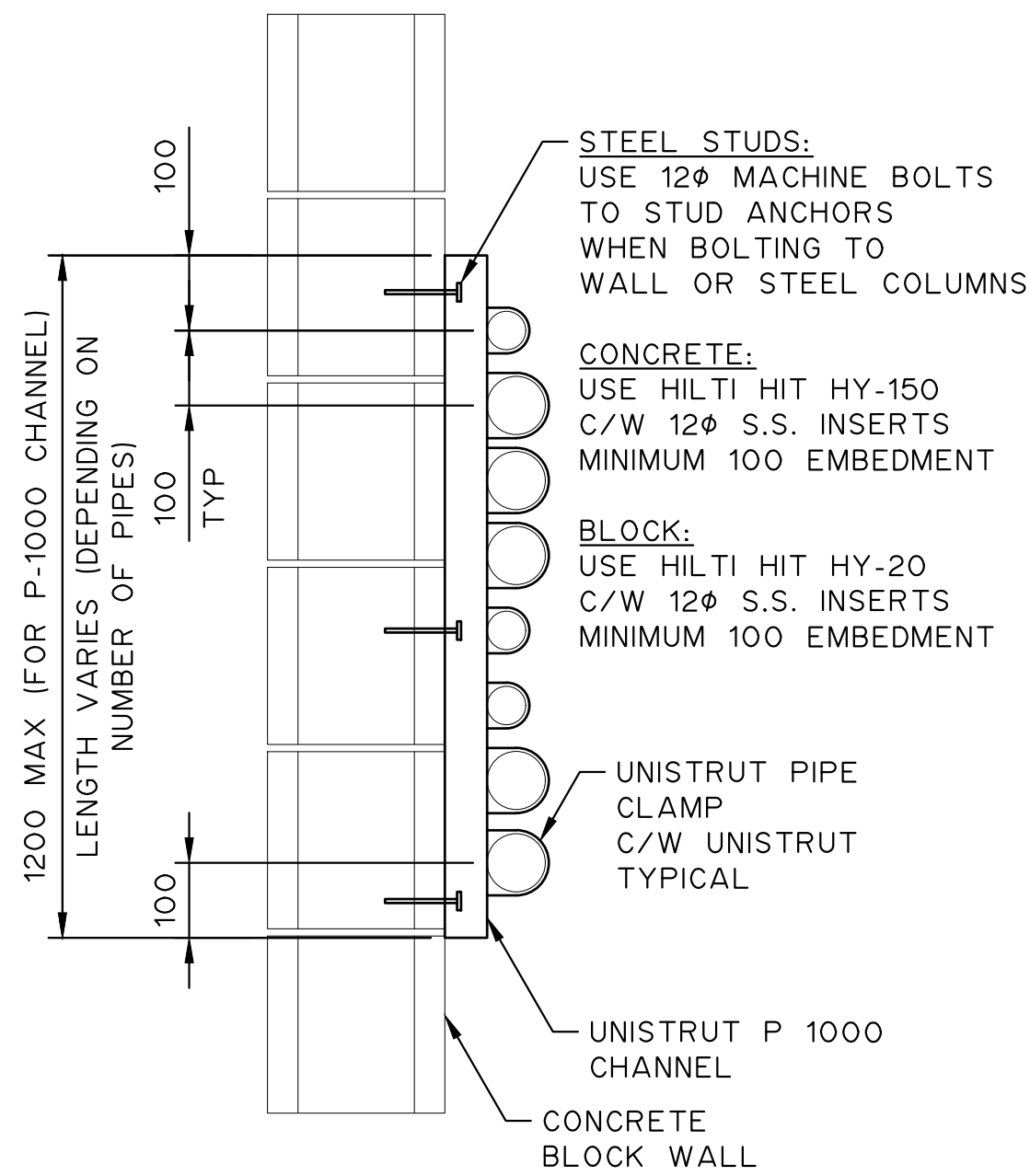


MOUNTING OF VERTICAL PIPE



MOUNTING OF HORIZONTAL PIPE

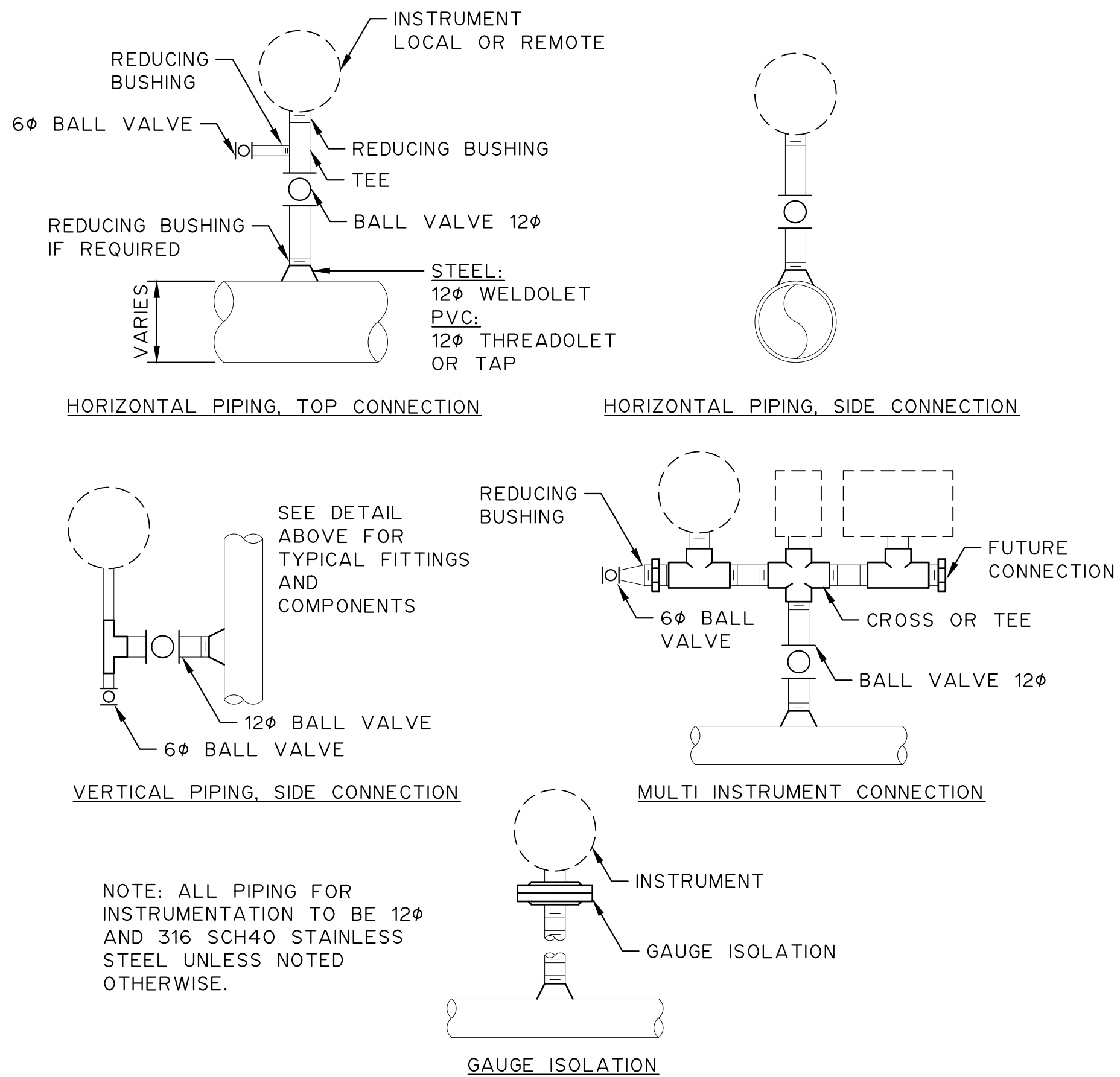
UNISTRUT PIPE SUPPORT UP TO 50mm PIPE
NTS



NOTES:

- CONTRACTOR TO FOLLOW PIPE UNISTRUT MANUFACTURER RECOMMENDATIONS FOR LINE SPACING AND ALLOWABLE SPAN.

UNISTRUT CHANNEL PIPE SUPPORT
FOR 50mm AND SMALLER
NTS



INSTRUMENT CONNECTION DETAILS

NOTES:

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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	R.K.F.



Scale NOT TO SCALE

Quality Control by
Designed by
Drawn by

L.Z.H.
Y.F.S.

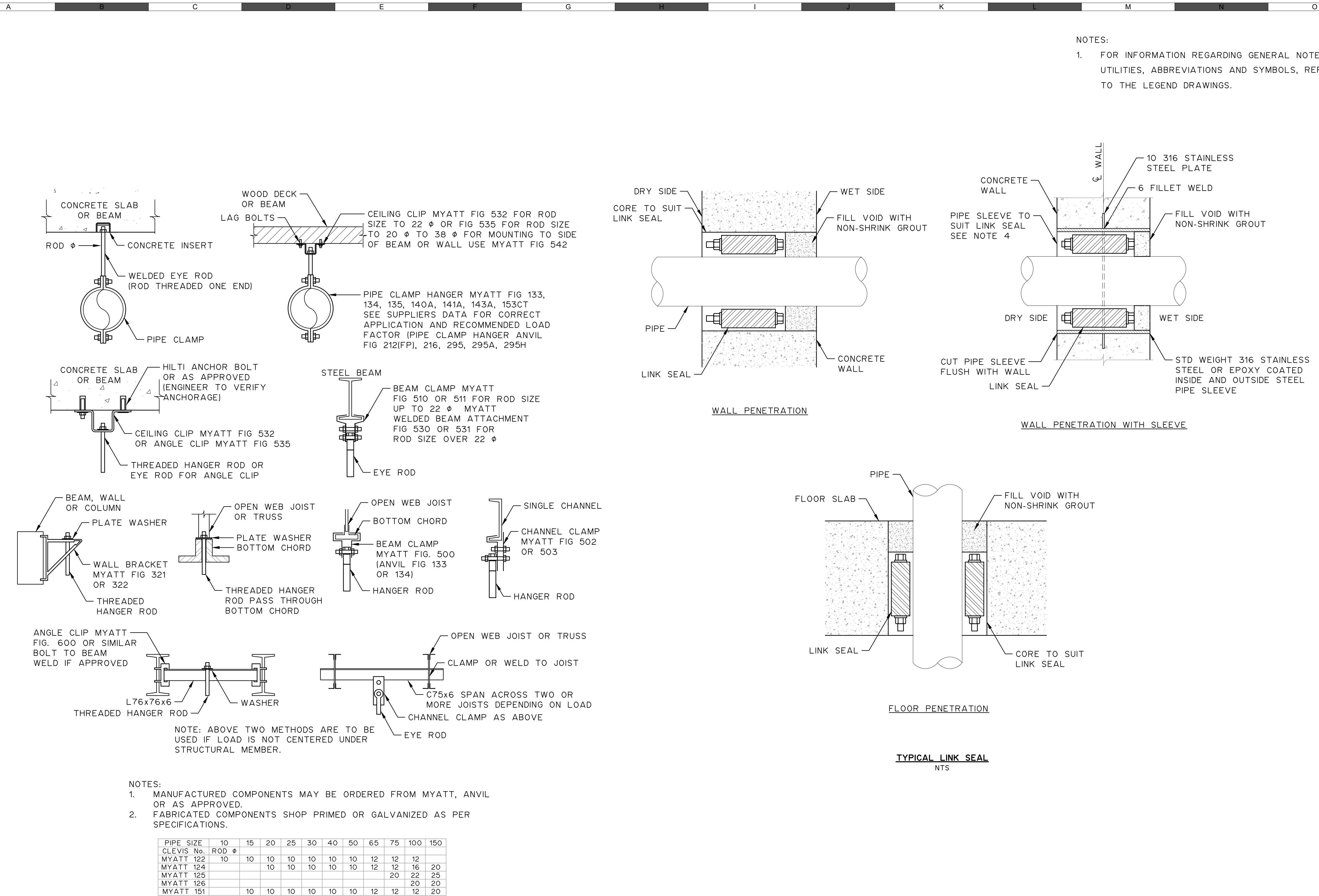
FOOTHILLS OKOTOKS INTAKE
PUMP STATION
MISCELLANEOUS DETAILS 1 OF 2

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-DET-001

of ##
Revision
C

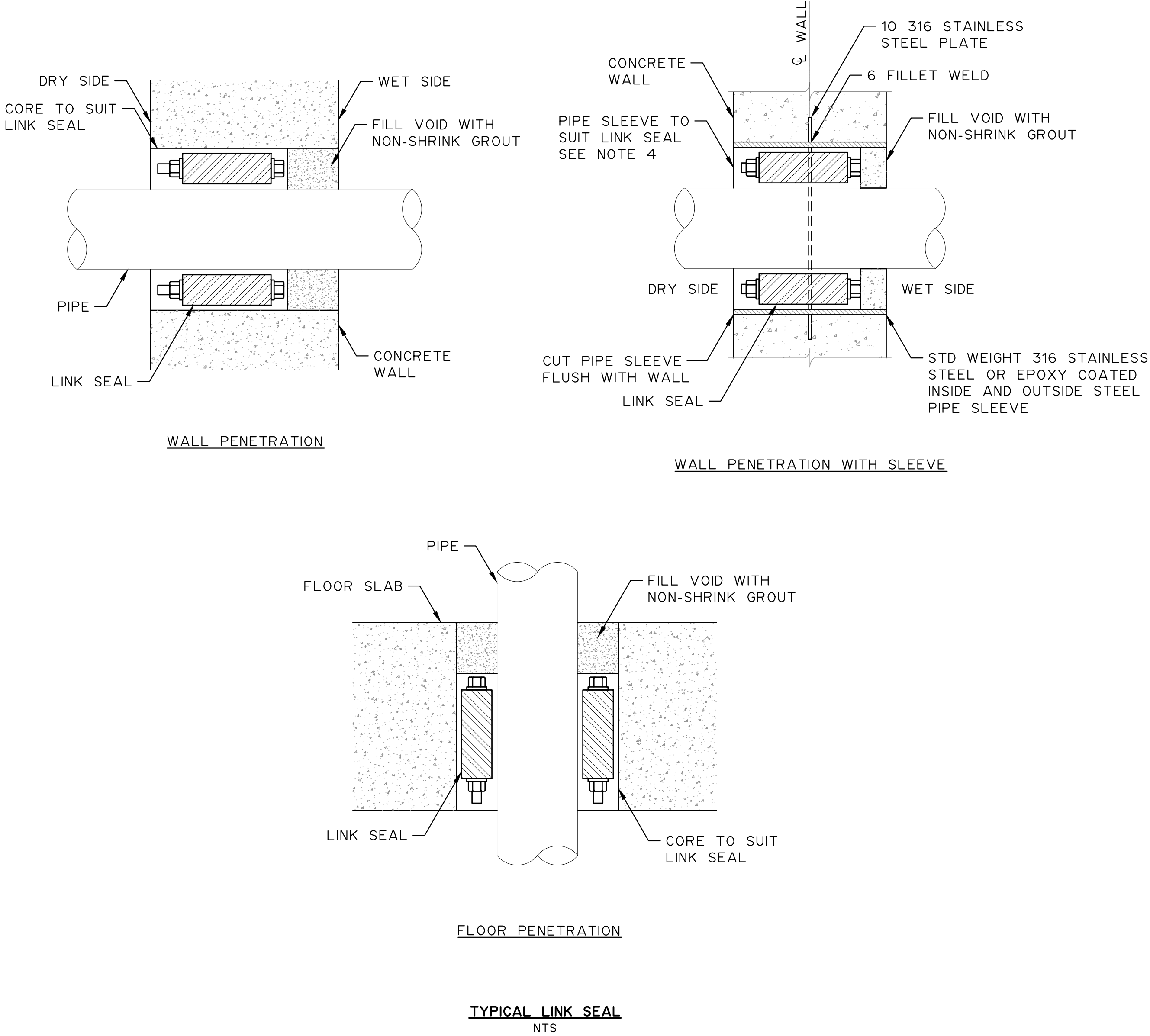
NOT FOR CONSTRUCTION

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STANDARD PIPE CLAMP HANGER DETAILS
NTS

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Designed by
Drawn by

L.Z.H.
Y.F.S.

FOOTHILLS OKOTOKS INTAKE
PUMP STATION
MISCELLANEOUS DETAILS 2 OF 2

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-P-DET-002

of ##
Revision
C

NOT FOR CONSTRUCTION

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1														
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5														
6														
7														
8														
9														
10														
11														
	A	B	C	D	E	F	G	H	I	J	K	L	M	O

PROPOSED

EQUIPMENT TO BE REMOVED

EXISTING

MARKER DENOTING EXTENT OF WORK TO EXISTING SYSTEMS

PLUMBING

G

NATURAL GAS

DCW

DOMESTIC COLD WATER

DHW

DOMESTIC HOT WATER

DHWR

DOMESTIC HOT WATER RETURN

W

WATER SERVICE

DR

BELOW GRADE DRAIN LINE

DR

ABOVE GRADE DRAIN LINE

STM

BELOW GRADE STORM

STM

ABOVE GRADE STORM

FPD

FIRE PROTECTION DRY

FPW

FIRE PROTECTION WET

RAD

RADON

CA

COMPRESSED AIR

V

SANITARY VENT

WT

WEEPING TILE BELOW GRADE

HEATING

HWS

HEATING WATER SUPPLY

HWR

HEATING WATER RETURN

GLS

GLYCOL SUPPLY

GLR

GLYCOL RETURN

COOLING

CHWS

CHILLED WATER SUPPLY

CHWR

CHILLED WATER RETURN

CWS

CONDENSER WATER SUPPLY

CWR

CONDENSER WATER RETURN

RL

REFRIGERANT LIQUID

RV

REFRIGERANT VAPOUR

HVAC AIR STREAMS

S/A

SUPPLY AIR

R/A

RETURN AIR

E/A

EXHAUST AIR

O/A

OUTDOOR AIR

C/A

COMBUSTION AIR

T/A

TRANSFER AIR

PIPE DROP

PIPE RISE

OFFSET DOWN

BOTTOM TAKE- OFF

TOP TAKE- OFF

TEE CONNECTION

CAP

BLOW OFF STRAINER

CONCENTRIC REDUCER

ECCENTRIC REDUCER

FLANGED SPOOL PIECE

UNION/FLANGED CONNECTION

PUMP

PRESSURE GAUGE AND COCK

STRAINER

PIPE SIZE

DIRECTION OF FLOW

TEMPERATURE SENSOR

SINGLE POINT PROBE

SENSOR AVERAGING PROBE

AIR SEPARATOR

AIR SCOOP

CHEMICAL POT FEEDER

AIR VENT

AIR VENT

BALANCE VALVE

CIRCUIT SETTER

GAS COCK

ISOLATION VALVE

PRESSURE REDUCING VALVE

RELIEF OR SAFETY VALVE

AUTOMATIC FILL VALVE

SOLENOID VALVE

DIFFERENTIAL PRESSURE VALVE

STEAM TRAPS

SUPERVISED VALVE

SWING GATE CHECK VALVE

BACK FLOW PREVENTER

SIGHT GLASS

MICRON FILTER

RADIATION TAG

DRINKING FOUNTAIN

THERMOMETER

METER

FLOOR DRAIN

FUNNEL FLOOR DRAIN

HUB DRAIN

ROOF DRAIN

RUNNING TRAP

FIXTURE TRAP

CLEAN-OUT

IN FLOOR CLEAN-OUT

NON FREEZE HOSE BIBB

SANITARY VENT

FIRE EXTINGUISHER

FIRE EXTINGUISHER C/W SEMI RECESSED CABINET

FIRE HOSE STATION

FIRE DEPARTMENT SIAMSESE CONNECTION

UPRIGHT SPRINKLER

PENDANT SPRINKLER

CONCEALED SPRINKLER

DRY PENDANT SPRINKLER

SIDEWALL HEAD SPRINKLER

SIDEWALL HEAD DRY SPRINKLER

VENTILATION DUCT WORK

THERMAL LINING (INSULATION)

ACOUSTICAL LINING (INSULATION)

RECTANGULAR DUCT

ROUND DUCT

FLAT OVAL DUCT

FLEXIBLE DUCT CONNECTION

BRAIDED FLEXIBLE PIPE CONNECTOR

DOUBLE SPHERE RUBBER PIPE CONNECTOR

VARIABLE VOLUME TERMINAL UNIT

TRANSITION

RECTANGULAR TO ROUND TRANSITION

TURNING VANES

SMOKE DETECTORS

DUCT REHEAT COIL

RELIEF VENT

CHIMNEY

INDICATES DIRECTION OF AIR FLOW

AIR FLOW MEASURING STATION

CARBON DIOXIDE

CARBON MONOXIDE

HUMIDISTAT

NITROGEN DIOXIDE

OUTSIDE AIR TEMP.

PRESSURE SENSOR

TEMP. SENSOR

THERMOSTAT

FREEZE-STAT

DIFFERENTIAL PRESSURE SENSOR

THERMOSTAT C/W LOCKABLE COVER

THERMOSTAT C/W REMOTE TEMPERATURE SENSOR

SUPPLY OR OUTSIDE AIR DUCT

RETURN OR TRANSFER AIR DUCT

EXHAUST OR COMBUSTION AIR DUCT

LOUVERED GRILLE

ROUND CONE DIFFUSER

SQUARE CONE DIFFUSER

RETURN AIR DIFFUSER

ROUND SUPPLY DUCT RISER

AIR GRILLE ABBREVIATION

S - SUPPLY

R - RETURN

E - EXHAUST

T - TRANSFER

BALANCE DAMPER

FIRE DAMPER

FIRE/ SMOKE DAMPER

MOTORIZED DAMPER

TAGS

FIXTURE AND EQUIPMENT TAG

FLOW SWITCH

EMCS POINT IDENTIFICATION TAG

VAV BOX IDENTIFICATION TAG

VOLTAGE/CURRENT PRESSURE TRANSDUCER

KEY NOTES

MECHANICAL ABBREVIATIONS

EQUIPMENT ABBREVIATIONS

EQUIPMENT NAME

ABBREVIATION

FURNACE

"ERV"

ENERGY RECOVERY VENTILATOR

"ERV"

HEAT RECOVERY VENTILATOR

"HRV"

MAKE-UP AIR UNIT

"MUA"

AIR HANDLING UNIT

"AHU"

ROOF-TOP UNIT

"RTU"

FAN COIL

"FC"

INFRARED RADIANT HEATER

"IRH"

UNIT HEATER

"UH"

FORCE FLOW HEATER

"FF"

CABINET UNIT HEATER

"CUH"

BASEBOARD HEATER

"BB"

REHEAT COIL

"RHC"

MIXED AIR VOLUME BOX

"MAY"

VARIABLE AIR VOLUME BOX

"VAV"

BOILER

"B"

CHILLER

"CH"

AIR CONDITIONING COIL

"AC"

AIR CONDITIONING CONDENSER

"CND"

HUMIDIFIER

"H"

EXHAUST FAN

"EF"

TRANSFER FAN

"TF"

ANTI-STRATIFICATION FAN

"ASF"

RANGE HOOD

"RH"

FUME HOOD

"FH"

VEHICLE EXHAUST COMPRESSOR

"VE"

DOMESTIC WATER HEATER PUMPS

"CMP"

EXPANSION TANK

"DW"

SEPTIC TANK

"ST"

SUMP

"SP"

FIRE EXTINGUISHER

"FE"

BALANCING DAMPER

"BD"

BACKDRAFT DAMPER

"BD"

FIRE DAMPER

"FD"

MOTORIZED DAMPER

"DM"

PLUMBING FIXTURE ABBREVIATIONS

FIXTURE NAME

ABBREVIATION

WATER CLOSET

"WC"

LAVATORY

"LAV"

URINAL

"URN"

SINK

"SK"

SHOWER

"SH"

BATH TUB

"BT"

DRINKING FOUNTAIN

"DF"

EYE WASH STATION

"EW"

GREASE INTERCEPTOR

"GI"

WATER SOFTENER

"WS"

DISHWASHER

"DW"

MOP SINK

"MS"

REFRIGERATOR

"RG"

RANGE

"RNG"

LAUNDRY BOX

"LB"

FLOOR DRAIN

"FD"

FUNNEL FLOOR DRAIN

"FFD"

TRENCH DRAIN

"TD"

HUB DRAIN

"HD"

ROOF DRAIN

"RD"

HOSE BIBB

"HB"

NON-FREEZE HOSE BIBB

"NFB"

CLEANOUT

"CO"

HVAC ABBREVIATIONS

SYSTEM NAME

ABBREVIATION

SUPPLY AIR

S/A

RETURN AIR

R/A

EXHAUST AIR

E/A

FRESH AIR

F/A

TRANSFER AIR

T/A

OUTDOOR AIR

O/A

COMBUSTION AIR

C/A

GENERAL PLUMBING NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE INTENT ONLY. PROVIDE ALL VERTICAL AND HORIZONTAL OFFSETS NOT NECESSARILY IDENTIFIED IN THE DRAWINGS IN A MANNER THAT MEETS ALL CODE REQUIREMENTS.

2. SIZE ALL PLUMBING LINES TO THE NATIONAL PLUMBING CODE.

3. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED WALLS.

4. ALL DOMESTIC PLUMBING FIXTURES ARE TO HAVE ISOLATION VALVES.

5. DOMESTIC COLD AND HOT WATER LINES ARE TO BE SIZED AT 1/2" UNLESS NOTED OTHERWISE. SIZE ALL LINES TO THE NATIONAL PLUMBING CODE REQUIREMENTS.

6. INSTALL HEAT TRAPS ON THE INCOMING DOMESTIC COLD LINE AT ALL DOMESTIC WATER HEATERS.

7. EACH GAS CONNECTION TO AN APPLIANCE SHALL BE MADE WITH A UNION, ISOLATION GAS COCK AND DIRT LEG. GAS LINES TO BE SIZED TO CAN/CSA B149.1-20. INCLUDE GASTITE FLEX CONNECTION FOR RANGES. HARD PIPE ALL OTHER MECHANICAL EQUIPMENT.

8. COORDINATE PLUMBING LINES AND FIXTURES/ EQUIPMENT WITH ALL OTHER DISCIPLINES.

9. VENT ALL PLUMBING EQUIPMENT AND FIXTURES AS REQUIRED BY CODE. GROUP FIXTURES AS REQUIRED BY CODE. GROUP FIXTURE VENTS TO MINIMIZE ROOF OPENINGS AND PENETRATIONS.

10. ALL FLOOR DRAINS ARE TO BE COMPLETE WITH TRAP PRIMERS.

GENERAL SITE NOTES

1. FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, SYMBOLS AND ABBREVIATIONS REFER TO THE CIVIL LEGEND AND CIVIL ABBREVIATIONS DRAWINGS.

2. READ THE MECHANICAL SITE DRAWINGS IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL.

3. REFER TO THE ELECTRICAL DRAWINGS FOR POWER AND TELECOMMUNICATION SERVICE AND SITE ELECTRIFICATION INFORMATION.

4. CONSTRUCTION LIMITS ARE APPROXIMATE, VERIFY WITH OWNER PRIOR TO COMMENCING WORK.

5. EXPOSE, SURVEY AND VERIFY ALL UNDERGROUND UTILITY TIE-INS AND CROSSINGS PRIOR TO COMMENCING WORK.

GENERAL HVAC NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE INTENT ONLY. PROVIDE ALL VERTICAL AND HORIZONTAL OFFSETS NOT NECESSARILY IDENTIFIED IN THE DRAWINGS IN A MANNER THAT MEETS ALL CODE REQUIREMENTS.

2. VENTILATION EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

3. DUCTWORK SHALL MEET THE REQUIREMENTS OF NFPA-90A-2024, AIR CONDITIONING AND VENTILATING SYSTEMS. DUCTWORK SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA AND ASHRAE MANUALS AND HANDBOOKS. EXHAUST HOOD AND DUCTING SHALL MEET THE REQUIREMENTS OF NFPA-96.

4. PROVIDE AND INSTALL FIRE DAMPERS WHERE REQUIRED TO MAINTAIN FIRE SEPARATION. FIRE DAMPERS ARE TO BE UL LISTED AND MANUFACTURED AS REQUIRED BY CAN/ULC-S112.2-07 (R2021).

5. THE FIRST 3 METERS (10'-0") OF ALL RELIEF AND EXHAUST AIR DUCTING IS TO BE INSULATED WITH 25mm (1") THERMAL INSULATION.

6. THE FIRST 3 METERS (10'-0") OF ALL DUCTS CONNECTED TO FURNACES AND FAN SYSTEMS IS TO BE INSULATED WITH 25mm (1") ACOUSTIC INSULATION.

7. ALL DUCT SIZES SHOWN INDICATE THE FREE AIR SPACE REQUIRED.

8. COORDINATE HVAC DUCTING AND EQUIPMENT WITH ALL OTHER DISCIPLINES.

9. COORDINATE WITH CEILING HEIGHT RESTRICTIONS AND ARCHITECTURAL REFLECTED LIGHTING PLAN.

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Ian Moxon

Architect

MPE

a division of Englobe

FOR DESIGN ASSIST RFP

NOV 29, 2024

urbansystems.ca

Professional Seals

#	Date	Issue/ Revision	App
A	2024-11-29	FOR DESIGN ASSIST RFP	P.P.G.

FOOTHILLS COUNTY

Okotoks

Historic Place, Sustainable Future

URBAN

systems

Scale

NTS

Quality Control by

Designed by

Drawn by

P.P.G.

B.K.D.

H.K.

FOOTHILLS OKOTOKS INTAKE PUMP STATION

LEGEND AND GENERAL NOTES

Sheet Number

Project Number

29121-005-09

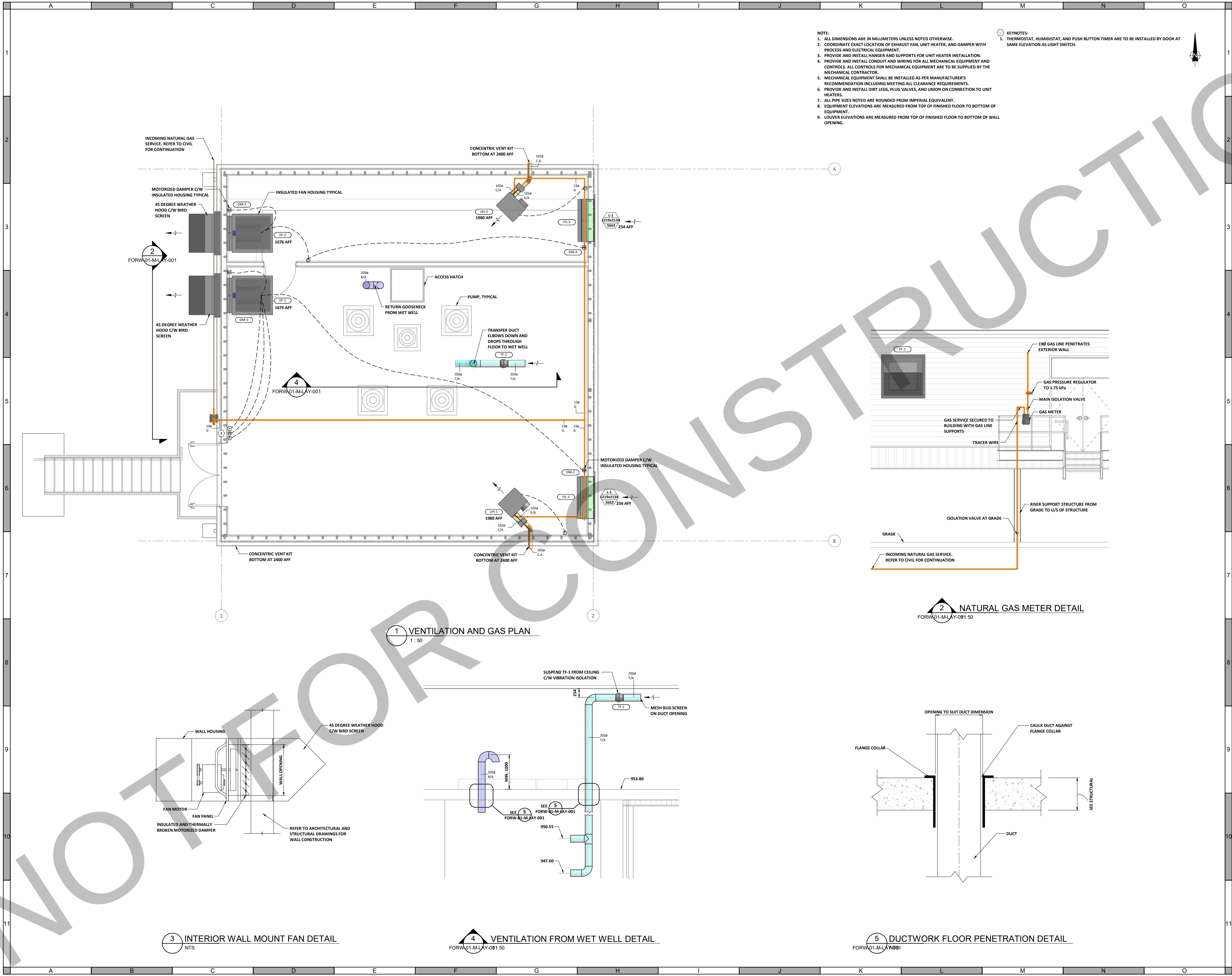
Drawing Number

Revision

FORW-01-M-DN-001

A

NOT FOR CONSTRUCTION



- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
 2. COORDINATE EXACT LOCATION OF EXHAUST FAN, UNIT HEATER, AND DAMPER WITH PROCESS AND ELECTRICAL EQUIPMENT.
 3. PROVIDE AND INSTALL HANGER AND SUPPORTS FOR UNIT HEATER INSTALLATION.
 4. PROVIDE AND INSTALL CONDUIT AND WIRING FOR ALL MECHANICAL EQUIPMENT AND CONTROLS. ALL CONTROLS FOR MECHANICAL EQUIPMENT ARE TO BE SUPPLIED BY THE MECHANICAL CONTRACTOR.
 5. MECHANICAL EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION INCLUDING MEETING ALL CLEARANCE REQUIREMENTS.
 6. PROVIDE AND INSTALL DIRT LEGS, PLUG VALVES, AND UNION ON CONNECTION TO UNIT HEATERS.
 7. ALL PIPE SIZES NOTED ARE ROUNDED FROM IMPERIAL EQUIVALENT.
 8. EQUIPMENT ELEVATIONS ARE MEASURED FROM TOP OF FINISHED FLOOR TO BOTTOM OF EQUIPMENT.
 9. LOUVER ELEVATIONS ARE MEASURED FROM TOP OF FINISHED FLOOR TO BOTTOM OF WALL OPENING.

- KEYNOTES:
1. THERMOSTAT, HUMIDISTAT, AND PUSH BUTTON TIMER ARE TO BE INSTALLED BY DOOR AT SAME ELEVATION AS LIGHT SWITCH.

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Ian Moxon
Architect

MPE
a division of Englobe

FOR DESIGN ASSIST RFP
NOV 29, 2024
urbansystems.ca

Professional Seals

#	Date	Issue/ Revision	App
A	2024-11-29	FOR DESIGN ASSIST RFP	P.P.G.



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Scale
As indicated

Quality Control by
Designed by
Drawn by

P.P.G.
B.K.D.
H.K.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
VENTILATION AND GAS PLAN

Sheet Number 2 of 3
Project Number 29121-005-09
Drawing Number FORW-01-M-LAY-001
Revision A

1 VENTILATION AND GAS PLAN
1:50

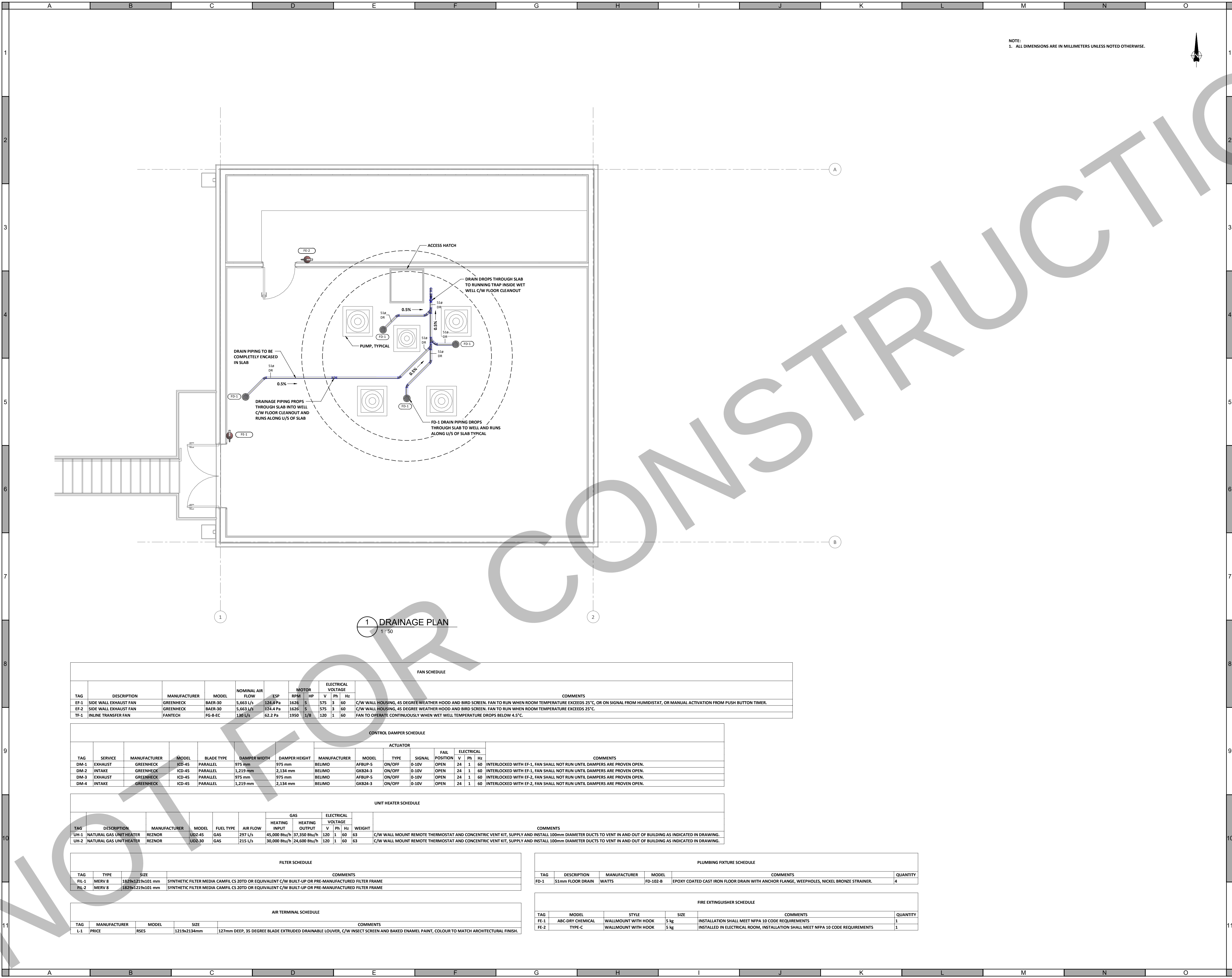
2 NATURAL GAS METER DETAIL
FORW-01-M-LAY-001 50

3 INTERIOR WALL MOUNT FAN DETAIL
NTS

4 VENTILATION FROM WET WELL DETAIL
FORW-01-M-LAY-001 50

5 DUCTWORK FLOOR PENETRATION DETAIL
FORW-01-M-LAY-001 50

NOT FOR CONSTRUCTION



NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

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Professional Seals

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A	2024-11-29	FOR DEISGN ASSIST RFP	P.P.G.



URBAN
systems

Scale
1 : 50

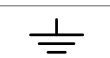
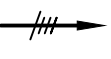
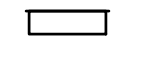
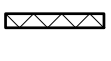
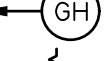
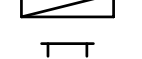
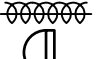
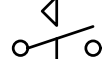
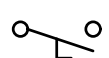
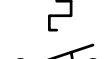
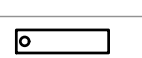
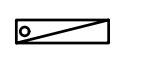
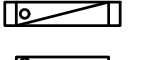
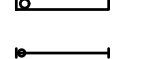
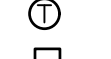
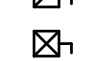
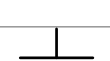
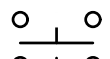
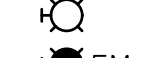
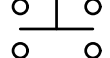
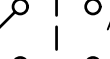
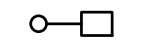
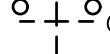
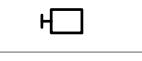
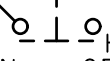
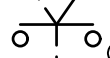
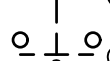
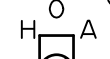
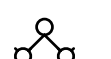
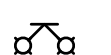
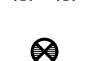
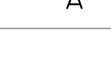
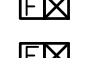
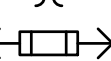
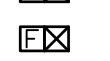
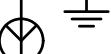
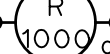
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Designed by B.K.D.
Drawn by H.K.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
DRAINAGE PLAN

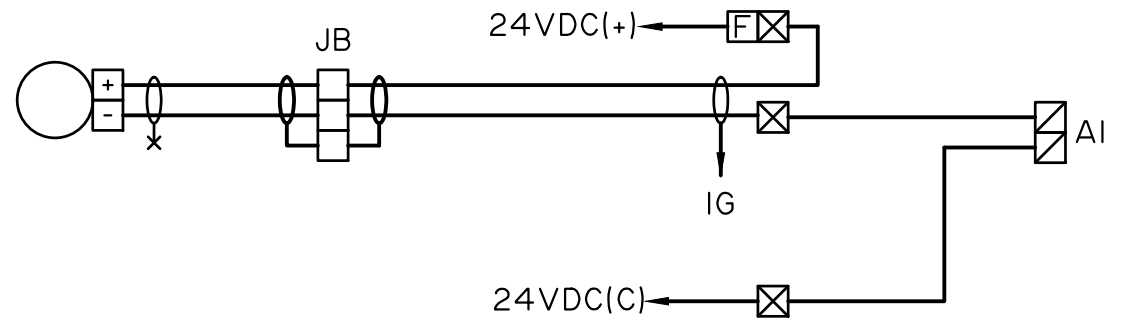
Sheet Number 3 of 3
Project Number
29121-005-09
Drawing Number Revision
FORW-01-M-LAY-002 A

NOT FOR CONSTRUCTION

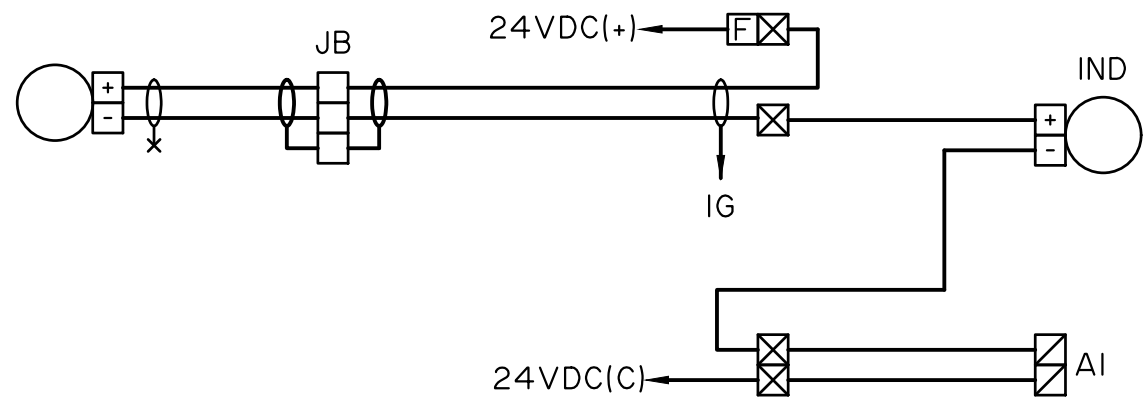
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DISTRIBUTION		POWER CONTINUED		POWER EQUIPMENT CONTINUED		INSTRUMENTATION EQUIPMENT	
	CONDUIT IDENTIFICATION TAG		MAGNETIC MOTOR STARTER		GROUND ROD		LEVEL SWITCH (OPEN ON RISING LEVEL)
	LIGHTING/POWER PANEL		HOME RUN WITH WIRE COUNT		GROUND ROD C/W WELL		LEVEL SWITCH (OPEN ON FALLING LEVEL)
	DATA PANEL		WIRELESS ACCESS POINT		GROUND ROD WITHOUT WELL		FLOW SWITCH (OPEN ON RISING FLOW)
	INTERCOM PANEL		ELECTRICAL HEATING		GATE HOIST		FLOW SWITCH (OPEN ON FALLING FLOW)
	FIRE ANNUNCIATOR PANEL		HEAT TRACING		HEATER C/W KILOWATT RATING		PRESSURE SWITCH (OPEN ON RISING PRESSURE)
	GROUND BAR		PIN AND SLEEVE CONNECTOR (FEMALE)		MOTOR CONTROL IDENTIFICATION TAG		PRESSURE SWITCH (OPEN ON FALLING PRESSURE)
	PLYWOOD BACKBOARD		PIN AND SLEEVE CONNECTOR (MALE)		TRANSFER SWITCH		TEMPERATURE SWITCH (OPEN ON RISING TEMPERATURE)
	EXTERIOR TRANSFORMER	SWITCHES AND JUNCTIONS BOXES		COMMUNICATIONS			TEMPERATURE SWITCH (OPEN ON FALLING TEMPERATURE)
	DRY TYPE TRANSFORMER						LIMIT SWITCH (NC)
	METERING CABINET GREATER THAN 200A						LIMIT SWITCH (NO)
	UTILITY METER PLAN						TIME DELAY RELAY (NC)
	POWER METER						TIME DELAY RELAY (NO)
	ELECTRIC UTILITY METER 200A AND LESS					INSTRUMENTATION IDENTIFICATION TAG	
	WATER METER						
	GAS METER						
	SPLITTER						
	ELECTRICAL CENTRAL DISTRIBUTION PANEL (CDP)						
	ELECTRICAL MOTOR CONTROL CENTRE (MCC)						
	ELECTRICAL MAIN DISTRIBUTION BOARD						
	TRANSFER SWITCH WITH BY-PASS						
	TRANSFER SWITCH						
	120/24V LOW VOLTAGE TRANSFORMER						
	WEATHER HEAD						
LIGHTING		LIFE SAFETY		CONTROL PANEL EQUIPMENT		PLC I/O	
	SURFACE MOUNTED LIGHT FIXTURE		CEILING MOUNTED EXIT LIGHT SINGLE FACE		RESET PUSH BUTTON (NO)		PLC/RTU DIGITAL INPUT
	RECESSED LIGHT FIXTURE		CEILING MOUNTED EXIT LIGHT DOUBLE FACE		RESET PUSH BUTTON (NC)		PLC/RTU DIGITAL OUTPUT
	RECESSED LIGHT FIXTURE WITH END PLATES		CEILING COMBINATION EXIT SIGN AND EMERGENCY LIGHT C/W BATTERY		MUSHROOM HEAD STOP		PLC/RTU ANALOG INPUT
	SURFACE MOUNTED STRIP LIGHT FIXTURE		WALL MOUNTED EXIT LIGHT SINGLE FACE		3 POSITION SELECTOR SWITCH		PLC/RTU ANALOG OUTPUT
	UNDER CABINET/VALENCE STRIP LIGHT FIXTURE		WALL MOUNTED EXIT LIGHT DOUBLE FACE		2 POSITION SELECTOR SWITCH	MISCELLANEOUS AND LABELS	
	WALL MOUNTED CUBED LIGHT FIXTURE		WALL COMBINATION EXIT SIGN AND EMERGENCY LIGHT C/W BATTERY		HAND-OFF-AUTO SELECTOR SWITCH		
	SURFACE MOUNTED LIGHT FIXTURE		EXIT LIGHT DIRECTIONAL ARROW		UP-OFF-DOWN SELECTOR SWITCH		
	RECESSED LIGHT FIXTURE		WALL MOUNTED EMERGENCY LIGHTING BATTERY PACK		RESET PUSH BUTTON		
	WALL MOUNTED LIGHT FIXTURE		CEILING MOUNTED EMERGENCY LIGHTING DOUBLE REMOTE HEAD		AMBER PILOT LIGHT		
	WALL MOUNTED LIGHT FIXTURE ON EMERGENCY		CEILING MOUNTED EMERGENCY LIGHTING DOUBLE REMOTE HEAD		GREEN PILOT LIGHT		
	TRACK LIGHT C/W PENDANT HEADS		WALL MOUNTED EMERGENCY LIGHTING DOUBLE REMOTE HEAD		RED PILOT LIGHT		
	TRACK LIGHT C/W ADJUSTABLE HEADS		SMOKE DETECTOR		DUPLEX RECEPTACLE		
	BOLLARD LIGHT FIXTURE		SMOKE ALARM - 120V		SINGLE PHASE PLUG		
	POLE MOUNTED LIGHT FIXTURE (ONE HEAD SHOWN)	POWER EQUIPMENT			MAIN CONTROL PANEL FUSED TERMINAL BLOCK		
	WALL MOUNTED HID LIGHT FIXTURE		DELTA WYE TRANSFORMER		AUXILIARY FUSED TERMINAL BLOCK		
POWER			DISTRIBUTION TRANSFORMER		CIRCUIT BREAKER		
			POTENTIAL TRANSFORMER		MAIN CONTROL PANEL TERMINAL BLOCK		
			FUSE DRAW OUT TYPE		PLC/RTU TERMINAL		
			CIRCUIT BREAKER DRAW OUT TYPE		AUXILIARY TERMINAL BLOCK		
			3 PHASE GENERATOR (GROUNDED)		MCC/VFD TERMINAL BLOCK		
			THERMAL OVERLOAD PROTECTION		DEVICE TERMINAL BLOCK		
			INTERLOCK		DRY CONTACT RELAY		
			CAPACITOR		TIME DELAY RELAY		
			CURRENT METER		MAGNETIC CONTACTOR		
			CONTACTOR		SOLENOID		
	FUSE		DRY CONTACT RELAY (NC)				
	DISCONNECT SWITCH		DRY CONTACT RELAY (NO)				
	FUSED DISCONNECT SWITCH		VARIABLE RESISTOR				
	CIRCUIT FRAME SIZE		RESISTOR				
	BREAKER TRIP RATING		THERMISTOR				
	POLE		DIODE				
	ELAPSED TIME METER		METAL OXIDE VARISTOR				

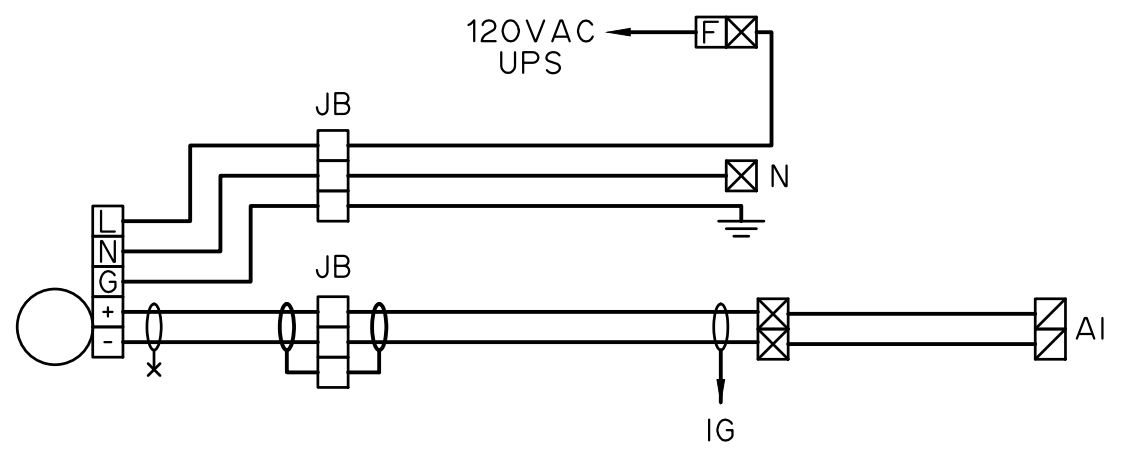
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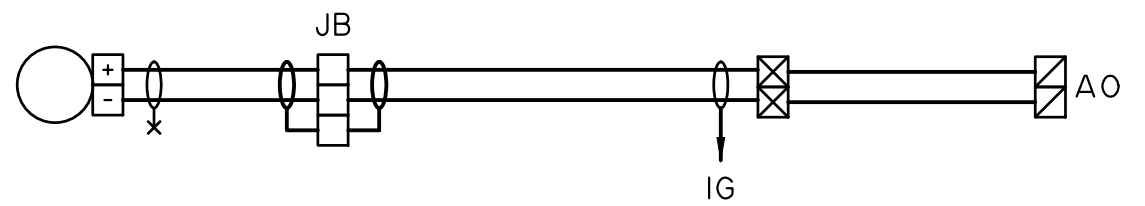
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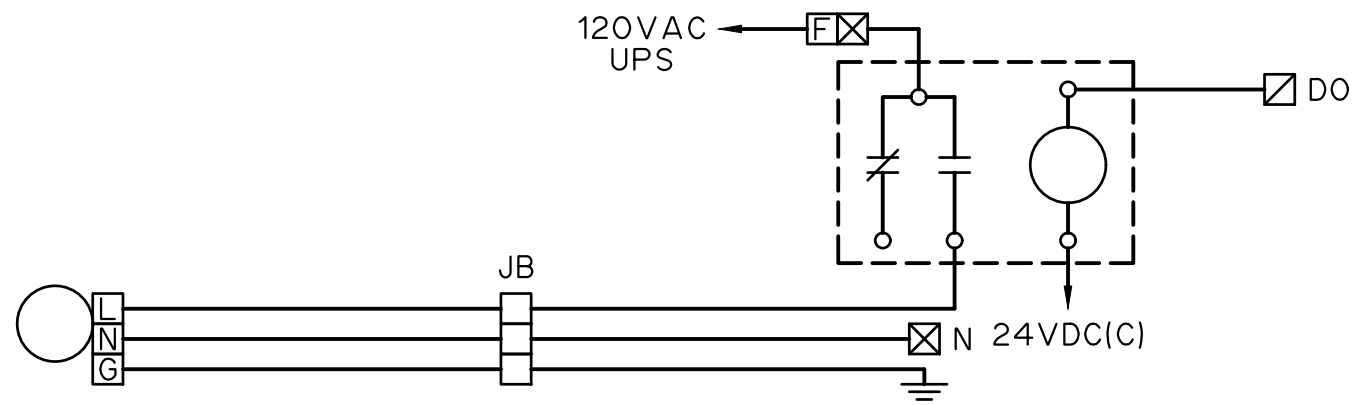
2 WIRE TRANSMITTER WITH PANEL INDICATION



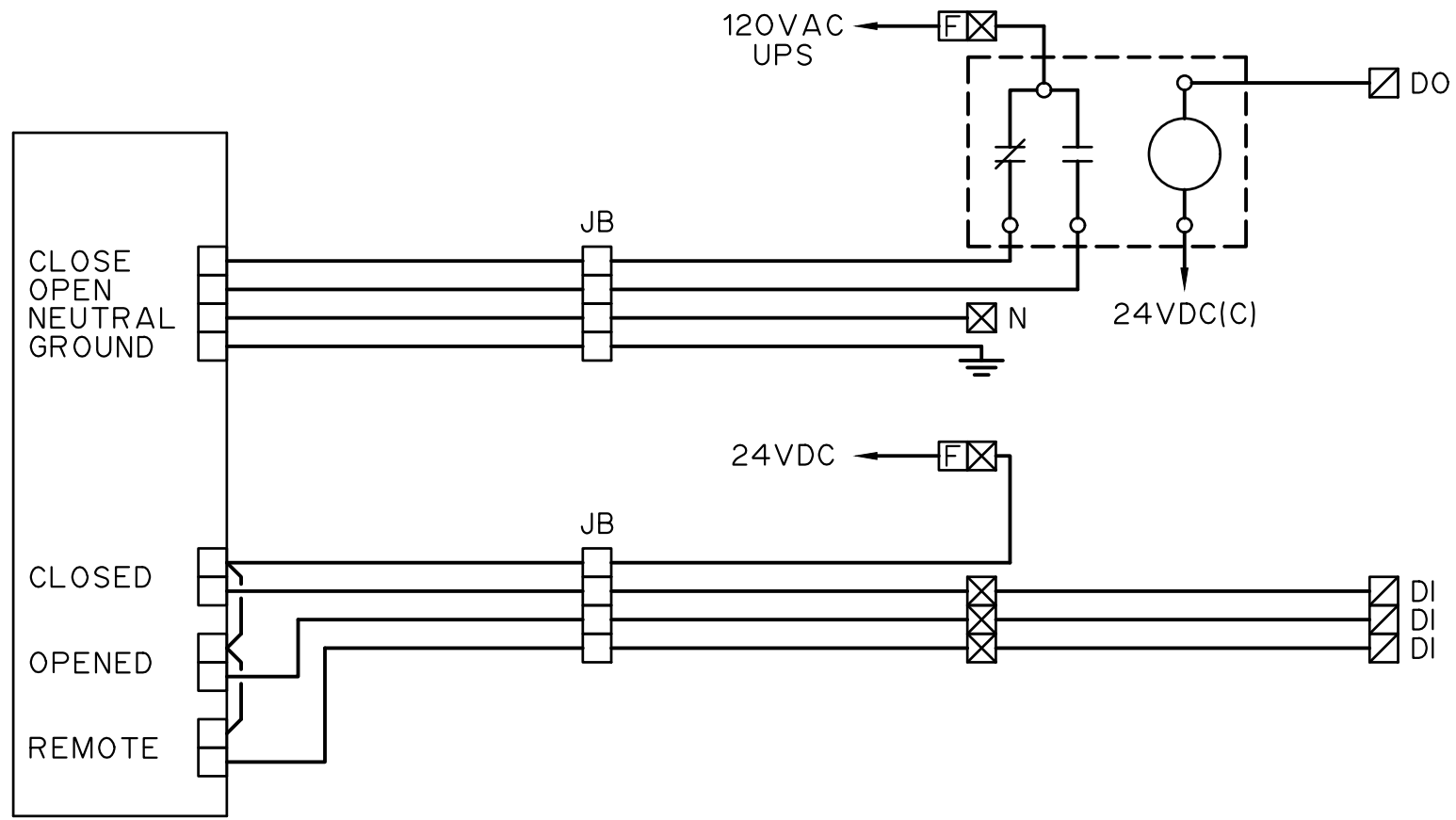
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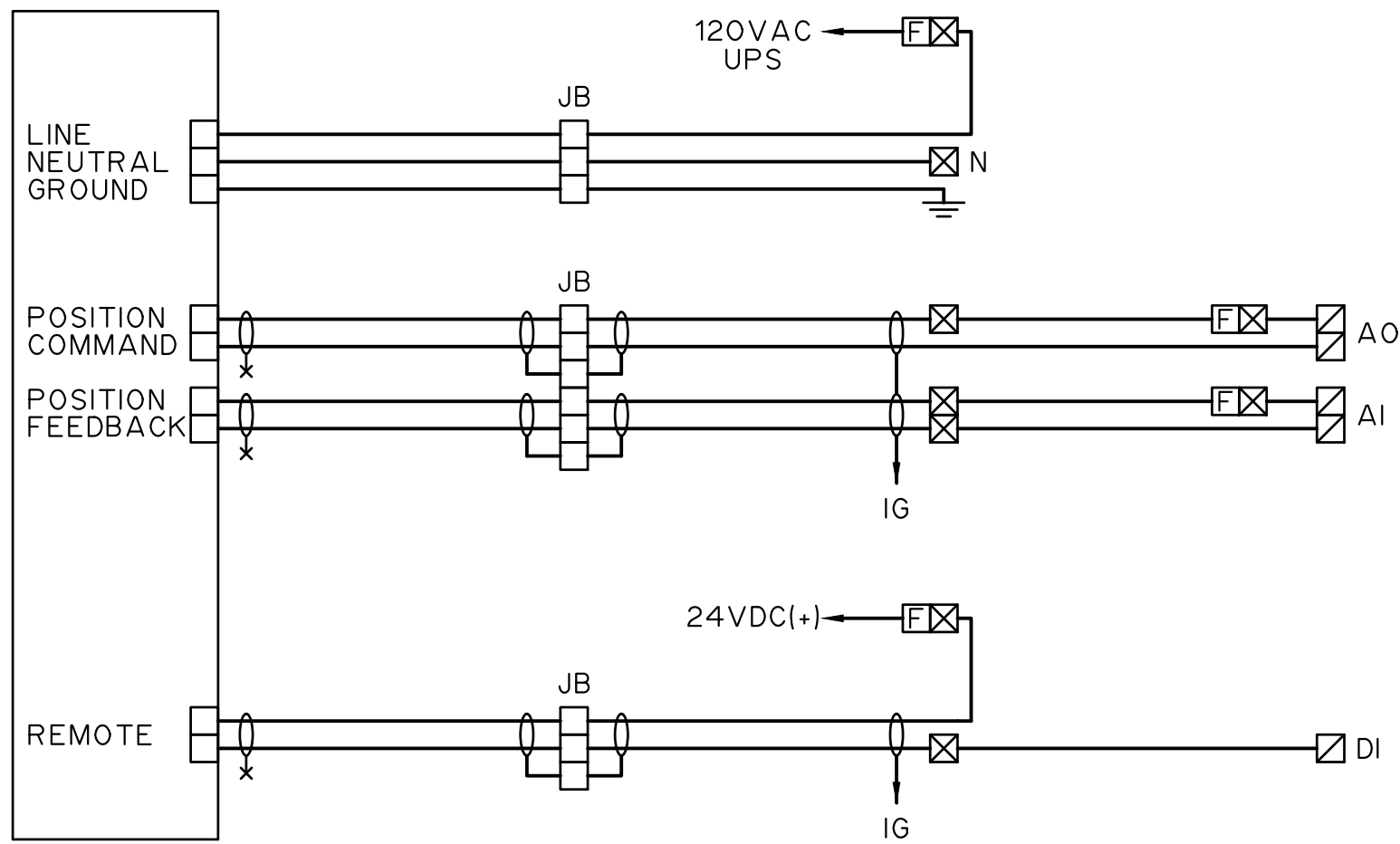
ANALOG OUTPUT



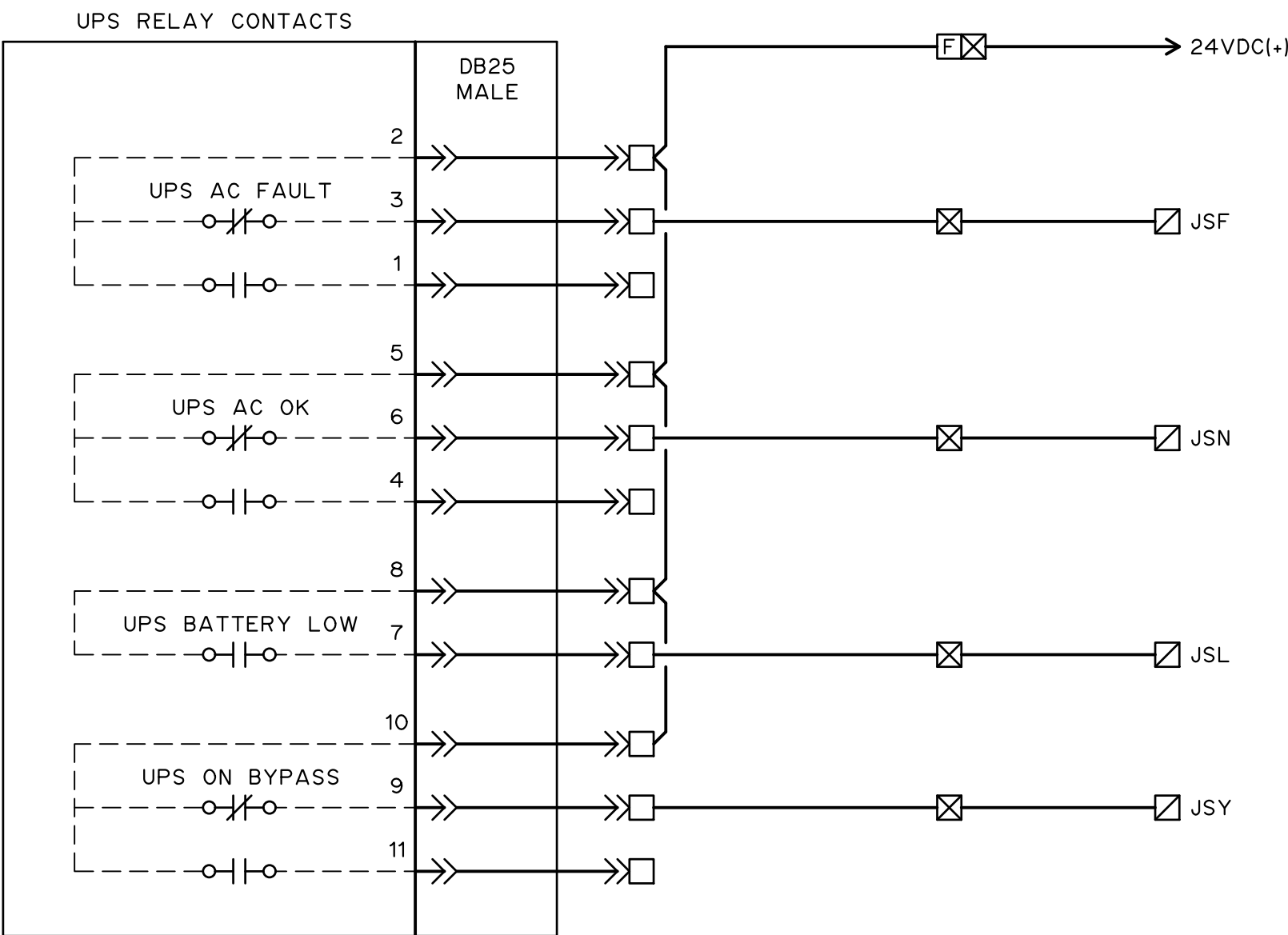
SOLENOID VALVE



NON-MODULATING MOTOR OPERATED VALVE



MODULATING MOTOR OPERATED VALVE



ALWAYS-ON UPS RELAY CONTACT SCHEMATIC

NOTES:

- FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES AND SYMBOLS REFER TO THE LEGEND DRAWING.
- JUNCTION BOX (JB) MAY NOT BE USED IN ALL INSTALLATIONS.
- GROUNDING OF INSTRUMENTS (CHASSIS) REQUIRED EVEN IF NOT SHOWN ON TYPICAL.
- WHERE DRAIN WIRE IS TO BE ISOLATED, TRIM FOIL AND DRAIN WIRE FLUSH WITH JACKET AND APPLY MINIMUM 20MM OPAQUE HEAT SHRINK CENTRED OVER THE END OF JACKET.
- WHERE DRAIN WIRE IS TO BE TERMINATED, TRIM FOIL FLUSH WITH JACKET. APPLY TRANSPARENT HEAT SHRINK OVER EXPOSED LENGTH OF DRAIN WIRE. APPLY MINIMUM 20MM OPAQUE HEAT SHRINK CENTRED OVER END OF JACKET/FOIL.
- WHERE SHIELD DRAINS ARE GROUNDED AT THE CONTROL PANEL THEN THESE ARE TO BE COMMONED TOGETHER ON AN ISOLATED INSTRUMENT GROUND WITH A SINGLE CONNECTION TO THE ELECTRICAL SAFETY GROUND.

X = SHIELD/DRAIN ISOLATION
IG = ISOLATED GROUND

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#	Date	Issue / Revision	App
A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale NOT TO SCALE

Quality Control by
Designed by
Drawn by

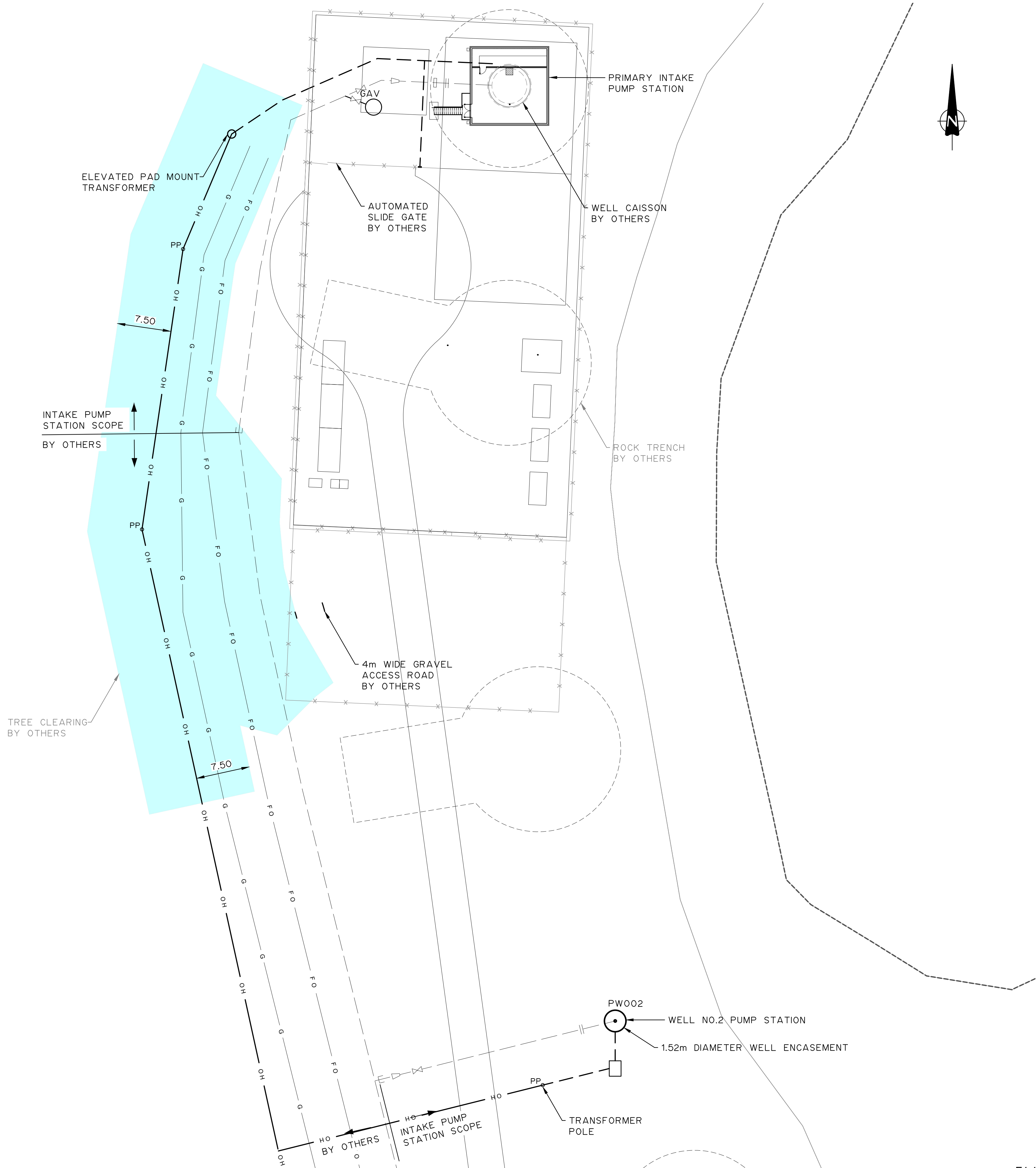
FOOTHILLS OKOTOKS
INTAKE PUMP STATION
INSTRUMENT WIRING TYPICALS

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-GE-002

of ##
Revision
C

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\IE1.1 FORWP-01-E-SP-001 Overall Siteplan.dwg, FORWP-01-E-SP-001, 2024/11/29 04:54 pm ysheng

- NOTES:
- FOR INFORMATION REGARDING GENERAL NOTES, ABBREVIATIONS AND SYMBOLS REFER TO THE LEGEND DRAWINGS.



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Scale 1 : 300

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

**FOOTHILLS OKOTOKS
INTAKE PUMP STATION
OVERALL SITE PLAN**

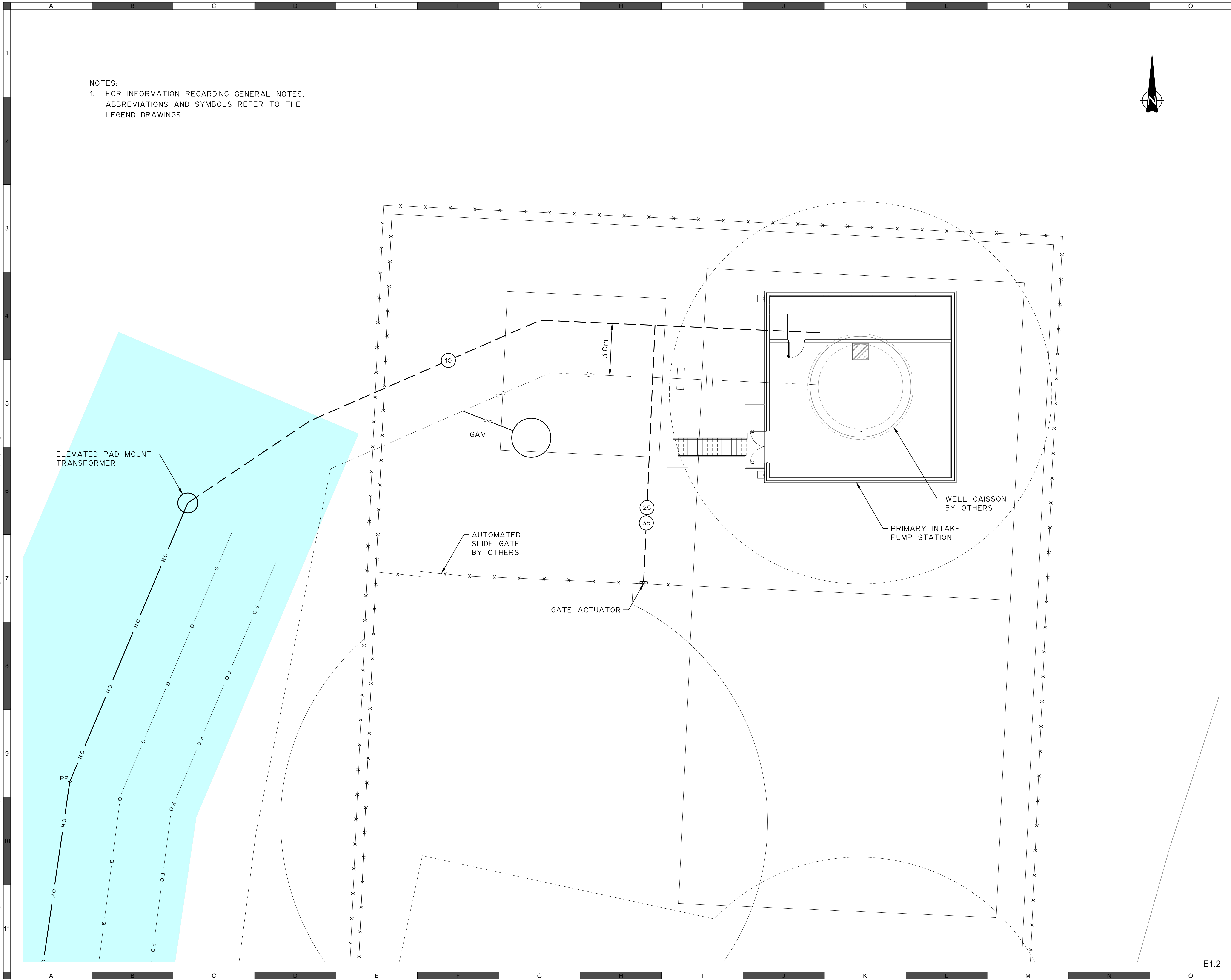
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Project Number
29121-005-09
Drawing Number
FORWP-01-E-SP-001

of ##
Revision
C

E1.1

NOT FOR CONSTRUCTION

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B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale 1 : 100

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
PUMP STATION SITE PLAN

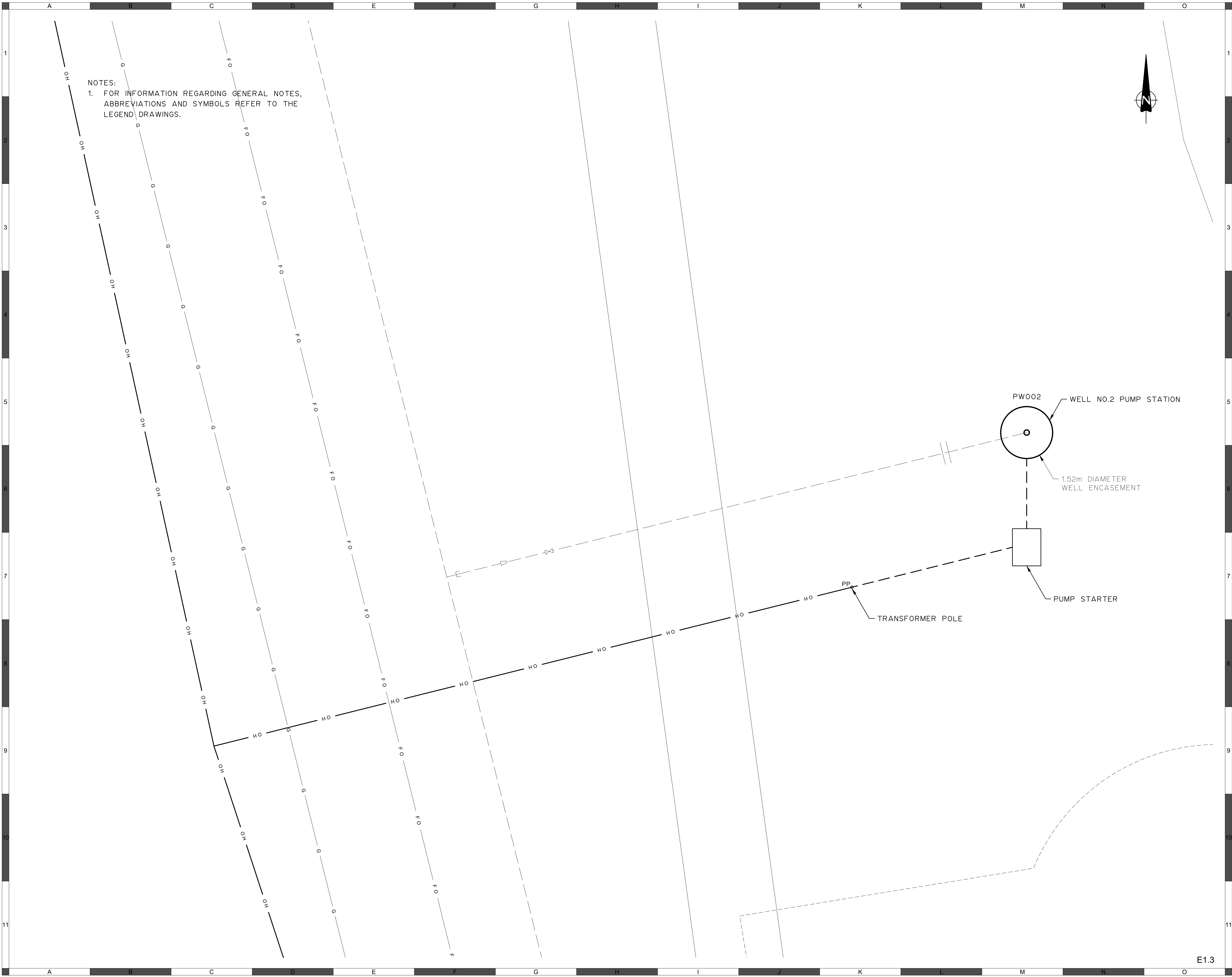
Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-SP-002

of ##
Revision
C

E1.2

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\IE1.3 FORWP-01-E-SP-003 Well 2 Siteplan.dwg, 2024/11/29 04:54 pm ysheng



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Professional Seals

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B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



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Scale
1 : 100

Quality Control by
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Y.F.S.

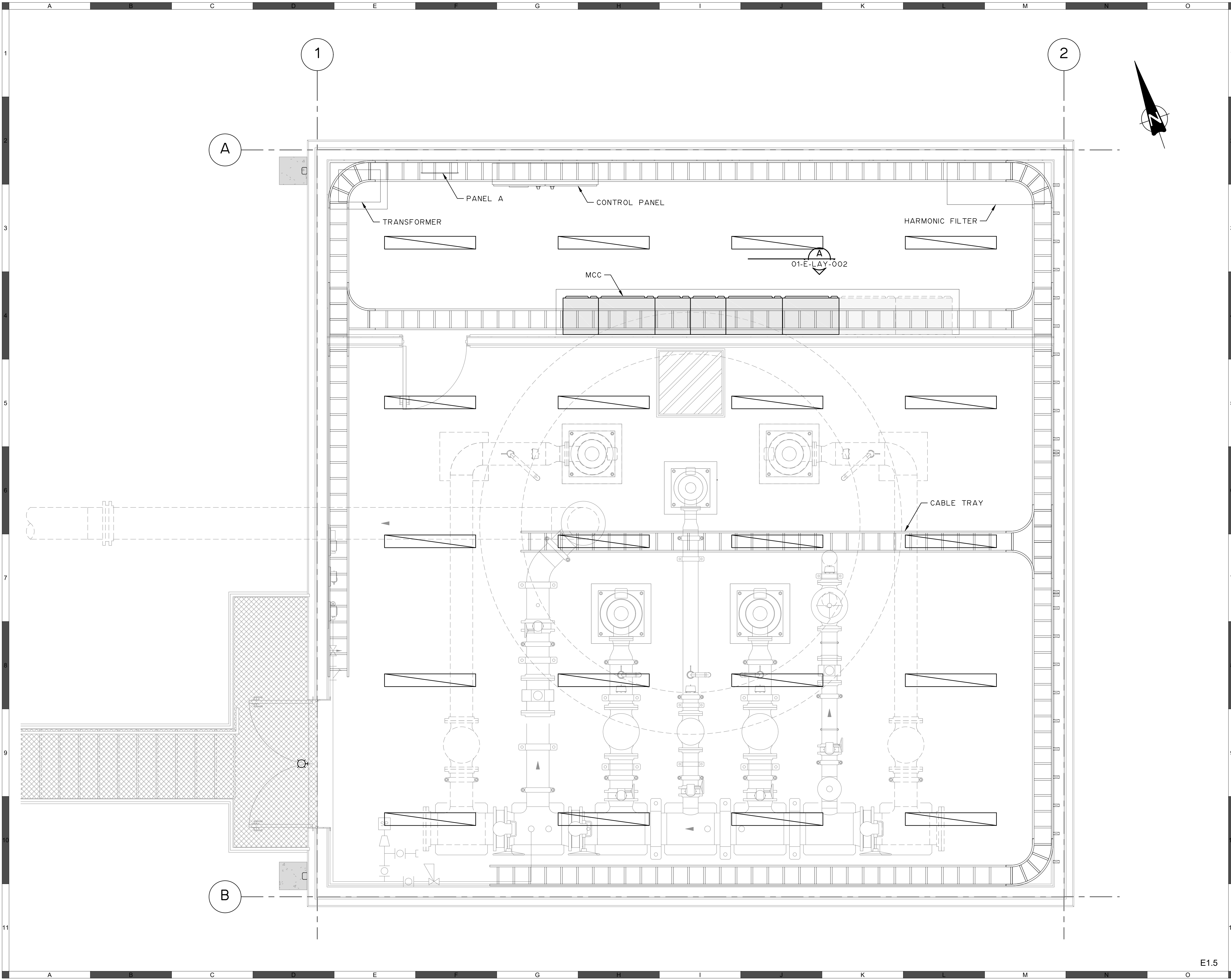
**FOOTHILLS OKOTOKS
INTAKE PUMP STATION
WELL 2 SITE PLAN**

Sheet Number	# of ##
Project Number	29121-005-09
Drawing Number	FORWP-01-E-SP-003
Revision	C

E1.3

NOT FOR CONSTRUCTION

M:\N-Data\29121\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACADE\1.5 FORWP-01-E-LAY-001 - POWER PLAN.dwg, 2024/11/29 04:55 pm ysheng



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Scale 1 : 25

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

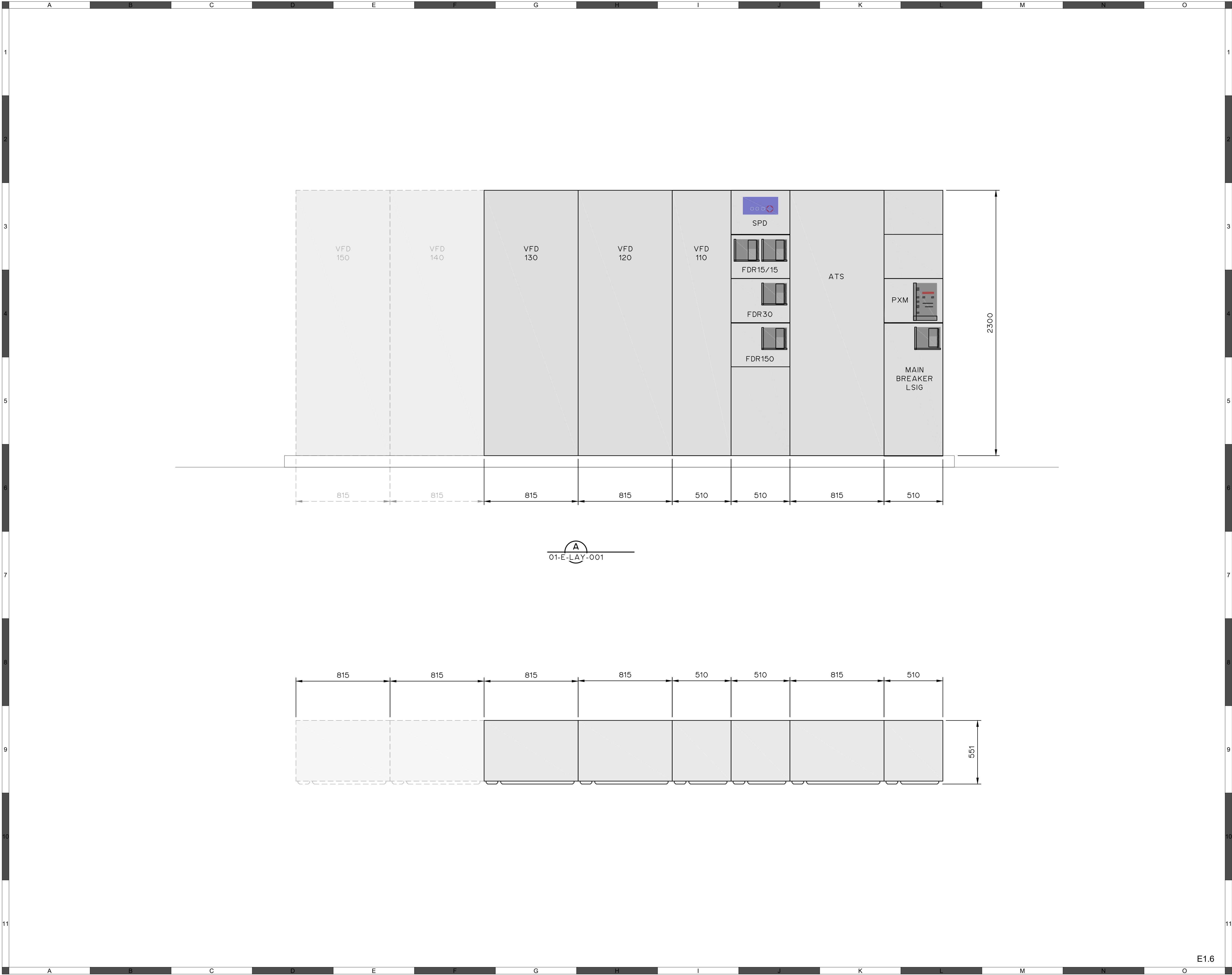
FOOTHILLS OKOTOKS
INTAKE PUMP STATION
EQUIPMENT LAYOUT

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-LAY-001	C

E1.5

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\IE1.6 FORWP-01-E-LAY-002 - MCC LAYOUT.dwg, FORWP-01-E-LAY-002, 2024/11/29 04:55 pm ysheng



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FOOTHILLS OKOTOKS INTAKE PUMP STATION MCC LAYOUT

Sheet Number: 29121-005-09
Project Number: 29121-005-09
Drawing Number: FORWP-01-E-LAY-002
Revision: C

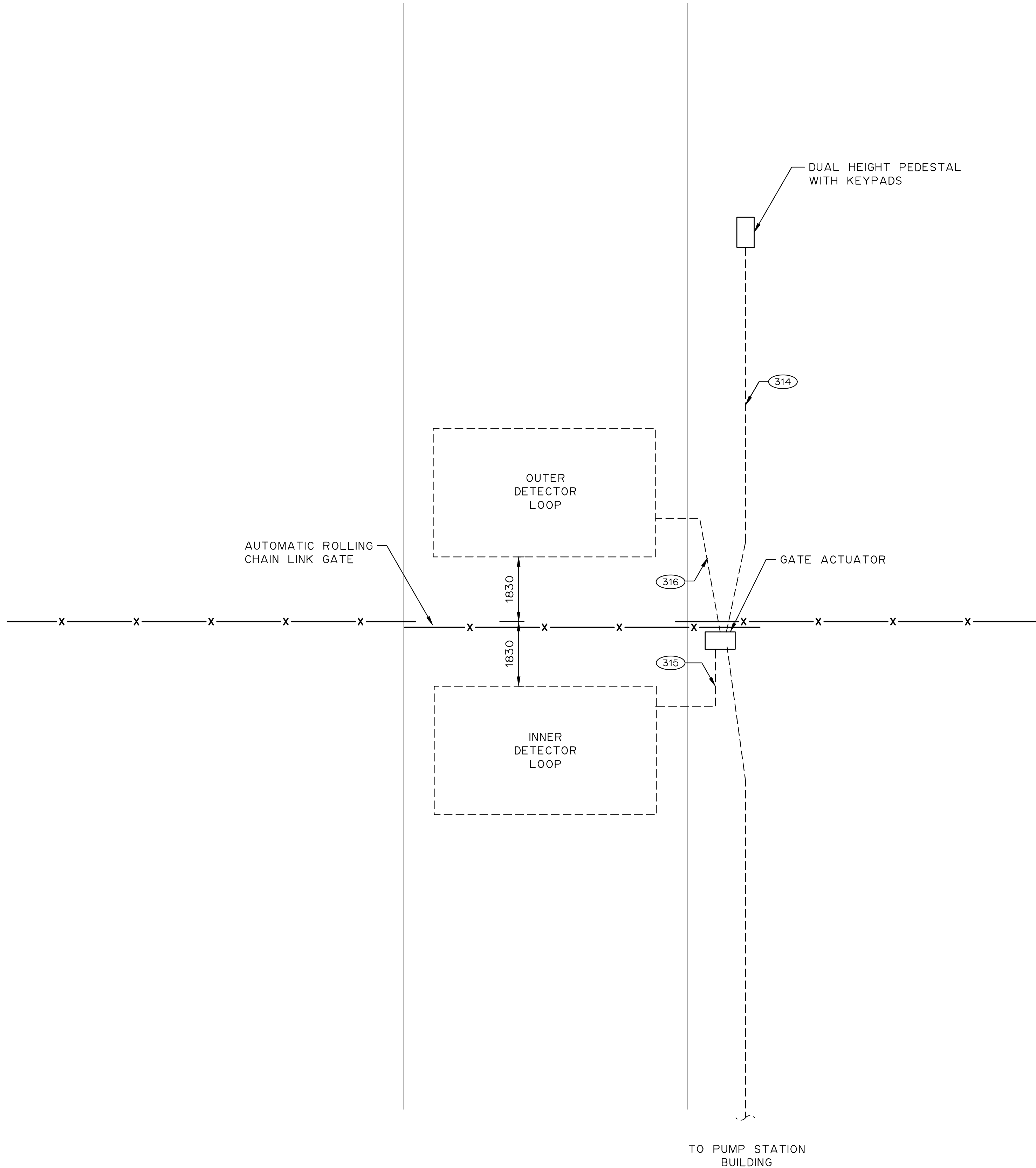
Scale: 1 : 15

Quality Control by: G.B.P.
Designed by: Y.F.S.
Drawn by:

E1.6

NOT FOR CONSTRUCTION

M:\N-Data\29121\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E1.7 FORWP-01-E-LAY-003 GATE AREA SITE PLAN.dwg, 2024/11/29 04:55 pm ysheng



- NOTES:
1. GATE DESIGN BASED ON PACKAGE FROM PHOENIX FENCE WITH LIFTMASTER IHSL24UL ACTUATOR.
 2. LAYOUT SHOWN IS TYPICAL. SEE SITE PLAN FOR LOCATION OF GATE ACTUATOR WITH RESPECT TO ROAD.

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Okotoks
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Scale
1 : 15

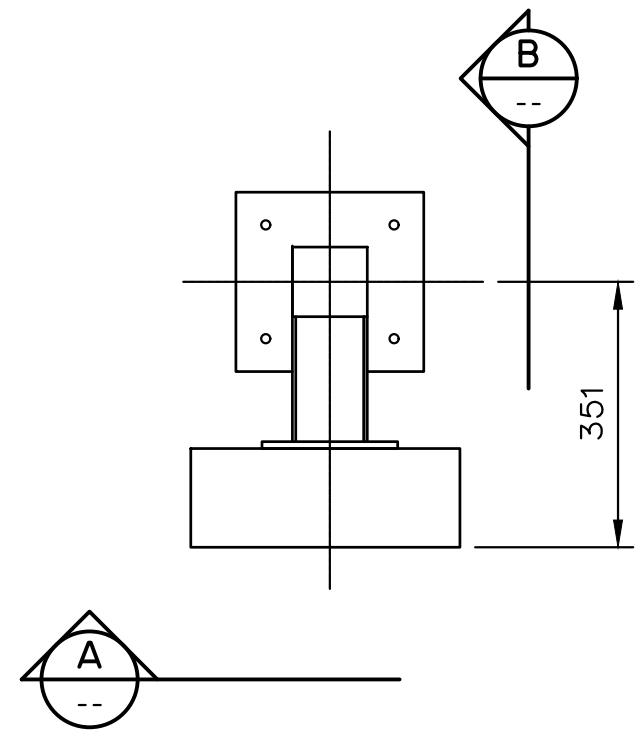
Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

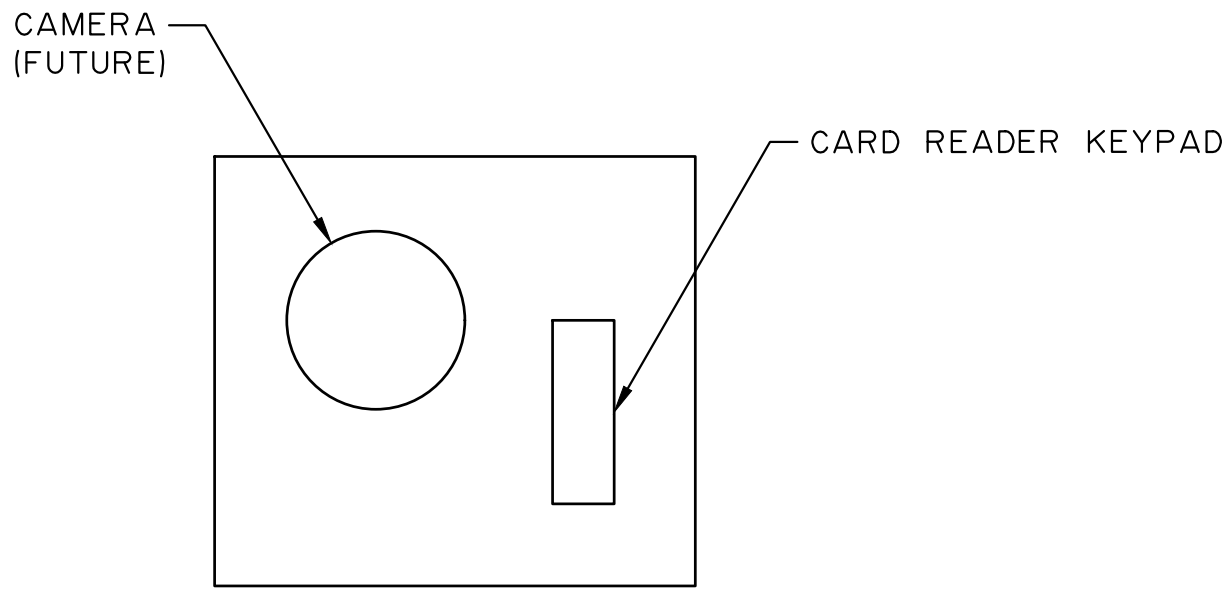
**FOOTHILLS OKOTOKS
INTAKE PUMP STATION
GATE AREA SITE PLAN**

Sheet Number	# of ##
Project Number 29121-005-09	
Drawing Number FORWP-01-E-LAY-003	Revision C

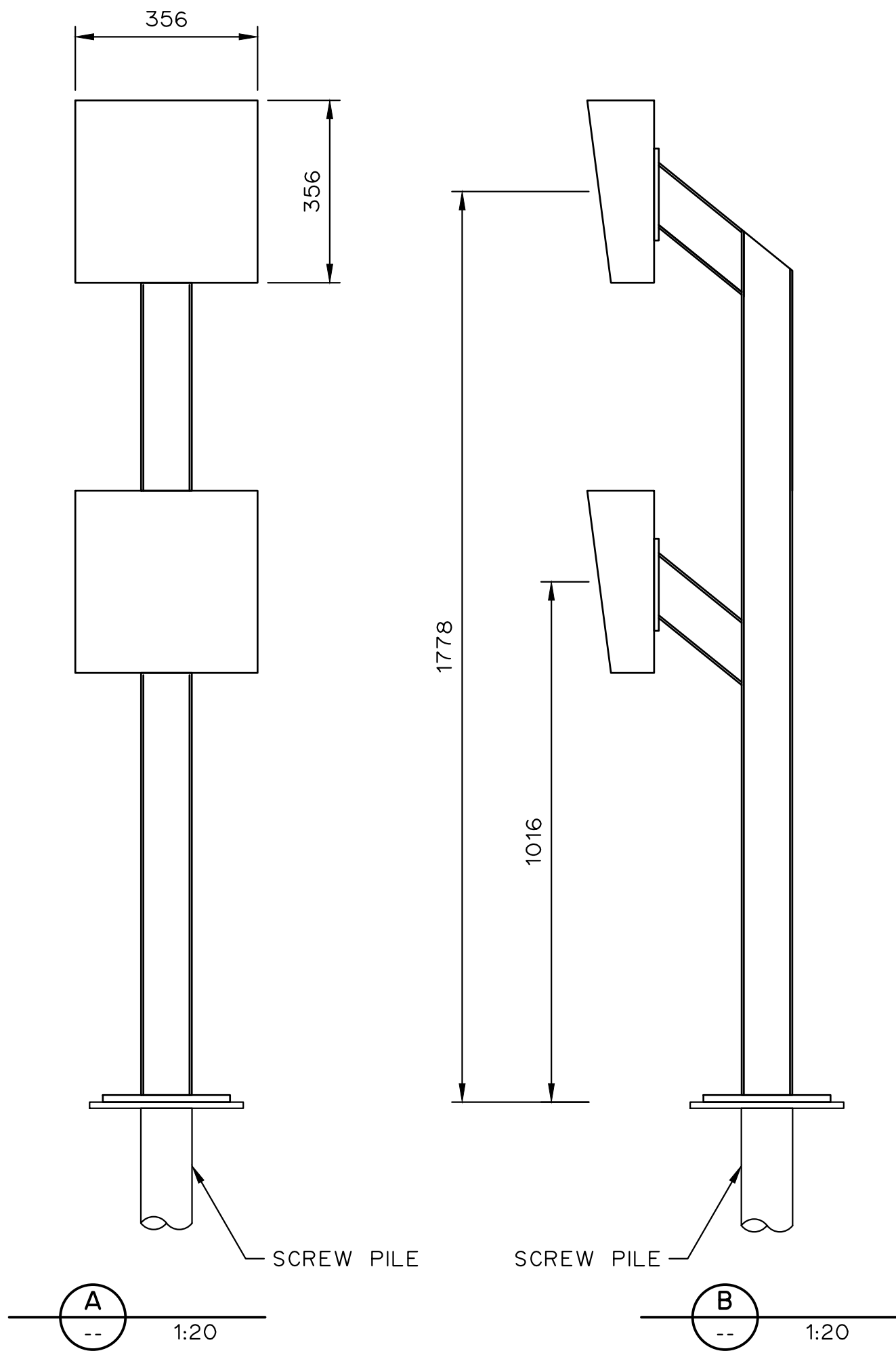
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PLAN
1:20



TYPICAL DEVICE INSTALLATION
NTS



ISOMETRIC
NTS

- NOTES:
- FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES AND SYMBOLS REFER TO THE LEGEND DRAWINGS.
 - HEAVY DUTY DUAL HEIGHT PEDESTAL AVAILABLE FROM AUTOMATIC SYSTEMS AMERICA.
 - INSTALL ON SCREW PILE WITH CONDUIT RISER INTO PEDESTAL LEG.

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Scale
1 : 15

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
GATE CARD READER
PEDESTAL DETAILS

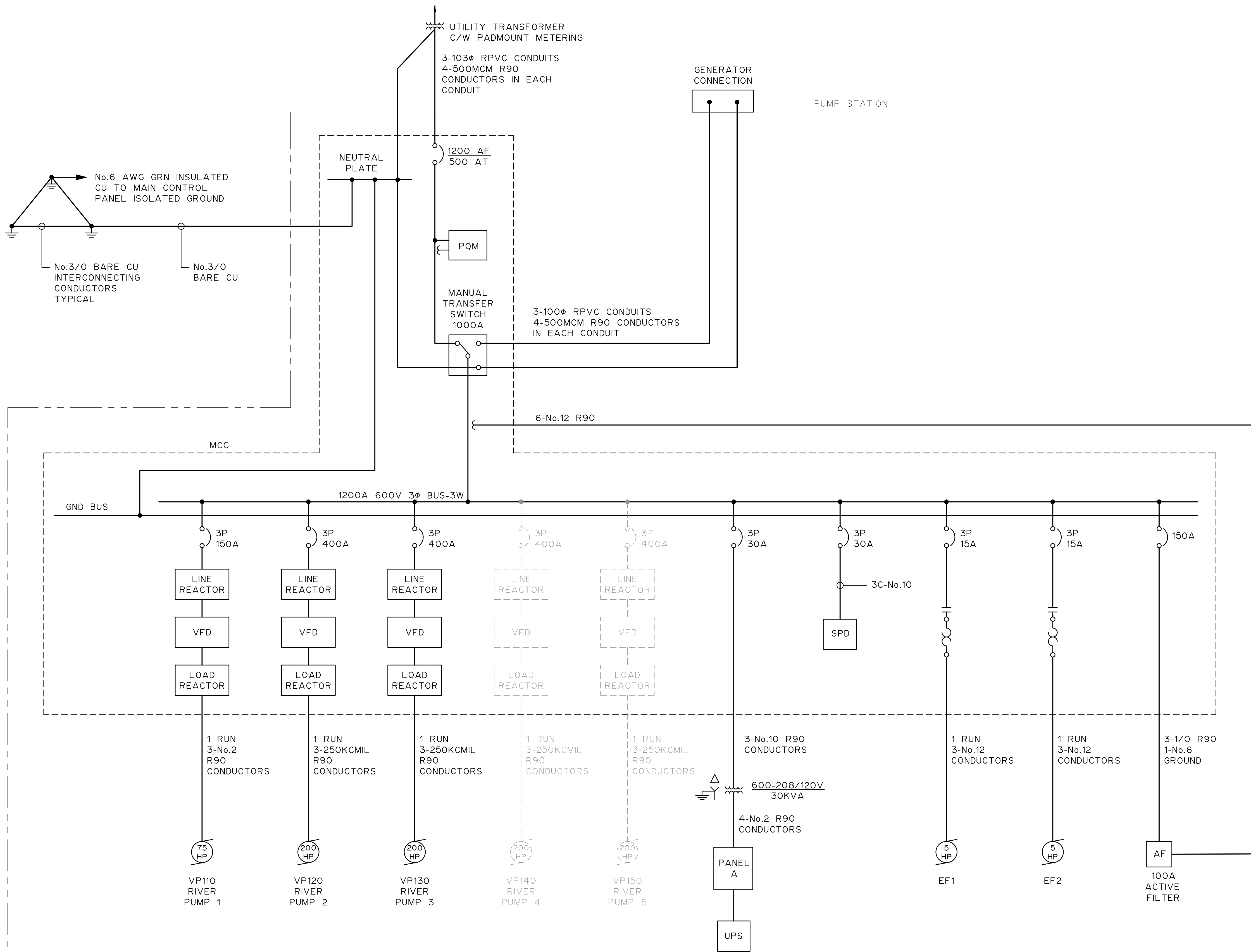
Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-DET-001

of ##
Revision
C

E1.8

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACADE\2.1 FORWP-01-E-SLD-001 Single Line Diagram.dwg, FORWP-01-E-SLD-001, 2024/11/20 04:56 pm ystheng



NOTES:
1. FOR INFORMATION REGARDING GENERAL NOTES,
ABBREVIATIONS AND SYMBOLS REFER TO THE
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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
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Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
SINGLE LINE DIAGRAM

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SLD-001	C

E2.1

NOT FOR CONSTRUCTION

M:\N-Data\2012\1 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACADE\2.3 FORWP-01-E-SCH-001 Schedules.dwg, FORWP-01-E-SCH-001, 2024/11/29 04:56 pm ysheng

NOTES:
1. FOR INFORMATION REGARDING GENERAL NOTES, ABBREVIATIONS AND SYMBOLS REFER TO THE LEGEND DRAWINGS.

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	PANEL 2C SCHEDULE							
	LOCATION: TERTIARY TREATMENT FACILITY							
	208/120V, 3Ø, 4W, 225A MAIN							
DESCRIPTION	TRIP AMPS	BRK. No.	PHASE A B C			BRK. No.	TRIP AMPS	DESCRIPTION
INTERIOR LIGHTING / EMERGENCY LIGHTING	20	1	●			2	20	UPS
EXTERIOR LIGHTING	15	3		●		4	15	RECEPTACLES - PUMP ROOM NORTH
RECEPTACLES - MECH/ELECT ROOM	15	5			●	6	15	RECEPTACLES - PUMP ROOM SOUTH
SPARE	15	7	●			8	15	RECEPTACLES - PUMP ROOM EAST
WASHROOM	15	9		●		10	15	RECEPTACLES - PUMP ROOM WEST
SPARE	15	11			●	12	15	CONTROL PANEL SERVICE RECEPTACLE
SPARE	15	13	●			14	15	SPARE
EXTERIOR LIGHTING	15	15		●		16	15	EXTERIOR RECEPTACLES
GATE PANEL	15	17			●	18	20	SPARE
DOMESTIC WATER PUMP P1	15	19	●			20	20	SPARE
CHEMICAL TANK EXHAUST FAN EF3	15	21		●		22	20	SPARE
UH1	15	23			●	24	30	SPARE
UH2	15	25	●			26	30	SPARE
TF1	15	27		●		28	30	SPARE
SPARE	15	29			●	30	30	SPARE
SPARE	15	31	●			32	30	SPARE
SPARE	15	33		●		34	30	SPARE
SPARE	15	35			●	36	15	SPARE
SPARE	15	37	●			38	15	SPARE
SPARE	15	39		●		40	15	SPARE
SPARE	15	41			●	42	15	SPARE

LUMINAIRE SCHEDULE						
TYPE	DESCRIPTION	MAKE/MODEL	LAMPING	VOLTAGE	MOUNTING/BALLAST	QUANTITY
101	INTERIOR VAPOUR TIGHT LIGHT	COLUMBIA, LXEM 4-40HL-RFA-EU	LED	120V	STD	20
102						
103						
104	EXTERIOR LIGHT	HUBBEL TRP2-24L-30-4K7-3-UNV-DB-PC	LED	120V		1
105	EMERGENCY LIGHTING CENTRAL BATTERY	LUMACELL RG24S-144-2-LD13	LED	120V		1
106	EMERGENCY LIGHTING REMOTE HEAD FOR EGRESS	LUMACELL RSQBDLD13	LED	24VDC		5
107	EXIT SIGN REMOTE POWERED	LUMACELL LER450UNIV	LED	24VDC		2

E2.3

Professional Seals

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A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
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Scale
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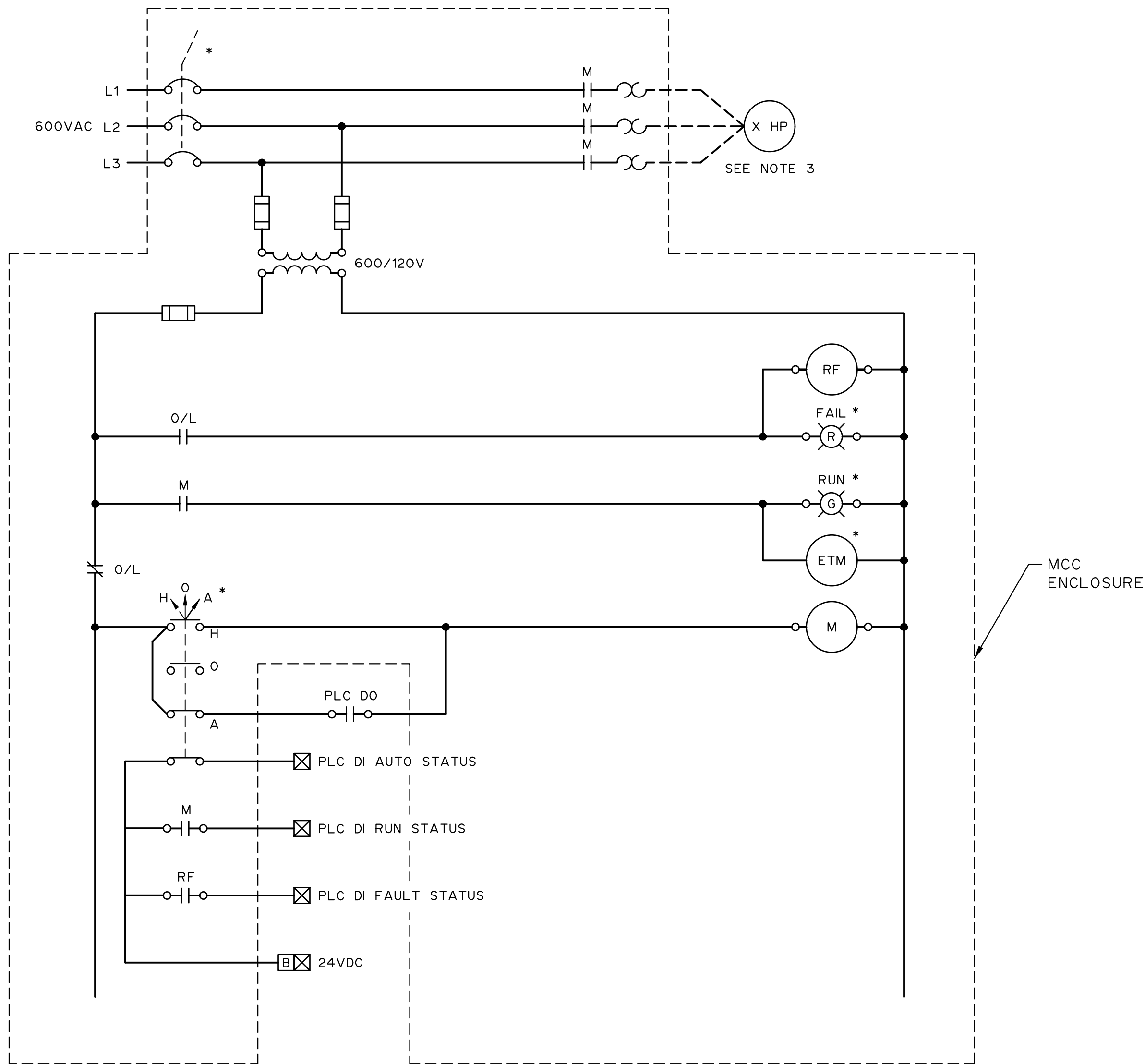
Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
PANEL AND LIGHTING SCHEDULES

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-001	C

NOT FOR CONSTRUCTION



NOTES:

1. ITEMS MARKED WITH AN ASTERISK ARE TO BE MOUNTED ON DOOR OF ENCLOSURE.
2. OVERLOAD TO BE ELECTRONIC.
3. REFER TO SINGLE LINE DIAGRAM FOR MOTOR SIZE.

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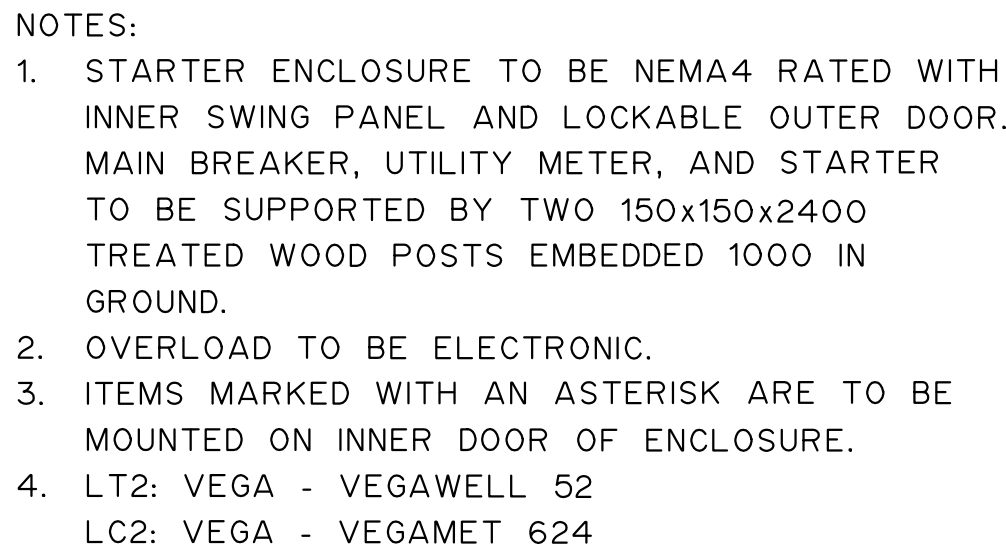
Scale

NOT TO SCALE

Quality Control by
Designed by G.B.P.
Drawn by Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
FULL VOLTAGE MOTOR STARTER
TYPICAL

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-WD-002	C



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Scale

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Designed by G.B.P.
Drawn by Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
WELL 2 PUMP SCHEMATIC

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-WD-003	C

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACADE\2.7 FORWP-01-E-SCH-002 CABLE SCHEDULE.dwg, FORWP-01-E-SCH-002, 2024/11/29 04:57 pm ysheng

CABLE SCHEDULE											
REF	TAG NUMBER	FROM	TO	CONDUCTOR DETAILS			CONDUIT/CABLE	VOLTAGE	LENGTH	Notes	REV#
		EQUIP TAG	EQUIP TAG	NO.	SIZE AWG	TYPE			(Meters)		
10	UTILXFMR-PC	UTILXFMR	MCC6	3 X 4C	500	R90	3 X 103 CONDUIT	600VAC	TBD		
	GENJB-PC1	GENJB	MCC6	3 X 4C	500	R90	3 X 103 CONDUIT	600VAC	TBD		
	VP110-PC	MCC6	VP110	3C	2	R90	TECK	600VAC	TBD		
	VP120-PC	MCC6	VP120	3C	250	R90	TECK	600VAC	TBD		
	VP130-PC	MCC6	VP130	3C	250	R90	TECK	600VAC	TBD		
	AHF774-PC	MCC6	AHF774	3C	1/0	R90	TECK	600VAC	TBD		
	AHF774-IC	MCC6	AHF774	6C	12	R90	TECK	600VAC	TBD	CT WIRING	
	PNL2AXFMR-PC	MCC6	PNL2A XFMR	3C	8	R90	TECK	600VAC	TBD		
	PNL2A-PC	PNL2A XFMR	PNL2A	4C	1/0	R90	TECK	208VAC	TBD		
25	GA751-PC	PNL2A	GA751	2C	12	R90	TECK	120VAC	TBD	GATE PWR	
	MCP-PC	PNL2A	MCP	20C	12	R90	TECK	120VAC	TBD	2 PWR CIRCUITS (UPS,SERV RECEPT)	
	MCC6-IC1	MCP	MCC6	42C	16	R90	TECK	24VDC	TBD	9-DI, 3-DO 3-VFD	
	MCC6-IC2	MCP	MCC6	6PR	18	R90	TECK	24VDC	TBD	3-AI, 3-AO VFDS	
	LVLJB-IC	MCP	LVLJB	3PR	18	R90	TECK	24VDC	TBD	1-AI,2-DI	
	TE011-IC	MCP	TE011	1TR	18	R90	TECK	24VDC	TBD	1-RTD	
	VP120-IC	MCP	VP120	5TR	18	R90	TECK	24VDC	TBD	6-RTD	
	VP130-IC	MCP	VP130	5TR	18	R90	TECK	24VDC	TBD	6-RTD	
	FIT172-IC	MCP	FIT172	2PR	18	R90	TECK	24VDC	TBD	1-AI,PWR	
	FCV172-IC	MCP	FCV172	3PR	18	R90	TECK	24VDC	TBD	1-AI,1-AO,1-DI	
	PIT180-IC	MCP	PIT180	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	PIT181-IC	MCP	PIT181	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	FIT182-IC	MCP	FIT182	2PR	18	R90	TECK	24VDC	TBD	1-AI,PWR	
	TE196-IC	MCP	TE196	1TR	18	R90	TECK	24VDC	TBD	1-RTD	
	AIT194-IP	MCP	AIT194	2C	16	R90	TECK	120VAC	TBD	PWR	
	AIT194-IC	MCP	AIT194	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	AIT195-IP	MCP	AIT195	2C	16	R90	TECK	120VAC	TBD	PWR	
	AIT195-IC	MCP	AIT195	2PR	18	R90	TECK	24VDC	TBD	1-AI	
	FV035-IC1	MCP	FV035	3C	16	R90	TECK	120VAC	TBD	1-DO,PWR	
	FV035-IC2	MCP	FV035	4C	16	R90	TECK	120VAC	TBD	3-DI	
	FIT165-IC	MCP	FIT165	2PR	18	R90	TECK	24VDC	TBD	1-AI,PWR	
	AIT175A-IP	MCP	AIT175A	2C	16	R90	TECK	120VAC	TBD	PWR	
	AIT175A-IC	MCP	AIT175A	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	AIT175B-IP	MCP	AIT175B	2C	16	R90	TECK	120VAC	TBD	PWR	
	AIT175B-IC	MCP	AIT175B	2PR	18	R90	TECK	24VDC	TBD	1-AI	
	PIT180-IC	MCP	PIT180	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	FIT185-IC	MCP	FIT185	2PR	18	R90	TECK	24VDC	TBD	1-AI,PWR	
	AIT186A-IP	MCP	AIT186A	2C	16	R90	TECK	120VAC	TBD	PWR	
	AIT186A-IC	MCP	AIT186A	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	AIT186B-IP	MCP	AIT186B	2C	16	R90	TECK	120VAC	TBD	PWR	
	AIT186B-IC	MCP	AIT186B	2PR	18	R90	TECK	24VDC	TBD	1-AI	
	VMP740-PC	MCP	VMP740	2C	16	R90	TECK	120VAC	TBD	PWR VIDEO MONITORING PANEL	
35	GA751-IC	MCP	GA751	10C	16	R90	TECK	24VDC	TBD	2-DI,3-DO,SPARE	
	ZSC753-IC	MCP	ZSC753	2C	16	R90	TECK	24VDC	TBD	1-DI	
	ASH761-IC	MCP	ASH761	3C	16	R90	TECK	24VDC	TBD	1-DI,PWR	
	ASH764-IC	MCP	ASH764	3C	16	R90	TECK	24VDC	TBD	1-DI,PWR	
	PQM772-IC	MCP	PQM772	2C	16	R90	TECK	24VDC	TBD	1-DI	
	PQM772-IP	MCP	PQM772	2C	16	R90	TECK	120VAC	TBD	PWR	
	ATS773-IC	MCP	ATS773	5C	16	R90	TECK	24VDC	TBD	2-DI,1-DO	
	AHF774-IC	MCP	AHF774	2C	16	R90	TECK	24VDC	TBD	1-DI	
	LSH780-IP	MCP	LSH780	2C	16	R90	TECK	120VAC	TBD	PWR	
	LSH780-IC	MCP	LSH780	2C	16	R90	TECK	24VDC	TBD	1-DI	
	TE790-IC	MCP	TE790	1TR	18	R90	TECK	24VDC	TBD	1-RTD	
	TE791-IC	MCP	TE791	1TR	18	R90	TECK	24VDC	TBD	1-RTD	
	AT797-IC	MCP	AT797	1PR	18	R90	TECK	24VDC	TBD	1-AI	
	VFD110-NET	MCP	VFD110	4PR	24	CAT6	TECK	24VDC	TBD	NETWORK	
	VFD120-NET	MCP	VFD120	4PR	24	CAT6	TECK	24VDC	TBD	NETWORK	
	VFD130-NET	MCP	VFD130	4PR	24	CAT6	TECK	24VDC	TBD	NETWORK	
	PQM772-NET	MCP	PQM772	4PR	24	CAT6	TECK	24VDC	TBD	NETWORK	
	ATS773-NET	MCP	ATS773	4PR	24	CAT6	TECK	24VDC	TBD	NETWORK	
	AHF774-NET	MCP	AHF774	4PR	24	CAT6	TECK	24VDC	TBD	NETWORK	
	NG741-NET	VMP740	NG741	4PR	24	CAT6	TECK	24VDC	TBD	VIDEO MONITORING	
	NG742-NET	VMP740	NG742	4PR	24	CAT6	TECK	24VDC	TBD	VIDEO MONITORING	
	NG743-NET	VMP740	NG743	4PR	24	CAT6	TECK	24VDC	TBD	VIDEO MONITORING	
	NG744-NET	VMP740	NG744	4PR	24	CAT6	TECK	24VDC	TBD	VIDEO MONITORING	
	NG745-NET	VMP740	NG745	4PR	24	CAT6	TECK	24VDC	TBD	VIDEO MONITORING	
	NG746-NET	VMP740	NG746	4PR	24	CAT6	TECK	24VDC	TBD	VIDEO MONITORING	

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B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



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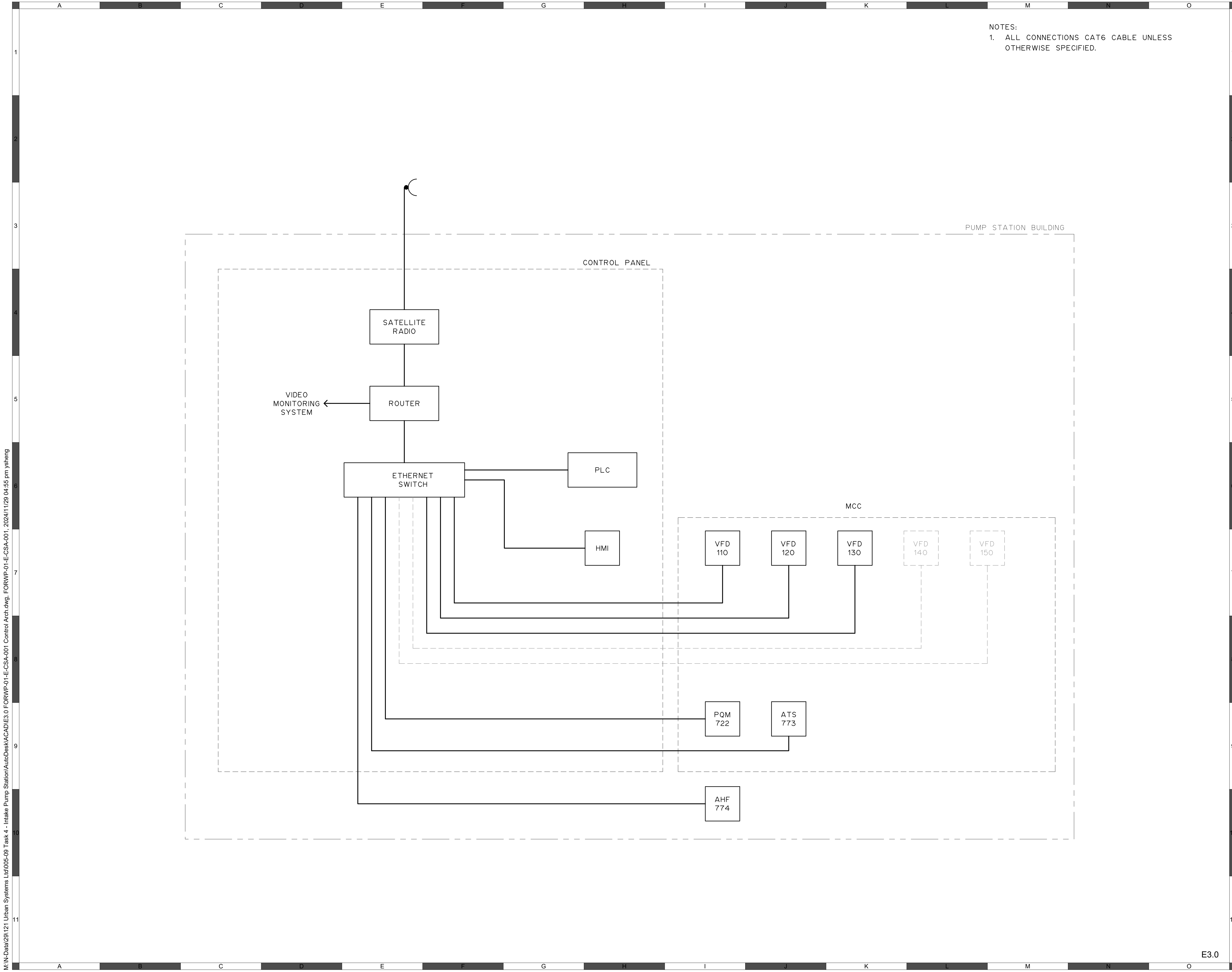
G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CABLE SCHEDULE

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-002	C

E2.7

NOT FOR CONSTRUCTION



- NOTES:
1. ALL CONNECTIONS CAT6 CABLE UNLESS OTHERWISE SPECIFIED.

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Y.F.S.

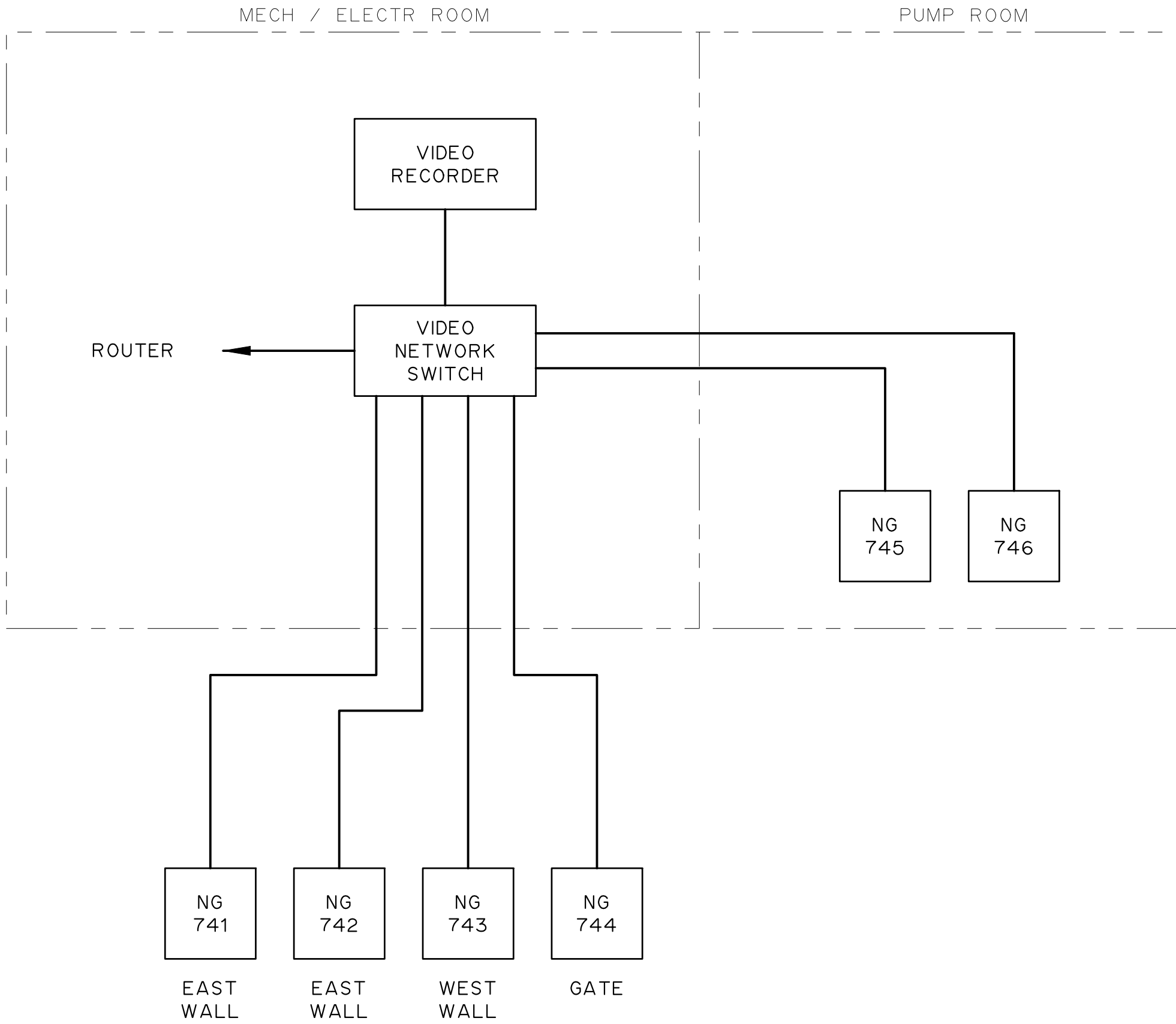
**FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL ARCHITECTURE**

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-CSA-001	C

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E3.0

NOT FOR CONSTRUCTION



- NOTES:
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Quality Control by
Designed by
Drawn by

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Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
VIDEO MONITORING SYSTEM

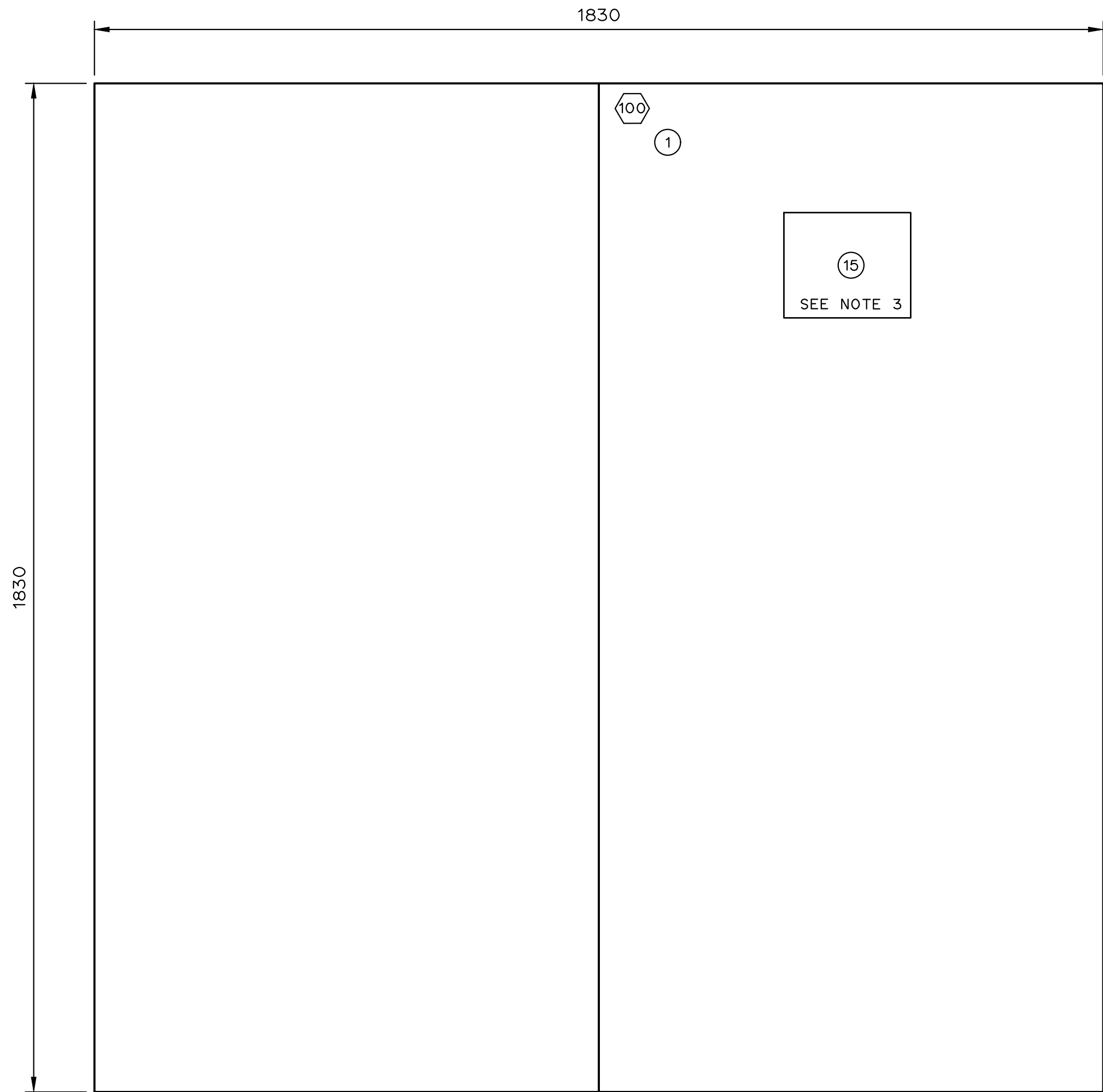
Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-CSA-002	C

E3.1

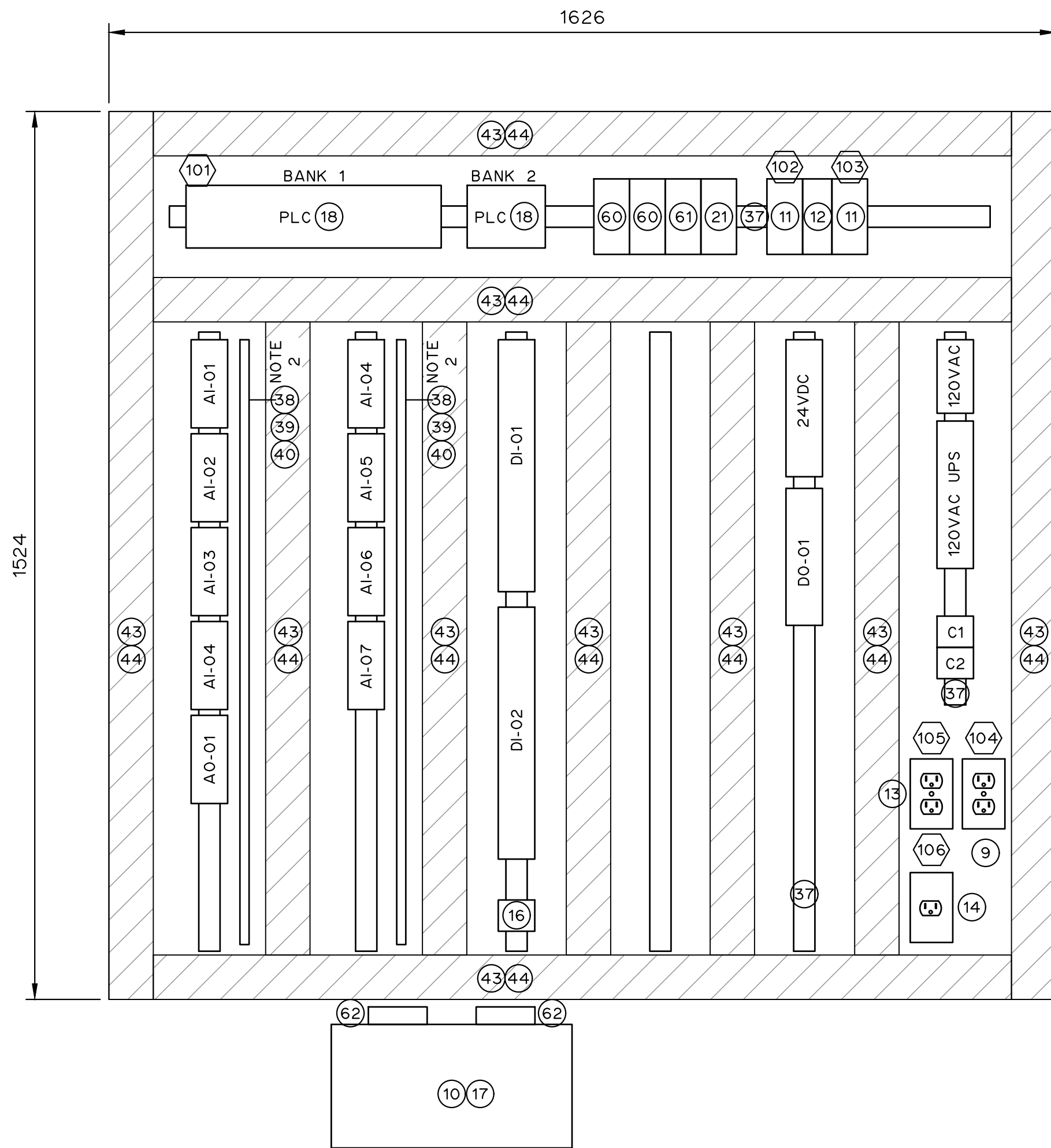
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CONTROL PANEL EXTERIOR



CONTROL PANEL INTERIOR

- NOTES:
1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
 2. ISOLATED GROUND BUS TO BE CONNECTED TO GROUND GRID.
 3. CENTRE OF HMI TO BE 1500 ABOVE FINISHED FLOOR. ALLOW FOR HOUSEKEEPING PAD.

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Scale 1 : 7.5

Quality Control by G.B.P.
Designed by Y.F.S.
Drawn by

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL PANEL LAYOUT

Sheet Number # of ##
Project Number
29121-005-09
Drawing Number Revision
FORWP-01-E-LAY-003 C

E3.1

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BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	MANUFACTURER	CATALOGUE No.
①	1	ENCLOSURE – THREE DOOR 86"x112"x14" C/W 3 POINT LATCH	HOFFMAN	A86M3E6
②	2	ENCLOSURE – BACK MOUNTING PLATE	HOFFMAN	C/W ABOVE
③				
④				
⑤				
⑥				
⑦				
⑧				
⑨	1	DUPLEX RECEPTACLE		
⑩	1	UPS 1500 VA/120VAC SIDE MOUNTING DISPLAY	ALWAYS ON	GES152N WITH OPTIONS
⑪	2	POWER SUPPLY 24VDC 10A	PHOENIX CONTACT	2903149
⑫	1	DIODE MODULE	PHOENIX CONTACT	2907380
⑬	1	DUPLEX RECEPTACLE (ORANGE)		
⑭	1	SIMPLEX RECEPTACLE		
⑮	1	HMI	HOPE INDUSTRIAL SYSTEMS	HIS-ML19.5
⑯	1	DB25 TO TERMINALS INTERFACE	PHOENIX CONTACT	2315188
⑰	1	DB25 SOCKET TO DB25 PIN CABLE LENGTH AS APPROPRIATE		
⑱	1	PLC	SCHNEIDER	SEE LAYOUT
⑲	1	COMPUTER	ONLOGIC	HX500
⑳				
㉑	1	ETHERNET SWITCH 16 PORTS. CU	SCHNEIDER	
㉒				
㉓				
㉔				
㉕				
㉖	A/R	ELECTRONIC CIRCUIT BREAKER 24VDC 1-3A	PHOENIX CONTACT	2909909
㉗				
㉘	A/R	THERMAL MAGNETIC CIRCUIT BREAKER 120VAC 2A TMC 81C02A	PHOENIX CONTACT	2907559
㉙	A/R	KNIFE DISCONNECT TERMINAL BLOCK - PT4-MT	PHOENIX CONTACT	3211933
㉚	A/R	TERMINAL, PT4	PHOENIX CONTACT	3211757
㉛	A/R	FUSE TERMINAL, PT4, VOLTAGE AS REQUIRED	PHOENIX CONTACT	
㉜	A/R	RELAY TERMINAL, 24VDC ICO, 10A CONTACTS PT TERMINAL	PHOENIX CONTACT	2900291
㉝	A/R	GROUND TERMINAL PT4-PE	PHOENIX CONTACT	3211766
㉞	A/R	END BRACKET, CLIP FIX 35–5	PHOENIX CONTACT	3022276
㉟	A/R	END PLATE, DU–T	PHOENIX CONTACT	3030420
㊱	A/R	TAG CARRIER, KLM 3–L	PHOENIX CONTACT	0814788
㊲	A/R	MOUNTING RAIL	PHOENIX CONTACT	
㊳	1	BUS BAR, PERFORATED, NSCH 15x2	WEIDMULLER	
㊴	A/R	PRESSURE PIECE, DKSUE	WEIDMULLER	
㊵	A/R	CLAMPING SCREW, BFSC M5x8	WEIDMULLER	
㊶	A/R	2" X 3" NARROW FINGER SLOTTED WIRING DUCT, WHITE	PANDUIT	F2X3WH6
㊷	A/R	2" WIRING DUCT COVER, WHITE	PANDUIT	C2WH6
㊸	A/R	3" X 3" NARROW FINGER SLOTTED WIRING DUCT, WHITE	PANDUIT	F3X3WH6
㊹	A/R	3" WIRING DUCT COVER, WHITE	PANDUIT	C3WH6
㊺	A/R	4" X 3" NARROW FINGER SLOTTED WIRING DUCT, WHITE	PANDUIT	F4X3WH6
㊻	A/R	4" WIRING DUCT COVER, WHITE	PANDUIT	C4WH6
㊼	A/R	4" WIRING DUCT COVER, WHITE	PANDUIT	C4WH6
㊽				
㊾	A/R	RELAY PLUG–IN BRIDGE BLUE	PHOENIX CONTACT	2966692
㊿	A/R	TERMINAL JUMPER 2 POSITION RED	PHOENIX CONTACT	3030336
1	A/R	TERMINAL JUMPER No. POSITION AND COLOUR AS NEEDED	PHOENIX CONTACT	
2				
3				
4				
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8				
9				
10				
11				
12	1	ROUTER	CISCO	MERAKI Z3 C/W 5 YEAR ENTERPRISE SUPPORT

NOTE 2

LAMICOID/LABEL SCHEDULE				
ITEM	QTY	DESCRIPTION	TYPE	SIZE
⑩0		CONTROL PANEL	LAMICOID	25x50
⑩1		PLC RACK 0	LAMICOID	25x50
⑩2		POWER SUPPLY A	LAMICOID	25x50
⑩3		POWER SUPPLY B	LAMICOID	25x50
⑩4		SERVICE RECEPTACLE	LAMICOID	25x50
⑩5		UPS RECEPTACLE	LAMICOID	25x50
⑩6		UPS FEED	LAMICOID	25x50
⑩7				
⑩8				
⑩9				
⑪0				
⑪1				
⑪2				
⑮0		120VAC	LABEL	TO FIT
⑮1		120VAC UPS	LABEL	TO FIT
⑮2		24 VDC	LABEL	TO FIT
⑮3		DI-01	LABEL	TO FIT
⑮4		DI-02	LABEL	TO FIT
⑮5		DI-03	LABEL	TO FIT
⑮6		AI-01	LABEL	TO FIT
⑮7		AI-02	LABEL	TO FIT
⑮8		AI-03	LABEL	TO FIT
⑮9		AI-04	LABEL	TO FIT
⑮0		AI-05	LABEL	TO FIT
⑮1		AI-06	LABEL	TO FIT
⑮2		AI-07		
⑮3		AI-08	LABEL	TO FIT
⑮4		AI-09	LABEL	TO FIT
⑮5		AI-10	LABEL	TO FIT
⑮6		AI-11	LABEL	TO FIT
⑮7		A0-01	LABEL	TO FIT
⑮8		A0-02	LABEL	TO FIT
⑮9		D0-01	LABEL	TO FIT
⑰0		D0-02	LABEL	TO FIT

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Designed by	Y.F.S.
Drawn by	

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL PANEL BILL OF MATERIALS
AND LABEL SCHEDULE

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-003	C

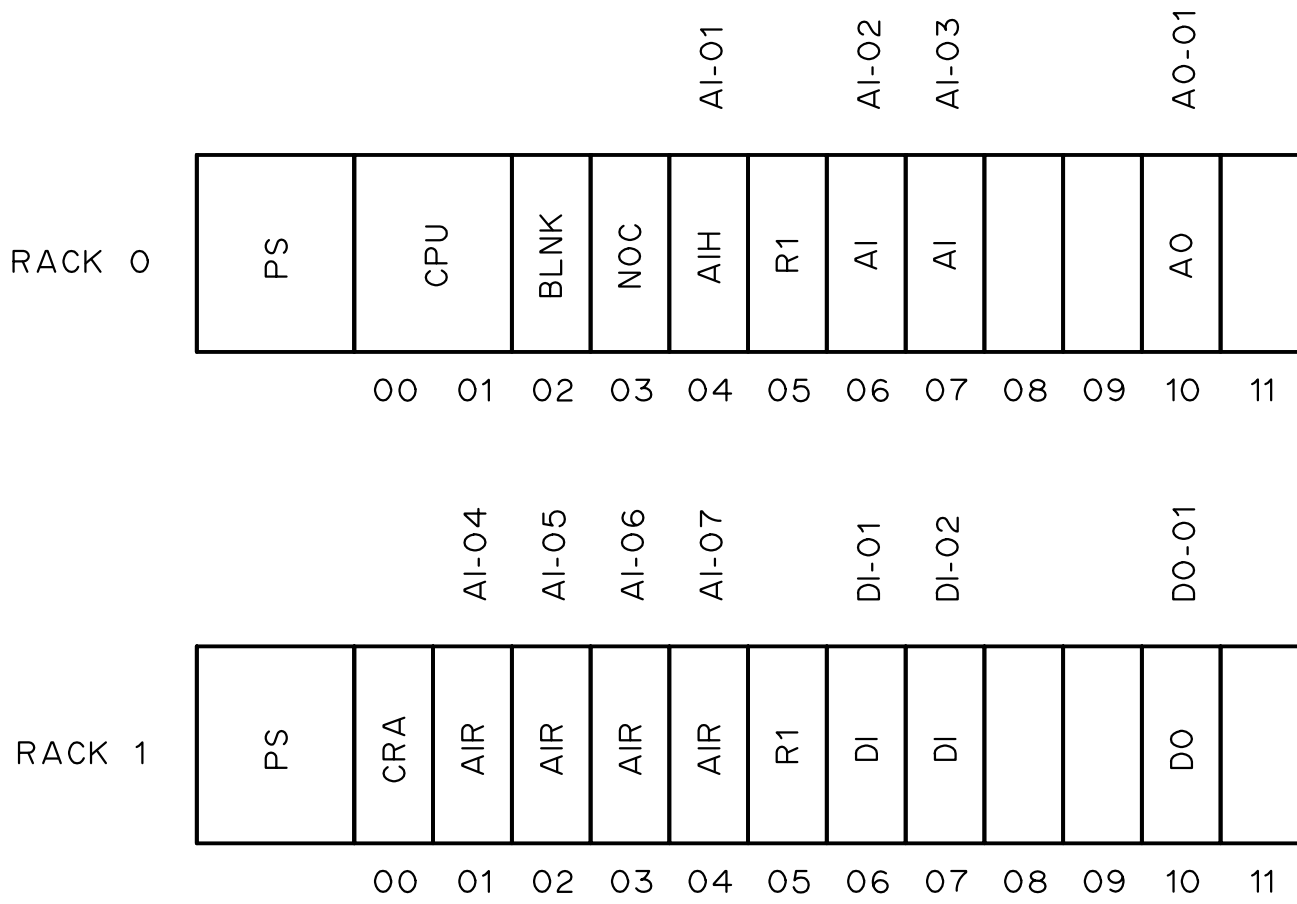
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- NOTES:
- FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, AND SYMBOLS, REFER TO THE LEGEND AND ABBREVIATION DRAWINGS.
 - UPS WITH DISPLAY SIDE MOUNTED.
 - 30300 (GES-152N 120V)
 - 00987 (AS400 RELAY COMMUNICATION CARD)
 - 30080 (FACE PLATE SIDE MOUNT OPTION 701N-152N)

Item	Part Number	Description
R1	BMEXBP1200	RACK DUAL X-BUS ETHERNET 12 SLOT
PS	BMXCPS3020	POWER SUPPLY 24VDC 30W
CPU	BMEP581020	M580 CONTROLLER 4MB
NOC	BMENOC0301	NETWORK MODULE ETHERNET
RIO	BMXCRA31210	ETHERNET REMOTE I/O DROP ADAPTER
AI	BMXAMI0810	ANALOG INPUT 8 CH
AIH	BMEAH10812	ANALOG INPUT 8 CH HART
AIR	BMXART0814	ANALOG INPUT 8 CH RTD
AO	BMXAMO0802	ANALOG OUTPUT 8 CH
DI	BMXDDI3202K	DIGITAL INPUT 32 CH
DO	BMXDDO1602	DIGITAL OUTPUT 16 CH
BLNK	BMXXEM010	PROTECTIVE COVER FOR UNUSED SLOT



PLC LAYOUT

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FOOTHILLS OKOTOKS
INTAKE PUMP STATION
PLC LAYOUT

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-SCH-004

of ##
Revision
C

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AI-01
156
040P
041P
042P
043P
044P
045P
046P
047P
040C
041C
042C
043C
044C
045C
046C
047C

36
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35
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AI-02
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B061
B062
B063
060P
060V
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064V
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AI-03
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AO-01
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0A5P
0A6P
0A7P
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0A3C
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0A7C

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DI-01
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B1603
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SPS2N

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DI-02
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SPS1P
SPS2P
SPS2P
SPS1N
SPS1N
SPS2N
SPS2N

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34

NOTES:

- FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, AND SYMBOLS, REFER TO THE LEGEND AND ABBREVIATION DRAWINGS.
- ADJACENT JUMPERED TERMINALS TO BE IMPLEMENTED WITH MANUFACTURER PROVIDED BRIDGES.
- 24VDC CIRCUIT BREAKERS TO BE SUPPLIED WITH BOTH 24VDC+ AND 24VDC COM. CIRCUIT BREAKERS FOR 24VDC AND DIGITAL INPUT TERMINAL STRIPS TO BE MONITORED BY PLC INPUTS. MONITORING CONTACTS OF EACH GROUP INDICATED TO BE CONNECTED IN SERIES WITH MANUFACTURER 2 POLE BRIDGES. SEE DETAIL.

E3.6

ATTENTION

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Professional Seals

#	Date	Issue / Revision	App
A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale NOT TO SCALE

Quality Control by	
Designed by	G.B.P.
Drawn by	Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL PANEL TERMINAL STRIP
LAYOUT 1 OF 2

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-005	C

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\IE3.6 - E3.7 FORWP-01-E-SCH-006.dwg, FORWP-01-E-SCH-006, 2024/11/20 04:56 pm ystheng

NOTES:

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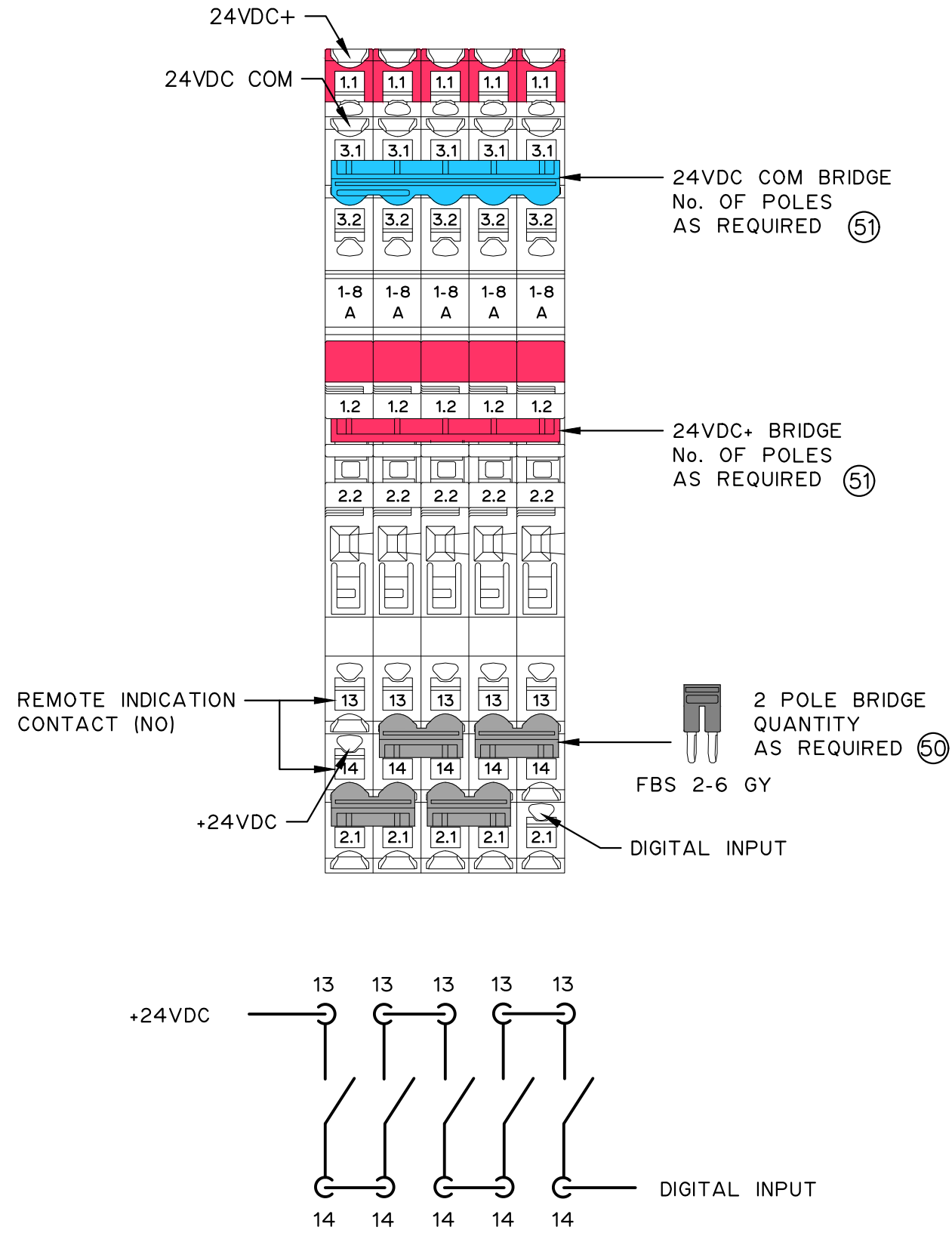
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		34
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A2		14
A1		11
	R1A02	12
A2		14
A1		11
	R1A03	12
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	R1A04	12
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A1		11
	R1A05	12
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A1		11
	R1A15	12
A2		14
	P	
	P	
	N	
	N	
		34

COIL COMMON
BRIDGE 49

24VDC	
	152
	36
	34
	28
B301	
B302	
B303	
B304	
B305	
B306	
B307	
B308	
B309	
B310	
B311	
B312	
B313	
B314	
B315	
B316	
B317	
B318	
B319	
B320	
B321	
B322	
B323	
301C	30
302C	
303C	
304C	
305C	
306C	
307C	
308C	
309C	
310C	
311C	
312C	
313C	
314C	
315C	
316C	
317C	
318C	
319C	
320C	
321C	
322C	
323C	
	35
	34

120VAC UPS	
	151
	36
	34
	28
B201	
B202	
B203	
B204	
B205	
B206	
B207	
B208	
B210	
B211	
B212	
B213	
B214	
B215	
B216	
B217	
B218	
B219	
201N	30
202N	
203N	
204N	
205N	
206N	
207N	
208N	
210N	
211N	
212N	
213N	
214N	
215N	
216N	
217N	
218N	
219N	
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	34

120VAC	
	150
	36
	34
	28
B100	
B101	
B102	
100N	30
101N	
102N	
	35
	34



24VDC CIRCUIT BREAKER DETAIL

ATTENTION
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B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by
G.B.P.
Y.F.S.

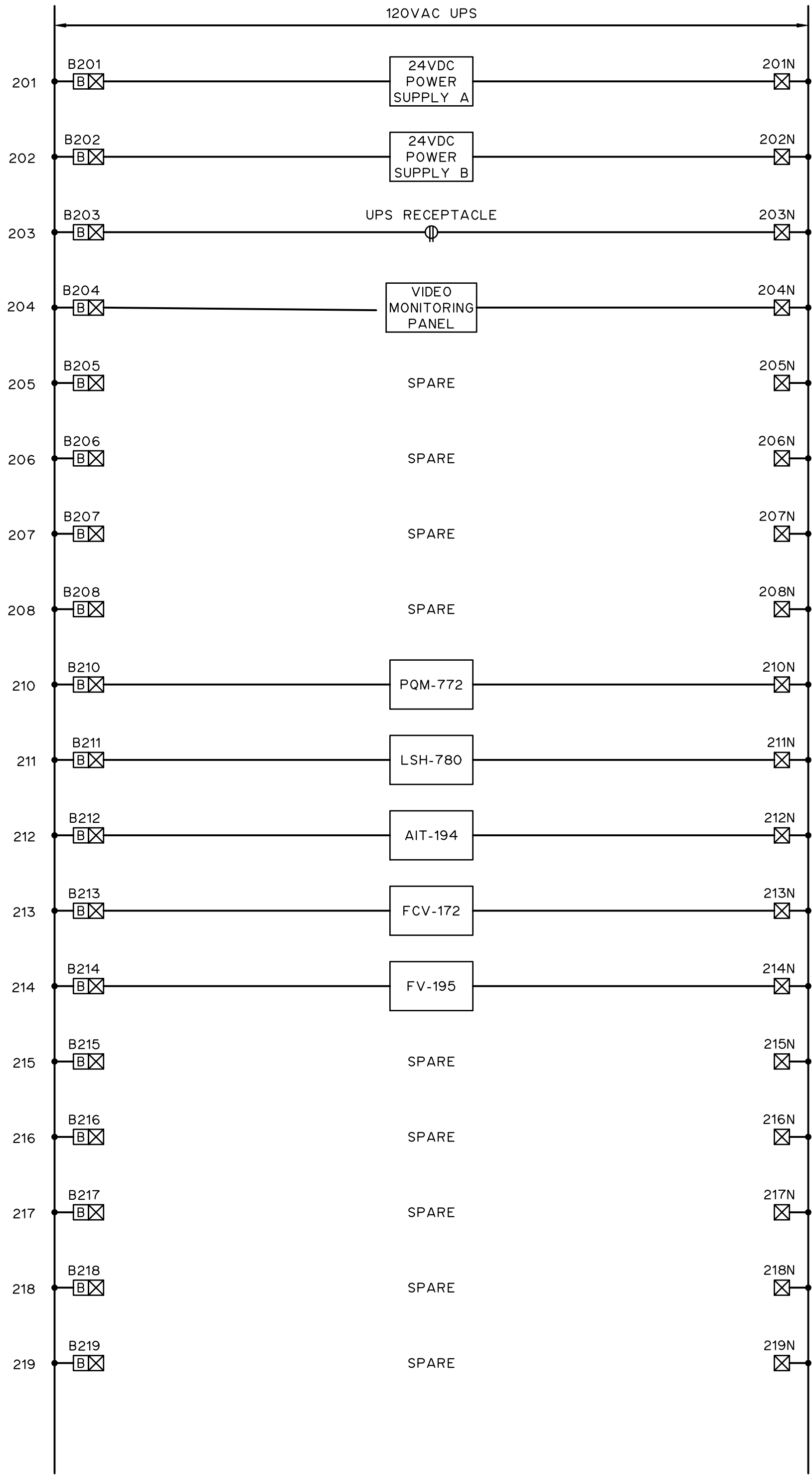
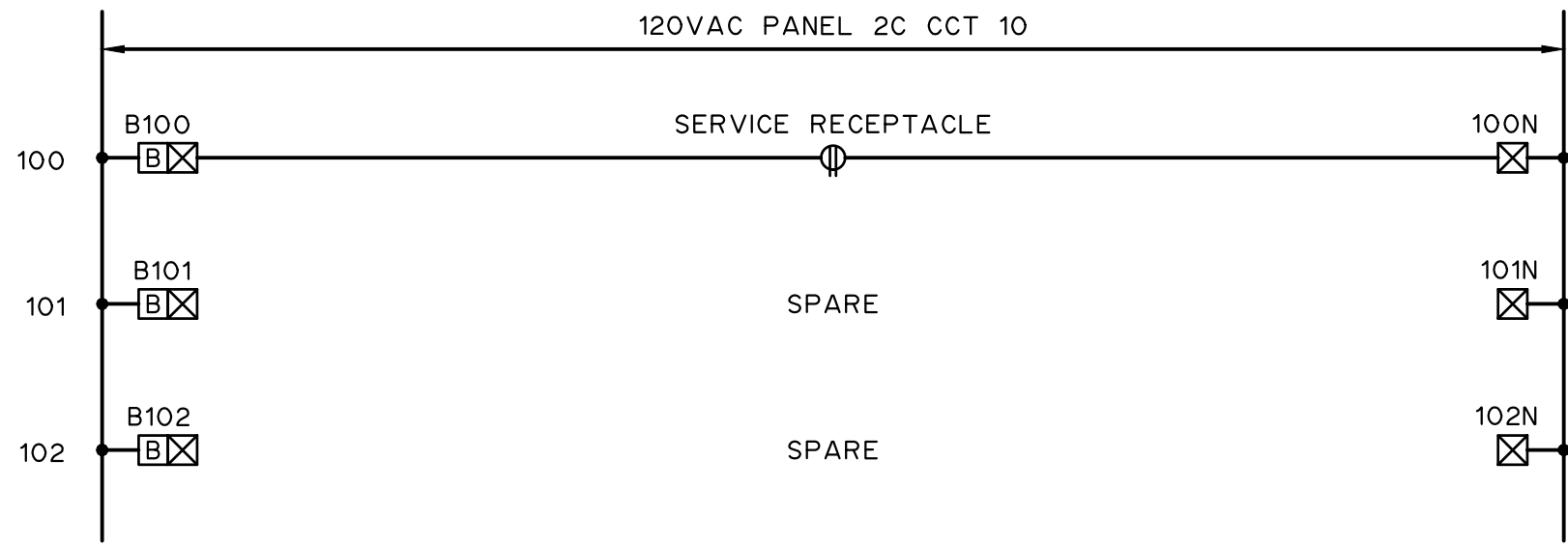
FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL PANEL TERMINAL STRIP
LAYOUT 2 OF 2

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-006	C

E3.7

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.8 FORWP-01-E-SCH-007 120VAC.dwg, FORWP-01-E-SCH-007, 2024/11/20 04:56 pm ystheng



NOTES:

1. FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, AND SYMBOLS, REFER TO THE LEGEND AND ABBREVIATION DRAWINGS.

E3.8

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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

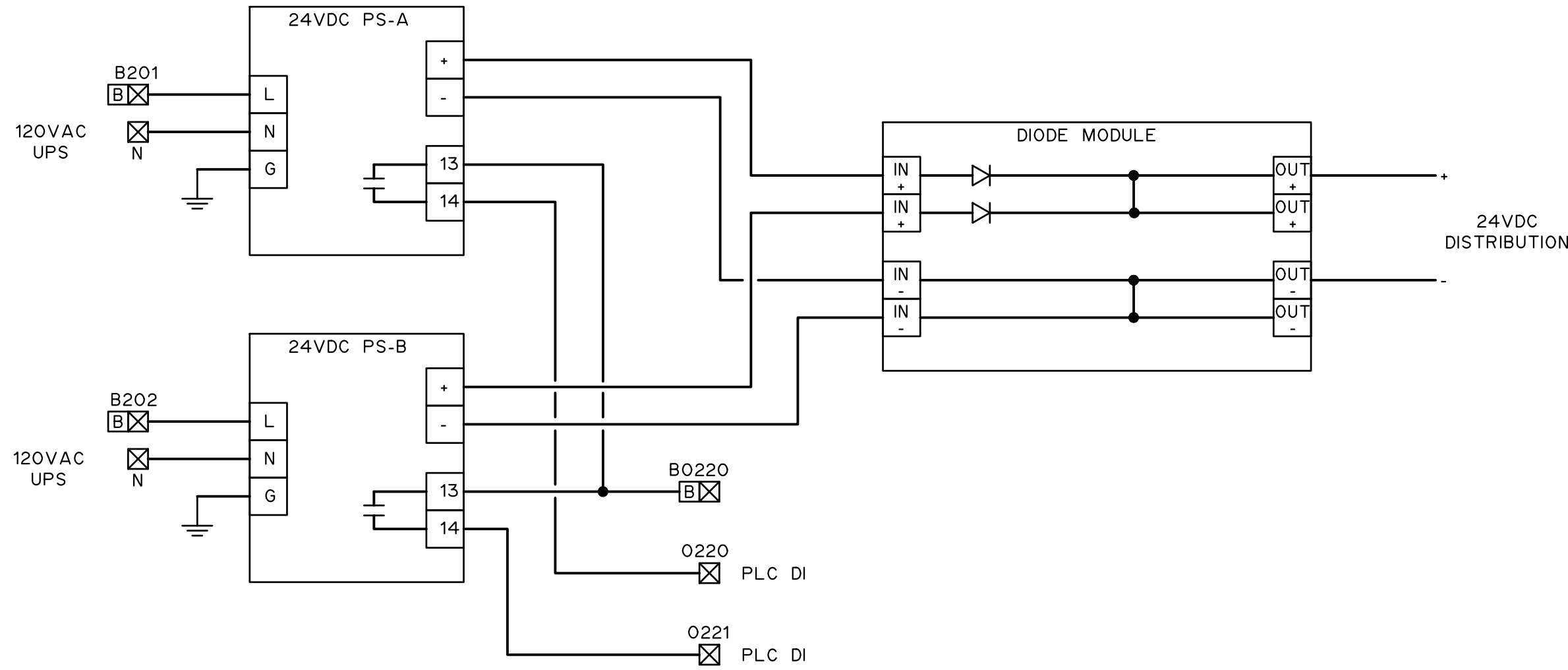
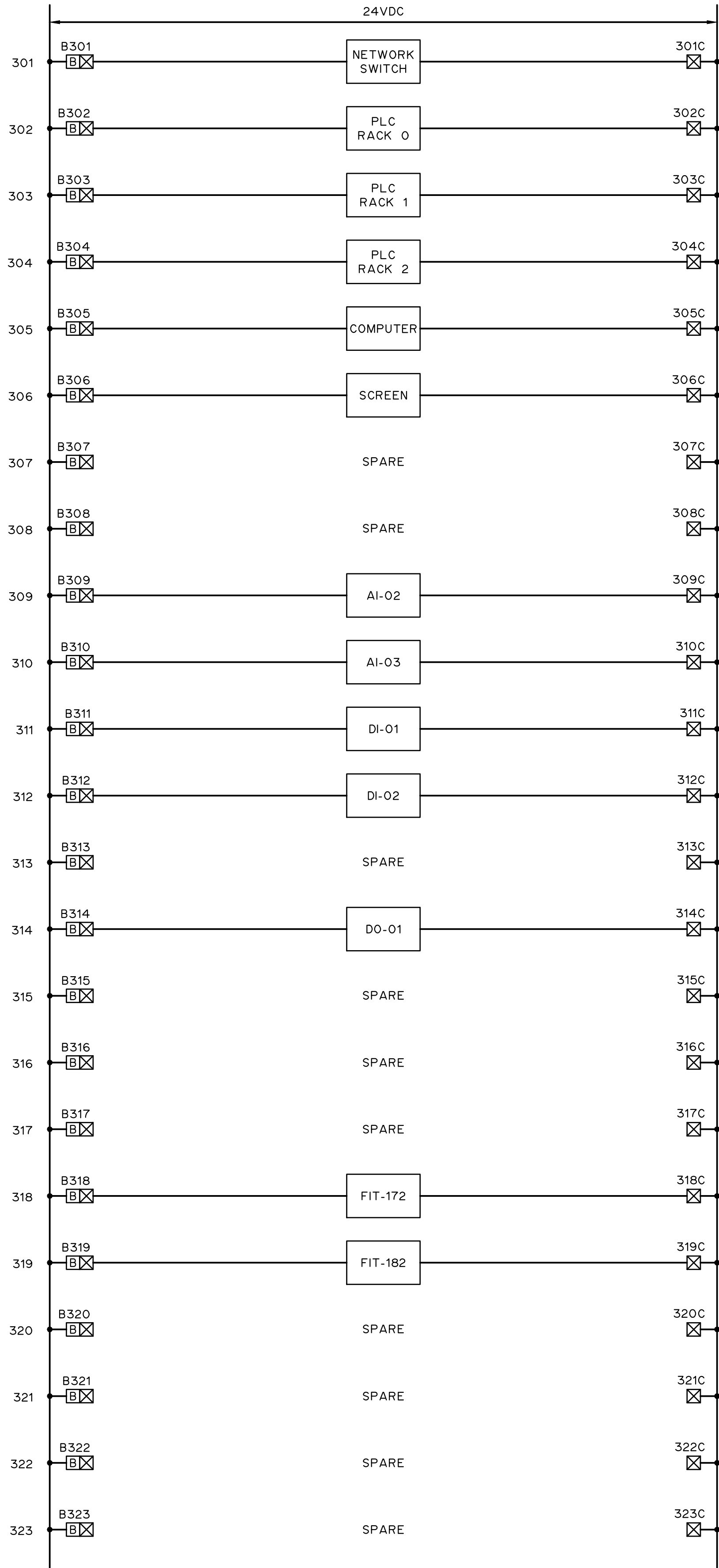
G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL PANEL POWER DISTRIBUTION
120VAC

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-007	C

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.9 FORWP-01-E-SCH-008 24VDC.dwg, 2024/11/29 04:57 pm ysheng



- NOTES:
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E3.9

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B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

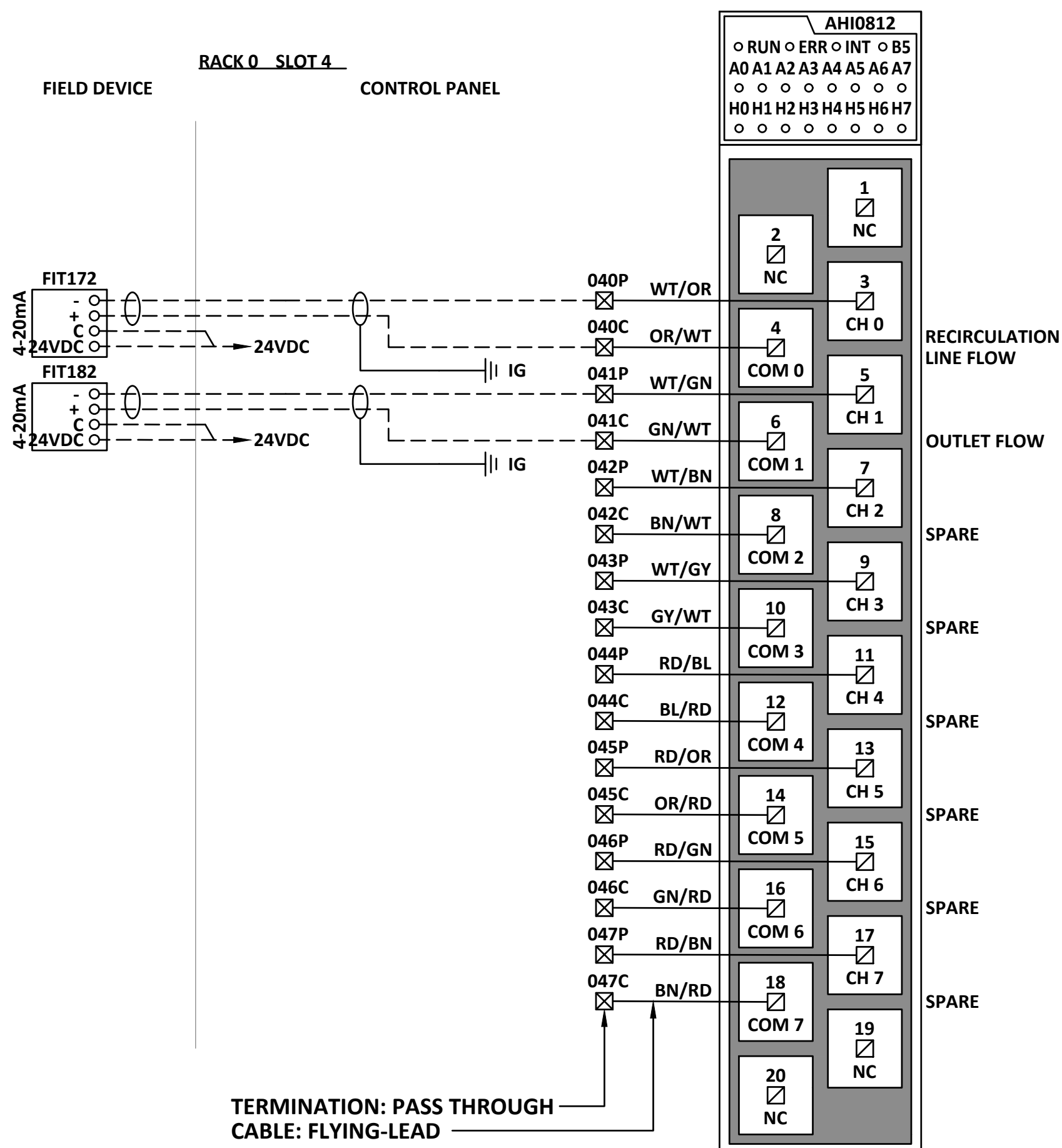
G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
CONTROL PANEL POWER DISTRIBUTION
24VDC

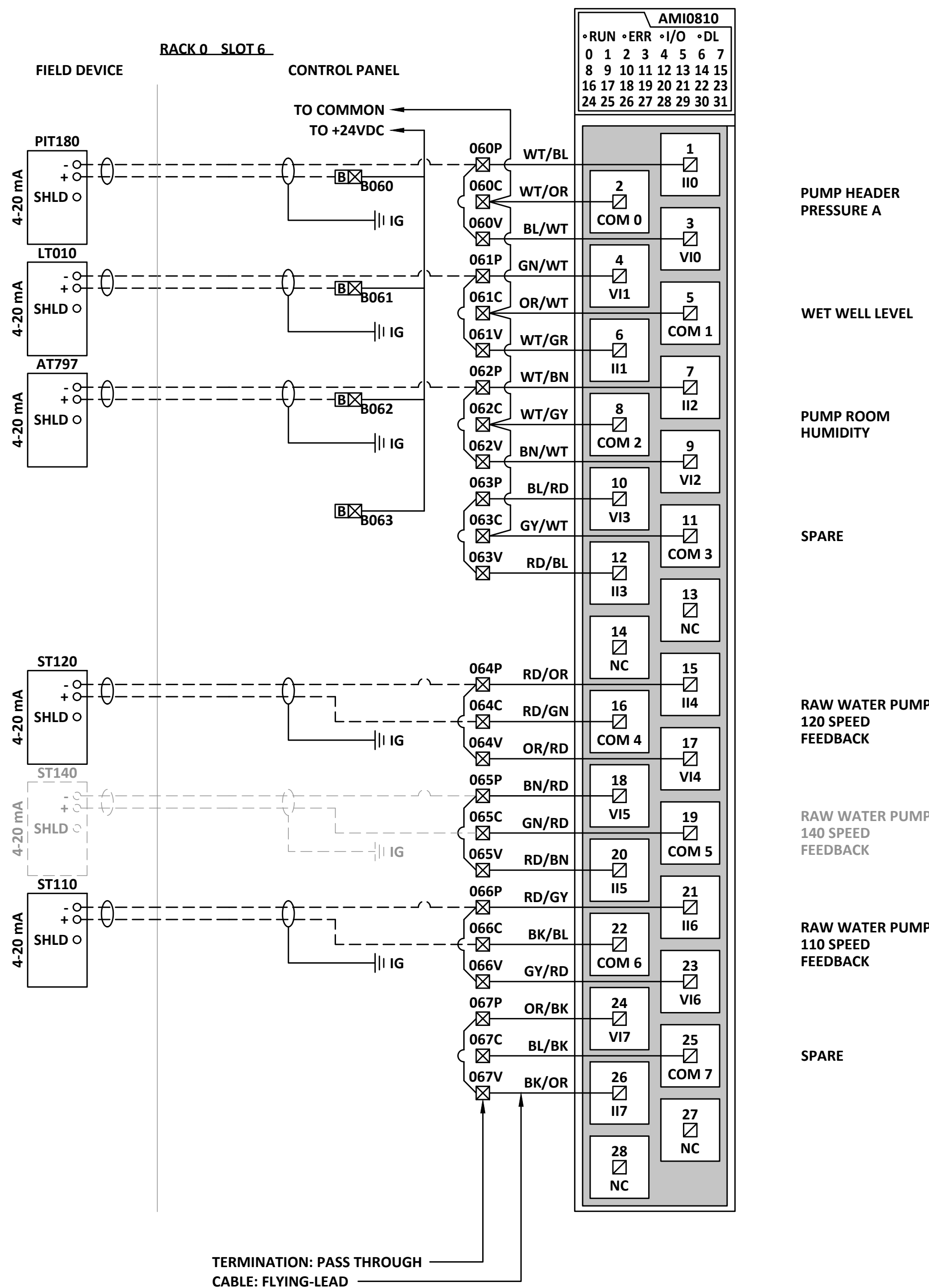
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Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-SCH-008	C

NOT FOR CONSTRUCTION

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AI-01

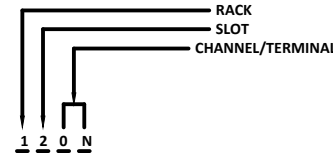


AI-02

ATTENTION
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NOTES:
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DRAWINGS.
2. REFER TO BILL OF MATERIALS AND LABEL SCHEDULE
DRAWING.
3. REFER TO CONTROL PANEL ENCLOSURE DRAWING FOR
TERMINAL STRIP LOCATION.
4. CIRCUIT BREAKERS JAMP UNLESS NOTED OTHERWISE.
5. DEVICE IS THREE WIRE. INCLUDE CONNECTION TO 24VDC
COMMON.



Professional Seals

#	Date	Issue / Revision	App
A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

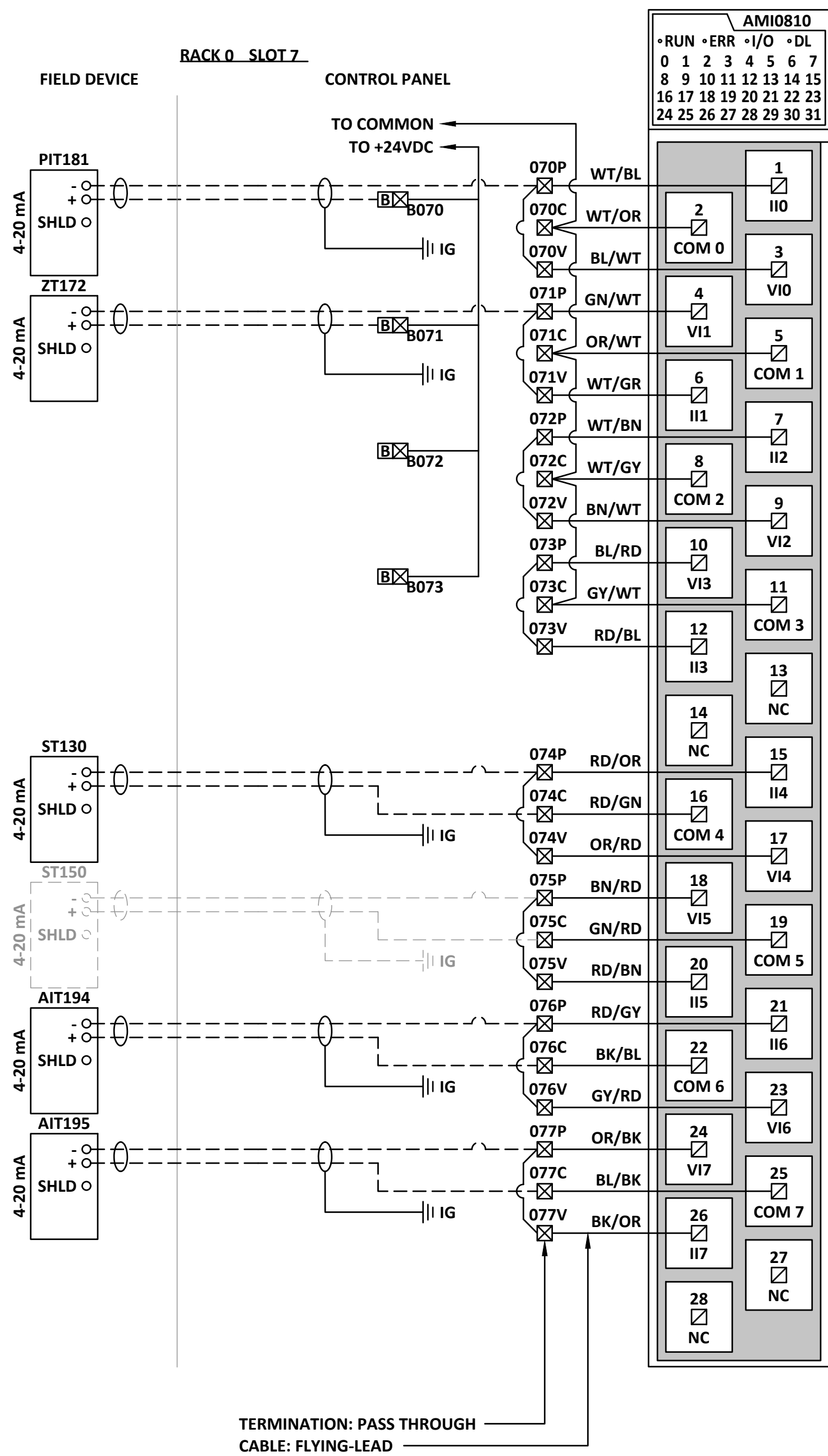
FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ANALOG INPUT MODULE 1 AND 2

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-WD-004	C

E3.10

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.11 - FORWP-01-E-WD-005 ANALOG INPUT MODULE 3.dwg, FORWP-01-E-WD-005, 2024/11/29 04:56 pm ysheng

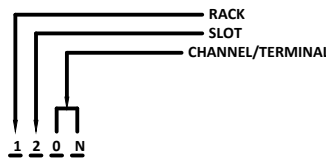


AI-03

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 - REFER TO BILL OF MATERIALS AND LABEL SCHEDULE DRAWING.
 - REFER TO CONTROL PANEL ENCLOSURE DRAWING FOR TERMINAL STRIP LOCATION.
 - CIRCUIT BREAKERS JAMP UNLESS NOTED OTHERWISE.
 - DEVICE IS THREE WIRE. INCLUDE CONNECTION TO 24VDC COMMON.



Professional Seals

#	Date	Issue / Revision	App
A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

**FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ANALOG INPUT MODULE 3**

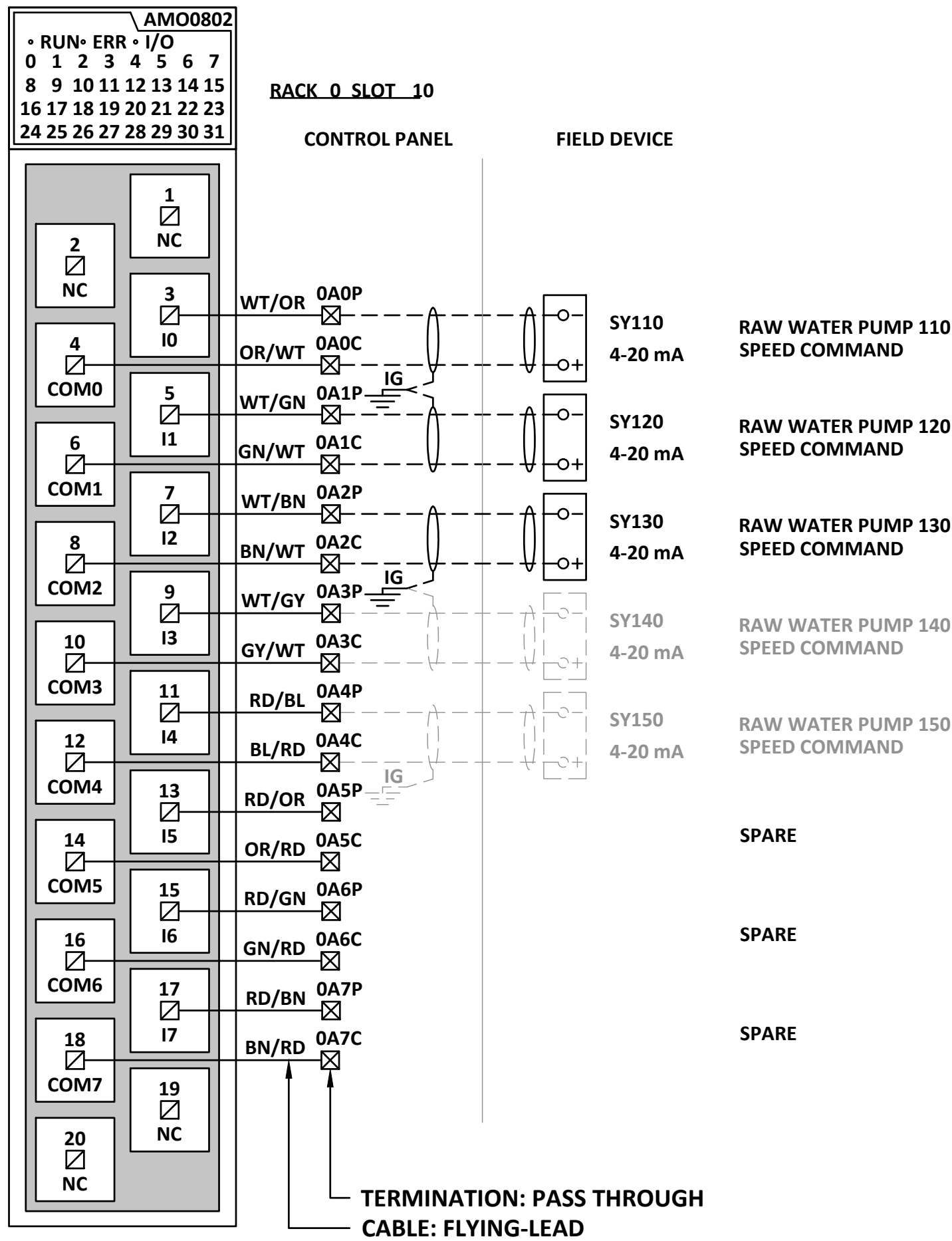
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Project Number
29121-005-09
Drawing Number
FORWP-01-E-WD-005

of ##
Revision
C

E3.11

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.12 - FORWP-01-E-WD-006 ANALOG OUTPUT MODULE 1.dwg, FORWP-01-E-WD-006, 2024/11/29 04:57 pm ysheng



AO-01

ATTENTION

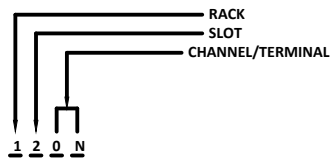
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- DEVICE IS THREE WIRE. INCLUDE CONNECTION TO 24VDC COMMON.



Professional Seals

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A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale

NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

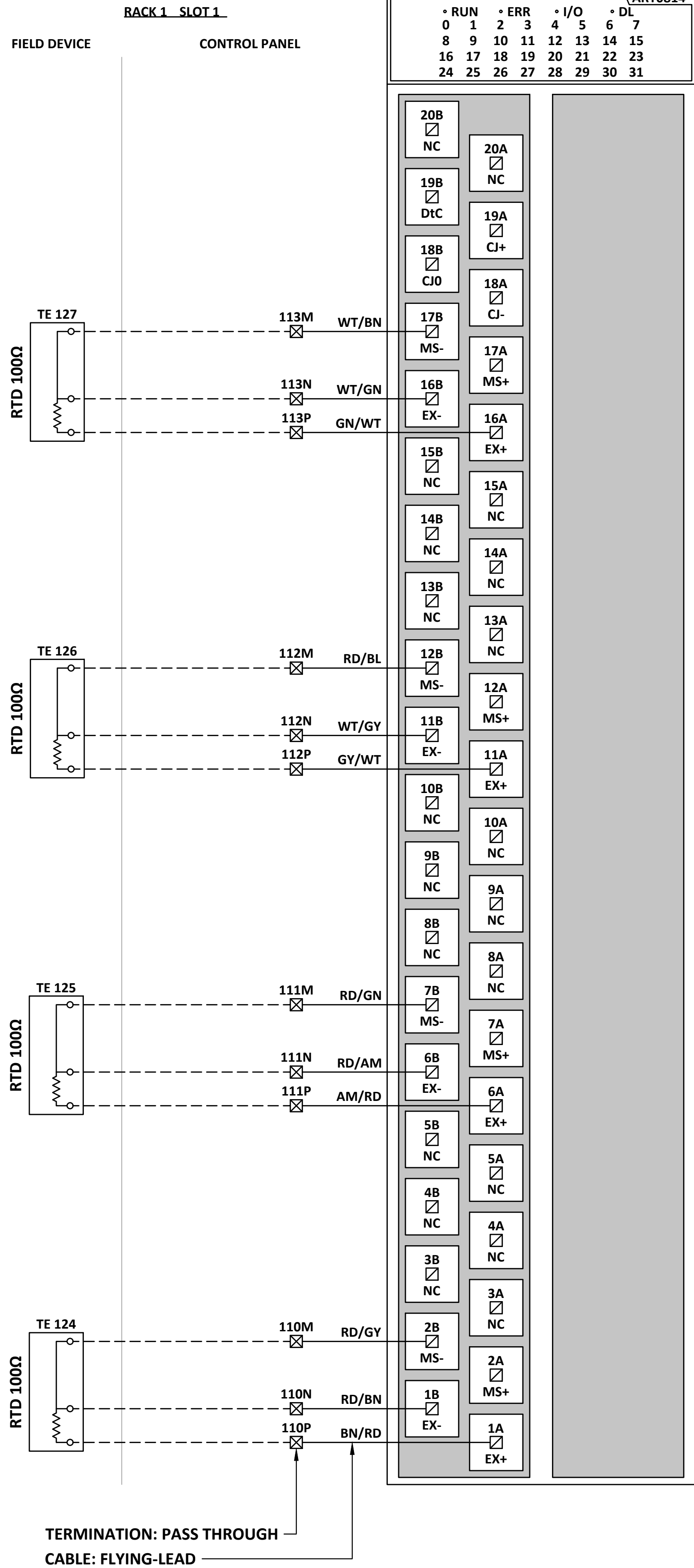
FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ANALOG OUTPUT MODULE 1

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-WD-006	C

E3.12

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.13 - FORWP-01-E-WD-007 ANALOG INPUT MODULE 4.dwg, FORWP-01-E-WD-007, 2024/11/29 04:57 pm ysheng

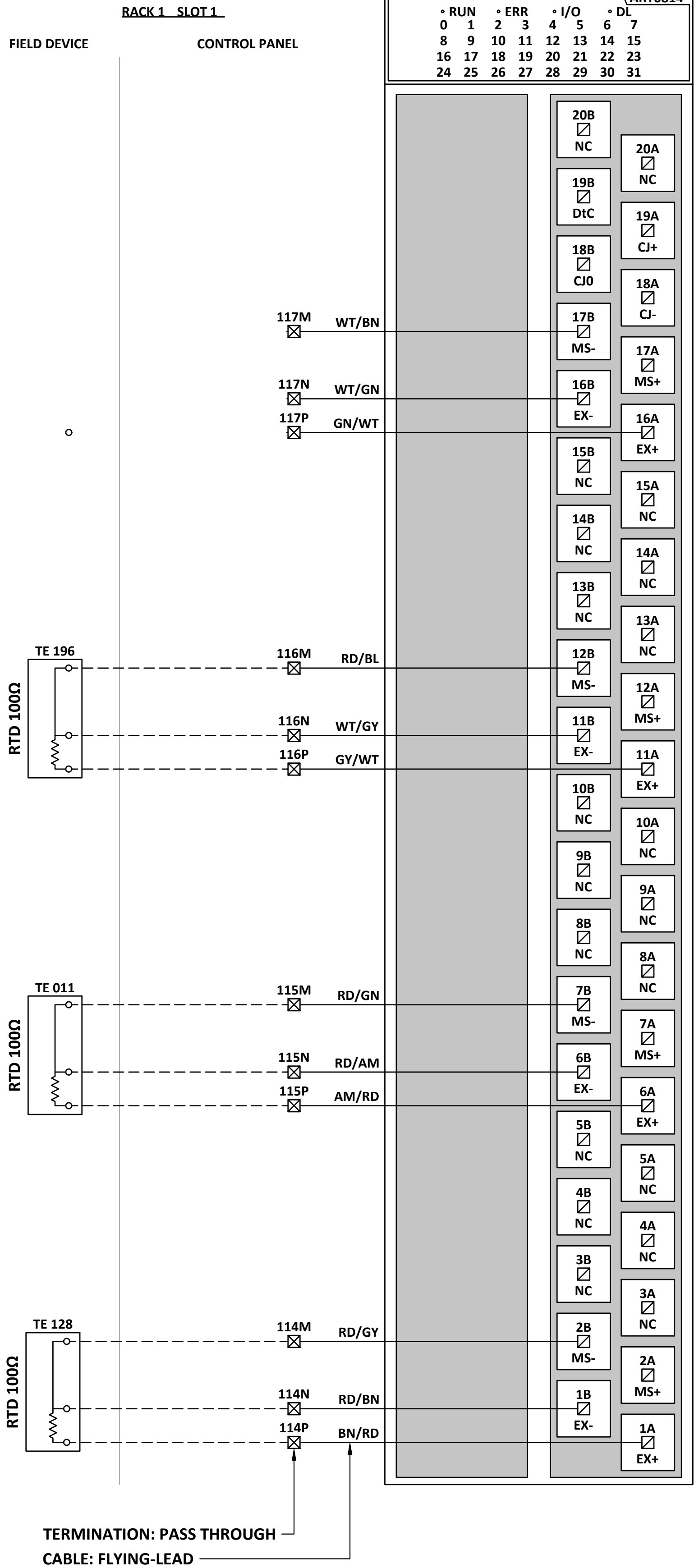


RAW WATER PUMP
120 MOTOR UPPER
BEARING
TEMPERATURE

RAW WATER PUMP
120 MOTOR
STATOR PHASE C
TEMPERATURE

RAW WATER PUMP
120 MOTOR
STATOR PHASE B
TEMPERATURE

RAW WATER PUMP
120 MOTOR
STATOR PHASE A
TEMPERATURE



SPARE

OUTLET
TEMPERATURE

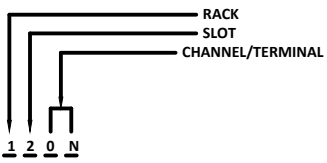
WET WELL AMBIENT
TEMPERATURE

RAW WATER PUMP
120 MOTOR LOWER
BEARING
TEMPERATURE

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TERMINAL STRIP LOCATION.
 - CIRCUIT BREAKERS JAMP UNLESS NOTED OTHERWISE.
 - DEVICE IS THREE WIRE. INCLUDE CONNECTION TO 24VDC
COMMON.



Professional Seals

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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ANALOG INPUT MODULE 4

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-WD-007

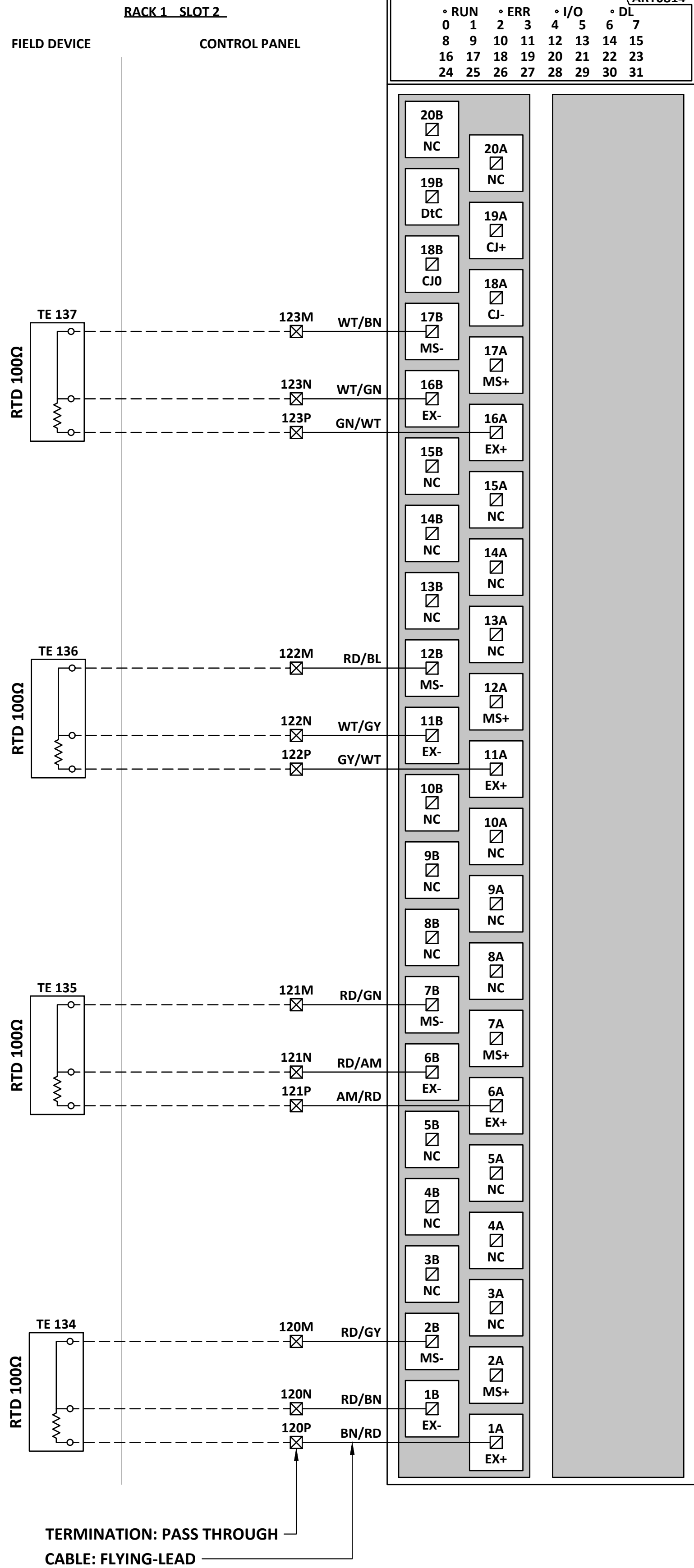
of ##
Revision
C

AI-04

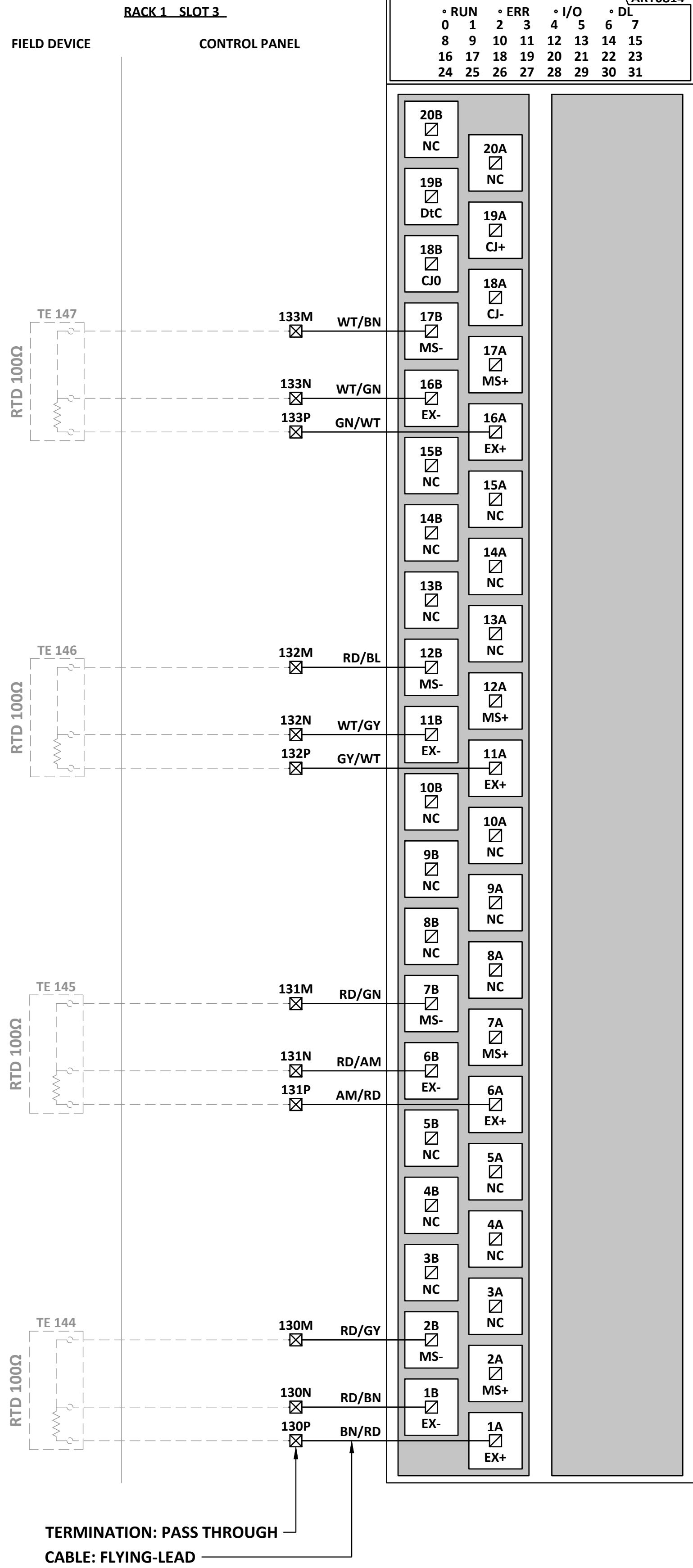
E3.13

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.14 - FORWP-01-E-WD-008 ANALOG INPUT MODULE 5.dwg, FORWP-01-E-WD-008, 2024/11/29 04:55 pm ysheng



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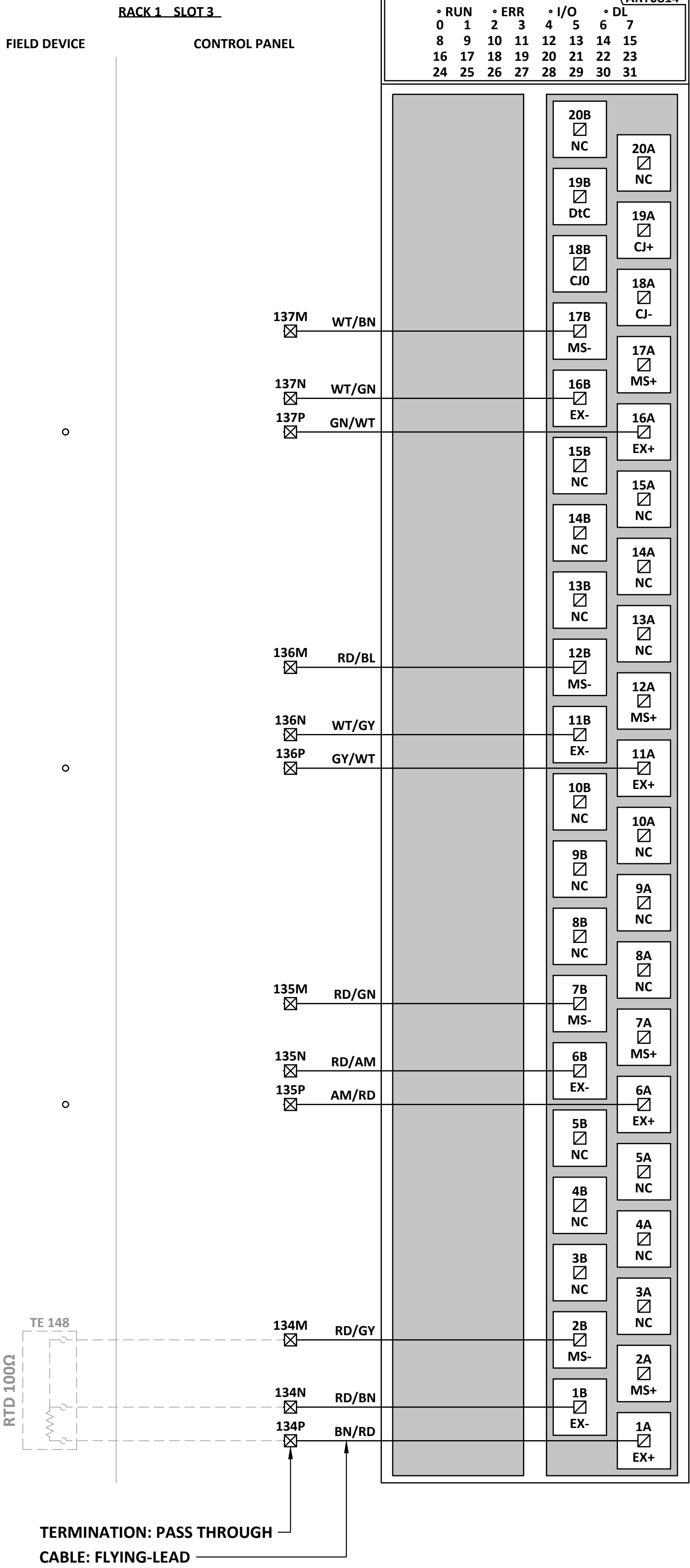
TERMINATION: PASS THROUGH
CABLE: FLYING-LEAD

RAW WATER PUMP
140 MOTOR UPPER
BEARING
TEMPERATURE

RAW WATER PUMP
140 MOTOR
STATOR PHASE C
TEMPERATURE

RAW WATER PUMP
140 MOTOR
STATOR PHASE B
TEMPERATURE

RAW WATER PUMP
140 MOTOR
STATOR PHASE A
TEMPERATURE



TERMINATION: PASS THROUGH
CABLE: FLYING-LEAD

SPARE

SPARE

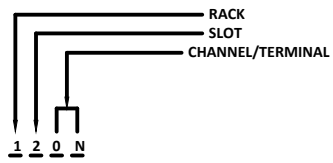
SPARE

RAW WATER PUMP
140 MOTOR LOWER
BEARING
TEMPERATURE

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B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ANALOG INPUT MODULE 6

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-WD-009

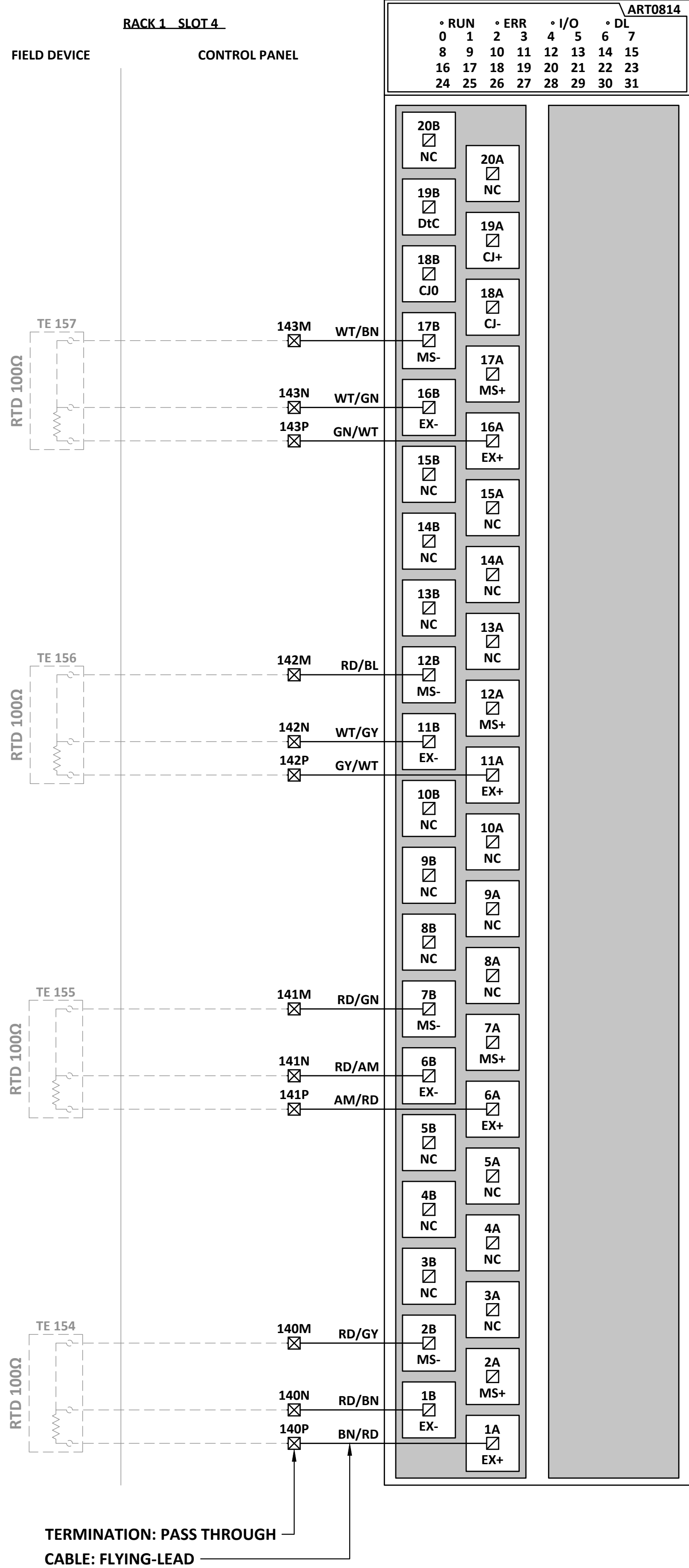
of ##
Revision
C

E3.15

AI-06

NOT FOR CONSTRUCTION

M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.16 - FORWP-01-E-WD-010 ANALOG INPUT MODULE 7.dwg, FORWP-01-E-WD-010, 2024/11/29 04:55 pm ysheng

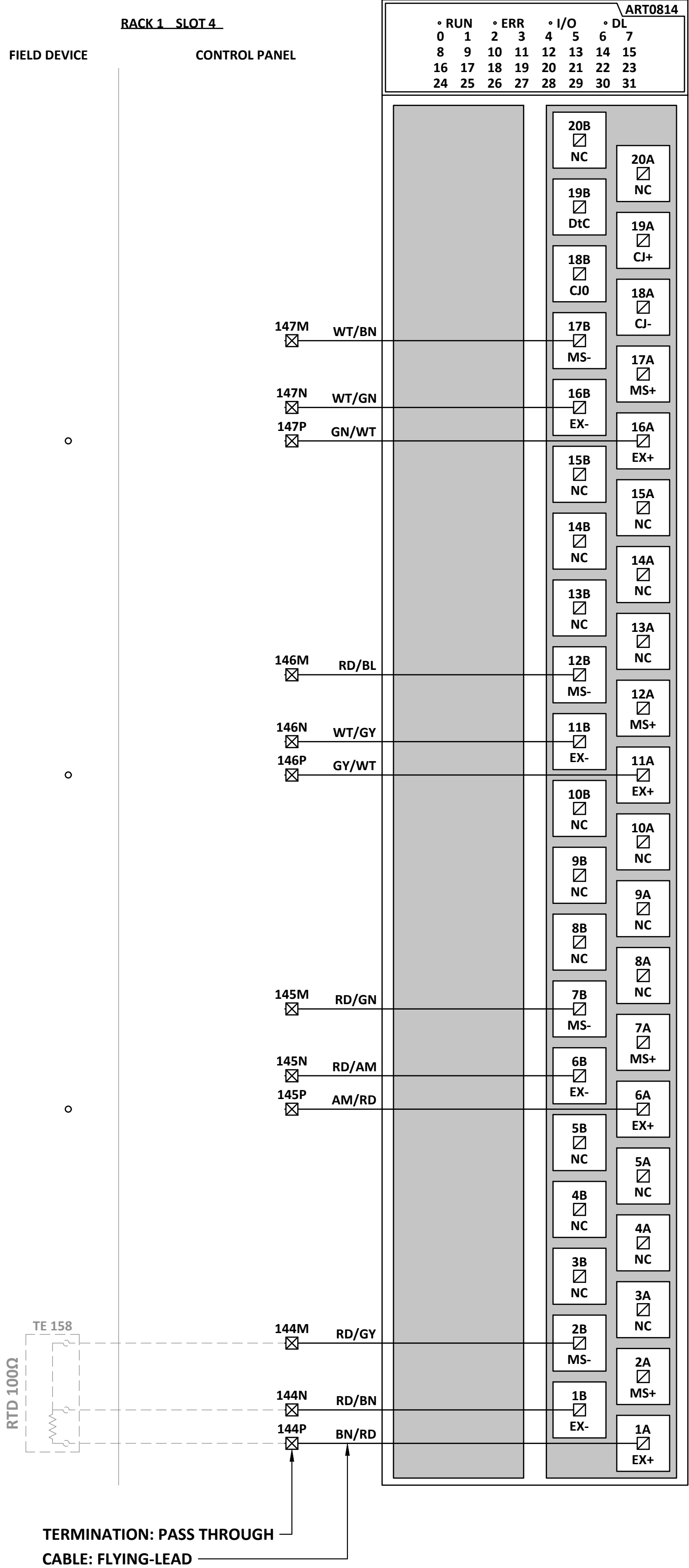


RAW WATER PUMP
150 MOTOR UPPER
BEARING
TEMPERATURE

RAW WATER PUMP
150 MOTOR
STATOR PHASE C
TEMPERATURE

RAW WATER PUMP
150 MOTOR
STATOR PHASE B
TEMPERATURE

RAW WATER PUMP
150 MOTOR
STATOR PHASE A
TEMPERATURE



SPARE

SPARE

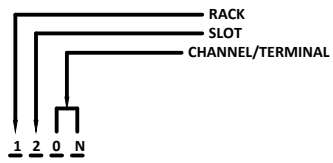
SPARE

RAW WATER PUMP
150 MOTOR LOWER
BEARING
TEMPERATURE

ATTENTION
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underground utilities and structures indicated on this
drawing, all underground utilities in the area of the
proposed work and any utilities or structures
reasonably apparent from an inspection of the
proposed work. Urban Systems Ltd. assumes no
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party negligence or failure to comply with the above.

- NOTES**
- FOR INFORMATION REGARDING GENERAL NOTES,
ABBREVIATIONS, AND SYMBOLS, REFER TO THE LEGEND
DRAWINGS.
 - REFER TO BILL OF MATERIALS AND LABEL SCHEDULE
DRAWING.
 - REFER TO CONTROL PANEL ENCLOSURE DRAWING FOR
TERMINAL STRIP LOCATION.
 - CIRCUIT BREAKERS JAMP UNLESS NOTED OTHERWISE.
 - DEVICE IS THREE WIRE. INCLUDE CONNECTION TO 24VDC
COMMON.



Professional Seals

#	Date	Issue / Revision	App
A	24-09-27	ISSUED FOR QUOTATION	G.B.P.
B	24-11-14	ISSUED FOR 75% REVIEW	G.B.P.
C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
ANALOG INPUT MODULE 7

Sheet Number
Project Number
29121-005-09
Drawing Number
FORWP-01-E-WD-010

of ##
Revision
C

E3.16

AI-07

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[illegible][illegible]

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Diagram illustrating the relationship between Rack, Slot, and Channel/Terminal:

- Rack 1 contains Slot 1 and Slot 2.
- Slot 1 contains Channel 1 and Channel 2.
- Slot 2 contains Channel 3 and Channel 4.

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C	24-11-29	ISSUED FOR DESIGN ASSIST RFP	G.B.P.



Quality Control by _____
Designed by G.B.P.
Drawn by Y.F.S.

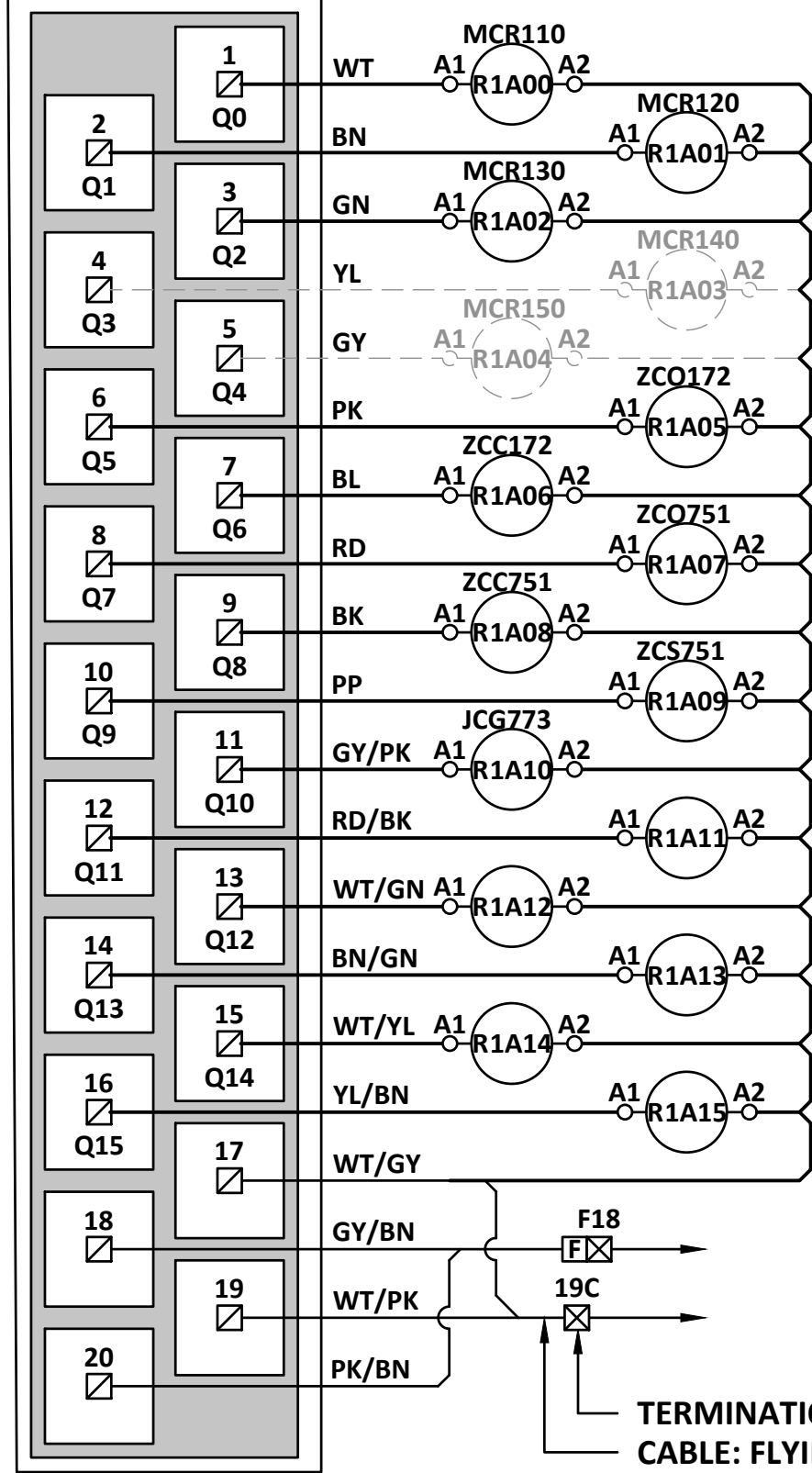
Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-WD-011	C

NOT FOR CONSTRUCTION

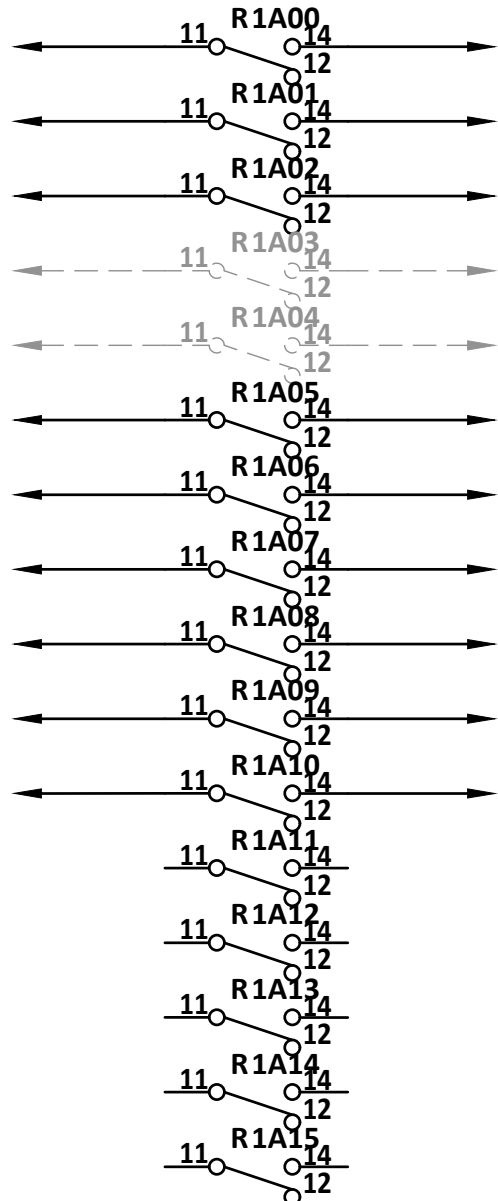
M:\N-Data\2011\21 Urban Systems Ltd\005-09 Task 4 - Intake Pump Station\AutoDesk\ACAD\E3.18 - FORWP-01-E-WD-012 DIGITAL OUTPUT MODULE 1.dwg, FORWP-01-E-WD-012, 2024/11/20 04:54 pm ysheng

DDO1602																													
• RUN • ERR • INT •																													
0	1	2	3	4	5	6	7																						
8	9	10	11	12	13	14	15																						
16	17	18	19	20	21	22	23																						
24	25	26	27	28	29	30	31																						

RACK1_SLOT 10



TERMINATION: PASS THROUGH
CABLE: FLYING-TEAR



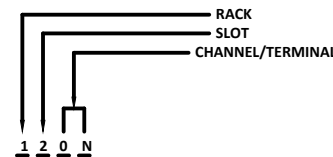
- RAW WATER PUMP 110 RUN COMMAND
- RAW WATER PUMP 120 RUN COMMAND
- RAW WATER PUMP 130 RUN COMMAND
- RAW WATER PUMP 140 RUN COMMAND
- RAW WATER PUMP 150 RUN COMMAND
- RECIRCULATION LINE FLOW CONTROL VALVE OPEN COMMAND
- RECIRCULATION LINE FLOW CONTROL VALVE CLOSE COMMAND
- GATE ACTUATOR OPEN COMMAND
- GATE ACTUATOR CLOSE COMMAND
- GATE ACTUATOR STOP COMMAND
- TRANSFER TO GENERATOR
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE

DO-01

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Scale
NOT TO SCALE

Quality Control by
Designed by
Drawn by

G.B.P.
Y.F.S.

FOOTHILLS OKOTOKS
INTAKE PUMP STATION
DIGITAL OUTPUT MODULE 1

Sheet Number	# of ##
Project Number	
29121-005-09	
Drawing Number	Revision
FORWP-01-E-WD-012	C

E3.18

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