

Autodesk Docs://20192375-Iqaluit_LongTermWater_C3D2023/IQALUIT-ARCA-S-BUILDING-23.rvt

GENERAL:

1. THE GENERAL NOTES AND STRUCTURAL TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT, EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NUNAVUT BUILDING CODE AT TIME OF TENDER. THE ABOVE TO GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NUNAVUT OCCUPATIONAL HEALTH AND SAFETY ACT, INCLUDING ERECTION, ALTERATION, REPAIR, DISMANTLING, DEMOLITION, STRUCTURAL MAINTENANCE, PAINTING, LAND CLEARING, EARTH MOVING, GRADING, EXCAVATING, TRENCHING, DIGGING, BORING, DRILLING, BLASTING, OR CONCRETING, THE INSTALLATION OF ANY MACHINERY OR PLANT, AND ANY WORK OR UNDERTAKING IN CONNECTION WITH THE PROJECT.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING AND SUPPORTS FOR ALL SLABS, BEAMS, WALLS AND FRAMES. TEMPORARY BRACING AND SUPPORTS MUST BE CAPABLE OF TRANSFERRING ALL IMPOSED CONSTRUCTION AND DEAD LOADS TO THE STRUCTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOADS.
5. BUILDING CONTROL LINES, REFERENCE LINES, GRID LINES AND TEMPORARY BENCH MARKS SHALL BE CLEARLY IDENTIFIED AND MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
6. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. THE CITY AND THE ENGINEER ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF UTILITIES INDICATED ON THE DRAWINGS.
7. READ ALL STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL RELATED AMEP, CIVIL AND PROCESS DRAWINGS, AND OTHER CONTRACT DOCUMENTS.
8. STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO ALL EQUIPMENTSHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
9. ALL EQUIPMENT SUPPORTS, PADS, CURBS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE CO-ORDINATED AND VERIFIED FOR SIZE AND LOCATION PRIOR TO CASTING CONCRETE. REINFORCEMENT MAY ALSO BE SHOWN ON OTHER DISCIPLINE DRAWINGS.
10. SEE OTHER CONTRACT DRAWINGS AND COORDINATE FOR ACTUAL SIZES, LOCATIONS AND DETAILS OF OPENINGS FOR PIPES, SLEEVES, DUCTS, FLOOR DRAINS, CONDUITS, AND OTHER PENETRATIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
11. SEE AMEP DRAWINGS AND COORDINATE FOR ACTUAL SIZES, LOCATIONS, AND DETAILS OF EQUIPMENT BASES, SLIDE GATES AND SIMILAR ITEMS.
12. SEE AMEP DRAWINGS FOR SIZES, REINFORCING, AND LOCATIONS OF CONCRETE ENCASED CABLES, CONDUITS, DUCT BANKS, AND CONCRETE PADS FOR ALL EQUIPMENT NOT SHOWN ON STRUCTURAL DRAWINGS.
13. OPENINGS LARGER THAN 300mm, OR GROUPS OF OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CASTING CONCRETE.
14. NO SLEEVES, DUCTS, PIPES OR OTHER OPENINGS SHALL PASS THROUGH JOISTS, BEAMS OR COLUMNS, EXCEPT WHERE DETAILED ON THE STRUCTURAL DRAWINGS.
15. BEFORE CASTING CONCRETE, THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED ITEMS, SUCH AS ANCHOR BOLTS, SLEEVES AND WATERSTOPS ARE IN POSITION AND SECURELY FASTENED IN PLACE TO THE SATISFACTION OF THE ENGINEER.
16. INTERNAL WATERSTOPS, AS SPECIFIED IN THE CONTRACT DOCUMENTS, ARE REQUIRED IN ALL JOINTS OF WATER-RETAINING STRUCTURES AND IN ALL JOINTS OF ALL BASE SLABS AND EXTERIOR WALLS BELOW GRADE. TERMINATE INTERNAL WATERSTOPS AT GRADE IN NON-WATER-RETAINING EXTERIOR WALLS.
17. THE CONTRACTOR SHALL SUBMIT PROPOSED CONSTRUCTION JOINT LOCATIONS, OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS, TO THE ENGINEER FOR REVIEW.
18. STRUCTURAL MEMBERS SHALL NOT BE CUT OR MODIFIED UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
19. ALL LIQUID-RETAINING STRUCTURES AND STRUCTURES BELOW GRADE SHALL BE WATERTIGHT.
20. DESIGN DETAILS, SECTIONS, AND TYPICAL DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS AND LOCATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT ON DRAWINGS.
21. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL STRUCTURES FROM FLOTATION DURING CONSTRUCTION.

DESIGN CRITERIA:

1. STRUCTURE HAS BEEN DESIGNED TO RESIST WIND AND SEISMIC LOADS WHICH ARE IN ACCORDANCE WITH THE USER'S GUIDE - NBC 2020 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B), FOR THE IMPORTANCE CATEGORY STATED IN NOTE #9, THE WIND AND SEISMIC PARAMETERS FOUND IN NOTE #10, AND FOR SITE CLASS X, $F_s = X.X$, $F_v = X.X$, $I_e F_s S_d(0.2) = X.XXX$, $R_d = X.X$, $R_e = X.X$ (CONVENTIONAL CONSTRUCTION OF MOMENT-RESISTING FRAMES AND BRACED FRAMES), AND NO IRREGULARITIES, USING STATIC ANALYSIS IN BOTH DIRECTIONS.
2. ROOF ELEMENTS SUCH AS JOISTS, JOIST'S GIRDERS, METAL DECK, ETC. AND THEIR CONNECTIONS TO THE SUPPORTING STRUCTURE ARE TO BE DESIGNED FOR UPWARD SUCTION DUE TO WIND. THE GROSS UPWARD DESIGN PRESSURES ARE SHOWN ON THE ROOF LOADING PLAN.
3. ADDITIONAL SNOW ACCUMULATIONS ADJACENT TO HIGHER ROOFS, PENTHOUSES, SCREENS, SKYLIGHTS AND MECHANICAL EQUIPMENT (INCLUDING DUCTS) ARE SHOWN ON THE ROOF LOADING PLAN ON DRAWING XXXXX IN ACCORDANCE WITH THE USER'S GUIDE - NBC 2020 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B). FOR CLARITY, NOT ALL ACCUMULATIONS ARE SHOWN ON THE PLAN.
4. AS A MINIMUM, WIND LOADS SHALL BE CALCULATED ON THE BASIS OF OPEN TERRAIN AND BUILDING CATEGORY 3 AS DEFINED IN THE USER'S GUIDE - NBC 2020 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B). IF OTHER PROVISIONS OF SAID COMMENTARIES RESULT IN HIGHER WIND LOADS AND/OR MORE STRINGENT WIND EFFECTS, THESE LOADS AND EFFECTS SHALL BE CONSIDERED IN THE DESIGN.
5. ALL LOADS SHOWN ON DRAWINGS ARE SPECIFIED (NO LOAD FACTOR APPLIED) LOADS UNLESS NOTED OTHERWISE. HOWEVER, (ULS) IMPORTANCE FACTORS ARE APPLIED, UNLESS NOTED OTHERWISE.
6. ALL LOAD EFFECTS (AXIAL FORCES, SHEARS, MOMENTS AND TORSIONS) ARE FACTORED, UNLESS OTHERWISE NOTED.
7. STRUCTURES ARE NOT STABLE UNTIL ALL COMPONENTS (INCLUDING BUT NOT LIMITED TO MOMENT CONNECTIONS, BRACING, FLOOR & ROOF DECK AND SHEATHING) ARE CONSTRUCTED.
8. MATERIALS:

STRUCTURAL STEEL: CAN/CSA-G40.20/G40.21, GRADE 350W FOR W-SECTIONS. GRADE 300W FOR OTHERS.

COLD-FORMED STEEL: YIELD STRENGTH = 350 MPa MIN.

HOLLOW STRUCTURAL SECTIONS (HSS): CONFORM TO CAN/CSA G40-20/G40.21-M GRADE 350W, CLASS C.

WELDING: E49XX ELECTRODES.

BOLTS, NUTS AND WASHERS: CONFORM TO ASTM A325.

ANCHOR BOLTS: CONFORM TO ASTM F1554 GRADE 36, UNLESS NOTED OTHERWISE.

PRIMER: SEE SPECIFICATION.

REINFORCING STEEL: DEFORMED CONCRETE REINFORCING BARS CONFORMING TO CAN/CSA-G30.18, GRADE 400R OR 400W, UNLESS NOTED OTHERWISE. WHERE WELDABLE REINFORCING STEEL IS SPECIFIED, IT SHALL BE GRADE 400W, UNLESS NOTED OTHERWISE.

WOOD: LUMBER: GRADED TO NLGA RULES NO.1/NO.2 S-DRY, UNLESS NOTED OTHERWISE. MSR GRADE FOR TRUSSES AS REQUIRED.

GLULAM: CSA 0122 SP GRADE 20FE BENDING STRESS, UNLESS NOTED OTHERWISE. 12CE COMPRESSION STRESS, UNLESS NOTED OTHERWISE.

PLYWOOD: CSA 0151 SOFTWOOD EXTERIOR GRADE.
9. STRUCTURE HAS BEEN ASSIGNED THE **POST-DISASTER** IMPORTANCE CATEGORY, AS DEFINED IN THE APPLICABLE EDITION OF THE NATIONAL BUILDING CODE 2020.
10. STRUCTURES HAVE BEEN DESIGNED CONSIDERING THE FOLLOWING CLIMATIC AND SEISMIC DATA:

WIND, kPa	SEISMIC	SNOW, kPa	RAIN, mm
q 1/50 = 0.65	S _s (0.2) = 0.202 S _s (0.5) = 0.225 S _s (1.0) = 0.143 S _s (2.0) = 0.0709 S _s (5.0) = 0.0191 S _s (10.0) = 0.00609 PGA = 0.112 PGV = 0.144	S _s = 2.9 S _r = 0.2	ONE DAY = 58.0

11. NO STRUCTURES HAVE BEEN DESIGNED FOR FUTURE EXPANSION.

CONCRETE:

1. THE DESIGN AND CONSTRUCTION OF ALL WORK ON THIS PROJECT SHALL CONFORM TO THE APPLICABLE EDITION OF THE FOLLOWING CSA STANDARDS:
CSA-A23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION";
CSA-A23.2 "TEST METHODS AND STANDARD PRACTICES FOR CONCRETE";
CSA-A23.3 "DESIGN OF CONCRETE STRUCTURES";
CAN/CSA-G30.18 "BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT".
2. UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE AS FOLLOWS:

- LEAN CONCRETE FILL 5 MPa
- MUD SLAB 35 MPa (EXPOSURE CLASS F-1)
- FOOTINGS 35 MPa (EXPOSURE CLASS C-1)
- PIERS, WALLS & CURBS 35 MPa (EXPOSURE CLASS C-1)
- SLABS ON GRADE..... SEE FOUNDATION AND SLAB ON GRADE PLANS AND SPEC.
- EXTERIOR APRONS..... 35 MPa (EXPOSURE CLASS C-1)
3. MINIMUM CONCRETE COVER TO REINFORCING BARS:
- | CONCRETE CLEAR COVER (CSA A23.1) | | | |
|---|----------------|-------|-------|
| EXPOSURE CONDITION | EXPOSURE CLASS | | |
| | N | F-1 | C-1 |
| CAST AGAISNT AND PERMANENTLY EXPOSED TO EARTH, INCLUDING FOOTINGS AND PILES | 75 mm | 75 mm | 75 mm |
| BEAMS, GIRDERS, COLUMNS AND PILES | 30 mm (#1) | 40 mm | 60 mm |
| SLABS, WALLS, JOISTS, SHELLS AND FOLDED PLATES | 20 mm (#1) | 40 mm | 60 mm |
| RATIO OF COVER TO NOMIMAL BAR DIAMETER (#2) | 1.0 (#1) | 1.5 | 2.0 |
| RATIO OF COVER TO NOMIMAL MAXIMUM AGGREGATE SIZE | 1.0 (#1 & #3) | 1.5 | 2.0 |
- NOTES:

1. THIS REFERS ONLY TO CONCRETE THAT WILL BE CONTINUALLY DRY WITHIN THE CONDITIONED SPACE (i.e., MEMBERS ENTIRELY WITHIN THE VAPOUR BARRIER OF THE BUILDING ENVELOPE).

2. THE COVER FOR A BUNDLE OF BARS SHALL BE THE SAME AS THAT FOR A SINGLE BAR WITH AN EQUIVALENT AREA.

3. THE SPECIFIED COVER FROM SCREEDED SURFACES SHALL BE AT LEAST 1.5 TIMES THE NOMINAL MAXIMUM AGGREGATE SIZE TO REDUCE INTERFERENCE BETWEEN AGGREGATE AND REINFORCEMENT WHERE VARIATIONS IN BAR PLACEMENT RESULT IN A COVER SMALLER THAN SPECIFIED.

4. DETAIL, BEND, PLACE AND SUPPORT REINFORCING STEEL IN CONFORMANCE WITH THE LATEST RSIC MANUAL OF STANDARD PRACTICE, UNLESS NOTED OTHERWISE.

5. ALTERNATE 90° HOOKS OF CROSSTIES END FOR END OVER HEIGHT OF ALL MEMBERS IN WHICH CROSSTIES ARE SPECIFIED.

6. ALL LAP SPLICES SHALL BE CLASS B TENSION SPLICES. FOR HORIZONTAL REINFORCEMENT THAT WILL BE PLACED IN SUCH A WAY THAT MORE THAN 300 mm OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE, BAR LOCATION FACTOR (k/1) EQUAL TO 1.3 SHALL BE APPLIED IN DETERMINING CLASS B TENSION SPLICE LENGTH, IN ACCORDANCE WITH APPLICABLE EDITION OF CSA-A23.3.

7. PLAIN (UNREINFORCED) CONCRETE EXPOSED TO DEICING CHEMICALS SHALL MEET EXPOSURE CLASS C-2 IN ACCORDANCE WITH APPLICABLE EDITION OF CSA-A23.1.

8. REINFORCED CONCRETE EXPOSED TO CHLORIDES SHALL MEET EXPOSURE CLASSIFICATION C-1 IN ACCORDANCE WITH APPLICABLE EDITION OF CSA-A23.1.

9. PROVIDE CORROSION INHIBITOR IN ALL CONCRETE OF EXPOSURE CLASS C-1. REFER TO SPECIFICATIONS FOR CORROSION INHIBITOR DOSAGE RATE.

10. USE TYPE GU PORTLAND CEMENT FOR ALL CONCRETE, UNLESS NOTED OTHERWISE.

11. ALL HORIZONTAL WALL AND GRADE BEAM REINFORCING SHALL BE CONTINUOUS THROUGH PIERS, UNLESS NOTED OTHERWISE. SPLICE TOP BARS AT MID-SPAN AND BOTTOM BARS AT SUPPORTS FOR ALL GRADE BEAMS.

12. WHEREVER OPENINGS OCCUR, INTERRUPTING ONE OR MORE REINFORCING BARS, IN SLABS OR WALLS, PROVIDE ADDITIONAL REINFORCING STEEL EQUAL TO THE REINFORCING STEEL DISPLACED BY THE OPENING UNLESS OTHERWISE SHOWN. DISTRIBUTE REINFORCEMENT EQUALLY ON EACH SIDE OF THE OPENING AND EXTENDING THE FULL SPAN LENGTH.

13. NO SLEEVES, PIPES, HOLES OR NOTCHES SHALL BE PLACED IN OR THROUGH WALLS, COLUMNS, PIERS, BEAMS, GRADE BEAMS, SLABS, FOOTINGS, OR ANY OTHER CONCRETE MEMBER, EXCEPT AS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.

14. DO NOT PLACE CONCRETE FOOTINGS OR ANY OTHER CONCRETE MEMBER UNTIL ALL DESIGNATED REINFORCING STEEL HAS BEEN PLACED AND INSPECTED AND ANY CONDUITS, PIPING OR OTHER EMBEDDED ITEMS ARE INSTALLED AND VERIFIED.

15. MAXIMUM WATER-TO-CEMENTING MATERIALS RATIO (w/cm) SHALL BE 0.55, AND MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 25 MPa FOR ALL CONCRETE FLOOR SLABS (BOTH SLABS ON GRADE AND SLABS ON DECK).



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Arcadis Professional Services (Canada) Inc.

A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
Revision	Description	Date

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Project title

IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
S.P.

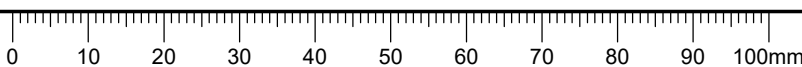
Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL
PUMP STATION
GENERAL NOTES

Project no.	Drawing no.	Revision no.
30192375	S001	A



FOUNDATION:

1. ALL **xxx** FOOTINGS SHALL BEAR ON SUITABLE FOUNDING MATERIAL WITH MINIMUM SLS BEARING RESISTANCE OF **xxx** kPa, MINIMUM ULS BEARING RESISTANCE OF **xxx** kPa, FRICTION ANGLE OF AT LEAST **xx°** AND MINIMUM FACTORED SLIDING RESISTANCE OF **xxx**. MAX. ALLOWABLE TOTAL SETTLEMENT TO BE **xx**mm. MAX. ALLOWABLE DIFFERENTIAL SETTLEMENT TO BE **xx**mm.
2. ALL BEARING VALUES AND GEOTECHNICAL INFORMATION ARE BASED ON GEOTECHNICAL REPORT **xxx DATED xx-xx-xx BY xxxxxxxxxxxx**.
3. THE CONTRACTOR SHALL PROTECT SOIL FROM WATER AND FREEZING ADJACENT TO AND BELOW ALL FOOTINGS, GRADE BEAMS AND OTHER CONCRETE POURS WITH MINIMUM **xxxx** mm SOIL COVER OR EQUIVALENT.
4. ALL EXCAVATIONS AND FOUNDING MATERIAL SHALL BE INSPECTED AND APPROVED BY A QUALIFIED SOILS ENGINEER PRIOR TO CONCRETE PLACEMENT.
5. THE CONTRACTOR SHALL PROVIDE ALL SHORING WHERE REQUIRED DURING EXCAVATION TO PREVENT CAVE-IN.
6. EXCAVATION SHALL NOT EXTEND BELOW A LINE EXTENDING DOWN AND AWAY FROM ANY FOOTING EDGE OR CORNER AT A RATIO OF 7 VERTICAL TO 10 HORIZONTAL.
7. ANY OVER EXCAVATION NECESSITATED BY LOCAL SOFT AREAS OR OTHER DELETERIOUS CONDITIONS SHALL BE MADE GOOD WITH 5 MPa LEAN CONCRETE FILL.
8. FOUNDATION WALL BACKFILL SHALL BE OPSS TYPE 1 GRANULAR 'B' OR APPROVED FREE-DRAINING, IN-SITU MATERIAL COMPACTED, IN LAYERS NOT TO EXCEED 200 mm, TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
9. BACKFILL TO PROCEED SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS UNLESS TEMPORARY SUPPORT IS PROVIDED. DO NOT BACKFILL UNTIL CONCRETE HAS ATTAINED 75% OF ITS SPECIFIED 28-DAY COMPRESSIVE STRENGTH.
10. CONSTRUCTION JOINTS AND CONTROL JOINTS IN REINFORCED FOUNDATION WALLS SHALL BE LOCATED AT THE EDGE OF PIERS (WHERE PIERS ARE PRESENT). MAXIMUM SPACING OF CONSTRUCTION JOINTS SHALL BE AS REQUIRED, BUT NOT GREATER THAN 20 m, UNLESS NOTED OTHERWISE. MAXIMUM SPACING OF CONTROL JOINTS SHALL BE 6 m, AND 3 m FROM CORNERS.
11. ALL EARTH-RETAINING WALLS HAVE BEEN DESIGNED ASSUMING FREE-DRAINING BACKFILL.
12. FOUNDATIONS SHALL BE CONSTRUCTED AS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL INCLUDE IN THEIR WORK ALL PROVISIONS, INCLUDING BUT NOT LIMITED TO EXCAVATION AND FORMING, AS REQUIRED TO CONSTRUCT FOUNDATIONS THUS.

STRUCTURAL DRAWING ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE	INCL	INCLUDE
ADD	ADDENDUM	INFO	INFORMATION
ADJ	ADJACENT	INT JT	INTERIOR JOINT
AFF	ABOVE FINISHED FLOOR	K	KIPS
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	KSF	KIPS PER SQUARE FOOT
		KSI	KIPS PER SQUARE INCH
		L	LENGTH
ALT	ALTERNATE	LB	POUND
ANC	ANCHOR	LG	LONG
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	LH	LOUVER HEAD
		LJ	LOUVER JAMB
APPROX	APPROXIMATE	LL	LIVE LOAD
AR	ANCHOR ROD	LLH	LONG LEG HORIZONTAL
ARCH	ARCHITECTURAL	LLV	LONG LEG VERTICAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL	LO	LOUVER OPENING
		LP	LOW POINT
B/B	BACK TO BACK	LS	LOUVER SILL
BC	BOTTOM CHORD	M	METER
BET	BETWEEN	MACH	MACHINE
BLDG	BUILDING	MATL	MATERIAL
BLK	BLOCK	MAX	MAXIMUM
BM	BEAM	MECH	MECHANICAL
BOF	BOTTOM OF FOOTING	MEZZ	MEZZANINE
BOS	BOTTOM OF STEEL	MFR	MANUFACTURER
BOT	BOTTOM	MIN	MINIMUM
BRG	BRACING	MISC	MISCELLANEOUS
BRG	BEARING	MM	MILLIMETER
BRKT	BRACKET	MT	METRIC TON
BSMT	BASEMENT	NIC	NOT IN CONTRACT
BULL	BULLETIN	NO	NUMBER
C/C	CENTER TO CENTER	NS	NEAR SIDE
CERT	CERTIFIED	NTS	NOT TO SCALE
CHKD PL	CHECKED PLATE	O/O	OUT TO OUT
CJ	CONSTRUCTION JOINT	OC	ON CENTER
CL	CENTERLINE	OPNG	OPENING
CLJ	CONTROL JOINT	OPP	OPPOSITE
CLR	CLEAR	PC	PIECE
CM	CENTIMETER	PEMB	PRE-ENGINEERED METAL BUILDING
COL	COLUMN	PEN	PENETRATION
CONC	CONCRETE	PL	PLATE
CONN	CONNECTION	PROJ	PROJECTION
CONSTR	CONSTRUCTION	PSF	POUNDS PER SQUARE FOOT
CONT	CONTINUATION (CONTINUOUS)	PSI	POUNDS PER SQUARE INCH
CONTR	CONTRACT(OR)	R	RADIUS
CTR	CENTER	R	RISER
DET	DETAIL	REF	REFERENCE
DH	DOOR HEADER	REINF	REINFORCEMENT
DIA	DIAMETER	REMOV	REMOVABLE
DIAG	DIAGONAL	REQD	REQUIRED
DIM	DIMENSION	RR	RAILROAD
DJ	DOOR JAMB	SCH	SCHEDULE
DL	DEAD LOAD	SECT	SECTION
DN	DOWN	SFRC	STEEL FIBER REINFORCED CONCRETE
DO	DOOR OPENING	SIM	SIMILAR
DWG	DRAWING	SP	SPACE
DWL	DOWEL	SPEC	SPECIFICATIONS
EA	EACH	SQ	SQUARE
EF	EACH FACE	SSC	STRUCTURAL STEEL CONTRACT
EL	ELEVATION	STAGG	STAGGERED
ELEC	ELECTRICAL	STD	STANDARD
EMB	EMBEDMENT	STIFF	STIFFENER
EOD	EDGE OF DECK	STL	STEEL
EOS	EDGE OF SLAB	STRU	STRUCTURAL
EQ	EQUAL	SYM	SYMMETRICAL
EQPT	EQUIPMENT	t	THICKNESS
EW	EACH WAY	T	TREAD
EXP JT	EXPANSION JOINT	T/	TOP OF
EXP	EXPANSION	T&B	TOP AND BOTTOM
EXST	EXISTING	TC	TOP CHORD
EXT	EXTERIOR	TC BOLTS	TENSION CONTROLLED BOLTS
FDN	FOUNDATION	TEMP	TEMPERATURE
FDNC	FOUNDATION CONTRACT	THK	THICK
FIN	FINISH	TL	TOTAL LOAD
FL	FLOOR	TOC	TOP OF CONCRETE
FLG	FLANGE	TOF	TOP OF FOOTING
FS	FAR SIDE	TOP	TOP OF PIER
FT	FEET	TOS	TOP OF STEEL
FTG	FOOTING	TYP	TYPICAL
FUT	FUTURE	UON	UNLESS OTHERWISE NOTED
GA	GAGE	VERT	VERTICAL
GC	GENERAL CONTRACT	VSC	VERTICAL SLOTTED CONNECTION
GALV	GALVANIZED	W	WIDTH (WIDE)
GENL	GENERAL	W/	WITH
GOL	GAGE OUTSTANDING LEG	W/O	WITHOUT
GR	GRADE	WH	WINDOW HEAD
GRT	GRATING	WJ	WINDOW JAMB
H	HIGH	WL	WIND LOAD
HGR	HANGER	WO	WINDOW OPENING
HGT	HEIGHT	WP	WORKING POINT
HORIZ	HORIZONTAL	WS	WINDOW SILL
HP	HIGH POINT	WS	WATER STOP
HS	HIGH STRENGTH	WT	WEIGHT
HSS	HOLLOW STRUCTURAL SECTION	WWR	WELDED WIRE REINFORCEMENT
ID	INSIDE DIAMETER	WWF	WELDED WIRE FABRIC
IE	INVERT ELEVATION		
IN	INCHES		



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Revision	Description	Date

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Project title

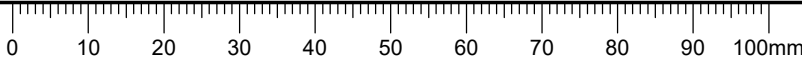
**IQUALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE**

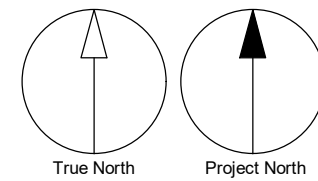
Designed by M.S.
Drawn by S.P.
Approved by K.A.
Project Manager C.G.

Drawing Title

**STRUCTURAL
PUMP STATION
GENERAL NOTES**

Project no. 30192375	Drawing no. S002	Revision no. A
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Project title

IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
S.P.

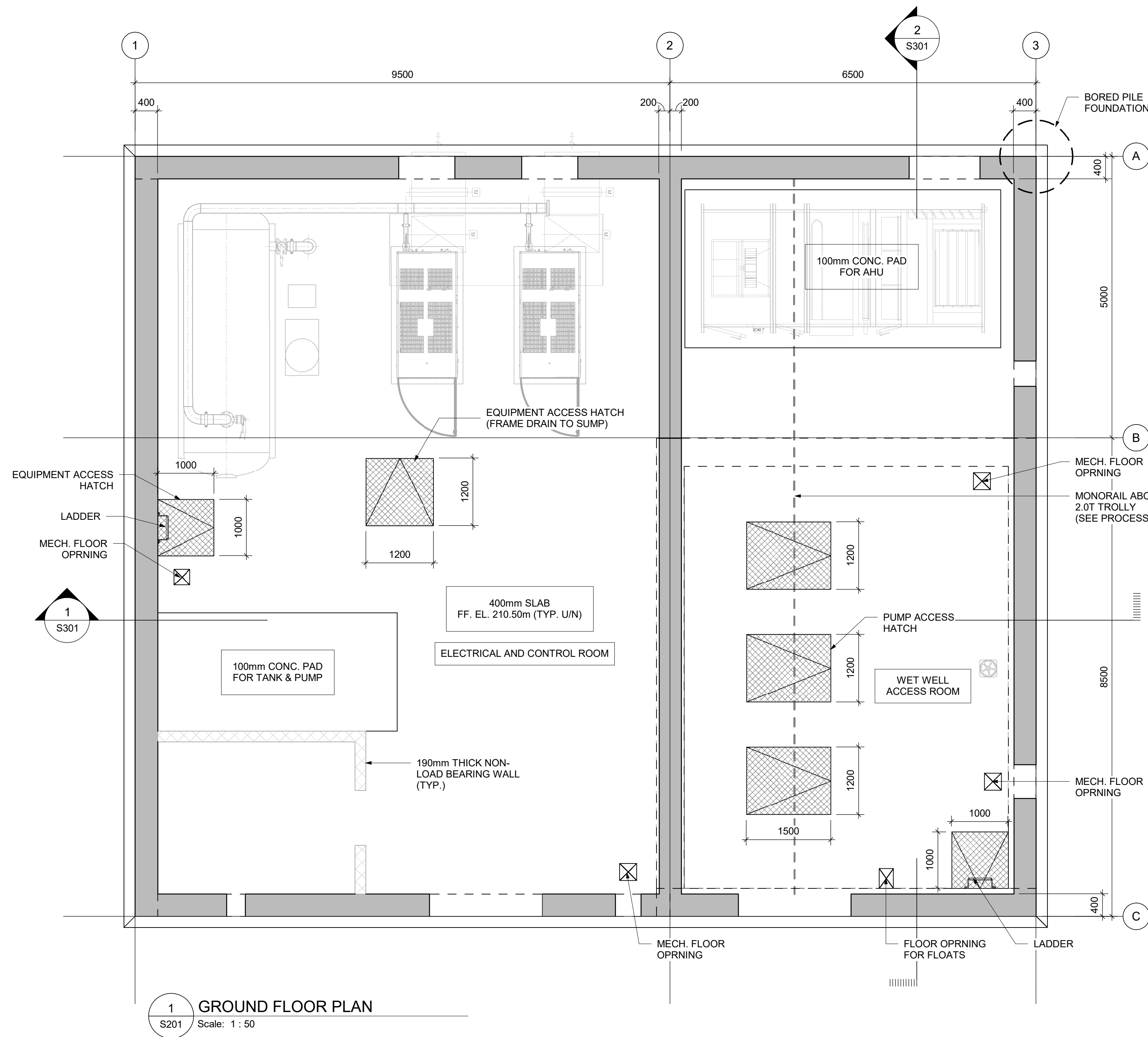
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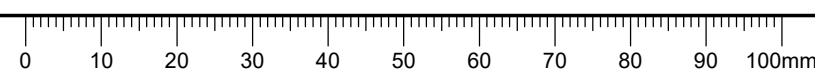
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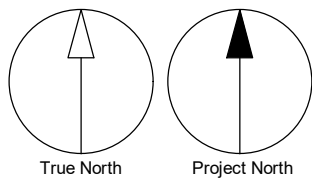
STRUCTURAL
PUMP STATION
PLAN AT GROUND ELEVATION

Project no.	Drawing no.	Revision no.
30192375	S201	A



1 GROUND FLOOR PLAN
S201 Scale: 1 : 50





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Arcadis Professional Services (Canada) Inc.

A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
Revision	Description	Date

PRIME CONSULTANT



121 Granton Drive, Suite 12
Richmond Hill, ON. L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
S.P.

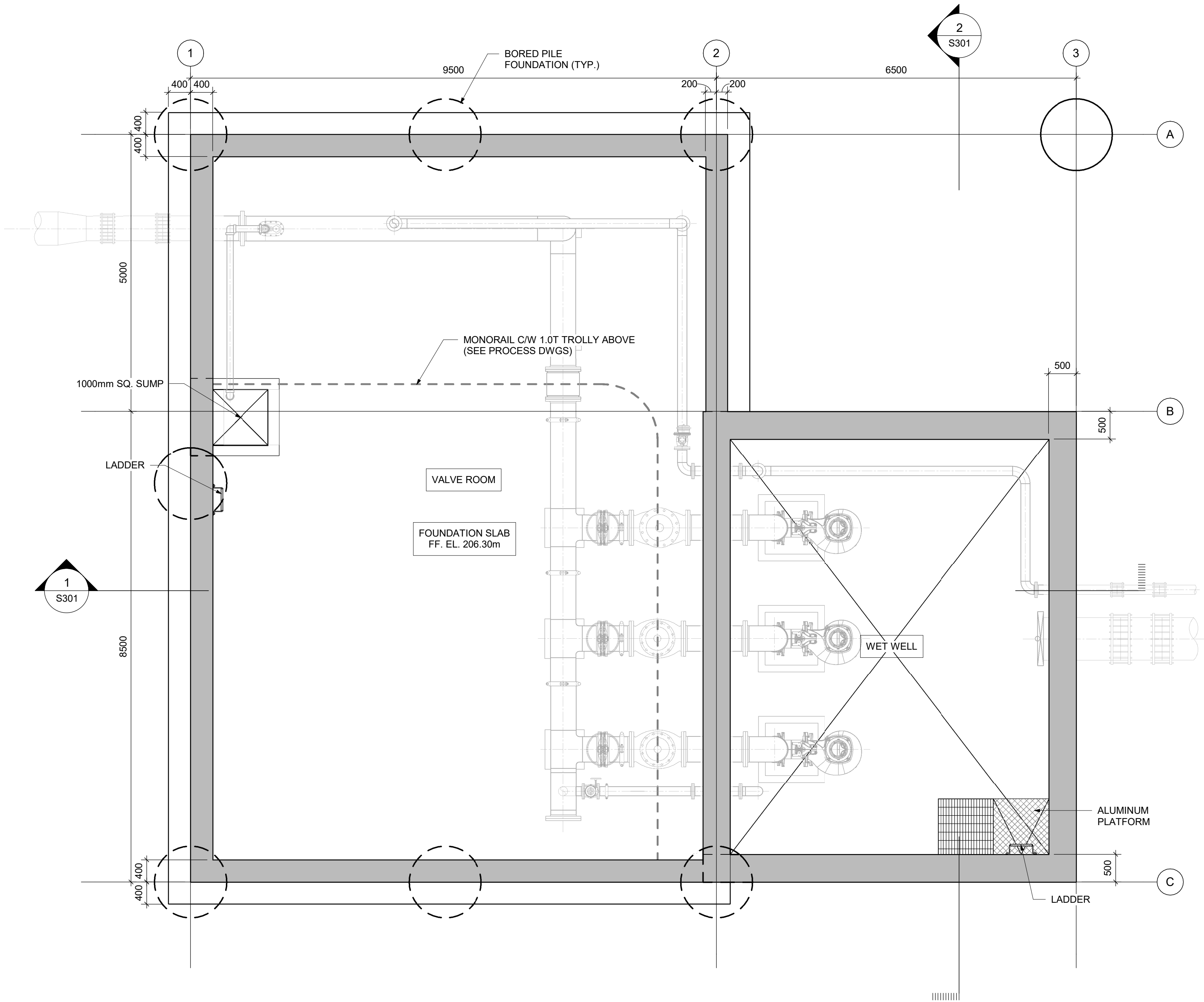
Approved by
K.A.

Project Manager
C.G.

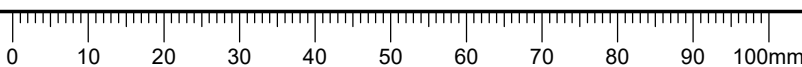
Drawing Title

STRUCTURAL
PUMP STATION
PLAN AT EL. 206.3 m

Project no.	Drawing no.	Revision no.
30192375	S202	A

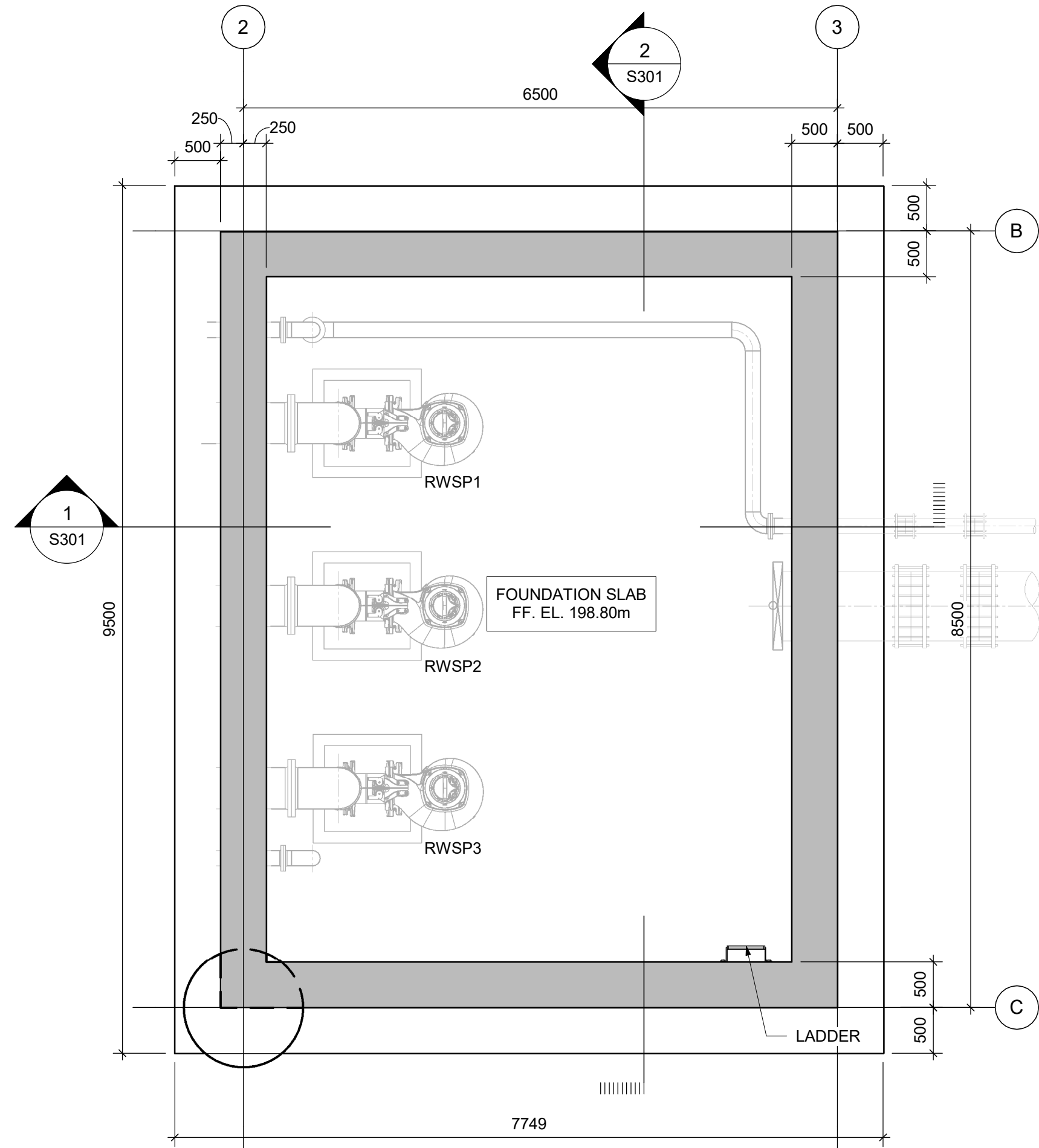


1 VALVE ROOM FLOOR PLAN
S202 Scale: 1 : 50

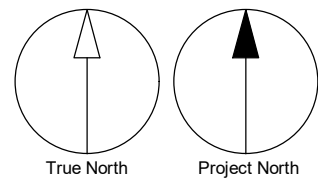


Autodesk Docs:/30192375-Iqaluit_LongTermWater C3D2023/IQALUIT-ARCA-S-BUILDING-23.rvt

A1 - 841X594



1 01 - WET WELL FLOOR PLAN
S203 Scale: 1 : 50



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Revision	Description	Date

PRIME CONSULTANT



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Project title

**IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE**

Designed by
M.S.

Drawn by
S.P.

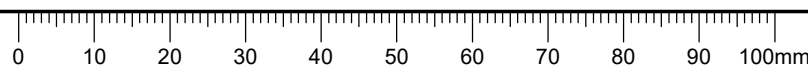
Approved by
K.A.

Project Manager
C.G.

Drawing Title

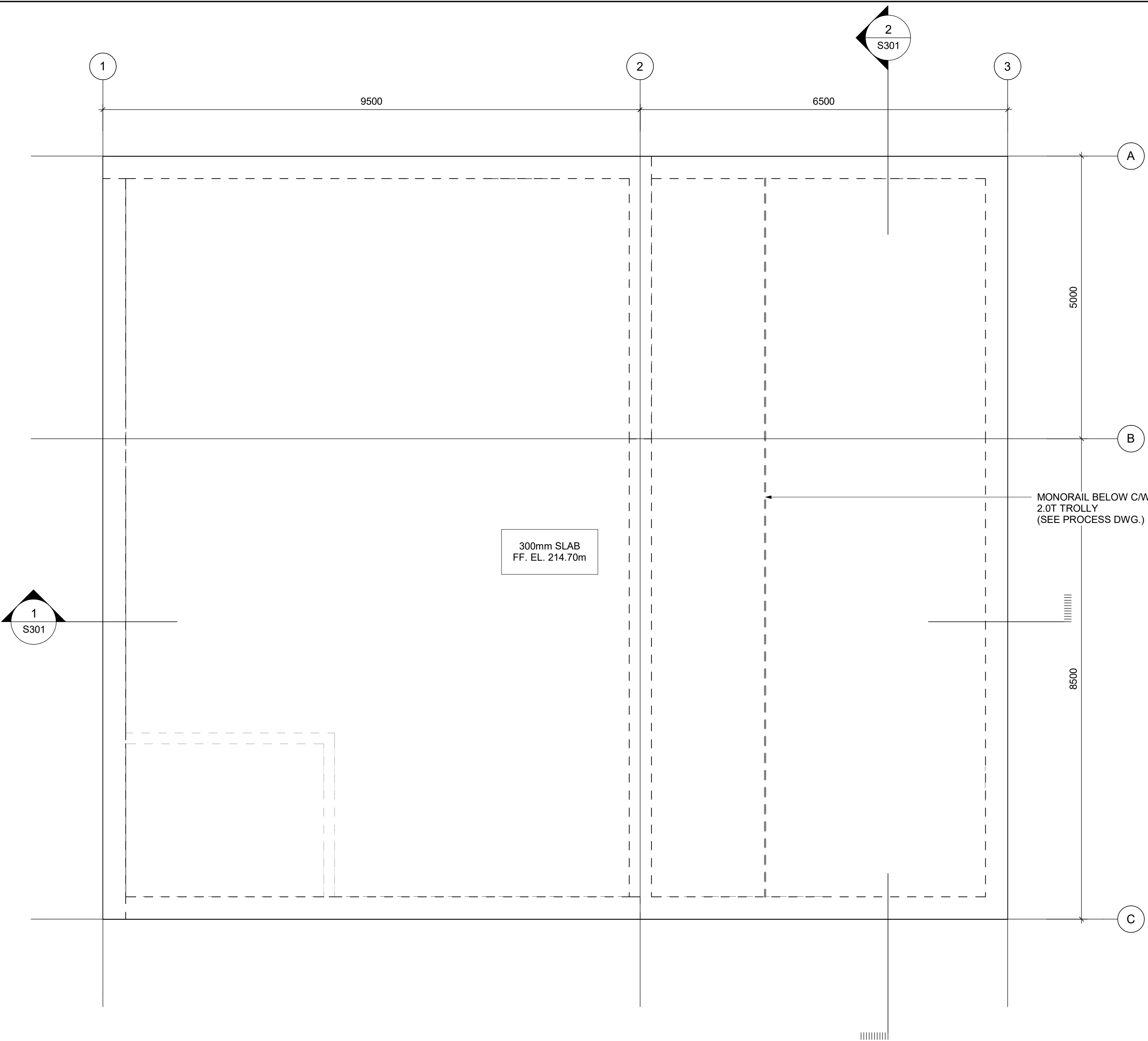
**STRUCTURAL
PUMP STATION
WET WELL FLOOR PLAN**

Project no.	Drawing no.	Revision no.
30192375	S203	A

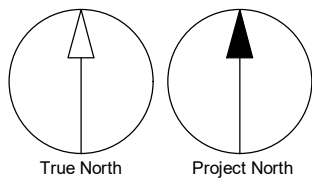


Autodesk Docs/30192375-Iqaluit_LongTermWater_C3D2023/IQALUIT-ARCA-S-BUILDING-23.rvt

A1 - 841X554



1 ROOF PLAN
S204 Scale: 1 : 50



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Revision	Description	Date

PRIME CONSULTANT



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Project title

IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
S.P.

Approved by
K.A.

Project Manager
C.G.

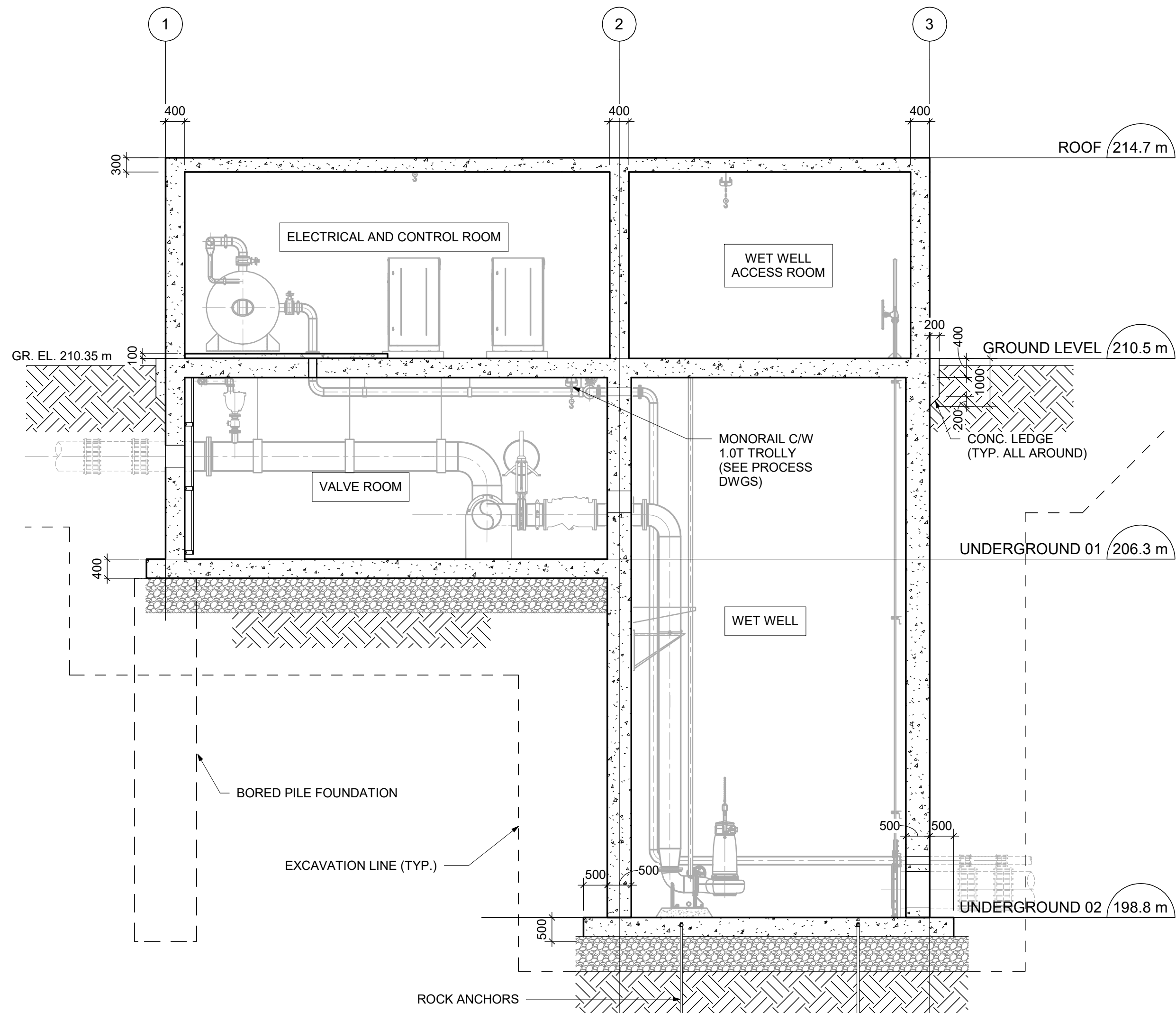
Drawing Title

STRUCTURAL
PUMP STATION
ROOF PLAN

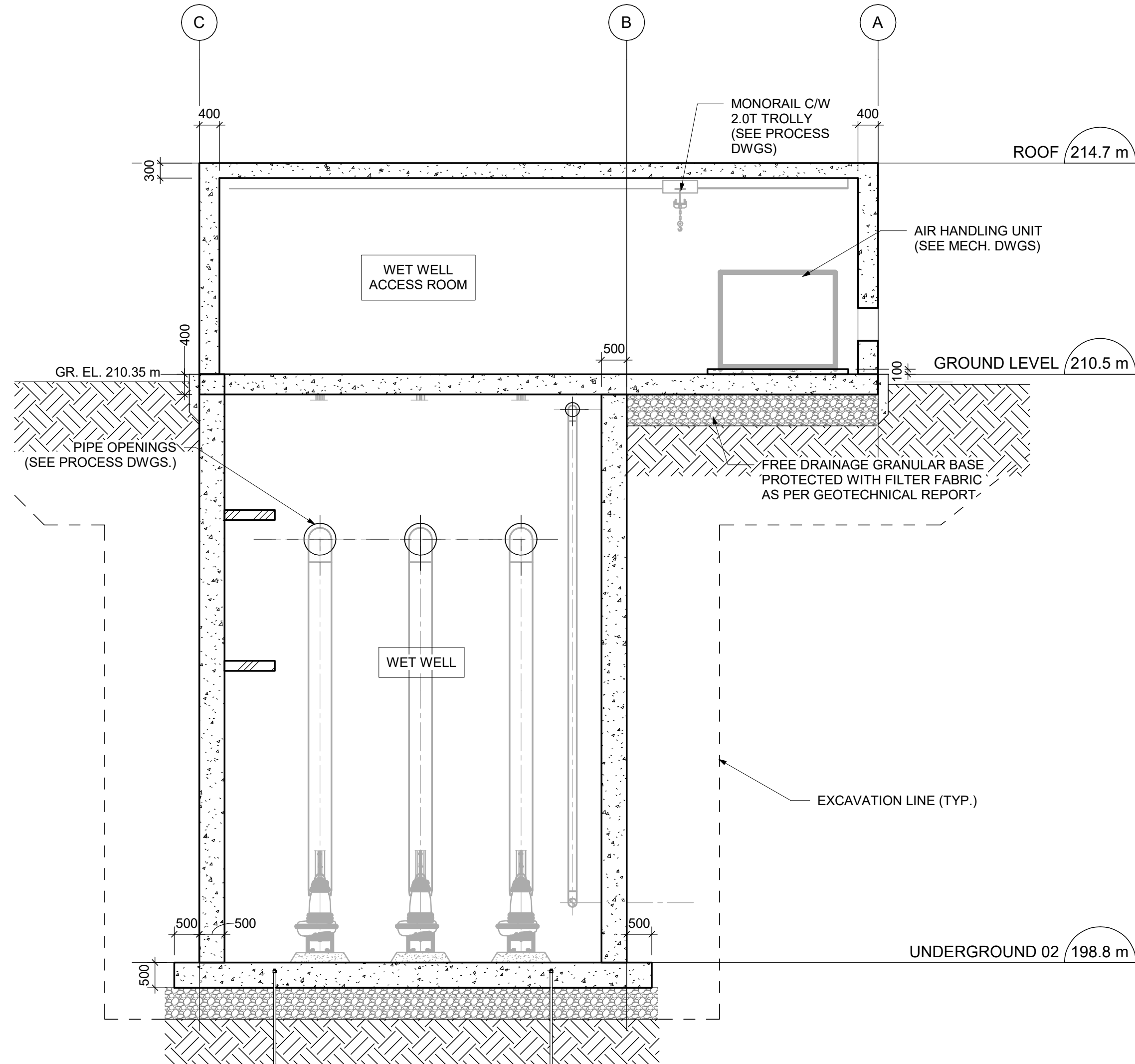
Project no. 30192375	Drawing no. S204	Revision no. A
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Autodesk Docs/30192375-Iqaluit_LongTermWater C3D2023/IQALUIT-ARCA-S-BUILDING-23.rvt

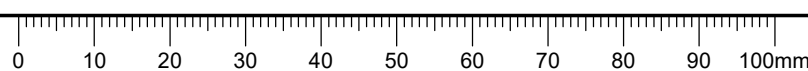
A1 - 841X554



1 SECTION
S301 Scale: 1 : 75



2 SECTION
S301 Scale: 1 : 75



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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

PRIME CONSULTANT



121 Granton Drive, Suite 12
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Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
S.P.

Approved by
K.A.

Project Manager
C.G.

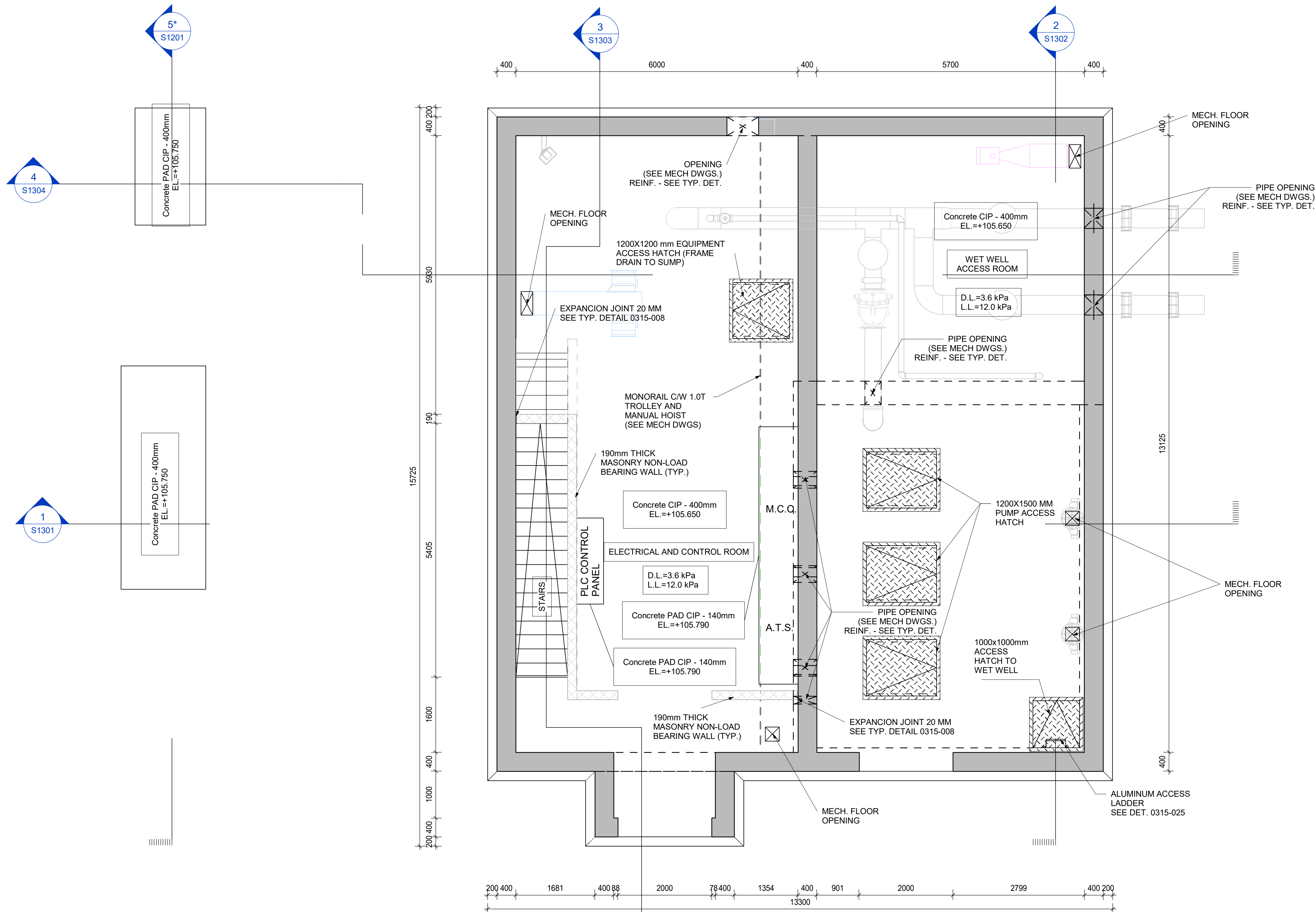
Drawing Title

STRUCTURAL PUMP STATION SECTIONS

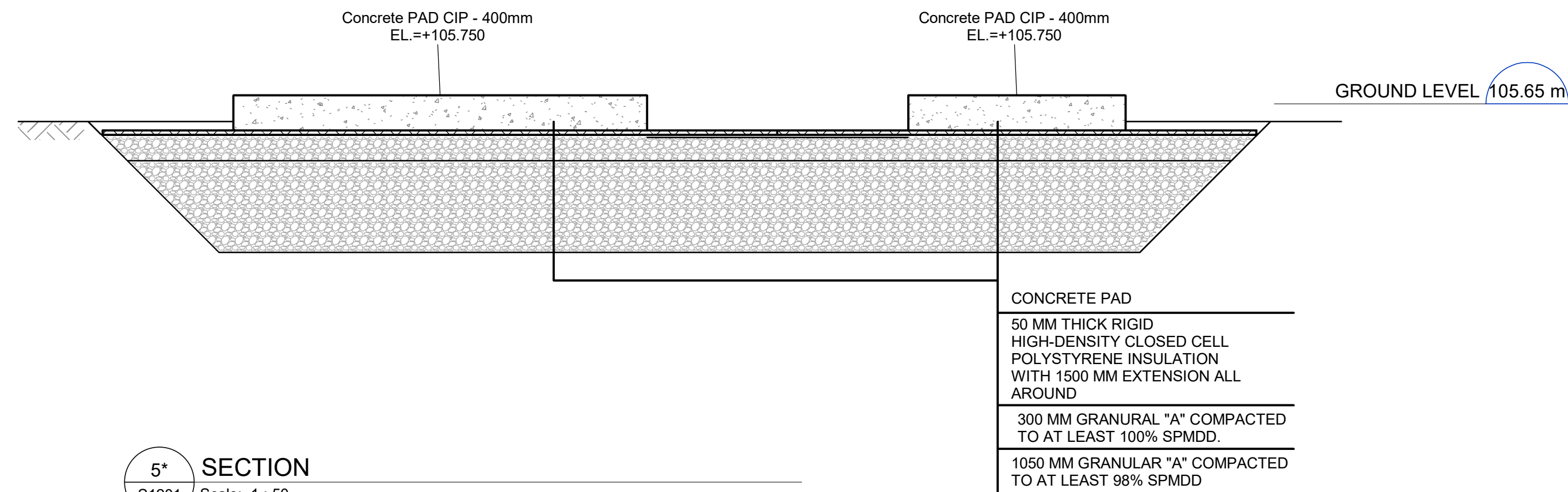
Project no.	Drawing no.	Revision no.
30192375	S301	A

Autodesk Docs://30288138-Iqaluit_LongTermWater_C3D2025/IQ-ARCA-S-APXPUMP-23.rvt

A1 - 841X594



1 GROUND FLOOR PLAN
Scale: 1 : 50

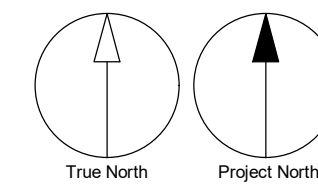


5 SECTION
S1201 Scale: 1 : 50

NOTES:

1. REINFORCE 400mm THICK SLAB WITH 15M@200 B / 10M@200 T UNLESS NOTED OTHERWISE.
2. REINFORCING BARS SHOWN ON PLAN ARE IN ADDITION TO 15M@200 B / 10M@200 T MAT.
3. REFER TO GENERAL NOTES FOR CONCRETE STRENGTH AND REINFORCING COVER.

REBAR PLACEMENT IN SLAB	
	TUL (TOP UPPER LAYER)
	TLL (TOP LOWER LAYER)
	BUL (BOTTOM UPPER LAYER)
	BLL (BOTTOM LOWER LAYER)



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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
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Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

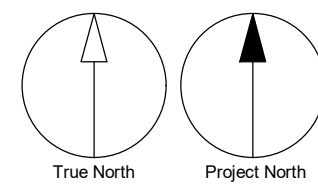
Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL AR PUMP STATION GROUND FLOOR PLAN

Project no.	Drawing no.	Revision no.
30192375	S1201	C



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Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
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www.arcadis.com

Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

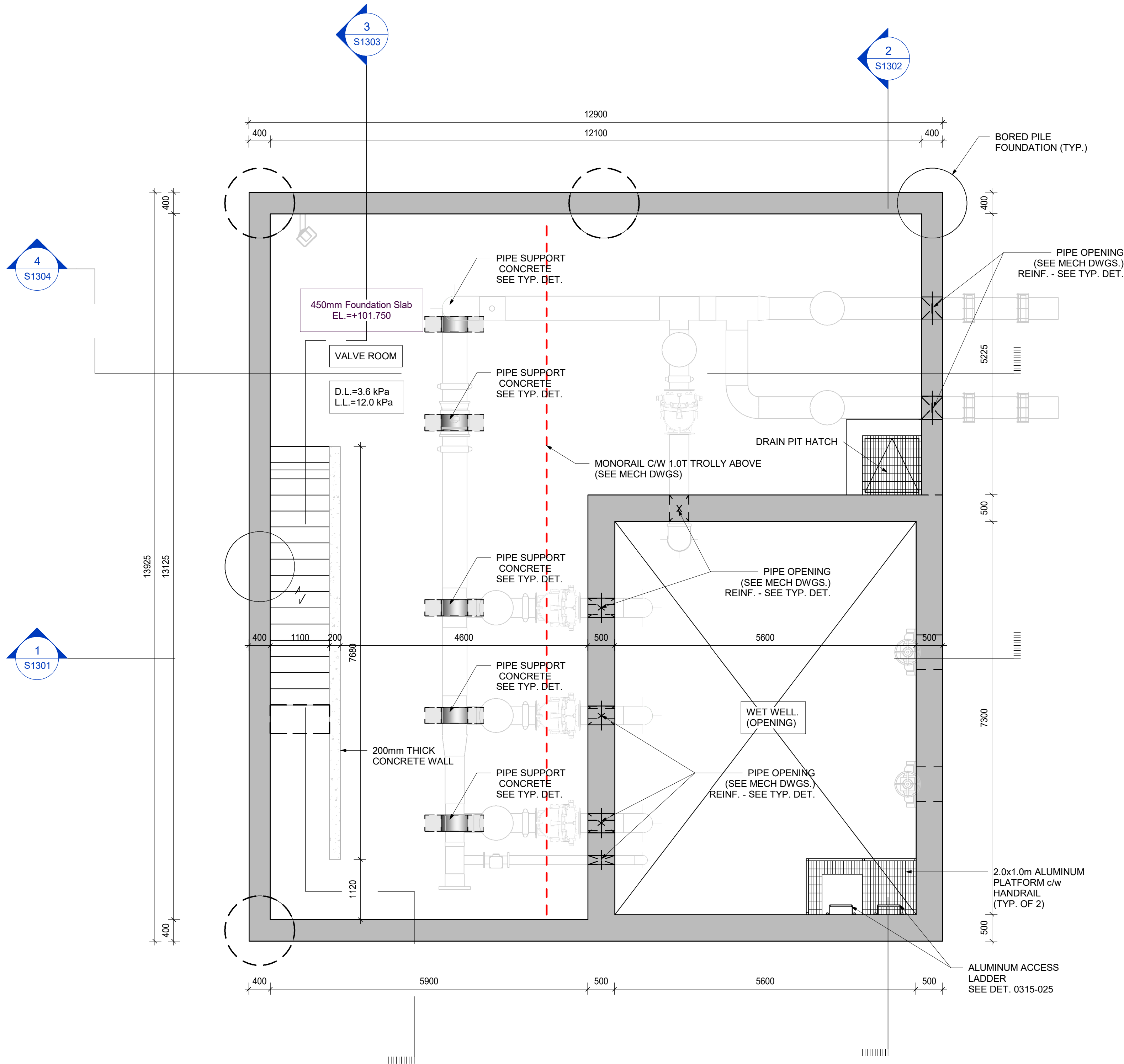
Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL AR PUMP STATION VALVE ROOM FLOOR PLAN

Project no.	Drawing no.	Revision no.
30192375	S1202	C



1 VALVE ROOM FLOOR PLAN
S1202 Scale: 1 : 50

NOTES:

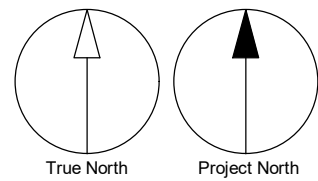
- REINFORCE 450mm THICK SLAB WITH 15M@200 T&B UNLESS NOTED OTHERWISE.
- REINFORCING BARS SHOWN ON PLAN ARE IN ADDITION TO 15M@200 T&B MAT.
- REFER TO GENERAL NOTES FOR CONCRETE STRENGTH AND REINFORCING COVER.

REBAR PLACEMENT IN SLAB	
	TUL (TOP UPPER LAYER)
	TLL (TOP LOWER LAYER)
	BUL (BOTTOM UPPER LAYER)
	BLL (BOTTOM LOWER LAYER)



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A1 - 841X594



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	ISSUED FOR PRELIMINARY DESIGN	
A	(REVISED)	2025-09-26
Revision	Description	Date

PRIME CONSULTANT



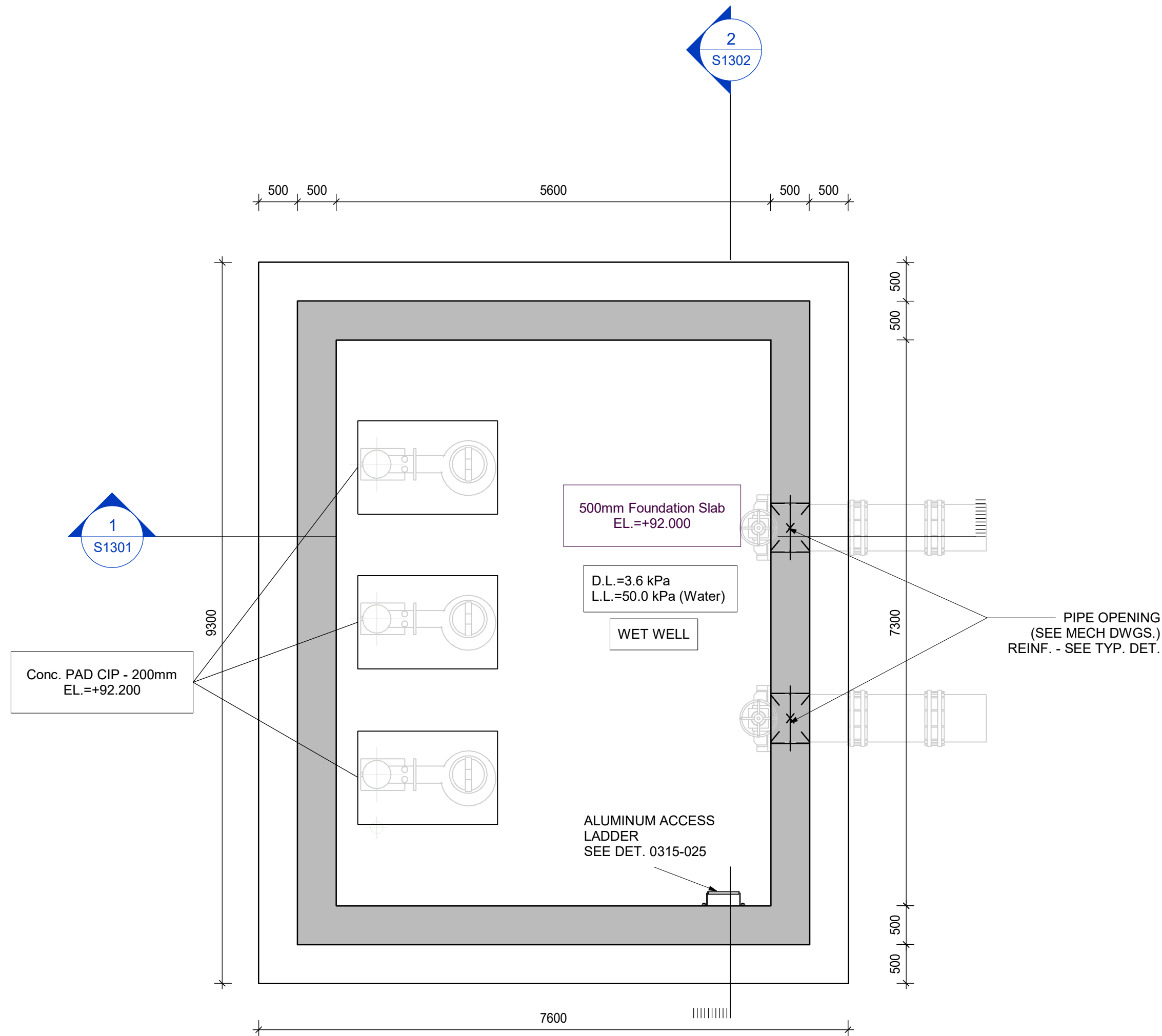
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE**

Designed by M.S.
Drawn by Y.N.
Approved by K.A.
Project Manager C.G.

Drawing Title
**STRUCTURAL
AR PUMP STATION
WET WELL FLOOR PLAN**

Project no. 30192375	Drawing no. S1203	Revision no. C
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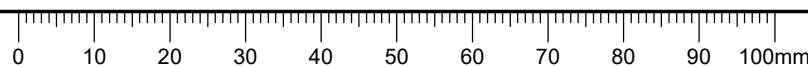


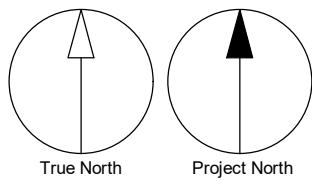
1
S1203
01 - WET WELL FLOOR PLAN
Scale: 1 : 50

NOTES:

1. REINFORCE 500mm THICK SLAB WITH 15M@200 T&B UNLESS NOTED OTHERWISE.
2. REINFORCING BARS SHOWN ON PLAN ARE IN ADDITION TO 15M@200 T&B MAT.
3. REFER TO GENERAL NOTES FOR CONCRETE STRENGTH AND REINFORCING COVER.

REBAR PLACEMENT IN SLAB	
	TUL (TOP UPPER LAYER)
	TLL (TOP LOWER LAYER)
	BUL (BOTTOM UPPER LAYER)
	BLL (BOTTOM LOWER LAYER)





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	ISSUED FOR PRELIMINARY DESIGN	2025-09-26
A	(REVISED)	
Revision	Description	Date

PRIME CONSULTANT



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www.arcadis.com

Project title

IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

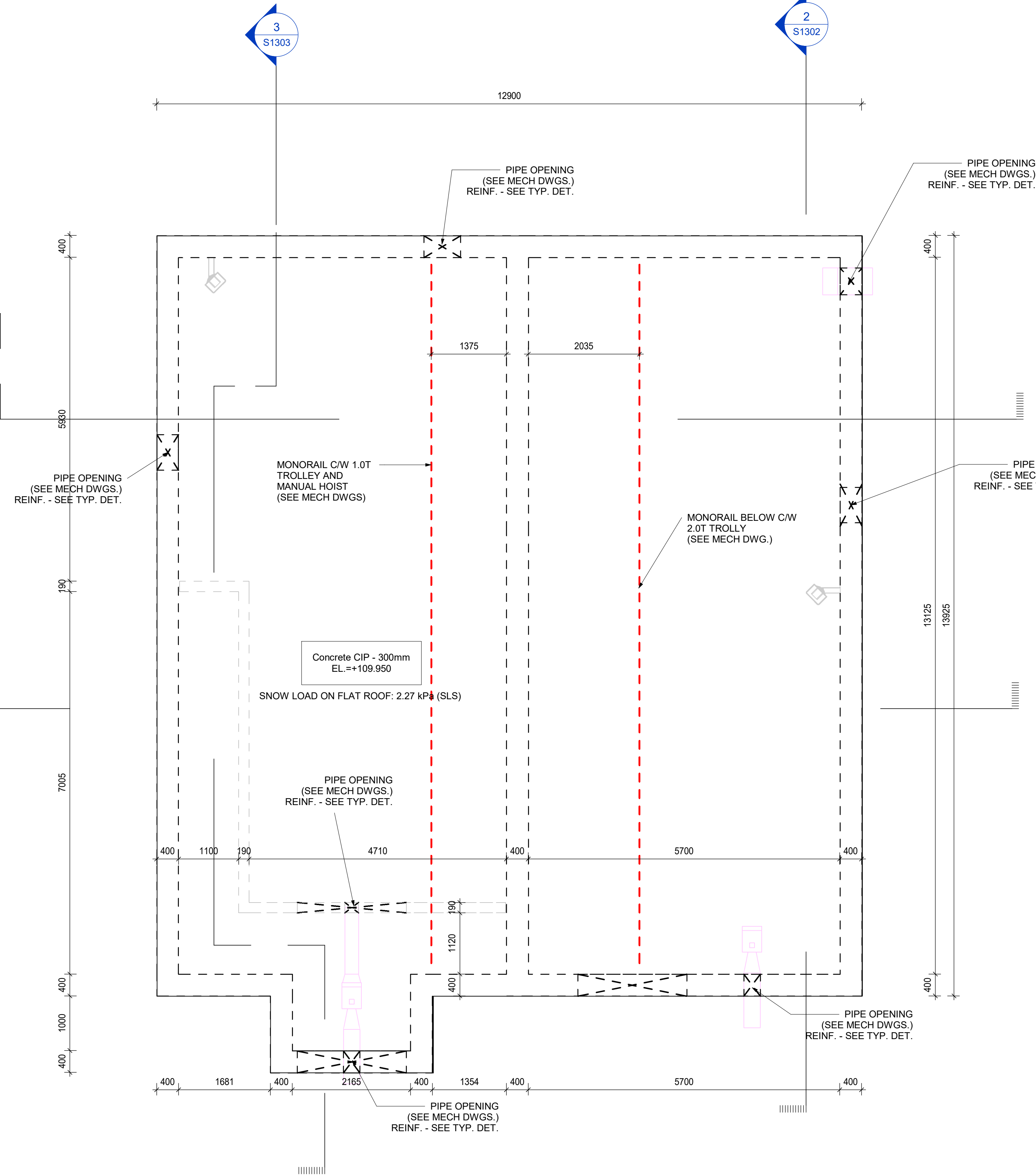
Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL AR PUMP STATION ROOF PLAN

Project no.	Drawing no.	Revision no.
30192375	S1204	C



1 ROOF PLAN
S1204 Scale: 1 : 50

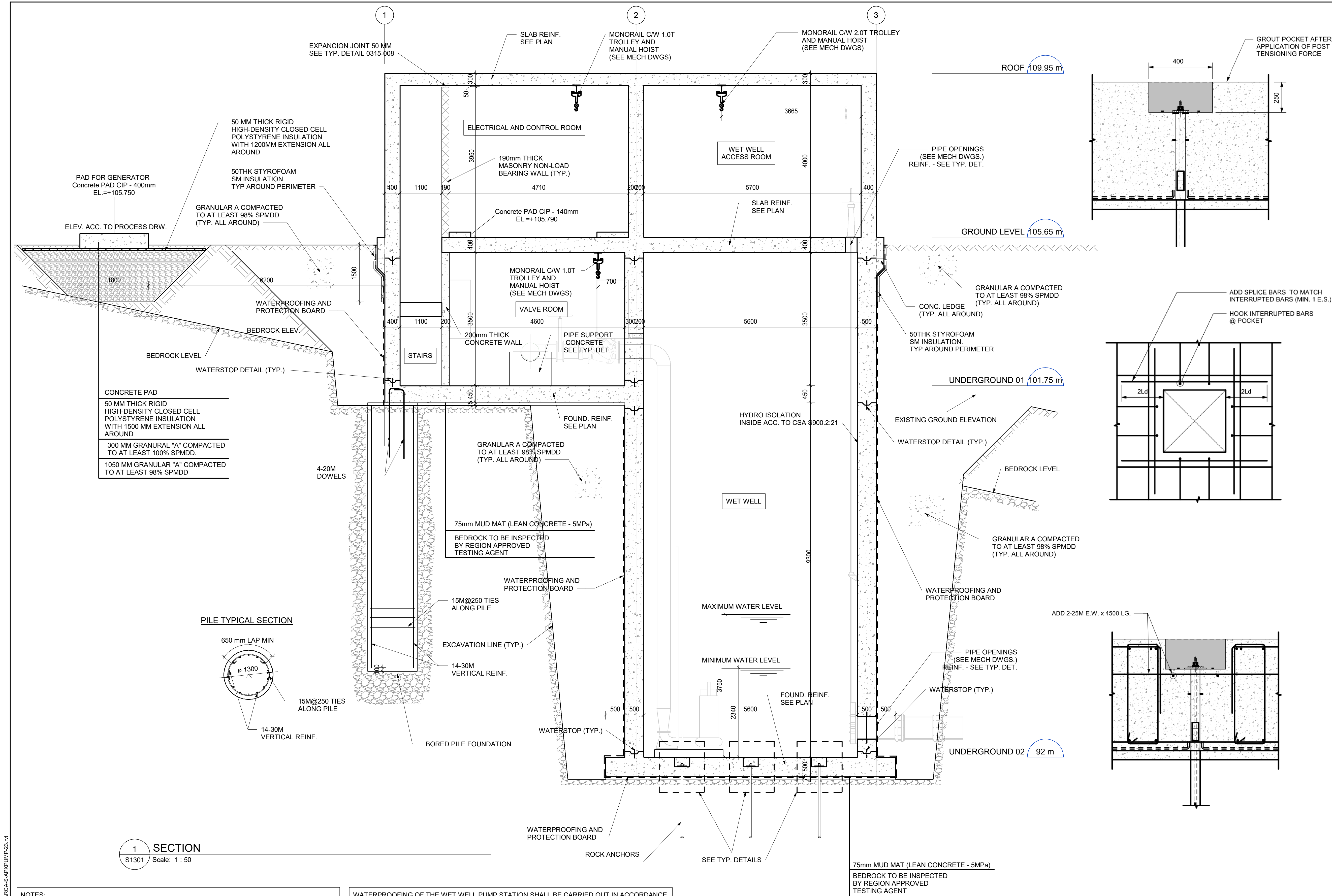
NOTES:

1. REINFORCE 350mm THICK SLAB WITH 15M@300 B / 10M@300 T UNLESS NOTED OTHERWISE.
2. REINFORCING BARS SHOWN ON PLAN ARE IN ADDITION TO 15M@300 B / 10M@300 T MAT.
3. REFER TO GENERAL NOTES FOR CONCRETE STRENGTH AND REINFORCING COVER.

REBAR PLACEMENT IN SLAB	
	TUL (TOP UPPER LAYER)
	TLL (TOP LOWER LAYER)
	BUL (BOTTOM UPPER LAYER)
	BLL (BOTTOM LOWER LAYER)

Autodesk Docs://30286138-Iqaluit_LongTermWater C3D2025/IQALUIT-ARCA-S-APXPUMP-23.rvt

A1 - 841X554



1 SECTION
S1301 Scale: 1 : 50

NOTES:

- DESIGN OF BENCHING LAYOUT AND ELEVATION SHOWN ON STRUCTURAL DRAWINGS ARE BASED ON PROCESS DESIGN. COORDINATE WITH PROCESS FOR ANY CHANGES IN THE LAYOUT OF BENCHING.
- ALL CONCRETE IN WET WELL AND VALVE CHAMBER STRUCTURE SHALL HAVE CRYSTALLINE WATERPROOFING COMPOUND IN THE MIX DESIGN, AS SPECIFIED.
- ALL SHORING SHALL BE DESIGNED BY THE CONTRACTOR, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OF ONTARIO. SUBMIT CALCULATION & SHOP FOR REVIEW.
- SEE MECH DRAWINGS FOR THE DETAIL OF SLIDING GATE FRAME EMBEDDING INTO THE WALL AND SLAB, INCLUDING BOX OUT AND SEALING OF THE GATE FRAME ON THE SIDES AND BOTTOM.
- ACCESS HATCH DIMENSIONS ARE BASED ON PROCESS REQUIREMENTS. REFER TO PROCESS DRAWINGS FOR ANY CHANGES.

WATERPROOFING OF THE WET WELL PUMP STATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN NATIONAL STANDARD CSA S900.2:21 STRUCTURAL DESIGN OF WASTEWATER TREATMENT PLANTS, INCLUDING THE FOLLOWING PROVISIONS:

- CLAUSE 4.5.2: BELOW-GRADE STRUCTURES SUCH AS PUMP STATIONS SHALL BE DESIGNED AS LIQUID-TIGHT ENVIRONMENTAL CONCRETE STRUCTURES, ACCOUNTING FOR UPLIFT PRESSURES FROM GROUNDWATER.
- CLAUSE 4.5.3.1: LIQUID-CONTAINING STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO BE REASONABLY LIQUID-TIGHT, WITH MINIMAL LEAKAGE UNDER NORMAL OPERATING CONDITIONS.
- CLAUSE 4.5.9.6: ALL JOINTS IN LIQUID-CONTACTING STRUCTURES SHALL BE EQUIPPED WITH APPROPRIATE WATERSTOPS TO ENSURE WATERTIGHTNESS.
- CLAUSE 4.6.4: STRUCTURES SHALL BE HYDROSTATICALLY TESTED FOR LEAKAGE IN ACCORDANCE WITH ACI 308.1M, WITH A MAXIMUM INITIAL FILLING RATE OF 1.2 M/H.
- CLAUSE 6.1.7.6.2: INTERNAL HDPE LINERS WITH MONOLITHICALLY EXTRUDED ANCHOR STUDS CAST INTO CONCRETE SHALL BE CONSIDERED PRIMARY PROTECTION AGAINST WASTEWATER AND GAS INGRESS. THESE MEASURES ARE INTENDED TO ENSURE LONG-TERM DURABILITY, PREVENT ENVIRONMENTAL CONTAMINATION, AND COMPLY WITH THE MINIMUM DESIGN SERVICE LIFE REQUIREMENT OF NOT LESS THAN 80 YEARS (SEE TABLE 1, CLAUSE 4.1).

ANCHOR INSTALLATION NOTES:

- ALL ANCHORS TO BE POST TENSIONED DYWIDAG (OR APPROVED EQUAL) GRADE 1035 MPA DOUBLE CORROSION PROTECTED, SHOP ASSEMBLED AND SHOP GROUTED W/TYPE 20 CEMENT GROUT.
- PRIOR TO INSTALLATION OF ANCHORS, TEST ANCHORS SHALL BE INSTALLED TO VERIFY DESIGN CAPACITY ASSUMED.
- ROCK ANCHOR ORIENTATION SHALL VERIFY DRILL HOLE DIAMETER AND ANCHOR EMBEDMENT LENGTH, INCLUDING FREE STRESSING LENGTH AND BONDED LENGTH.
- PRIOR TO INSTALLATION OF THE ANCHORS, THE DRILL HOLE SHALL BE TESTED IN ACCORDANCE WITH THE ANCHOR TEST REQUIREMENTS AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE DRILL ROCK ANCHOR DRILL HOLES FROM TOP OF MUD SLAB.
- PRIOR TO STRESSING AND WATERSTOP SYSTEM INSTALLATION, THE CONCRETE AFTER STRESSING ITS 28-DAY COMPRESSIVE STRENGTH SHALL BE VERIFIED TO BE GREATER THAN 30 MPA.
- DRILL ROCK ANCHOR DRILL HOLES FROM TOP OF MUD SLAB.
- AFTER STRESSING AND WATERSTOP SYSTEM SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR TO VERIFY SITE CONDITIONS AND CAPACITIES.

ROCK ANCHOR SCHEDULE: RA-1
ANCHOR DIAMETER (MIN.): 57 MM
ANCHOR INSTALLATION DIAMETER (MIN.): 150 MM
PIPE SLEEVE SIZE (EXT. DIAMETER MIN.): 200 MM
TOP PLATE SIZE: 200X200X30
DESIGN CAPACITY: 820 KN (ULS)
POST-TENSIONING FORCE: 660 KN (ULS)
POCKET DETAIL: 2/5S100



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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
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Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

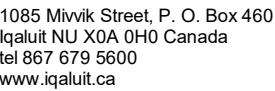
Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL AR PUMP STATION SECTIONS

Project no.	Drawing no.	Revision no.
30192375	S1301	C



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PRIME CONSULTANT

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Project title

IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE

Designed by
M.S.

Drawn by
Y.N.

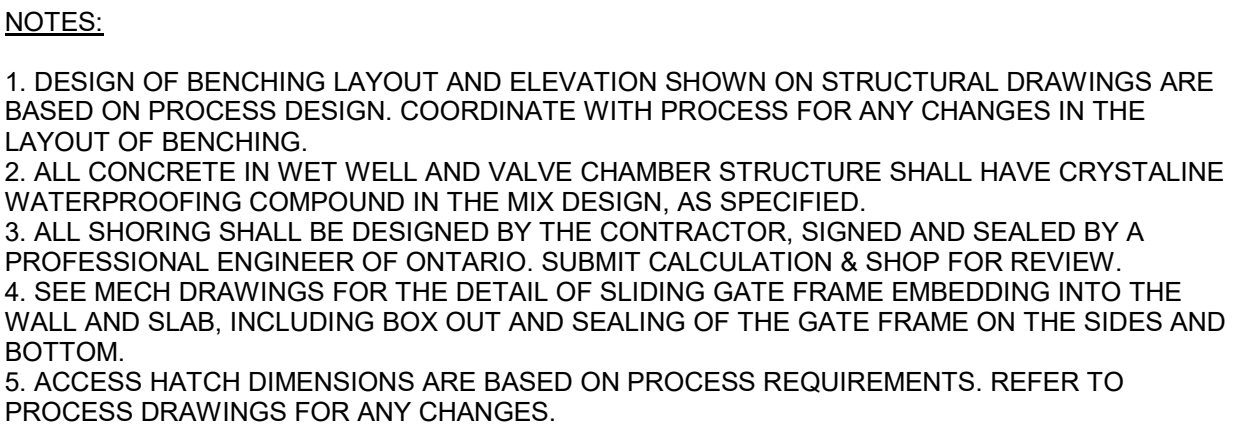
Approved by
K. A.

Project Manager
C.G.

Drawing Title

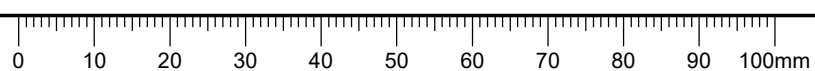
STRUCTURAL AIR PUMP STATION SECTIONS

Project no.	Drawing no.	Revision no.
30192375	S1302	C



WATERPROOFING OF THE WET WELL PUMP STATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN NATIONAL STANDARD CSA S900.2:21 STRUCTURAL DESIGN OF WASTEWATER TREATMENT PLANTS, INCLUDING THE FOLLOWING PROVISIONS:

- CLAUSE 4.5.2: BELOW-GRADE STRUCTURES SUCH AS PUMP STATIONS SHALL BE DESIGNED AS LIQUID-TIGHT ENVIRONMENTAL CONCRETE STRUCTURES, ACCOUNTING FOR UPLIFT PRESSURES FROM GROUNDWATER.
 - CLAUSE 4.5.3.1: LIQUID-CONTAINING STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO BE REASONABLY LIQUID-TIGHT, WITH MINIMAL LEAKAGE UNDER NORMAL OPERATING CONDITIONS.
 - CLAUSE 4.5.9.8: ALL JOINTS IN LIQUID-CONTACTING STRUCTURES SHALL BE EQUIPPED WITH APPROPRIATE WATERSTOPS TO ENSURE WATERTIGHTNESS.
 - CLAUSE 4.6.4: STRUCTURES SHALL BE HYDROSTATICALLY TESTED FOR LEAKAGE IN ACCORDANCE WITH ACI 350.1M, WITH A MAXIMUM INITIAL FILLING RATE OF 1.2 M/H.
 - CLAUSE 6.1.7.6.2: INTERNAL HDPE LINERS WITH MONOLITHICALLY EXTRUDED ANCHOR STUDS CAST INTO CONCRETE SHALL BE CONSIDERED PRIMARY PROTECTION AGAINST WASTEWATER AND GASES.
- THESE MEASURES ARE INTENDED TO ENSURE LONG-TERM DURABILITY, PREVENT ENVIRONMENTAL CONTAMINATION, AND COMPLY WITH THE MINIMUM DESIGN SERVICE LIFE REQUIREMENT OF NOT LESS THAN 80 YEARS (SEE TABLE 1, CLAUSE 4.1).



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Arcadis Professional Services (Canada) Inc.

ISSUED FOR PRELIMINARY DESIGN		
A (REVISED)		
Revision	Description	Date

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
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www.arcadis.com

Project title

IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

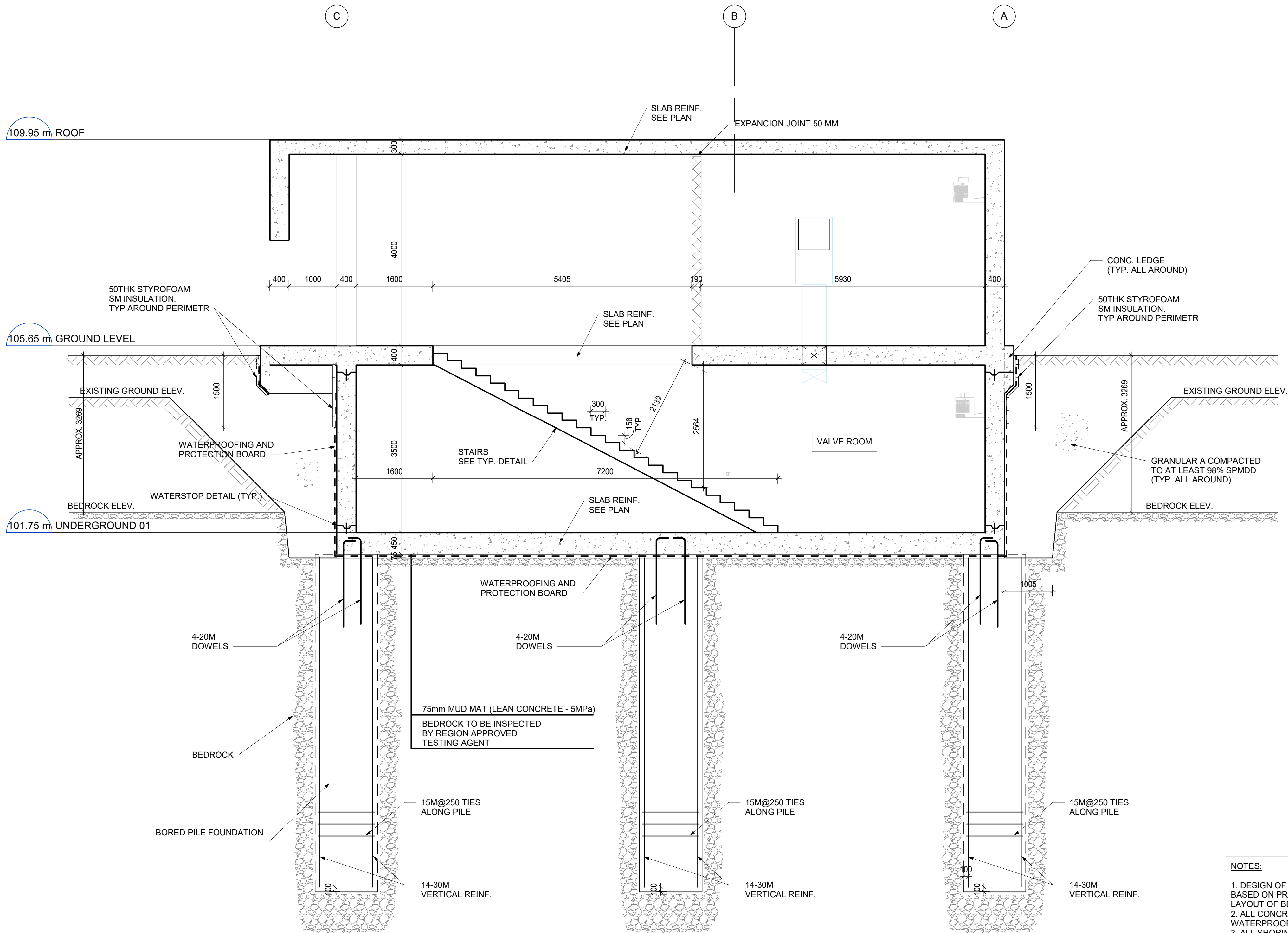
Approved by
K.A.

Project Manager
C.G.

Drawing Title

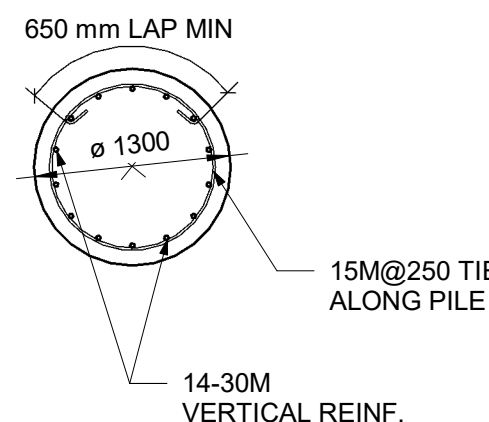
STRUCTURAL AR PUMP STATION SECTIONS

Project no.	Drawing no.	Revision no.
30192375	S1303	C



3 SECTION
S1303 Scale: 1 : 50

PILE TYPICAL SECTION



NOTES:

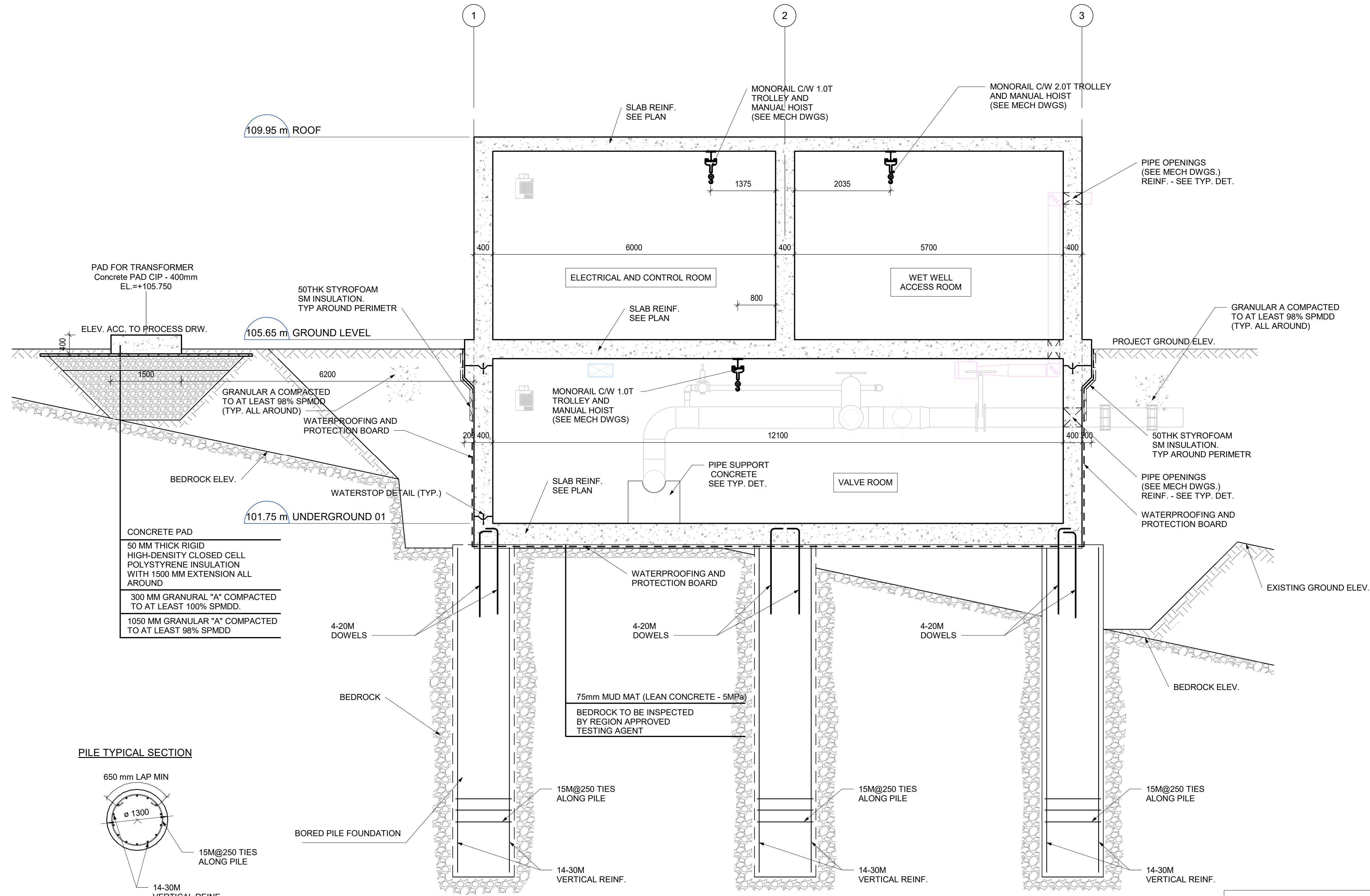
- DESIGN OF BENCHING LAYOUT AND ELEVATION SHOWN ON STRUCTURAL DRAWINGS ARE BASED ON PROCESS DESIGN. COORDINATE WITH PROCESS FOR ANY CHANGES IN THE LAYOUT OF BENCHING.
- ALL CONCRETE IN WET WELL AND VALVE CHAMBER STRUCTURE SHALL HAVE CRYSTALLINE WATERPROOFING COMPOUND IN THE MIX DESIGN, AS SPECIFIED.
- ALL SHORING SHALL BE DESIGNED BY THE CONTRACTOR, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OF ONTARIO. SUBMIT CALCULATION & SHOP FOR REVIEW.
- SEE MECH DRAWINGS FOR THE DETAIL OF SLIDING GATE FRAME EMBEDDING INTO THE WALL AND SLAB, INCLUDING BOX OUT AND SEALING OF THE GATE FRAME ON THE SIDES AND BOTTOM.
- ACCESS HATCH DIMENSIONS ARE BASED ON PROCESS REQUIREMENTS. REFER TO PROCESS DRAWINGS FOR ANY CHANGES.

WATERPROOFING OF THE WET WELL PUMP STATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN NATIONAL STANDARD CSA S900.2-21 STRUCTURAL DESIGN OF WASTEWATER TREATMENT PLANTS, INCLUDING THE FOLLOWING PROVISIONS:

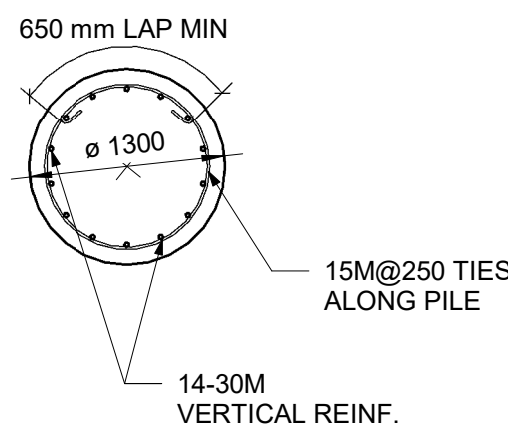
- CLAUSE 4.5.2: BELOW-GRADE STRUCTURES SUCH AS PUMP STATIONS SHALL BE DESIGNED AS LIQUID-TIGHT ENVIRONMENTAL CONCRETE STRUCTURES, ACCOUNTING FOR UPLIFT PRESSURES FROM GROUNDWATER.
 - CLAUSE 4.5.3.1: LIQUID-CONTAINING STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO BE REASONABLY LIQUID-TIGHT, WITH MINIMAL LEAKAGE UNDER NORMAL OPERATING CONDITIONS.
 - CLAUSE 4.5.9.6: ALL JOINTS IN LIQUID-CONTACTING STRUCTURES SHALL BE EQUIPPED WITH APPROPRIATE WATERSTOPS TO ENSURE WATERTIGHTNESS.
 - CLAUSE 4.6.4: STRUCTURES SHALL BE HYDROSTATICALLY TESTED FOR LEAKAGE IN ACCORDANCE WITH ACI 350.1M, WITH A MAXIMUM INITIAL FILLING RATE OF 1.2 M/H.
 - CLAUSE 6.1.7.6.2: INTERNAL HDPE LINERS WITH MONOLITHICALLY EXTRUDED ANCHOR STUDS CAST INTO CONCRETE SHALL BE CONSIDERED PRIMARY PROTECTION AGAINST WASTEWATER AND GAS INGRESS.
- THESE MEASURES ARE INTENDED TO ENSURE LONG-TERM DURABILITY, PREVENT ENVIRONMENTAL CONTAMINATION, AND COMPLY WITH THE MINIMUM DESIGN SERVICE LIFE REQUIREMENT OF NOT LESS THAN 80 YEARS (SEE TABLE 1, CLAUSE 4.1).

Autodesk Docs://20286138-Iqaluit_LongTermWater/C3D2025/IQALUIT-ARCA-S-APXPUMP-23.rvt

A1 - 841X594



PILE TYPICAL SECTION



BORED PILE FOUNDATION

4 SECTION
S1304 Scale: 1 : 50

NOTES:

1. DESIGN OF BENCHING LAYOUT AND ELEVATION SHOWN ON STRUCTURAL DRAWINGS ARE BASED ON PROCESS DESIGN. COORDINATE WITH PROCESS FOR ANY CHANGES IN THE LAYOUT OF BENCHING.
2. ALL CONCRETE IN WET WELL AND VALVE CHAMBER STRUCTURE SHALL HAVE CRYSTALLINE WATERPROOFING COMPOUND IN THE MIX DESIGN, AS SPECIFIED.
3. ALL SHORING SHALL BE DESIGNED BY THE CONTRACTOR, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OF ONTARIO. SUBMIT CALCULATION & SHOP FOR REVIEW.
4. SEE MECH DRAWINGS FOR THE DETAIL OF SLIDING GATE FRAME EMBEDDING INTO THE WALL AND SLAB, INCLUDING BOX OUT AND SEALING OF THE GATE FRAME ON THE SIDES AND BOTTOM.
5. ACCESS HATCH DIMENSIONS ARE BASED ON PROCESS REQUIREMENTS. REFER TO PROCESS DRAWINGS FOR ANY CHANGES.

WATERPROOFING OF THE WET WELL PUMP STATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN NATIONAL STANDARD CSA S900.2.21 STRUCTURAL DESIGN OF WASTEWATER TREATMENT PLANTS, INCLUDING THE FOLLOWING PROVISIONS:

- CLAUSE 4.5.2: BELOW-GRADE STRUCTURES SUCH AS PUMP STATIONS SHALL BE DESIGNED AS LIQUID-TIGHT ENVIRONMENTAL CONCRETE STRUCTURES, ACCOUNTING FOR UPLIFT PRESSURES FROM GROUNDWATER.
 - CLAUSE 4.5.3.1: LIQUID-CONTAINING STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO BE REASONABLY LIQUID-TIGHT, WITH MINIMAL LEAKAGE UNDER NORMAL OPERATING CONDITIONS.
 - CLAUSE 4.5.9.6: ALL JOINTS IN LIQUID-CONTACTING STRUCTURES SHALL BE EQUIPPED WITH APPROPRIATE WATERSTOPS TO ENSURE WATERTIGHTNESS.
 - CLAUSE 4.6.4: STRUCTURES SHALL BE HYDROSTATICALLY TESTED FOR LEAKAGE IN ACCORDANCE WITH ACI 350.1M, WITH A MAXIMUM INITIAL FILLING RATE OF 1.2 M/H.
 - CLAUSE 6.1.7.6.2: INTERNAL HDPE LINERS WITH MONOLITHICALLY EXTRUDED ANCHOR STUDS CAST INTO CONCRETE SHALL BE CONSIDERED PRIMARY PROTECTION AGAINST WASTEWATER AND GAS INGRESS.
- THESE MEASURES ARE INTENDED TO ENSURE LONG-TERM DURABILITY, PREVENT ENVIRONMENTAL CONTAMINATION, AND COMPLY WITH THE MINIMUM DESIGN SERVICE LIFE REQUIREMENT OF NOT LESS THAN 80 YEARS (SEE TABLE 1, CLAUSE 4.1).



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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
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Project title

IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL
AR PUMP STATION
SECTIONS

Project no.	Drawing no.	Revision no.
30192375	S1304	C

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PLC / SCADA

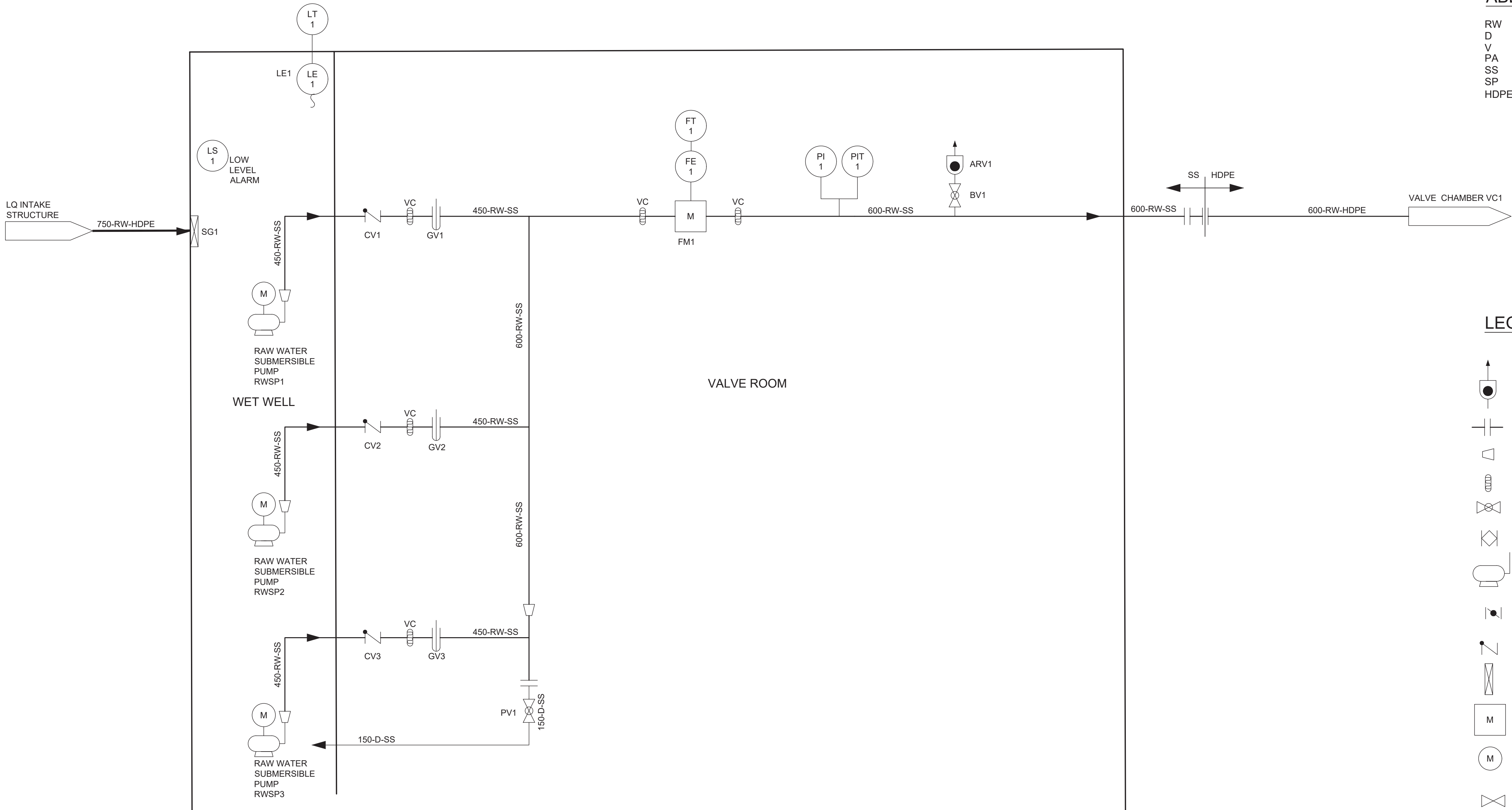
FIELD

ABBREVIATIONS

RW	RAW WATER
D	DRAIN
V	VENT
PA	PROCESS AIR
SS	STAINLESS STEEL
SP	SUBMERSIBLE PUMP
HDPE	HIGH-DENSITY POLYETHYLENE

LEGEND

	AIR/VACUUM VALVE
	FLANGE
	CONCENTRIC REDUCER
	VICTAULIC COUPLING
	BALL VALVE
	PLUG VALVE
	SUBMERSIBLE PUMP
	BUTTERFLY VALVE
	CHECK VALVE
	SLUICE GATE
	MAGNETIC FLOWMETER
	MOTOR
	GATE VALVE



Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant		
121 Granton Drive, Suite 12 Richmond Hill ON L4B 3N4 Canada tel 905 764 9380 www.arcadis.com		

Project title		
IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE		

Designed by P.D.		
Drawn by A.V.		
Approved by M.J.		
Project Manager C.G.		

Drawing title		
PROCESS PUMP STATION PROCESS FLOW DIAGRAM		

Project no.	Drawing no.	Revision no.
30192375	P003	B

PRELIMINARY
NOT FOR CONSTRUCTION

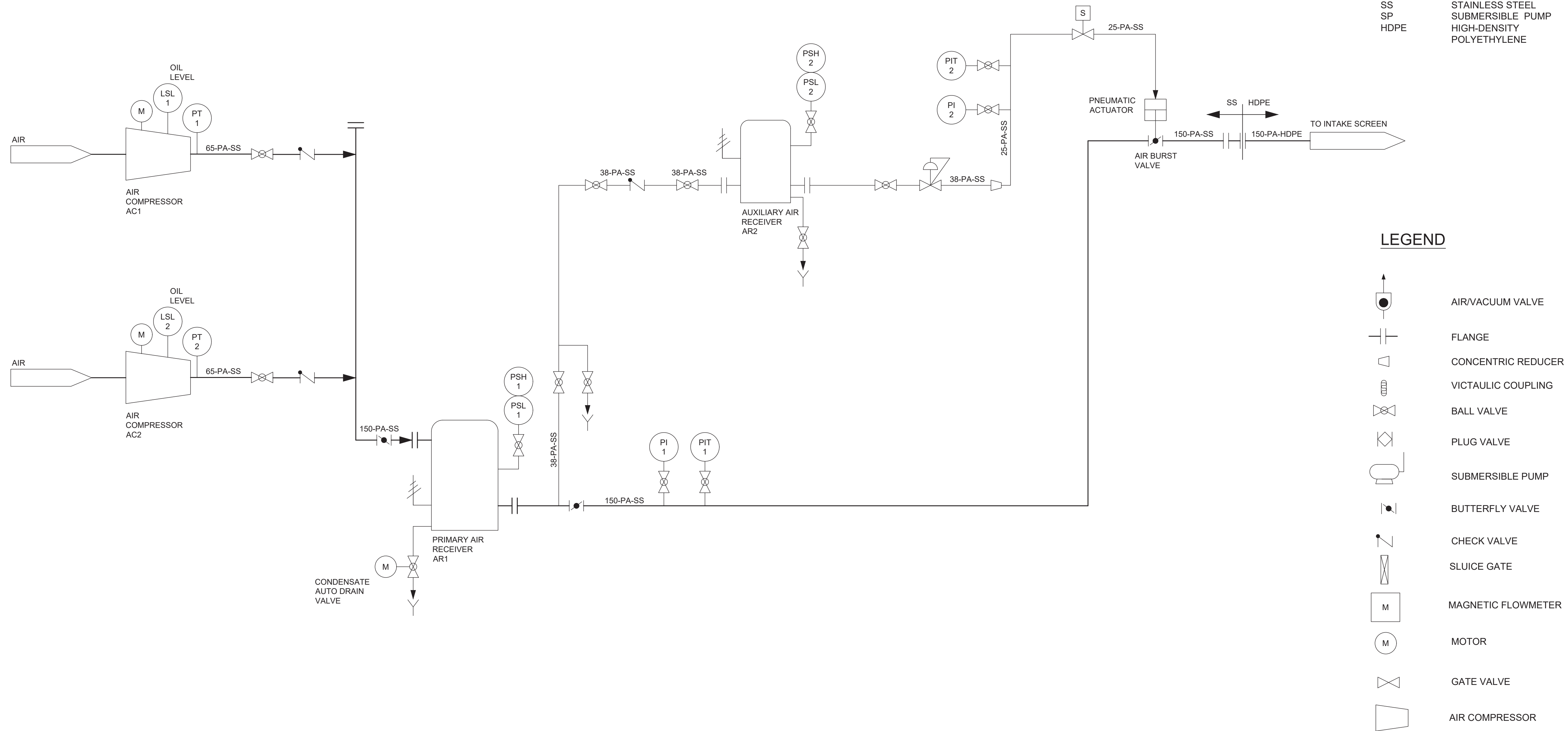
PLC / SCADA

FIELD

ABBREVIATIONS

RW	RAW WATER
D	DRAIN
V	VENT
PA	PROCESS AIR
SS	STAINLESS STEEL
SP	SUBMERSIBLE PUMP
HDPE	HIGH-DENSITY POLYETHYLENE

LEGEND



B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date

Consultant



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Project title

**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by

P.D.

Drawn by

Approved by

M.J.

Project Manager

Drawing title

PROCESS

PUMP STATION PROCESS FLOW DIAGRAM COMPRESSED AIR

Project no.

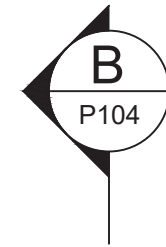
30192375

Drawing no.

P004

၂၀၁၈ ခုနှစ်

3



AIR COMPRESSOR
(TYP. OF 2)

8328L (2200 GAL)
COMPRESSED AIR TANK

AIR DRYER

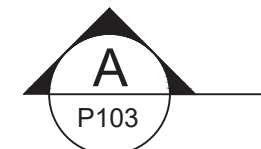
80 GAL AUXILIARY
COMPRESSED AIR TANK

1200x1200mm EQUIPMENT
ACCESS HATCH

1000x1000mm ACCESS
HATCH TO VALVE ROOM

WASTE WATER STORAGE
TANK

POTABLE WATER STORAGE
TANK



INSTANTANEOUS WATER
HEATER TANK

WASHROOM

ELECTRICAL AND CONTROL
ROOM

F.F EL. 210.50m

CONTROL
PANEL

M.C.C.

WET WELL
ACCESS
ROOM

F.F EL. 210.50m

AIR HANDLING UNIT.
SEE MECHANICAL DRAWINGS
FOR DETAILS

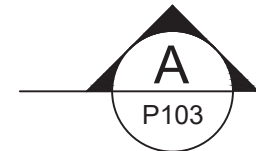
MONORAIL c/w 2.0T TROLLEY
AND MANUAL HOIST

1500x1200mm PUMP
ACCESS HATCH.
(FRAME DRAIN TO SUMP)
(TYP.)

PEDESTAL MOUNTED GEAR
BOX c/w HAND WHEEL FOR
SG1

150x300mm OPENING
FOR LEVEL FLOATS c/w
GRATING COVER

1000x1000mm ACCESS
HATCH TO WET WELL



PLAN AT GROUND ELEVATION

SCALE 1:40



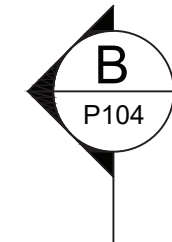
1085 Mivvik Street, P.O. Box 460
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PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant	
Project title	IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by P.D.	Drawn by A.V.	Approved by M.J.	Project Manager C.G.
Drawing title PROCESS PUMP STATION PLAN AT GROUND ELEVATION			
Project no. 30192375	Drawing no. P101	Revision no. B	



100Ø COMBINATION
AIR/VACUUM VALVE

600-RW-HDPE

600-RW-SS

150-PA-SS

450Ø DRESSER
TRANSITION COUPLING
FROM SS TO HDPE

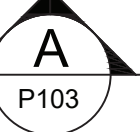
1000mm SQ. SUMP

ALUMINUM LADDER
(TYP.)

1200x1200mm EQUIPMENT
ACCESS HATCH ABOVE

VALVE
ROOM

F.F EL. 206.30m



600x450Ø REDUCER

450Ø VICTAULIC
COUPLING
(TYP.)

MONORAIL c/w 2.0T
TROLLEY AND MANUAL
HOIST

FLOWMETER

600Ø VICTAULIC COUPLING
(TYP.)

150Ø BURST AIR VALVE

450Ø KNIFE GATE VALVE c/w
CHAIN DRIVEN HANDWHEEL
(TYP. OF 3)

450Ø SWING CHECK VALVE
(TYP. OF 3)

150-PA-SS

RWSP1

WET
WELL

F.F EL. 198.80m

RWSP2

RWSP3

150-PA-HDPE

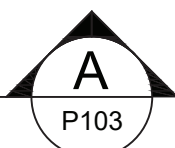
750-RW-HDPE

900mm SQ. SLUICE
GATE SG1

RAW WATER
SUBMERSIBLE PUMP
(TYP. OF 3)

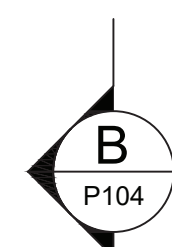
2.0x1.0m ALUMINUM
PLATFORM c/w HANDRAIL
(TYP. OF 2)

ALUMINUM LADDER
(TYP.)



PLAN AT EL. 207.00m

SCALE 1:40



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PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant
ARCADIS
121 Granton Drive, Suite 12
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tel 905 764 9380
www.arcadis.com

Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

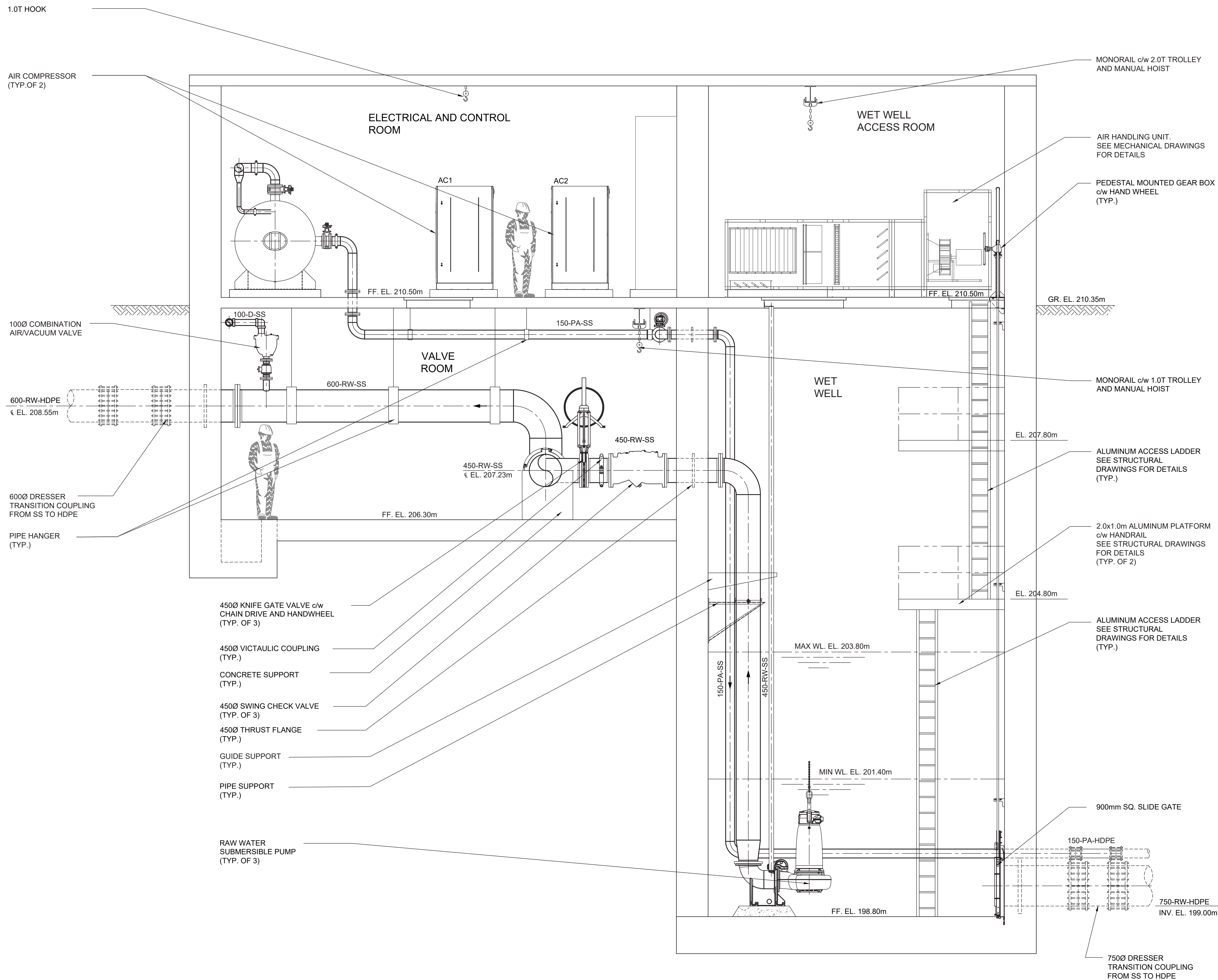
Designed by
P.D.
Drawn by
A.V.
Approved by
M.J.
Project Manager
C.G.
Drawing title
**PROCESS
PUMP STATION
PLAN AT EL. 207.00m**

Project no.	Drawing no.	Revision no.
30192375	P102	B



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PRELIMINARY
NOT FOR CONSTRUCTION



SECTION A

SCALE 1:40



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Project title

IQUALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE

Designed by
P.D.

Drawn by
A.V.

Approved by
M.J.

Project Manager
C.G.

Drawing title

PROCESS

PUMP STATION
SECTION A

Project no.

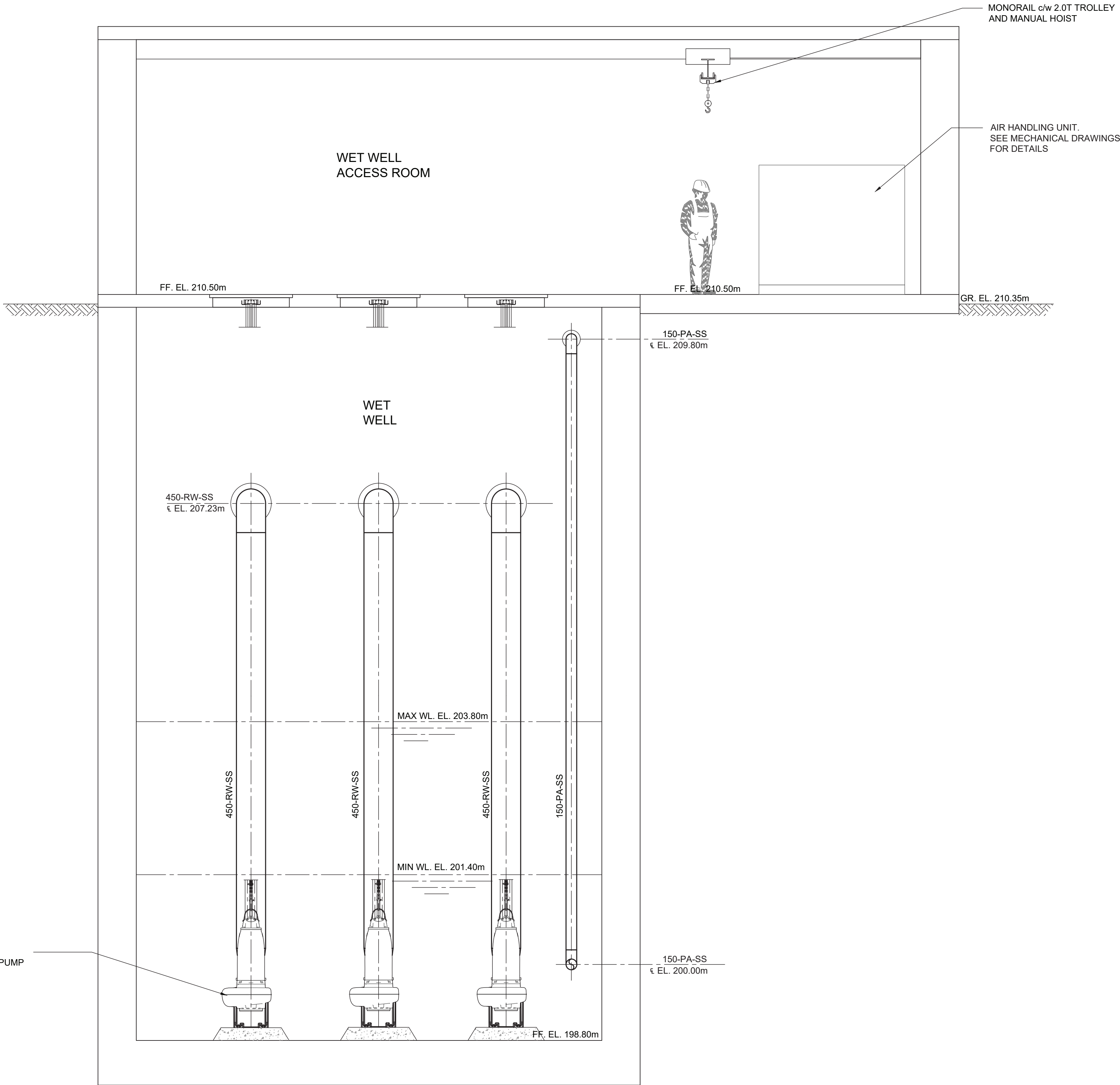
30192375

Drawing no.

P103

Revision no.

B



SECTION B

SCALE 1:40



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PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

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Project title

**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
P.D.

Drawn by
A.V.

Approved by
M.J.

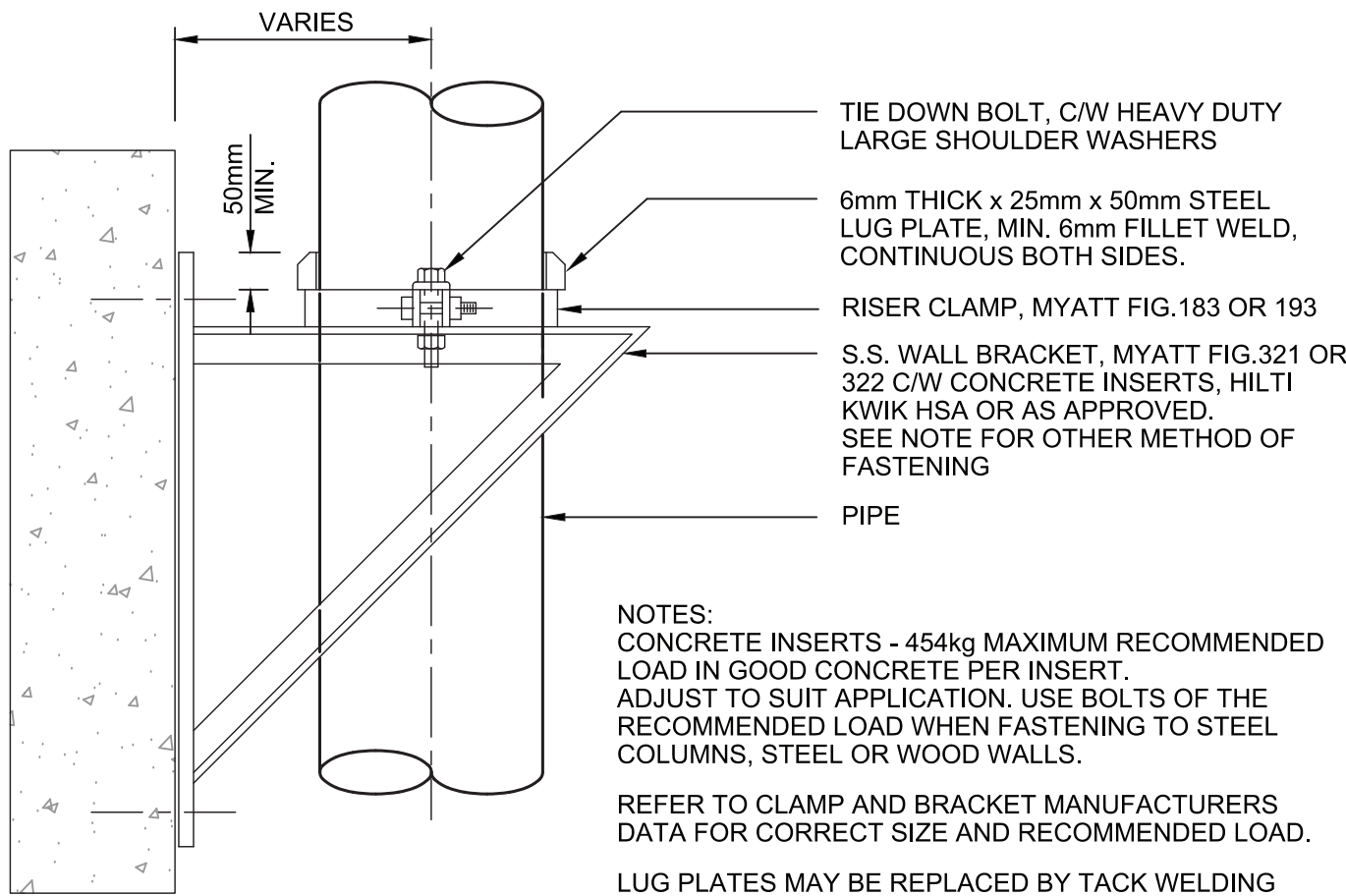
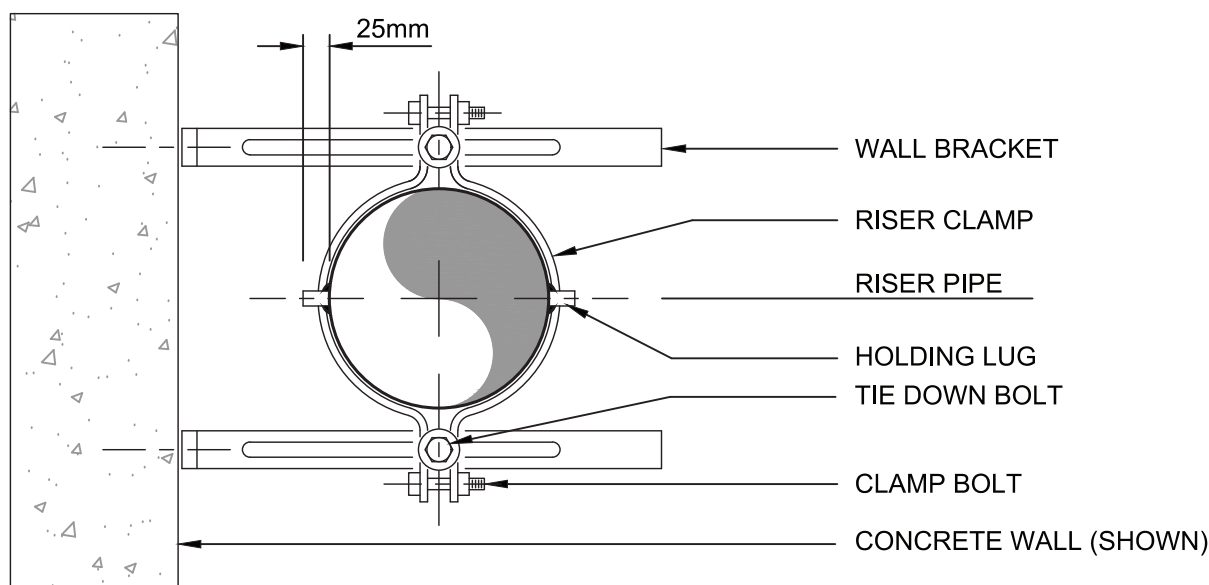
Project Manager
C.G.

Drawing title

**PROCESS

PUMP STATION
SECTION B**

Project no. 30192375	Drawing no. P104	Revision no. B
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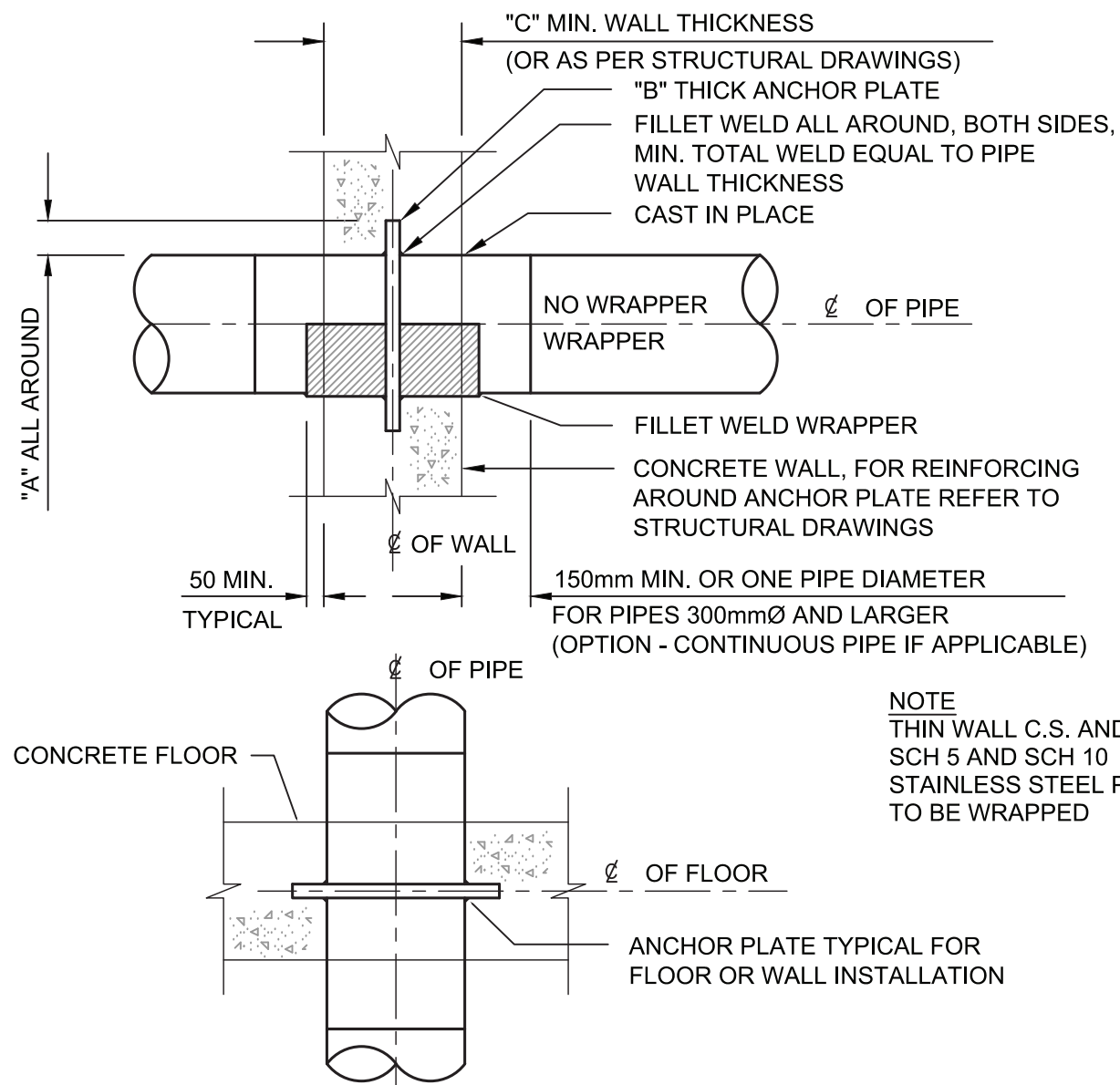
NOTES:
CONCRETE INSERTS - 454kg MAXIMUM RECOMMENDED LOAD IN GOOD CONCRETE PER INSERT. ADJUST TO SUIT APPLICATION. USE BOLTS OF THE RECOMMENDED LOAD WHEN FASTENING TO STEEL COLUMNS, STEEL OR WOOD WALLS.

REFER TO CLAMP AND BRACKET MANUFACTURERS DATA FOR CORRECT SIZE AND RECOMMENDED LOAD.

LUG PLATES MAY BE REPLACED BY TACK WELDING (EQUAL STRENGTH) CLAMP TO PIPE, IF APPROVED BY ENGINEER.

MUELLER CLAMPS AND BRACKETS MAY BE USED AS AN APPROVED ALTERNATE.

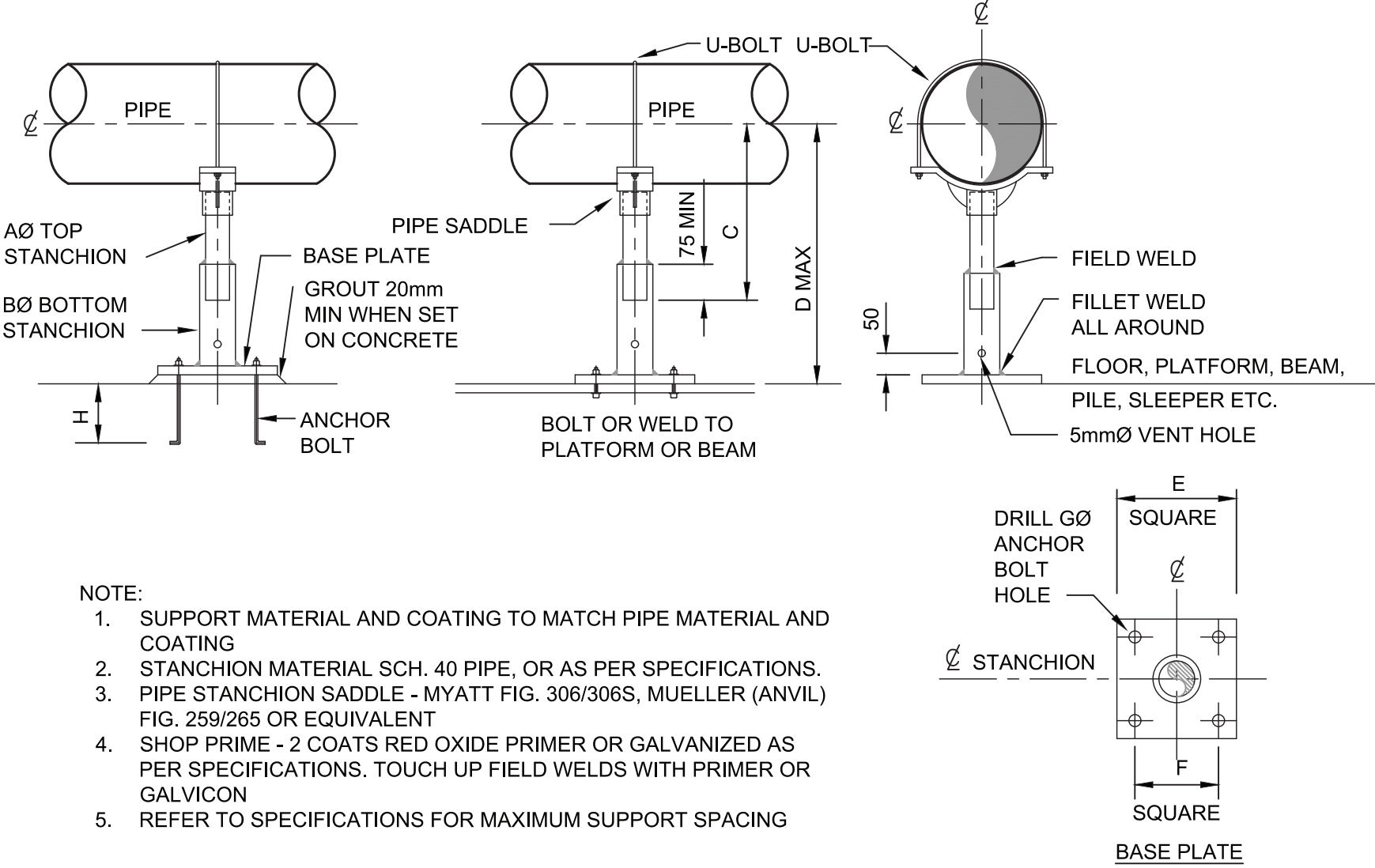
DETAIL 1
RISER PIPE SUPPORT



NOTE
ANCHOR RING CHART INFORMATION BASED
AIWWA M-11 FIGURE 13-19 AND TABLE 13-3
BEARING LOADS FOR ANCHOR RINGS IN CONCRETE IS
BASED ON MAXIMUM PIPE PRESSURE 1724 kPa (250 PSI)

PIPE SIZE	50 TO 200	250 & 300	350 & 450	500 & 600	750 & 900	1050 & LARGER
A	25	40	50	76	102	CUSTOM DESIGN FOR EACH APPLICATION
B	10	10	13	15	22	
C	200	300	350	400	AS PER DESIGN	
PERMISSIBLE LOAD ON RING	414 kg	904 kg	1425 kg	3200 kg	7214 kg	

DETAIL 2
NEW STRUCTURAL WALL / FLOOR PIPE ANCHOR

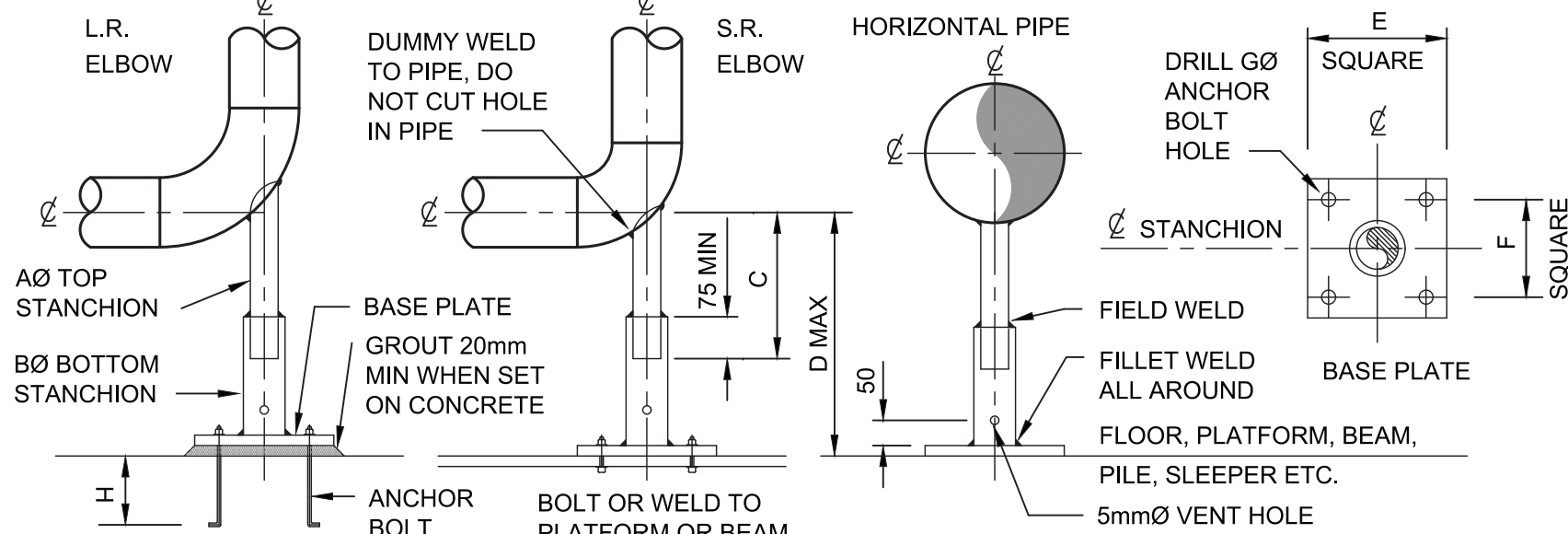


- NOTE:
- SUPPORT MATERIAL AND COATING TO MATCH PIPE MATERIAL AND COATING
 - STANCHION MATERIAL SCH. 40 PIPE, OR AS PER SPECIFICATIONS.
 - PIPE STANCHION SADDLE - MYATT FIG. 306/306S, MUELLER (ANVIL) FIG. 259/265 OR EQUIVALENT
 - SHOP PRIME - 2 COATS RED OXIDE PRIMER OR GALVANIZED AS PER SPECIFICATIONS. TOUCH UP FIELD WELDS WITH PRIMER OR GALVICON
 - REFER TO SPECIFICATIONS FOR MAXIMUM SUPPORT SPACING

PIPE SIZE	100	125	150	200	250	300	350	400	450	500	600	750	900
A	80	80	80	80	80	80	80	80	90	90	100	100	100
B	100	100	100	100	100	100	100	100	150	150	150	150	150
C MIN	240	255	270	310	350	370	380	425	485	510	590	670	745
C MAX	350	370	390	425	460	485	515	540	600	625	705	785	860
D MAX	1200	1200	1200	1200	1200	1200	1200	1200	1850	1850	1850	1850	1850
THICK x E SQUARE	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250
F SQUARE	200	200	200	200	200	200	200	200	200	200	200	200	200

DETAIL 3
HORIZONTAL PIPE SUPPORT

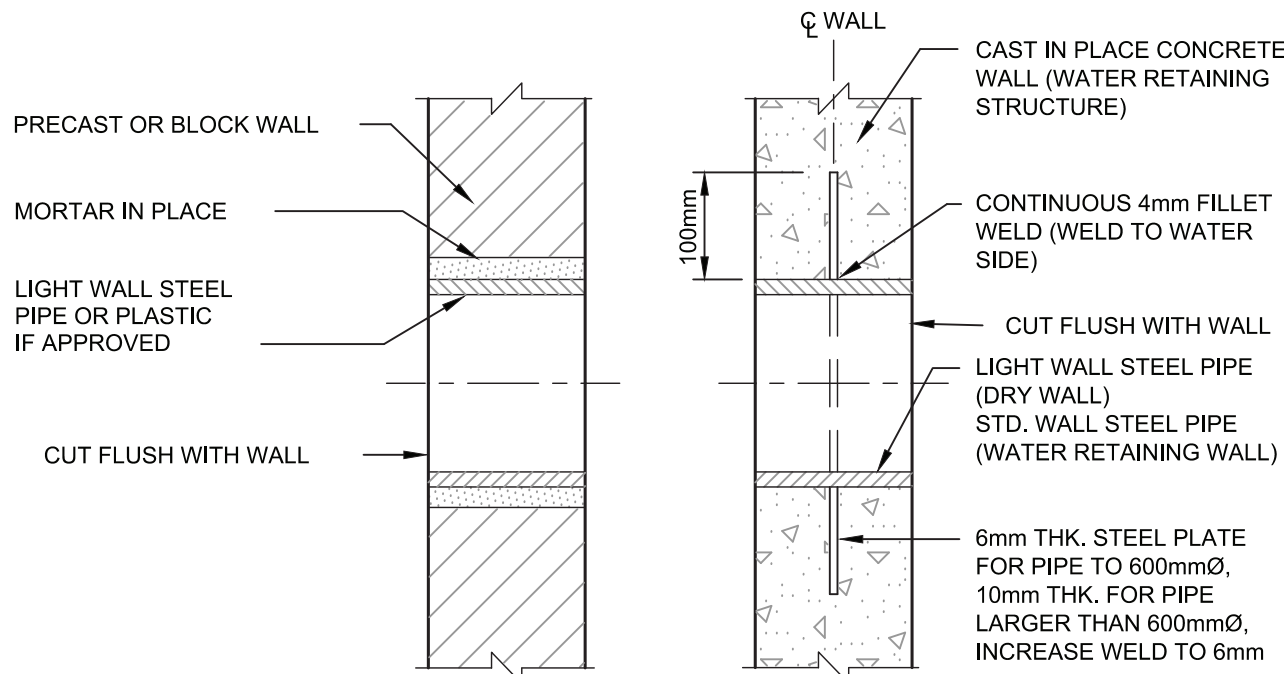
DETAIL 1
N.T.S.



- NOTES: STANCHION MATERIAL SCH. 40 PIPE, OR AS PER SPECIFICATIONS.
BASE PLATE - CARBON STEEL
SHOP PRIME - 2 COATS RED OXIDE PRIMER OR GALVANIZED AS PER SPECIFICATIONS
TOUCH UP FIELD WELDS WITH PRIMER OR GALVICON
STANCHIONS - MAY BE MYATT FIG. 308 OR MUELLER (ANVIL) FIG. 62

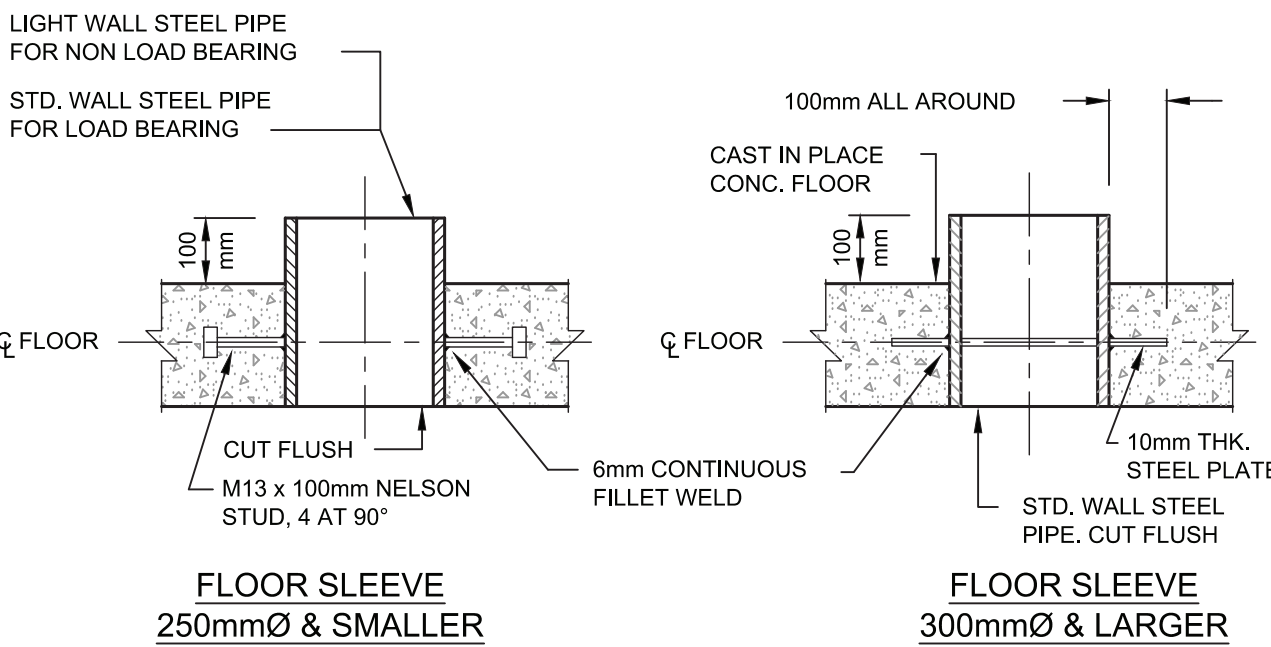
PIPE SIZE	50	65	80	100	125	150	200	250	300	350	400	450	500	600
A	40	40	65	65	100	100	100	125	125	125	125	125	-	-
B	65	65	80	80	125	125	125	150	150	150	150	150	-	-
C MIN	200	200	210	235	250	270	300	350	380	410	450	500	-	-
C MAX	330	330	340	350	375	390	420	460	500	530	570	610	-	-
D MAX	1000	1000	1000	1200	1200	1500	1500	1850	1850	2000	3000	3000	-	-
THICK x E SQUARE	10mm x 150	10mm x 150	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 300	10mm x 300	-	-
F SQUARE	110	110	200	200	200	200	200	200	200	200	240	-	-	-
G DIAM. x No. HOLES	15 DIAMETER x 2 OPPOSITE CORNERS			20 DIAMETER x 4				25 DIAMETER x 4						
BOLT DIAM. x H	M12x50 HSL HILTI OR AS APPROVED			M16x100 GALVANIZED OR AS APPROVED EXIST. CONCRETE USE M16 HSL HILTI				M20x150 (MIN) GALVANIZED BOLT CAST IN PLACE OR AS APPROVED						

DETAIL 4
PIPE SUPPORT
VERTICAL PIPE SUPPORT



**WALL SLEEVE IN
BLOCK OR PRECAST WALL**

**WALL SLEEVE IN
CONCRETE WALL**

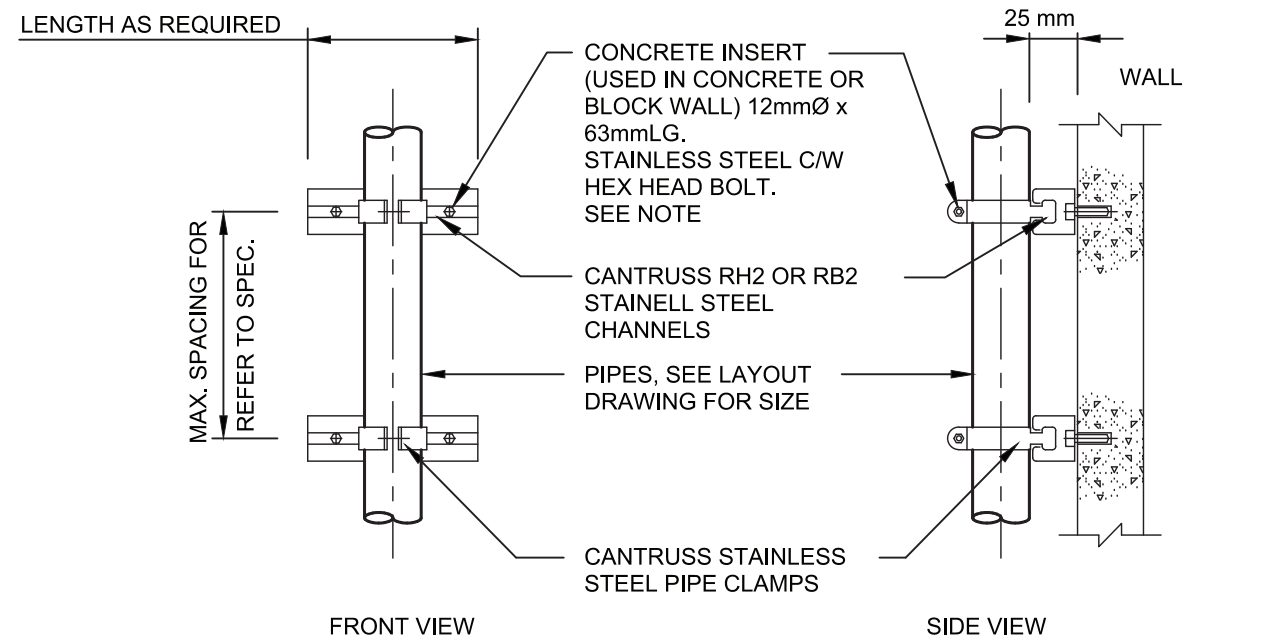


**FLOOR SLEEVE
250mmØ & SMALLER**

**FLOOR SLEEVE
300mmØ & LARGER**

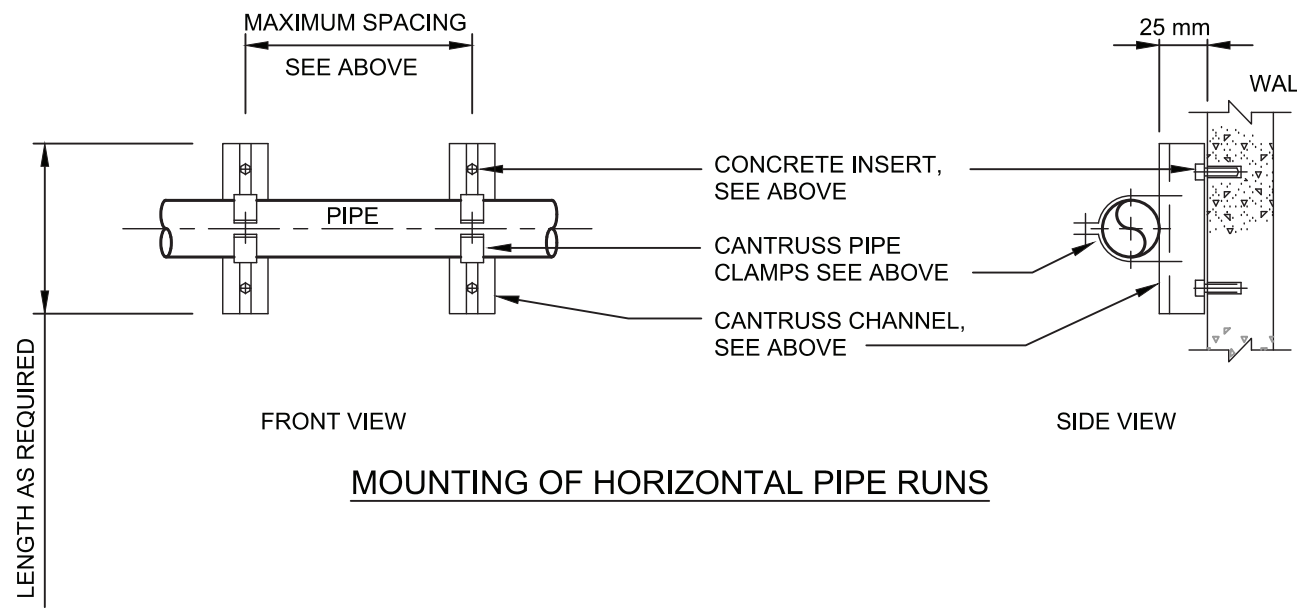
- NOTES:
- SLEEVE TO BE NEXT PIPE DIAMETER LARGER THAN OUTSIDE DIAMETER OF PIPE PASSING THROUGH, OR AS SPECIFIED ON THE DRAWINGS.
 - THE STEEL RETAINING PLATE MAY BE ROUND, SQUARE OR OCTAGON.
 - SHOP PRIME EXPOSED SURFACE WITH 2 COATS RED OXIDE PRIMER.
 - SLEEVES IN A WET ENVIRONMENT TO BE EPOXY LINED AND COATED.

DETAIL 5
PIPE PENETRATION SLEEVE



MOUNTING OF VERTICAL PIPE

- NOTE: CONCRETE INSERTS - 454kg MAXIMUM RECOMMENDED LOAD IN GOOD CONCRETE PER INSERT ADJUST TO SUIT APPLICATION. USE BOLTS OF THE SAME RECOMMENDED LOAD WHEN FASTENING TO STEEL COLUMNS, STEEL OR WOOD WALLS.



MOUNTING OF HORIZONTAL PIPE RUNS

DETAIL 6
PIPE SUPPORT
SINGLE PIPE CANTRUSS CHANNEL



1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant



121 Granton Drive, Suite 12
Richmond Hill ON L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

IQUALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE

Designed by
P.D.

Drawn by
A.V.

Approved by
M.J.

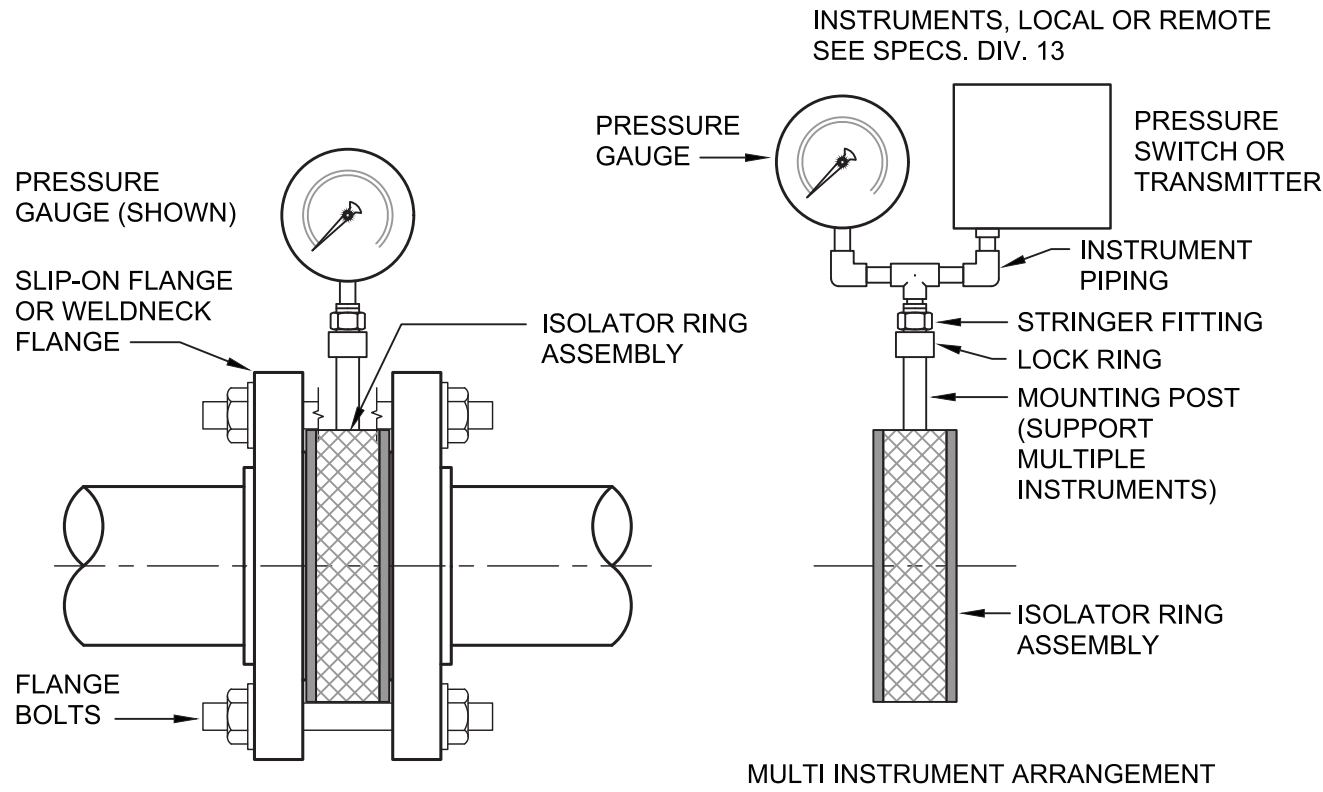
Project Manager
C.G.

Drawing title

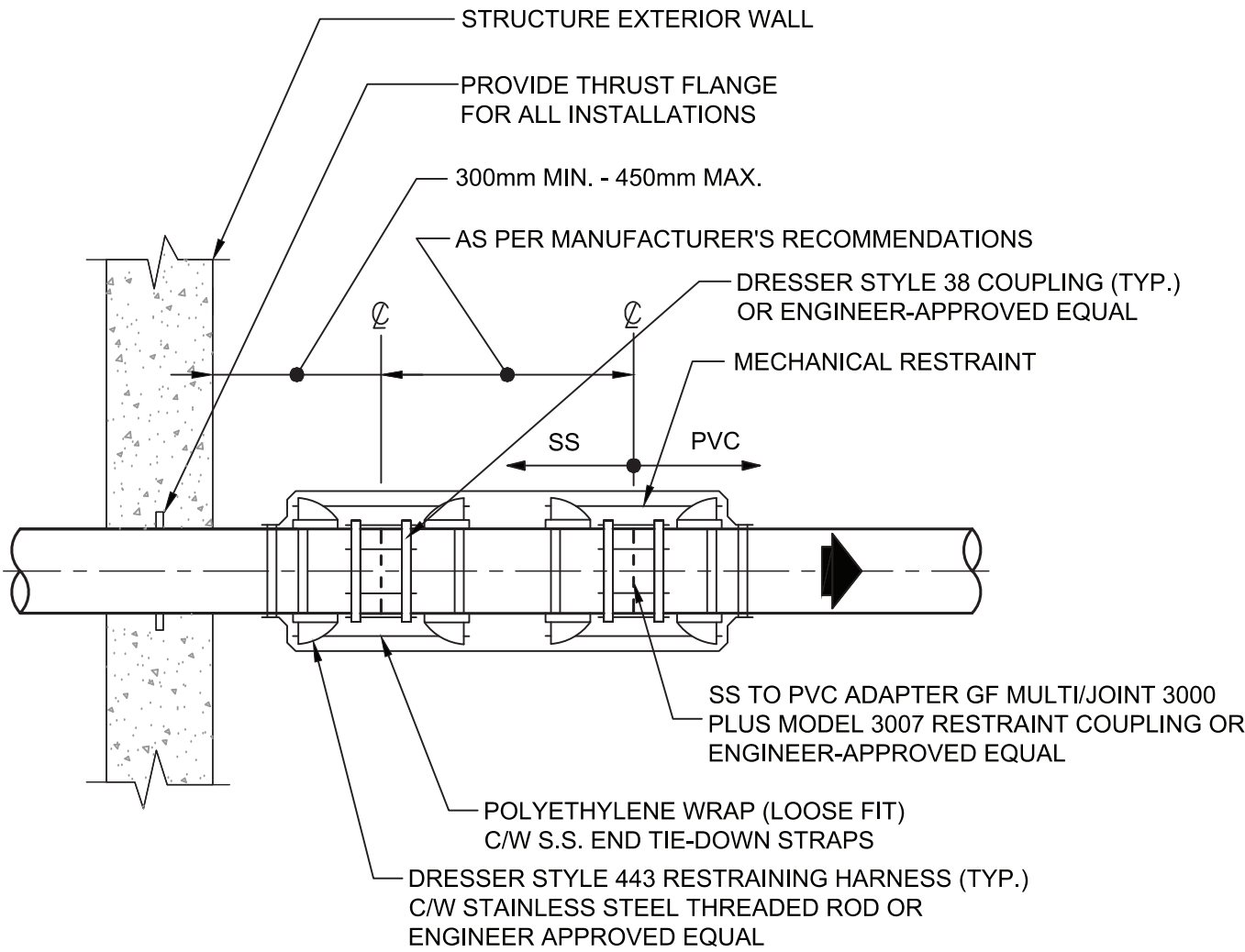
PROCESS

PUMP STATION
DETAILS - 1

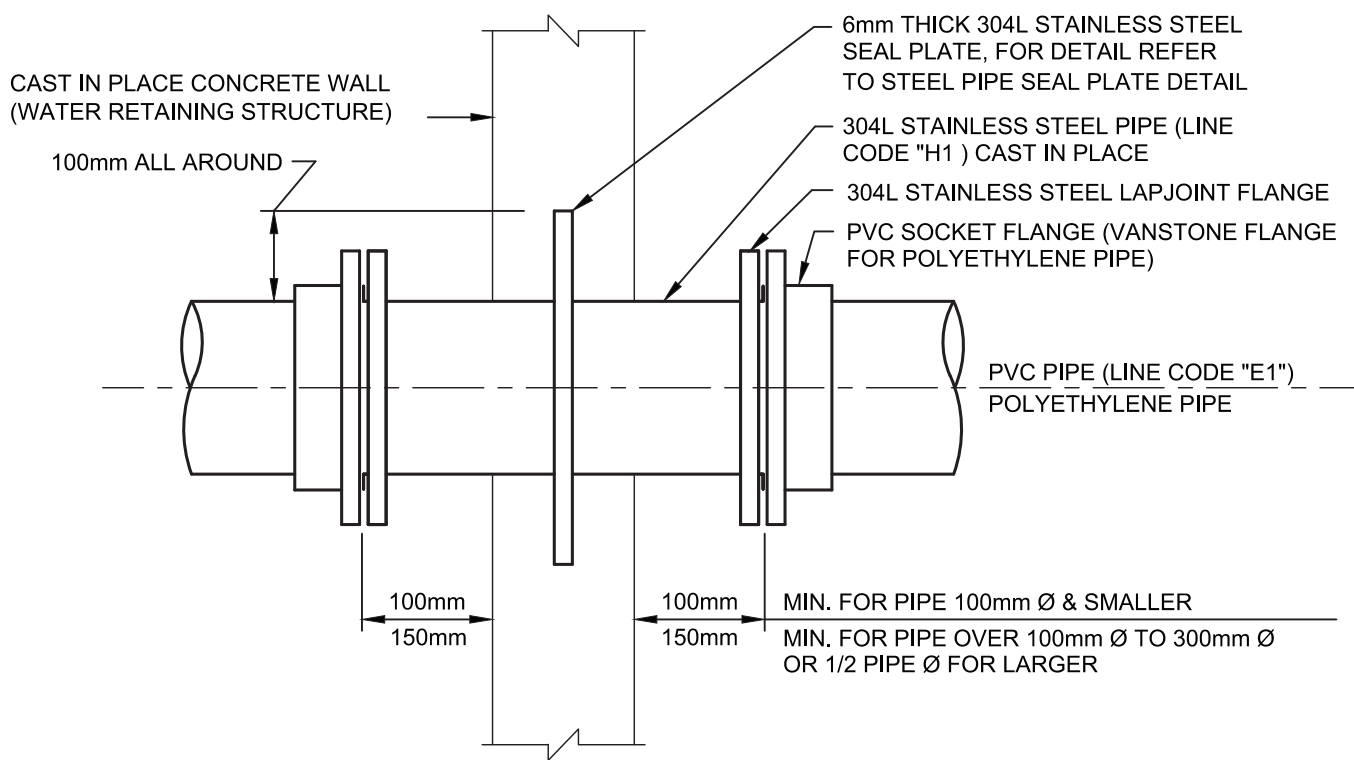
Project no.	Drawing no.	Revision no.
30192375	P201	B



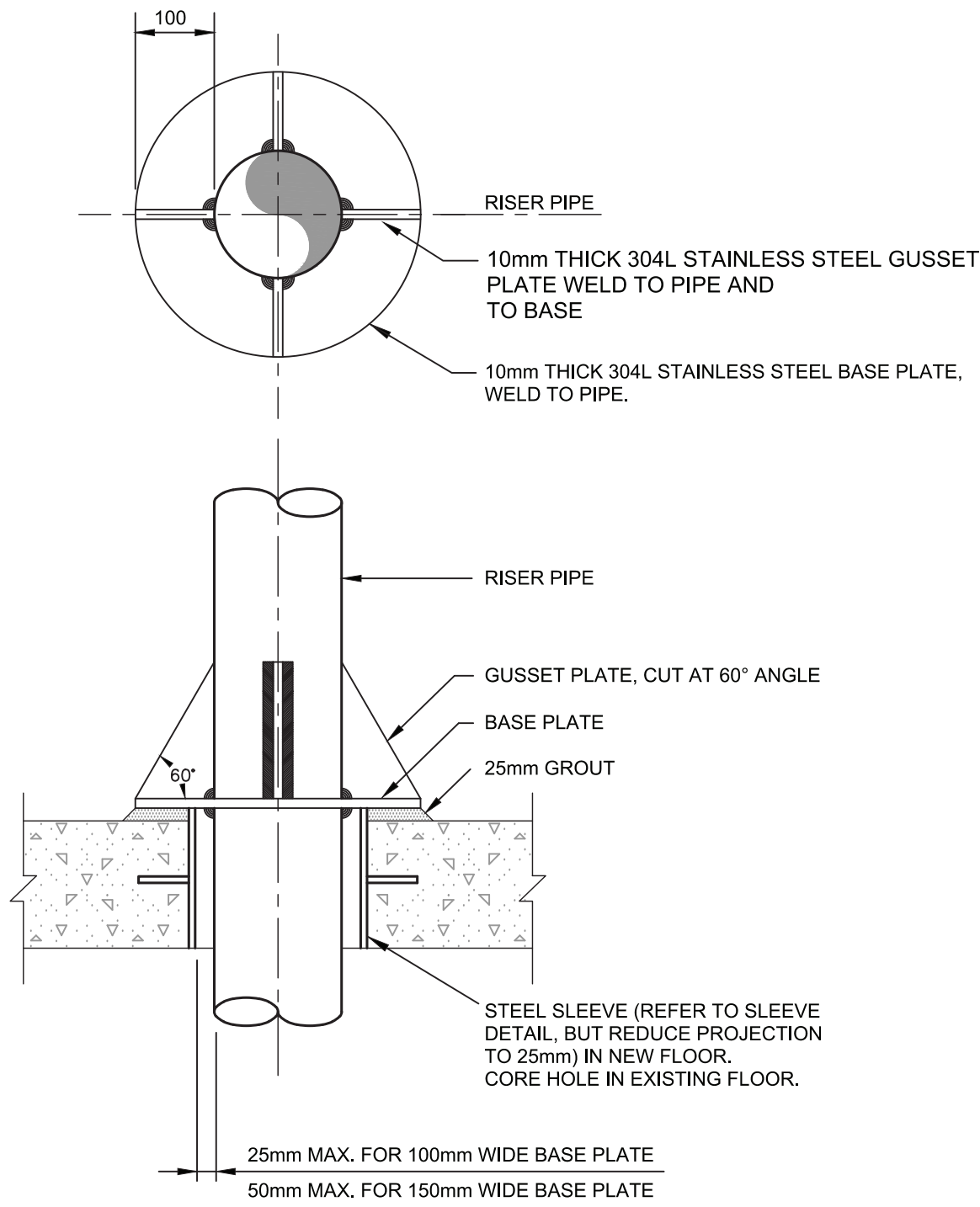
DETAIL 7
PRESSURE SENSOR RING



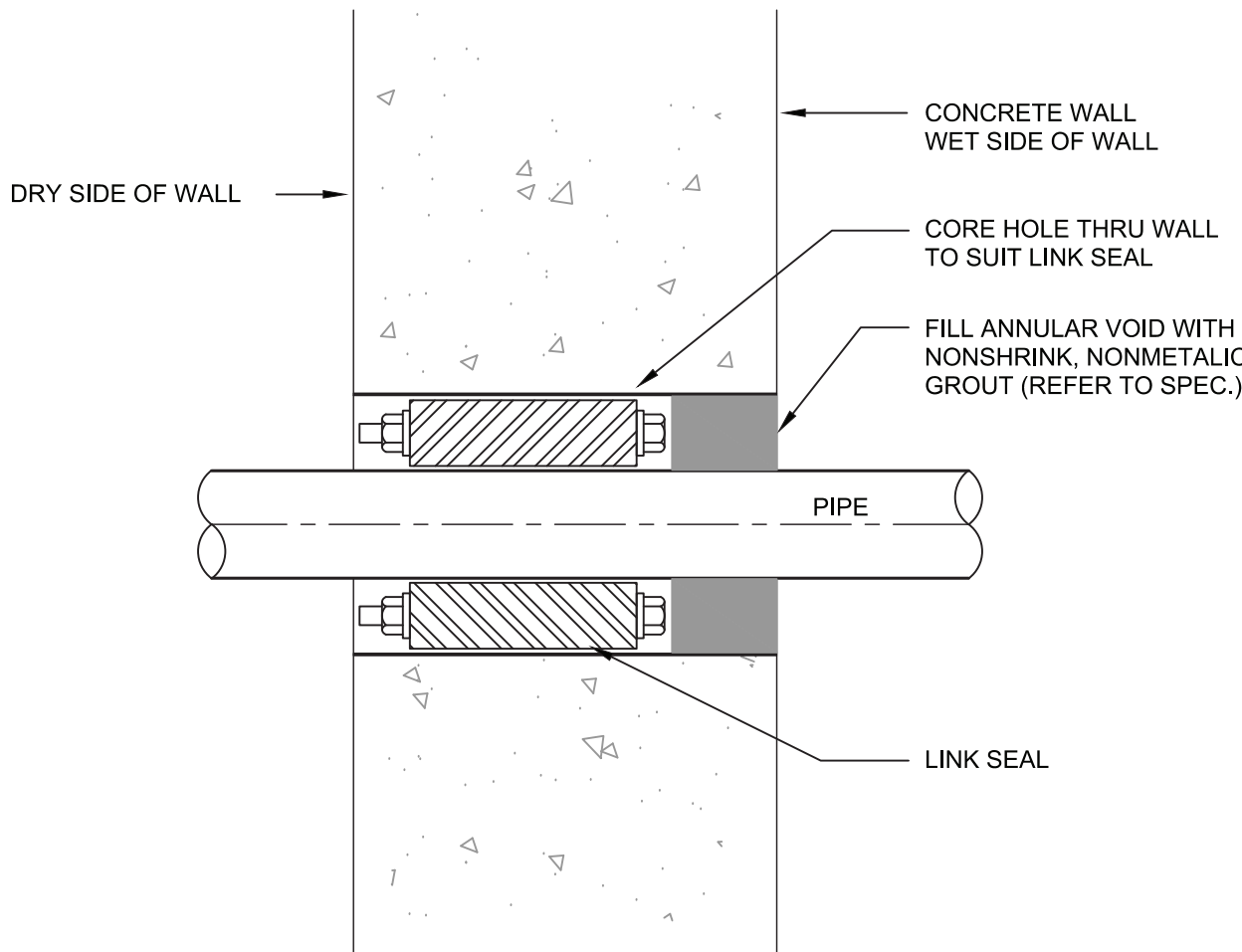
DETAIL 8
DOUBLE DRESSER COUPLING & HARNESS ASSEMBLY



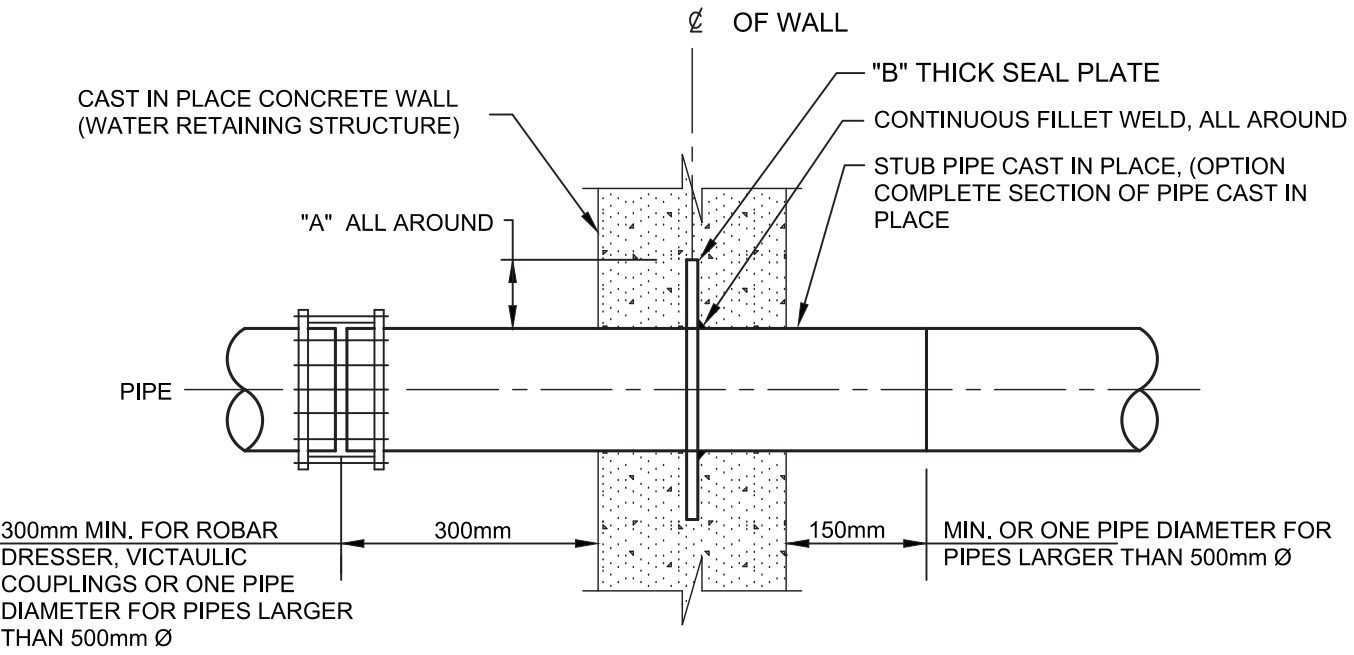
DETAIL 9
PVC OR POLYETHYLENE PIPE PASSING THROUGH A LIQUID RETAINING STRUCTURE



DETAIL 10
PIPE RISER SUPPORT 300mmØ AND SMALLER



DETAIL 11
PIPE PASSING THROUGH WALL LINK SEAL



NOTES: THE SEAL PLATE SHALL BE ROUND BARE STEEL PIPE OR REMOVE COATING FROM PORTION OF PIPE CAST IN WALL.

PIPE SIZE	50 TO 100	125 TO 200	250 TO 400	450 TO 600	750 & LARGER
A	75	100	125	150	200
B	6	10	10	12	12

DETAIL 12
WATER STOP SEAL PLATE (2)

PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

 **ARCADIS**

121 Granton Drive, Suite 12
Richmond Hill ON L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

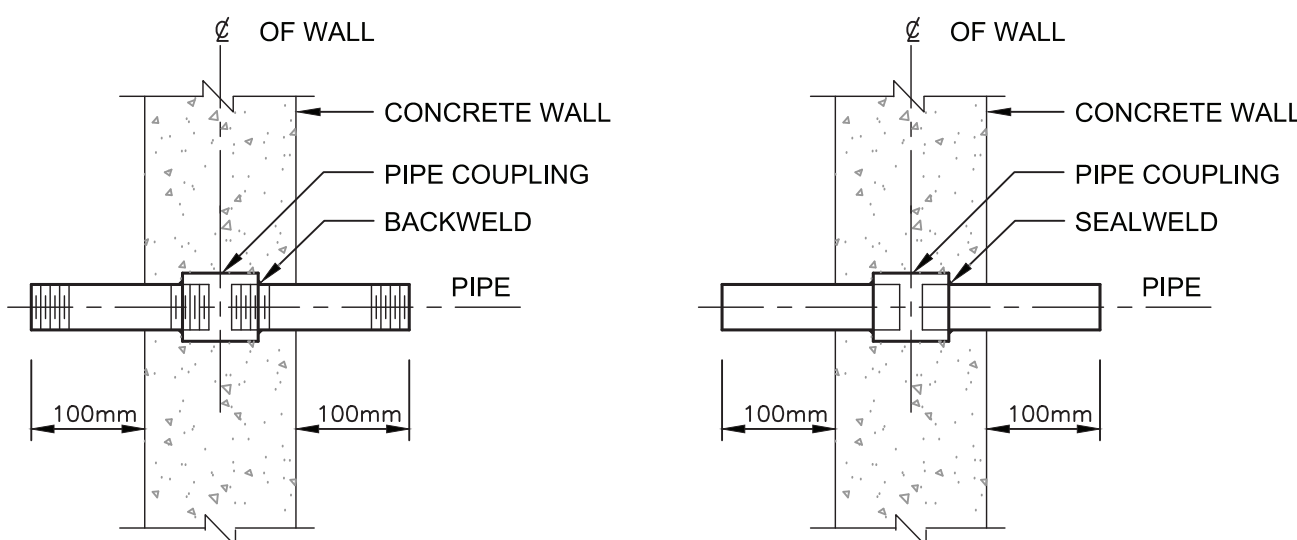
IQUALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE

Designed by P.D.
Drawn by A.V.
Approved by M.J.
Project Manager C.G.

Drawing title

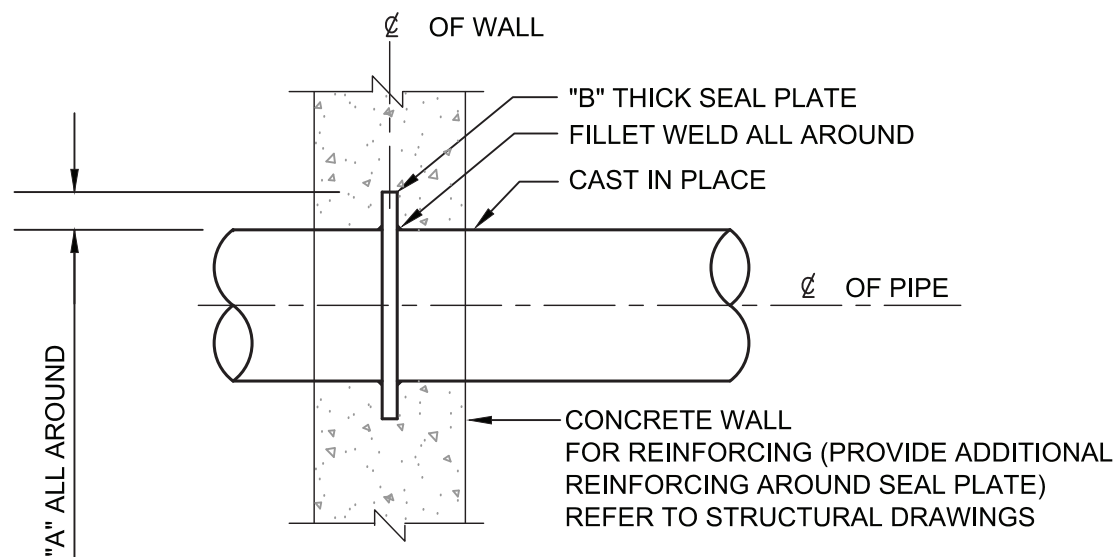
PROCESS
PUMP STATION
DETAILS - 2

Project no. 30192375	Drawing no. P202	Revision no. B
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FOR THREADED PIPES
100mm DIA. & SMALLER

FOR WELDED PIPES
40mm DIA. & SMALLER

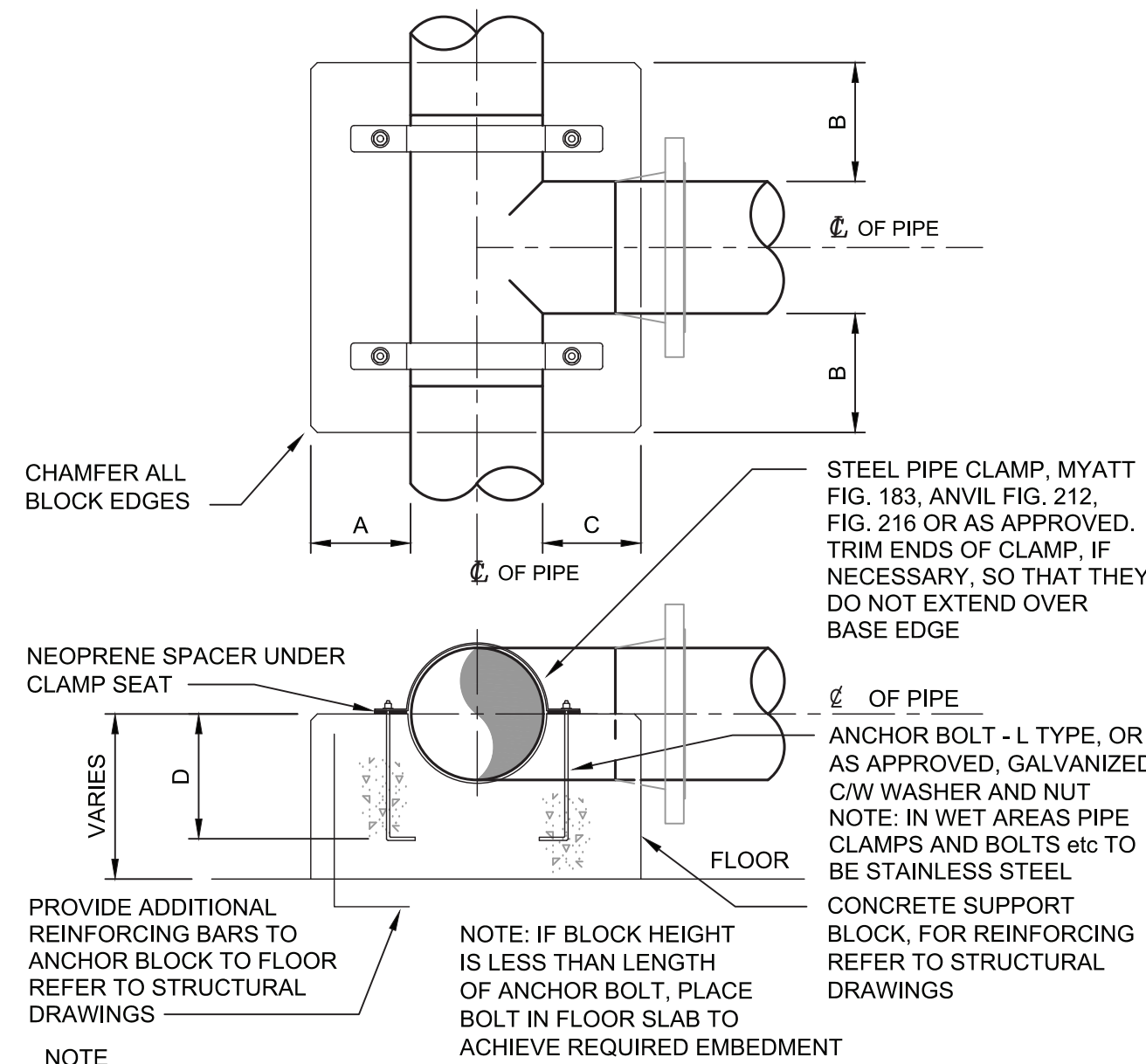


PIPE SIZE	50 TO 100	125 TO 200	250 TO 400	450 TO 600	750 & 900	1050 & LARGER
A	50	50	75	75	100	CUSTOM DESIGN FOR EACH APPLICATION
B	6	10	10	12	12	

FOR PIPES 50mm DIA. & LARGER

DETAIL 13

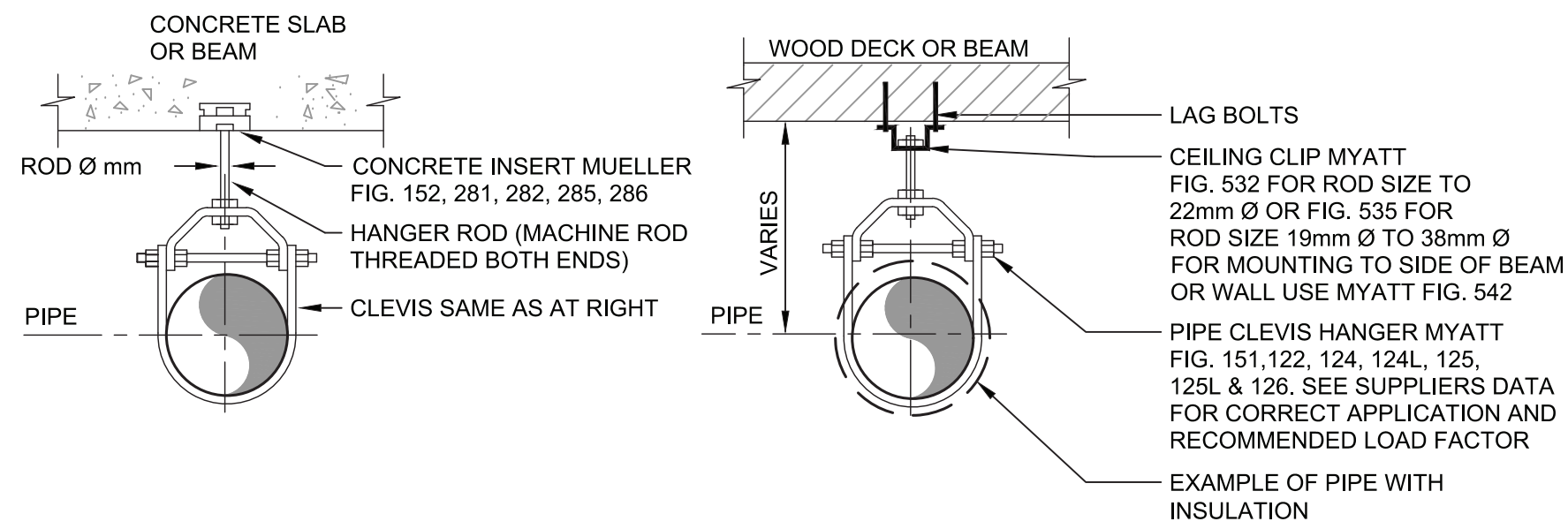
WATER STOP SEAL PLATE



PIPE SIZE	50 & 65	80 & 100	125 & 150	200 & 250	300 TO 400	450 TO 600	750 & 900	1050 & LARGER
A	75	100	150	200	250	300	400	CUSTOM DESIGN FOR EACH APPLICATION
B	50	75	100	150	200	200	300	
C	50	50	75	100	100	150	200	
BOLT Ø x D	M8 x 90 (MIN)	M12 x 110 (MIN)	M16 x 130 (MIN)	M19 x 170 (MIN)	M22 x 210 (MIN)	M25 x 210 (MIN)	M38 x 305 (MIN)	

DETAIL 14

CONCRETE SUPPORT BLOCK WITH STRAP
HORIZONTAL TEE / WYE



OPTIONAL METHODS OF UPPER HANGER ROD ATTACHMENTS
DEPICTING DIFFERENT CEILING STRUCTURES

PIPE SIZE	10	15	20	25	30	40	50	65	80	100	150	200	250	300	350	400	450	500	600
CLEVIS No.	10																		
MYATT 122	10	10	10	10	10	10	10	13	13	13									
MYATT 124		10	10	10	10	10	10	13	13	16	19	19	22	22	25	25	28	32	32
MYATT 125										19	22	25	25	28	32				
MYATT 126										19	19	22	22	25	25	32	32	32	38
MYATT 151		10	10	10	10	10	10	13	13	13	19	19	22						
ANGLE	80x60x6	90x75x6	100x90x8	125x90x10															
CHANNEL																			
SPAN (mm)	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.
600	1680kg	2364kg	3955kg	5455kg	7455kg	9455kg	11455kg	13455kg	15455kg	17455kg	19455kg	21455kg	23455kg	25455kg	27455kg	29455kg	31455kg	33455kg	35455kg
900	1136kg	1590kg	2636kg	3818kg	5000kg	6182kg	7364kg	8546kg	9728kg	10910kg	12092kg	13274kg	14456kg	15638kg	16820kg	17992kg	19174kg	20356kg	21538kg
1200	864kg	1182kg	1951kg	2864kg	3877kg	4890kg	5903kg	6916kg	7929kg	8942kg	9955kg	10968kg	11981kg	12994kg	14007kg	15020kg	16033kg	17046kg	18059kg
1500	682kg	954kg	1590kg	2318kg	3046kg	3774kg	4502kg	5230kg	5958kg	6686kg	7414kg	8142kg	8870kg	9598kg	10326kg	11054kg	11782kg	12510kg	13238kg
1800	545kg	772kg	1318kg	1909kg	2500kg	3091kg	3682kg	4273kg	4864kg	5455kg	6046kg	6637kg	7228kg	7819kg	8410kg	9001kg	9592kg	10183kg	10774kg
2100		682kg	1136kg	1636kg	2136kg	2636kg	3136kg	3636kg	4136kg	4636kg	5136kg	5636kg	6136kg	6636kg	7136kg	7636kg	8136kg	8636kg	9136kg
2400			1000kg	1455kg	1910kg	2365kg	2820kg	3275kg	3730kg	4185kg	4640kg	5095kg	5550kg	6005kg	6460kg	6915kg	7370kg	7825kg	8280kg
2700				863kg	1272kg	1681kg	2090kg	2500kg	2909kg	3318kg	3727kg	4136kg	4545kg	4954kg	5363kg	5772kg	6181kg	6590kg	6999kg

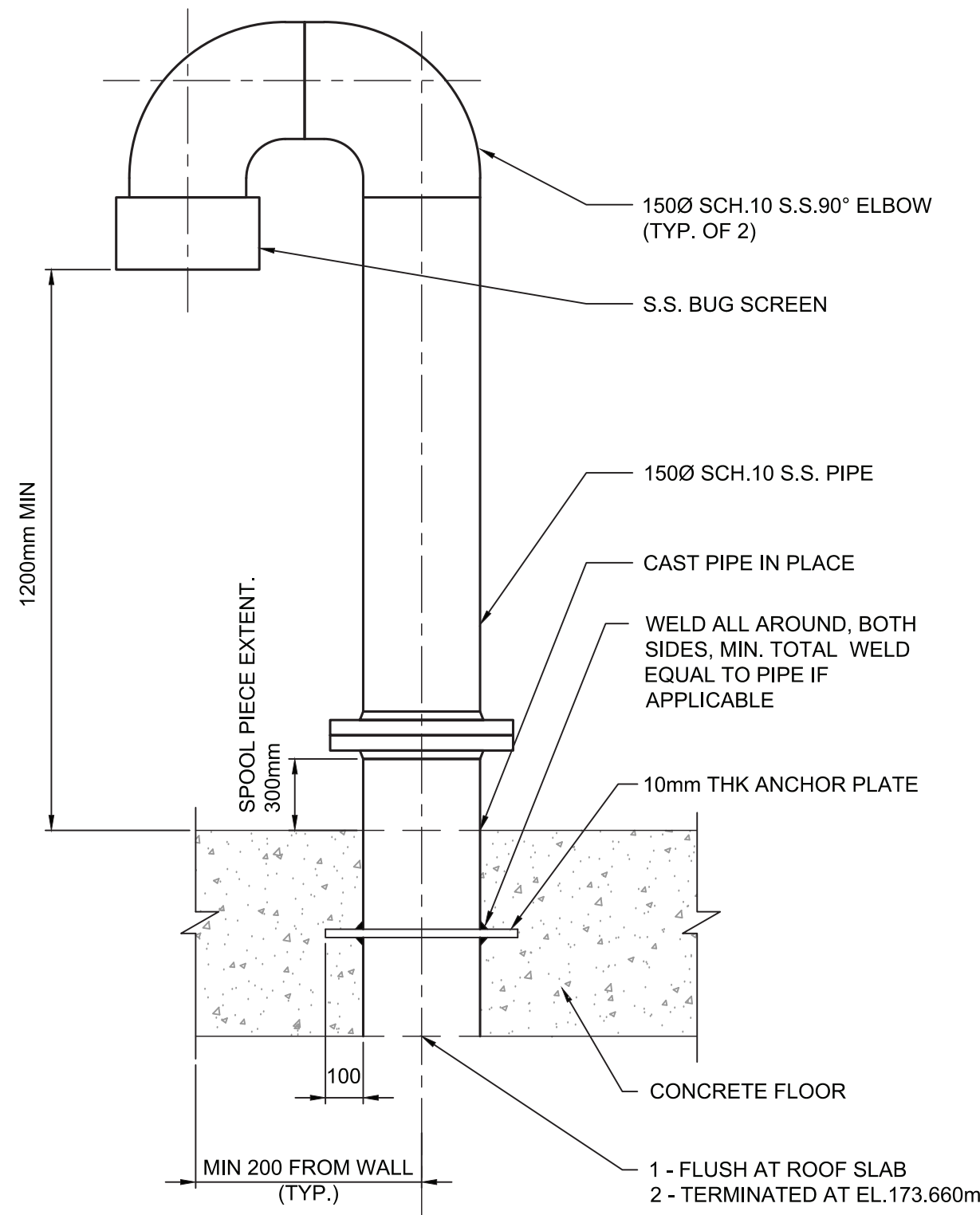
NOTES:

MANUFACTURED COMPONENTS MAY BE ORDERED FROM MYATT, MUELLER OR AS APPROVED
S.L. IS THE SAFE TOTAL UNIFORMLY DISTRIBUTED LOAD IN KILOGRAMS WITH A MAXIMUM DEFLECTION OF 6mm

FABRICATED COMPONENTS SHOP PRIME WITH 2 COATS RED OXIDE PRIMER OR GALVANIZED AS PER SPECS.

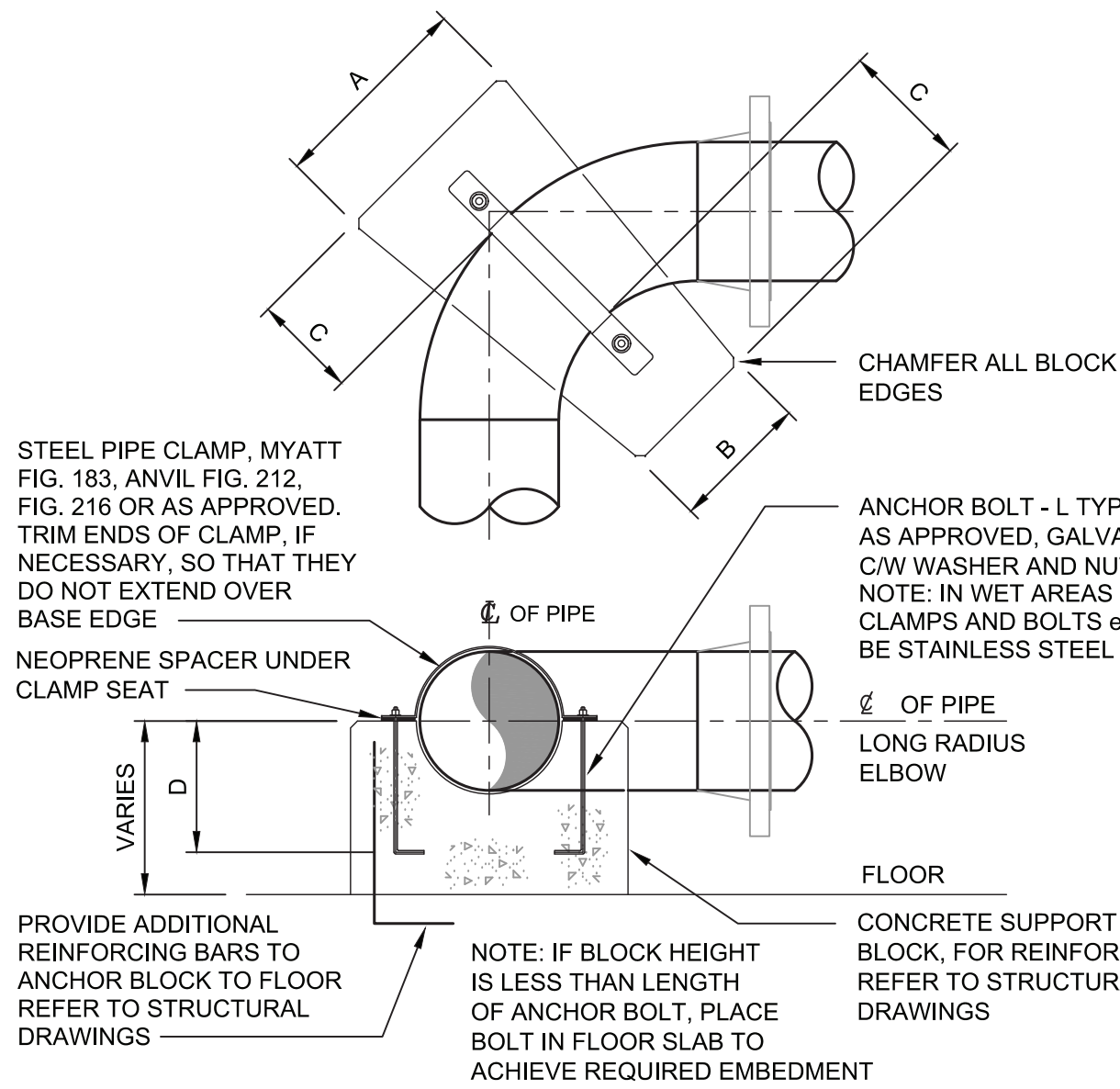
DETAIL 15

PIPE HANGER



DETAIL 16

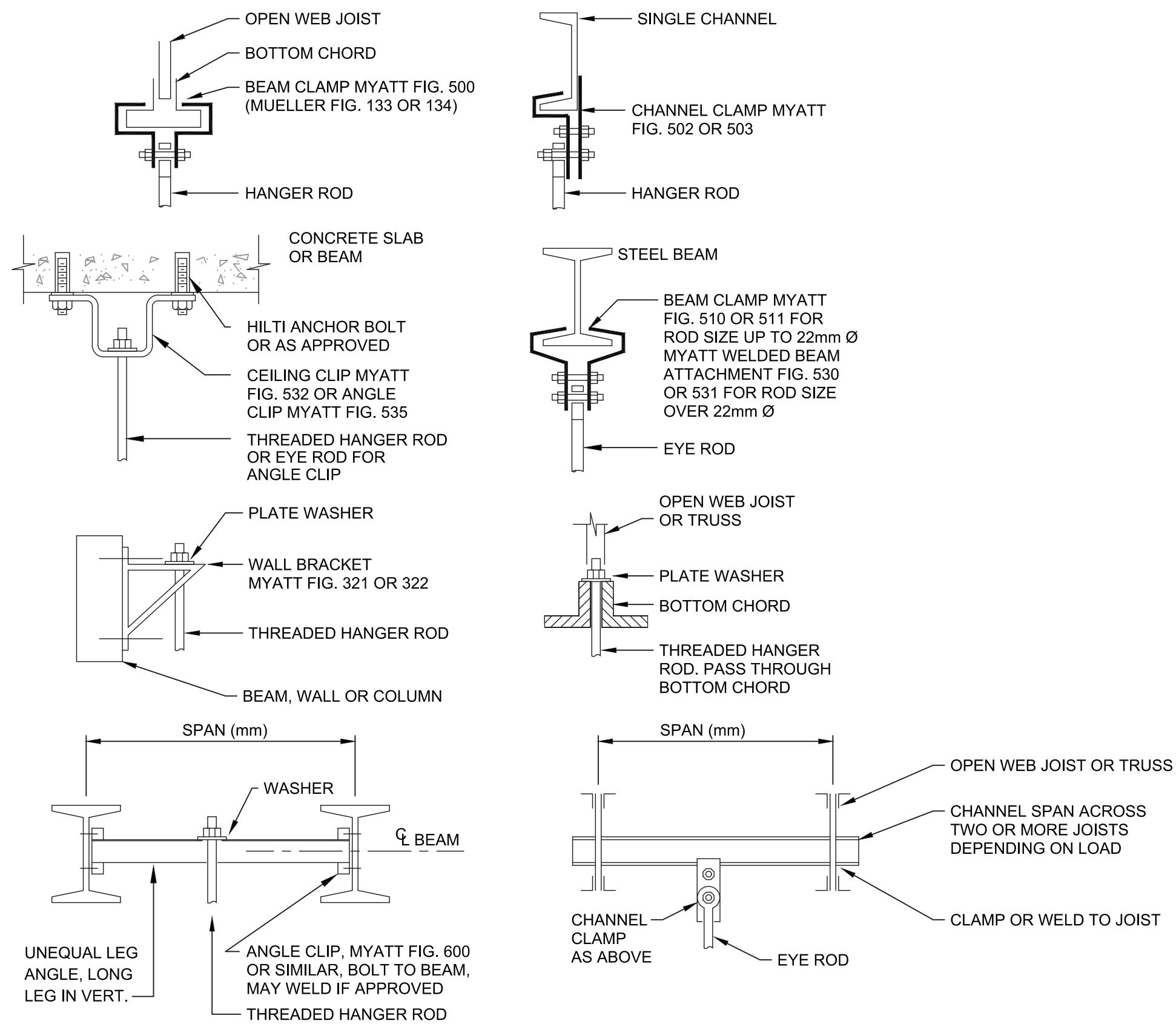
WET WELL VENT



PIPE SIZE	50 & 65	80 & 100	125 & 150	200 & 250	300 TO 400	450 TO 600	750 & 900	1050 & LARGER
A	100	150	200	400	500	600	700	CUSTOM DESIGN FOR EACH APPLICATION
B	50	100	150	250	300	400	500	
C	50	75	100	150	200	250	300	
BOLT Ø x D	M8 x 90 (MIN)	M12 x 110 (MIN)	M16 x 130 (MIN)	M19 x 170 (MIN)	M22 x 210 (MIN)	M25 x 210 (MIN)	M38 x 305 (MIN)	

DETAIL 17

CONCRETE SUPPORT BLOCK WITH STRAP
HORIZONTAL ELBOW



ABOVE TWO METHODS ARE TO BE USED IF LOAD IS TOO GREAT FOR SINGLE POINT LOAD, OR IF LOAD IS NOT CENTERED UNDER STRUCTURAL MEMBER

DETAIL 18

PIPE HANGER



1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant	ARCADIS
121 Granton Drive, Suite 12 Richmond Hill ON L4B 3N4 Canada tel 905 764 9380 www.arcadis.com	

Project title	IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE	
Designed by P.D.	Drawn by A.V.	Approved by M.J.
Project Manager C.G.	PROCESS PUMP STATION DETAILS - 3	
Drawing title	Project no.	Revision no.
	30192375	P203
		B

C:\Users\wecher451\Documents\30192375-Iqaluit-LongTermWater-C3D2023\Project_Files\7.0_Production\7.03_Design\12_Process\Sheets\APPS\14081-P001-4.dwg



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Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

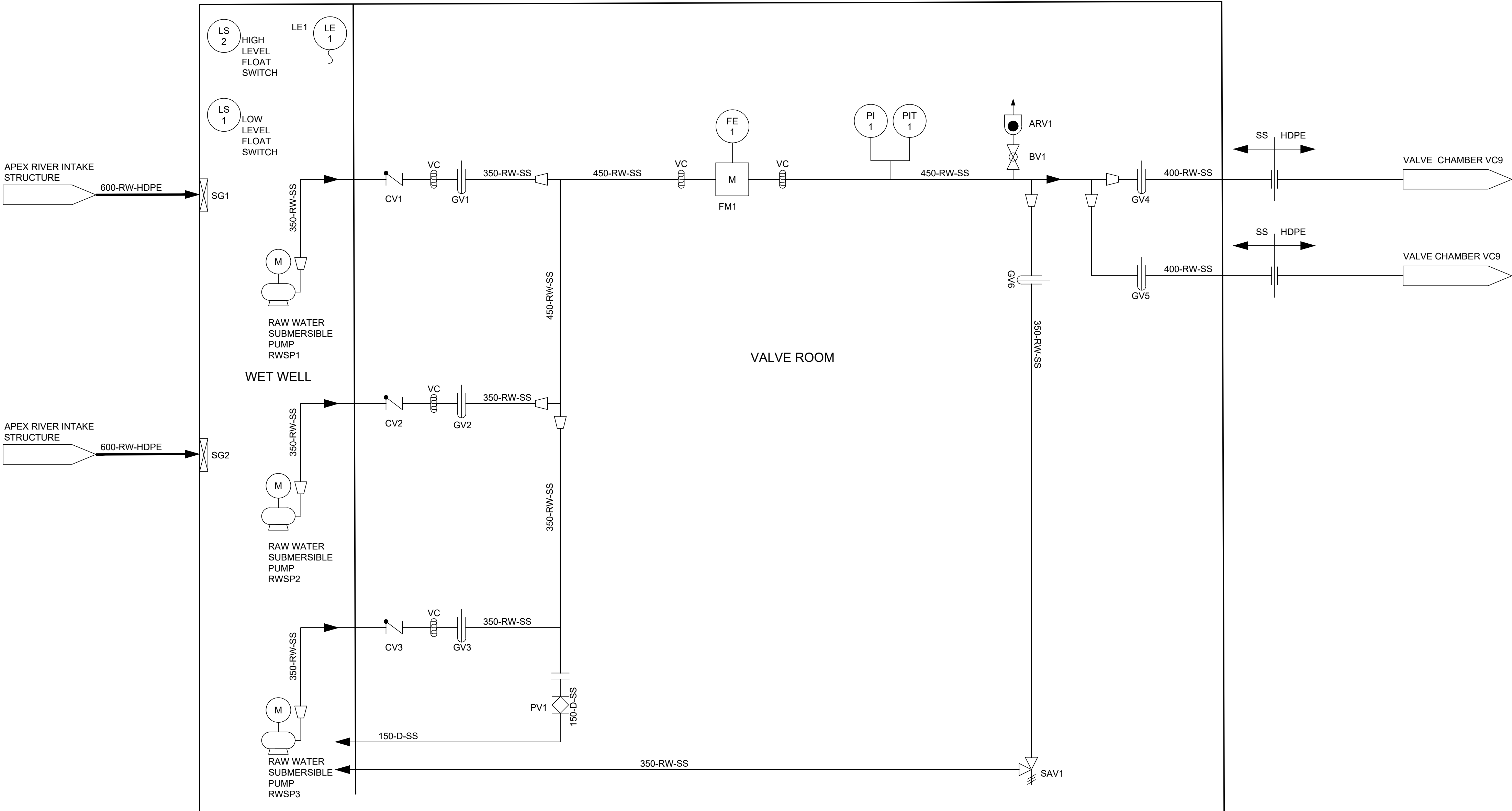
PRELIMINARY
NOT FOR CONSTRUCTION

ABBREVIATIONS

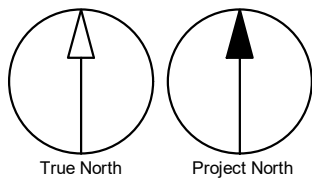
RW RAW WATER
D DRAIN
V VENT
PA PROCESS AIR
SS STAINLESS STEEL
SP SUBMERSIBLE PUMP
HDPE HIGH-DENSITY POLYETHYLENE

LEGEND

- AIR/VACUUM VALVE
- FLANGE
- CONCENTRIC REDUCER
- VICTAULIC COUPLING
- BALL VALVE
- PLUG VALVE
- SUBMERSIBLE PUMP
- BUTTERFLY VALVE
- CHECK VALVE
- SLUICE GATE
- MAGNETIC FLOWMETER
- MOTOR
- GATE VALVE
- SURGE ANTICIPATOR VALVE



Revision		Description		Date	
A		ISSUED FOR PRELIMINARY DESIGN (REVISED)		202-09-26	
Consultant					
 ARCADIS					
8133 Warden Avenue - Unit 300 Markham ON L6G 1B3 Canada tel 905 763 2322 www.arcadis.com					
Project title					
IQALUIT					
LONG TERM WATER PROGRAM					
RAW WATER SUPPLY					
AND STORAGE					
Designed by					
K.C.					
Drawn by					
C.W.					
Approved by					
M.J.					
Project Manager					
C.G.					
Drawing title					
PROCESS					
AR PUMP STATION					
PROCESS FLOW DIAGRAM					
Project no.		Drawing no.		Revision no.	
30192375		P1001		C	



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Arcadis Professional Services (Canada) Inc.

	ISSUED FOR PRELIMINARY DESIGN	2025-09-26
A	(REVISED)	
Revision	Description	Date

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
K.C.

Drawn by
C.W.

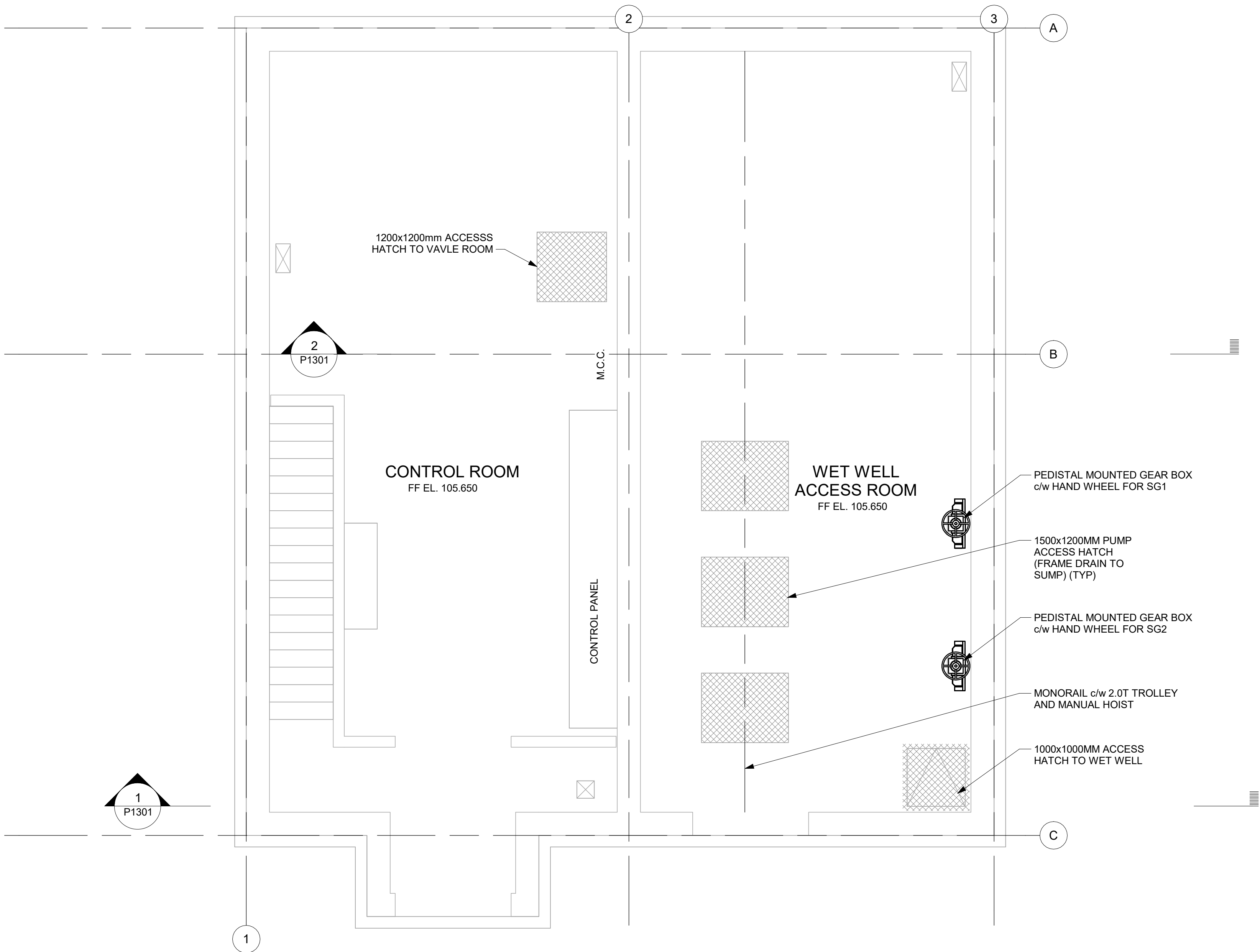
Approved by
Approver

Project Manager

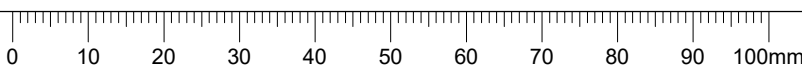
Drawing Title

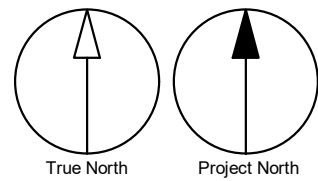
**AR PUMP STATION
PLAN AT GROUND ELEVATION**

Project no.	Drawing no.	Revision no.
30288139	P1101	C



1 PLAN AT GROUND ELEVATION MECH
Scale: 1 : 50

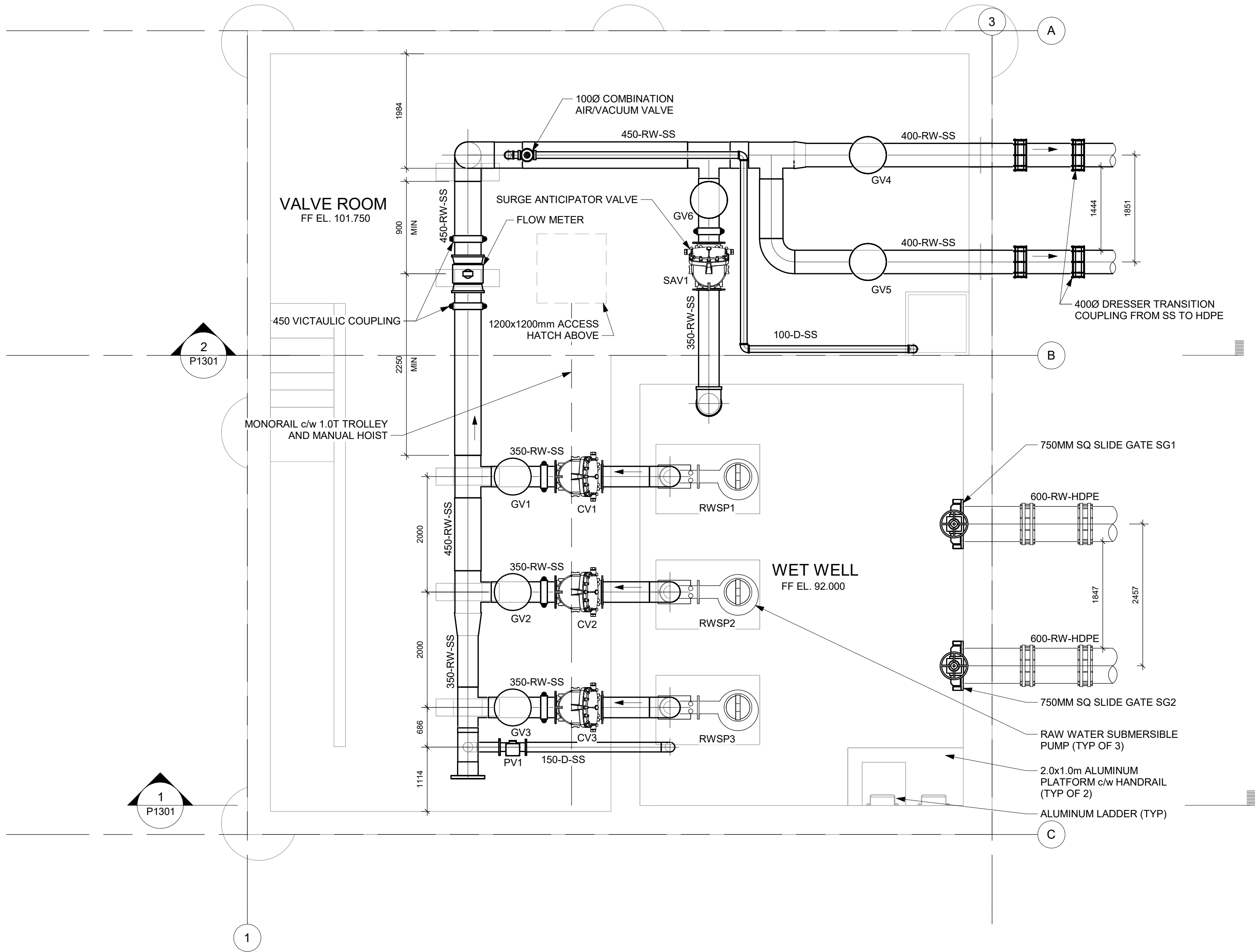




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1 PLAN AT EL 99.100 MECH
P1102 Scale: 1 : 50

ISSUED FOR PRELIMINARY DESIGN		2025-09-26
A	(REVISED)	
Revision	Description	Date

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
K.C.

Drawn by
C.W.

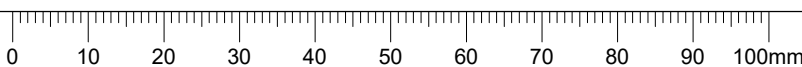
Approved by
Approver

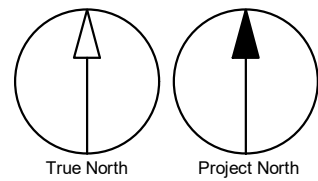
Project Manager

Drawing Title

**AR PUMP STATION
PLAN AT EL 91.000**

Project no.	Drawing no.	Revision no.
30288139	P1102	C





1055 Milvik Street, P. O. Box 460
Iqaluit NU X0A 0H0 Canada
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www.iqaluit.ca

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Arcadis Professional Services (Canada) Inc.

ISSUED FOR PRELIMINARY DESIGN		
A	(REVISED)	2025-09-26
Revision	Description	Date

PRIME CONSULTANT



8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

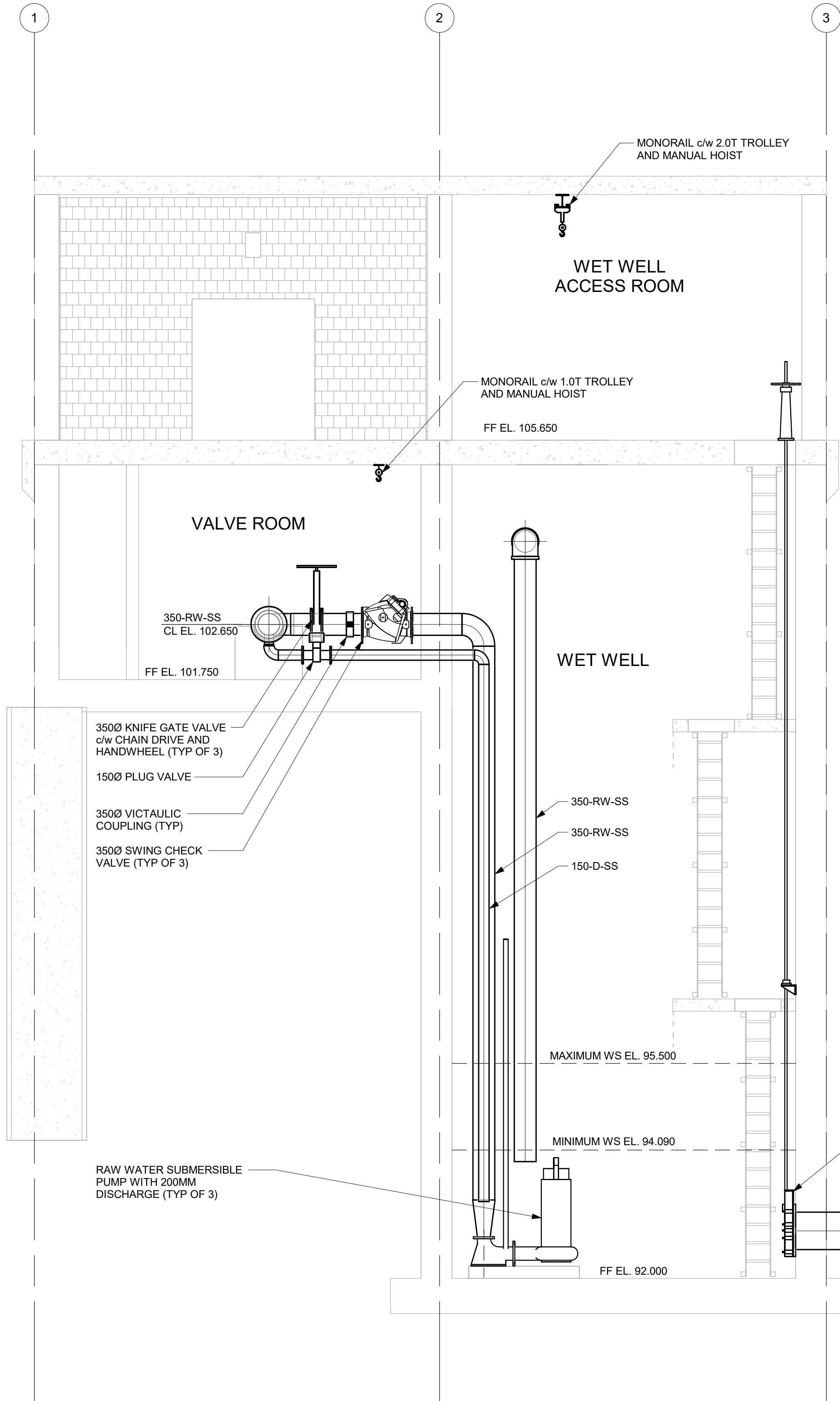
Approved by
Approver

Project Manager

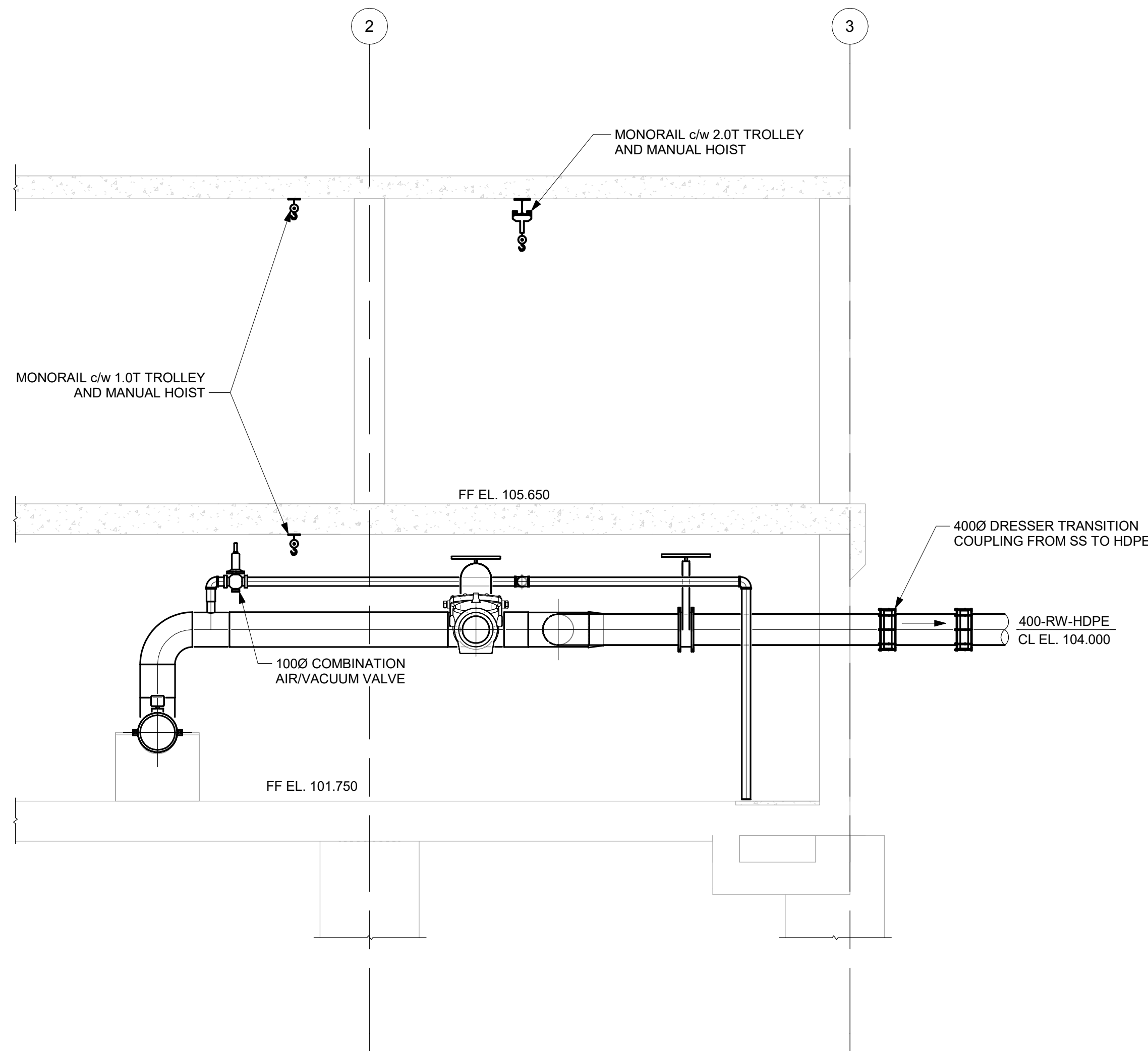
Drawing Title

AR PUMP STATION MECHANICAL SECTIONS

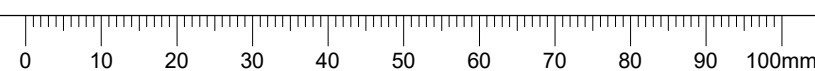
Project no.	Drawing no.	Revision no.
30288139	P1301	C



1
SECTION A
P1301 Scale: 1 : 50



2
SECTION B
P1301 Scale: 1 : 50



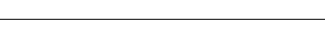
LEGEND AND SYMBOLS



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Arcadis Professional Services (Canada) Inc.

 1085 Mwak Street, P. O. Box 460 Iqaluit NU X0A 0H0 Canada tel 867 679 5600 www.iqaluit.ca									
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MECHANICAL PIPING X-YYY "X" PIPE SIZE NPS "Y" PIPE SERVICE HWS HEATING WATER SUPPLY HWR HEATING WATER RETURN HCS HEATING / CHILLED WATER SUPPLY HCR HEATING / CHILLED WATER RETURN GLY-HWS GLYCOL HEATING WATER SUPPLY GLY-HWR GLYCOL HEATING WATER RETURN CHWS CHILLED WATER SUPPLY CHWR CHILLED WATER RETURN PCHWS PROCESS CHILLED WATER SUPPLY PCHWR PROCESS CHILLED WATER RETURN CTWS COOLING WATER SUPPLY CTWR COOLING WATER RETURN HPST HIGH PRESSURE STEAM LPST HIGH PRESSURE STEAM S.COND STEAM CONDENSATE S.COND-P PUMPED STEAM CONDENSATE ReL REFRIGERANT LIQUID ReG REFRIGERANT GAS FUEL FUEL PIPE FOS FUEL OIL SUPPLY FOR FUEL OIL RETURN FOV FUEL OIL VENT H HUMIDIFIER LINE ENGINE OIL ENGINE OIL SOL 'B' SOLUBLE 'B' OIL HONE HONE OIL GASO GASOLINE MCS(LP) MACHINE COOLANT SUPPLY (LOW PRESSURE) MCS(HP) MACHINE COOLANT SUPPLY (HIGH PRESSURE) MCR MACHINE COOLANT RETURN N.GAS NATURAL GAS PR PROPANE CA COMPRESSED AIR  DIRECTION OF FLOW  NEW PIPING / DUCTWORK  EXISTING PIPING / DUCTWORK TO REMAIN  DEMOLITION PIPING / DUCTWORK VALVES, FITTINGS AND SPECIALTIES  GATE VALVE  GLOBE VALVE  CHECK VALVE  PLUG VALVE  BUTTERFLY VALVE  BALL VALVE  DIAPHRAGM VALVE  HOSE END VALVE  BOILER BLOWDOWN VALVE  FIRE STOP VALVE  RUPTURE DISC  VALVE IN RISER  PRESSURE REDUCING VALVE  PRESSURE RELIEF VALVE - ELEVATION  PRESSURE RELIEF VALVE - PLAN  FLOAT ACTIVATED SIGNAL TRANSMITTER  FLOAT OPERATED VALVE  BACK PRESSURE VALVE  DIFFERENTIAL BACK PRESSURE VALVE  NEEDLE VALVE  BALANCING VALVE  FLOW METERING FITTING (UNDER 75mm)  CONTROL VALVE - ELECTRIC  CONTROL VALVE - PNEUMATIC  THREE-WAY CONTROL VALVE - ELECTRIC  THREE-WAY CONTROL VALVE - PNEUMATIC  FLOW METERING FITTING (75mm AND LARGER) VALVES, FITTINGS AND SPECIALTIES  MOTORIZED VALVE  PUMP CONTROL VALVE  GLOBE CONTROL VALVE - PNEUMATIC  BUTTERFLY CONTROL VALVE - PNEUMATIC  PNEUMATIC ACTUATOR  ELECTRIC ACTUATOR  ELECTRIC MOTOR  ELECTRIC SOLENOID  ROOM THERMOSTAT  FLOW SWITCH (HARD WIRED)  HIGH LIMIT HUMIDITY SENSOR  DIFFERENTIAL PRESSURE SENSOR  MEDIA RUN-OUT SWITCH  ELBOW TURNED TOWARD  ELBOW TURNED AWAY  TEE TURNED AWAY  TEE TURNED TOWARD  CONCENTRIC REDUCER  ECCENTRIC REDUCER  PIPE CAP THREADED  PIPE CAP WELDED  PLUG  FLEXIBLE CONNECTION  UNION  FLANGE CONNECTION  BLIND FLANGE  ORIFICE FLANGES  QUICK CONNECTION FITTING  PIPE ANCHOR  PIPE LINE GUIDE  PIPE LINE EXPANSION JOINT  EXPANSION LOOP  PRESSURE GAUGE <									

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FAN SCHEDULE															
MARK NO.	LOCATION	SERVICE	TYPE	DRIVE TYPE	AIRFLOW (L/s)	ESP (IN OF WG)	FAN SPEED (RPM)	MOTOR DATA			WEIGHT (KG)	DB AT 3M	MANUFACTURER	MODEL	NOTES
								KW	RPM	V/pH/Hz					
EF-01	WASHROOM	WASHROOM EXHAUST			94	0.5									
EF-02	WET WELL	WETWELL EXHAUST			263	0.5									
EF-03	VALVE ROOM & WET WELL ACCESS ROOM	WETWELL EXHAUST			479	0.5									
NOTES:															

ELECTRIC UNIT HEATER SCHEDULE (EUH)													
MARK NO.	LOCATION	TYPE	ELECTRICAL DATA				FAN DATA		MOUNTING HEIGHT M	WEIGHT KG	MANUFACTURER	MODEL	DIMENSIONS (H/W/D) (MM)
			KW RATING	V/pH/Hz	CONTROL VOLTAGE	MAX AMP RATING	FLOW RATE	VELOCITY					
							L/s	M/s					
EUH-01	ELECTRICAL / CONTROL ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	10										
EUH-02	ELECTRICAL / CONTROL ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	10										
EUH-03	WET WELL ACCESS ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	7										
EUH-04	WET WELL ACCESS ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	7										
EUH-05	VALVE ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	4										
EUH-06	VALVE ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	4										
EUH-07	WET WELL	WALL MOUNTED ELECTRIC UNIT HEATER	7										
NOTES: DISCONNECT SWITCH, BUILT IN THERMOSTAT, MOUNTING HEIGHT.													

MOTORIZED DAMPER SCHEDULE (MD)												
TAG NO.	LOCATION	SERVICE	DAMPER LOCATION	ASSOCIATED UNIT	CONTROL DAMPER			ACTUATOR				
					SIZE (MM)	MANUFACTURER	MODEL	ENCLOSURE	V/pH/Hz	MANUFACTURER	MODEL	NOTES
MD-01	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								
MD-02	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								
MD-03	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								
MD-04	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								
MD-05	ELECTRICAL/CONTROL ROOM	INTAKE AIR DAMPER	IN DUCT	AHU								
MD-06	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AHU								
MD-07	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-02								
MD-08	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-03								

AIR HANDLING UNIT SCHEDULE (AHU)															
MARK NO.	LOCATION	SERVICE	SUPPLY FAN DATA						FILTERS		WEIGHT (KG)	DIMENSIONS (H/W/L) (MM)	MANUFACTURER	MODEL	NOTES
			DRIVE TYPE	ESP (IN OF WG)	TSP (IN OF WG)	TOTAL AIRFLOW (L/s)	QTY	KW PER MOTOR	MOTOR SPEED (RPM)	THICKNESS (MM)					
AHU-01	ELECTRICAL/CONTROL ROOM			1.0		5067									
NOTES: 1. DISCONNECT PROVIDED UNDER THE ELECTRICAL WORK. 2. UNIT SHALL CONSIST OF AIR INTAKE HOOD WITH WIREMESH SECTION W/ INLET DAMPER AND FILTERS, FAN SECTION W/VFD, ELECTRIC HEATING SECTION AND COMPLETE WITH MIN 46MM HEIGHT ROOF CURB.															

BLOWER HEATER SCHEDULE (BH)											
MARK NO.	LOCATION	ELECTRICAL REQUIREMENTS				WEIGHT (KG)	FAN		MANUFACTURER	MODEL	NOTES
		HEATING ELEMENTS		CONTROL UNIT			FLOW (LPS)	ESP (IN OF WG)			
		CAPACITY OUTPUT (KW)	V/Ph/Hz	POWER (W)	V/Ph/Hz						
BHTR-01	WET WELL ACCESS ROOM						263	0.5			

PUMP SCHEDULE (P)								
MARK NO.	TANK NAME	LOCATION	CAPACITY	HEAD	MOTOR	MANUFACTURER	MODEL	REMARKS
			LPS	M	HP			
P-01	NON POTABLE WATER PUMP	ELECTRICAL & CONTROL ROOM	1.26	21	1.5	XYLEM	1A15	SKID MOUNTED C/W CONTROL PANEL, VFD 75.7 LIT PRESSURIZED TANK
P-02	RAW SUBMERSIBLE WASTEWATER PUMP	ELECTRICAL & CONTROL ROOM	4.21	11.1	2.7	FLYGT	NP 3069 SH 3	C/W CONTROL PANEL, FLOATS, ACCESS HATCH
NOTES : 1. REFER TO DETAIL 1 ON DWG M204 FOR NOZZLES REQUIRED. 2. MOUNTED ON CONCRETE PAD.								

BASEBOARD HEATER (BBH)									
MARK NO.	SERVICE	CAPACITY OUTPUT (KW)	V/pH/Hz	WEIGHT (KG)	FAN		MANUFACTURER	MODEL NO	NOTES
					POWER (HP)	FLOW (LPS)			
BBH-01	WASHROOM	3							

TANKS SCHEDULE (T)								
MARK NO.	TANK NAME	LOCATION	CAPACITY	DIA	HEIGHT	MANUFACTURER	MODEL	REMARKS
			LITERS	MM	MM			
T-01	NONPOTABLE WATER STORAGE TANK	ELECTRICAL & CONTROL ROOM	3785	1550	2110	PPM	0892 B-B	NOTES 1,2
T-02	WASTEWATER STORAGE TANK	ELECTRICAL & CONTROL ROOM	3785	1550	2110	PPM	0892 B-B	NOTES 1,2
NOTES : 1. REFER TO DETAIL 1 ON DWG M204 FOR NOZZLES REQUIRED. 2. MOUNTED ON CONCRETE PAD.								

GRINDER LIFT STATION									
MARK NO.	TANK NAME	DISCHARGE	HEAD	TANK CAPACITY	DISCHARGE PIPE	MOTOR	ELECTRICAL	WEIGHT	REMARKS
		LPS	M	LITERS	MM	HP	V/PH/HZ	KG	
SANF	WASHROOM	1.64	11	32.2	40	1	220/1/60	22.7	



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Revision	Description	Date

PRIME CONSULTANT



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Project title

IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE

Designed by
D.S.

Drawn by
C.S.

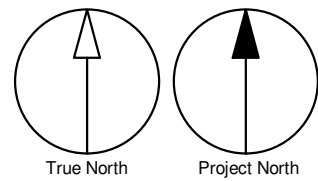
Approved by
S.L.

Project Manager
C.G.

Drawing Title

BUILDING MECHANICAL
PUMP STATION
EQUIPMENT
SCHEDULES

Project no.	Drawing no.	Revision no.
30192375	M002	A



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Revision	Description	Date
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Project title

IQUALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE

Designed by
D.S.

Drawn by
S.B.

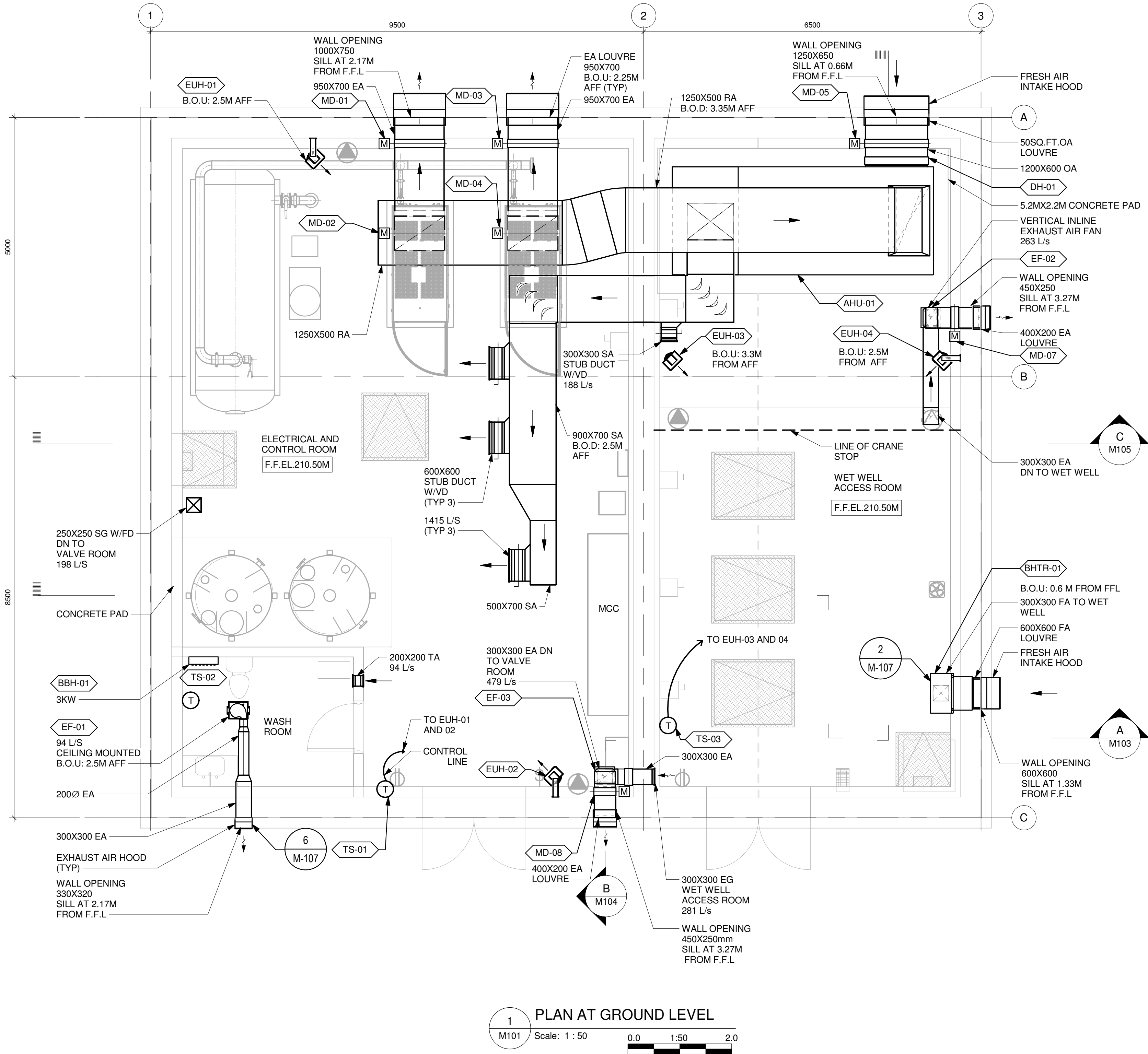
Approved by
S.L.

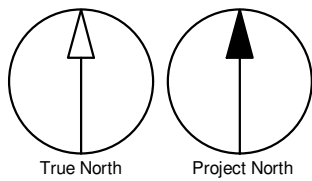
Project Manager
C.G.

Drawing Title

MECHANICAL
BUILDING MECHANICAL PUMP
STATION HVAC GROUND LEVEL PLAN

Project no.	Drawing no.	Revision no.
30192375	M101	A





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PROGRAM RAW WATER
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Designed by
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Drawn by
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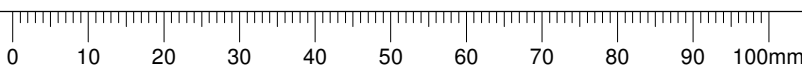
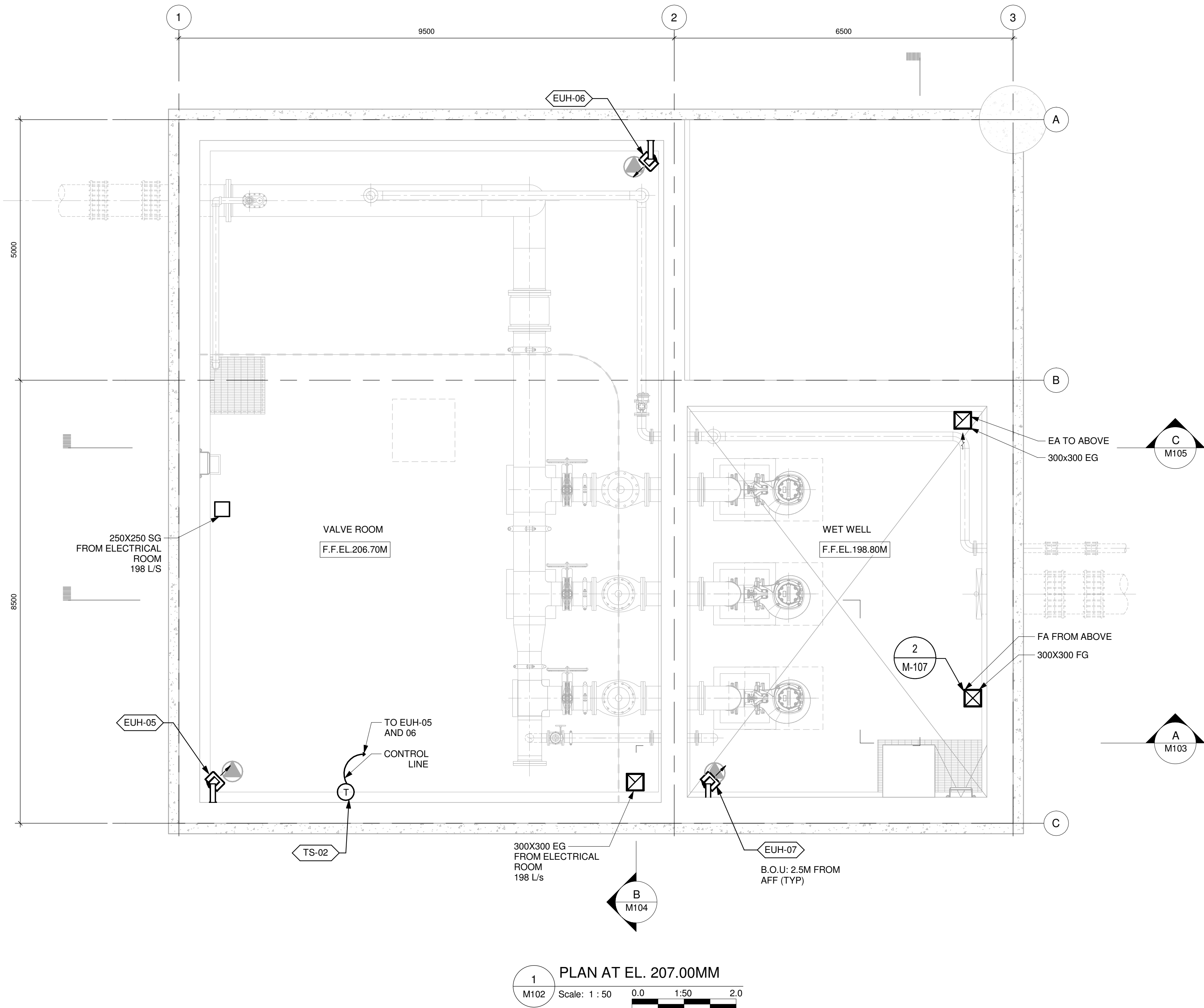
Approved by
S.L.

Project Manager
C.G.

Drawing Title

MECHANICAL
BUILDING MECHANICAL PUMP
STATION HVAC PLAN AT EL. 207.00m

Project no.	Drawing no.	Revision no.
30192375	M102	A



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Project title

**IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE**

Designed by
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Drawn by
S.B.

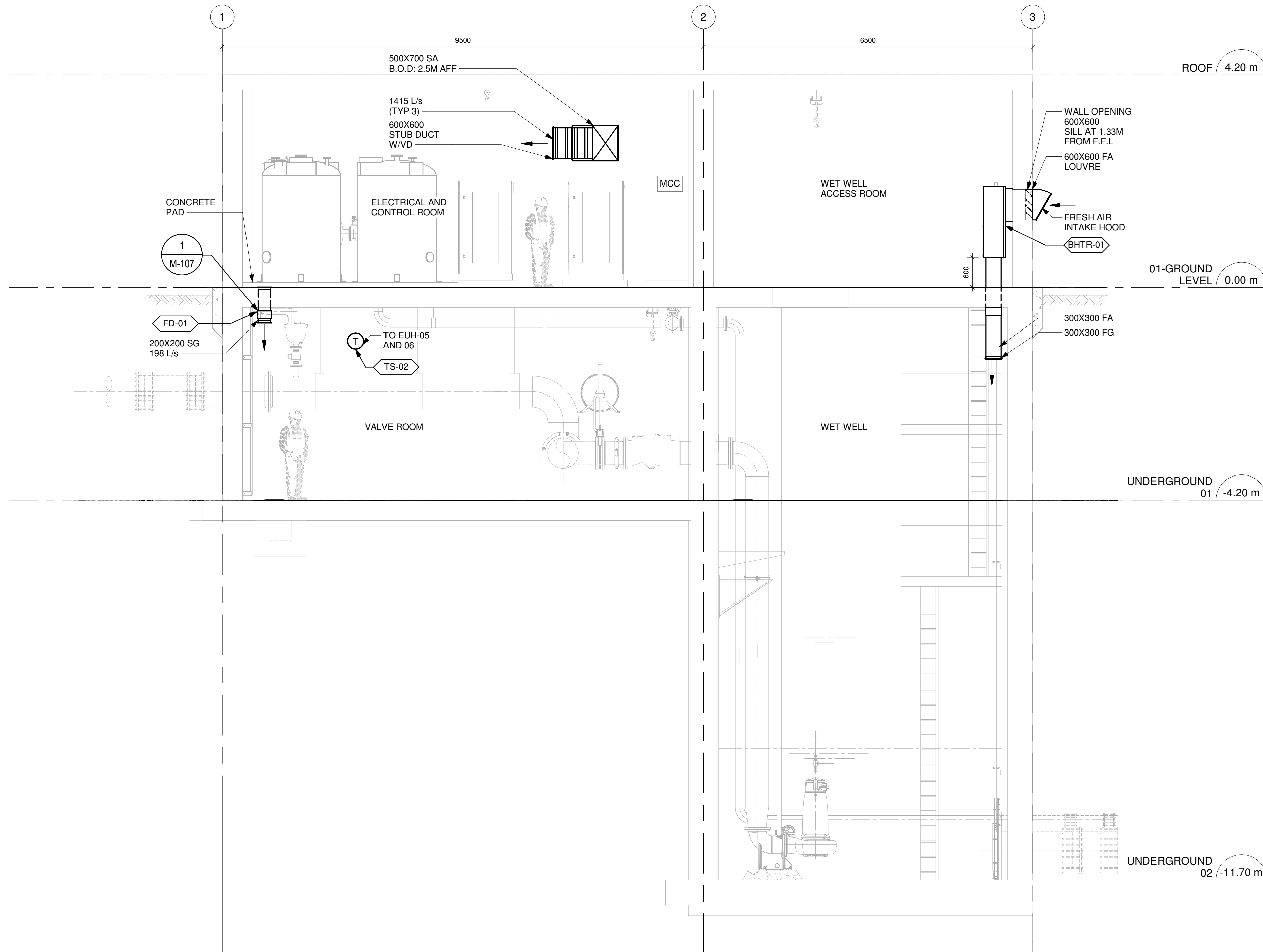
Approved by
S.L.

Project Manager
C.G.

Drawing Title

**MECHANICAL
BUILDING MECHANICAL PUMP
STATION HVAC SECTION A**

Project no.	Drawing no.	Revision no.
30192375	M103	A



SECTION - A
Scale: 1 : 50
0.0 1:50 2.0

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Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
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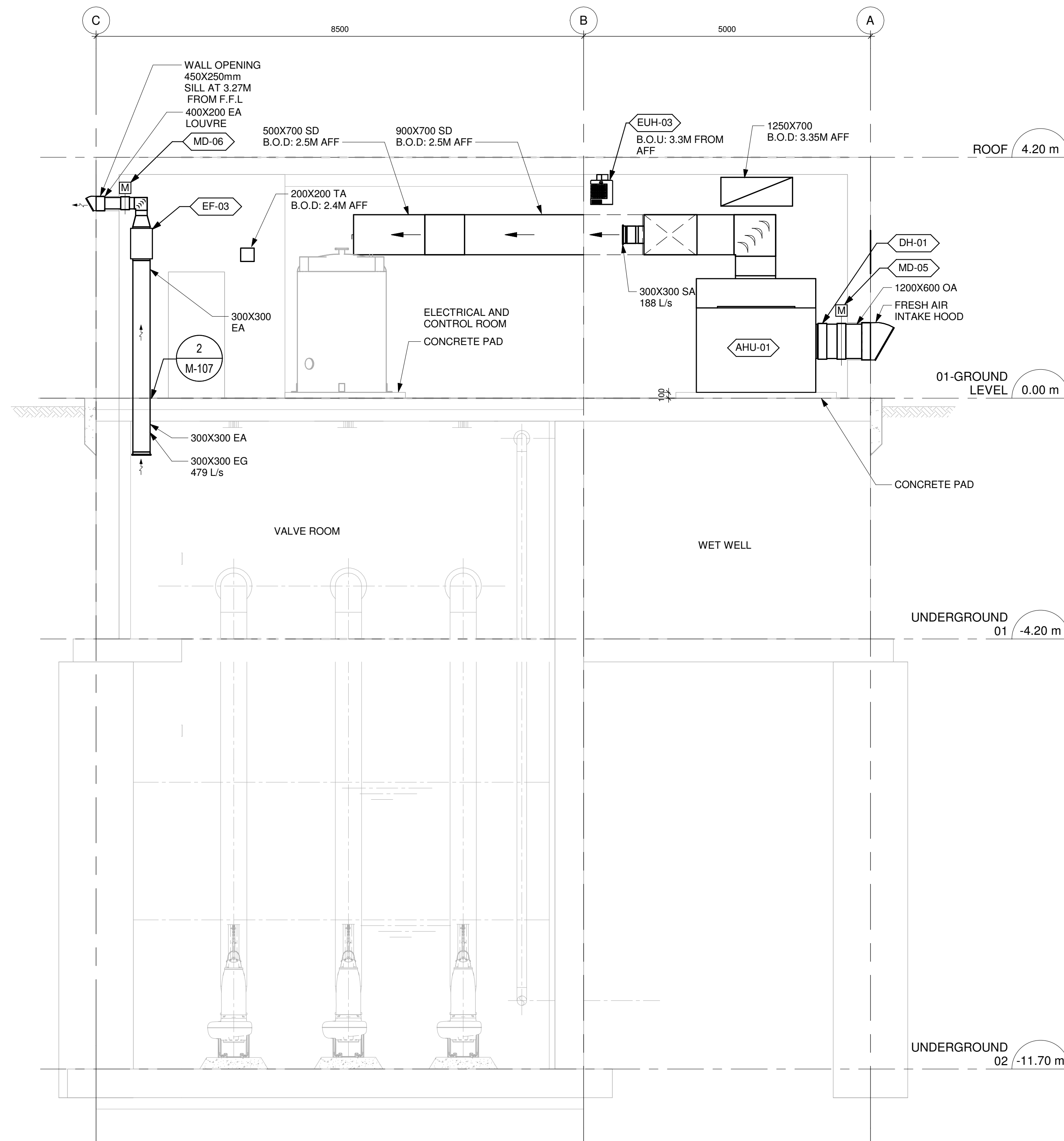
Approved by
S.L.

Project Manager
C.G.

Drawing Title

MECHANICAL BUILDING MECHANICAL PUMP STATION HVAC SECTION B

Project no.	Drawing no.	Revision no.
30192375	M104	A



B SECTION - B
M104 Scale: 1 : 50 0.0 1:50 2.0

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Revision	Description	Date
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Project title

IQALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

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Drawn by
S.B.

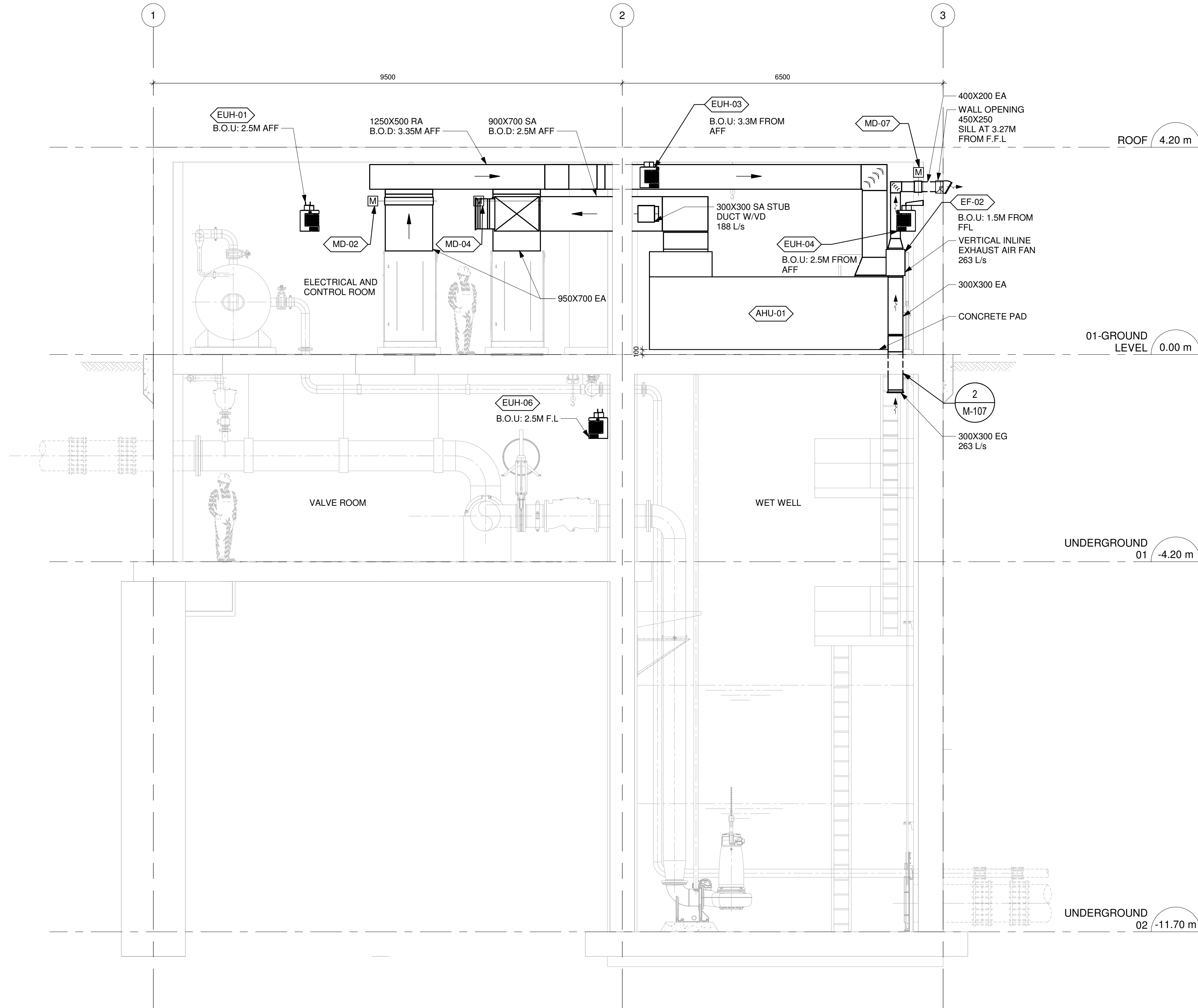
Approved by
S.L.

Project Manager
C.G.

Drawing Title

MECHANICAL BUILDING MECHANICAL PUMP STATION HVAC SECTION C

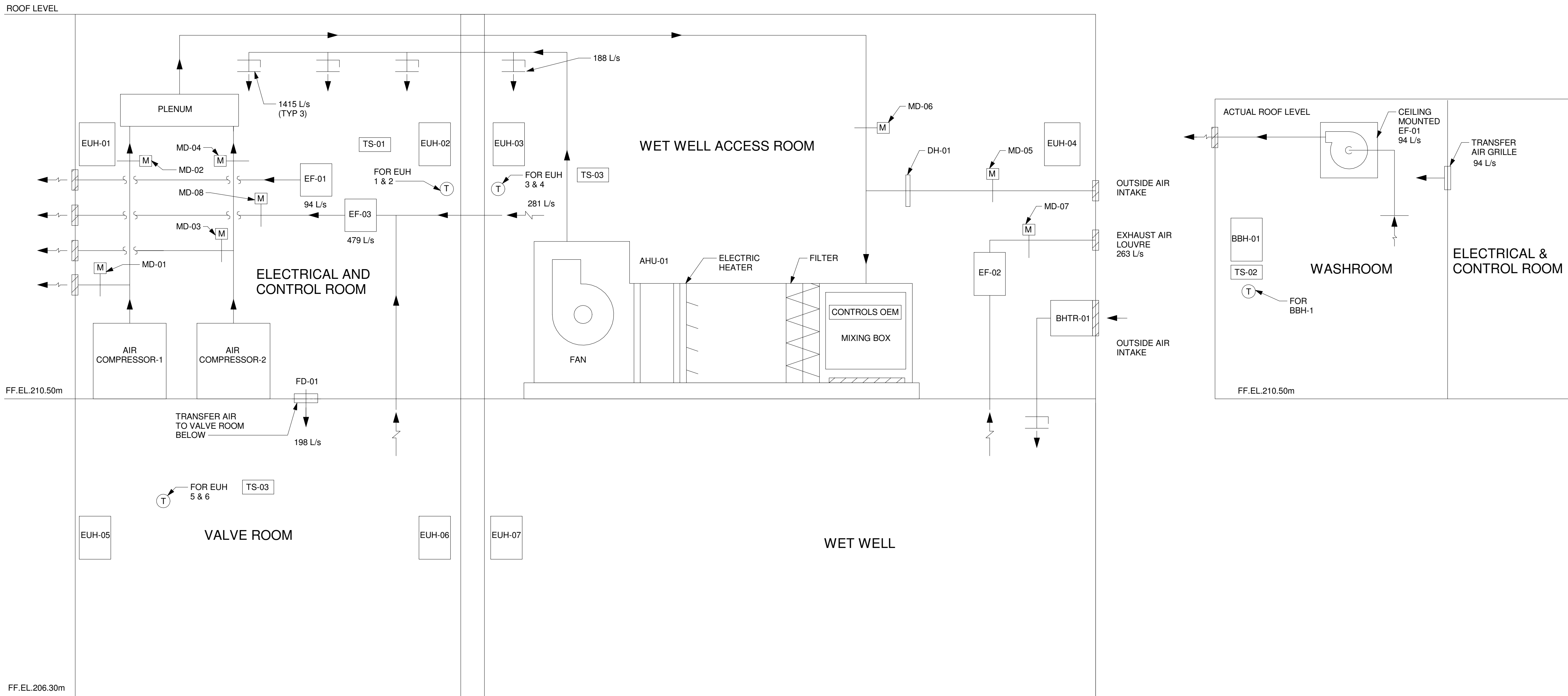
Project no.	Drawing no.	Revision no.
30192375	M105	A



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1 PUMP STATION BUILDING AIRFLOW & CONTROL SCHEMATICS
M106 Scale: NTS

CONTROLS NOTES:

1. ALL EQUIPMENT TO HAVE LOCAL CONTROLS WITH ALARMS AT SCADA SYSTEM.
2. ALL ROOM TEMPERATURES, MIN. MAX. TO BE MONITORED AT SCADA.
3. AIR COMPRESSORS GEN. ALARMS AT SCADA - BY PROCESS TEAM

SEQUENCE OF OPERATION:

1. OUTDOOR TEMP. < 15C:
OCCUPIED MODE: EF-1,2,3 RUN UNIT MAU-01 OPERATED AT 2500CFM IF AIR COMPRESSORS ARE OFF OR 10500CFM IF ONE AIR COMPRESSOR IS ON; UNOCCUPIED MODE: EF-1&3 ARE OFF, EF-2 IS OPER., UNIT MAU-01 RUNS AT 1280CFM IF AIR COMPRESSORS ARE OFF AND AT 9280 IF ONE AIR COMPRESSOR IS ON. MDs ON AIR COMPRESSOR EXHAUST AIR CONNECTIONS MODULATE TO MAINTAIN SA TEMP. AT 17C.
2. OUTDOOR TEMP. >15C
OCCUPIED MODE: EF-1,2,3 RUN UNIT MAU-01 OPERATED AT 2500CFM IF AIR COMPRESSORS ARE OFF OR 10500CFM IF ONE AIR COMPRESSOR IS ON; MDs MODULATE TO MAINTAIN ROOM TEMP AT AMBIENT TEMPERATURE; UNOCCUPIED MODE: EF-1&3 ARE OFF, EF-2 IS OPER., UNIT MAU-01 RUNS AT 1280CFM IF AIR COMPRESSORS ARE OFF AND AT 9280 IF ONE AIR COMPRESSOR IS ON.

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Project title

**IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE**

Designed by
D.S.

Drawn by
S.B.

Approved by
S.L.

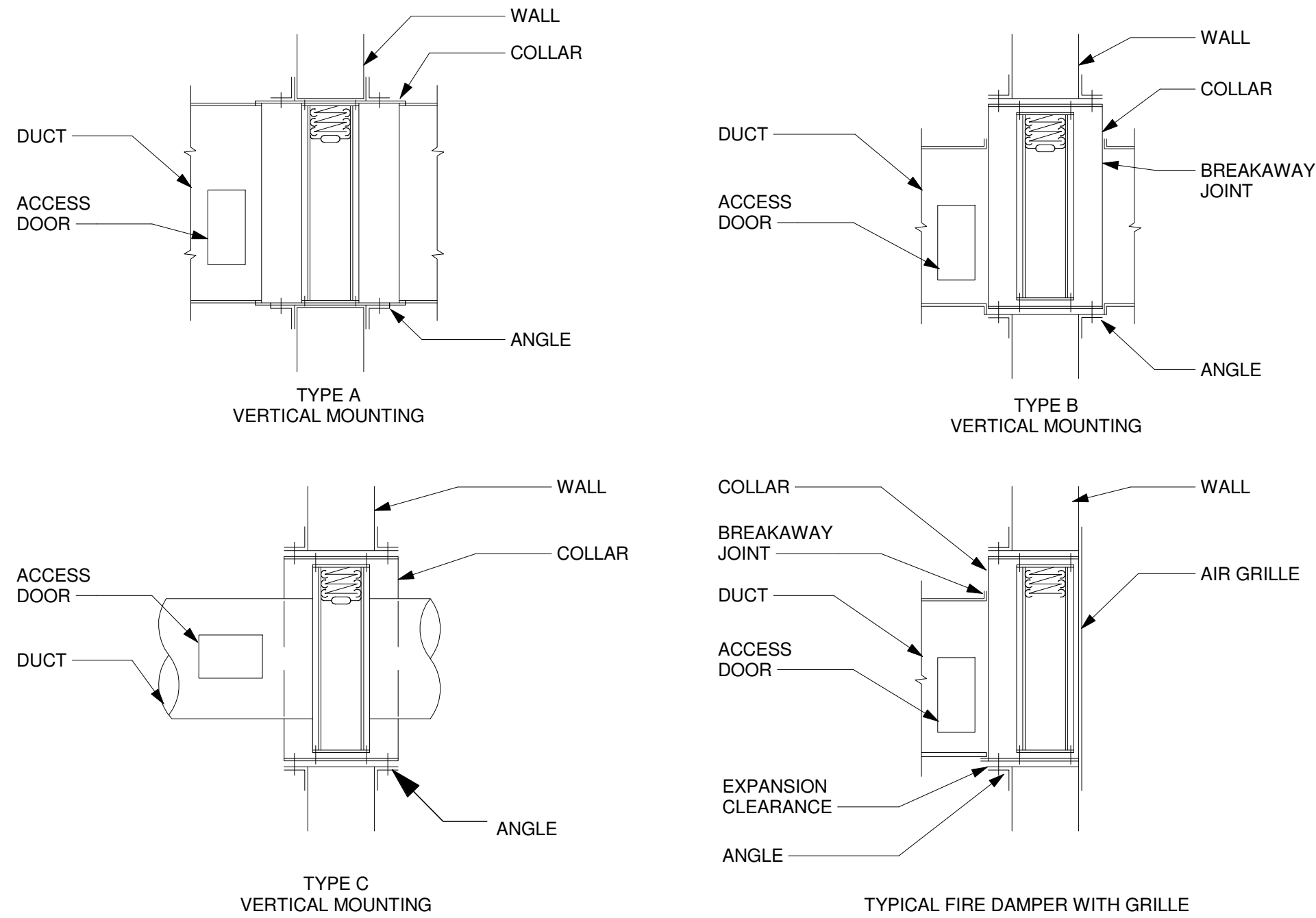
Project Manager
C.G.

Drawing Title

**MECHANICAL
BUILDING MECHANICAL PUMP
STATION HVAC SCHEMATICS**

Project no.	Drawing no.	Revision no.
30192375	M106	A

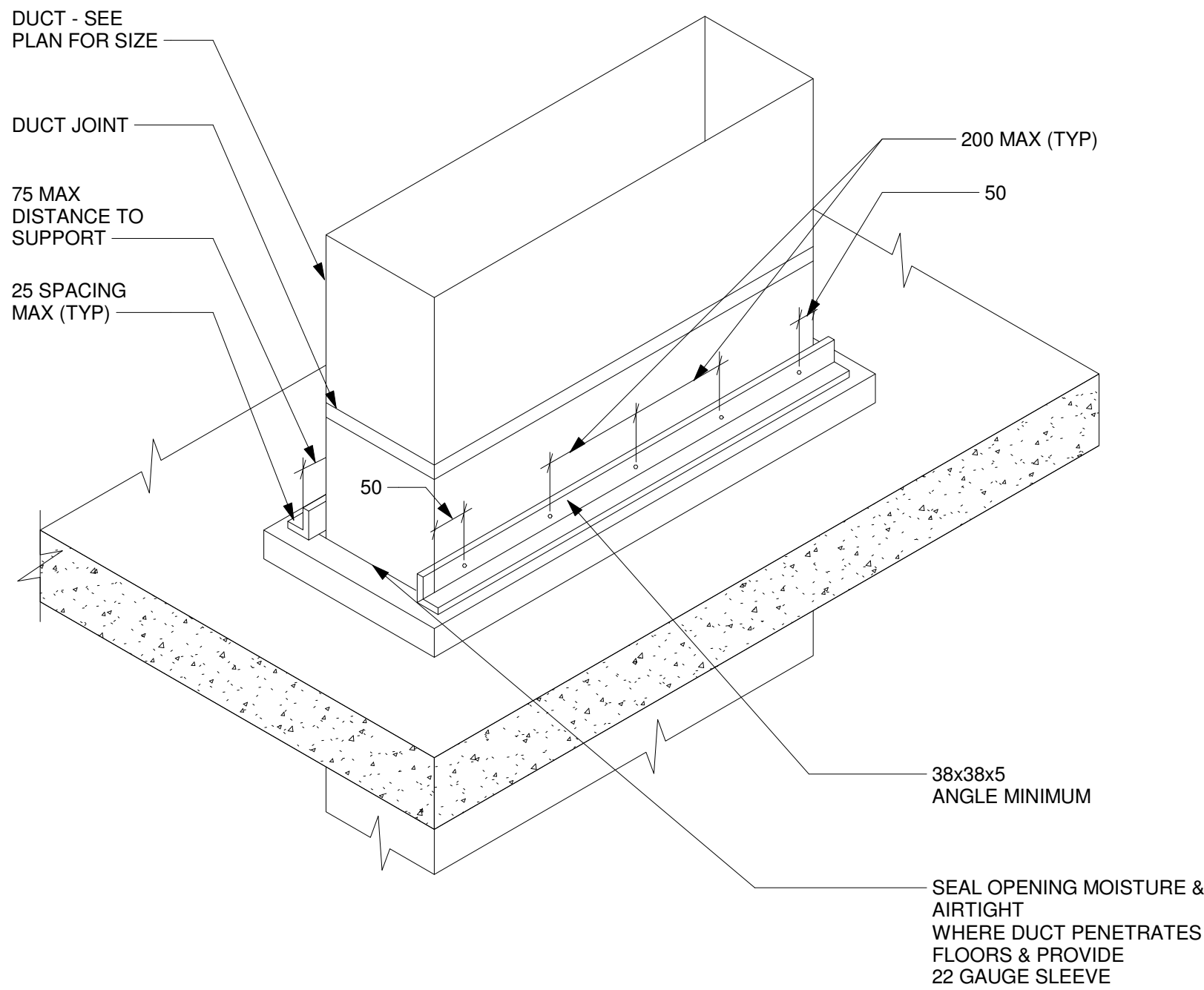
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NOTES:

1. VERTICAL MOUNTINGS SHOWN. HORIZONTAL MOUNTINGS SIMILAR.
2. THE INSTALLATION SHOWN COMPLY WITH THE FIRE DAMPER MANUFACTURERS PRINTED INSTALLATION INSTRUCTIONS.
3. FIRE DAMPER SHALL BE INSTALLED IN THE PLANE OF THE FIRE SEPARATION.
4. PROVIDE AN ACCESS DOOR FOR EACH FIRE DAMPER.
5. PROVIDE SHOP DRAWINGS AND INSTALLATION DETAILS FOR REVIEW.

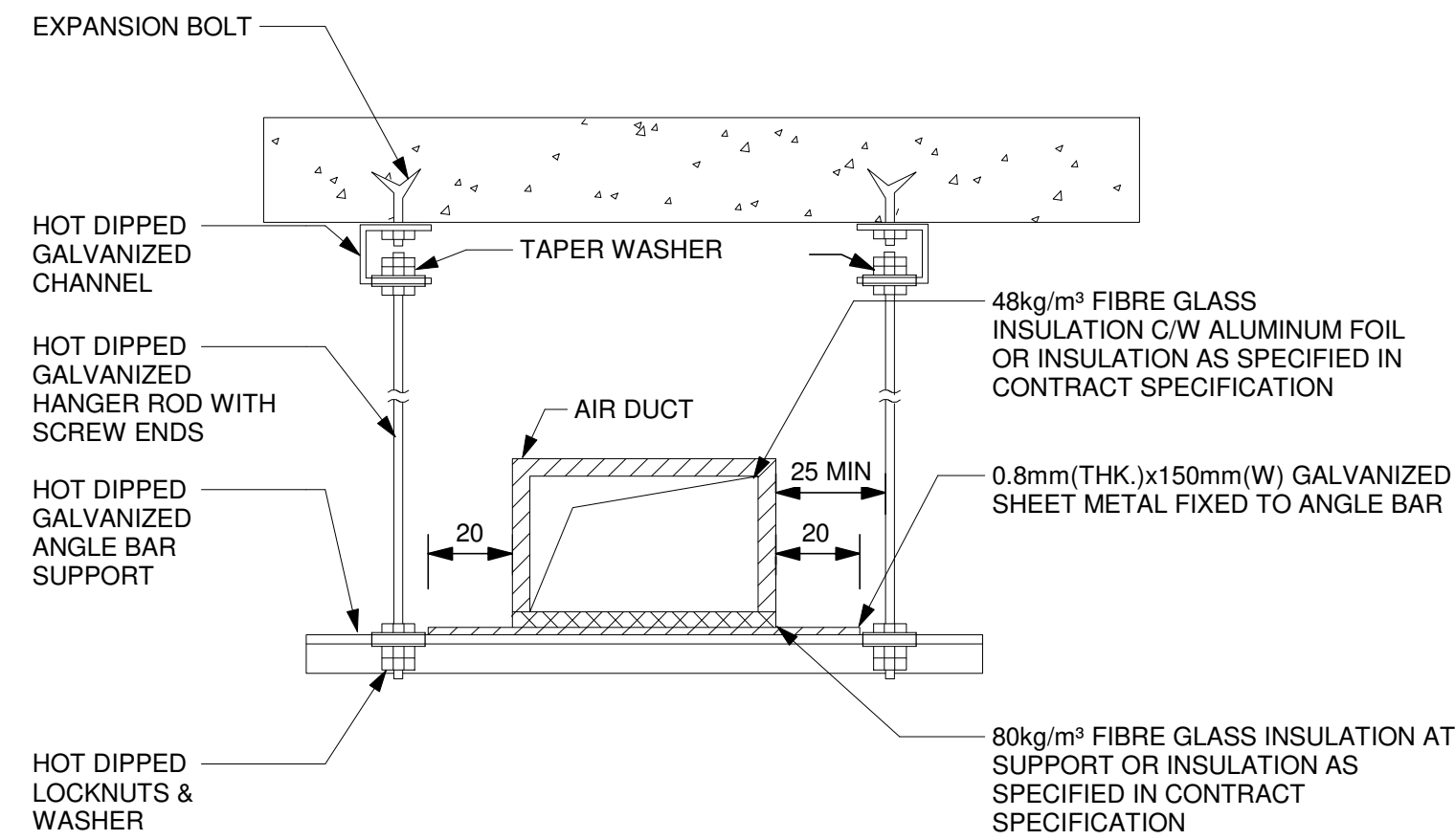
1 FIRE DAMPER MOUNTING
M107 Scale: NTS



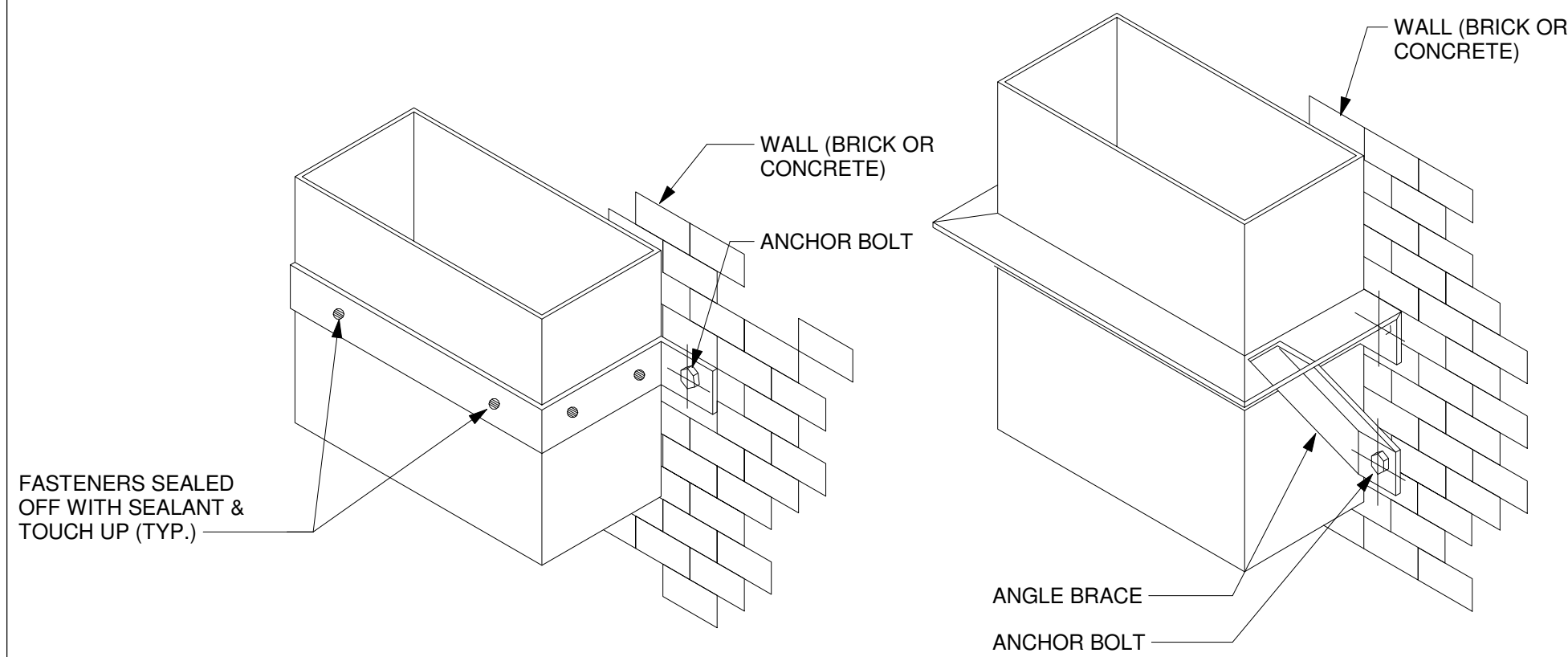
NOTES:

1. 100MM CONCRETE CURB AROUND DUCT OPENING.
2. REFER TO FIRE DAMPER DETAILS WHEN FIRE DAMPER IS REQUIRED.

2 DUCT RISER SUPPORTS FROM FLOOR
M107 Scale: NTS



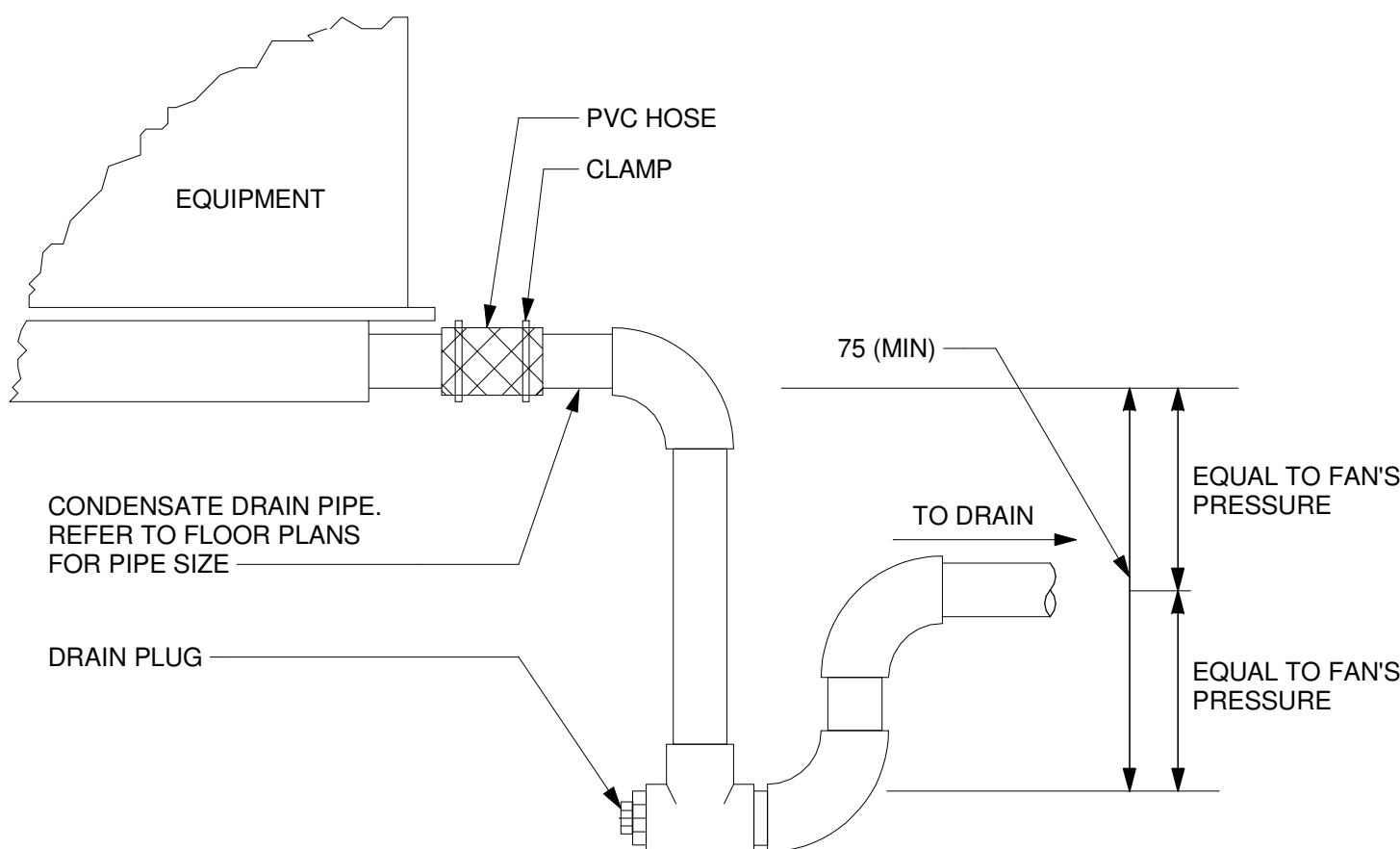
3 AIR DUCT HANGER WITH INSULATION
M107 Scale: NTS



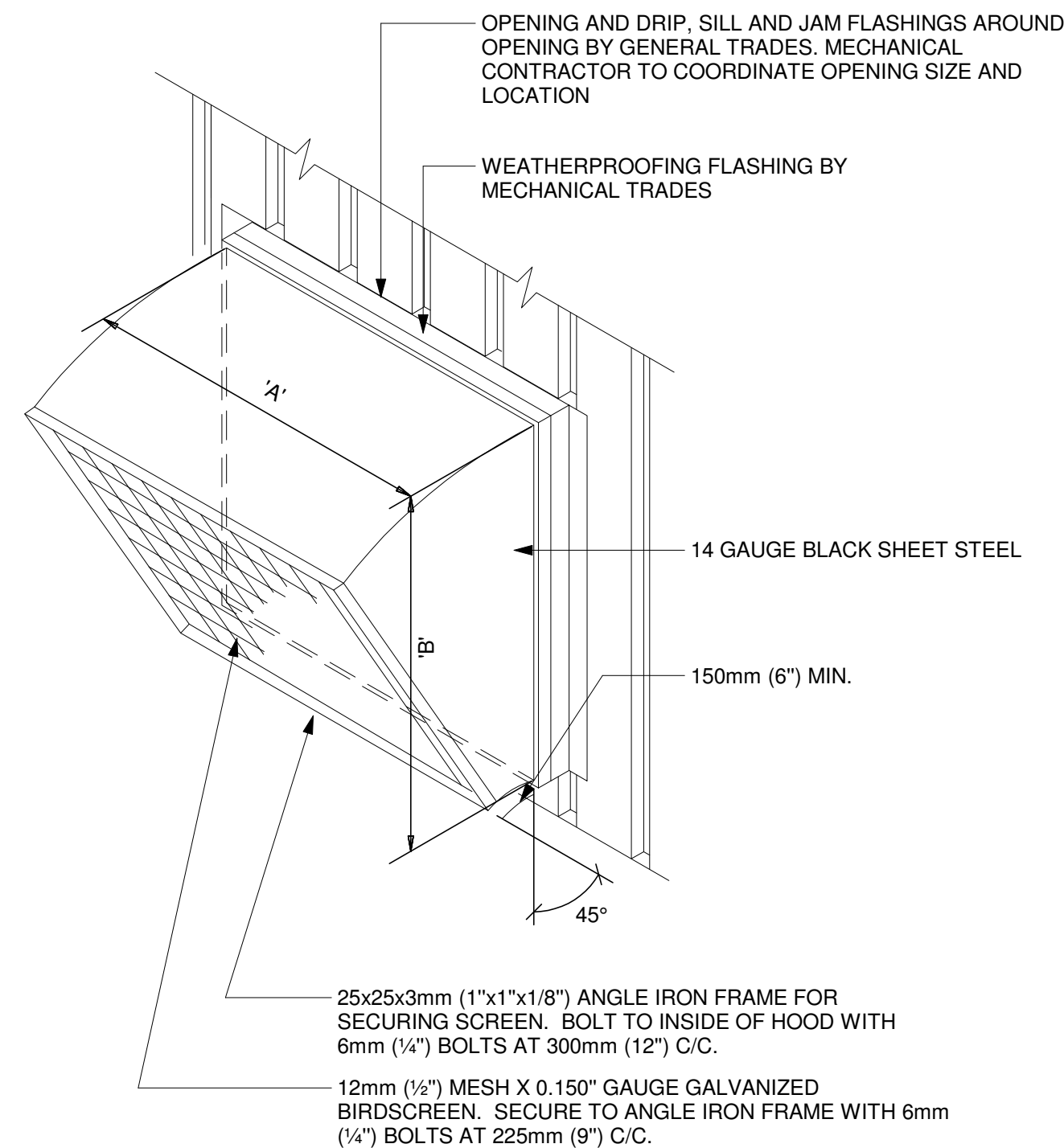
NOTES (TYP. FOR ALL DUCT WORK SUPPORT) :

1. ANGLE AND FASTENER SIZES FOR DUCT SUPPORTS AND HANGERS SHALL BE IN ACCORDANCE WITH SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA) DUCT CONSTRUCTION AND SEISMIC STANDARDS OR APPROVED EQUAL.
2. FOR DUCT OPENINGS THROUGH FLOORS, REFER TO STRUCTURAL DRAWINGS.
3. THE DETAILS SHOWN ON THIS SHEET ARE A CONCEPTUAL PRESENTATION ONLY. ALL EQUIPMENT AND DUCT ATTACHMENTS SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE PROJECT STRUCTURAL ENGINEER. ATTACHMENTS SHALL BE DESIGNED TO SUPPORT ALL GRAVITY LOADS, DYNAMIC WIND AND SNOW PRESSURE LOADS CAUSED BY THE OPERATION OF THE EQUIPMENT AND SEISMIC LOADING. ATTACHMENTS SHALL MEET ALL REQUIREMENTS OF THE OBC, SMACNA, ASHRAE STANDARDS AND APPLICABLE LOCAL CODES.

4 DUCT RISER SUPPORTS FROM WALL
M107 Scale: NTS



5 COIL DRAIN WITH DRAW THRU TRAP
M107 Scale: NTS



6 FRESH/EXHAUST AIR INTAKE HOOD - WALL TYPE
M107 Scale: NTS

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PRIME CONSULTANT



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Project title

**IQALUIT
LONG TERM WATER
PROGRAM RAW WATER
SUPPLY AND STORAGE**

Designed by
D.S.

Drawn by
S.B.

Approved by
S.L.

Project Manager
C.G.

Drawing Title

**MECHANICAL
BUILDING MECHANICAL PUMP
STATION HVAC DETAILS**

Project no.

30192375

Drawing no.

M107

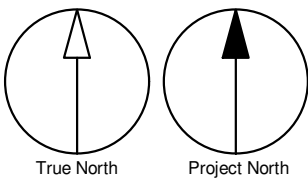
Revision no.

A

Autodesk Docs://301192375-Iqaluit_LongTermWater_C302023/IQALUIT-ARCA-P-PLUMBING-23.rvt

A1 - 841X594

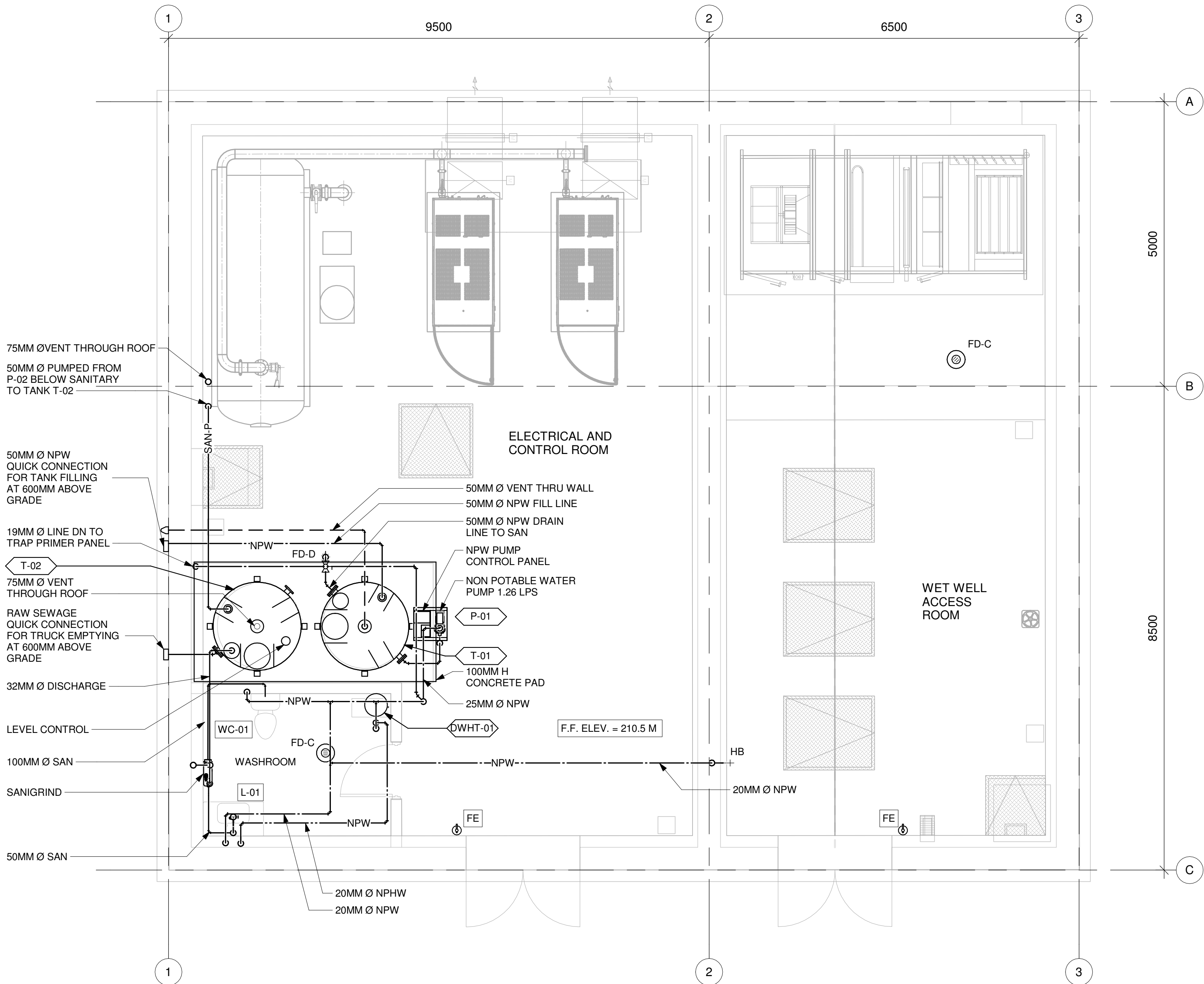
NOTES:
1. ALL PIPING TO BE INSULATED.
REFER TO SPECIFICATIONS.



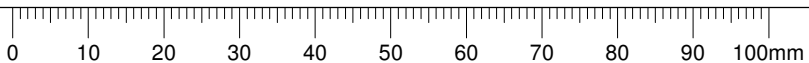
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Arcadis Professional Services (Canada) Inc.



1 PLAN AT GROUND ELEVATION
M201 Scale: 1 : 50
0.0 1:50 2.0



Revision	Description	Date
----------	-------------	------

PRIME CONSULTANT



121 Granton Drive, Suite 12
Richmond Hill, ON. L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE**

Designed by
D.S.

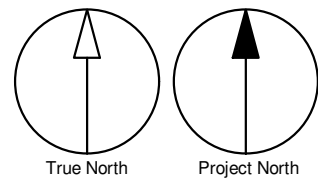
Drawn by
C.S.

Approved by
S.L.

Project Manager
C.G.

Drawing Title
**BUILDING MECHANICAL
PUMP STATION
PLUMBING & DRAINAGE
GROUND LEVEL PLAN**

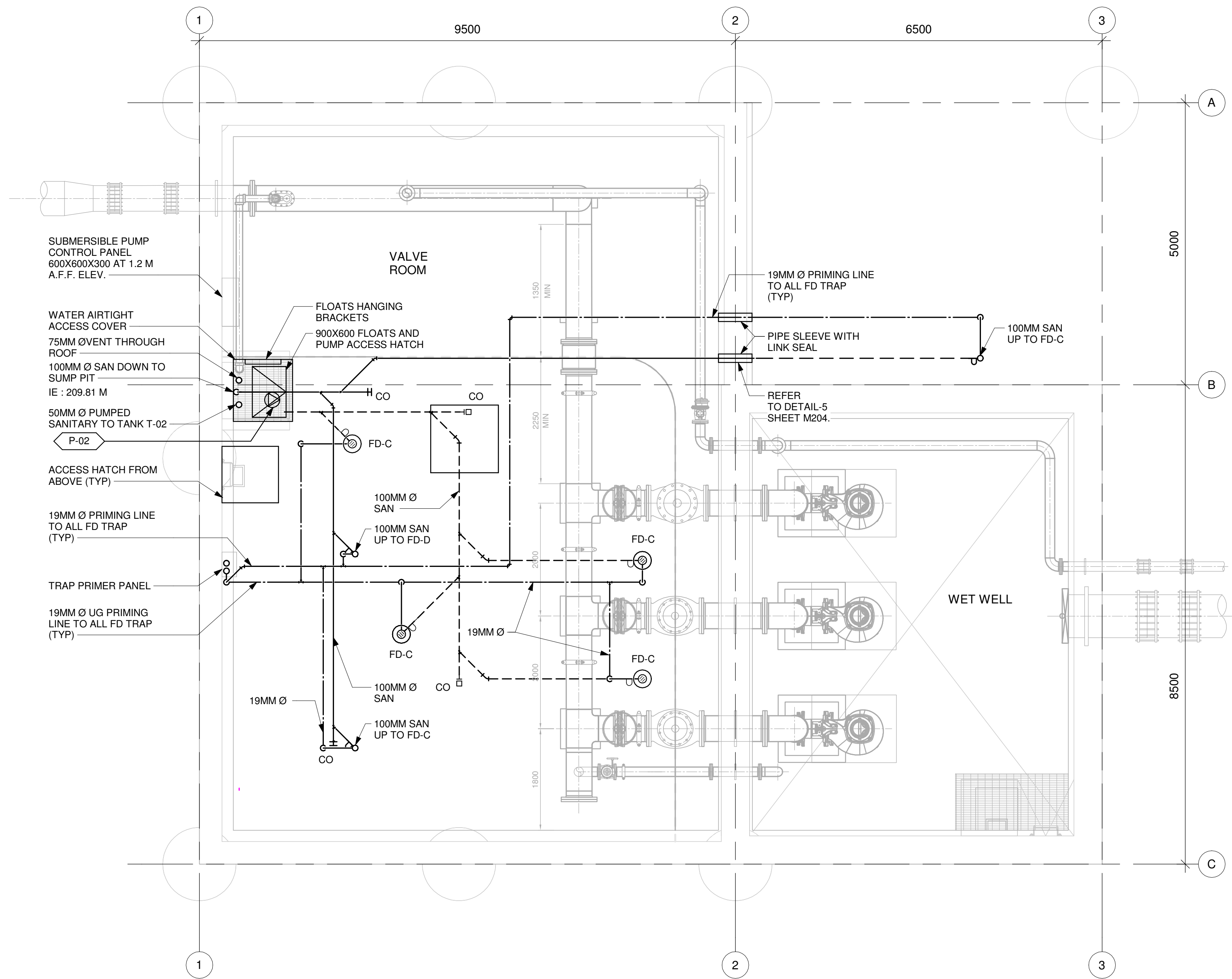
Project no.	Drawing no.	Revision no.
30192375	M201	A



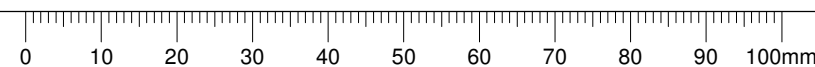
PRELIMINARY
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Arcadis Professional Services (Canada) Inc.



1 PLAN AT EL. 207.00m
M202 Scale: 1 : 50 0.0 1:50 2.0



Revision	Description	Date
----------	-------------	------

PRIME CONSULTANT



121 Granton Drive, Suite 12
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Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE**

Designed by
D.S.

Drawn by
C.S.

Approved by
S.L.

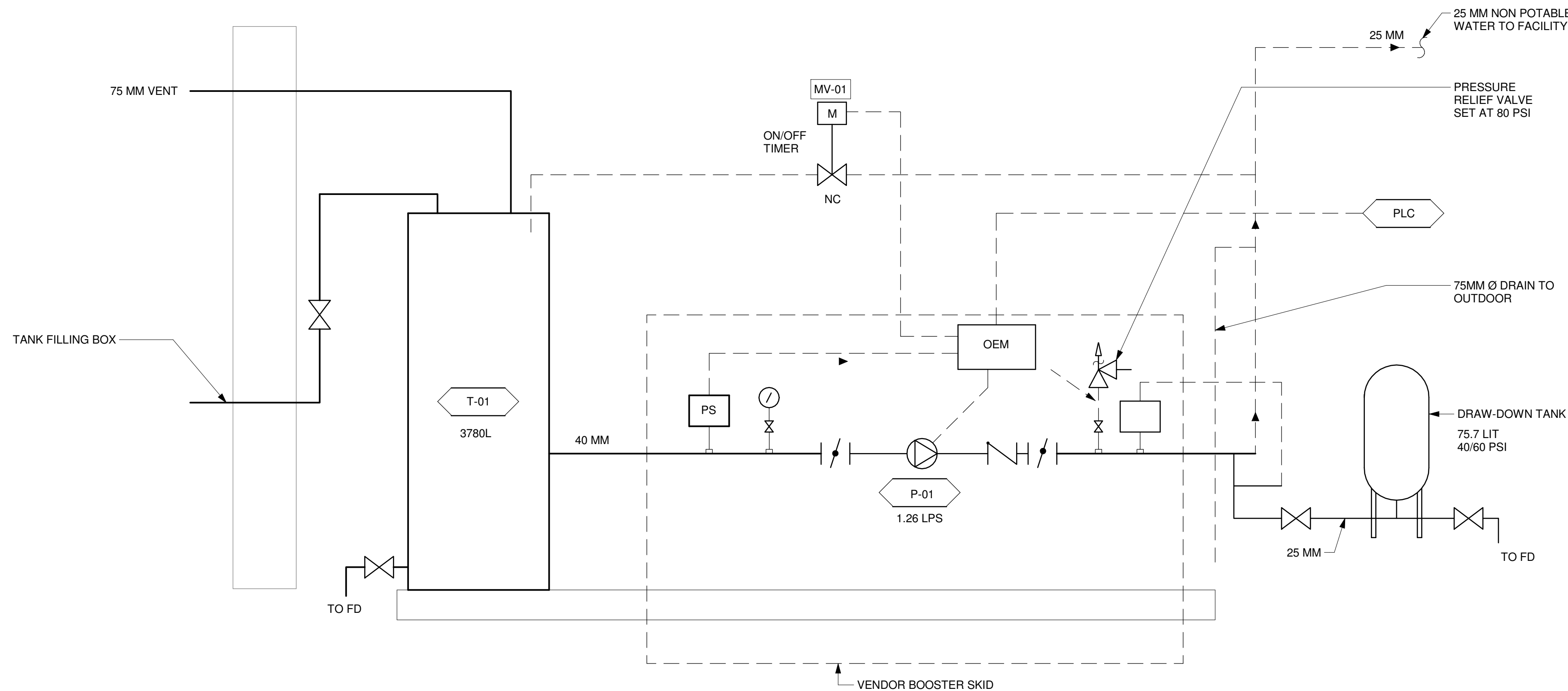
Project Manager
C.G.

Drawing Title
**BUILDING MECHANICAL
PUMP STATION
PLUMBING & DRAINAGE
PLAN AT EL. 207.00m**

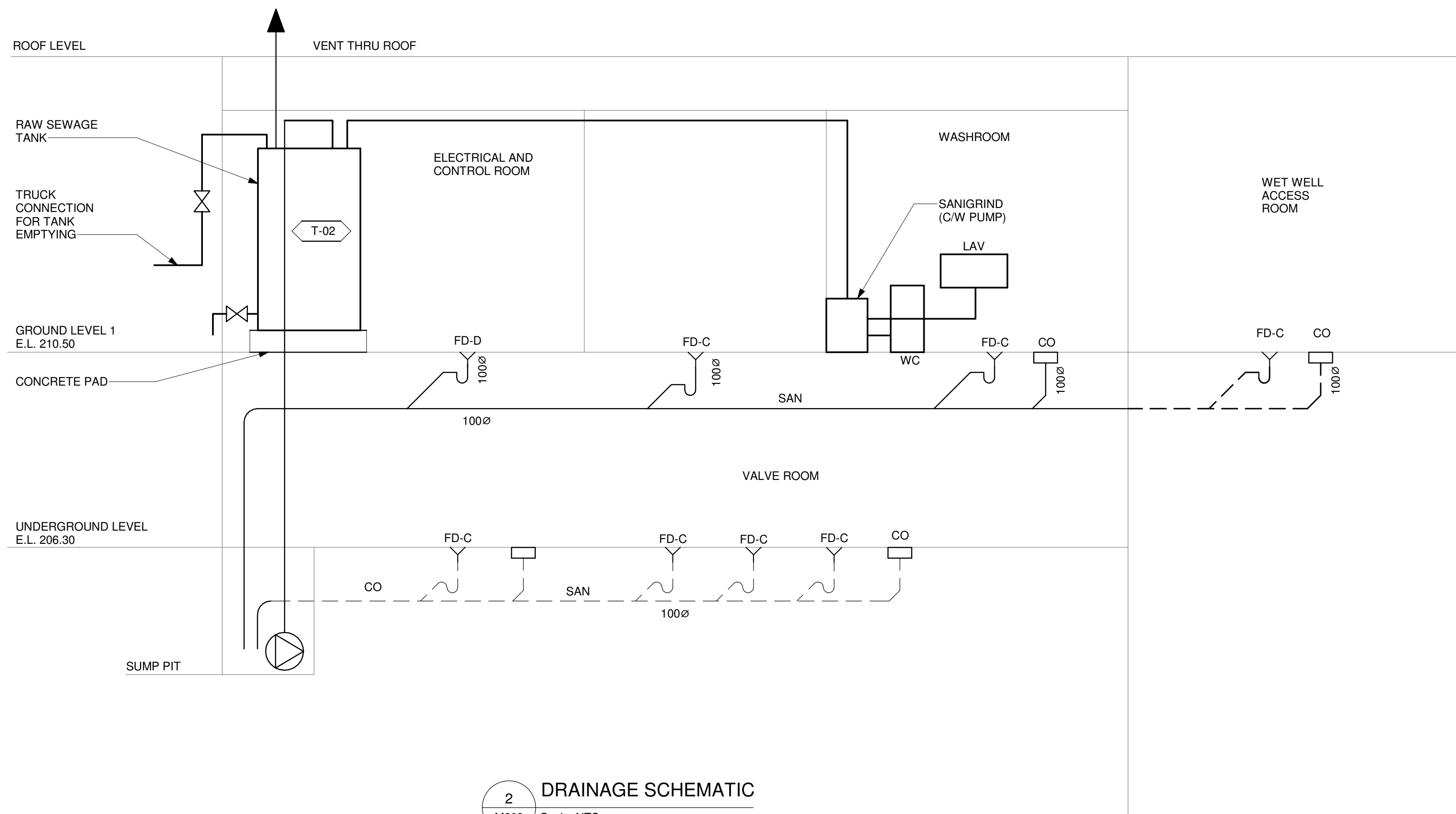
Project no.	Drawing no.	Revision no.
301921375	M202	A

Autodesk Docs://301192375-Iqaluit_LongTermWater_C3D2023/IQALUIT-ARCA-P-PLUMBING-23.rvt

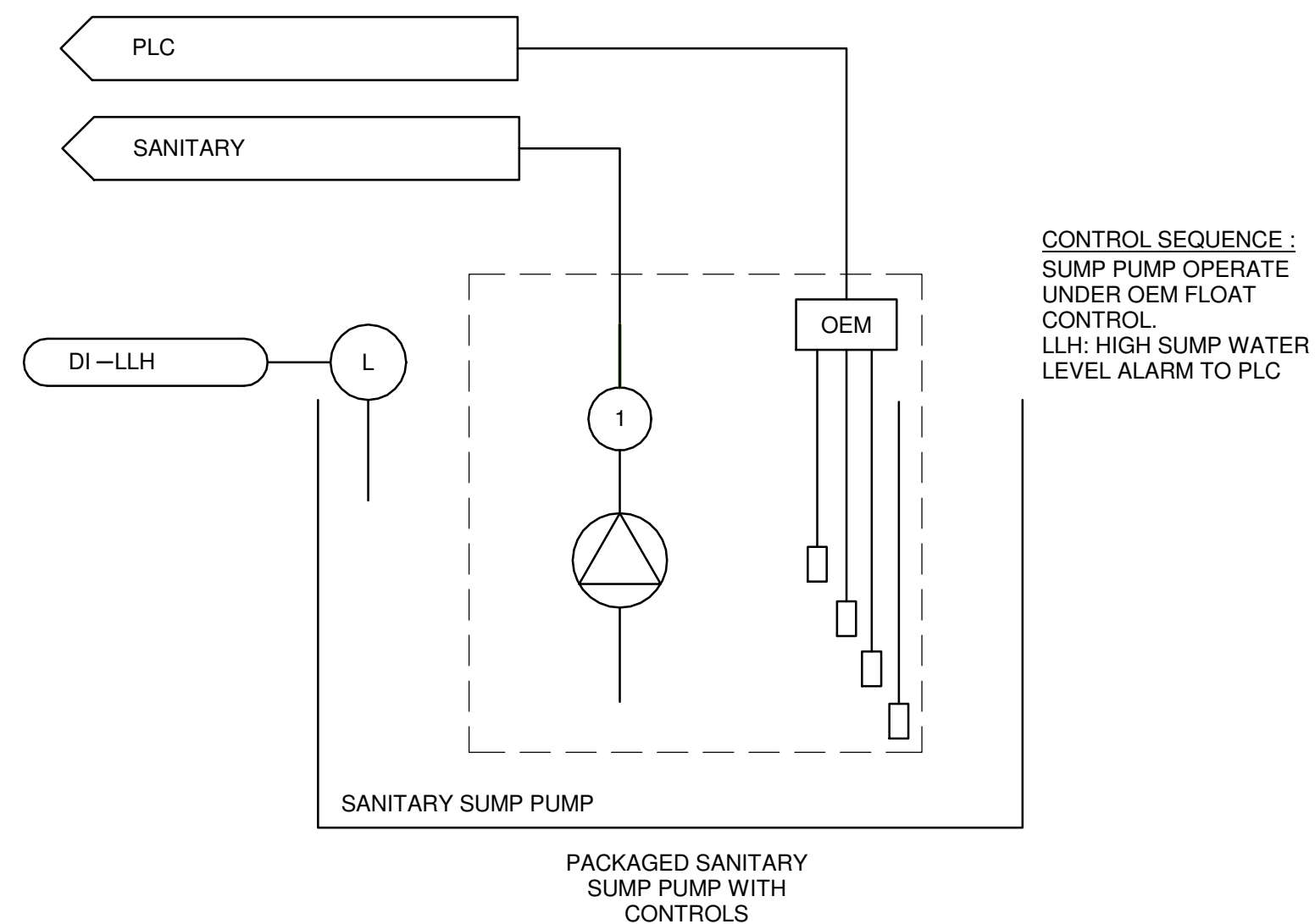
A1 - 841X594



1 NON POTABLE WATER SCHEMATICS
M203 Scale: NTS



2 DRAINAGE SCHEMATIC
M203 Scale: NTS



3 CONTROL SCHEMATIC FOR SANITARY DRAIN SUMP PUMP
M203 Scale: NTS



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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

PRIME CONSULTANT



121 Granton Drive, Suite 12
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Project title
**IQUALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE**

Designed by
D.S.

Drawn by
C.S.

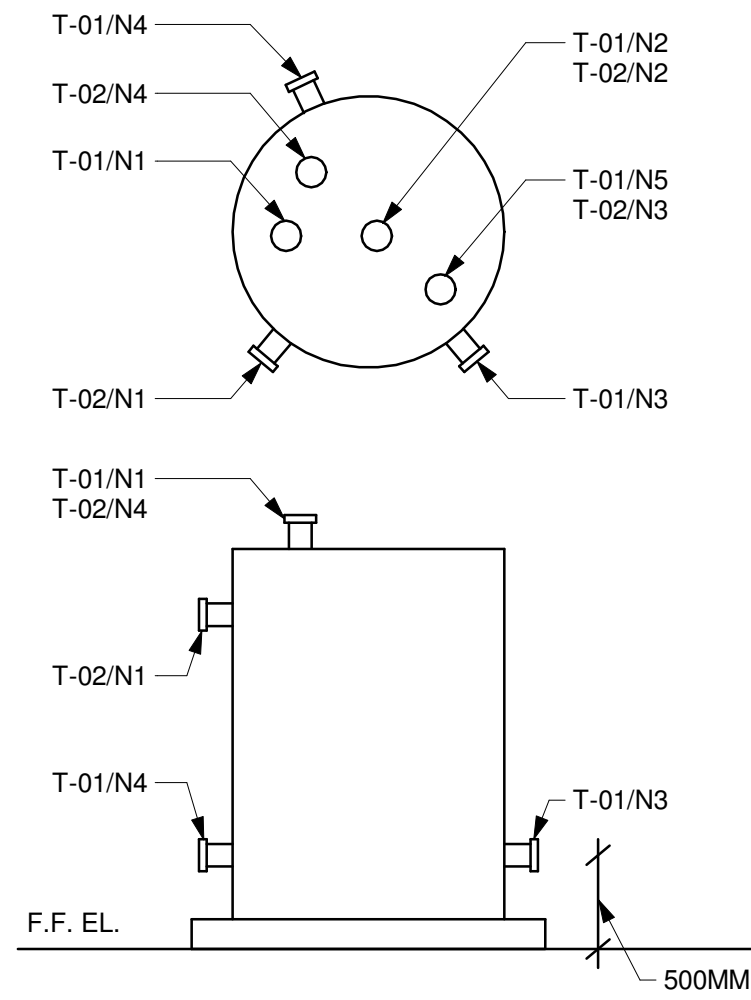
Approved by
S.L.

Project Manager
C.G.

Drawing Title

**BUILDING MECHANICAL
PUMP STATION
PLUMBING & DRAINAGE
SCHEMATICS**

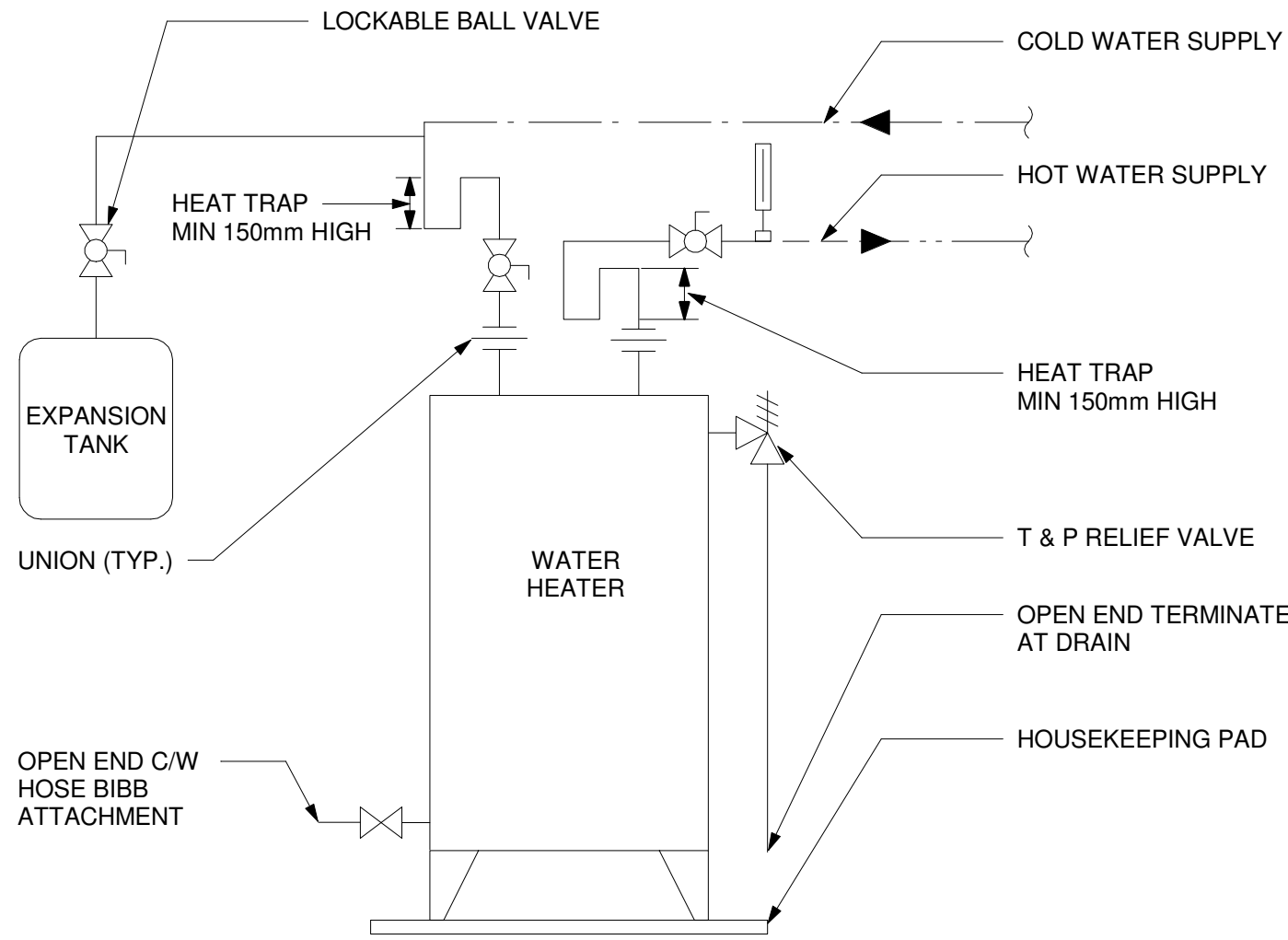
Project no.	Drawing no.	Revision no.
30192375	M203	A



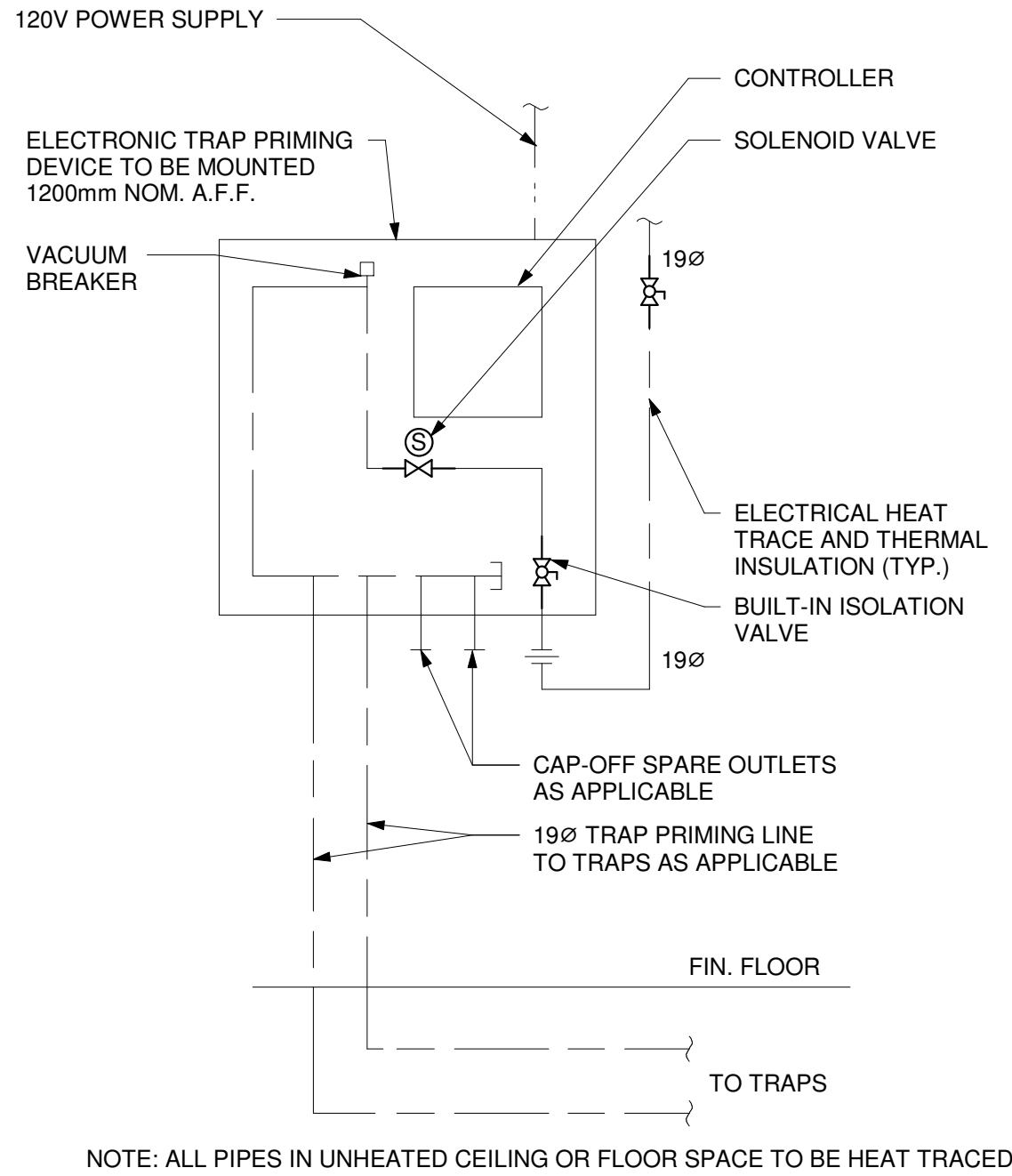
TANK DETAIL				
TANK NO.	NOZZLE NO.	SIZE	NOZZLE DESCRIPTION	NOTES
T-01	N1	50	FILLING BY TRUCK	MAINTAIN MIN 2M FROM SEWAGE EMPTYING LINE
T-01	N2	50	VENT	THRU WALL AT HIGH LEVEL, W INSECT SCREEN
T-01	N3	50	P-01	SUCTION LINE W FLANGED CONNECTION
T-01	N4	50	DRAIN	WITH DRAIN VALVE, EXTEND DRAIN LINE TO FD-D
T-02	N1	50	EMPTY BY TRUCK	MAINTAIN MIN 2M FROM WATER FILLING LINE
T-02	N2	75	VENT	EXTEND LINE OT OUTDOOR ABOVE ROOF LINE
T-02	N3	75	LEVEL CONTROL	HIGH LEVEL ALARM AT PLC, INTERLOCK AND STOP P-02
T-02	N4	50	SAN-P P-02	P-02 SHUT OFF AT HIGH LEVEL T-02
T-02	N5	32	SANIF	DISCHARGE LINE FROM SANI FLOW

- NOTES :
1. PROVIDE SIGHT GLASS LEVEL FOR BOTH TANKS.
 2. ALL NOZZLES TO BE FLANGED CONNECTION, CLASS 150.

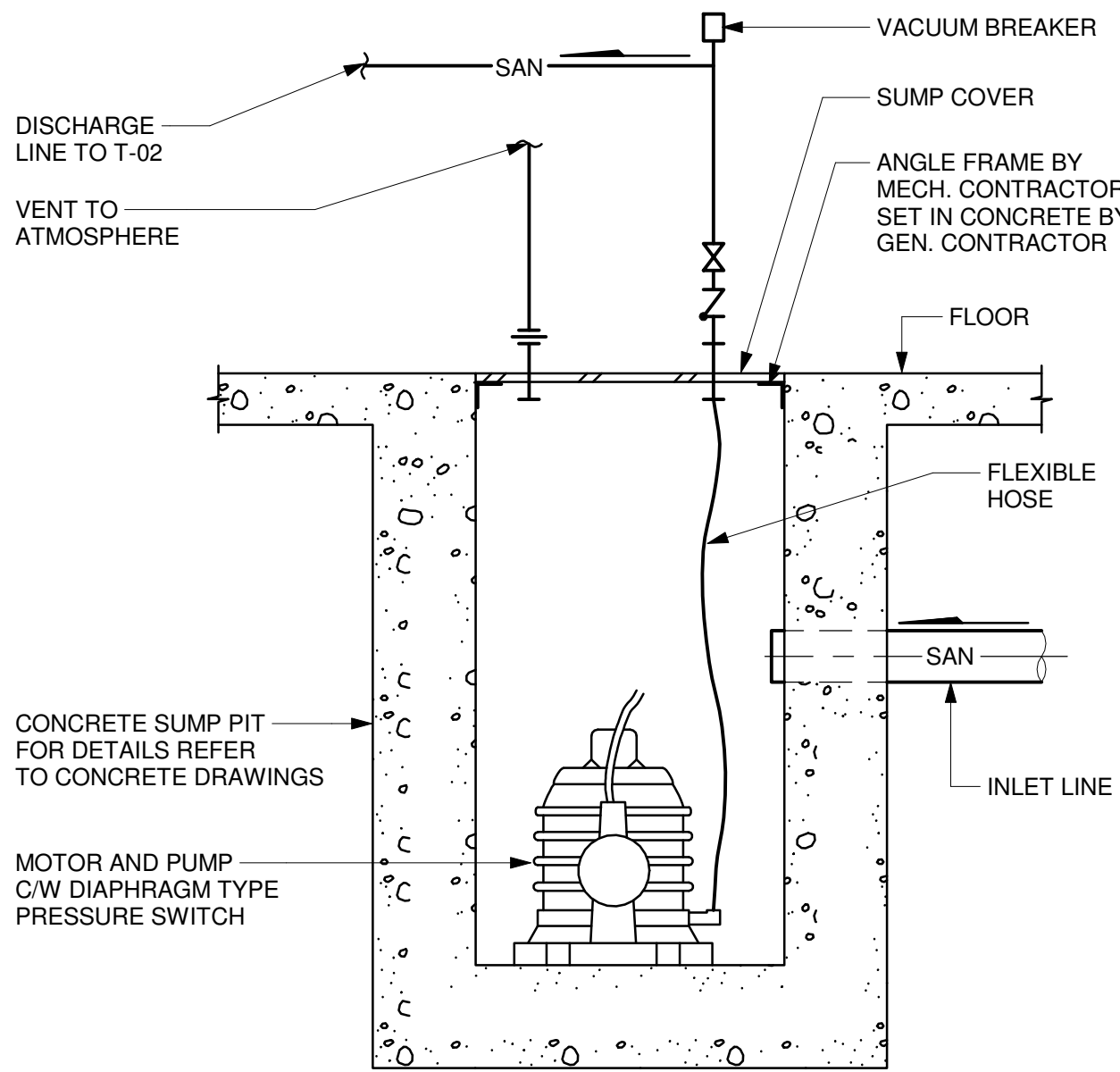
1
M204
Scale: NTS
TANK DETAILS



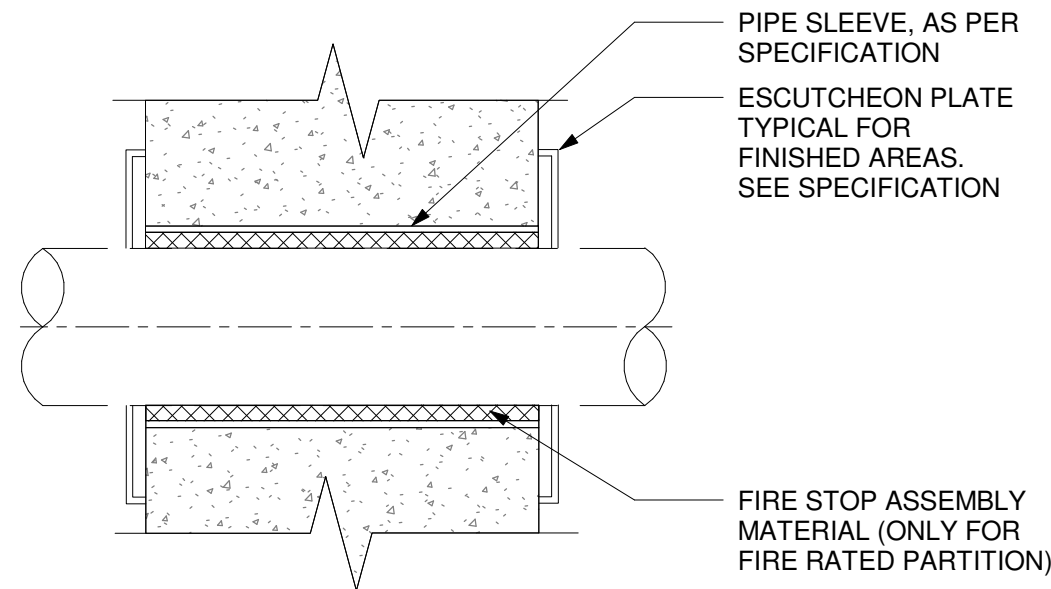
2
M204
Scale: NTS
DOMESTIC WATER HEATER ELECTRIC - NO RECIRCULATION1



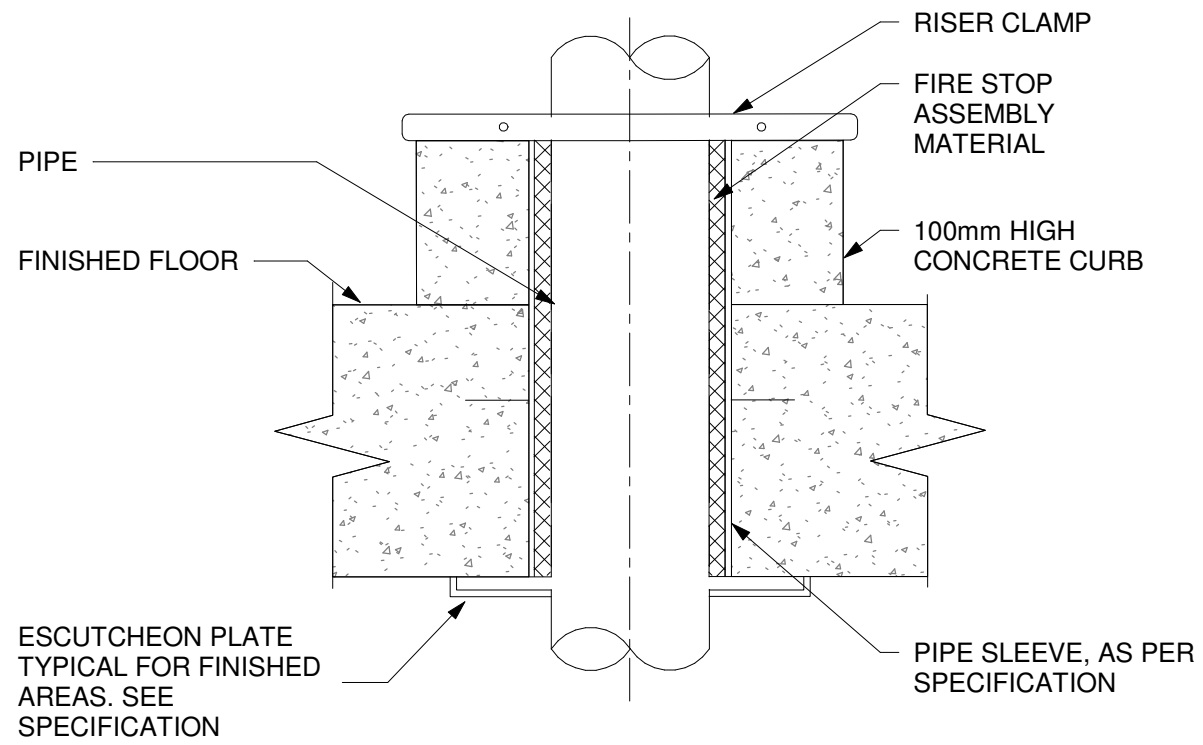
3
M204
Scale: NTS
ELECTRONIC TRAP PRIMING DEVICE



4
M204
Scale: NTS
SUMP PIT DETAIL



5
M204
Scale: NTS
PIPE SLEEVE THROUGH INTERIOR WALL



6
M204
Scale: NTS
PIPE SLEEVE THROUGH FLOORS

PLUMBING FIXTURE SCHEDULE

DESCRIPTION	SERVICES				REMARKS
	CW (mm)	HW (mm)	WASTE (mm)	VENT (mm)	
WATER CLOSET (FLUSH VALVE)	25	-	75	40	
LAVATORY	12	12	32	32	

- NOTES:
1. SIZING OF SUPPLIES INSIDE WASHROOM TO BE BASED ON 35 KPa PRESSURE DROP PER 30m OF PIPE OR MAXIMUM VELOCITY OF 1.2 mps.
 2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF PLUMBING AND DRAINAGE INSIDE WASHROOM AREA FOR ALL WASHROOMS.

7
M204
Scale: NTS
PLUMBING FIXTURE SCHEDULE

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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
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PRIME CONSULTANT



121 Granton Drive, Suite 12
Richmond Hill, ON, L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

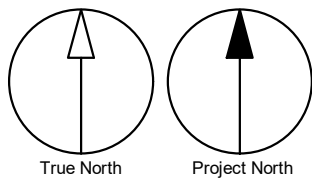
IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
D.S.
Drawn by
C.S.
Approved by
S.L.
Project Manager
C.G.
Drawing Title

BUILDING MECHANICAL PUMP STATION PLUMBING & DRAINAGE DETAILS - 1

Project no.	Drawing no.	Revision no.
30192375	M204	A





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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	

PRIME CONSULTANT



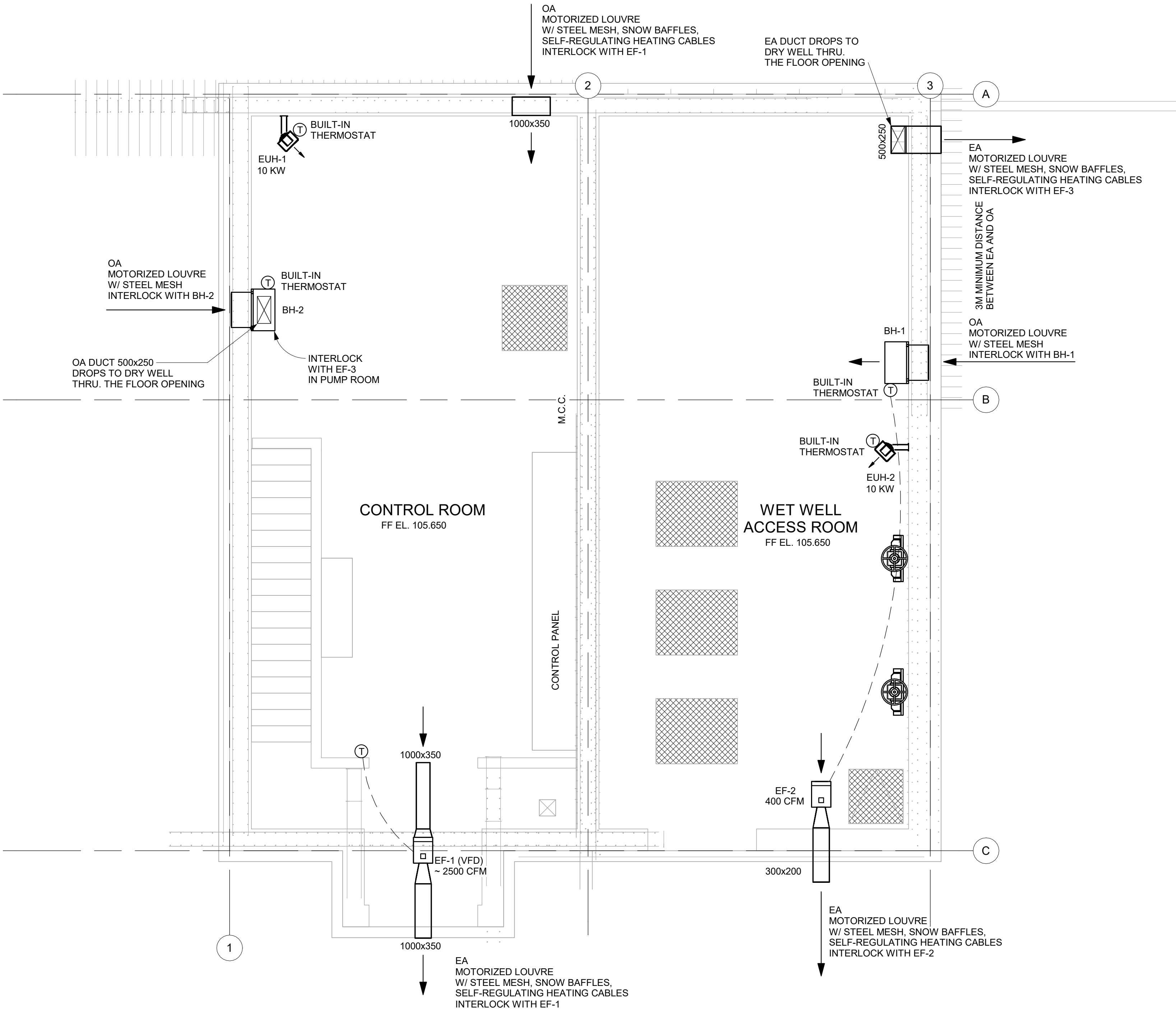
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

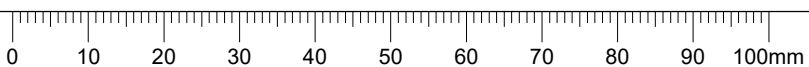
Designed by
Designer
Drawn by
Author
Approved by
Approver
Project Manager

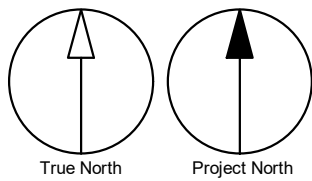
Drawing Title
**AR PUMP STATION
HVAC GROUND LEVEL PLAN**

Project no.	Drawing no.	Revision no.
30288139	M1101	C



1
M-1101
PLAN AT GROUND ELEVATION
Scale: 1 : 50





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Arcadis Professional Services (Canada) Inc.

	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
Revision	Description	Date

PRIME CONSULTANT



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Markham, ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

**IQUALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
Designer

Drawn by
Author

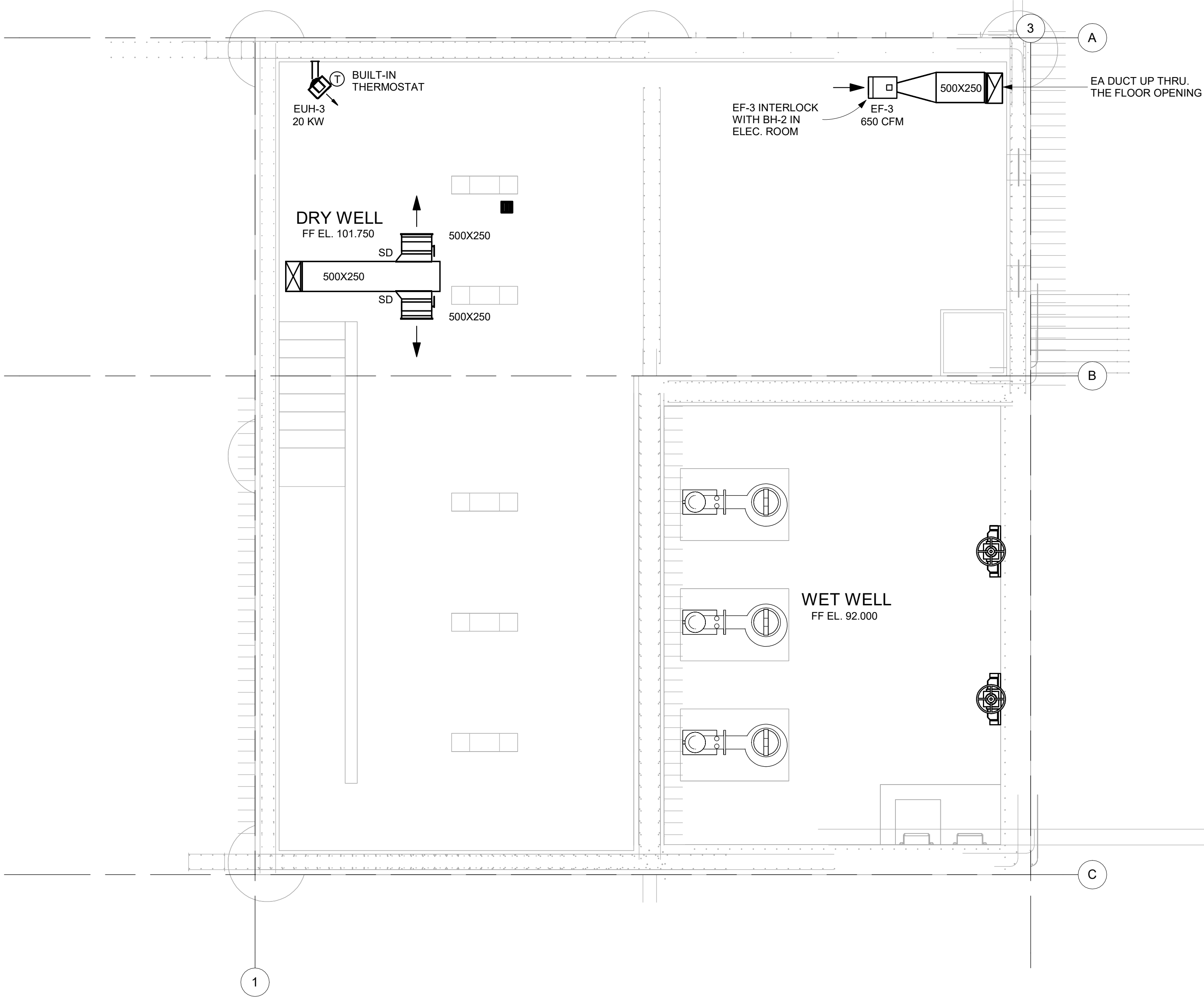
Approved by
Approver

Project Manager

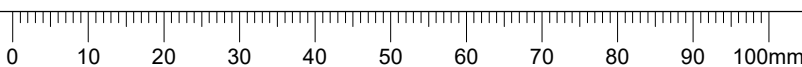
Drawing Title

**AR PUMP STATION
HVAC PLAN AT EL. 99.1 m**

Project no.	Drawing no.	Revision no.
30288139	M1102	C



1 PLAN AT EL 99.100
M-1102 Scale: 1 : 50



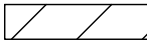
LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Project no.	Drawing no.	Revision no.
30192375	E001	B

LAYOUT SYMBOLS																					
SYMBOL	DESCRIPTION																				
	INTERCOM/TELEPHONE OUTLET NO DESIGNATION - BELL OUTLET D DESK TOP HANDSET TYPE F FLOOR OUTLET M FAX MACHINE P PLANT IN-HOUSE PHONE W WALL MTD. HANDSET TYPE																				
	<u>CONDUIT/WIRING DESIGNATIONS</u>																				
	CONDUIT OR CABLE, CONCEALED OR EMBEDDED																				
	FUTURE CONDUIT OR CABLE, CONCEALED OR EMBEDDED																				
	CONDUIT OR CABLE, DIRECT BURIED																				
	CONDUIT OR CABLE EXPOSED OR SURFACE MOUNTED																				
	WIRING BOX J JUNCTION BOX P PULL BOX S SPLITTER BOX																				
	CONDUIT OR CABLE (HOME RUN TO PANELBOARD "A" CIRCUIT 3.																				
	9 #12-21mmC 21mm CONDUIT INSIDE DIAMETER CONDUCTOR SIZE (AWG OR KCMIL) NUMBER OF CONDUCTORS																				
	<u>CONDUIT IMPERIAL/METRIC CONVERSIONS</u>																				
	<table><tr><td>1/2"</td><td>= 16mm</td><td>3/4"</td><td>= 21mm</td></tr><tr><td>1"</td><td>= 27mm</td><td>1-1/4"</td><td>= 35mm</td></tr><tr><td>1-1/2"</td><td>= 41mm</td><td>2"</td><td>= 53mm</td></tr><tr><td>2-1/2"</td><td>= 63mm</td><td>3"</td><td>= 78mm</td></tr><tr><td>4"</td><td>= 103mm</td><td>5"</td><td>= 127mm</td></tr></table>	1/2"	= 16mm	3/4"	= 21mm	1"	= 27mm	1-1/4"	= 35mm	1-1/2"	= 41mm	2"	= 53mm	2-1/2"	= 63mm	3"	= 78mm	4"	= 103mm	5"	= 127mm
1/2"	= 16mm	3/4"	= 21mm																		
1"	= 27mm	1-1/4"	= 35mm																		
1-1/2"	= 41mm	2"	= 53mm																		
2-1/2"	= 63mm	3"	= 78mm																		
4"	= 103mm	5"	= 127mm																		
	<u>GROUNDING</u>																				
	GROUNDING CONDUCTOR, CONCEALED, EMBEDDED OR DIRECT BURIED																				
	SPLICE OR TAP CONNECTION																				
	THERMIT WELD CONNECTION TO FLAT SURFACE																				
	GROUND ROD, DIRECT BURIED																				
	GROUND ROD WITH INSPECTION BOX OR WELL																				
	GRADIENT GROUND MAT																				

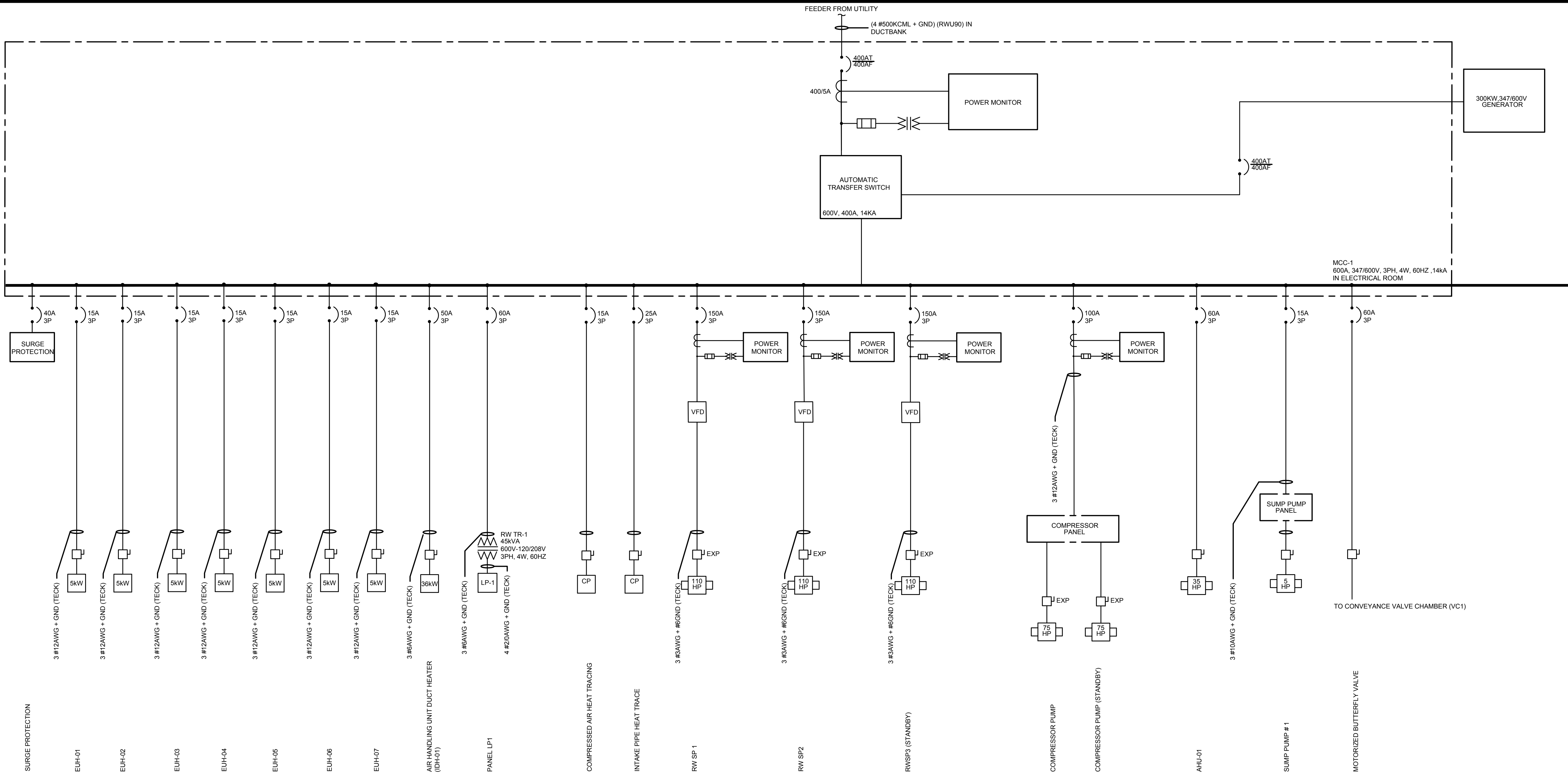
CONTROL SCHEMATICS	
SYMBOL	DESCRIPTION
	STARTER/CONTACTOR OPERATING COIL DESIGNATION
M	STARTER COIL
MS	SLOW
MF	FAST
MFD	FORWARD
MRV	REVERSE
C	CONTACTOR COIL
CS	SLOW
CF	FAST
CFD	FORWARD
CRV	REVERSE
RELAYS	
CR	CONTROL RELAY
LR	LATCHING RELAY
ETM	ELAPSED TIME METER
DVR	DOUBLE VOLTAGE RELAY

SINGLE LINE DIAGRAM	
SYMBOL	DESCRIPTION
	THERMAL ELEMENT
	GROUND CONNECTION
	CABLE/CONDUCTOR No. 1 REFER TO CABLE/CONDUCTOR LIST
	INSTRUMENT OR METER A AMMETER (D - DENOTES MAX. DEMAND INDICATOR) V VOLTMETER kW KILOWATT METER kWh KILOWATT HOUR METER
	OPERATOR CONTROLS AS AMMETER SWITCH VS VOLTMETER SWITCH

SINGLE LINE DIAGRAM LEGEND	
SYMBOL	DESCRIPTION
	HEAVY LINES - NEW WIRING & EQUIPMENT
	LIGHT LINES - EXISTING WIRING & EQUIPMENT
	TO BE REMOVED

C:\Users\mihajlo.bojic\DC\ACCDocs\BI - DT Services\30192375-Iqaluit_LongTermWater C3D2023\Project Files\7.0_Production\7.03_Design\14_Elec-Bld\Sheets\E001-ELECTRICAL LEGEND.dwg

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RWPS SINGLE LINE DIAGRAM



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tel 867 979 5600
www.iqaluit.ca

PRELIMINARY

NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant:



121 Granton Drive, Suite 12
Richmond Hill ON L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
M. BOJIC

Drawn by
M. BOJIC

Approved by
F. RASTI

Project Manager
C.G.

Drawing title

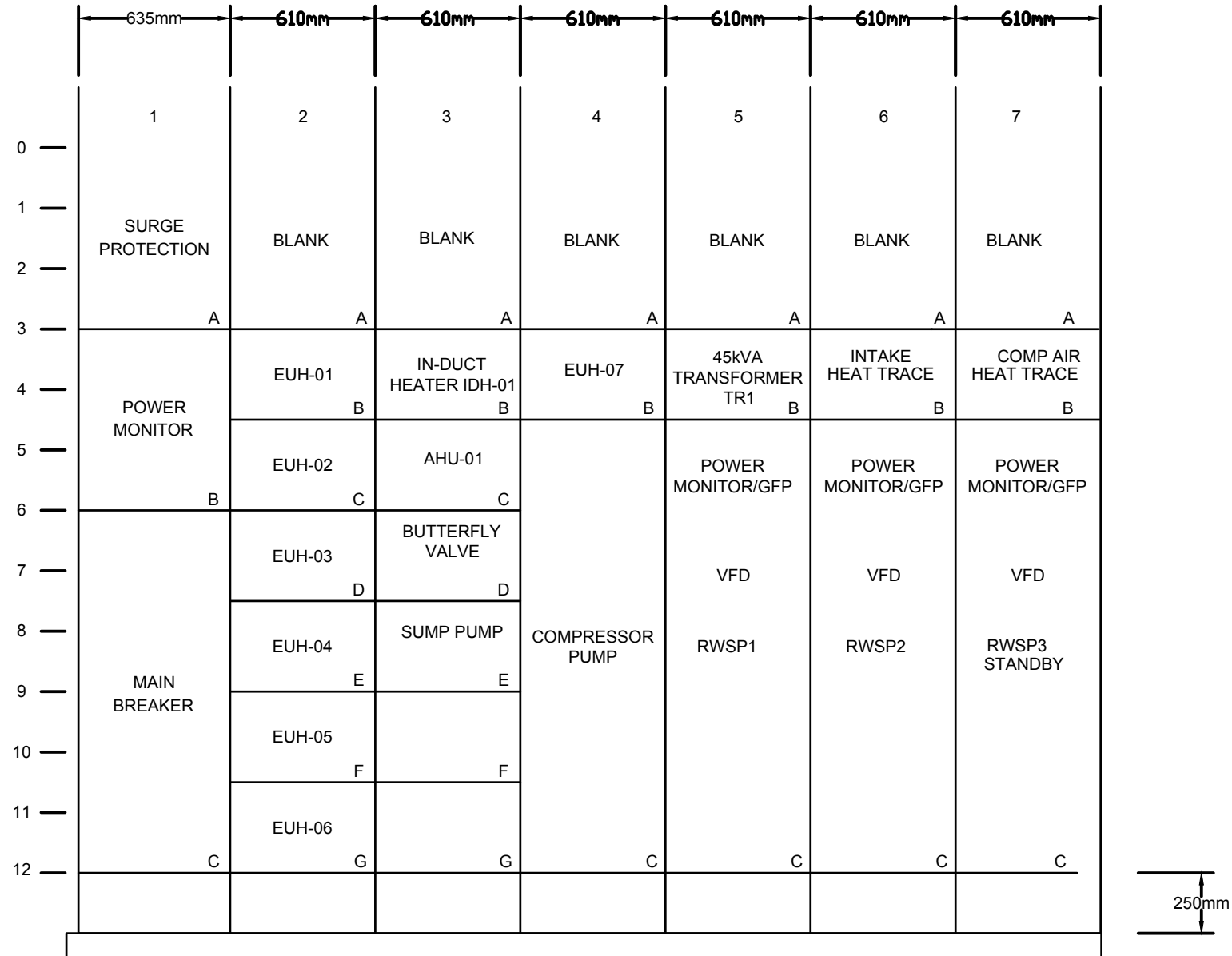
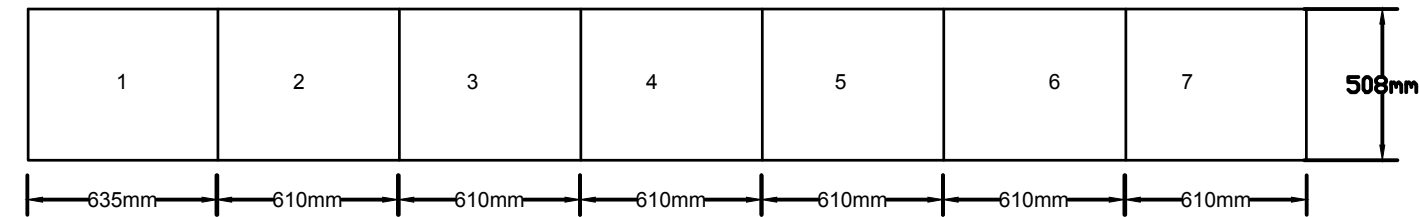
ELECTRICAL SINGLE LINE DIAGRAM

Project no.	Drawing no.	Revision no.
30192375	E201	B



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tel 867 979 5600
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PRELIMINARY
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RWPS FACILITY - MCC ELEVATION

LOCATION - RWPS FACILITY ELECTRICAL ROOM
ENCLOSURE - EEMAC 12 (DUSTTIGHT)

B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date

Consultant
121 Granton Drive, Suite 12 Richmond Hill ON L4B 3N4 Canada tel 905 764 9380 www.arcadis.com

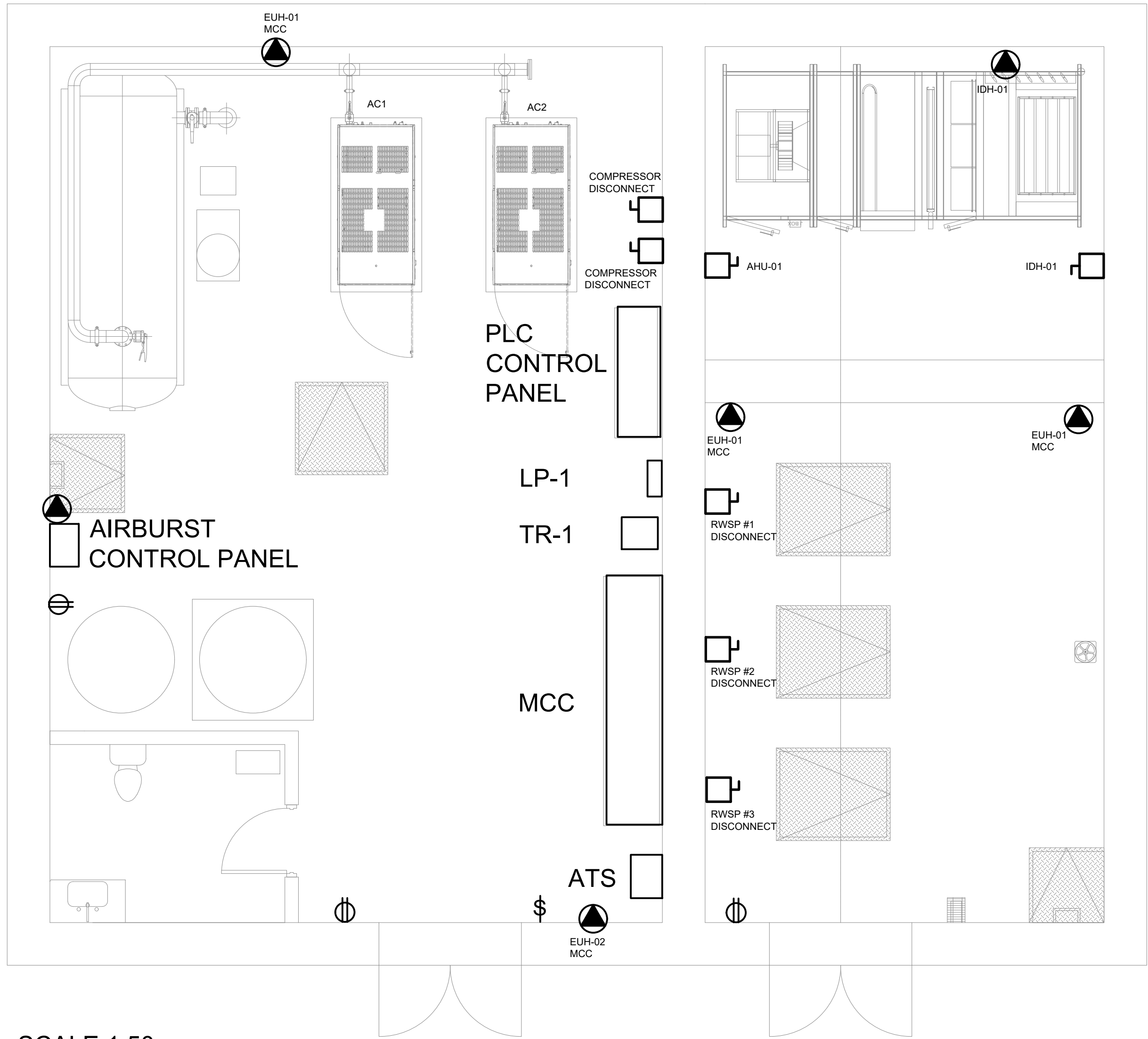
Project title
LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by M.B.
Drawn by M.B.
Approved by F.R.
Project Manager C.G.

Drawing title
ELECTRICAL PUMP STATION MCC LAYOUT AND PANEL SCHEDULE

Project no.	Drawing no.	Revision no.
30192375	E202	B

C:\Users\mhalloboja\Documents\DT Services\30192375-Iqaluit_LongTermWater_C3D2023\Project_Files\7.0_Production\7.03_Design\14_Elec-Bldg\Sheets\E210.211-ELECTRICAL_BUILDING_PLANS.dwg



SCALE 1:50



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PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant:

ARCADIS

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Richmond Hill ON L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

**LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
M.B.

Drawn by
M.B.

Approved by
F.R.

Project Manager
C.G.

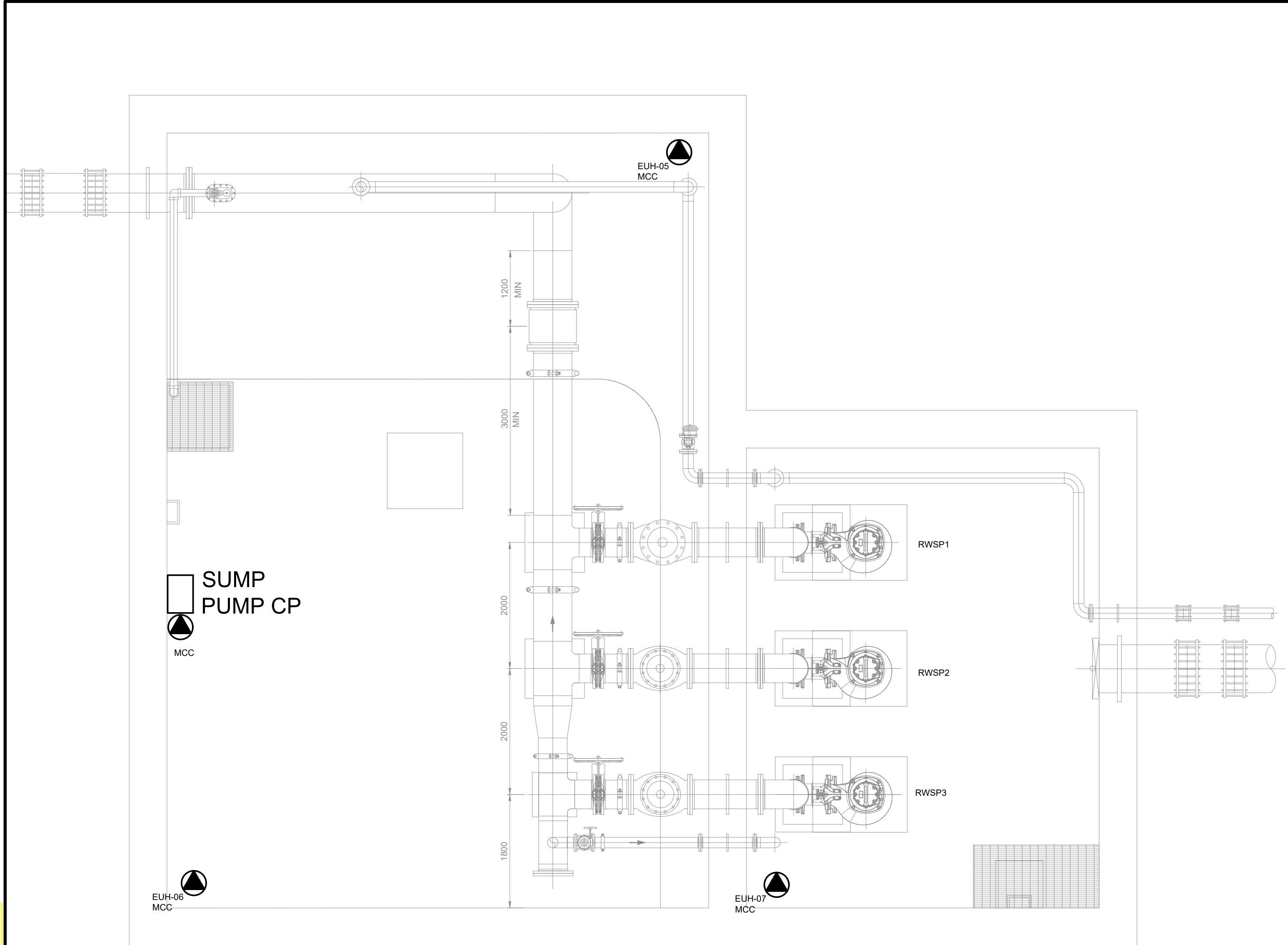
Drawing title

ELECTRICAL

**PUMP STATION PLAN
AT GROUND ELEVATION**

Project no.	Drawing no.	Revision no.
30192375	E211	A

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SCALE 1:50



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tel 867 979 5600
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PRELIMINARY
NOT FOR CONSTRUCTION

A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
Revision	Description	Date

Consultant:

ARCADIS

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Richmond Hill ON L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

**LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
M.B.

Drawn by
M.B.

Approved by
F.R.

Project Manager
C.G.

Drawing title

ELECTRICAL

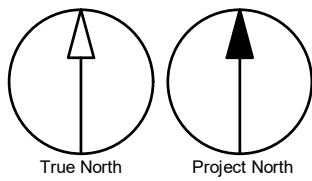
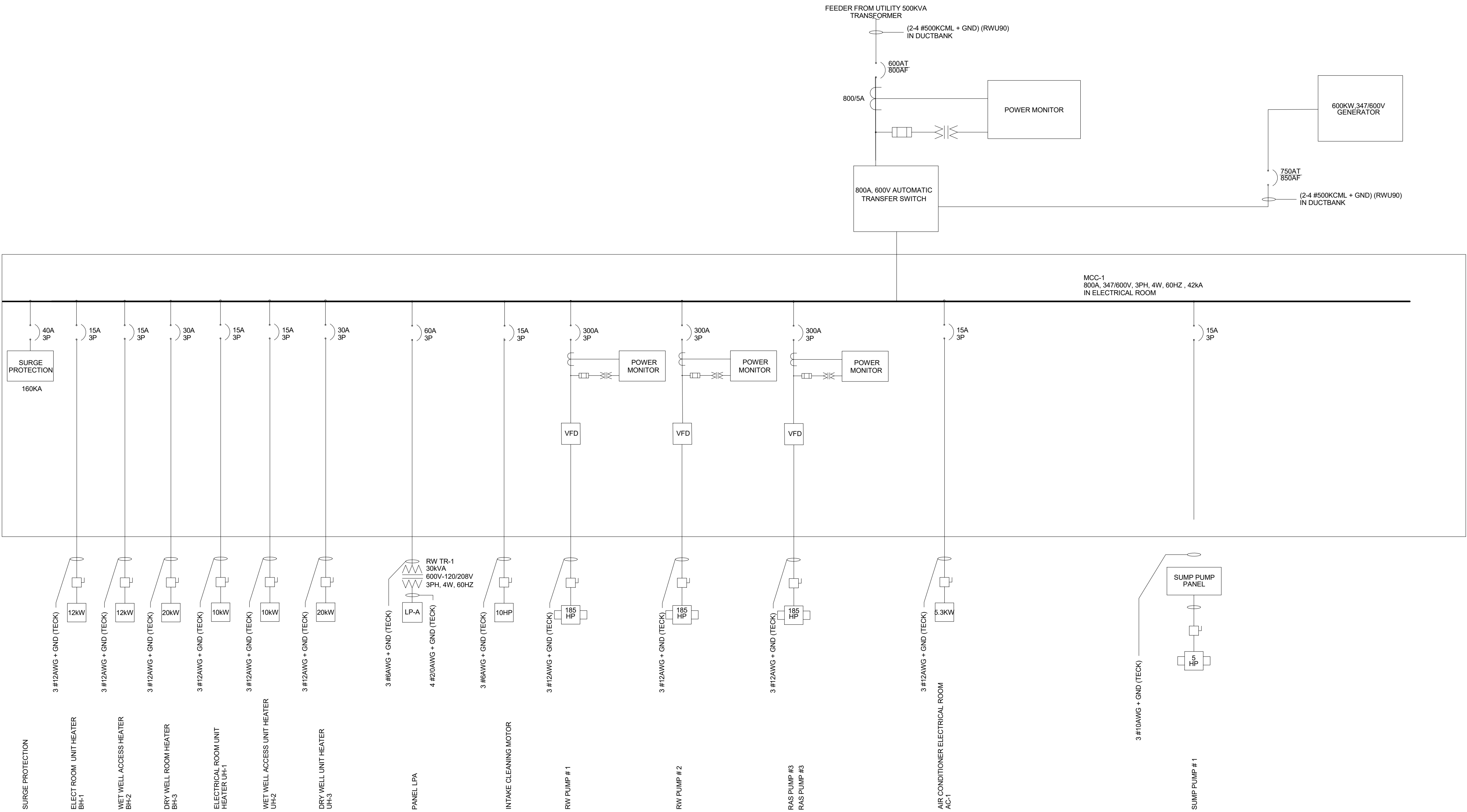
**PUMP STATION BUILDING
PLAN AT EL. 207.0 m**

Project no.	Drawing no.	Revision no.
30192375	E212	A

Autodesk Docs://02088139-Iqaluit_LongTermWater_C3D02029/QL-ARCA-E-APXPUMP-23.rvt

A1 - 841X554

RWP BUILDING SINGLE LINE DIAGRAM



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Arcadis Professional Services (Canada) Inc.

A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
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Revision	Description	Date
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PRIME CONSULTANT



8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

Designed by
MB

Drawn by
AK

Approved by
MJ

Project Manager

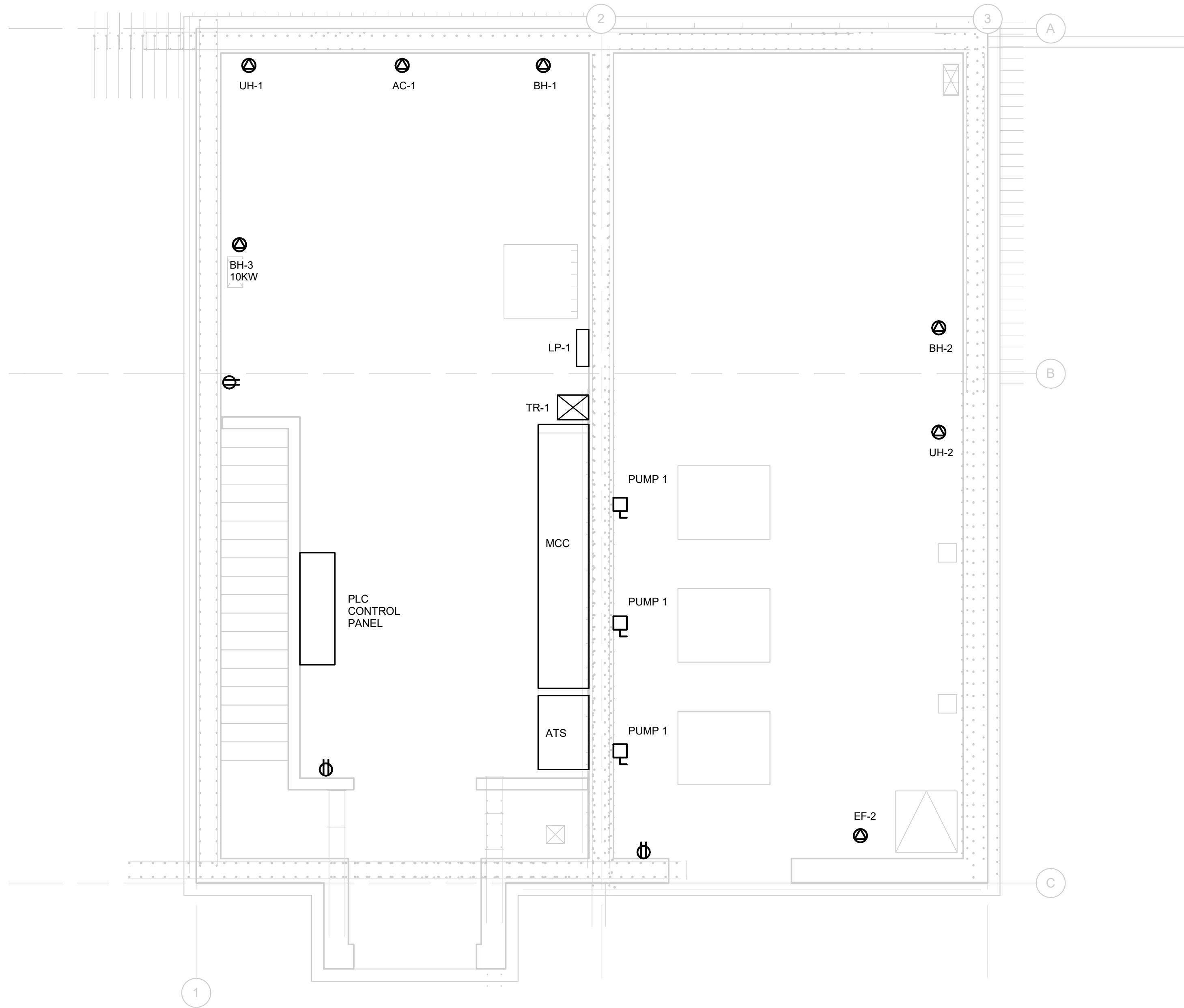
Drawing Title

AR PUMP STATION SINGLE LINE DIAGRAM

Project no. 30288139	Drawing no. E1100	Revision no. C
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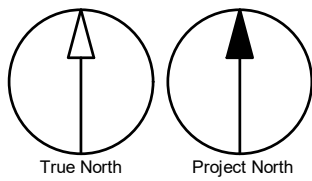
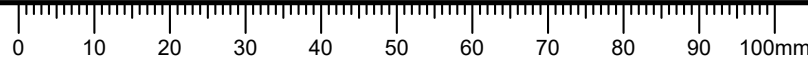
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A1 - 841X554



NOTES:

1. PROVIDE ELECTRICAL CONNECTIONS FROM MCC BREAKERS TO MECHANICAL EQUIPMENT INDICATED.
2. PROVIDE ELECTRICAL EQUIPMENT INDICATED ON PLAN.
3. FOR CONNECTIONS BETWEEN EQUIPMENT AND LOADING INFORMATION REFER TO SINGLE LINE DIAGRAM



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Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

PRIME CONSULTANT



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Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE**

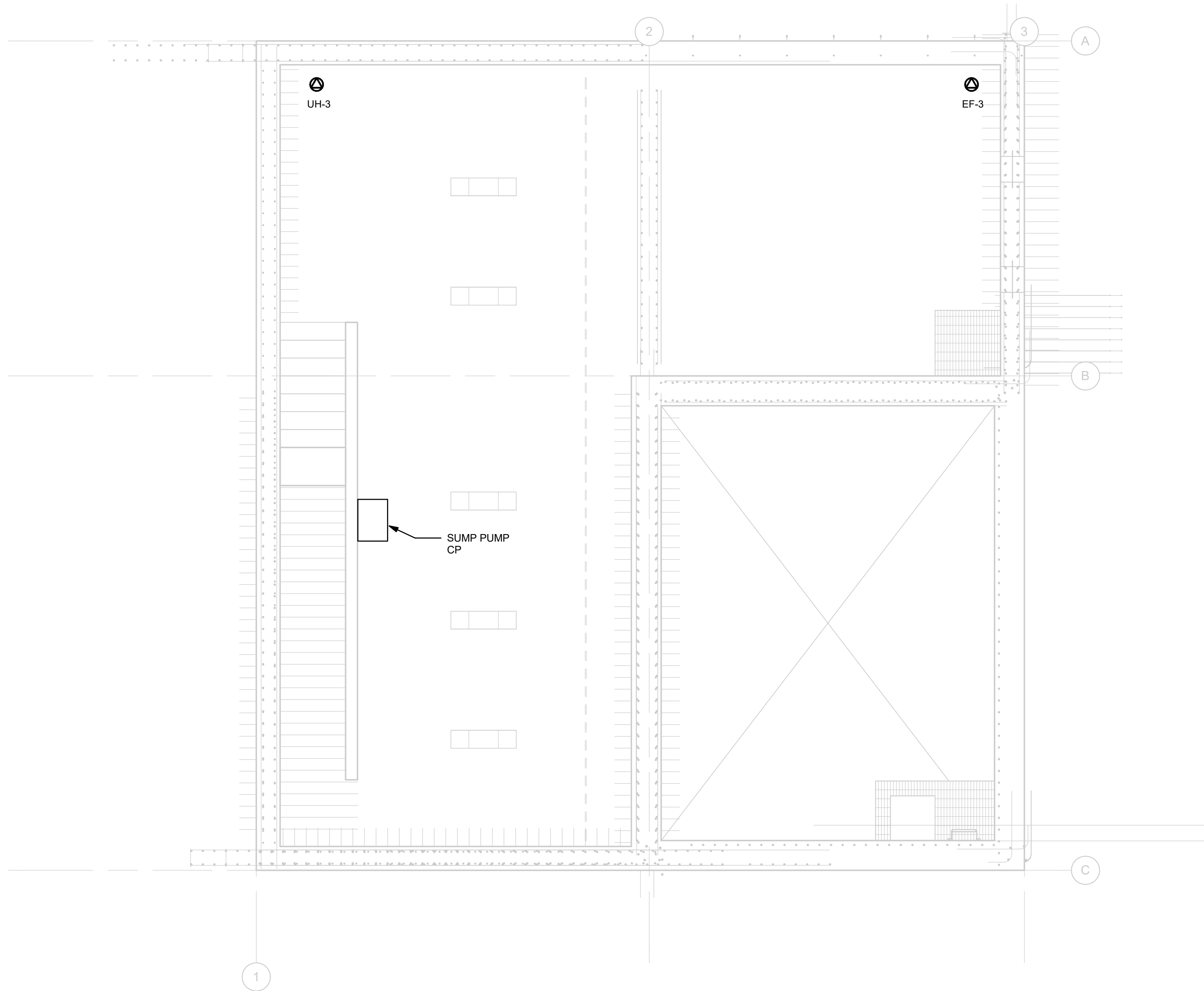
Designed by MB
Drawn by AK
Approved by MJ
Project Manager

Drawing Title
**AR PUMP STATION
ELECTRICAL PLAN - GRADE LEVEL**

Project no. 30288139	Drawing no. E1110	Revision no. C
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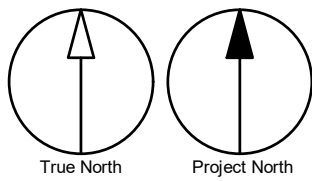
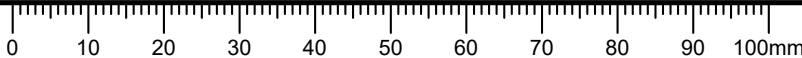
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A1 - 841X554



NOTES:

1. PROVIDE ELECTRICAL CONNECTIONS FROM MCC BREAKERS TO MECHANICAL EQUIPMENT INDICATED.
2. PROVIDE 600V CONNECTION TO SUMP PUMP CONTROL PANEL. PROVIDE CONDUIT AND PULL STRINGS FROM PLC TO SUMP PUMP



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Arcadis Professional Services (Canada) Inc.

Revision	Description	Date
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

PRIME CONSULTANT



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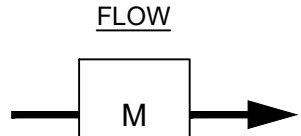
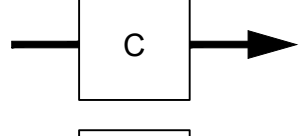
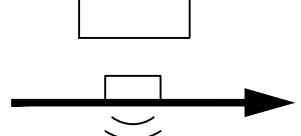
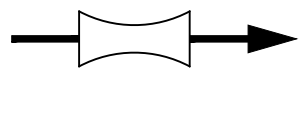
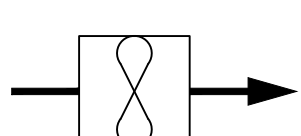
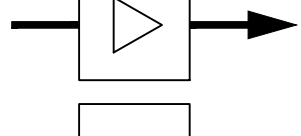
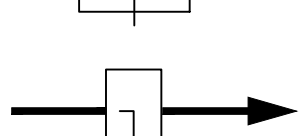
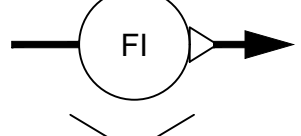
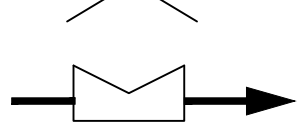
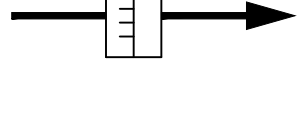
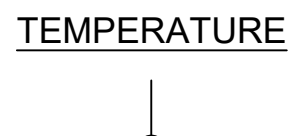
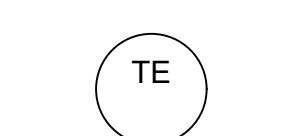
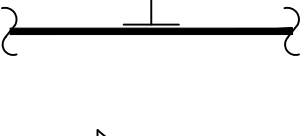
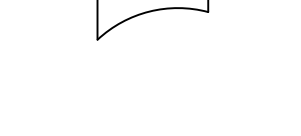
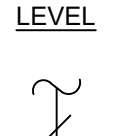
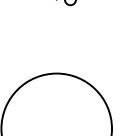
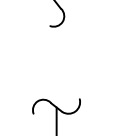
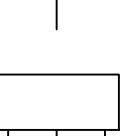
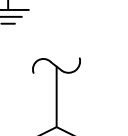
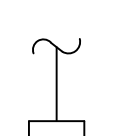
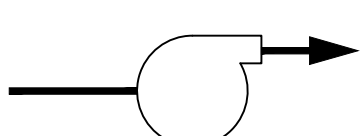
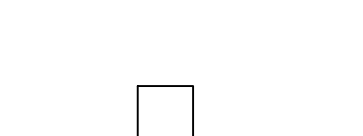
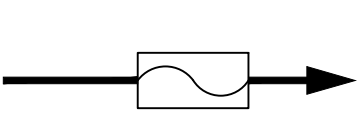
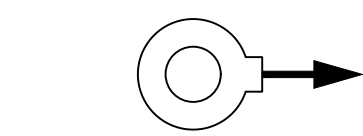
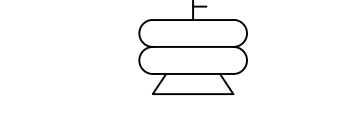
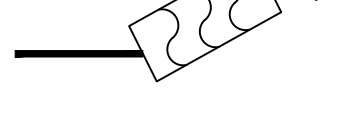
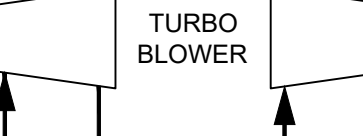
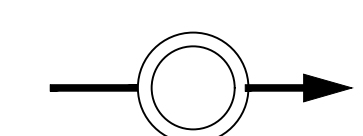
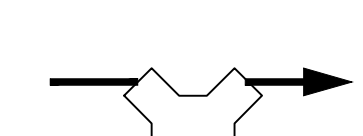
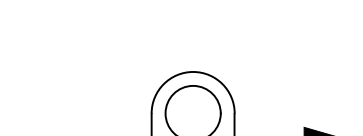
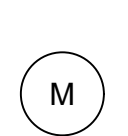
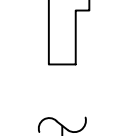
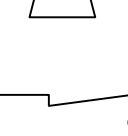
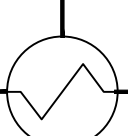
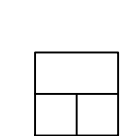
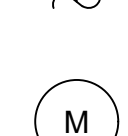
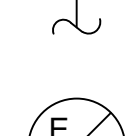
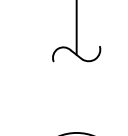
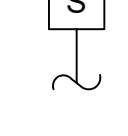
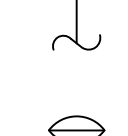
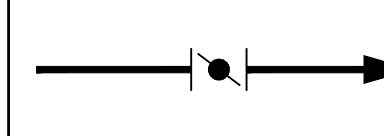
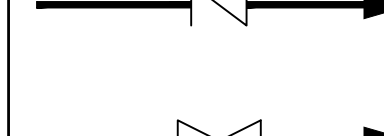
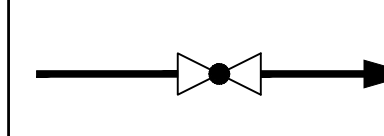
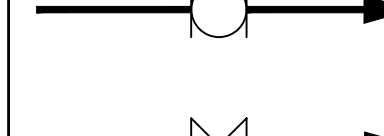
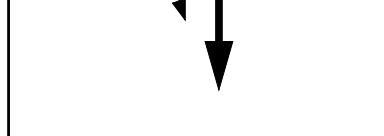
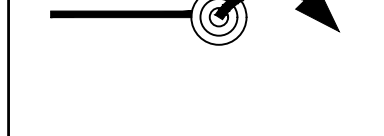
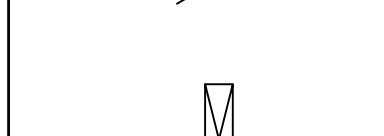
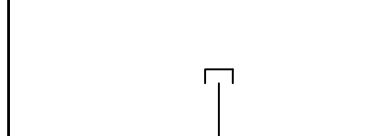
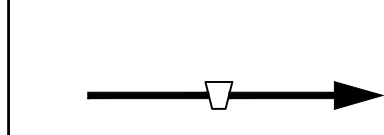
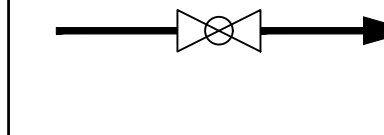
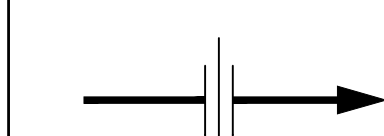
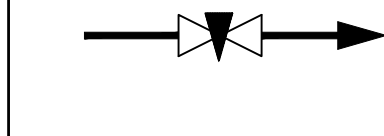
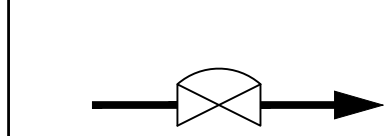
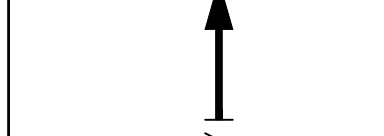
Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY AND
STORAGE**

Designed by MB
Drawn by AK
Approved by MJ Project Manager

Drawing Title
**AR PUMP STATION
ELECTRICAL PLAN - PUMP LEVEL**

Project no. 30288139	Drawing no. E1111	Revision no. C
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PRIMARY ELEMENT SYMBOLS		EQUIPMENT SYMBOLS		ACTUATOR SYMBOLS	VALVE & GATE SYMBOLS
FLOW  ELECTROMAGNETIC  ELECTROMAGNETIC CORIOLIS TYPE  ULTRASONIC IN-LINE  ULTRASONIC CLAMP-ON OR DOPPLER  VENTURI  ORIFICE PLATE  PROPELLER OR TURBINE  VORTEX  TARGET  PITOT TUBE  ROTAMETER  FLUME  WEIR  AVERAGING PITOT TUBE	LEVEL  BUBBLE TUBE  ULTRASONIC  CAPACITANCE  ELECTRODES (WITH HOLDER)  FLOAT  OPTICAL	 CENTRIFUGAL PUMP (DRY PIT)  PROPORTIONING PUMP (PD)  ROTARY PUMP (PD)  CENTRIFUGAL PUMP (WET PIT)  VERTICAL TURBINE PUMP  SCREW PUMP  TURBO BLOWER COMPRESSOR  CYCLONE SEPARATOR  CENTRIFUGAL BLOWER  COMPRESSOR (PD) RECIPROCATING  COMPRESSOR (PD) ROTARY	 MOTOR  VERTICAL PUMP  AGITATOR OR MIXER  SUBMERSIBLE SUMP PUMP  EJECTOR NOTE XX: CS = CONSTANT SPEED 2S = TWO SPEED VS = VARIABLE SPEED PD : POSITIVE DISPLACEMENT  HEAT EXCHANGER	 CYLINDER  MOTOR  ELECTROPNEUMATIC  ELECTROHYDRAULIC MANUAL (SHOWN ONLY FOR HAND OPERATED VALVES EQUIPPED WITH POSITION MONITORING INSTRUMENTS)  SOLENOID  DIAPHRAGM (SPRING OPPOSED)  DIAPHRAGM (PRESSURE BALANCED) NOTE: ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL) XX: FO = FAIL OPEN FC = FAIL CLOSED FI = FAIL TO INTERMEDIATE POSITION BLANK = FAIL TO LAST POSITION  PRESSURE OR VACUUM RELIEF SPRING OR WEIGHT LOADED  HYDRAMOTOR	 BUTTERFLY VALVE  CHECK VALVE  GATE OR GENERAL IN-LINE VALVE  GLOBE VALVE  ROTARY VALVE  THREE WAY VALVE (ARROW IF SHOWN INDICATES FAIL OPEN PATH)  TELESCOPING VALVE  DAMPER OR LOUVER  SLUICE GATE  PREFABRICATED SLIDE GATE  CONE VALVE  BALL VALVE  PLUG VALVE  KNIFE GATE VALVE  NEEDLE VALVE  BACK FLOW PREVENTER  PINCH VALVE  MUD VALVE



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PRELIMINARY
NOT FOR CONSTRUCTION

B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date
Consultant		
 121 Granton Drive, Suite 12 Richmond Hill ON L4B 3N4 Canada tel 905 764 9380 www.arcadis.com		
Project title		
LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE		
Designed by J.G.C.		
Drawn by M.D.		
Approved by M.J.		
Project Manager C.G.		
Drawing title		
INSTRUMENTATION AND CONTROL		
LEGEND - 1		
Project no.	Drawing no.	Revision no.
30192375	I101	B

Consultant

 **ARCADIS**

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Designed by J.GC.
Drawn by M.D.
Approved by M.J.
Project Manager C.G.

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NOTE:
1. FLOW STREAM IDENTIFICATION IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.



B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date



LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE

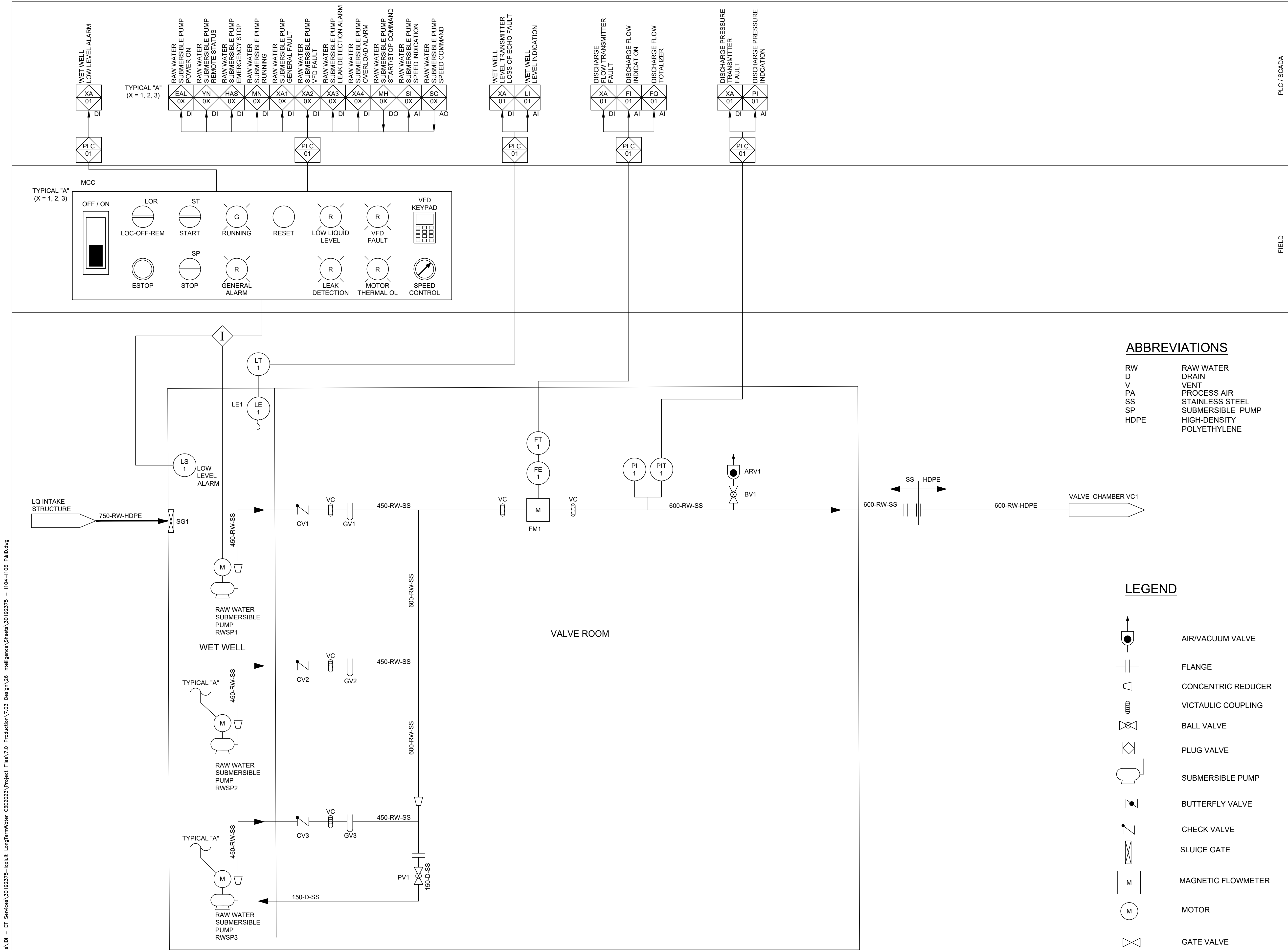
Drawing title

LEGEND - 3

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A1 - 841X594



ABBREVIATIONS

RW	RAW WATER
D	DRAIN
V	VENT
PA	PROCESS AIR
SS	STAINLESS STEEL
SP	SUBMERSIBLE PUMP
HDPE	HIGH-DENSITY POLYETHYLENE

LEGEND

	AIR/VACUUM VALVE
	FLANGE
	CONCENTRIC REDUCER
	VICTAULIC COUPLING
	BALL VALVE
	PLUG VALVE
	SUBMERSIBLE PUMP
	BUTTERFLY VALVE
	CHECK VALVE
	SLUICE GATE
	MAGNETIC FLOWMETER
	MOTOR
	GATE VALVE

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PRELIMINARY
NOT FOR CONSTRUCTION

Revision	Description	Date
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

121 Granton Drive, Suite 12
Richmond Hill ON L4B 3N4 Canada
tel 905 764 9380
www.arcadis.com

Project title

**LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
J.G.C.

Drawn by
M.D.

Approved by
M.J.

Project Manager
C.G.

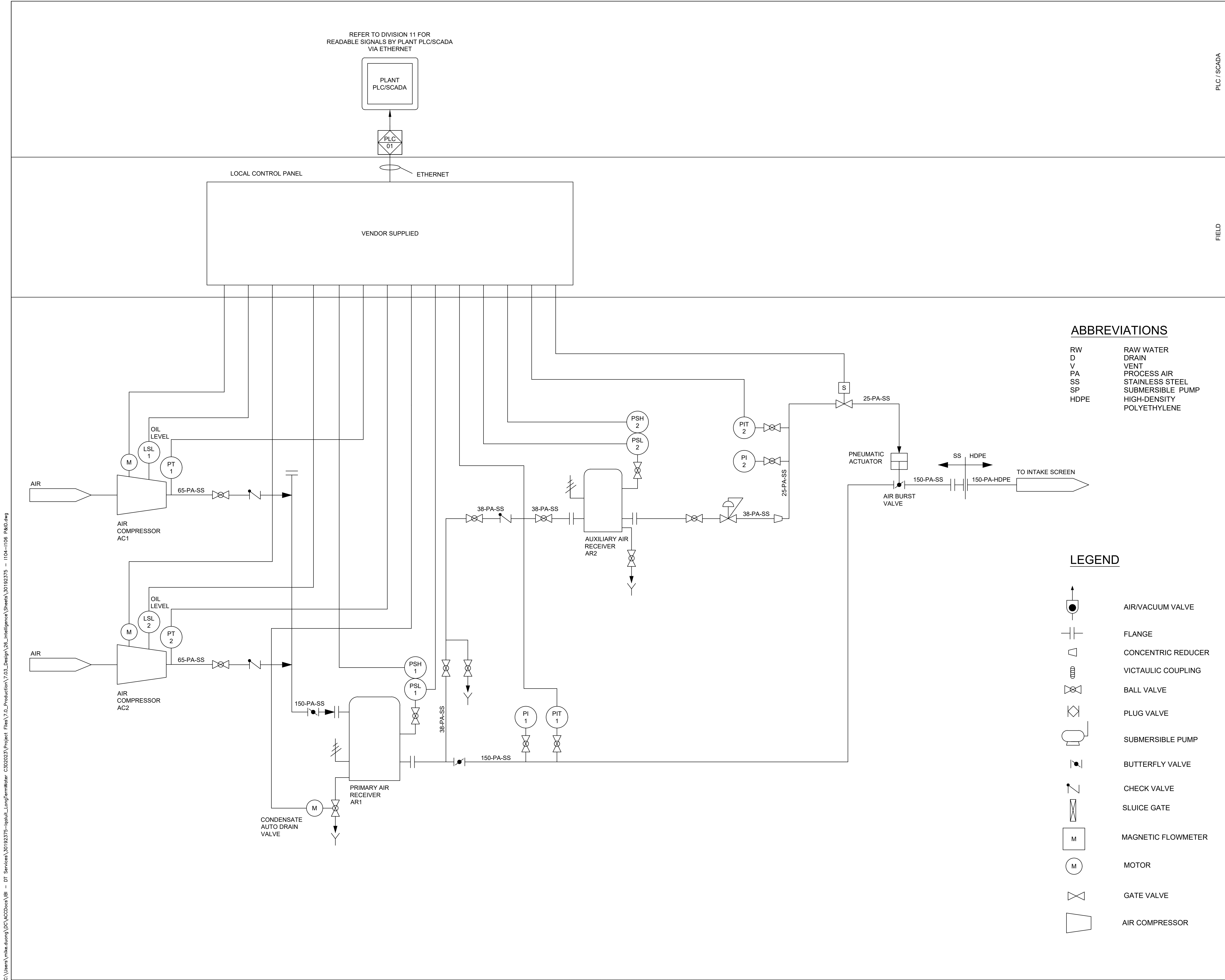
Drawing title

INSTRUMENTATION AND CONTROL

P&ID - PUMP STATION

Project no.	Drawing no.	Revision no.
30192375	I104	B

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PLC / SCADA

FIELD

PRELIMINARY
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B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date

Consultant

ARCADIS

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Project title

**LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
J.G.C.

Drawn by
M.D.

Approved by
M.J.

Project Manager
C.G.

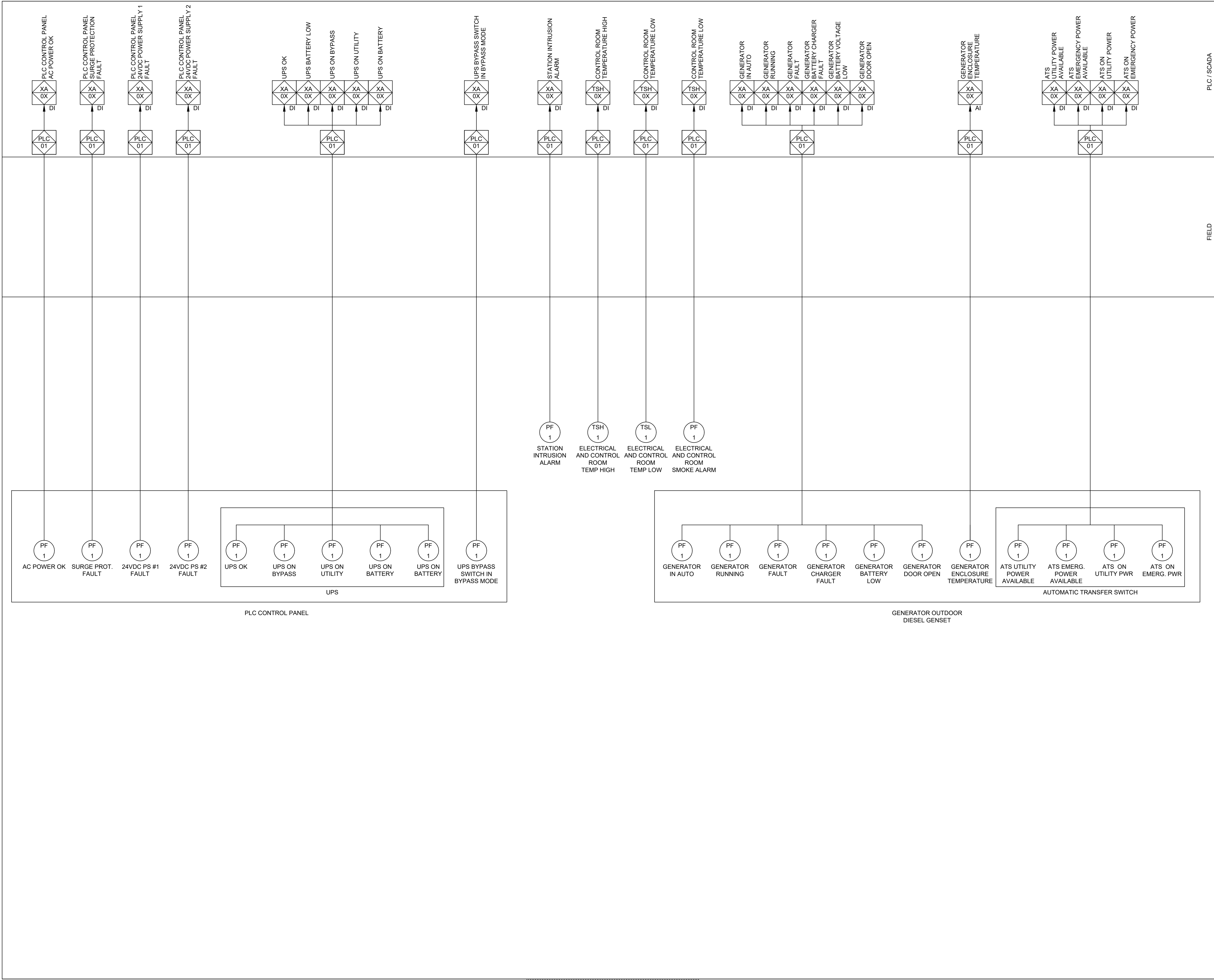
Drawing title

INSTRUMENTATION AND CONTROL

**P&ID - PUMP STATION
AIR BURST SYSTEM**

Project no.	Drawing no.	Revision no.
30192375	I105	B

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B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date

Consultant

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Project title

**LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
J.G.C.

Drawn by
M.D.

Approved by
M.J.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

**P&ID - PUMP STATION CONTROL AND
GENERATOR**

Project no.	Drawing no.	Revision no.
30192375	I106	B



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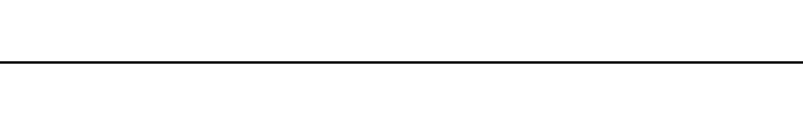
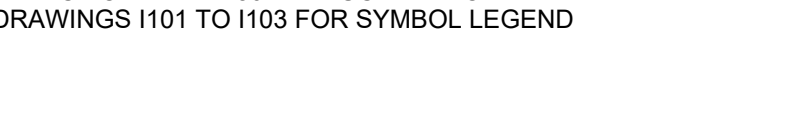
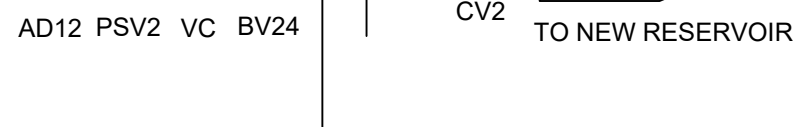
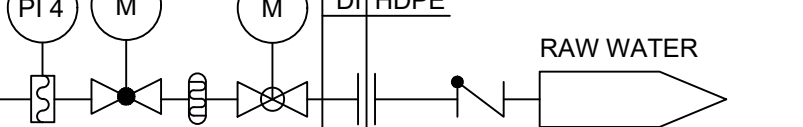
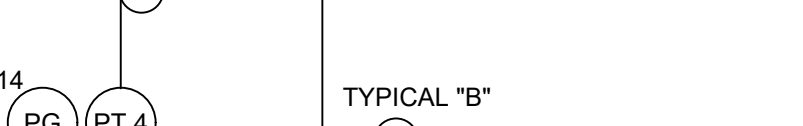
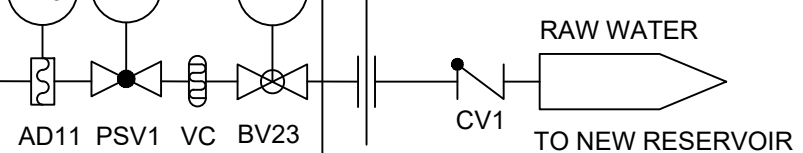
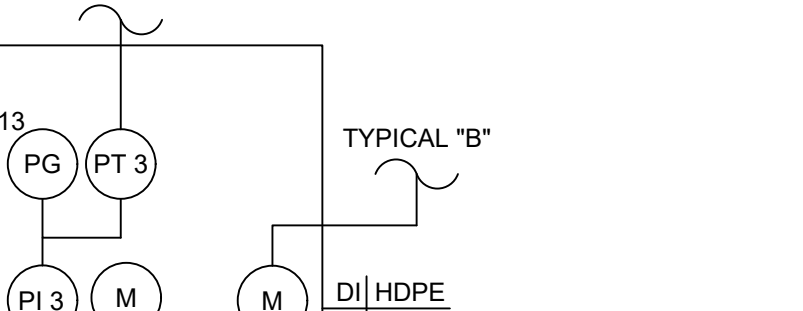
PLC / SCADA

FIELD

ABBREVIATIONS

AD	ANNULAR DIAPHRAGM
BV	BALL VALVE
CV	CHECK VALVE
DI	DUCTILE IRON
HDPE	HIGH DENSITY POLYETHYLENE
M	MOTORIZED
PG	PRESSURE GAUGE
PI	PRESSURE INSTRUMENT
PSV	PRESSURE SUSTAINING VALVE
PT	PRESSURE TRANSMITTER
RW	RAW WATER
SCAV	SANITARY COMBINATION AIR VALVE
VC	VALVE CHAMBER

TYPICAL "A"



NOTE:

- ALL TEE CONNECTIONS ARE 150 MM DUCTILE IRON
- REFER TO DRAWINGS I101 TO I103 FOR SYMBOL LEGEND

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PLC / SCADA

FIELD

BV	BALL VALVE
DIFF	DIFFUSER
FE	FLOW ELEMENT
FM	FLOW METER
FT	FLOW TRANSMITTER
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
RW	RAW WATER
SC	SCREEN

	BALL VALVE
	DIFFUSER
	ELECTRICALLY ACTUATED GATE VALVE
	FLANGE
	FLOW ELEMENT
	FLOW METER
	FLOW TRANSMITTER
	MOTORIZED
	SCREEN

Consultant	
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Project title

Designed by
J.GC.

Drawn by	
M.D.	

Approved
M.J.

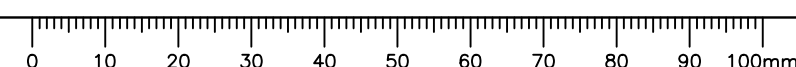
Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

P&ID - SERVICE CORRIDOR

Project no.	Drawing no.	Revision no.
30192375	I108	B



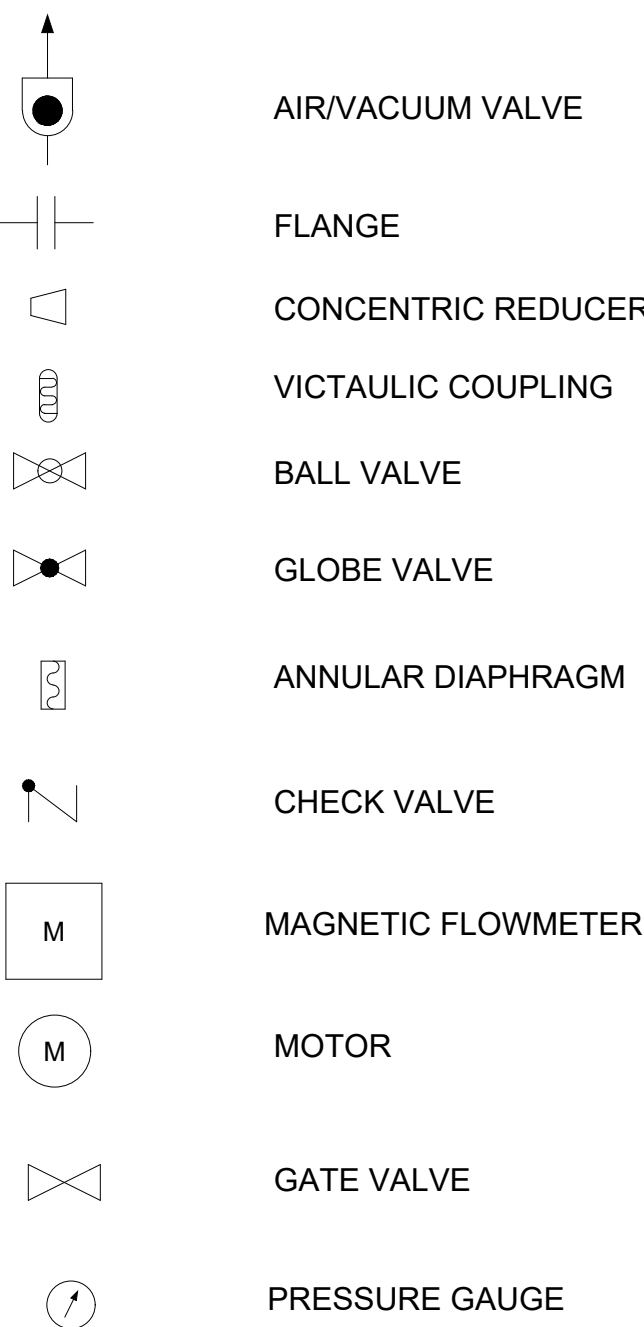
PLC / SCADA

MCC / CONTROL ROOM

ABBREVIATIONS

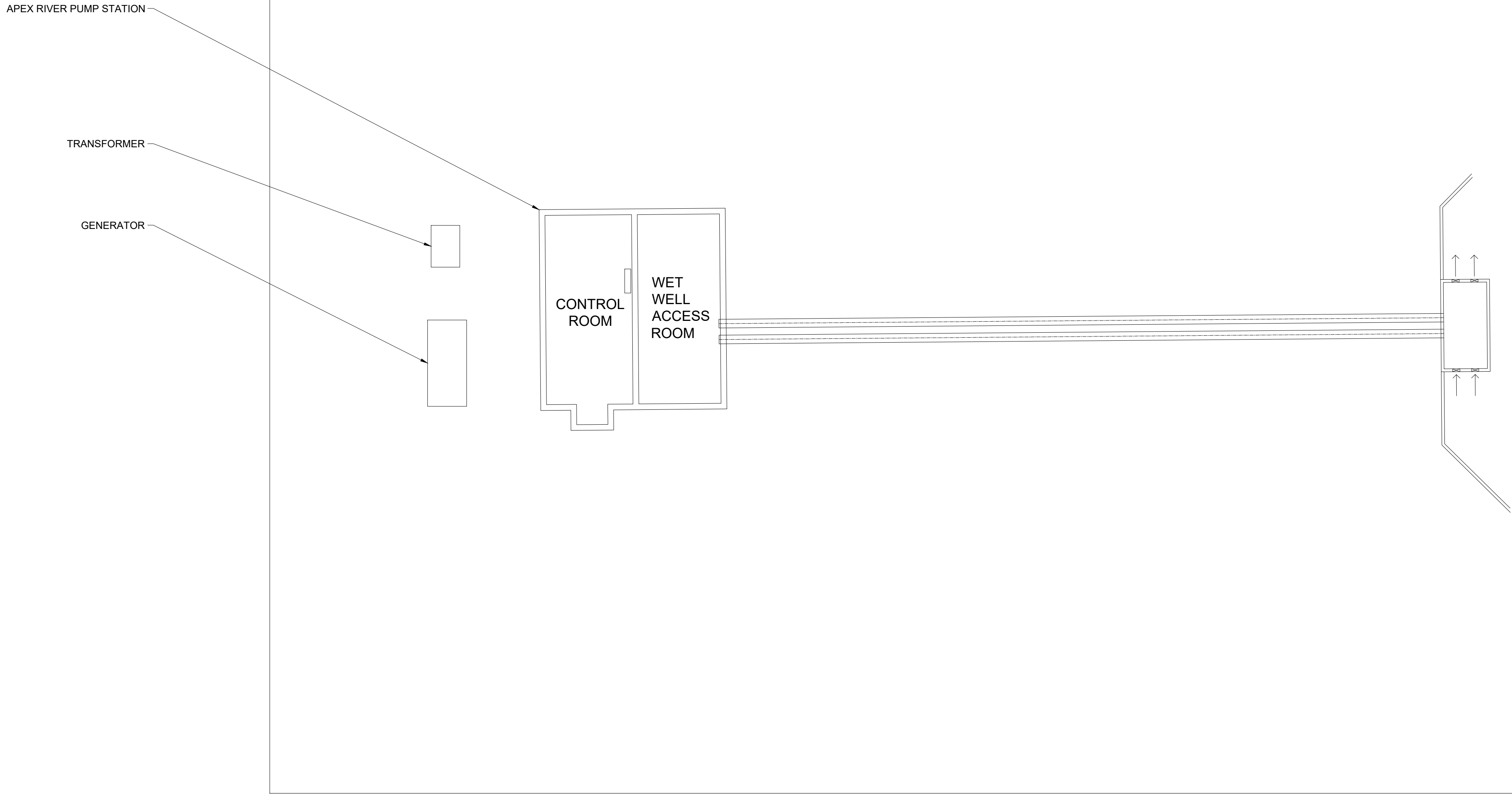
AD	ANNULAR DIAPHRAGM
BV	BALL VALVE
CV	CHECK VALVE
DI	DUCTILE IRON
HDPE	HIGH-DENSITY POLYETHYLENE
M	MOTORIZED
PG	PRESSURE GAUGE
PI	PRESSURE INSTRUMENT
PSV	PRESSURE SUSTAINING VALVE
PT	PRESSURE TRANSMITTER
RW	RAW WATER
SCAV	SANITARY COMBINATION AIR VALVE
VC	VALVE CHAMBER

LEGEND



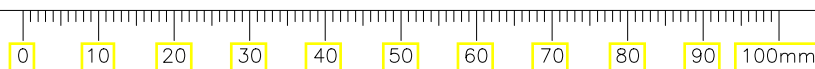
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Revision	Description	Date
Consultant		
 ARCADIS		
8133 Warden Avenue - Unit 300 Markham ON L6G 1B3 Canada tel 905 763 2322 www.arcadis.com		
Project title		
IQUALUIT LONG TERM WATER PROGRAM RAW WATER SUPPLY AND STORAGE		
Designed by J.G.C.		
Drawn by M.H.		
Approved by J.G.C.		
Project Manager C.G.		
Drawing title		
INSTRUMENTATION AND CONTROL AR PUMP STATION CONVEYANCE PIPELINE P&ID		
Project no.	Drawing no.	Revision no.
30192375	I1102	C

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SITE PLAN - APEX RIVER PUMP STATION

SCALE 1:200



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Revision	Description	Date
Consultant		



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Project title
**IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE**

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

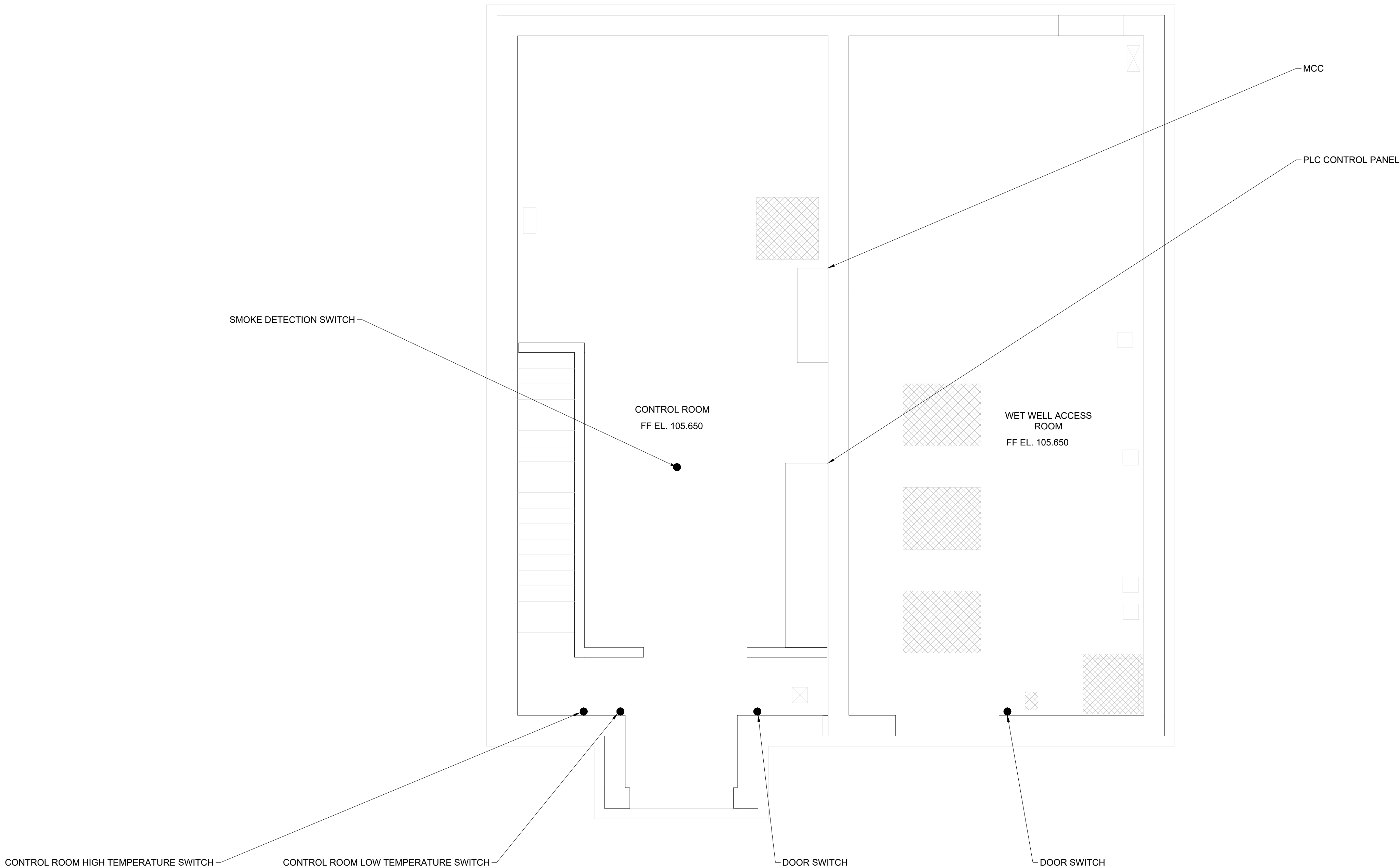
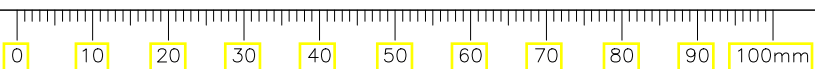
Project Manager
C.G.

Drawing title
**INSTRUMENTATION AND CONTROL
AR PUMP STATION
SITE PLAN**

Project no. 30192375	Drawing no. N1101	Revision no. C
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A1 - 841X594



FLOOR PLAN - APEX RIVER PUMP STATION

SCALE 1:50



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Project title

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RAW WATER SUPPLY
AND STORAGE**

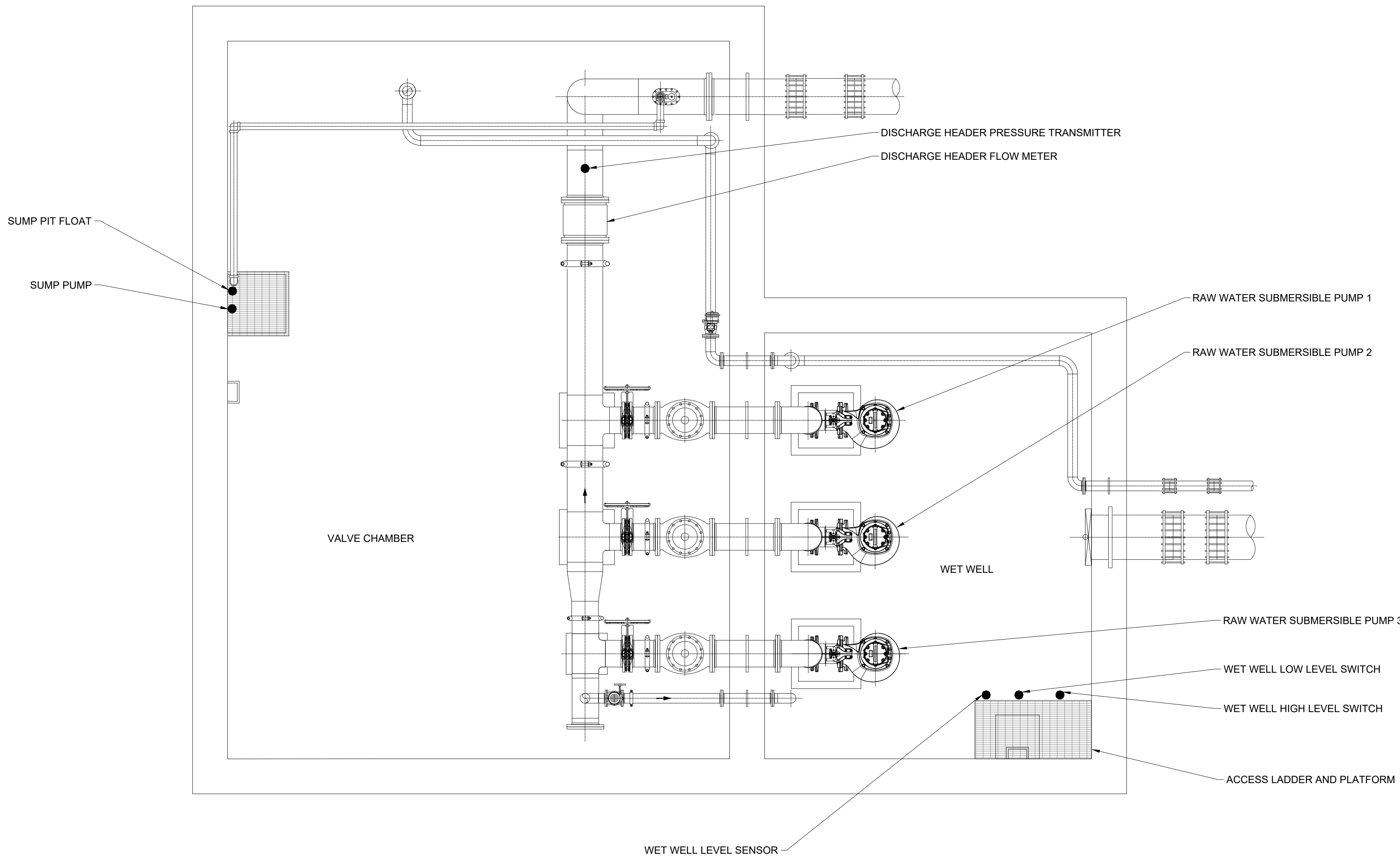
Designed by J.G.C.
Drawn by M.H.
Approved by J.G.C.
Project Manager C.G.

Drawing title

**INSTRUMENTATION AND CONTROL
AR PUMP STATION
FLOOR PLAN 1**

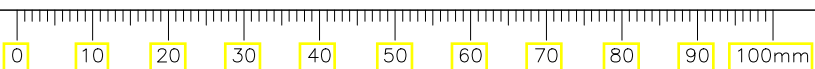
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FLOOR PLAN - APEX RIVER PUMP STATION

SCALE 1:50



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A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

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Project title

IQALUIT
LONG TERM WATER PROGRAM
RAW WATER SUPPLY
AND STORAGE

Designed by
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Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL
AR PUMP STATION
FLOOR PLAN 2

Project no.	Drawing no.	Revision no.
30192375	N1103	C