



BLACKFALDS

A L B E R T A

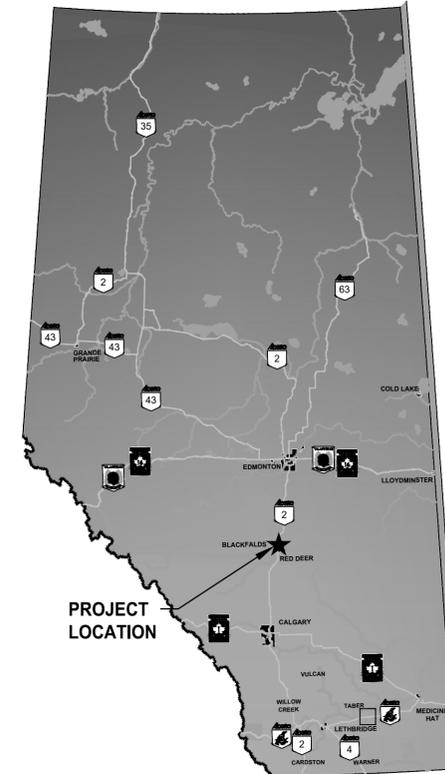
MCKAY RANCH
LIFT STATION

March 2026

Project Number: 1101000459

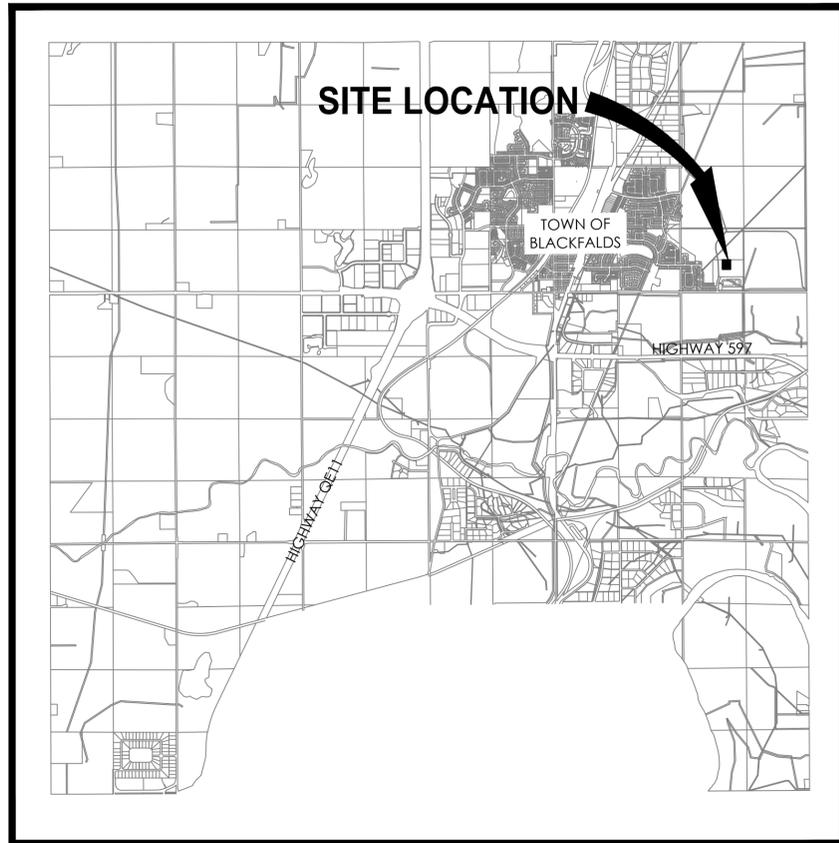
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LOCATION PLAN

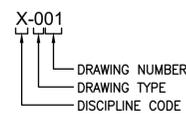
N.T.S.
 BLACKFALDS, ALBERTA



SITE LOCATION PLAN

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PC-601	OVERALL COMMUNICATIONS PLAN

DRAWING NUMBER



DISCIPLINE CODE & DRAWING ORDER

- G GENERAL DRAWINGS
- C CIVIL DRAWINGS
- A ARCHITECTURAL DRAWINGS
- S STRUCTURAL DRAWINGS
- P PROCESS DIAGRAMS
- M MECHANICAL DRAWINGS
- E ELECTRICAL DRAWINGS
- I INSTRUMENTATION DRAWINGS
- PC PROCESS CONTROLS DRAWINGS

DRAWING TYPE

- 0 GENERAL (SYMBOLS, LEGENDS, NOTES ETC.)
- 1 PLANS (HORIZONTAL VIEWS)
- 2 SECTIONS (SECTIONAL VIEWS, WALL SECTIONS)
- 3 LARGE SCALE (PLANS, ELEVATIONS OR SECTIONS THAT ARE NOT DETAILS)
- 4 DETAILS
- 5 STANDARD DETAILS

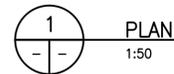
NOTES:

1. CONTRACTOR TO WELD ANY DAMAGE TO THE EXISTING HDPE LINER WITH APPROVED WELDER.
2. CONTRACTOR TO ENSURE ANY LINER PENETRATIONS ARE SEALED INCLUDING BUT NOT LIMITED TO PIPE PENETRATIONS, PIPE SUPPORTS, ETC.



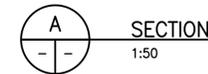
SEE DETAIL

DETAIL BUBBLE



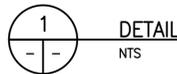
PLAN

1:50



SECTION

1:50



DETAIL

NTS

CAPTION TITLE

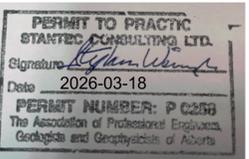
NOTE:

SECTIONS ARE IDENTIFIED WITH LETTERS, DETAILS BY NUMBERS
 LEFT TAG DENOTES SOURCE DWG, RIGHT TAG DENOTES TARGET DWG (SEE MANUAL FOR FURTHER EXPLANATION)

Revision	By	Appd.	YY.MM.DD
E ---	---	---	---
D ---	---	---	---
C ---	---	---	---
B FOR TENDER	JTM	BVH	2026.03.09
A FOR 95% REVIEW	JTM	BVH	2026.02.13
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File Name: C-001.dwg	JTM	JC	BVH	2026.03.09
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal



Client/Project

BLACKFALDS
 ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

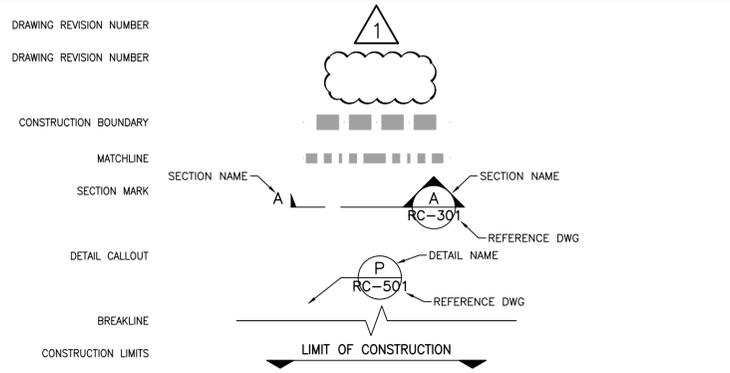
GENERAL
 LOCATION PLAN & LIST OF DRAWINGS

Project No.	Scale	
1101000459	NO SCALE	
Drawing No.	Sheet	Revision
G-002	of	0

SURFACE WORKS

	EXISTING	ABANDONED OR REMOVE	PROPOSED	FUTURE
FOUND IRON POST	●		○	
ALBERTA SURVEY CONTROL MONUMENT	▲ ASCM 247361 879.100			
SURVEY CONTROL BENCHMARK	⊠			
BOREHOLE	⊙ BH#1 000.00		⊙ BH#1 000.00	
MONITORING WELL	⊙ MW#3		⊙ MW#3	
PROPERTY LINE	— — — — —	///-///-///-///-	— — — — —	- - - - -
EASEMENT/RIGHT-OF-WAY	— — — — —		— — — — —	- - - - -
EDGE OF ASPHALT OR GRAVEL	- - - - -
250 CURB & GUTTER	=====	XXXXXX	=====	=====
PINNED CURB	=====	XXXXXX	=====	=====
ROAD CENTERLINE	-----		-----	-----
DEPRESSED CURB (DRIVEWAY)	=====	XXXXXX	=====	=====
VERTICAL POINT OF INTERSECTION (VPI)	+000.00		+000.000	+000.00
PAVEMENT ELEVATION	(877.55)		877.554	
DRAINAGE ARROW	➔		➔	➔
EC/BC MARKS				
RAMP-RESIDENTIAL	▲	XXXX	▲	▲
CONCRETE (JERSEY) BARRIER	▤	XXXX	▤	▤
BARBED WIRE FENCE	-x-x-x-	///-///-///-///-	-x-x-x-	-x-x-x-
CHAIN LINK FENCE	-c-c-c-	///-///-///-///-	-c-c-c-	-c-c-c-
IRON FENCE	-f-f-f-	///-///-///-///-	-f-f-f-	-f-f-f-
VINYL FENCE	-v-v-v-	///-///-///-///-	-v-v-v-	-v-v-v-
POST & CABLE FENCE	-o-o-o-	///-///-///-///-	-o-o-o-	-o-o-o-
SILT FENCE	~~~~~	~~~~~	~~~~~	~~~~~
GUARD RAIL	=====	XXXXXX	=====	=====
RETAINING WALL	=====	XXXXXX	=====	=====
RAILROAD	=====	XXXXXX	=====	=====
CULVERT	=====	XXXXXX	=====	-----
DITCH OR SWALE	-D-D-		-D-D-	-D-D-
SLOPE LIMIT CUT				
SLOPE LIMIT FILL				
CONTOUR	---000.00---		---000.000---	---000.000---
TREES	⊙		⊙	
TREES	~~~~~		~~~~~	
RAILWAY GATE	⊠	XXXXXX	⊠	⊠
BUILDING	▭	XXXXXX	▭	▭
WETLAND AND SETBACK	▭	XXXXXX	▭	▭

GENERAL



DEEP AND SHALLOW UTILITY WORKS

	EXISTING	ABANDONED OR REMOVE	PROPOSED	FUTURE	PROFILE VIEW
MANHOLE	⊙	⊗	⊙	⊙	
CATCH BASIN MANHOLE	⊙	⊗	⊙	⊙	
STANDARD FACED CATCH BASIN	▭	⊗	▭	▭	
ROLLED FACED CATCH BASIN	▭	⊗	▭	▭	
ENCASEMENT	▭	⊗	▭	▭	
PLUG		⊗			
COUPLER		⊗			
HYDRANT	⊙	⊗	⊙	⊙	⊙
HYDRANT VALVE	⊙	⊗	⊙	⊙	
AIR RELEASE VALVE	⊙	⊗	⊙	⊙	
COMBINATION AIR/VACUUM VALVE	⊙	⊗	⊙	⊙	
MAIN LINE VALVE	⊙	⊗	⊙	⊙	
REDUCER	▭	⊗	▭	▭	
PARKS WATER SERVICE BOX	⊙	⊗	⊙	⊙	
GRADE DEFLECTION		⊗			
OUTFALL)	⊗))	
PIPE BENDS	11.25° 45° 22.5° TEE		11.25° 45° 22.5° TEE		
SANITARY FORCEMAIN	-FM-FM-	///-///-///-///-	-FM-FM-	-FM-FM-	
SANITARY SEWER	-SS-SS-	///-///-///-///-	-SS-SS-	-SS-SS-	
STORM SEWER	-ST-ST-	///-///-///-///-	-ST-ST-	-ST-ST-	
WATER MAIN	-W-W-	///-///-///-///-	-W-W-	-W-W-	
WATER WELL	⊙	⊗	⊙	⊙	
STREET LIGHTS (SINGLE / DOUBLE DAVIT)	⊙	⊗	⊙	⊙	
GAS LINE	-G-G-	///-///-///-///-	-G-G-	-G-G-	
GAS SLEEVE	▭	⊗	▭	▭	
POWER POLE	⊙	⊗	⊙	⊙	
OVERHEAD POWER LINE	-O/H-P-	///-///-///-///-	-O/H-P-	-O/H-P-	
BURIED POWER LINE	-P-P-	///-///-///-///-	-P-P-	-P-P-	
POWER TRANSFORMER	▭	⊗	▭	▭	
POWER URD BOX	⊙	⊗	⊙	⊙	
OVERHEAD COMMUNICATION LINE	-O/H-T-O/H-T-	///-///-///-///-	-O/H-T-O/H-T-	-O/H-T-O/H-T-	
BURIED COMMUNICATION LINE	-T-T-	///-///-///-///-	-T-T-	-T-T-	
COMMUNICATION PEDESTAL	▲	⊗	▲	▲	
OVERHEAD SHAW LINE	-O/H-CATV-	///-///-///-///-	-O/H-CATV-	-O/H-CATV-	
BURIED SHAW LINE	-CATV-CATV-	///-///-///-///-	-CATV-CATV-	-CATV-CATV-	
SHAW PEDESTAL	●	⊗	●	●	
BURIED FIBRE OPTIC LINE	-FO-FO-	///-///-///-///-	-FO-FO-	-FO-FO-	
GAS PIPELINE	-GPL-GPL-	///-///-///-///-	-GPL-GPL-	-GPL-GPL-	
GAS WELL	⊙	⊗	⊙	⊙	
OIL PIPELINE	-OPL-OPL-	///-///-///-///-	-OPL-OPL-	-OPL-OPL-	
OIL WELL	⊙	⊗	⊙	⊙	

HATCH PATTERNS

REMOVALS	ASPHALT OVERLAY (DEPTH NOTED ON ASPHALT TREATMENT & CONCRETE FINISHING DWGS)	GRANULAR BASE COURSE
TOPSOIL & SEED	DEEP STRENGTH ASPHALT RECONSTRUCTION	GRANULAR SUB-BASE COURSE
TOPSOIL & SOD	TRANSIT STOP TREATMENT	EXISTING GROUND
ASPHALT MILLING & OVERLAY (DEPTH NOTED ON ASPHALT TREATMENT & CONCRETE FINISHING DWGS)	NEW ROAD/TRAIL CONSTRUCTION	
ASPHALT LEVEL COURSE	CONCRETE	

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS TO MEET THE CURRENT VERSION OF THE MUNICIPALITY'S DESIGN GUIDELINES & CONTRACT SPECIFICATIONS.
- CONTRACTOR TO COORDINATE THE EFFORTS AND SCHEDULING OF ALL UTILITY COMPANIES AND THE MUNICIPALITY FORCES FOR THEIR PORTION OF THE WORK.
- LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES TO BE CONFIRMED BY THE CONTRACTOR IN THE FIELD. ANY CONFLICTS WITH PROPOSED UTILITIES ARE TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DETOURING AND CONSTRUCTION SIGNAGE (TRAFFIC AND PEDESTRIAN ACCOMMODATION STRATEGY).
- ALL MANHOLES TO BE CONSTRUCTED WITH SULPHATE RESISTANT CONCRETE.
- PROVIDE CLASS B BEDDING IN ACCORDANCE WITH THE MUNICIPALITY'S CONTRACT SPECIFICATIONS OR AS OTHERWISE SPECIFIED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS OR BY THE ENGINEER.
- TRENCH BACKFILL IN GRASSES OR SODDED AREAS TO BE COMPACTED TO 95% SPD TRENCH BACKFILL UNDER ROADWAYS TO BE COMPACTED TO 98% SPD.
- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE NOTED.
- ALL EXISTING TREES TO REMAIN UNLESS EXPRESSED PERMISSION BY THE OWNER OR OWNERS REPRESENTATIVE HAS BEEN GIVEN. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OF ANY TREE INADVERTENTLY DEMOLISHED.
- ALL NEW WORK SHOWN ON THE CONTRACT DRAWINGS IS PART OF THIS CONTRACT UNLESS NOTED OTHERWISE DELINEATED WITH "BY OTHERS".
- REFER TO GEOTECHNICAL REPORT FOR EXISTING CONDITIONS, BOREHOLE LOGS AND CONSTRUCTION REQUIREMENTS.
- NO EXCAVATION FOR DEEP UTILITIES TO OCCUR OUTSIDE OF UTILITY EASEMENTS UNLESS PRIOR PERMISSION HAS BEEN OBTAINED IN WRITING FROM THE LAND OWNER AND APPROVED BY THE ENGINEER.
- PRIOR TO CONSTRUCTION, ALL PERMITS REQUIRED TO BE APPLIED, OBTAINED AND PAID FOR BY THE CONTRACTOR.

SHALLOW UTILITY NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION AND COSTS FOR ALL SERVICE CONNECTIONS, TEMPORARY UTILITY REQUIREMENTS, AND ANY OTHER RELATED WORK ON THE SITE INCLUDING COORDINATION WITH ALL THE PERTINENT SHALLOW UTILITY COMPANIES FOR THEIR PORTION OF THE WORK.
- ALL UTILITIES ARE APPROXIMATE ONLY AND THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR CONSULTING WITH THE MUNICIPAL AUTHORITIES AND THE UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL ALSO VERIFY THE EXACT LOCATION AND INVERT ELEVATION BY HAND EXCAVATION, HYDROVAC, OR SIMILAR METHOD FOR ALL UTILITY CROSSINGS, TIE-INS AND POTENTIAL CONFLICTS WITHIN THE CONSTRUCTION LIMITS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO STARTING CONSTRUCTION.
- MANHOLES, FRAMES, AND GRATES TO BE IN ACCORDANCE WITH THE MUNICIPALITY STANDARD DETAILS UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.

WATER NOTES:

- TOP OF WATERMAIN TO BE A MINIMUM OF 2.70m BELOW FINISHED GRADE. INSTALL 150mm THICK RIGID INSULATION OVER PIPE IF COVER < 2.70m FROM FINISHED GRADE.
- ALL PRESSURE PIPES TO BE MECHANICALLY RESTRAINED USING THRUST BLOCKS, COMPLY TO LOCAL STANDARDS, AND TO BE CONFIRMED WITH THE ENGINEER, INCLUDING INTERMEDIATE JOINTS, BENDS, AND FITTINGS OF ALL DIAMETERS.

SANITARY NOTES:

- SANITARY SEWER PIPES TO BE OF MATERIAL AND CLASS AS DETAILED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS CONFORMING TO CURRENT CSA STANDARDS.
- TOP OF SANITARY SEWER PIPE TO BE A MINIMUM OF 3.00m BELOW FINISHED GRADE (UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS).
- REMOVED PLUGS SHALL BECOME THE PROPERTY OF THE MUNICIPALITY.

STORM NOTES:

- EXISTING DRAINAGE PATTERNS TO BE MAINTAINED.
- STORM SEWER PIPES TO BE OF CLASS AS DETAILED ON THE CONTRACT DRAWINGS AND IN THE CONTRACT SPECIFICATIONS CONFORMING TO CURRENT CSA STANDARDS.
- TOP OF STORM SEWER PIPE TO BE A MINIMUM OF 2.50m BELOW FINISHED GRADE (UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS).
- CULVERTS TO HAVE PIPE STIFFNESS AS DETAILED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS CONFORMING TO CURRENT CSA STANDARDS.

GRADING NOTES:

- ALL GRADING IS TO OCCUR WITHIN THE CONSTRUCTION LIMITS AS ILLUSTRATED ON THE CONTRACT DRAWINGS UNLESS PRIOR WRITTEN PERMISSION HAS BEEN OBTAINED FROM THE LAND OWNER AND APPROVED BY THE ENGINEER.

ABBREVIATIONS

150mm T&S	150mm TOPSOIL AND SEED	LPD	LOWPOINT DRAIN
ABAN	ABANDONED	LWL	LOW WATER LEVEL
BLDG	BUILDING	MAX	MAXIMUM
BOC	BACK OF CURB	MECH	MECHANICAL
BOT	BOTTOM	MH	MANHOLE
BOW	BACK OF WALK	MIN	MINIMUM
C&G	CURB AND GUTTER	NC	NORMALLY CLOSED
CB	CATCHBASIN	NE	NORTH EAST
CBD	CONTINUOUS BLOW	NE	NOT IN CONTRACT
CHR'D	CHECKERED	NLL	NORMAL LIQUID LEVEL
CIP	CAST-IN-PLACE	No	NUMBER
C	CENTERLINE	NTS	NOT TO SCALE
CLF	CHAINLINK FENCE	NW	NORTH WEST
CMS	CONCRETE MEDIAN SLAB	OC	ON CENTRE
CO	CLEAN OUT	OPNG	OPENING
CONC	CONCRETE	O/S	OFFSET
CONT	CONTINUOUS	P&C	POST AND CABLE FENCE
CPLG	COUPLING	P	PROPERTY LINE
CSP	CORRUGATED STEEL PIPE	PL	PLATE
C/W	COMPLETE WITH	PO	PUMP OUT
DC	DRAIN CONNECTION	PP	POWER POLE
DCB	DOUBLE CATCHBASIN	PREC	PRECAST
DET	DETAIL	PT	PRIMED TRAP
DIA	DIAMETER	RAD	RADIUS
DIG	DIGESTER	R/L	RAISE/LOWER
DR	DRAIN	R/L/S	RAISE/LOWER/STOP
D/S	DOWN STREAM	RD	ROOF DRAIN
DWLS	DOWELS	RED	REDUCER
DWG	DRAWING	RIGHT	RIGHT
EB	EAST BOUND	R/W	RIGHT OF WAY
EF	EXHAUST FAN	SAN	SANITARY SEWER
EG	EXISTING GRADE	SCH	SCHEDULE
EJ	EXPANSION JOINT	SE	SOUTH EAST
EL	ELEVATION	SF	SILT FENCE
ELB	ELBOW	SHLD	SHOULDER
ELECT	ELECTRICAL	SPD	STANDARD PROCTOR DENSITY
EMERG	EMERGENCY	SPEC	SPECIFICATION
EOA	EDGE OF ASPHALT	STA	STATION
EOG	EDGE OF GRAVEL	STD	STANDARD
EQUIP	EQUIPMENT	STM	STORM SEWER
EXIST / EX	EXISTING	STMH	STORM MANHOLE
FD	FLOOR DRAIN	STRCT	STRUCTURE
FG	FINISHED GRADE	S/W	SIDEWALK
FIN	FINISH	SW	SOUTH WEST
FIN	FLOOR	SWL	SWALE
FM	FORCEMAIN	TBA	TO BE ABANDONED
FCC	FACE OF CURB	TBC	TO BE CONFIRMED
FACE OF WALL	FACE OF WALL	TBR	TO BE REMOVED
FUT	FUTURE	TH	THICK
GALV	GALVANIZED	TOW	TOP OF CONCRETE
GBC	GRANULAR BASE COURSE	TOW	TOP OF WALL
GB	GRANULAR FILL	TYP	TYPICAL
GL	GAS LINE	T/O	TOP OF
HDD	HORIZONTAL DIRECTIONAL DRILL	UR/W	UTILITY RIGHT OF WAY
HLL	HIGH LIQUID LEVEL	U/S	UNDERSIDE
HWL	HIGH WATER LEVEL	VERT	VERTICAL
INSUL	INSULATED	WAT	WATERMAIN
INV	INVERT	WL	WATER LEVEL
LLL	LOW LIQUID LEVEL		
LIP	LIP OF GUTTER		



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E			
D			
C			
B	JTM	BVH	2026.03.09
A	JTM	BVH	2026.02.13
Issued			

Permit-Seal

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PROFESSIONAL ENGINEER ALBERTA
BRADLEY J. VANDER AALST
2026-03-17
Member No: 80305

Client/Project

BLACKFALDS
ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

CIVIL
GENERAL NOTES ABBREVIATIONS AND
LEGEND

Project No.	Scale
1101000459	NO SCALE
Drawing No.	Sheet
C-001	of 0
	Revision



Revision	By	Appd.	YY.MM.DD
E	---	---	---
D	---	---	---
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B	JTM	BVH	2026.03.09
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Permit-Seal

Client/Project
BLACKFALDS
 ALBERTA

MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
 CIVIL
 OVERALL LOCATION PLAN

PLANT SCHEDULE

TREES	KEY	BOTANICAL / COMMON NAME	MIN SIZE	QTY
	CS	Picea Pungens / Colorado Spruce	2.5m HT.	8
	WS	Picea Glauca / White Spruce	2.5m HT.	4
	SP	Pinus Sylvestris / Scots Pine	2.5m HT.	6
	PP	Pinus Ponderosa / Ponderosa Pine	2.5m HT.	5
		1.8m Black Chainlink Fence with Vinyl Slats	1.8m HT.	102 lin.m.
		Boulders. Limestone or approved equivalent based on availability and cost	0.5-0.75m ³	10
		Seed on 300mm depth topsoil		675sq.m.
		Mulch (100mm depth)		90sq.m.
		25mm Washed Rock, 100mm Depth with weed barrier at subgrade		101sq.m.

SEED MIX
 SPECIES % BY WT.
 KENTUCKY BLUE GRASS (DROUGHT TOLERANT CULTIVARS) 20%
 FINE FESCUE BLEND (CREEPING, CHEWING, HARD) 65%
 PERENNIAL RYE GRASS 15%
 SEED RATE: APPLY AT 13g/m² OR 130kg/ha



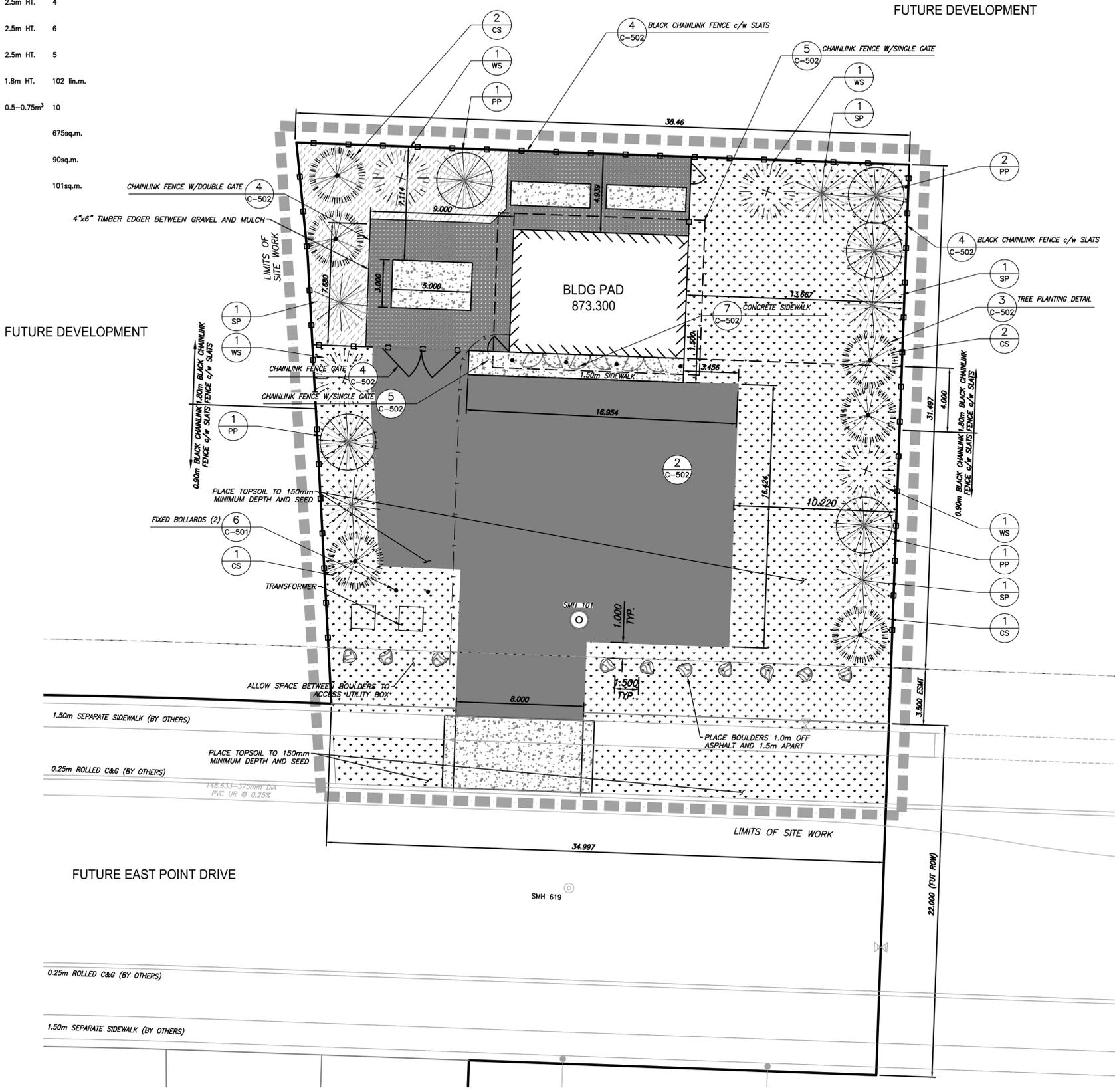
1100 - 4900 50th Street
 Red Deer AB Canada T4N 1X7
 Tel. 403.341.3320
 www.stantec.com

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Notes

- ALL CONSTRUCTION AND MATERIALS TO MEET CITY OF RED DEER CONTRACT SPECIFICATIONS.
- CONTRACTOR TO COORDINATE THE EFFORTS AND SCHEDULING OF ALL UTILITY COMPANIES AND THE DEVELOPER FOR THEIR PORTION OF THE WORK.
- LOCATIONS AND DEPTHS OF ALL EXISTING UNDERGROUND UTILITIES TO BE CONFIRMED BY THE CONTRACTOR IN THE FIELD. SHALLOW UTILITIES TO BE VERIFIED WITH FORTIS IN THE FIELD PRIOR TO INSTALLATION. ANY CONFLICTS WITH PROPOSED UTILITIES ARE TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
- ALL PIPE BEDDING TO BE TYPE 'B' BEDDING COMPACTED TO 100% S.P.D.
- NATIVE TRENCH ZONE BACKFILL TO BE COMPACTED TO 100% S.P.D. GRANULAR TRENCH ZONE BACKFILL TO BE COMPACTED TO 100% S.P.D.
- ALL MANHOLE AND VALVE RIMS MAY REQUIRE ADJUSTMENT TO MATCH TOP OF ASPHALT ELEVATION (INCIDENTAL).
- CATHODIC PROTECTION SHALL BE SUPPLIED FOR ALL VALVES, HYDRANTS AND ALL METAL FITTINGS (INCIDENTAL).
- ALL MANHOLES AND SIDEWALK TO BE CONSTRUCTED WITH SULPHATE RESISTANT CONCRETE (TYPE HS).
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
- ALL GRADES SHOWN ARE TOP OF ASPHALT=(TOA) OR LIP OF GUTTER=(LOG).



FUTURE DEVELOPMENT

FUTURE DEVELOPMENT

FUTURE EAST POINT DRIVE

C:\Users\jwheeler\OneDrive\Documents\Projects\1101000459\Mckay_Ranch_Lift_Station\Project Files\02_civil\sheet_files\C-101.dwg 2026/03/06 10:09 AM By: jwheeler, Jordan

ORIGINAL SHEET - AN3 D

Revision	By	Appd.	YY.MM.DD
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D	---	---	---
C	---	---	---
B	JTM	BVH	2026.03.09
A	JTM	BVH	2026.02.13
Issued	---	---	---

File Name: C-101.dwg

Permit-Seal

Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
CIVIL
SITE AND LANDSCAPING PLAN

Project No. 1101000459	Scale 1:150
Drawing No. C-101	Sheet of
Revision 0	Revision 0

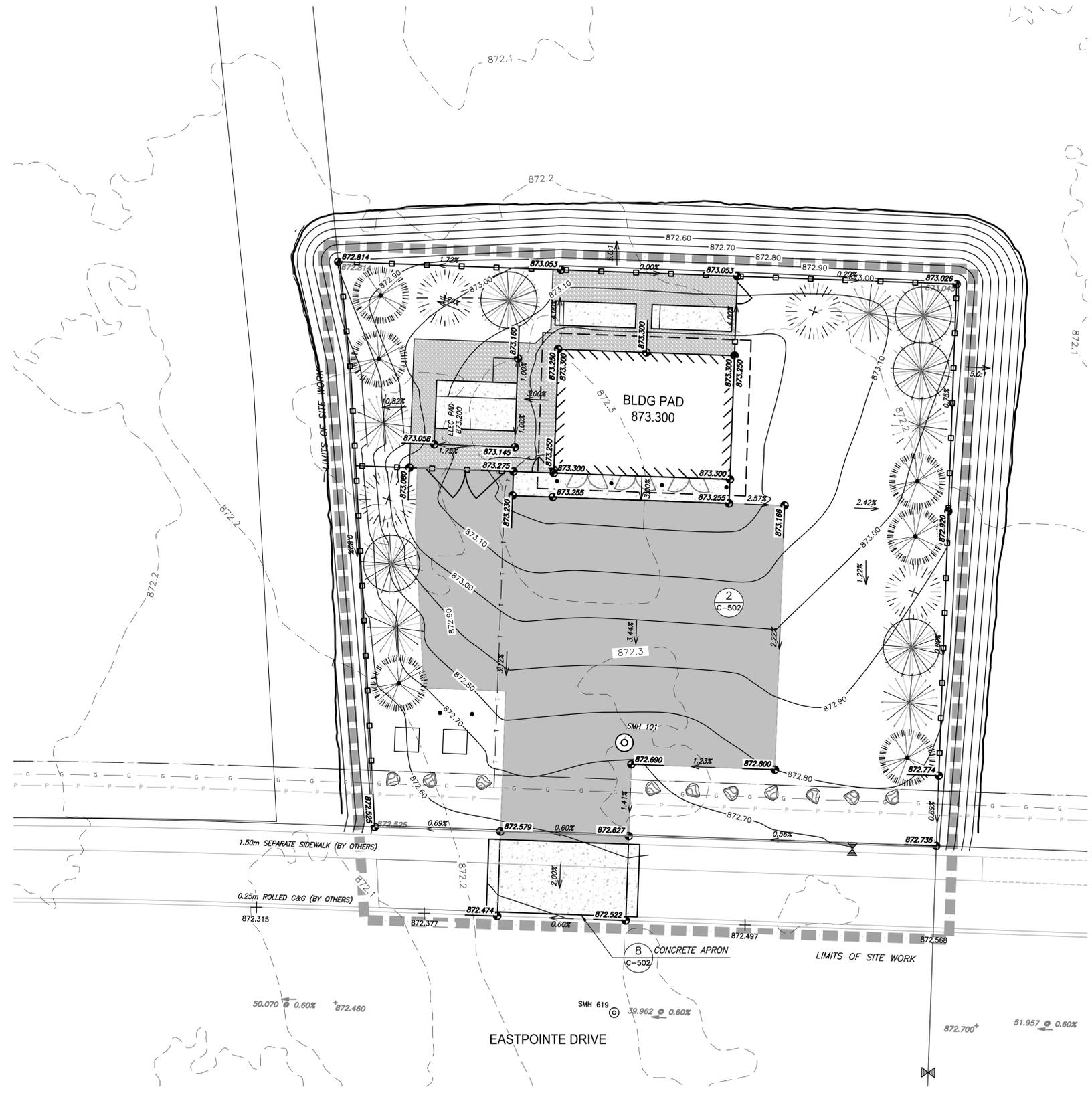


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 The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

Notes

1. ALL CONSTRUCTION AND MATERIALS TO MEET CITY OF RED DEER CONTRACT SPECIFICATIONS.
2. CONTRACTOR TO COORDINATE THE EFFORTS AND SCHEDULING OF ALL UTILITY COMPANIES AND THE DEVELOPER FOR THEIR PORTION OF THE WORK.
3. LOCATIONS AND DEPTHS OF ALL EXISTING UNDERGROUND UTILITIES TO BE CONFIRMED BY HYDRO-VACING. CONDUIT LOCATIONS TO BE VERIFIED WITH FORTIS IN THE FIELD PRIOR TO INSTALLATION. ANY CONFLICTS WITH PROPOSED UTILITIES ARE TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
4. ALL PIPE BEDDING TO BE TYPE 'B' BEDDING COMPACTED TO 100% S.P.D.
5. NATIVE TRENCH ZONE BACKFILL TO BE COMPACTED TO 100% S.P.D. GRANULAR TRENCH ZONE BACKFILL TO BE COMPACTED TO 100% S.P.D.
6. ALL MANHOLE AND VALVE RIMS MAY REQUIRE ADJUSTMENT TO MATCH TOP OF ASPHALT ELEVATION (INCIDENTAL)
7. CATHODIC PROTECTION SHALL BE SUPPLIED FOR ALL VALVES, HYDRANTS AND ALL METAL FITTINGS (INCIDENTAL).
8. ALL MANHOLES AND SIDEWALK TO BE CONSTRUCTED WITH SULPHATE RESISTANT CONCRETE (TYPE HS).
9. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
10. ALL GRADES SHOWN ARE TOP OF ASPHALT=(TOA) OR LIP OF GUTTER=(LOG).



Revision	By	Appd.	YY.MM.DD
E			
D			
C			
B FOR TENDER	JTM	BVH	2026.03.09
A FOR 95% REVIEW	JTM	BVH	2026.02.13
Issued			

File Name: C-102.dwg
 Dwn. Chkd. Dsgn. YY.MM.DD

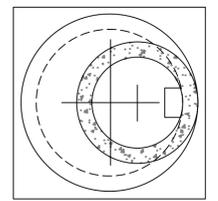
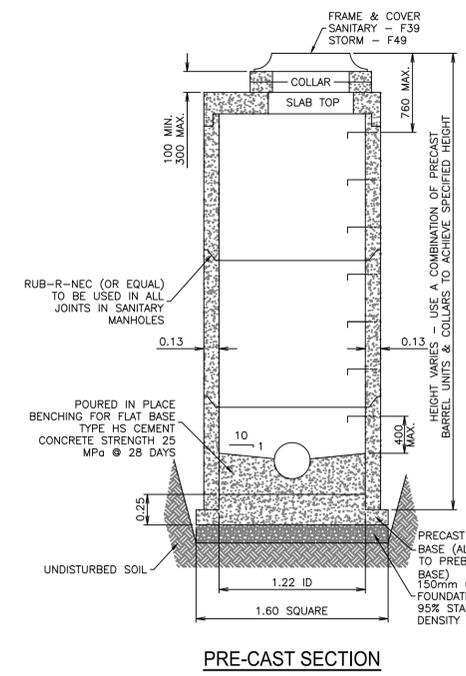
Permit-Seal




Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta
 Title
 CIVIL
 SITE GRADING PLAN

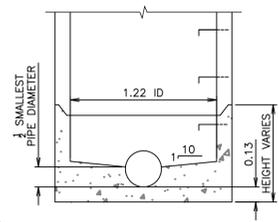
Project No. 1101000459
 Drawing No. C-102
 Scale 1:150
 Sheet of 0
 Revision

Notes

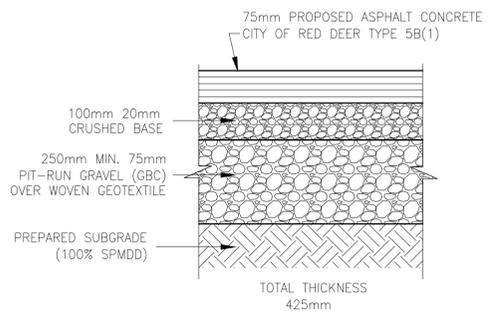


PLAN

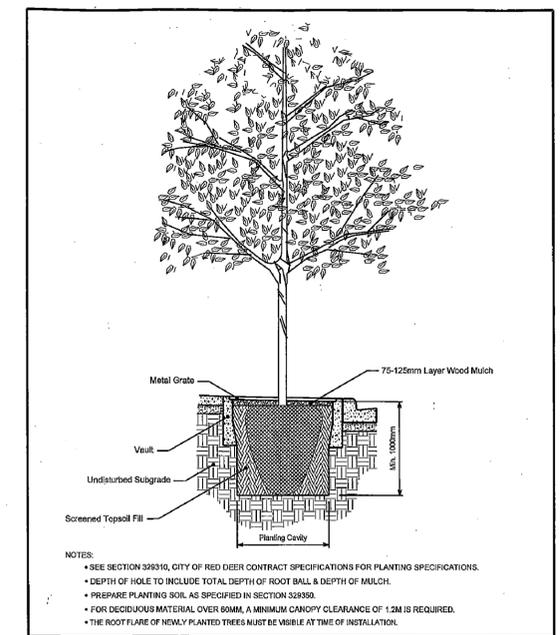
- NOTES:
 1. MANHOLE STEPS TO BE MSU 20mm O.D. ALUMINUM TUBING C/W 3mm LOW DENSITY POLYETHYLENE COATING OR APPROVED EQUAL.
 2. STEPS TO BE AT 400 O.C.



PRE-CAST AND PRE-BENCHED SECTION



ASPHALT PAVEMENT STRUCTURE DETAIL

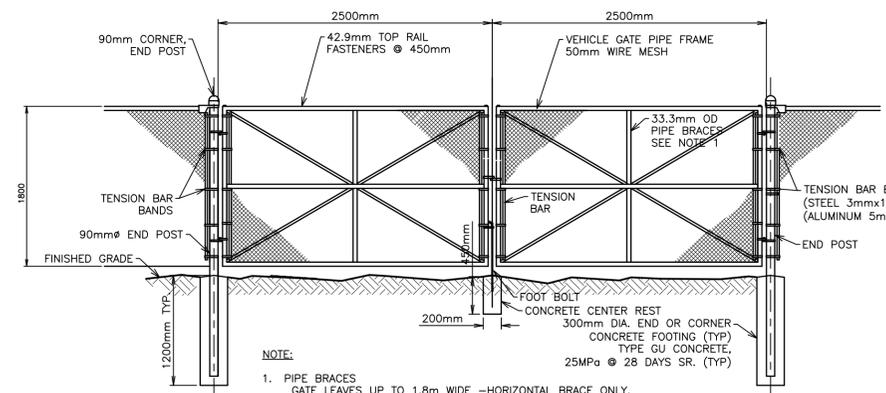


NOTES:
 • SEE SECTION 539310, CITY OF RED DEER CONTRACT SPECIFICATIONS FOR PLANTING SPECIFICATIONS.
 • DEPTH OF HOLE TO INCLUDE TOTAL DEPTH OF ROOT BALL & DEPTH OF MULCH.
 • PREPARE PLANTING SOIL AS SPECIFIED IN SECTION 539300.
 • FOR DECIDUOUS MATERIAL OVER 60MM, A MINIMUM CANOPY CLEARANCE OF 1.2M IS REQUIRED.
 • THE ROOT FLARE OF NEWLY PLANTED TREES MUST BE VISIBLE AT TIME OF INSTALLATION.

THE CITY OF RED DEER RECREATION, PARKS & CULTURE DEPARTMENT		APPROVED BY
DATE: Nov. 20/2005	PROJECT: TYPICAL VAULT PLANTING	
SCALE: N.T.S.	DATE: 50 08 04	

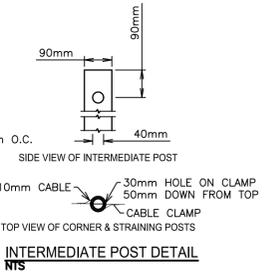
TREE PLANTING DETAIL

1200mm TYPE 5A PRECAST MANHOLE ASSEMBLY

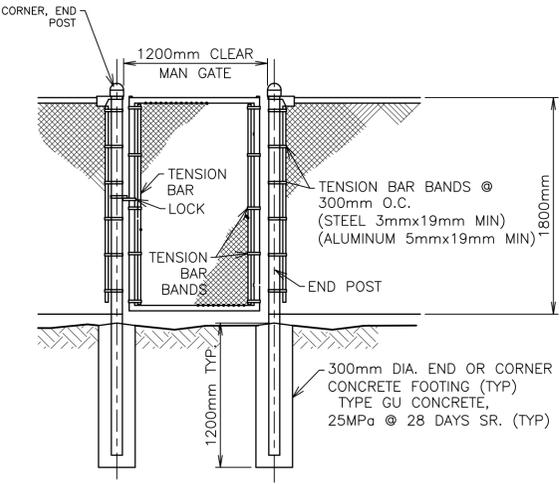


- NOTE:
 1. PIPE BRACES GATE LEAVES UP TO 1.8m WIDE - HORIZONTAL BRACE ONLY. GATE LEAVES OVER 1.8m - BOTH HORIZONTAL AND VERTICAL BRACES.
 2. BLACK POWDER COATED FINISH.
 3. FENCING TO INCLUDE PLASTIC VISIBILITY BLOCKING STRIPS.
 4. ALL POSTS AND RAILS SHALL BE HEAVY WALL SCHEDULE 40 OR APPROVED EQUIVALENT TO WITHSTAND WIND LOAD.

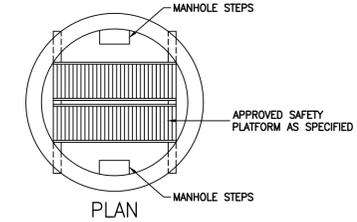
CHAINLINK FENCE WITH DOUBLE GATE DETAIL



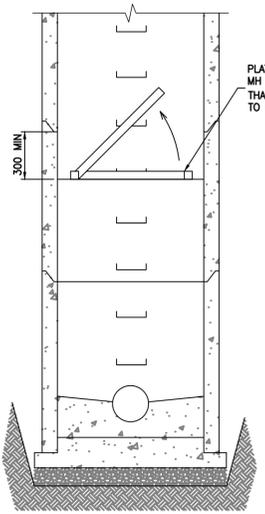
INTERMEDIATE POST DETAIL



SINGLE MANGATE DETAIL



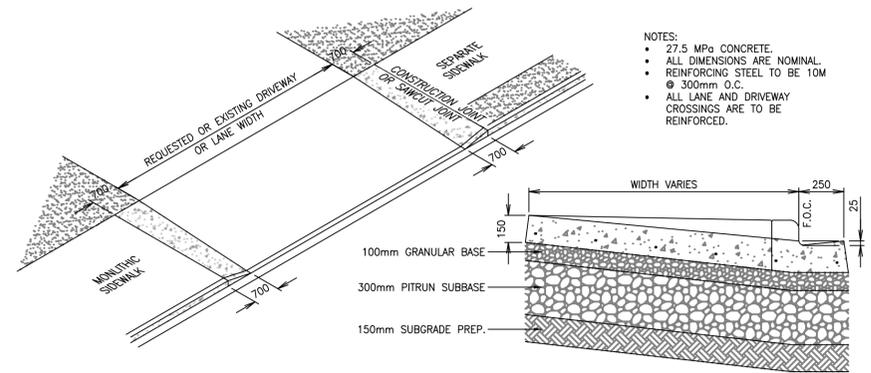
PLAN



SECTION

- NOTES:
 • TO BE INSTALLED ON MANHOLES GREATER THAN 6.0m DEEP.
 • MAXIMUM SPACING BETWEEN PLATFORMS TO BE 6.0m.
 • ALUMINUM GRATES TO BE MSU MISSISSAUGA OR APPROVED EQUAL.
 • TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

MANHOLE SAFETY PLATFORM



SECTION 'A-A' STANDARD CURB & GUTTER

NEW CONSTRUCTION LANEWAY / SIDEWALK CROSSING

E	---	---	---	---
D	---	---	---	---
C	---	---	---	---
B	FOR TENDER	JTM	BVH	2026.03.09
A	FOR 95% REVIEW	JTM	BVH	2026.02.13
Issued		By	Appd.	YY.MM.DD

File Name: C-501.dwg

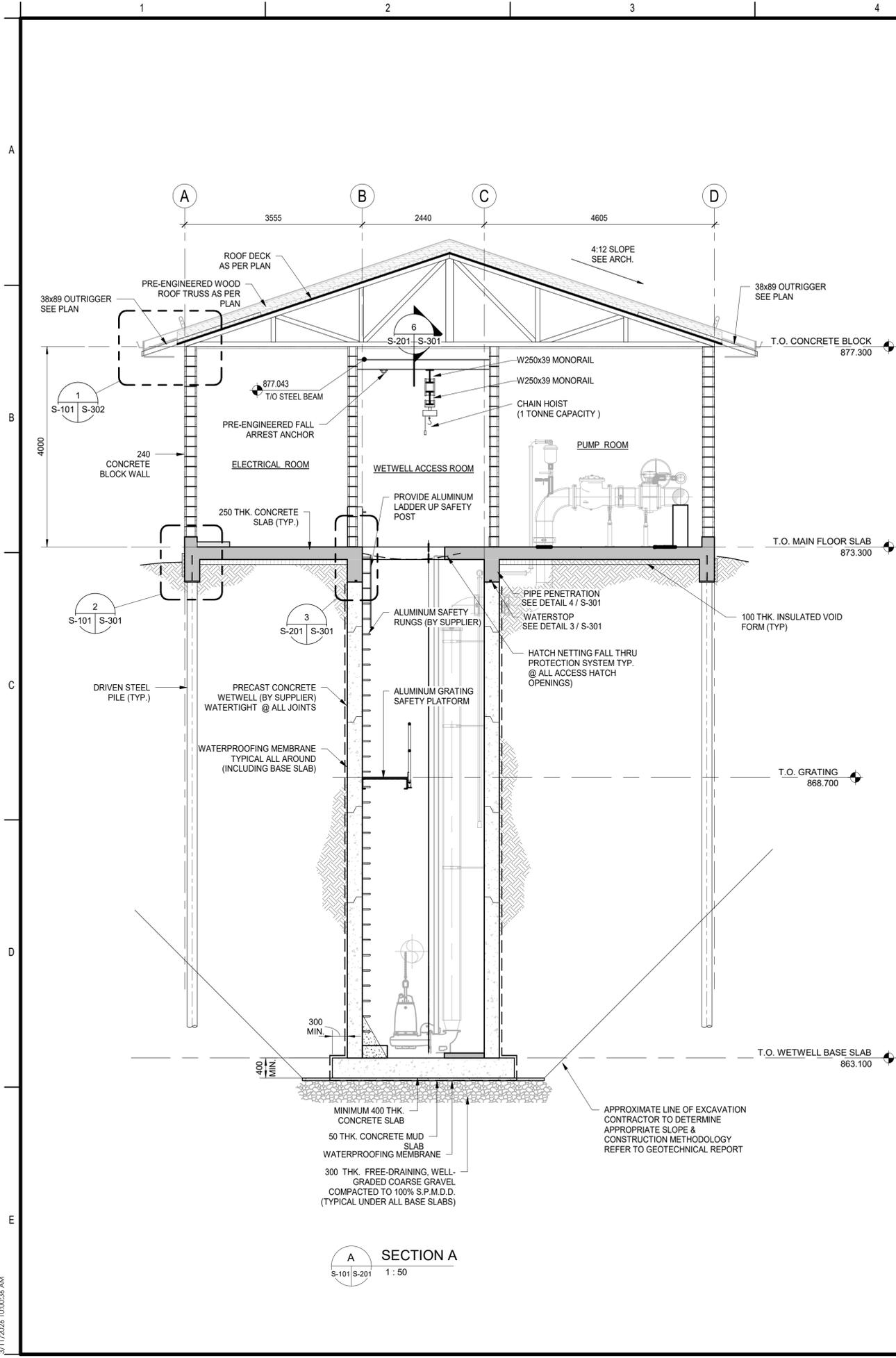
Permit-Seal

PERMIT TO PRACTICE
 STANTEC CONSULTING LTD.
 Signature: *Bradley J. Vander Kerkhof*
 Date: 2026-03-18
 PERMIT NUMBER: P-0269
 The Association of Professional Engineers, Geologists and Geophysicists of Alberta

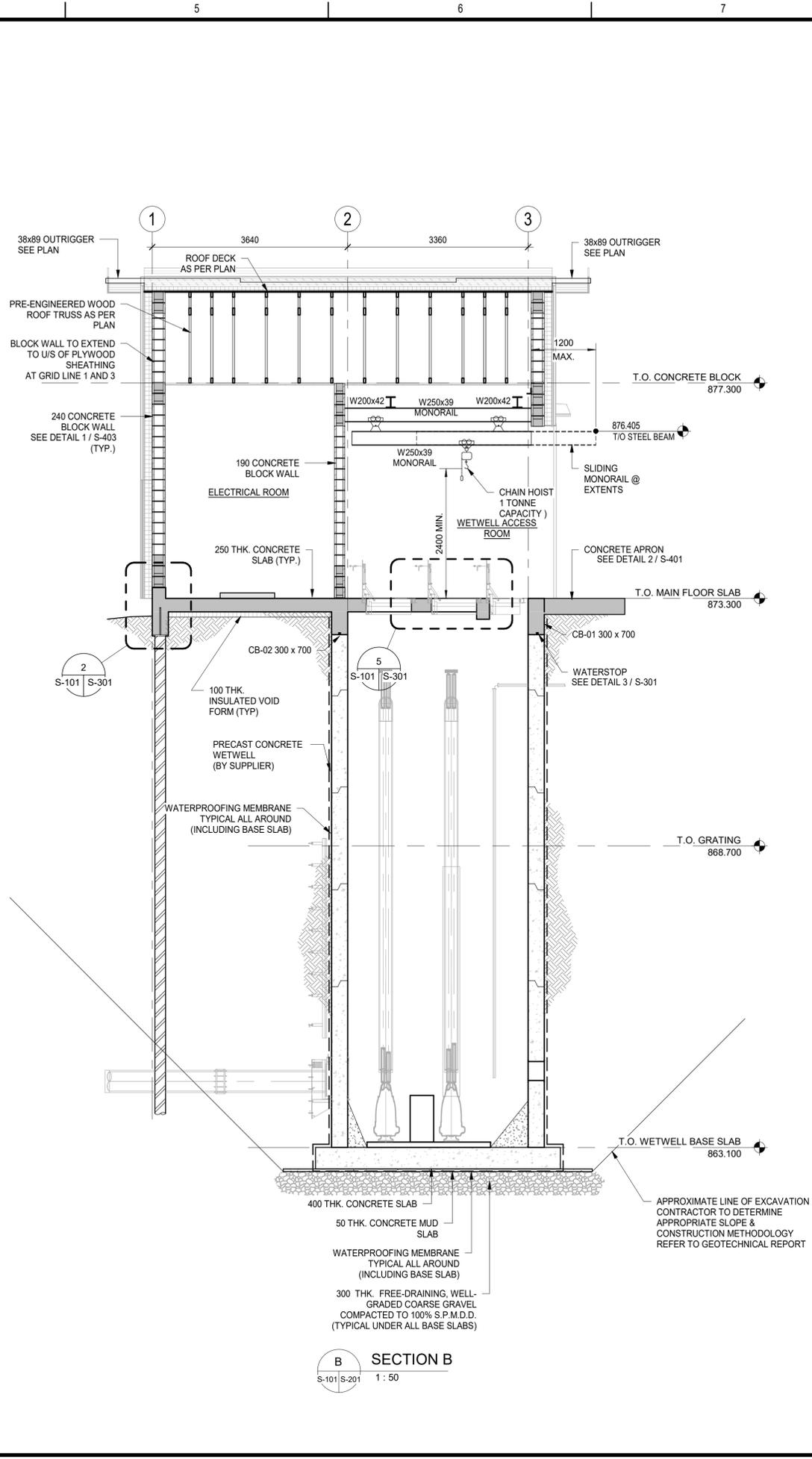
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
CIVIL
 DETAILS 2

Project No. 1101000459	Scale AS SHOWN
Drawing No. C-502	Sheet of
	Revision 0



A SECTION A
S-101 S-201 1 : 50



B SECTION B
S-101 S-201 1 : 50

Revision	By	Appd	YYYY.MM.DD	
B	ISSUED FOR TENDER	KL	QW	2026.03.09
A	FOR 95% REVIEW	KL	QW	2026.02.13
Issued		By	Appd	YYYY.MM.DD

Permit-Seal

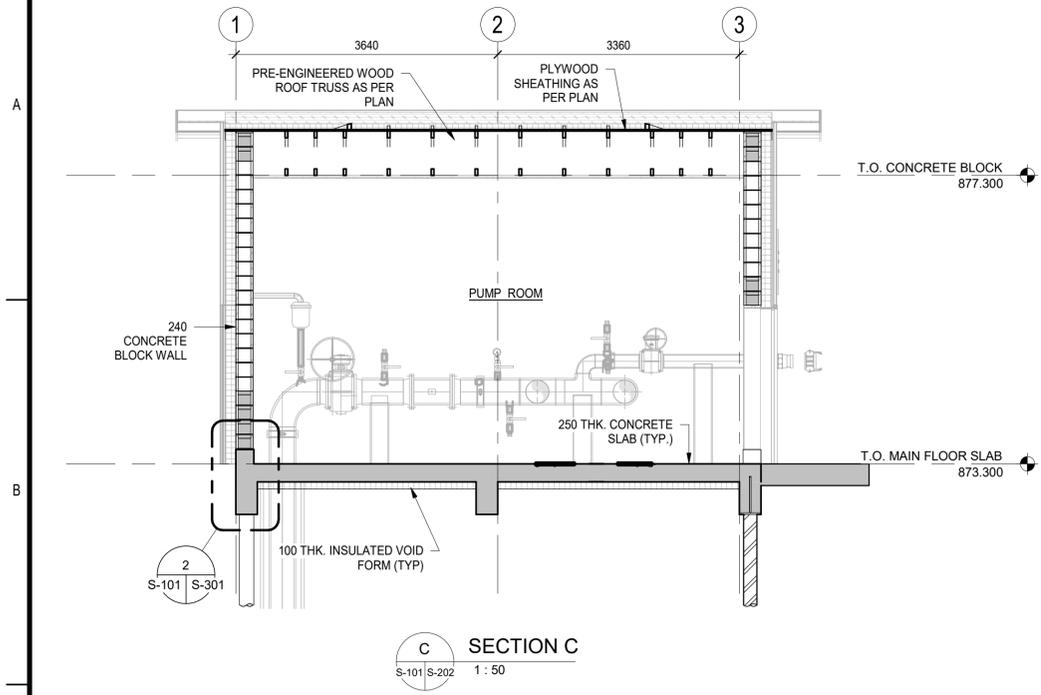
Client/Project
BLACKFALDS
ALBERTA

McKAY RANCH LIFT STATION
Blackfalds, Alberta

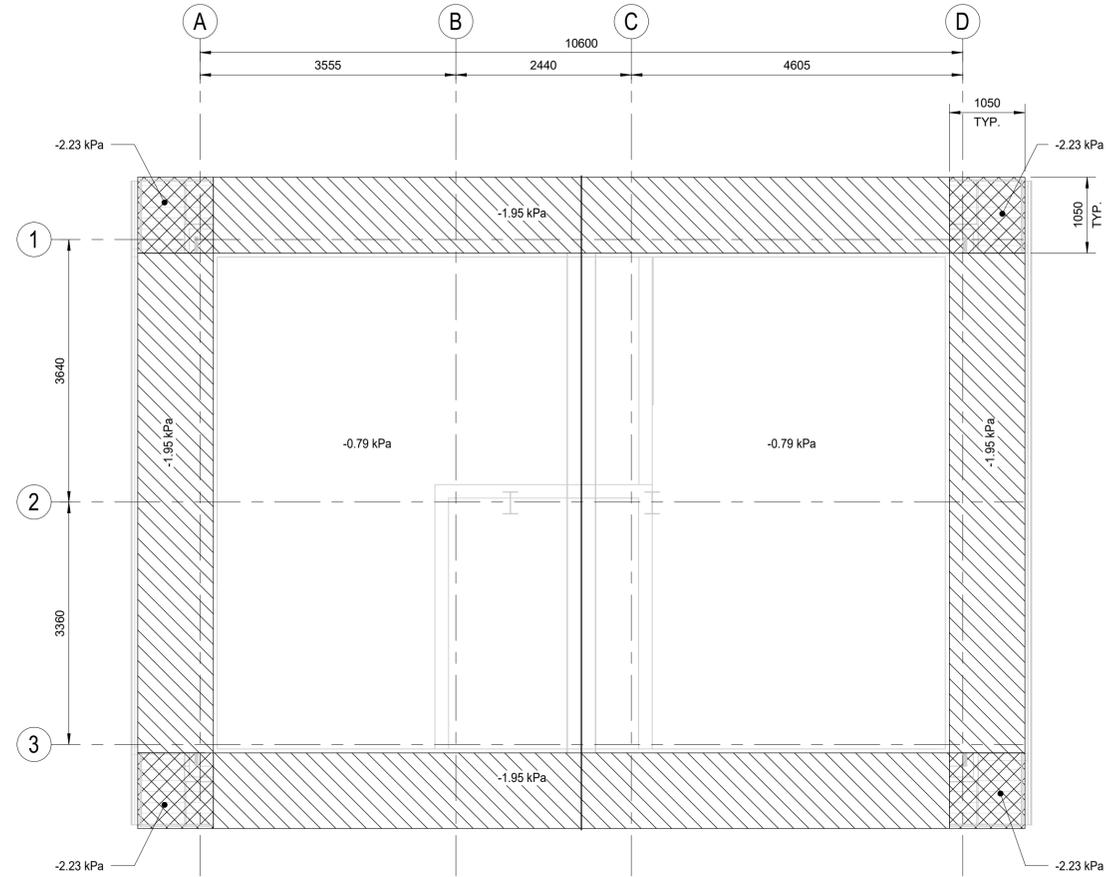
Title
STRUCTURAL SECTIONS

Project No. 113929403	Scale 1 : 50
Drawing No. S-201	Sheet of
	Issue/Revision A/0

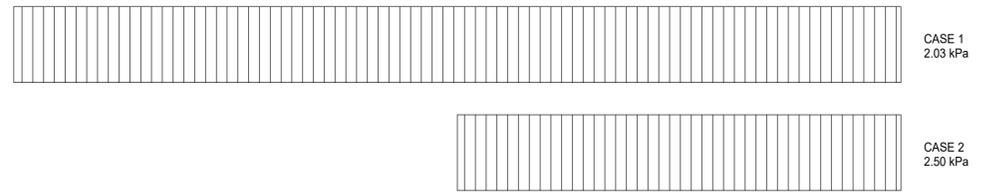
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C SECTION C
S-101 S-202 1 : 50



WIND ROOF LOADING PLAN

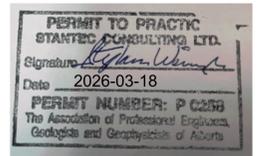


SNOW DRIFT ROOF LOADING PLAN

1 ROOF LOADING PLAN
S-202 1 : 50

Revision	By	Appd	YYYY.MM.DD
B	ISSUED FOR TENDER	KL	QW 2026.03.09
A	FOR 95% REVIEW	KL	QW 2026.02.13
Issued		By	Appd YYYY.MM.DD

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Client/Project

BLACKFALDS
ALBERTA

McKay Ranch Lift Station

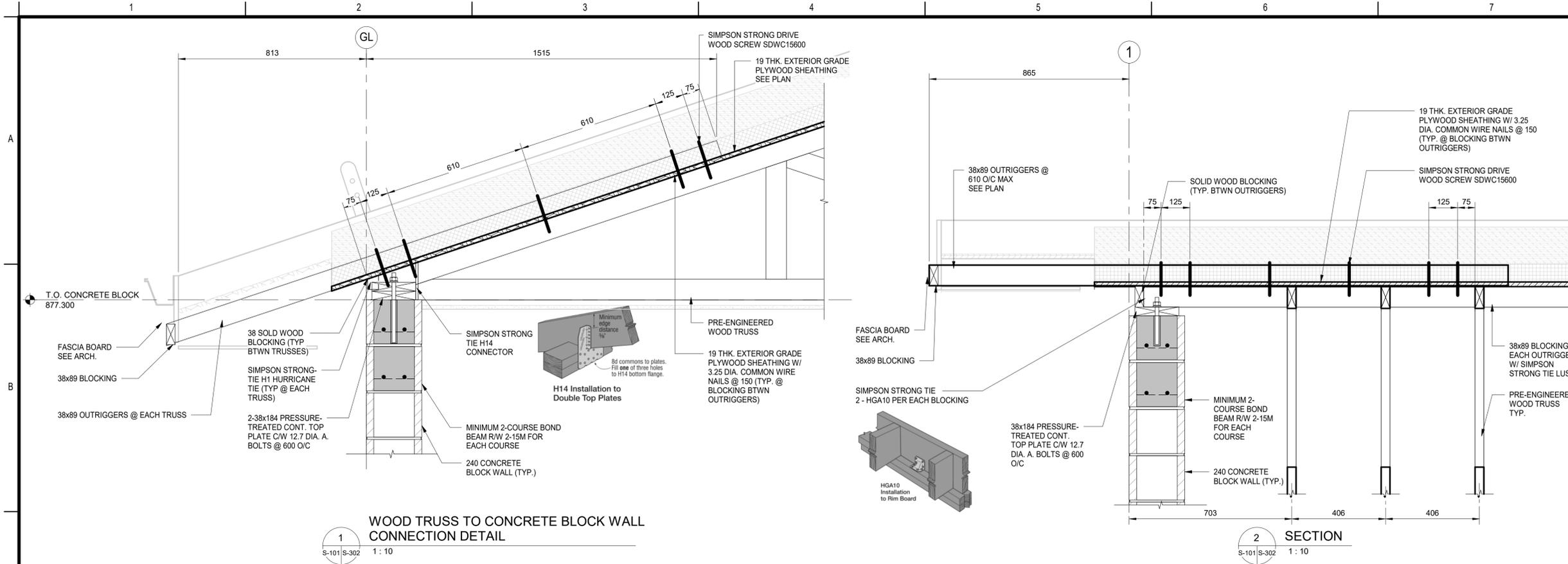
Blackfalds, Alberta

Title

STRUCTURAL
SECTIONS AND WIND ROOF LOADING
PLAN

Project No. 113929403 Scale 1 : 50

Drawing No. S-202 Sheet of Issue/Revision A/0



WOOD TRUSS TO CONCRETE BLOCK WALL CONNECTION DETAIL

1
S-101 S-302
1 : 10

2
S-101 S-302
1 : 10

Revision	By	Appd	YYYY.MM.DD	
B	ISSUED FOR TENDER	KL	QW	2026.03.09
A	FOR 95% REVIEW	KL	QW	2026.02.13
Issued		By	Appd	YYYY.MM.DD

Permit-Seal

Client/Project
BLACKFALDS
 ALBERTA

McKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 STRUCTURAL
 SECTIONS AND DETAILS

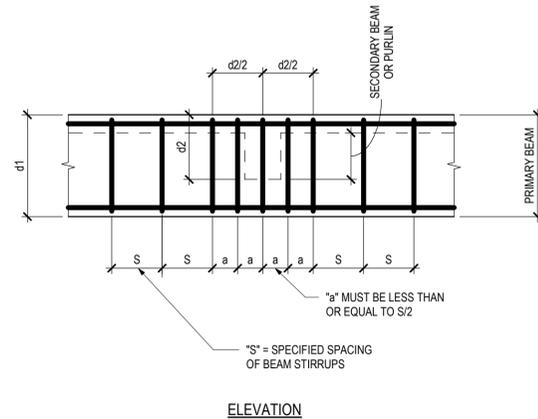
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Drawing No. S-302 Sheet of Issue/Revision A/0

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TYPICAL ADDITIONAL STIRRUPS AT UNSUPPORTED BEAM INTERSECTIONS

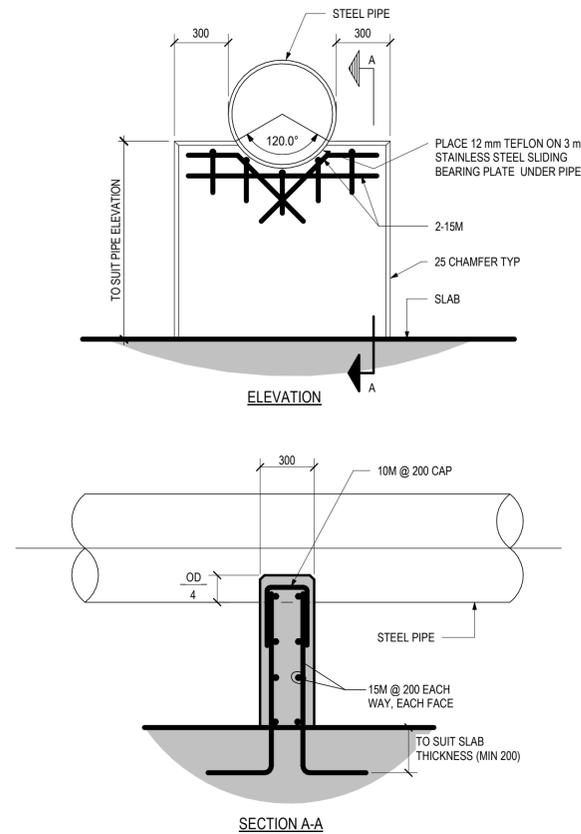
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NOTE:
 THIS DETAIL IS NOT APPLICABLE IF BEAM INTERSECTION IS OVER A SUPPORT

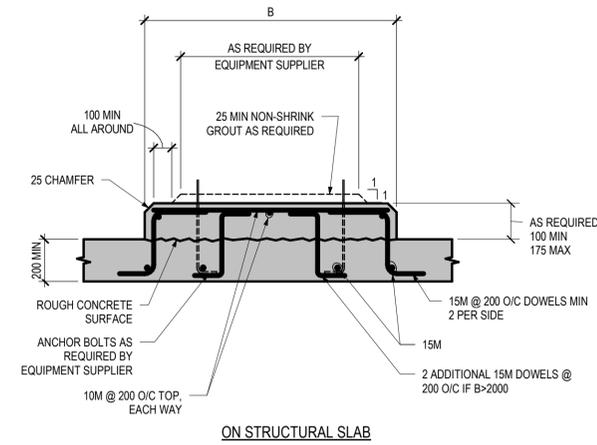
TYPICAL PIPE SUPPORT DETAIL

2



TYPICAL HOUSEKEEPING PAD FOR EQUIPMENT (NEW CONSTRUCTION)

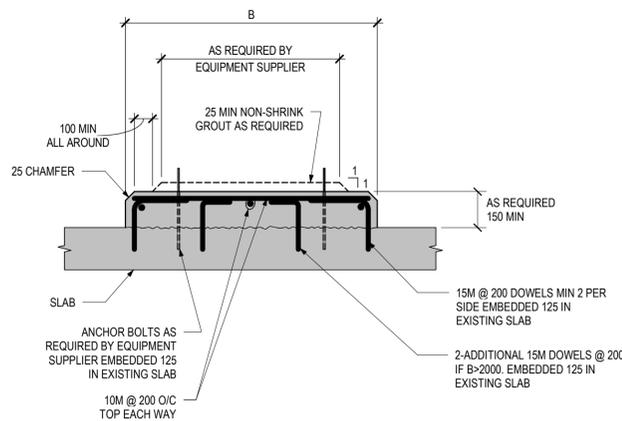
3



- NOTES:
- PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER.
 - THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE PAD IS BEING PLACED.
 - EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
 - WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN, THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.

TYPICAL HOUSEKEEPING PAD FOR EQUIPMENT ON EXISTING FLOOR SLABS

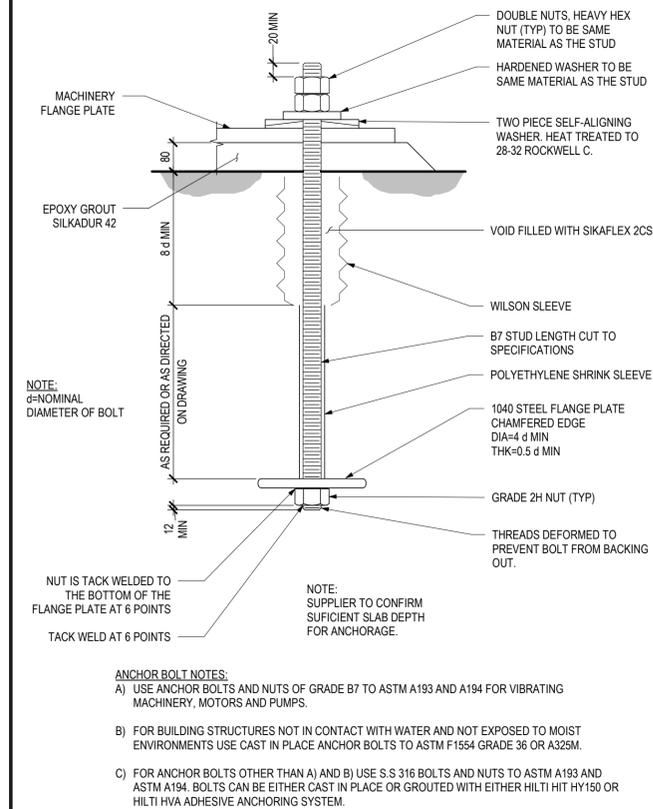
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- NOTES:
- PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER.
 - THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE PAD IS BEING PLACED.
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 - WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN, THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.
 - USE HILTI HIT HY 150 SYSTEM FOR ALL REBAR AND ANCHOR BOLTS FASTENING TO EXISTING CONCRETE SLAB

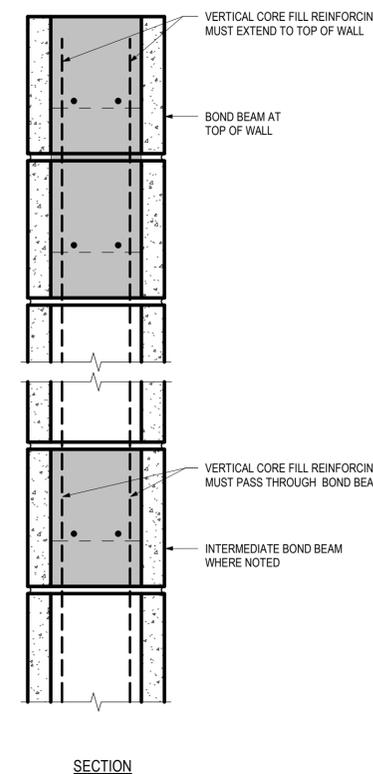
TYPICAL ANCHOR BOLT FOR VIBRATING MACHINERY DETAIL

5



TYPICAL HORIZONTAL BOND BEAMS IN CONCRETE BLOCK WALL

6



SECTION

Revision	By	Appd	YYYY.MM.DD
B	KL	QW	2026.03.09
A	KL	QW	2026.02.13
Issued	By	Appd	YYYY.MM.DD

Permit-Seal

Client/Project
BLACKFALDS
 ALBERTA

McKAY RANCH LIFT STATION

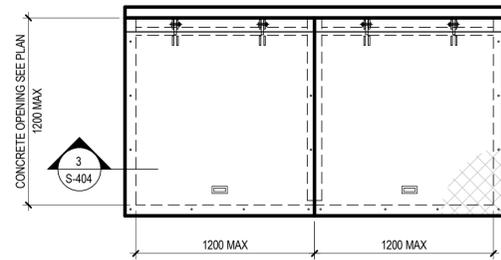
Blackfalds, Alberta

Title
STRUCTURAL
STANDARD DETAILS

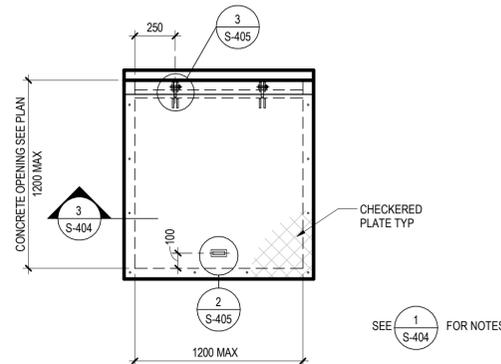
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 Drawing No. S-402 Sheet of Issue/Revision A/0

TYPICAL SEALED COVERS - BOLTED

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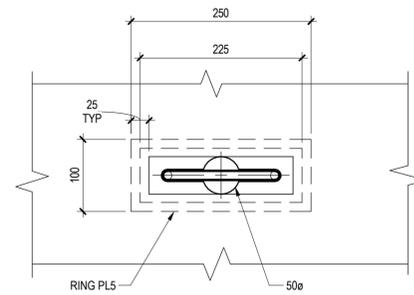
DOUBLE COVER PLAN



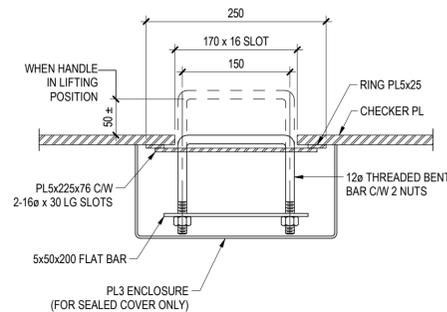
SINGLE COVER PLAN

TYPICAL DROP HANDLE DETAIL

2



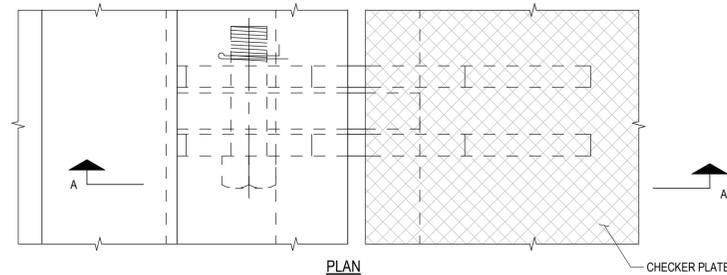
PLAN



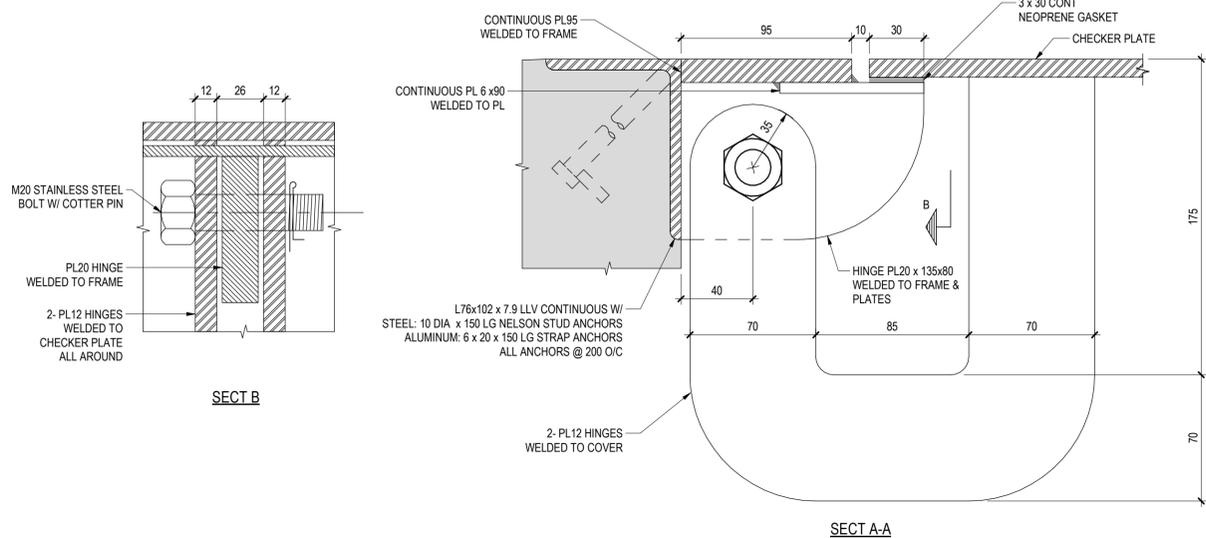
SECTION

TYPICAL HINGE DETAIL SEALED COVER

3



PLAN

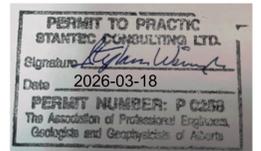


SECT B

SECT A-A

Revision	By	Appd	YYYY.MM.DD	
B	ISSUED FOR TENDER	KL	QW	2026.03.09
A	FOR 95% REVIEW	KL	QW	2026.02.13
Issued		By	Appd	YYYY.MM.DD

Permit-Seal



Client/Project

BLACKFALDS
ALBERTA

McKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

STRUCTURAL
STANDARD DETAILS

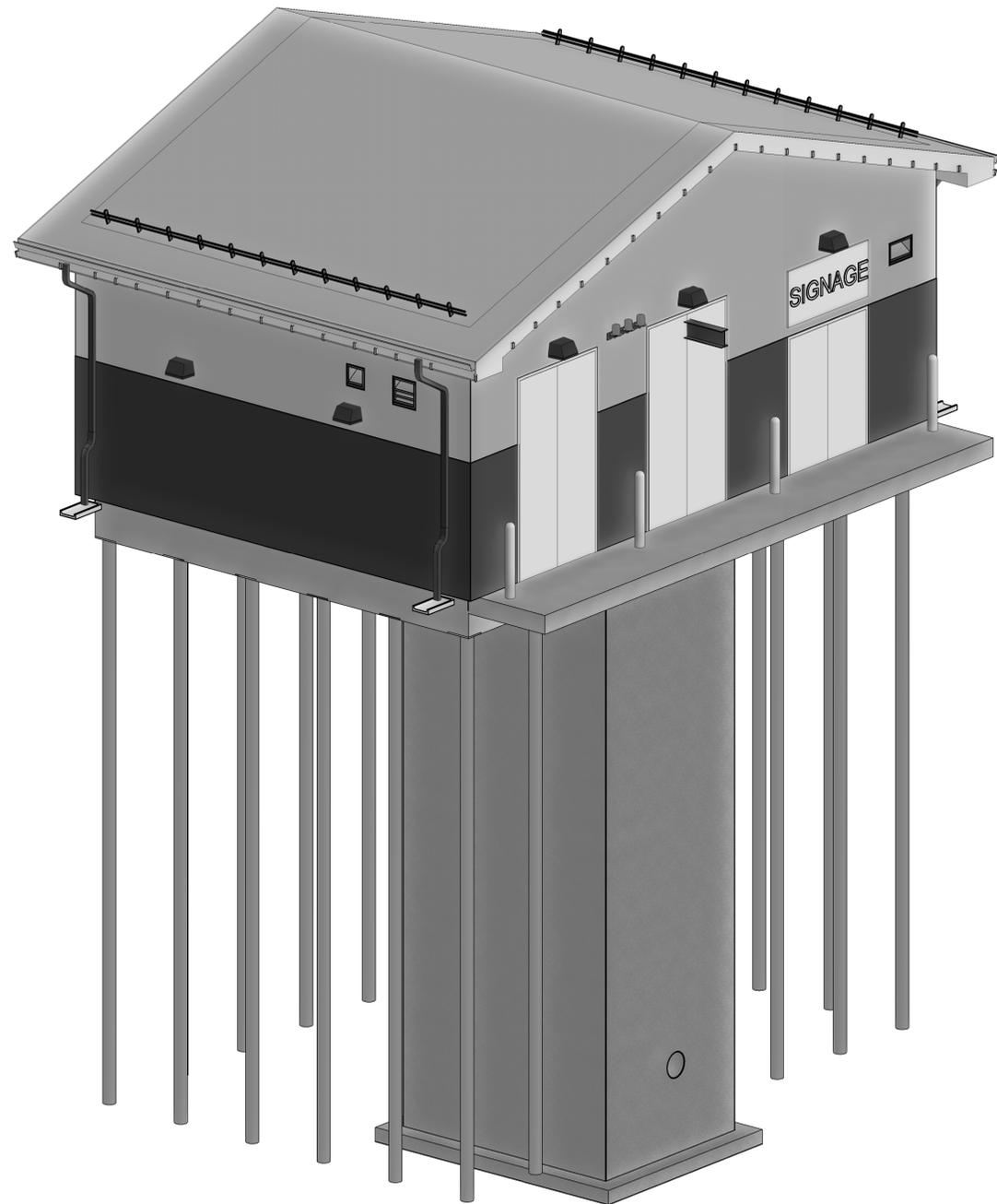
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Scale
As indicated

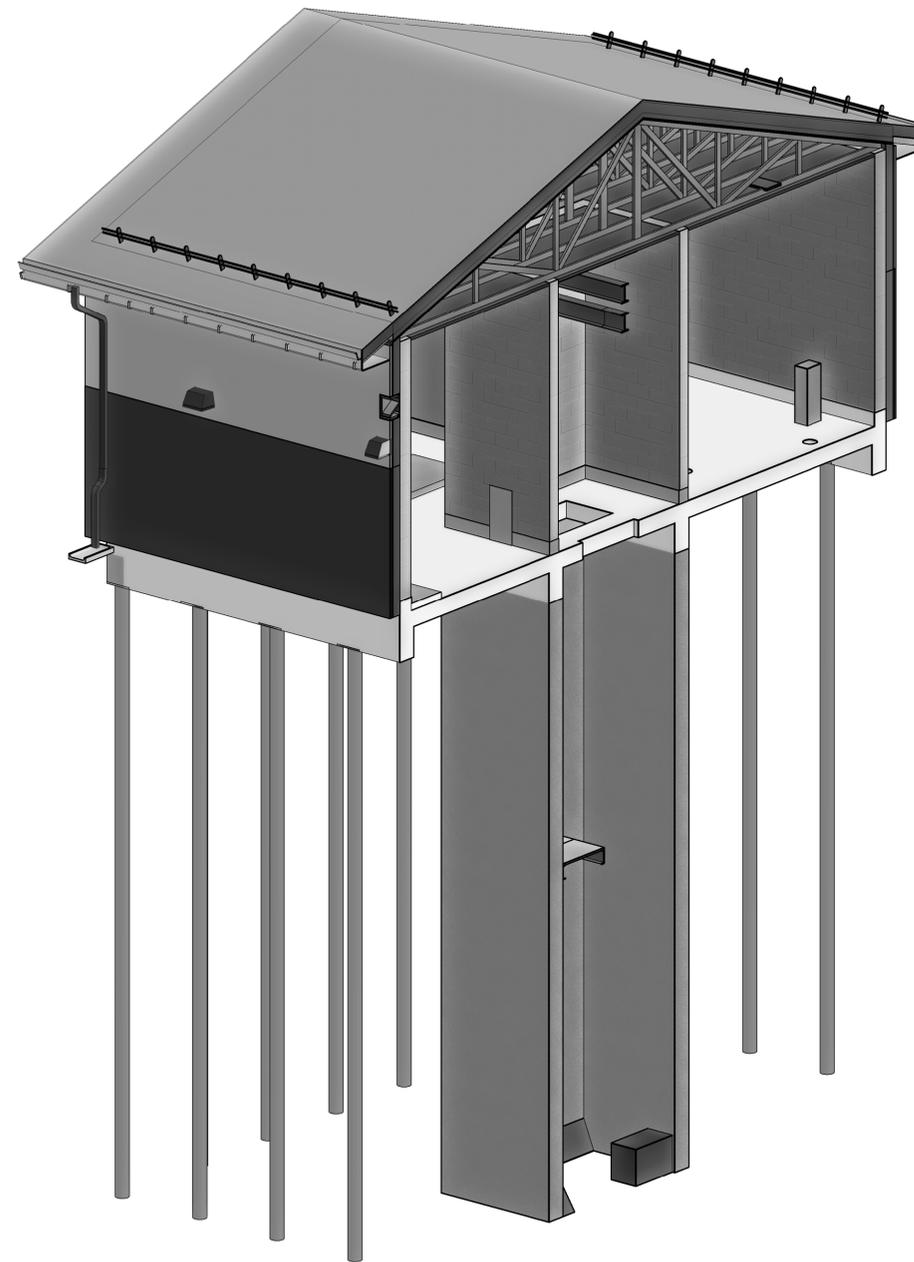
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S-405

Sheet
of

Issue/Revision
A/0



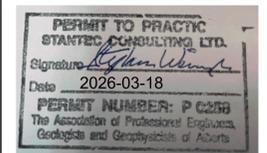
1 **SOUTHWEST CAMERA VIEW**



2 **SOUTHWEST SECTIONAL VIEW**

Revision	By	Appd	YYYY.MM.DD
B	ISSUED FOR TENDER	KL	QW 2026.03.09
A	FOR 95% REVIEW	KL	QW 2026.02.13
Issued		By	Appd YYYY.MM.DD

Permit-Seal



Client/Project

BLACKFALDS
ALBERTA

McKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

STRUCTURAL
CAMERA VIEWS

Project No.
113929403

Scale

Drawing No.
S-601

Sheet

of

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A/0

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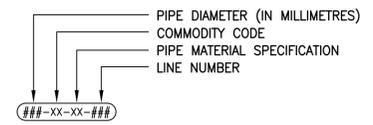
PROCESS MECHANICAL COMMODITY SYMBOLS

SYMBOL	COMMODITY
AIR	AIR SUPPLY
DR	DRAIN
GW	GROUND WATER
PCE	PRIMARY EFFLUENT
PI	PRIMARY INFLUENT
RS	RAW SEWAGE
SW	SERVICE WATER
WAS	WASTE ACTIVATED SLUDGE
WW	WASTEWATER

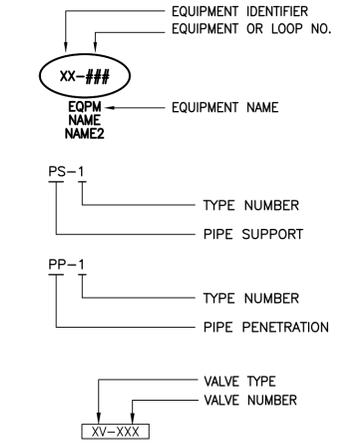
PIPE MATERIAL CODE

SYMBOL	MATERIAL AND FLANGE RATING
PVC	PVC DR18 PRESSURE CLASS 150
MS	MILD STEEL SCHEDULE 40 CLASS 150
SS	STAINLESS STEEL SCHEDULE 10 CLASS 150

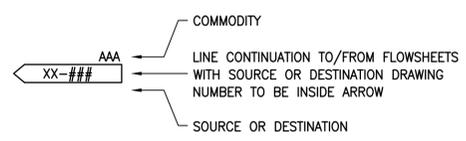
LINE IDENTIFICATION



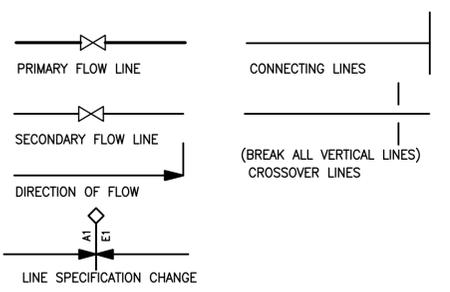
EQUIPMENT IDENTIFICATION



LINE SOURCE OR DESTINATION TAG



LINE SYMBOLS



PIPE CONVERSION CHART

NOMINAL IMPERIAL DESIGNATION SIZE IN INCHES	NOMINAL METRIC DESIGNATION SIZE IN MILLIMETRES	NOMINAL IMPERIAL DESIGNATION SIZE IN INCHES	NOMINAL METRIC DESIGNATION SIZE IN MILLIMETRES
1/8	6	14	350
1/4	8	15	380
3/8	10	16	400
1/2	15	18	450
3/4	20	20	500
1	25	24	600
1 1/4	32	30	750
1 1/2	40	36	900
2	50	42	1050
2 1/2	65	48	1200
3	80	54	1350
4	100	60	1500
5	125	66	1650
6	150	72	1800
8	200	78	1950
10	250	80	2000
12	300		

NOTE: PIPE SIZE FROM 1/2" THROUGH 80" - CONVERSION BASED ON CSA STANDARD Z245.1
 PIPE SIZE 1/2" AND SMALLER - CONVERSION BASED ON EUROPEAN ISO STANDARD
 OTHER PIPE SIZES ARE CONVERSIONS ROUNDED TO THE NEAREST ARBITRARILY ASSIGNED WHOLE NUMBER

VALVE & EQUIPMENT ABBREVIATIONS

ARV	AIR RELEASE VALVE
BAV	BALL VALVE
CHV	CHECK VALVE
CAV	COMBINATION AIR VALVE
ESP	EMERGENCY SEWAGE PUMP
FCV	FLOW CONTROL VALVE
PLV	PLUG VALVE
PP#	PIPE PENETRATION NUMBER
PSRV	PRESSURE SAFETY RELIEF VALVE
PS#	PIPE SUPPORT NUMBER
PRV	PRESSURE REDUCING VALVE
PV	PROCESS VENT
RSP	RAW SEWAGE PUMP
SLG	SLUICE GATE

FLOW

FC	FLOW CONTROLLER
FE	FLOW ELEMENT
FIC	FLOW INDICATING CONTROLLER
FIT	FLOW INDICATING TRANSMITTER
FQI	FLOW TOTALIZATION INDICATION
FQIT	FLOW TOTALIZATION INDICATION TRANSMITTER

ELECTRICAL

EAL	LOW VOLTAGE ALARM
ES	VOLTAGE SWITCH
EY	VOLTAGE RELAY

LEVEL

LNW	NORMAL WATER LEVEL
LLW	LOW WATER LEVEL
LHW	HIGH WATER LEVEL
LAH	LEVEL ALARM HIGH
LAHH	LEVEL ALARM HIGH HIGH
LAL	LEVEL ALARM LOW
LALL	LEVEL ALARM LOW LOW
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LS	LEVEL SWITCH
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH HIGH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW LOW

PRESSURE

PG	PRESSURE GAUGE
PI	PRESSURE INDICATOR
PIT	PRESSURE INDICATOR TRANSMITTER
PSV	PRESSURE SUSTAINING VALVE

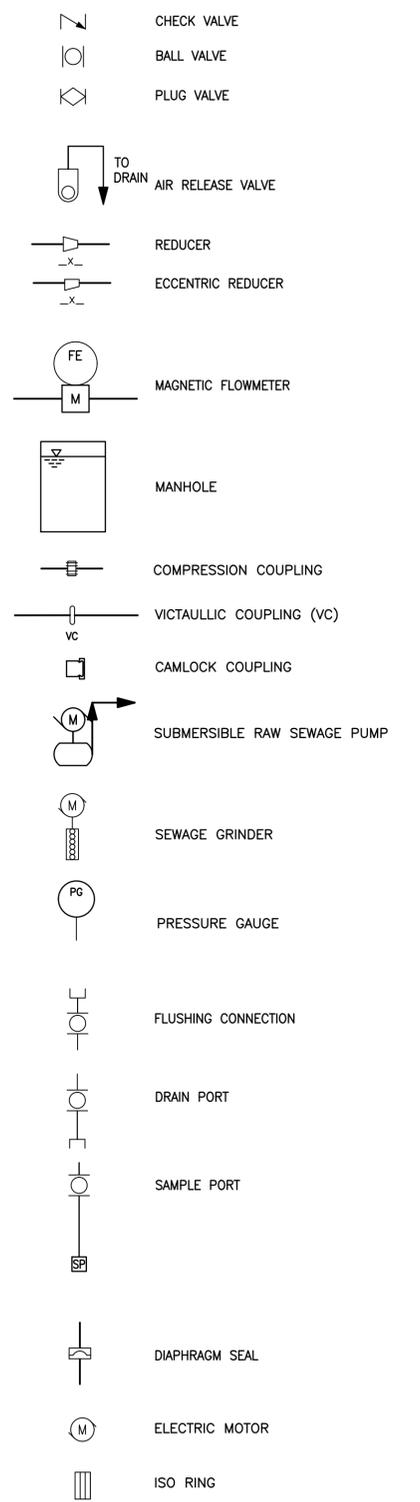
TEMPERATURE

TAH	TEMPERATURE ALARM HIGH
TAL	TEMPERATURE ALARM LOW
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
TSL	TEMPERATURE SWITCH LOW
TT	TEMPERATURE TRANSMITTER

MISCELLANEOUS

AA	ANALYSIS ALARM
AE	ANALYSIS ELEMENT
AH	ALARM HORN
AI	ANALYSIS INDICATION
ESD	EMERGENCY STOP DEVICE
FP	FLUSHING POINT
FVNR	FULL VOLTAGE NON-REVERSING
HI	HAND INDICATION
HS	HAND SWITCH
I1	MOTOR PROTECTION INTERLOCK
I2	CURRENT INDICATION
I/I	CURRENT TO CURRENT REPEATER
IS	INTRINSICALLY SAFE
JI	POWER INDICATION
KQI	RUN TIMER
NC	NORMALLY CLOSED
QOI	START COUNTER
SC	SPEED CONTROL
SCH	SPEED CONTROL HIGH
SI	SPEED INDICATION
UA	MULTI-VARIABLE ALARM (AS SPECIFIED)
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
Y1	RUN STATUS
YC	RUN PERMISSIVE
XA	DEVICE ALARM
XY	ALARM RELAY
ZC	POSITION CONTROL
ZA	POSITION ALARM
ZSO	LIMIT SWITCH OPEN
ZSC	LIMIT SWITCH CLOSED
ZI	POSITION INDICATOR

VALVE & EQUIPMENT SYMBOLS



Revision	By	Appd.	YY.MM.DD
E			
D			
C			
B	FOR TENDER	RM JK	2026.03.09
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Issued			

Permit-Seal

Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta
 Title
PROCESS NOTES, ABBREVIATIONS, AND SYMBOL LEGEND

Project No.	Scale
1101000459	NO SCALE
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	PRIMARY LOCATION ***NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION ***NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	1.	2.	3.
SHARED DISPLAY SHARED CONTROL	4.	5.	6.
COMPUTER FUNCTION	7.	8.	9.
PROGRAMMABLE LOGIC CONTROL	10.	11.	12.

*SYMBOL SIZE MAY VARY ACCORDING TO THE USER'S NEEDS AND THE TYPE OF DOCUMENT. A SUGGESTED SQUARE AND CIRCLE SIZE FOR LARGER DIAGRAMS IS SHOWN ABOVE. CONSISTENCY IS RECOMMENDED.

**ABBREVIATION OF THE USER'S CHOICE SUCH AS IPI (INSTRUMENT PANEL #1), IC2 (INSTRUMENT CONSOLE #2), CC3 (COMPUTER CONSOLE #3), ETC., MAY BE USED WHEN IT IS NECESSARY TO SPECIFY INSTRUMENT OR FUNCTION LOCATION.

***NORMALLY INACCESSIBLE OR BEHIND-THE-PANEL DEVICES OR FUNCTIONS MAY BE DEPICTED BY USING THE SAME SYMBOLS BUT WITH DASHED HORIZONTAL BARS, I.E.



- (1) CONNECTION TO PROCESS, MECHANICAL LINK, OR INSTRUMENT SUPPLY
- THE FOLLOWING ABBREVIATIONS DENOTE TYPES OF POWER SUPPLY
- AIR SUPPLY (PLANT AIR, HEADER SUPPLY REGULATED eg ADJUSTED TO 552 kPa)
- FILTERED AIR SUPPLY (REGULATED eg ADJUSTED TO 138 kPa)
- ELECTRIC SUPPLY
- GAS SUPPLY
- STEAM SUPPLY
- WATER SUPPLY
- 1 PSI = 6.894 kPa

- (2) UNDEFINED SIGNAL
- (3) PNEUMATIC SIGNAL **
- (4) ELECTRICAL SIGNAL
- (5) HYDRAULIC SIGNAL
- (6) CAPILLARY TUBING (FILLED SYSTEM)
- (7) ELECTROMAGNETIC OR SONIC SIGNAL *** (GUIDED)
- (8) ELECTROMAGNETIC OR SONIC SIGNAL *** (NOT GUIDED)
- (9) INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
- (10) MECHANICAL LINK

OPTIONAL BINARY (ON-OFF) SYMBOLS

- (11) PNEUMATIC BINARY SIGNAL
- (12) ELECTRIC BINARY SIGNAL

NOTE: 'OR' MEANS USER'S CHOICE. CONSISTENCY IS RECOMMENDED. THE FOLLOWING ABBREVIATIONS ARE SUGGESTED TO DENOTE THE TYPES OF POWER SUPPLY. THESE DESIGNATIONS MAY ALSO BE APPLIED TO PURGE FLUID SUPPLIES.

AS - AIR SUPPLY	} OPTIONS	HS - HYDRAULIC SUPPLY
IA - INSTRUMENT AIR		NS - NITROGEN SUPPLY
PA - PLANT AIR		SS - STEAM SUPPLY
ES - ELECTRICAL SUPPLY		WS - WATER SUPPLY
GS - GAS SUPPLY		

* THE SUPPLY LEVEL MAY BE ADDED TO THE INSTRUMENT SUPPLY LINE, E.G., AS-100, A 100-PSIG AIR SUPPLY; ES-24DC, A 24 VOLT DIRECT CURRENT POWER SUPPLY.

** THE PNEUMATIC SIGNAL SYMBOL APPLIES TO A SIGNAL USING ANY GAS AS THE MEDIUM. IF A GAS OTHER THAN AIR IS USED, THE GAS MAY BE IDENTIFIED BY A NOTE ON THE SIGNAL SYMBOL OR OTHERWISE.

*** ELECTROMAGNETIC PHENOMENA INCLUDE HEAT, RADIO WAVES, NUCLEAR RADIATION, AND LIGHT.

PRESSURE CONTROL VALVE LEGEND

- SU SUSTAINING
- RD REDUCING
- RL RELIEVING
- SA SURGE ANTICIPATING
- VR VACUUM RELIEF
- RF RATE OF FLOW

ANALYZING ELEMENT / ALARM LEGEND

- CHL CHLORINE
- TUR TURBIDITY
- PH PH
- DO DISSOLVED OXYGEN
- CON CONDUCTIVITY
- ETC etc
- TSS TOTAL SUSPENDED SOLIDS
- NH3 AMMONIA
- NO3 NITRATE
- OP04 PHOSPHATE
- MLSS MIXED LIQUOR SUSPENDED SOLIDS

- LOCALLY MOUNTED INSTRUMENT
- PANEL MOUNTED INSTRUMENT
- BACK OF PANEL MOUNTED INSTRUMENT
- PILOT LIGHT
- UNDEFINED INTERLOCK LOGIC

FLOW

- HIGH - FLOW ALARM
- LOW LOW - FLOW ALARM
- LOW - FLOW ALARM
- FLOW CONTROL VALVE
- FLOW DISCHARGE VALVE
- FLOW ELEMENT (PRIMARY ELEMENT WITHOUT TRANSMITTER)
- FLOW SIGHT GLASS
- FLOW INDICATOR
- FLOW INDICATING CONTROLLER
- FLOW INDICATING TRANSMITTER
- FLOW TOTALIZER INDICATOR
- FLOW TOTALIZER INDICATING TRANSMITTER
- FLOW SWITCH - HIGH SET POINT
- FLOW SWITCH - LOW SET POINT
- FLOW TRANSMITTER
- FLOW TEST POINT
- FLOW STRAIGHTENING VANES
- SOLENOID VALVE
- FLOW SIGNAL CONVERTER (CURRENT INPUT / PNEUMATIC OUTPUT)
- FLOW SIGNAL INTEGRATOR
- FLOW SQUARE ROOT EXTRACTOR
- FLOW SIGNAL SUMMATION
- FLOW SWITCH

LEVEL

- LEVEL ALARM - HIGH
- LEVEL ALARM - HIGH HIGH
- LEVEL ALARM - LOW
- LEVEL ALARM - LOW LOW
- LEVEL CONTROLLER
- LEVEL CONTROL VALVE
- LEVEL GAUGE GLASS
- LEVEL ELEMENT
- LEVEL INDICATOR
- LEVEL INDICATING CONTROLLER
- LEVEL INDICATOR & TRANSMITTER
- LEVEL INDICATING SWITCH 10,000 OHMS RESISTANCE
- LEVEL RECORDER
- LEVEL SWITCH
- LEVEL SWITCH - HIGH SET POINT
- LEVEL SWITCH - HIGH HIGH SET POINT
- LEVEL SWITCH - LOW SET POINT
- LEVEL SWITCH - LOW LOW SET POINT
- LEVEL TRANSMITTER
- LEVEL POTENTIOMETER
- LEVEL CONVERSION INTERFACE
- HIGH HIGH LEVEL CONVERSION INTERFACE
- LOW LOW LEVEL CONVERSION INTERFACE
- LEVEL SWITCH - MID SET POINT
- LEVEL CONTROL SWITCH
- DIFFERENTIAL PRESSURE LEVEL TRANSMITTER

PRESSURE

- PRESSURE ALARM - HIGH
- PRESSURE ALARM - HIGH HIGH
- PRESSURE ALARM - LOW
- PRESSURE ALARM - LOW LOW
- PRESSURE CONTROLLER
- PRESSURE CONTROL VALVE (REFER TO LEGEND)
- PRESSURE DIFFERENTIAL INDICATOR
- PRESSURE DIFFERENTIAL SWITCH - HIGH
- PRESSURE DIFFERENTIAL SWITCH - LOW
- PRESSURE DIFFERENTIAL TRANSMITTER
- PRESSURE INDICATOR
- PRESSURE INDICATING CONTROLLER
- PRESSURE INDICATING TRANSMITTER
- PRESSURE TEST POINT
- PRESSURE SWITCH
- PRESSURE RUPTURE DISK
- PRESSURE SWITCH - HIGH SET POINT
- PRESSURE SWITCH - HIGH HIGH SET POINT
- PRESSURE SWITCH - LOW SET POINT
- PRESSURE SWITCH - LOW LOW SET POINT
- PRESSURE RELIEF VALVE
- PRESSURE SIGNAL CONVERTER (CURRENT INPUT / PNEUMATIC OUTPUT)

TEMPERATURE

- TEMPERATURE ALARM - HIGH SET POINT
- TEMPERATURE ALARM - LOW SET POINT
- TEMPERATURE CONTROL VALVE
- TEMPERATURE ELEMENT (PRIMARY ELEMENT WITHOUT TRANSMITTER)
- TEMPERATURE INDICATOR
- TEMPERATURE INDICATING CONTROLLER
- MULTIPOINT TEMPERATURE INDICATOR (SCANNING TEMPERATURE INDICATOR)
- MULTIPOINT TEMPERATURE RECORDER (SCANNING TEMPERATURE RECORDER)
- TEMPERATURE TEST POINT
- TEMPERATURE SWITCH - HIGH SET POINT
- TEMPERATURE SWITCH - LOW SET POINT
- TEMPERATURE SWITCH
- TEMPERATURE TRANSMITTER
- THERMOWELL (WITHOUT THERMOCOUPLE)

MISCELLANEOUS

- ANALYZING ELEMENT (REFER TO LEGEND)
- ANALYZING INDICATOR TRANSMITTER
- SMOKE DETECTOR
- CONDUCTIVITY INDICATOR
- CHART RECORDER
- CONDUCTIVITY SWITCH - HIGH SET POINT
- CONDUCTIVITY SWITCH - LOW SET POINT
- HAND CONTROLLER (MANUAL LOADING STATION)
- HAND INDICATING CONTROLLER (MANUAL LOADING STATION)
- HAND INDICATION STATUS
- MANUAL SELECTOR SWITCH
- HAND-OFF-AUTO SWITCH
- HAND SWITCH
- HEATER
- CURRENT INDICATION
- LOSS OF POWER SWITCH
- TIME SEQUENCING PROGRAMMER
- TIMER
- MOISTURE INDICATING CONTROLLER
- MOISTURE ELEMENT (PRIMARY ELEMENT WITHOUT TRANSMITTER)
- MOISTURE DETECTION
- COUNTER
- SPEED CONTROL
- SPEED INDICATOR
- DOOR SWITCH (MANDOORS & O/H)
- TEMPERATURE INDICATING CONTROLLER
- MULTIVARIABLE LIGHT (BEACON)
- MULTIVARIABLE SWITCH
- VARIABLE SPEED SWITCH
- WEIGHT RECORDER
- GENERAL FAULT
- VIBRATION ALARM - HIGH SET POINT
- START/STOP COMMAND
- FAULT SWITCH
- TORQUE ALARM - HIGH SET POINT
- START/STOP COMMAND
- RUN STATUS OF EQUIPMENT STATUS
- TORQUE SWITCH HIGH
- TORQUE SWITCH HIGH HIGH
- POSITION STATUS
- VALVE LIMIT SWITCH (CLOSED POSITION)
- VALVE LIMIT SWITCH (OPEN POSITION)
- VALVE POSITION TRANSMITTER
- VALVE COMMAND CLOSE
- VALVE COMMAND OPEN
- LINE FILTER
- PRE FILTER
- REFRIGERATED DRYER
- DESICCANT DRYER
- AUTOMATIC DRAIN (FLOAT TYPE)
- COMBINATION REGULATOR LINE FILTER
- COMBINATION LINE FILTER REGULATOR, LUBRICATOR

Revision	By	Appd.	YY.MM.DD
E			
D			
C			
B	FOR TENDER	RM JK	2026.03.09
A	FOR 95% REVIEW	RM JK	2026.02.13
Issued			

Permit-Seal

Signature: *[Signature]*
 Date: 2026-03-18
 Permit Number: P 0209
 The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Client/Project

BLACKFALDS
ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

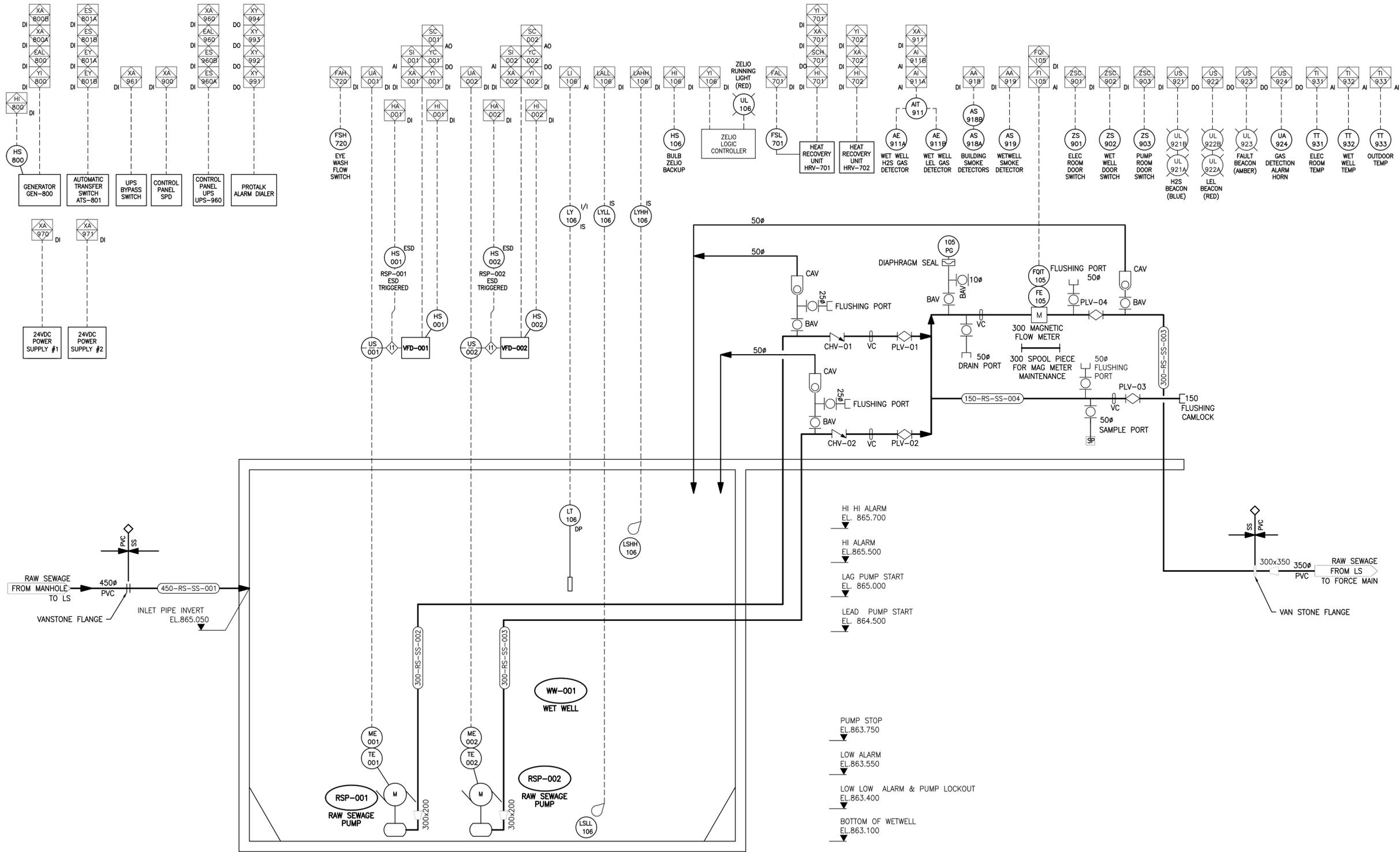
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PROCESS INSTRUMENTATION SYMBOLS

Project No.	Scale
1101000459	NO SCALE
Drawing No.	Sheet
P-002	- of -
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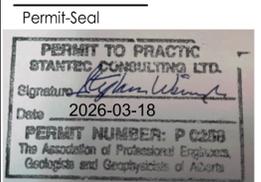
RAW SEWAGE FROM MANHOLE TO LS
 VANSTONE FLANGE
 450 ϕ PVC
 INLET PIPE INVERT EL.865.050

- HI HI ALARM EL. 865.700
- HI ALARM EL.865.500
- LAG PUMP START EL. 865.000
- LEAD PUMP START EL. 864.500

- PUMP STOP EL.863.750
- LOW ALARM EL.863.550
- LOW LOW ALARM & PUMP LOCKOUT EL.863.400
- BOTTOM OF WETWELL EL.863.100

RAW SEWAGE PUMP-001 FUTURE PUMP CAPACITY: 140 L/S TDH: 19 M MOTOR: 60 HP (NP3202)	RAW SEWAGE PUMP-001 INITIAL PUMP CAPACITY: 90 L/S TDH: 15 M MOTOR: 35 HP (NP3202)	RAW SEWAGE PUMP-002 INITIAL PUMP CAPACITY: 90 L/S TDH: 15 M MOTOR: 35 HP (NP3202)	RAW SEWAGE PUMP-002 FUTURE PUMP CAPACITY: 140 L/S TDH: 19 M MOTOR: 60 HP (NP3202)
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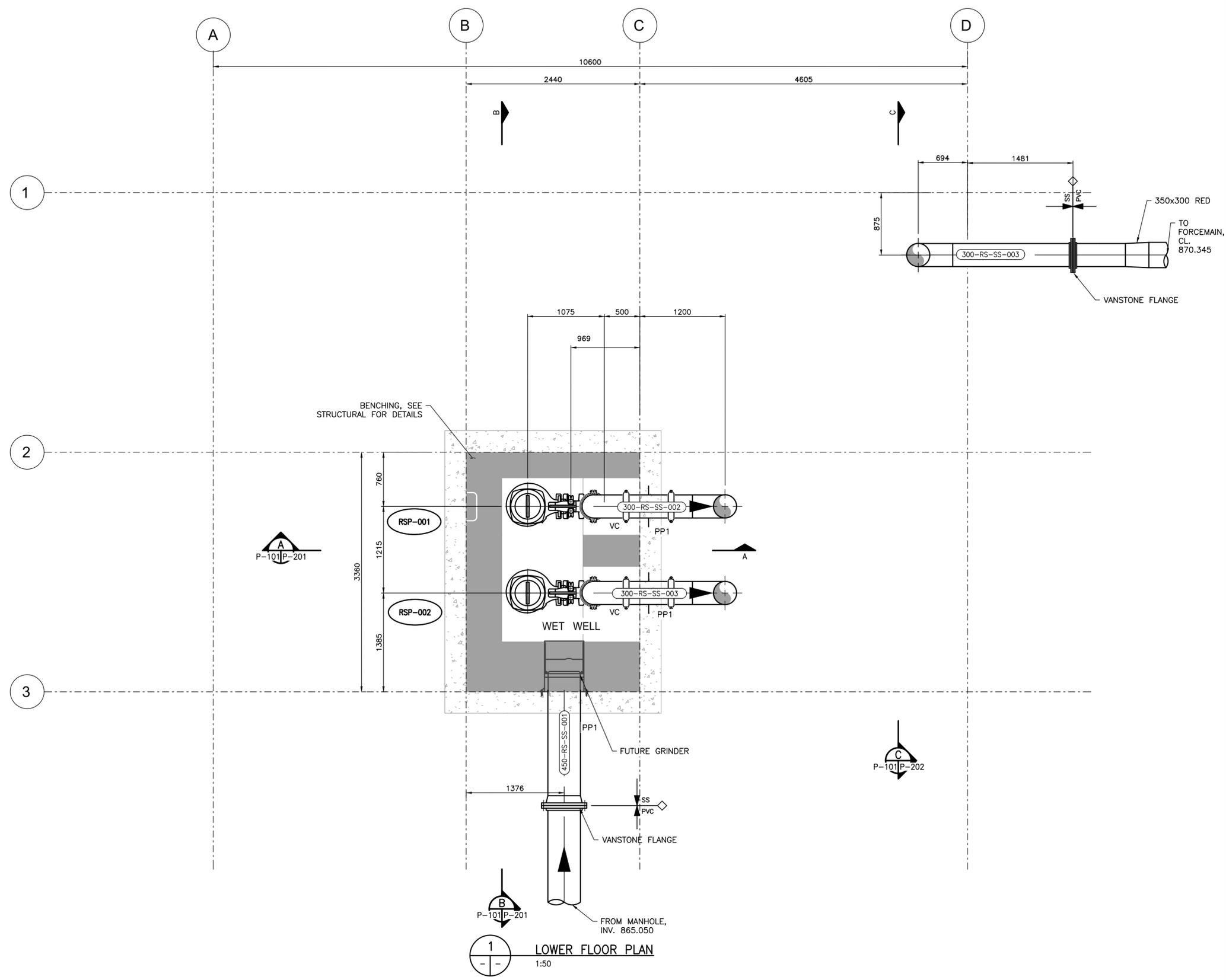
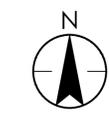
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	RM	JK	2026.02.13
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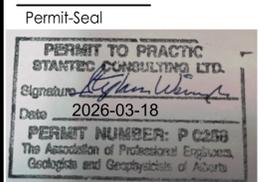
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
PROCESS AND INSTRUMENTATION DIAGRAM

Project No. 1101000459 Scale NO SCALE
 Drawing No. Sheet Revision
P-003 - of - **B/0**



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E	---	---	---
D	---	---	---
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B	FOR TENDER	RM JK	2026.03.09
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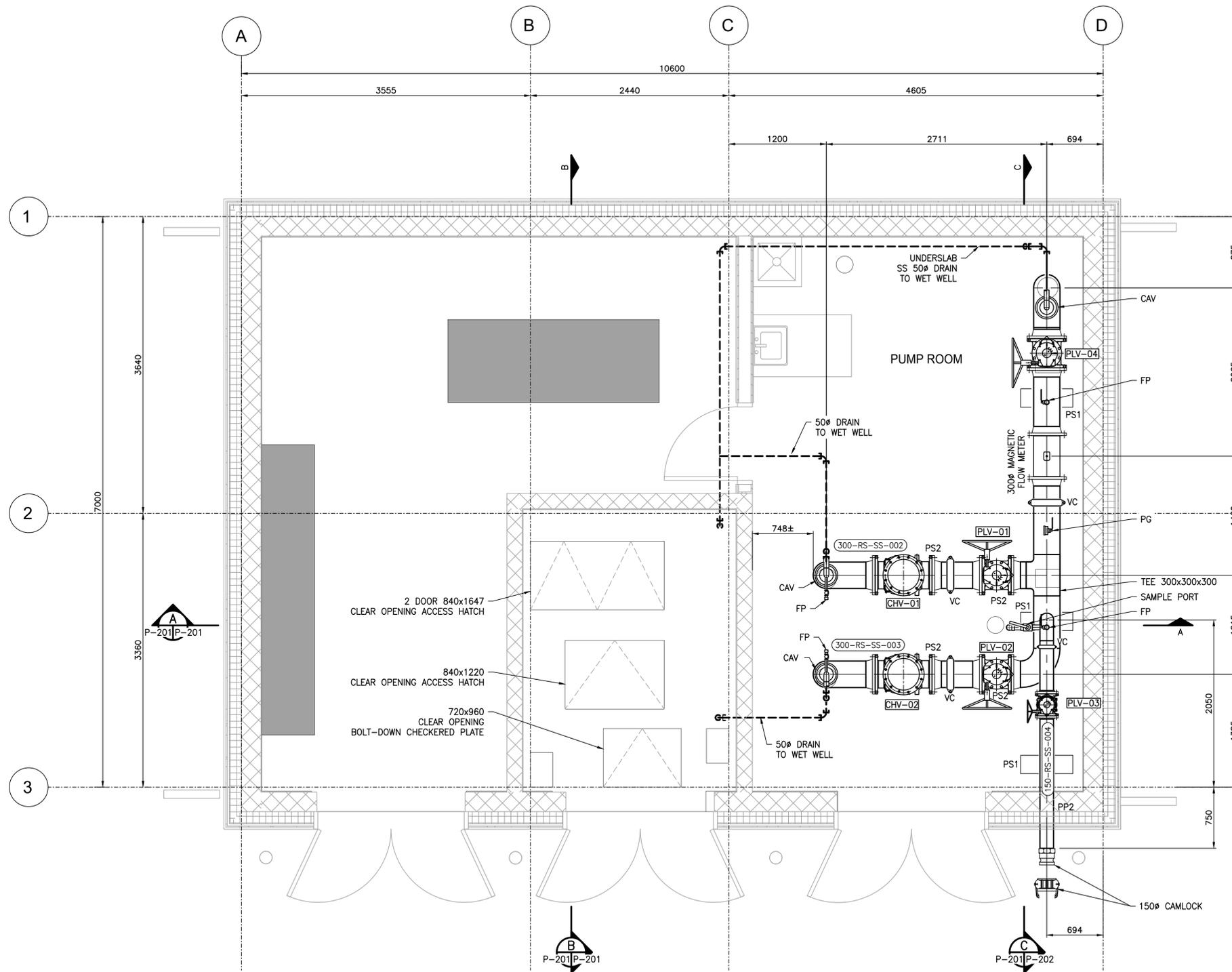


Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta
 Title
PROCESS
LOWER FLOOR PLAN

Project No. 1101000459	Scale 1:50
Drawing No. P-101	Sheet - of -
	Revision B/0

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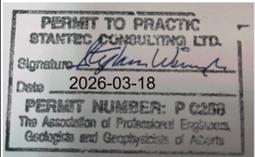
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2 MAIN FLOOR PLAN
 1:50

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B	RM	JK	2026.03.09
A	RM	JK	2026.02.13
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Client/Project

BLACKFALDS
 ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

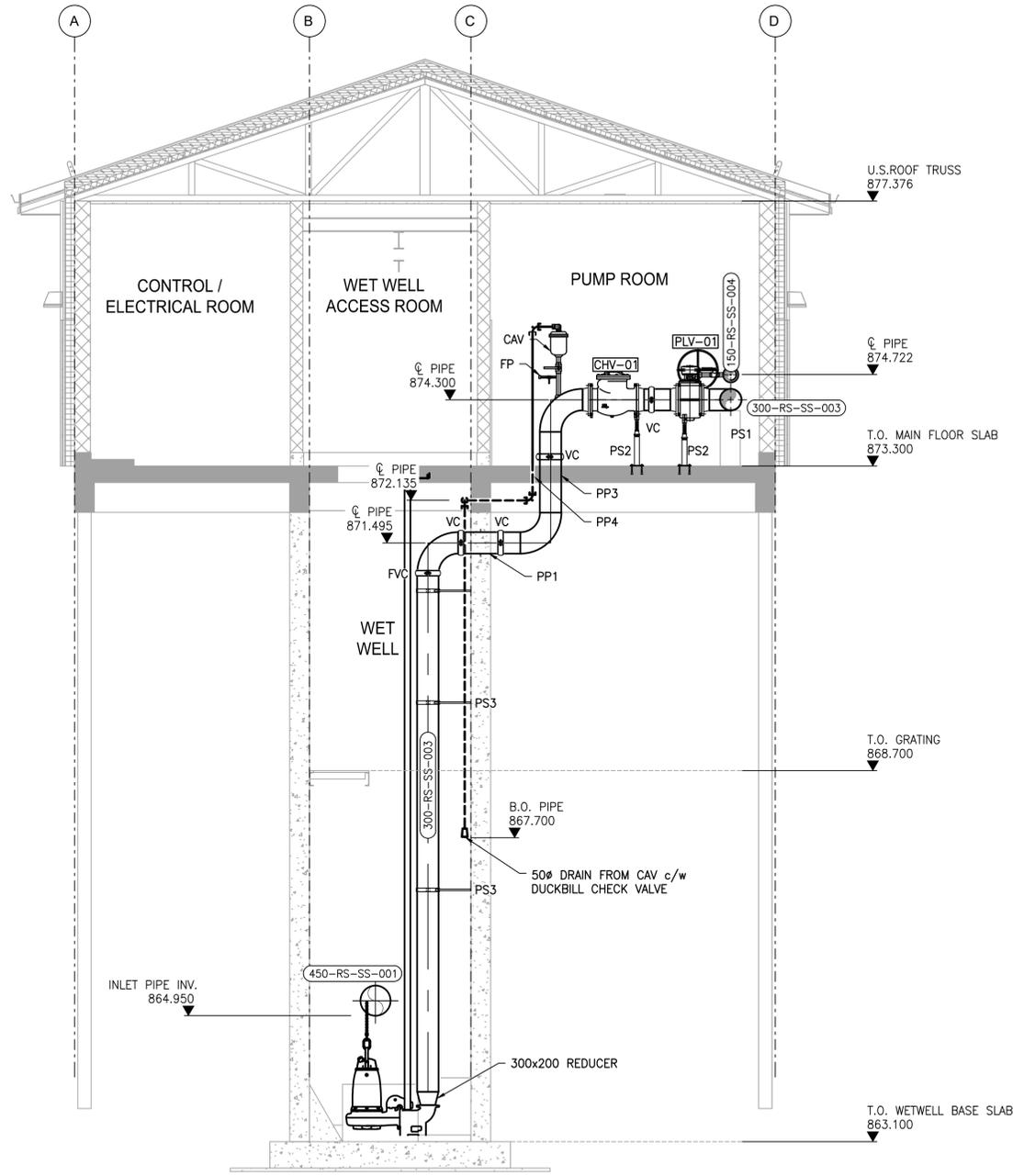
Title

PROCESS
 OPERATING FLOOR PLAN

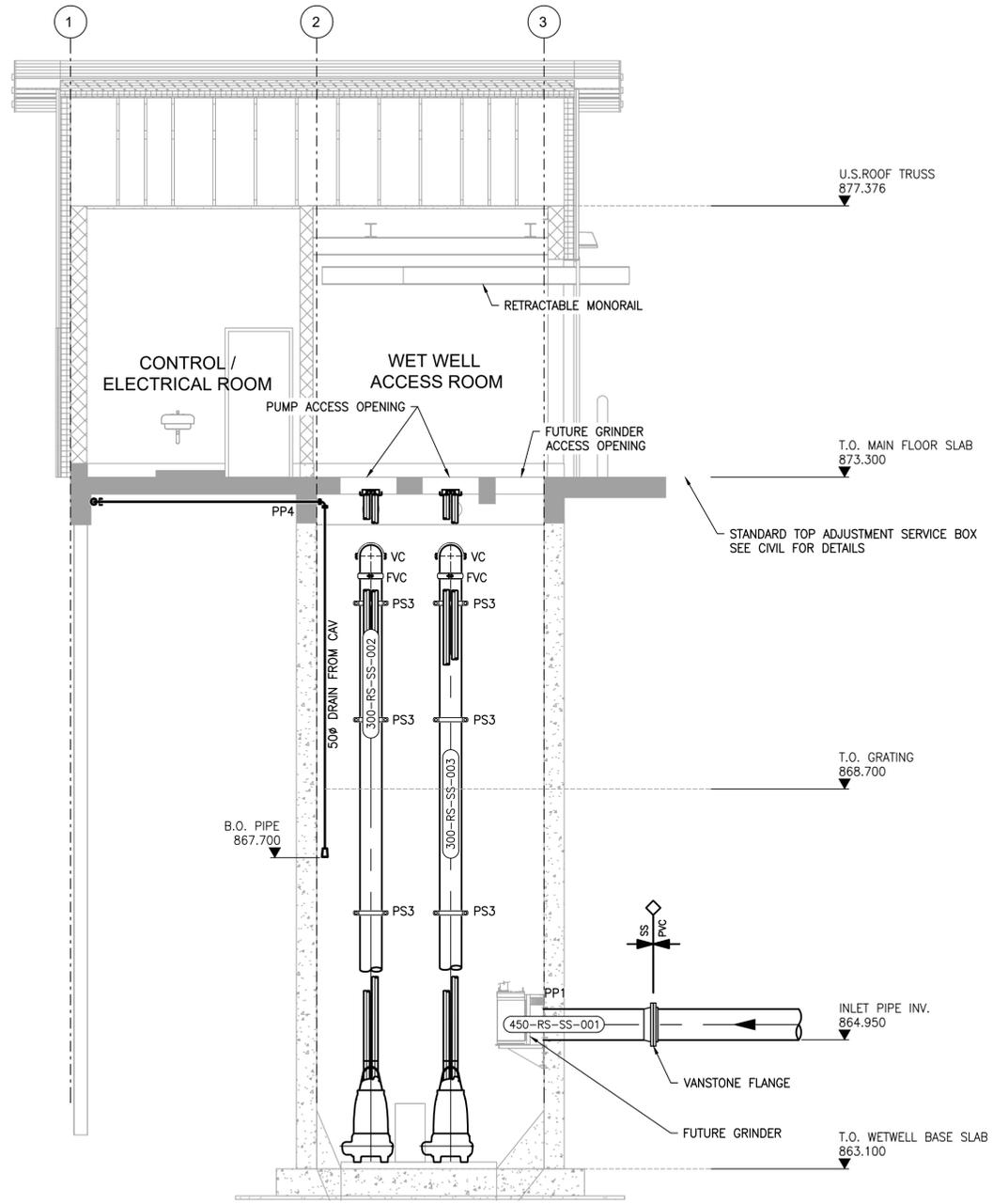
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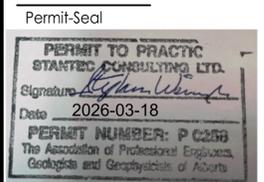


A SECTION
 P-101 P-201 1:50



B SECTION
 P-101 P-201 1:50

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E	---	---	---
D	---	---	---
C	---	---	---
B	RM	JK	2026.03.09
A	RM	JK	2026.02.13
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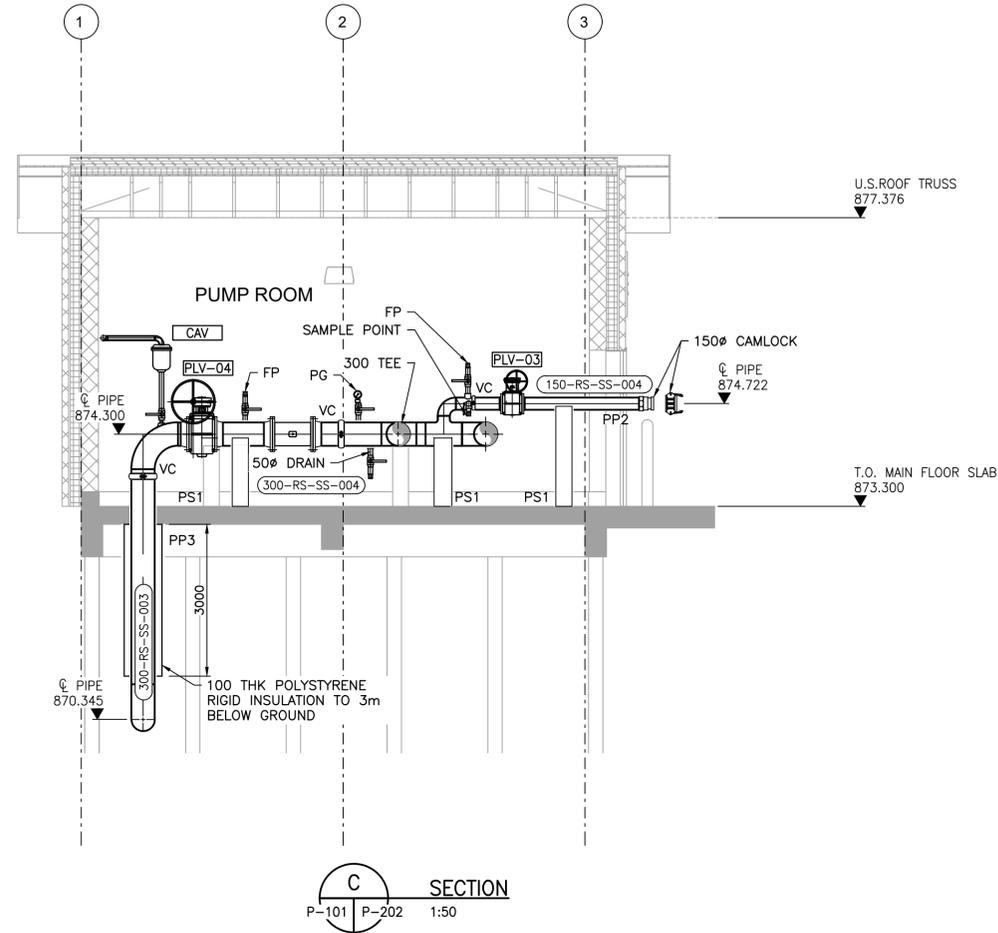
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
PROCESS SECTIONS

Project No. 1101000459	Scale 1:50
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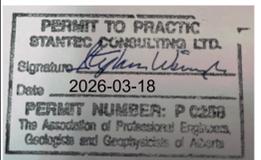
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B	FOR TENDER	RM JK	2026.03.09
A	FOR 95% REVIEW	RM JK	2026.02.13
Issued	By	Appd.	YY.MM.DD

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Client/Project

BLACKFALDS
ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

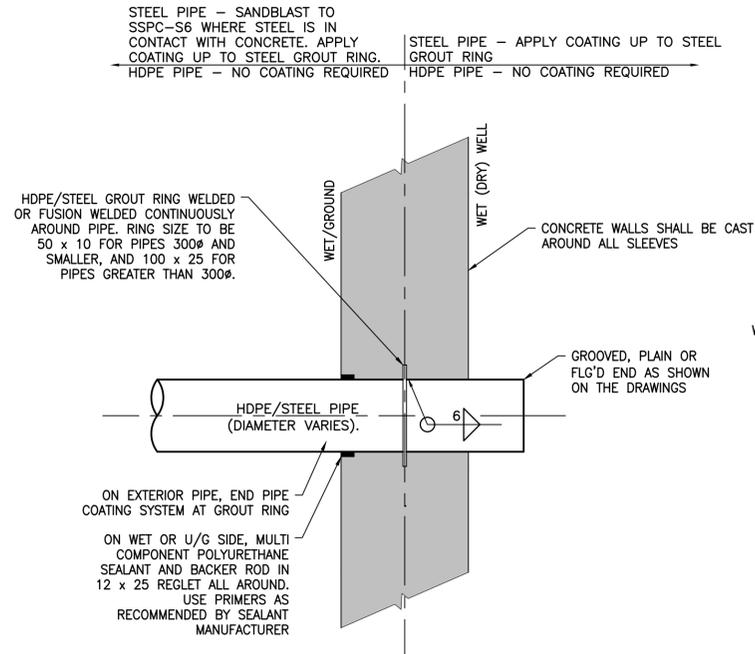
PROCESS
SECTION

Project No. 1101000459 Scale 1:50

Drawing No. P-202 Sheet of Revision B/0

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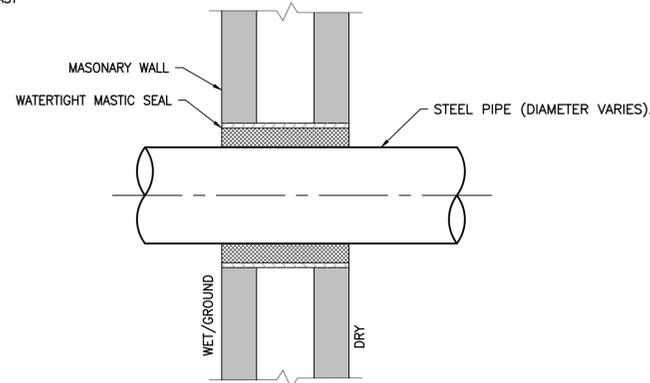
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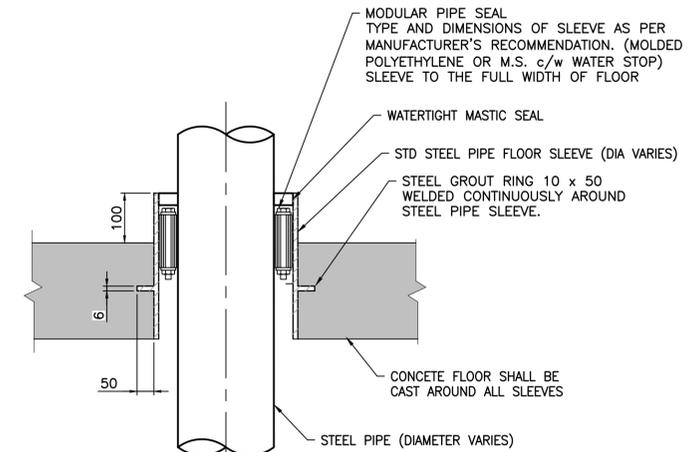
NOTES:

1. NO LONGITUDINAL MOVEMENT ALLOWED
2. LIQUID SIDE MUST PASS LEAKAGE TEST UNDER PRESSURE TO WHICH STRUCTURE IS SUBJECTED.

1 CONCRETE WALL PIPE PENETRATION (TYPE 1)
 NTS



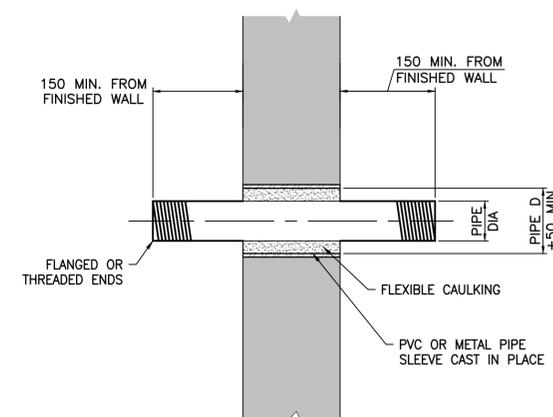
2 MASONRY WALL PIPE PENETRATION (TYPE 2)
 NTS



APPLICATION NOTES

1. USE STAINLESS STEEL HARDWARE
2. MANUFACTURER TO SPEC MODULAR PIPE SEAL MATERIAL SUITABLE FOR PIPING

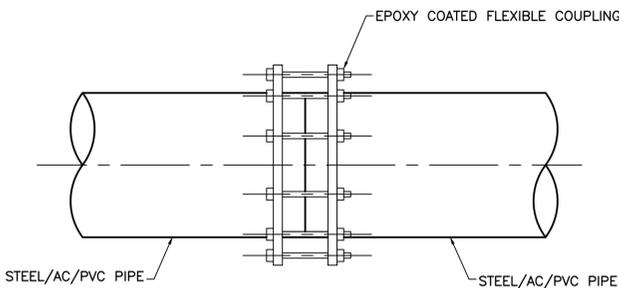
3 CONCRETE FLOOR PIPE PENETRATION (TYPE 3)
 NTS



NOTES:

1. ALLOW TRANSVERSE MOVEMENT

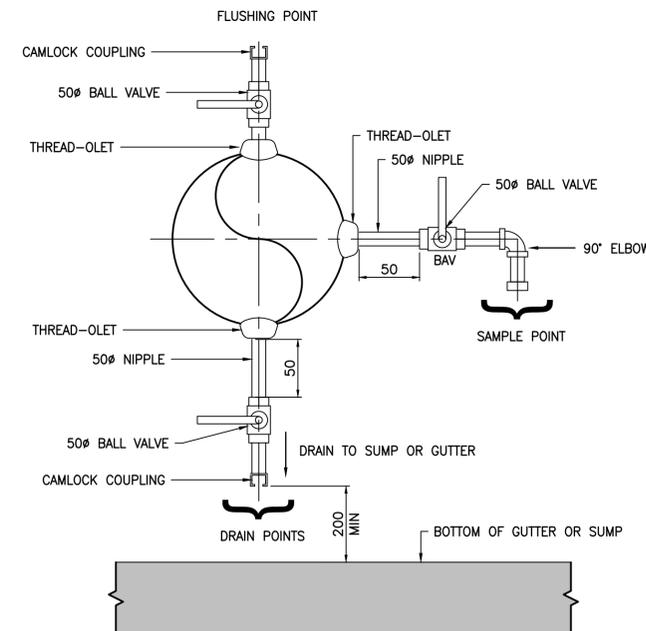
4 CONCRETE WALL PIPE PENETRATION FOR LESS THAN 75mm NOMINAL (TYPE 4)
 NTS



NOTES:

1. FLEXIBLE COUPLING MANUFACTURED BY DRESSER OR ROBAR OR APPROVED ALTERNATIVE.
2. PROVIDE RESTRAINING HARNESS ACCORDING TO AWWA M11.
3. WRAP COUPLING WITH DENSO PASTE AND TAPE AFTER INSTALLATION.
4. CONNECTION COUPLING TO MATCH PIPE DIAMETER AS REQUIRED.

5 STEEL/HDPE/PVC PIPE FLEXIBLE COUPLING
 NTS



NOTES:

1. ALL DRAIN & SAMPLE POINT FITTINGS SHALL BE GALV'D STEEL EXCEPT ON S.S. PIPING, FITTINGS SHALL BE S.S.
2. LOCATE DRAINS AT LOW POINTS OF ALL LINES AND AS NOTED.
3. LOCATE VENTS AT ALL HIGH POINTS AND AS NOTED.
4. LOCATE EACH VALVE FOR EASE OF OPERATION.

6 SAMPLE, DRAIN AND FLUSHING POINTS CONNECTIONS
 NTS

Revision	By	Appd.	YY.MM.DD
E	---	---	---
D	---	---	---
C	---	---	---
B	FOR TENDER	RM JK	2026.03.09
A	FOR 95% REVIEW	RM JK	2026.02.13
Issued	By	Appd.	YY.MM.DD

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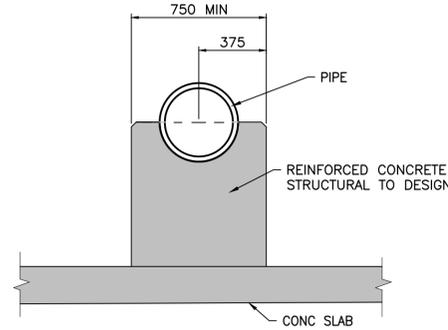
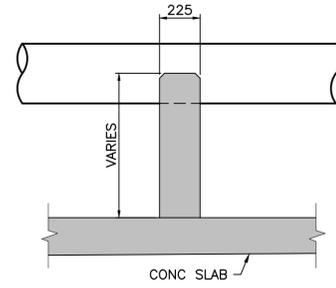
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
 PROCESS
 STANDARD DETAILS

Project No. 1101000459	Scale NO SCALE
Drawing No. P-501	Sheet - of -
Revision	B/0

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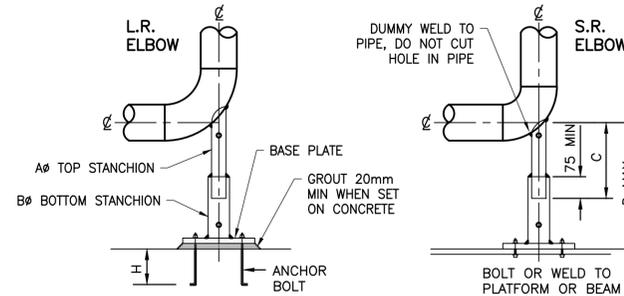
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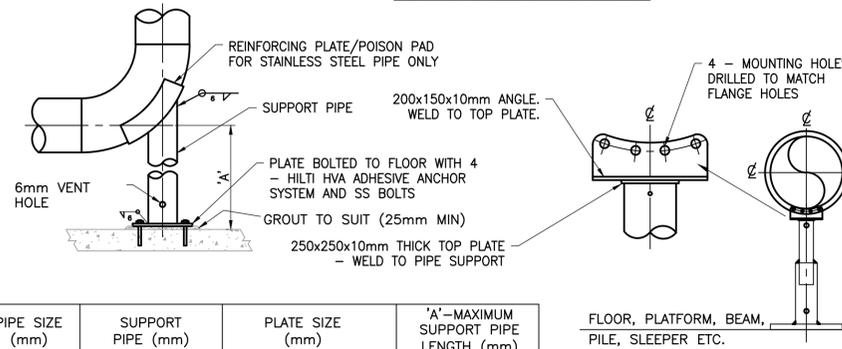
NOTE:

1. ALL EDGES TO RECEIVE 30x30 CHAMFER.
2. ALL PIPE SUPPORT AND HANGER COMPONENTS TO BE STAINLESS STEEL 316 U.N.O.

1 CONCRETE PIPE SUPPORT (TYPE 1)
 NTS



VERTICAL ELBOW SUPPORT



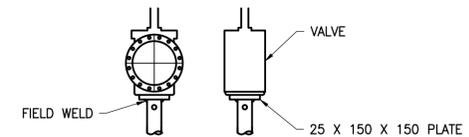
FLANGE PIPING SUPPORT

PIPE SIZE (mm)	SUPPORT PIPE (mm)	PLATE SIZE (mm)	'A'-MAXIMUM SUPPORT PIPE LENGTH (mm)
100	50 SCH 40	200 X 200 X 6	1525
150	50 SCH 40	200 X 200 X 6	1525
200	100 SCH 40	250 X 250 X 6	1625
250	100 SCH 40	250 X 250 X 6	1625
300	150 SCH 40	300 X 300 X 10	1830
350	200 SCH 40	350 X 350 X 10	1830
400	200 SCH 40	350 X 350 X 10	1830
500	200 SCH 40	350 X 350 X 10	1830
600	250 SCH 40	400 X 400 X 10	1830
750	300 SCH 40	450 X 450 X 10	1830
900	300 SCH 40	450 X 450 X 10	1830

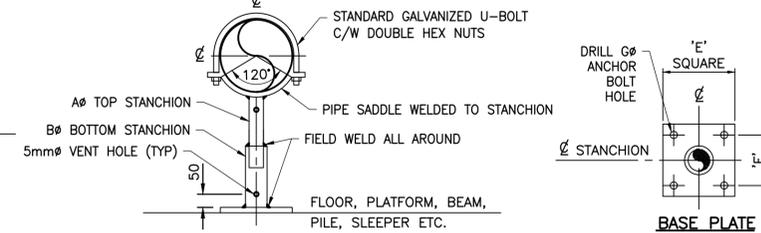
NOTE:

1. ALL PIPE SUPPORT AND HANGER COMPONENTS TO BE STAINLESS STEEL 316 U.N.O.

2 ADJUSTABLE SADDLE PIPE SUPPORT (TYPE 2)
 NTS



HORIZONTAL VALVE SUPPORT



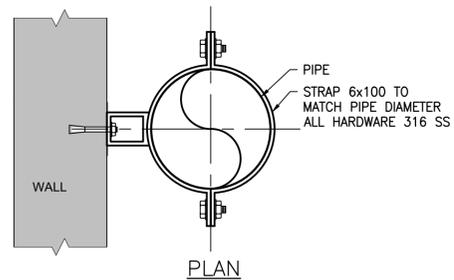
HORIZONTAL PIPING SUPPORT

NOTES:

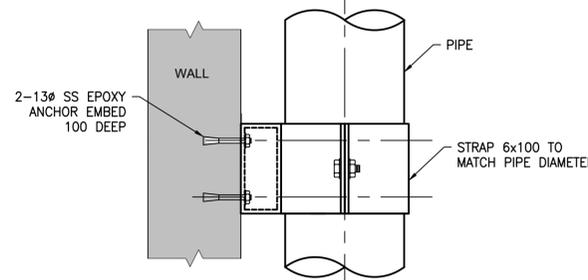
1. STANCHION MATERIAL SCH. 40 PIPE, OR AS PER SPECIFICATIONS. BASE PLATE - CARBON STEEL. FINISH - HOT DIPPED GALVANIZED AS PER SPECIFICATIONS. TOUCH UP FIELD WELDS WITH GALVICON.
2. STANCHIONS - MAY BE MYATT FIG. 308 OR MUELLER FIG. 264.
3. PIPE SADDLE - CUT FROM PIPE, LENGTH IS EQUAL TO WIDTH, WIDTH IS DETERMINED BY THE 120° ANGLE. REPAID REQUIRED ON PIPE 500mmØ AND LARGER. TOP VENT HOLE REQUIRED ONLY IF STANCHION IS 1500mm OR LONGER.

PIPE SIZE	50	65	75	100	125	150	200	250	300	350	400	450	500	600	750
A	40	40	65	65	65	75	75	75	100	100	100	150	150	150	150
B	65	65	75	75	75	100	100	100	150	150	150	200	200	200	200
C	MIN	200	200	210	235	250	270	300	350	380	410	450	500	530	600
	MAX	330	330	340	350	375	390	420	460	500	530	570	610	650	720
D MAX	1000	1000	1200	1200	1200	1500	1500	2000	2000	2000	2000	3000	3000	3000	3000
THICK x E SQUARE	6mm x 150	6mm x 150	6mm x 150	6mm x 200	6mm x 200	10mm x 200	10mm x 200	10mm x 200	10mm x 250	10mm x 250	10mm x 250	13mm x 300	13mm x 300	13mm x 300	13mm x 300
F SQUARE	115	115	115	150	150	150	150	200	200	200	200	240	240	240	240
G DIA. x No. HOLES	15 DIAMETER x 2 OPPOSITE CORNERS			20 DIAMETER x 4				25 DIAMETER x 4							
BOLT DIA. 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							

ADJUSTABLE PIPE STANCHION



PLAN



SECTION

NOTE:

1. ALL PIPE SUPPORT AND HANGER COMPONENTS TO BE STAINLESS STEEL 316 U.N.O.

3 CLAMP/BRACE PIPE SUPPORT (TYPE 3)
 NTS

Revision	By	Appd.	YY.MM.DD
E			
D			
C			
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Issued			

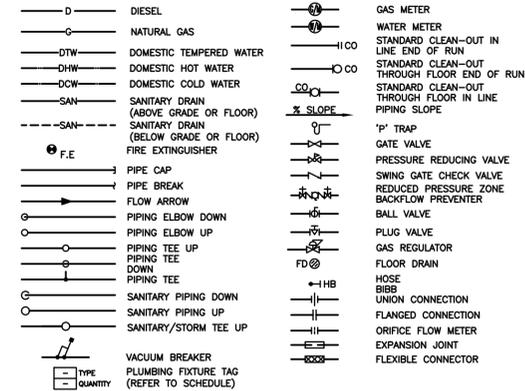
Permit-Seal

Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

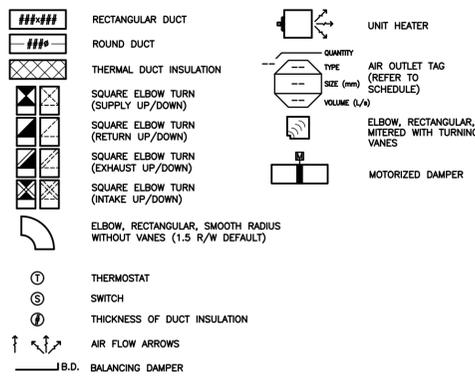
Title
 PROCESS
 STANDARD DETAILS

Project No. 1101000459 Scale NO SCALE
 Drawing No. Sheet Revision
 P-502 - of - B/0

PIPING IDENTIFICATION AND SYMBOLS



HVAC SYMBOLS



MECHANICAL DRAWING LIST		
DRAWING No.	DRAWING NAME	SCALE
M-001	MECHANICAL LEGENDS & SCHEDULES	N.T.S
M-100	BELOW GRADE - PLUMBING LAYOUT	1:30
M-101	GROUND LEVEL - PLUMBING LAYOUT	1:30
M-102	WET WELL BELOW GRADE - HEATING & VENTILATION LAYOUT	1:30
M-103	WET & DRY WELL - MAIN LEVEL - HEATING & VENTILATION LAYOUT	1:30
M-104	SECTION A - HEATING & VENTILATION LAYOUT	1:30
M-105	SECTION B & C - HEATING & VENTILATION LAYOUT	1:50
M-106	MECHANICAL DETAILS	N.T.S
M-107	MECHANICAL SCHEMATICS	N.T.S

GAS LEGEND	
DESCRIPTION	kW
MUA-701	25.90
MUA-702	24.70
UH-705	7.30
DHW-707	44.00
GEN-800	458.96 (TO BE CONFIRMED)
TOTAL	560.86

NOTE: MINIMUM GAS SERVICE PRESSURE REQUIRED IS 3.5kPa. DISTRIBUTION GAS PRESSURE IS 1.75kPa TO 3.50kPa. PROVIDE PRESSURE REDUCING VALVES AS REQUIRED TO MEET APPLIANCE REQUIRED PRESSURES. VENT ALL PRVs TO ATMOSPHERE AS PER CSA B149.1-15.

GRILLE & DIFFUSER SCHEDULE	
GRILLE TYPE	DESCRIPTION
SUPPLY AIR	
S-1	E.H. PRICE MODEL 620 DOUBLE DEFLECTION LOUVERED FACE SUPPLY; TO BE SUITABLE FOR SURFACE OR EXPOSED DUCT MOUNTING; REFER TO DRAWINGS FOR GRILLE SIZES AND CAPACITIES.
RETURN AIR	
R-1	E.H. PRICE MODEL 80 ALUMINIUM EGG CRATE RETURN GRILLE, 1/2" CORE; TO BE SUITABLE FOR SURFACE OR EXPOSED DUCT MOUNTING; REFER TO DRAWINGS FOR GRILLE SIZES AND CAPACITIES.
TRANSFER GRILLE	
T-1	E.H. PRICE 540/F/S/A/B12 SUITABLE FOR SURFACE MOUNTING. FIXED LOUVER C/W SINGLE DEFLECTION. SIZE AS SHOWN ON DRAWINGS.

GAS UNIT HEATER SCHEDULE											
TAG No.	LOCATION	MANUFACTURER	MODEL No.	GAS INPUT CAPACITY (kW)	OUTPUT CAPACITY (kW)	AIRFLOW (L/s)	MOTOR			ACCESSORIES & REMARKS	
							kW	V/Ph/Hz	RPM		
UH-705	GROUND LEVEL	REZNOR	MODEL B-25	7.3	5.9	697	0.05	120/1/60	-	100	REZNOR MODEL B-25, CEILING SUSPENDED WITH CENTRIFUGAL BLOWER FOR AIR DELIVERY. ALUMINIZED STEEL HEAT EXCHANGER AND STEEL BURNER RACK WITH STAINLESS STEEL INSERT. SINGLE STAGE COMBINATION GAS VALVE. TOTALLY ENCLOSED BLOWER MOTOR. DIRECT DRIVE MOTOR WITH MULTI-SPEED TAPS. FAN AND LIMIT SAFETY CONTROLS.

ELECTRIC UNIT HEATER SCHEDULE							
TAG No.	LOCATION	MANUFACTURER	MODEL No.	OUTPUT (kW)	VOLTS	PHASE	ACCESSORIES & REMARKS
UH-706	GROUND LEVEL	TRANE	UHXA-033F1B	3	600	3	TRANE MODEL UHXA EXPLOSION PROOF UNIT HEATER, WALL/CEILING MOUNTABLE. EQUIPPED WITH AUTOMATIC RESET THERMAL OVERLOAD SWITCH CAPILLARY TYPE. OVER-PRESSURE FROM EXCESSIVE EXTERNAL TEMPERATURE RELIEVED BY FACTORY INSTALLED RELIEF VALVE. C/W EXPLOSION PROOF WALL MOUNTED THERMOSTAT.

DOMESTIC INSTANTANEOUS WATER HEATER SCHEDULE								
TAG No.	LOCATION	MANUFACTURER	MODEL No.	RECOVERY RATE LITRES/HR (37.7°C RISE)	INPUT (kW)	ELECTRICAL (V/Ph/Hz)	STORAGE CAPACITY (LITRES)	REMARKS
DHW-707	GROUND LEVEL	RINNAI	V65(VC2025FFU-US)	-	44	120/1/60	-	V65 SERIES TANKLESS WATER HEATER, STANDARD MC-91-20S CONTROLLER, C/W PRESSURE AND TEMPERATURE RELIEF VALVE.

INDIRECT FIRED MAKE-UP AIR UNIT SCHEDULE																	
UNIT No.	SERVICE	MANUFACTURER	MODEL No.	AIR				CAPACITY (L/s)	EXT. STATIC PRESS. (Pa)	MOTOR		HEATING		REMARKS			
				WINTER EXHAUST DB/WB (°C)	SUMMER EXHAUST DB/WB (°C)	WINTER SUPPLY DB/WB (°C)	SUMMER SUPPLY DB/WB (°C)			kW	EFFICIENCY (%)	V/Ph/Hz	INPUT CAPACITY (kW)		WINTER RECOVERED ENERGY (kW)	SUMMER RECOVERED ENERGY (kW)	
HRV-701	GROUND LEVEL	TEMPEFF	RGL 1000 TYPE 1	16.7/10.4	23.9/17	12.3/6.7	25.5/22	401	125	1.50	86.50	208/3/60	25.9	22	4.7	3.3	0
HRV-702	GROUND LEVEL	TEMPEFF	RGL 1000 TYPE 1	16.7/10.4	23.9/17	12.3/6.7	25.5/22	401	125	1.50	86.50	208/3/60	25.9	22	4.7	3.3	0

PLUMBING FIXTURE SCHEDULE									
FIXTURE TAG	TYPE	FIXTURE CONNECTIONS (mm)					DESCRIPTION		
		DCW	DHW	DTW	DRAIN	VENT			
FD-1	HEAVY DUTY FLOOR DRAIN	-	-	-	75ø	-	ZURN Z520 9" (229mm) DIAMETER TOP DRAIN, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, SEEPAGE PAN AND ADJUSTABLE EXTENSION FRAME WITH HEAVY-DUTY CAST IRON DEEP FLANGE SLOTTED GRATE.		
FD-2	FUNNEL FLOOR DRAIN	-	-	-	75ø	-	ZURN MODEL ZN211-BE FUNNEL FLOOR DRAIN, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, ADJUSTABLE "TYPE BE" POLISHED NICKEL BRONZE ROUND STRAINER WITH 4" (102mm) ROUND FUNNEL. SIZE AS PER DRAWINGS.		
MV-1	EMERGENCY THERMOSTATIC MIXING VALVE	20ø	20ø	30ø	-	-	BRADLEY S19-2100 RECESSED CABINET EMERGENCY THERMOSTATIC MIXING VALVE. 3/4" (20mm) NPT INLETS AND OUTLETS. EXCEEDS ANSI Z358.1, ASSE 1071 CERTIFIED. RELIABLE LIQUID-FILLED THERMOSTAT WITH 10-YEAR WARRANTY. CHECKSTOPS ON INLETS. ADJUSTABLE SET POINT WITHIN TEMPERATURE RANGE. ACCURATE TEMPERATURE CONTROL TO WITHIN ±3° F. BUILT-IN COLD WATER BYPASS, ASSURING COLD FLOW. POSITIVE SHUTOFF OF HOT SUPPLY WHEN COLD SUPPLY IS LOST. DIRT AND LIME RESISTANT. DIAL THERMOMETER. UNIVERSAL MOUNTING CAPABILITY. CABINET FEATURES: 18 GAUGE BODY & DOOR, LEFT-HAND HINGE, CYLINDER LOCK, INLET/OUTLET KNOCK-OUT HOLES FOR MOUNTING FLEXIBILITY, STAINLESS STEEL OR BAKED WHITE ENAMEL FINISHES, SURFACE-MOUNTED OR RECESSED STYLE WITH FLANGE. VALVE SPECIFICATIONS: MAXIMUM OPERATING PRESSURE OF 125 PSI (860 KPA), MAXIMUM INLET TEMPERATURE OF 180° F (82° C), RECOMMENDED INLET TEMPERATURE OF 120° F (49° C) - 140° F (60° C), TEMPERATURE RANGE SET POINT OF STD. 65° F (19° C) TO 90° F (32° C) 85° F (29° C).		
MS-1	MOP SINK	20ø	20ø	-	50ø	-	FRANKE MOP SINK FSS22210/318-1. CENTER WASTE LOCATION WITH 2" (50mm) GRID STRAINER. 18 GAUGE (1.5 mm), TYPE 316 (EN1.4401 17/12/2) STAINLESS STEEL. POLISHED #4 SATIN FINISH (MATERIAL CODE 1.4301 CHROME NICKEL STEEL V2A). RADIUS COVED BOWL CORNERS. INTEGRAL CORNER SPLASH GUARD. CAN BE INSTALLED IN EITHER LEFT OR RIGHT CORNERS. UNDERCOATED TO REDUCE CONDENSATION AND RESONANCE. ONE PIECE WALL HANGERS. CERTIFIED TO ASME A112.19.3-2008 / CSA B45.4-08. NOMINAL DIMENSIONS: 610mm (24") WIDE X 610mm (24") FRONT TO BACK X 559mm (22") DEEP. ZURN AQUASEC Z841M4 POLISHED CHROME-PLATED CAST BRASS SERVICE SINK FAUCET WITH QUARTER TURN CERAMIC DISC CARTRIDGES, 2-1/2" (64mm) LONG SWIVEL INLETS (WITH INTEGRAL STOPS) PROVIDING ADJUSTABLE CENTERS FROM 4" (102mm) TO 8-3/8" (213mm) AND A 6" (152mm) CENTERLINE CAST BRASS VACUUM BREAKER SPOUT WITH AN ANGLED-RESISTANT COLOR-CODED METAL WRIST BLADE HANDLES. CLIENT TO SUPPLY P-TRAP.		
HB-1	HOSE BIBB	40ø	-	-	-	-	ACCORN MODEL B121-LF BENT NOSE HOSE VALVE WITH VACUUM BREAKER. BALL VALVE AND HOSE CONNECTION, INSTALL HOSE MOUNTED WALL BRACKET SUPPLIED BY OWNER.		
HB-2	HOSE BIBB	40ø	-	-	-	-	BALL VALVE: WATTS MODEL FBV 2 PIECE, FULL PORT, BRONZE BALL VALVE, STAINLESS STEEL CAMLOCK COUPLING FOR CONNECTION TO A HOSE; VACUUM BREAKER: WATTS MODEL 800M40T ANTI-SIPHON PRESSURE VACUUM BREAKER, INSTALL STAINLESS STEEL WALL MOUNTED HOSE BRACKET SUPPLIED BY OWNER. C/W 6FT (15M) OF HOSE C/W STAINLESS STEEL CAMLOCK COUPLING.		
EW-1	EMERGENCY EYEWASH SPRAY HEADS	-	-	15ø	-	-	GUARDIAN G-1849 MODEL 90° SWING DOWN DECK MOUNTED EYEWASH. THE EYE/FACE WASH INCLUDES AN INTEGRAL 5.1 GPM (19.2 L) FLOW CONTROL, PROVIDING WATER AT A SAFE VELOCITY WHILE MAINTAINING ITS EFFECTIVENESS (EXCEEDS MINIMUM WATER FLOW OF 3.0 GPM (11.4 L) AT 30 PSI (2.0 BAR)). THE EYE/FACE WASH IS PROTECTED BY FLIP OPEN DUST COVERS THAT OPEN WHEN THE PRODUCT IS ACTIVATED OR BY A FULL BOWL DUST COVER THAT ACTIVATES THE UNIT WHEN IT IS OPENED. SAFE, STEADY WATER FLOW UNDER VARYING WATER SUPPLY CONDITIONS FROM 30.90 PSI (2.0-6.1 BAR) IS ASSURED BY INTEGRAL FLOW CONTROL IN THE SPRAYHEAD ASSEMBLY. SPRAYHEADS ARE MADE FROM AN IMPACT RESISTANT ABS PLASTIC OR FROM DURABLE 304/316 STAINLESS STEEL WITH ELECTRO-POLISHED FINISH. PERFORATED SPRAYHEAD WITH PROTECTIVE SPRAYHEAD COVER IS ABS PLASTIC AND PROVIDES SOFT SPRAY FOR CLEANSING EYES AND FACE. CHROME-PLATED BRASS VALVE WITH EXTENDED HANDLE STAYS OPEN ONCE HANDLE PULLED DOWN. ATTACHMENT KIT INCLUDES 1/2" (15mm) NPT SUPPLY, AND FITTINGS. THE SPRAYHEAD CONTAINS AN ANTIMICROBIAL AGENT TO PROTECT THE SPRAYHEAD. BACKFLOW PREVENTION SERIES N9 DUAL-CHECK BACKFLOW PREVENTER HAS A CHROME-NICKEL PLATED BRASS BODY AND INCLUDES ATMOSPHERIC VENT FOR CONTINUOUS PRESSURE APPLICATIONS. ATTACH EYEWASH SWING ARM TO FRANK WBR2221-B WITH CUSTOM MADE HOLE DRILL.		
SK-1	WALL HUNG SINK	15ø	15ø	-	75ø	-	FRANKE WHS 2221-B WALL HUNG BASIN C/W 18 GAUGE (12mm) TYPE 304 STAINLESS STEEL, EXPOSED AREA #4 STAIN FINISHED, RADIUS COVED BOWL CORNERS, ANTI-SPILL RIM, COMPLIES WITH ADA, ANSI A117.1 AND CSA B651-04, INCLUDING 12500WK 1 1/2" (32mm) WASTE DN32 KIT WITH OVERFLOW. C/W CUSTOM MADE HOLE DRILLING FOR GUARDIAN G-1849 EYEWASH ARM. AMERICAN STANDARD 6114.111.002 MONTERREY SINGLE CONTROL 1.25 GPM CENTERSET, POLISHED CHROME FAUCET. CAST BRASS CENTERSET BODY WITH METAL HANDLE. 1/2" MALE THREADED BRASS INLET SHANKS WITH QUICK SPIN NUTS. WASHERLESS CERAMIC DISC VALVE CARTRIDGE WITH INTEGRAL HOT LIMIT SAFETY STOP. FAUCET MOUNTS ON 4" (102MM) CENTERS. 117 MM (4-5/8") LONG OUTLET SPOUT FROM CENTER OF FAUCET.		

FIRE EXTINGUISHER SCHEDULE						
TAG No.	LOCATION	CAPACITY (KG)	ULC RATING	CLASSIFICATION	DESCRIPTION	REMARKS
FE-1	MAIN/SERVICE AND LOWER LEVEL	4.54	6A80-B/C	ABC	DRY CHEMICAL	C/W WALL MOUNTING BRACKET

Revision	By	Appd.	YY.MM.DD
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Issued	By	Appd.	YY.MM.DD

Permit-Seal

Client/Project

BLACKFALDS
ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

MECHANICAL LEGENDS & SCHEDULES

Project No. 1101000459 Scale N.T.S

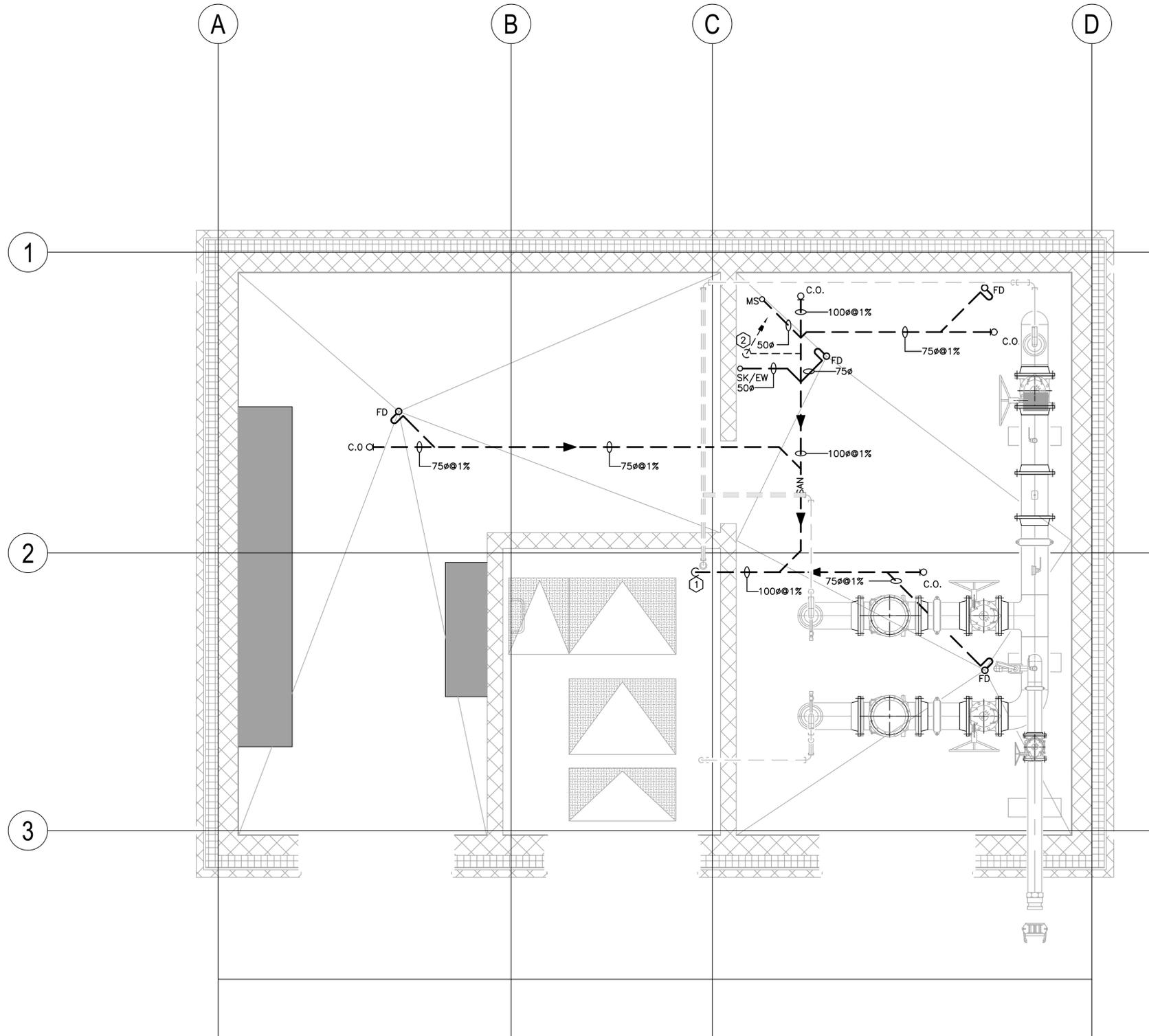
Drawing No. M-001 Sheet 1 of 9 Revision C

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Legend



GENERAL NOTES

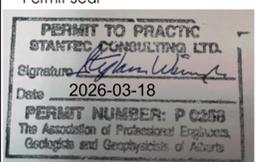
- VENT ALL FIXTURES IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE 2015.
- PROVIDE TRAP PRIMERS TO ALL DRAINS AS PER MECHANICAL SPECIFICATIONS.
- DO NOT SCALE DRAWINGS. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED THAT ARE NOT DEFINED BY FIXED DIMENSIONS ARE APPROXIMATE ONLY.
- INSTALL DOMESTIC WATER PIPING TO FIXTURES IN ACCORDANCE WITH NATIONAL PLUMBING CODE 2015.
- INDIVIDUAL FIXTURE PIPE SIZES AS PER PLUMBING FIXTURE SCHEDULE.

KEY NOTES

- 1 RACK 100mm SANITARY PIPE INSIDE WET WELL WALL AND TERMINATE SANITARY PIPE AT 2650mm A.F.F.
- 2 50mm SANITARY VENT PIPE UP TO ROOF. INSTALL IN ACCORDANCE TO NATIONAL PLUMBING CODE.

Revision	By	Appd.	YY.MM.DD
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A FOR 95% REVIEW	AS	IG	2026.02.13
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
 BELOW GRADE
 PLUMBING LAYOUT

Project No. 1101000459	Scale 1:30
Drawing No. M-100	Sheet 2 of 9
Revision C	

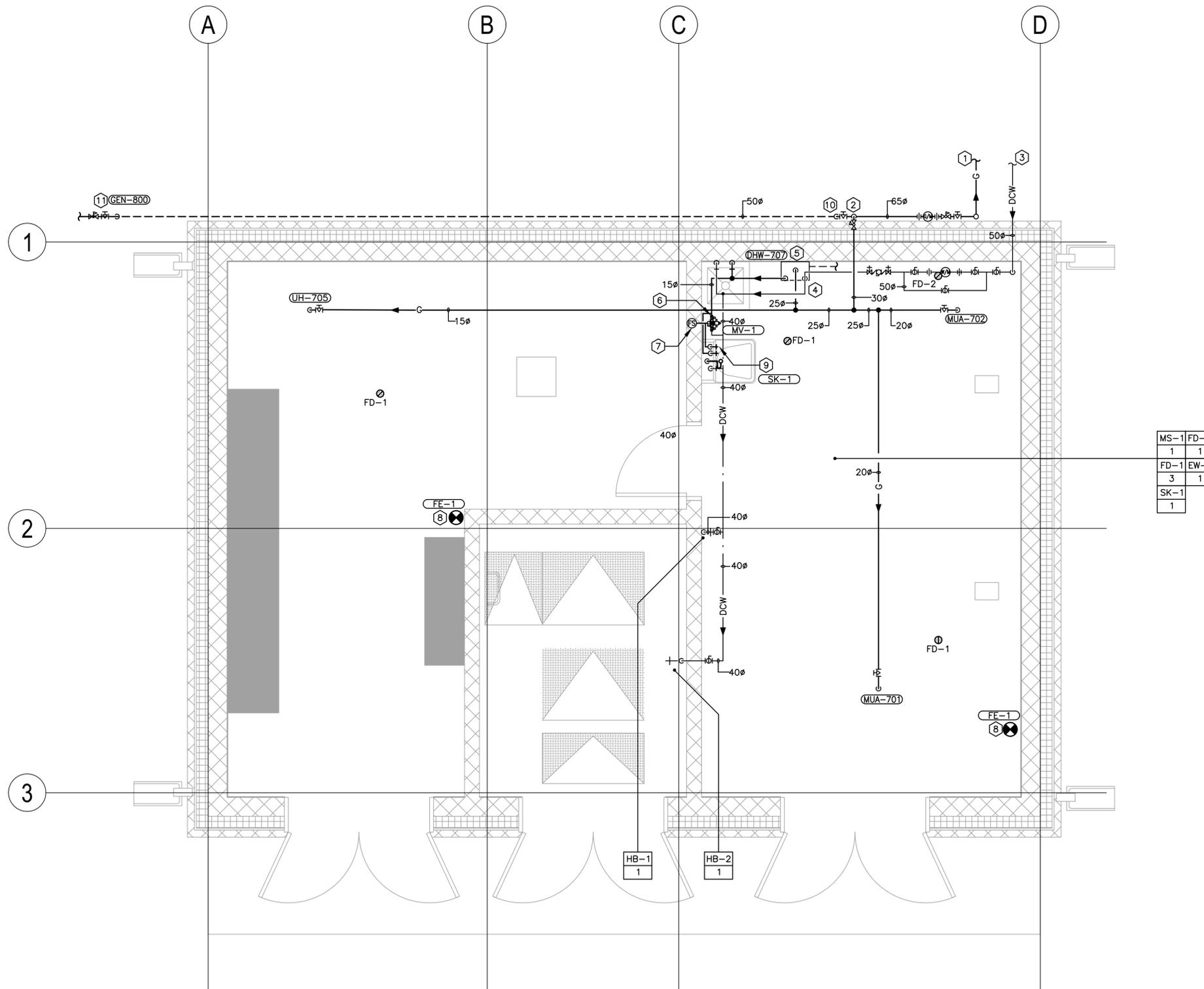
A BELOW GRADE - PLUMBING LAYOUT
 M-100 1:30

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Consultants

Legend



MS-1	FD-2
1	1
FD-1	EW-1
3	1
SK-1	
1	

- GENERAL NOTES**
- VENT ALL FIXTURES IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE 2015.
 - PROVIDE TRAP PRIMERS TO ALL DRAINS AS PER MECHANICAL SPECIFICATIONS.
 - MAKE WATER CONNECTIONS TO SITE SERVICES TO THE BUILDING. COORDINATE WITH STRUCTURAL FOR ADEQUATE FILL REQUIREMENTS.
 - DO NOT SCALE DRAWINGS. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED THAT ARE NOT DEFINED BY FIXED DIMENSIONS ARE APPROXIMATE ONLY.
 - INSTALL DOMESTIC WATER PIPING TO FIXTURES IN ACCORDANCE WITH NATIONAL PLUMBING CODE 2015.
 - ALL PLUMBING FIXTURES TO HAVE ISOLATION VALVES.
 - INDIVIDUAL FIXTURE PIPE SIZES AS PER PLUMBING FIXTURE SCHEDULE.
 - PIPE PRESSURE OVERFLOW RELIEF LINES TO THE NEAREST INDIRECT DRAIN.

- KEY NOTES**
- INCOMING NATURAL GAS SERVICE BY UTILITY PROVIDER. SERVICE LINE TO BE ADEQUATELY SIZED FOR GAS LOAD LISTED ON DRAWING M-001. NATURAL GAS PRESSURE DOWNSTREAM OF METER TO BE 3.48kPA.
 - NATURAL GAS LINE UP FROM GROUND LEVEL TO BELOW JOIST AND TO BE RACKED TIGHT TO UNDERSIDE OF STRUCTURE. PROVIDE EXTERIOR 1.75KPA REGULATOR ON BRANCH SERVING BUILDING APPLIANCES.
 - INCOMING 50φ WATER SERVICE (BY CIVIL). MAKE CONNECTIONS TO SITE SERVICES APPROXIMATELY 1.0m FROM BUILDING.
 - ALL PIPING SHOWN OFFSET FOR CLARITY PURPOSES ONLY. ALL PIPES TO BE RACKED ACCORDINGLY.
 - WALL MOUNTED INSTANTANEOUS DOMESTIC WATER HEATER DWH-707. CONNECT BOILER DRAIN TO THE NEAREST SANITARY LINE.
 - EMERGENCY MIXING VALVE TO BE SECURELY MOUNTED ON WALL.
 - EMERGENCY FLOW SWITCH FOR DOMESTIC TEMPERED WATER LINE TO BE MOUNTED ON WALL. CONNECT TO PLC FOR REMOTE MONITORING.
 - FIRE EXTINGUISHER MOUNTED ON WALL (TYPICAL)
 - INSTALL SINK C/W CUSTOM MADE HOLE DRILLED BY MANUFACTURE FOR GUARDIAN G-1849 EYEWASH ARM & FITTINGS.
 - 50φ GAS PIPE DOWN FROM MAIN GAS LINE AND TO BE BURIED MINIMUM 800mm BELOW GROUND LEVEL.
 - FIELD VERIFY NEW GAS FIRED GENERATOR LOCATION AND CONNECT GAS PIPE TO GENERATOR C/W ISOLATION VALVE & PRESSURE REGULATOR. PRV SETTING TO MATCH INLET GAS PRESSURE REQUIREMENTS OF GENERATOR MANUFACTURER.

1 GROUND LEVEL-PLUMBING LAYOUT
 M-101 1:30

Revision	By	Appd.	YY.MM.DD
B FOR TENDER	AS	IG	2026.03.09
A FOR 95% REVIEW	AS	IG	2026.02.13
Issued	By	Appd.	YY.MM.DD

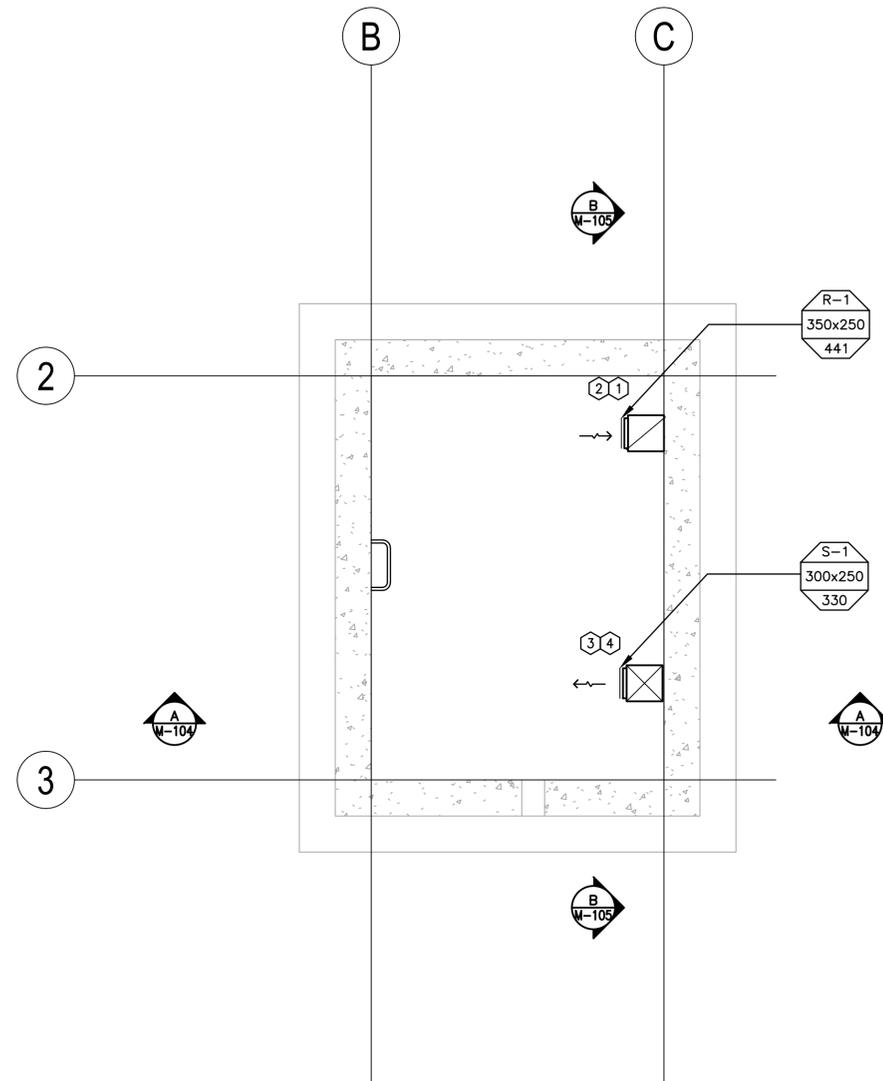
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PERMIT TO PRACTICE
 STANTEC CONSULTING LTD.
 Signature: [Signature]
 Date: 2026-03-18
 PERMIT NUMBER: P 0260
 The Association of Professional Engineers, Geologists and Geophysicists of Alberta
 APEGA ID# 185695 2026-03-17

Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
 GROUND LEVEL
 PLUMBING LAYOUT

Project No.	Scale	
1101000459	1:30	
Drawing No.	Sheet	Revision
M-101	3 of 9	C



GENERAL NOTES

1. ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
2. DO NO SCALE DRAWINGS. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED THAT ARE NOT DEFINED BY FIXED DIMENSIONS ARE APPROXIMATE ONLY.
3. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES, ELECTRICAL EQUIPMENT AND SPRINKLER HEADS.
4. MECHANICAL EQUIPMENT, DUCTS AND PIPING ARE TO BE COORDINATED WITH STRUCTURAL JOISTS AND CROSS BRACING.
5. ALL SUPPLY AIR AND RETURN AIR GRILLES TO HAVE BALANCING DAMPERS ON BRANCH DUCTWORK REGARDLESS OF WHAT IS INDICATED ON DRAWINGS.
6. DUCT SIZE FROM SUPPLY AND RETURN AIR GRILLES TO MATCH GRILLE SIZE UNLESS NOTED OTHERWISE.

KEY NOTES

- ① SUPPLY & INSTALL RETURN AIR GRILL © 1400mm ABOVE FLOOD LEVEL.
- ② 350x300 RETURN AIR DUCT FROM BELOW TO EXHAUST FAN EF-703.
- ③ SUPPLY & INSTALL SUPPLY AIR GRILL © 1675mm BELOW SAFETY PLATFORM.
- ④ 300x300 SUPPLY AIR DUCT DOWN TO WET WELL FROM MUA-701.

1 WET WELL - HEATING & VENTILATION LAYOUT
 M-102 1:30

Revision	By	Appd.	YY.MM.DD
B	FOR TENDER	AS	IG 2026.03.09
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Issued		By	Appd. YY.MM.DD

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
 BELOW GRADE - WET WELL
 HEATING & VENTILATION LAYOUT

Project No. 1101000459	Scale 1:30
Drawing No. M-102	Sheet 4 of 9
	Revision C

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- GENERAL NOTES**
- ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
 - DO NO SCALE DRAWINGS. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED THAT ARE NOT DEFINED BY FIXED DIMENSIONS ARE APPROXIMATE ONLY.
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 - ALL SUPPLY AIR AND RETURN AIR GRILLES TO HAVE BALANCING DAMPERS ON BRANCH DUCTWORK REGARDLESS OF WHAT IS INDICATED ON DRAWINGS.
 - DUCT SIZE FROM SUPPLY AND RETURN AIR GRILLES TO MATCH GRILLE SIZE UNLESS NOTED OTHERWISE.

- KEY NOTES**
- TERMINATE 100mm CONCENTRIC VENT HORIZONTALLY 610mm BELOW ROOF JOIST THROUGH WALL AND TERMINATE 600mm FROM EDGE OF THE WALL. INSTALL AS PER MANUFACTURERS INSTRUCTIONS.
 - INSTALL INSTANTANEOUS DOMESTIC WATER 125mm CONCENTRIC FLUE ADAPTER AND TERMINATE 600mm FROM EDGE OF THE WALL. INSTALL AS PER MANUFACTURERS INSTRUCTIONS.
 - 300x300 SUPPLY AIR DUCT FROM HRV-701 DOWN TO WELL LEVEL.
 - 350x300 RETURN DUCT FROM BELOW TO HRV-701.
 - SUPPLY AND INSTALL GAS FIRED UNIT HEATER IN DRY WELL MINIMUM 2200mm A.F.F.(APPROX. 42kg).
 - SUPPLY AND INSTALL EXPLOSION PROOF ELECTRIC UNIT HEATER IN WET WELL 2200mm A.F.F.(APPROX. 60kg).
 - SUPPLY & INSTALL HRV-701 & HRV-702 CONTROL PANEL AT 1500mm A.F.F.
 - SUPPLY AND INSTALL EXPLOSION PROOF THERMOSTAT.

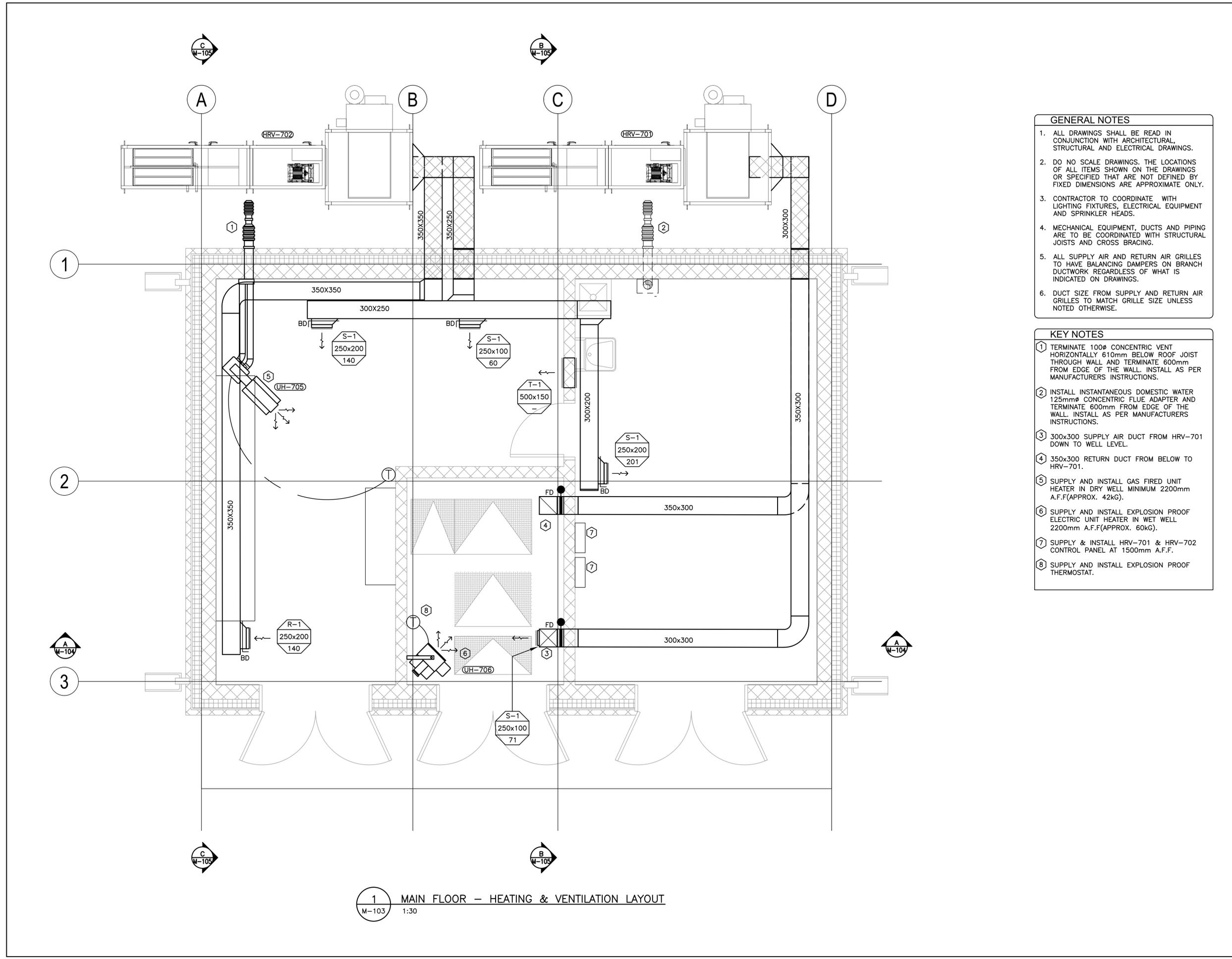
Revision	By	Appd.	YY.MM.DD
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Issued	By	Appd.	YY.MM.DD

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
**WET & DRY WELL - MAIN LEVEL
 HEATING & VENTILATION LAYOUT**

Project No. 1101000459 Scale 1:30
 Drawing No. M-103 Sheet 5 of 9 Revision C



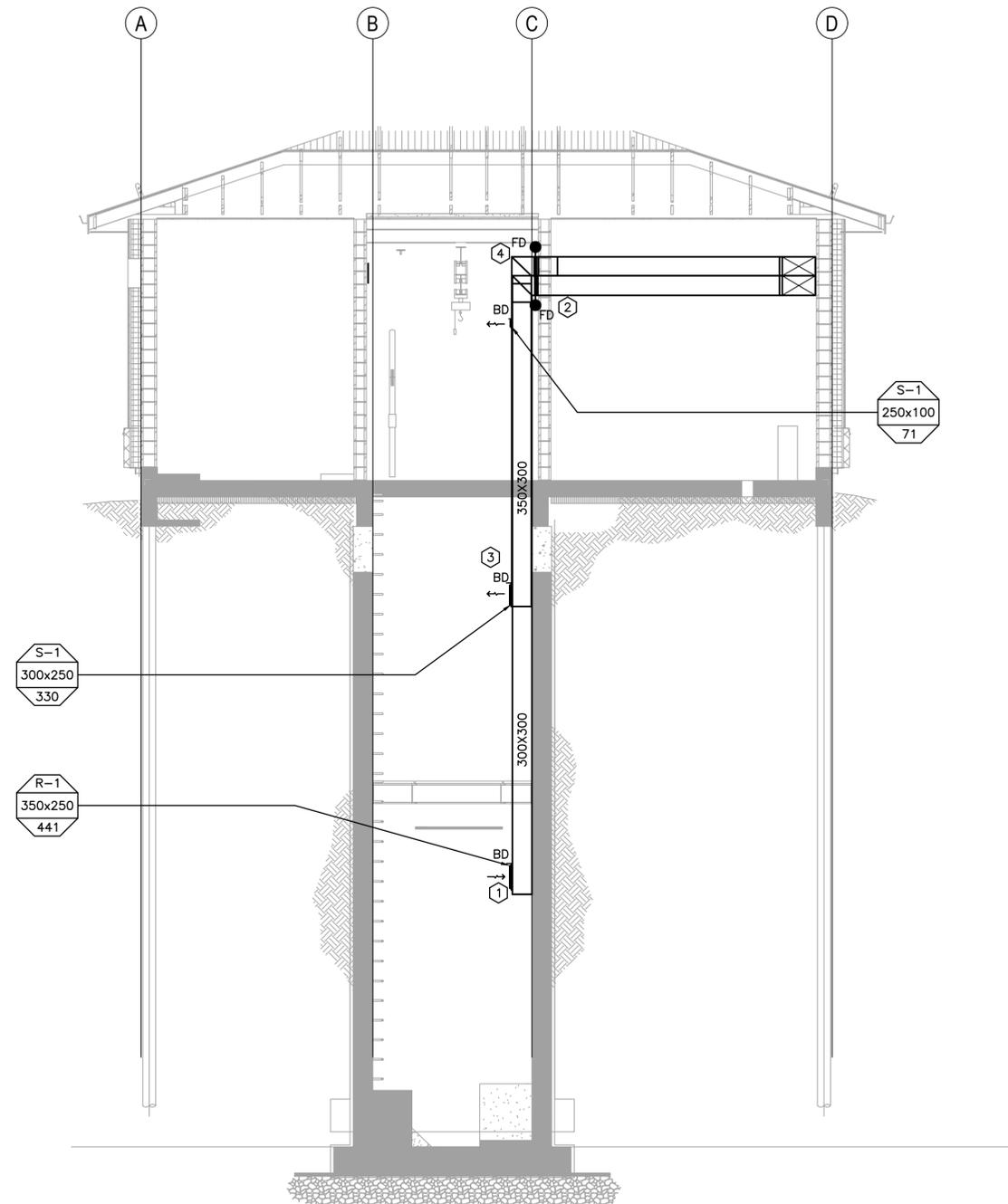
1 MAIN FLOOR - HEATING & VENTILATION LAYOUT
 M-103 1:30

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3. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES, ELECTRICAL EQUIPMENT AND SPRINKLER HEADS.
4. MECHANICAL EQUIPMENT, DUCTS AND PIPING ARE TO BE COORDINATED WITH STRUCTURAL JOISTS AND CROSS BRACING.
5. ALL SUPPLY AIR AND RETURN AIR GRILLES TO HAVE BALANCING DAMPERS ON BRANCH DUCTWORK REGARDLESS OF WHAT IS INDICATED ON DRAWINGS.
6. DUCT SIZE FROM SUPPLY AND RETURN AIR GRILLES TO MATCH GRILLE SIZE UNLESS NOTED OTHERWISE.

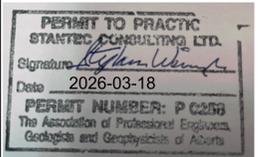
KEY NOTES

- ① SUPPLY & INSTALL RETURN AIR GRILLE @ 1400mm ABOVE FLOOD LEVEL.
- ② 350x300 RETURN AIR DUCT FROM WET WELL TO HRV-701.
- ③ SUPPLY & INSTALL SUPPLY AIR GRILLE @ 3400mm ABOVE SAFETY PLATFORM LEVEL.
- ④ 300x300 SUPPLY AIR DUCT DOWN TO WET WELL FROM HRV-701.

A SECTION A-A - HEATING & VENTILATION LAYOUT
 M-104 1:50

Revision	By	Appd.	YY.MM.DD
B FOR TENDER	AS	IG	2026.03.09
A FOR 95% REVIEW	AS	IG	2026.02.13
Issued	By	Appd.	YY.MM.DD

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Client/Project

BLACKFALDS
ALBERTA

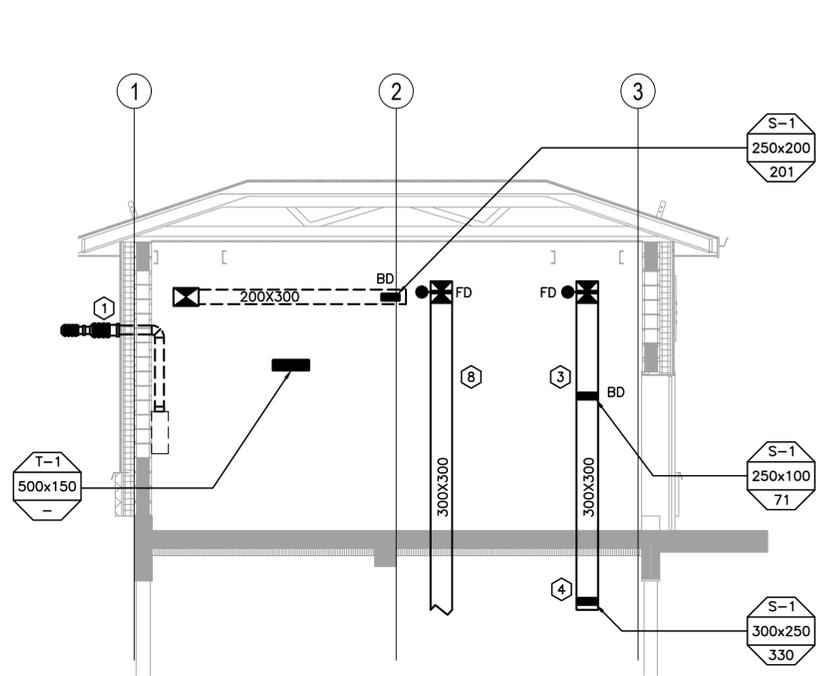
MCKAY RANCH LIFT STATION

Blackfalds, Alberta

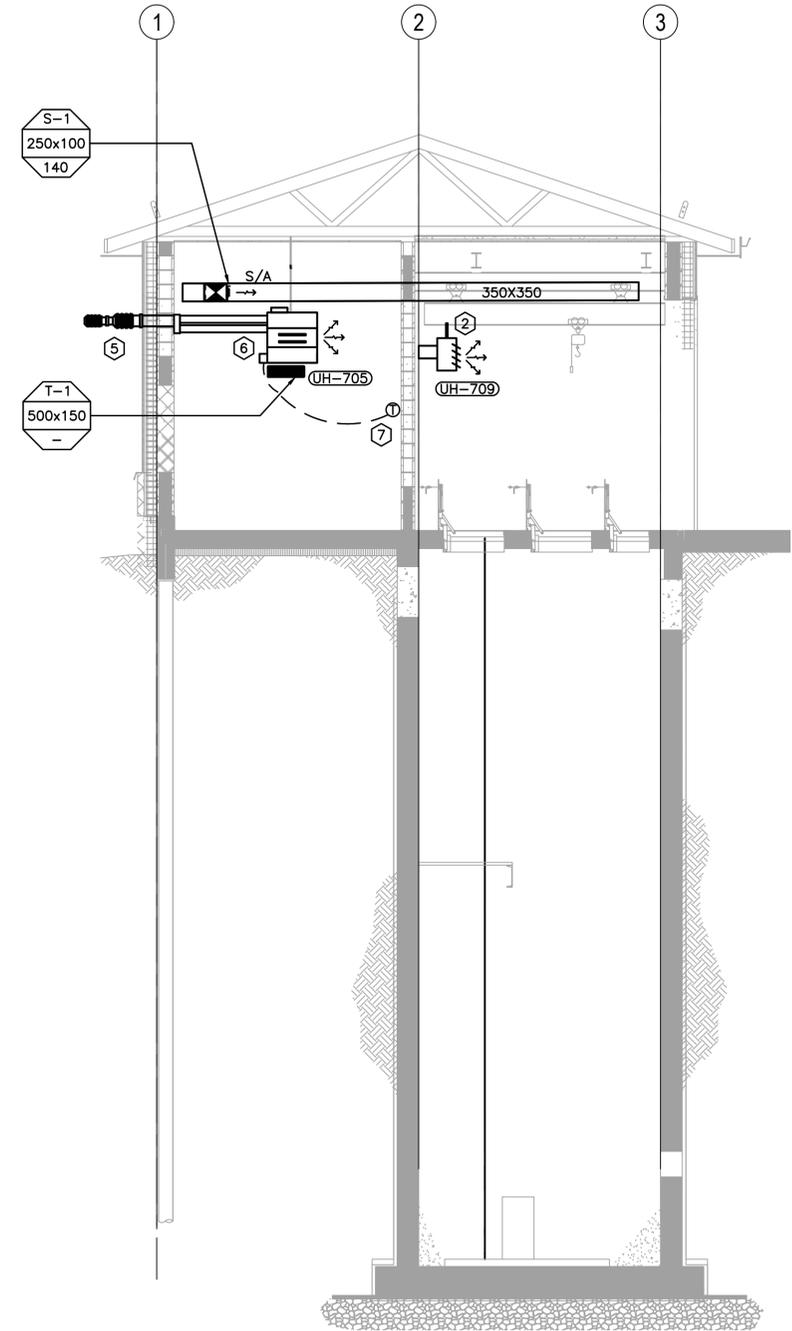
Title

SECTION A
HEATING & VENTILATION LAYOUT

Project No. 1101000459	Scale 1:50	Revision C
Drawing No. M-104	Sheet 6 of 9	Revision C



B SECTION B-B - HEATING & VENTILATION LAYOUT
 M-105 1:50



C SECTION C-C - HEATING & VENTILATION LAYOUT
 M-105 1:50

- GENERAL NOTES**
1. ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
 2. DO NOT SCALE DRAWINGS. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED THAT ARE NOT DEFINED BY FIXED DIMENSIONS ARE APPROXIMATE ONLY.
 3. CONTRACTOR TO COORDINATE WITH LIGHTING FIXTURES, ELECTRICAL EQUIPMENT AND SPRINKLER HEADS.
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 5. ALL SUPPLY AIR AND RETURN AIR GRILLES TO HAVE BALANCING DAMPERS ON BRANCH DUCTWORK REGARDLESS OF WHAT IS INDICATED ON DRAWINGS.
 6. DUCT SIZE FROM SUPPLY AND RETURN AIR GRILLES TO MATCH GRILLE SIZE UNLESS NOTED OTHERWISE.

- KEY NOTES**
1. INSTALL INSTANTANEOUS DOMESTIC WATER 125Ø FLUE AS PER MANUFACTURERS INSTRUCTIONS. EXTEND CONCENTRIC AIR VENT 150mm BEYOND EAVESTROUGH.
 2. INSTALL EXPLOSION PROOF ELECTRICAL UNIT HEATER, UH-706 @ 2200mm A.F.F.
 3. 300X300 SUPPLY AIR DUCT DOWN TO WET WELL FROM HRV-701.
 4. SUPPLY & INSTALL SUPPLY AIR GRILLE @ 1675mm BELOW SAFETY PLATFORM.
 5. 100Ø COMBUSTION AIR AND 100Ø EXHAUST HORIZONTALLY THROUGH WALL WITH CONCENTRIC AIR VENT TERMINATION. INSTALL AS PER MANUFACTURERS INSTRUCTIONS. EXTEND CONCENTRIC AIR VENT 150mm BEYOND EAVESTROUGH.
 6. SUPPLY & INSTALL GAS FIRED UNIT HEATER IN GROUND LEVEL, UH-705 @ 2200mm A.F.F.
 7. SUPPLY INSTALL UH-705 GAS FIRED UNIT HEATER THERMOSTAT 1500mm A.F.F.
 8. 350x300 RETURN DUCT FROM WET WELL TO HRV-701.

Revision	By	Appd.	YY.MM.DD
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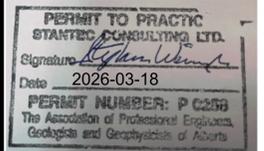
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION
 Blackfalds, Alberta

Title
 SECTIONS B & C
 HEATING & VENTILATION LAYOUT

Project No. 1101000459	Scale 1:50
Drawing No. M-105	Sheet 7 of 9
	Revision C

Revision	By	Appd.	YY.MM.DD
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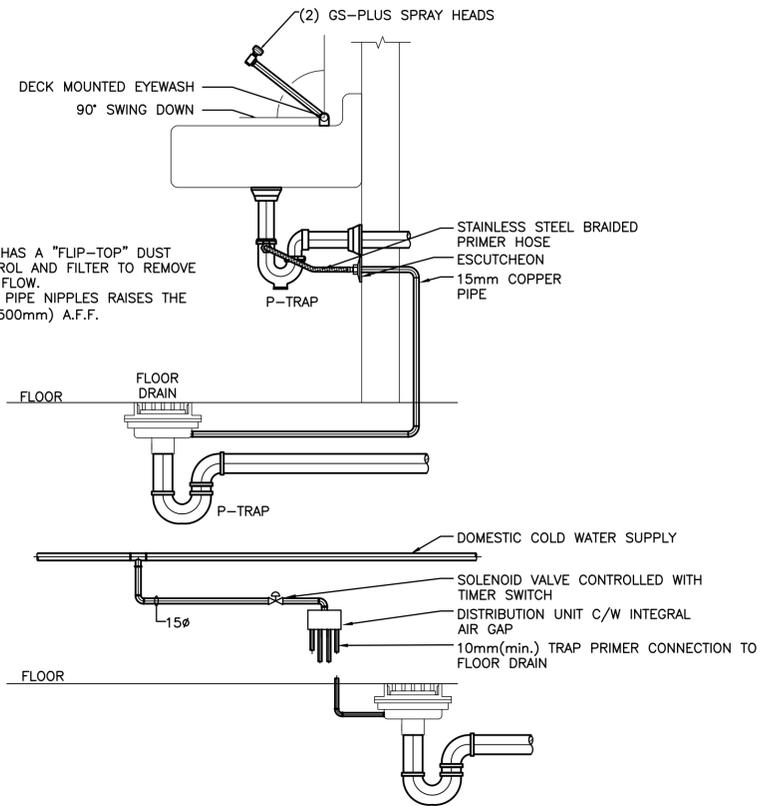
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 MECHANICAL
 DETAILS

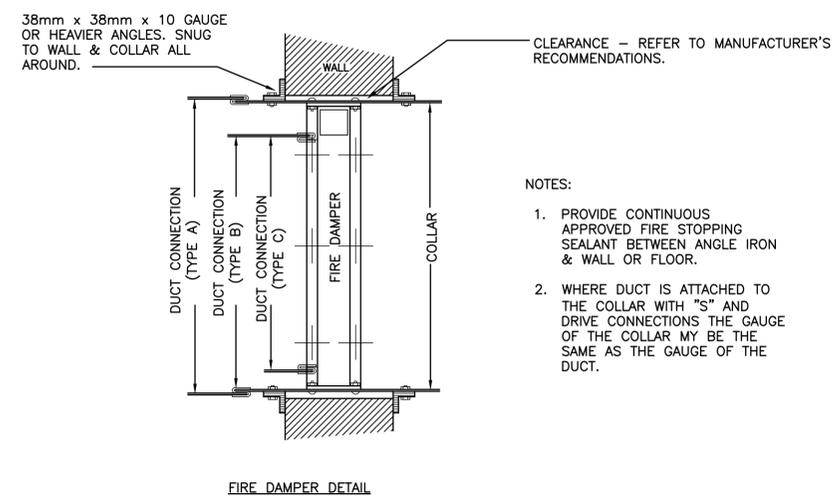
Project No.	Scale	
1101000459	N.T.S	
Drawing No.	Sheet	Revision

M-106 8 of 9 C

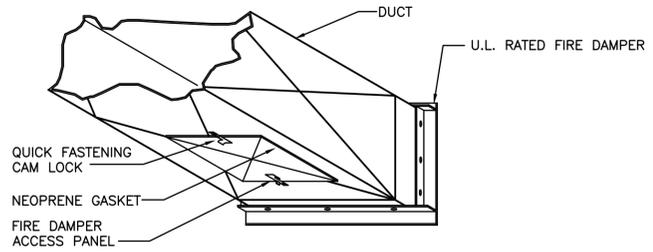


NOTES:
 1. EACH GS-PLUS SPRAY HEAD HAS A "FLIP-TOP" DUST COVER, INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES FROM THE WATER FLOW.
 2. REVERSING THE TWO LOWEST PIPE NIPPLES RAISES THE DRAIN OUTLET TO 19-5/8" (500mm) A.F.F.

1 TRAP PRIMER INSTALLATION
 M-106 N.T.S



2 FIRE DAMPER INSTALLATION DETAIL
 M-106 N.T.S



ACCESS PANEL SCHEDULE	
DUCT SIZE	ACCESS PANEL SIZE
LESS THAN 200mm WIDE	150x150 - SLEEVE MIN OF 75mm
200mm WIDE	150x150mm
250mm TO 300mm	200x200mm
300mm TO 350mm	250x250mm
OVER 350 WIDE	300x300mm

FIRE DAMPER ACCESS DETAIL

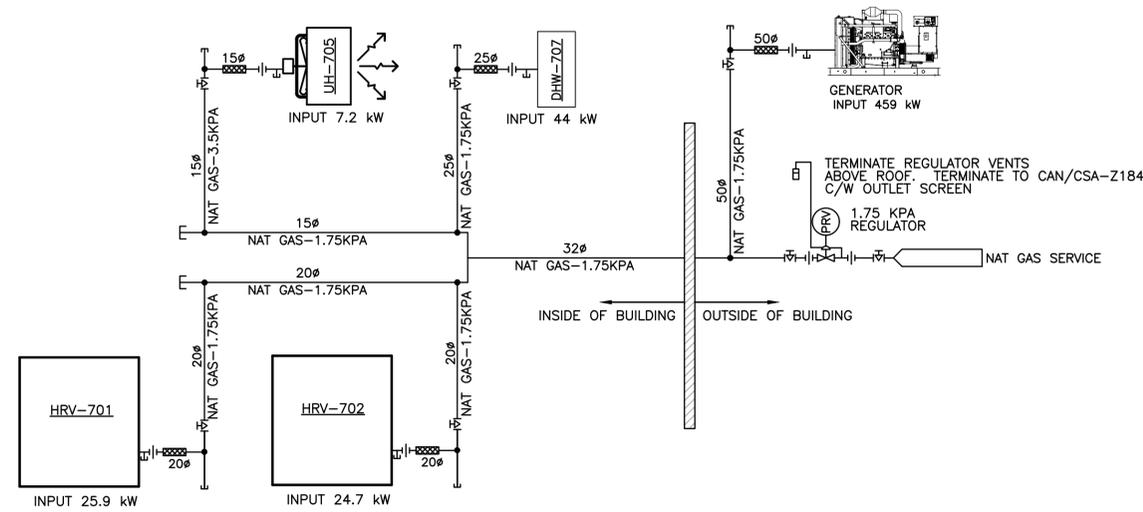
3 FIRE DAMPER ACCESS DETAIL
 M-106 N.T.S

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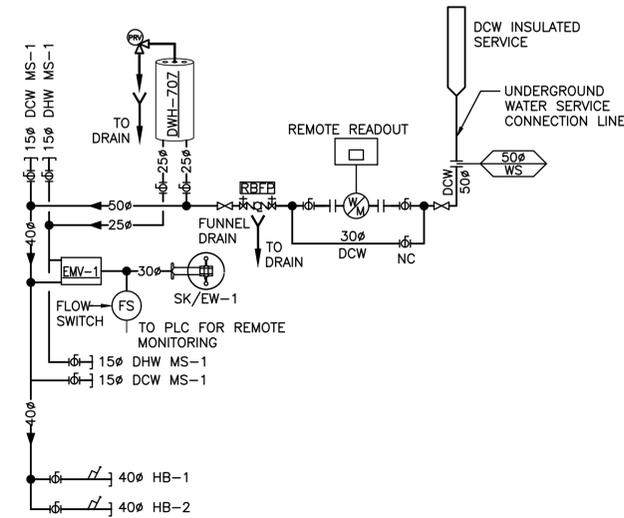
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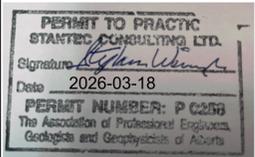
1 NATURAL GAS SCHEMATIC
 M-107 N.T.S



2 DOMESTIC WATER PIPING SCHEMATIC
 M-107 N.T.S

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Client/Project

BLACKFALDS
 ALBERTA

MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title

MECHANICAL
 SCHEMATICS

Project No. 1101000459	Scale N.T.S
Drawing No. M-107	Sheet 9 of 9
	Revision C

SYMBOL SCHEDULE

LUMINAIRES		NOTES & ABBREVIATIONS	
	0.25'x4' SURFACE MOUNTED OR HANGING LED		DRAWING EQUIPMENT /DEVICE TYPE TAG
	0.25'x4' SURFACE MOUNTED LED, HAZARDOUS AREA		DRAWING DESCRIPTION /INSTRUCTION KEYNOTE
	WALL MOUNTED		DRAWING REVISION IDENTIFICATION
	EMERGENCY LIGHTING BATTERY PACK	AFF	ABOVE FINISHED FLOOR
	STROBE/BEACON LIGHT	AFG	ABOVE FINISHED GRADE
	EMERGENCY LIGHTING REMOTE HEAD, DUAL LAMP	BO	BLANK OFF DEVICE
	EMERGENCY LIGHTING BATTERY PACK / EXIT LIGHT COMBO	BR	BELOW ROOF
INSTRUMENTS		CW	COMPLETE WITH
		EL	ELEVATION
		EX	EXISTING
	ALARM HORN	FG	FINISHED GRADE
	MAGNETIC DOOR SWITCH	GFI	GROUND FAULT PROTECTED DEVICE
	SECURITY CAMERA	JB	JUNCTION BOX
	INSTRUMENT LOCATION	MAX	MAXIMUM
	GAS/SMOKE DETECTOR HEAD	MIN	MINIMUM
	WALL MOUNTED EXIT SIGN	MC	MOTION CONTROL
	DATA OUTLET	NC	NORMALLY CLOSED
	COMBO TELEPHONE/DATA OUTLET	NO	NORMALLY OPEN
POWER		NTS	NOT TO SCALE
		PC	PHOTOCELL
	SIMPLEX RECEPTACLE	R	EXISTING DEVICE TO REMOVE
	15A DUPLEX RECEPTACLE	RE	EXISTING DEVICE TO BE RELOCATED
	WEATHER PROOF RECEPTACLE	RH	REMOTE HEAD
	20A (T-SLOT) DUPLEX RECEPTACLE	RL	LOCATION OF RELOCATED DEVICE
	GROUND FAULT RECEPTACLE	SRS	SEPTAGE RECEIVING STATION
	SPLIT DUPLEX RECEPTACLE	STD	STANDARD
	MOTOR	TYP	TYPICAL
	DISCONNECT SWITCH	WP	WEATHERPROOF DEVICE
	MOTOR C/W DISCONNECT SWITCH	XP	EXPLOSION PROOF
	THERMOSTAT	●	INDICATES DEVICE MOUNTED ABOVE COUNTER COORDINATE EXACT MOUNTING HEIGHT WITH ARCH. DETAIL
	MOTORIZED DAMPER CONNECTION	v	INDICATES DEVICE MOUNTED IN ELECTRIFIED FURNITURE SYSTEM, AND SUPPLIED AND INSTALLED BY FURNITURE SUPPLIER. (CONNECTION TO ELECTRIFIED FURNITURE SYSTEM SHALL BE BY DIV. 16)
	SPECIAL RECEPTACLE - UPS CONNECTION	[]	INDICATES EQUIPMENT DESIGNATION NUMBER. (REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EQUIPMENT NUMBER).
SWITCHES		CR-##	CARD READER NUMBERING SYSTEM
	LINE VOLTAGE SWITCH	DM-##	DOOR MONITORED (DOOR CONTACTS) NUMBERING SYSTEM
	PHOTO ELECTRIC CELL	EL-##	ELECTRONICALLY LOCKED (INCLUDE DM) NUMBERING SYSTEM
	THREE WAY SWITCH	CP-##	CAMERA PTZ
	FOUR WAY SWITCH	CF-##	CAMERA FIXED
	THREE WAY SWITCH WITH CONTACTOR FOR MULTIPLE CIRCUITS		

1 SYMBOL LEGEND
E-001 NO SCALE

LIGHTING NOTES

- ALL ELECTRICAL MATERIALS AND INSTALLATIONS SHOWN AND/OR SPECIFIED SHALL BE INSTALLED AS PER THE MANUFACTURE'S RECOMMENDATIONS AND SHALL COMPLY IN STRICT ACCORDANCE WITH THE LATEST EDITION OF C.S.A. STANDARDS AND THE CANADIAN ELECTRICAL CODE (C.E.C.).
- ALL CONDUIT WORK AND JUNCTION BOXES AS REQUIRED SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- ELECTRICAL CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS AT PROJECT COMPLETION.
- PROVIDE LAMICOID LABELS FOR ANY SPECIAL PURPOSE SWITCHES OR RECEPTACLES.
- ELECTRICAL CONTRACTOR TO BE RESPONSIBLE FOR ALL ELECTRICAL CONNECTIONS TO FIXTURES IN MILLWORK.
- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL A KROY DURATAPE TYPE 200 LABEL ON COVERPLATES OF ALL DUPLEX RECEPTACLES. LABEL SHALL BE CLEAR OR WHITE TYPE C/W 1/2" BLACK LETTERING AND SHALL IDENTIFY PANEL AND CIRCUIT BREAKER.

2 LIGHTING NOTES
E-001 NO SCALE

LUMINAIRE SCHEDULE

TYPE	VOLTAGE	WATTAGE	LAMPS/ HEADS	MOUNTING	DESCRIPTION	MANUFACTURER - CATALOGUE NUMBER OR APPROVED EQUAL
100	120V	42W	LED	SUSPENDED	LED STRIP LIGHT FIXTURE, 5000 LUMEN, C/W ELECTRONIC BALLAST AND WIREGUARD. PROVIDE AIRCRAFT SUSPENSION CABLES AND FEED AS REQUIRED.	LITHONIA (ZL1N SERIES) CAT. NO. ZL1N-L48-5000LM-FST-MVOLT-40K-90CRI-WH-WGZ48
101	120V	38W	2-LED	SURFACE	LED LIGHT FIXTURE 2-TUBE. DIV 1	ENDURALITE LED CAT. NO. ELXP2X18W6K
102	120V	60W	2-LED	WALL MOUNT	INDUSTRIAL EMERGENCY EXIT SIGN LIGHTING COMPLETE WITH BATTERY AND TWO LED HEADS.	EMERGI-LITE (EXHZ SERIES) CAT. NO. EXHZ-GG-_-N6A-_-UN-/-2-LI
103	120V	47W	LED	EXTERIOR WALL	EXTERIOR LED WALL FIXTURE C/W INTEGRAL PHOTOCELL CONTROL. MOUNT AT 3600mm ABOVE GRADE.	COOPER (ENTRI LED SERIES) CAT. NO. ENT-E02-LED-E1-GZW-BZ-PC-VA6172
104	120V	47W	LED	EXTERIOR WALL	EXTERIOR LED WALL FIXTURE C/W INTEGRAL PHOTOCELL CONTROL. MOUNT AT 2400mm ABOVE GRADE.	COOPER (ENTRI LED SERIES) CAT. NO. ENT-E02-LED-E1-GZW-BZ-PC-VA6172
105	120V	70W	2-LED	WALL MOUNT	INDUSTRIAL EMERGENCY LIGHTING 12V BATTERY PACK.	STANPRO (SLC SERIES) CAT. NO. SLC-12-360-2S-WH
106	12V	10W	2-LED	WALL MOUNT	INDUSTRIAL EMERGENCY LIGHTING 12V REMOTE HEAD, TO TIE INTO 12V BATTERY BACK.	STANPRO (S SERIES) CAT. NO. S-206-24-5W-LA-WH
107	120V	70W	2-LED	WALL MOUNT	INDUSTRIAL EMERGENCY LIGHTING 12V BATTERY PACK. RATED FOR ZONE 2.	STANPRO (SLBXP II SERIES) CAT. NO. SLBXP II-1-72-2D-4LR-GY
110	120V	-	BCN	EXTERIOR, SURFACE MOUNT	WEATHERPROOF FLASHING STROBE BEACON, BLUE, 120VAC, C/W REPLACEMENT LENS AND CAST GUARD. BEACON SHALL INDICATE H2S DETECTION.	APPLIED STROBE TECHNOLOGY COMPANY LTD (AST-1) BEACON PART # AST-1-90-130-AC-BL REPLACEMENT LENS PART # AST-1-LENS-BL
111	120V	-	BCN	EXTERIOR, SURFACE MOUNT	WEATHERPROOF FLASHING STROBE BEACON, RED, 120VAC, C/W REPLACEMENT LENS AND CAST GUARD. BEACON SHALL INDICATE LEL DETECTION.	APPLIED STROBE TECHNOLOGY COMPANY LTD (AST-1) BEACON PART # AST-1-90-130-AC-RE REPLACEMENT LENS PART # AST-1-LENS-RE
112	120V	-	BCN	EXTERIOR, SURFACE MOUNT	WEATHERPROOF FLASHING STROBE BEACON, AMBER, 120VAC, C/W REPLACEMENT LENS AND CAST GUARD. BEACON SHALL INDICATE GENERAL LIFT STATION FAULT.	APPLIED STROBE TECHNOLOGY COMPANY LTD (AST-1) BEACON PART # AST-1-90-130-AC-AM REPLACEMENT LENS PART # AST-1-LENS-AM
113	120V	-	BCN	SURFACE MOUNT OR PENDANT	INTERIOR FLASHING STROBE BEACON, EXPLOSION PROOF, ZONE 1, BLUE, 120VAC, C/W REPLACEMENT LENS AND CAST GUARD. BEACON SHALL INDICATE H2S DETECTION.	APPLIED STROBE TECHNOLOGY COMPANY LTD (AST-4) BEACON PART # AST-4-S-90-130-AC-BL REPLACEMENT LENS PART # AST-4-LENS-BL
114	120V	-	BCN	SURFACE MOUNT OR PENDANT	INTERIOR FLASHING STROBE BEACON, EXPLOSION PROOF, ZONE 1, RED, 120VAC, C/W REPLACEMENT LENS AND CAST GUARD. BEACON SHALL INDICATE LEL DETECTION.	APPLIED STROBE TECHNOLOGY COMPANY LTD (AST-4) BEACON PART # AST-4-S-90-130-AC-RE REPLACEMENT LENS PART # AST-4-LENS-RE
115	120V	36W	LED	WALL MOUNT	EXPLOSIONPROOF SERIES LED LUMINAIRE, ZONE 1 (CLASS 1 DIV. 1), WALL MOUNTED ON WALL OR BRACKET, ILLUMINATE WHEN CORRESPONDING HATCH DOOR IS OPENED.	COOPER (EV LED SERIES) CAT. NO. EVLEDBX3C701

3 LUMINAIRE SCHEDULE
E-001 NO SCALE

POWER AND COMMUNICATION NOTES

- REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT PRIOR TO INSTALLATION. COORDINATE WITH ALL OTHER TRADES PRIOR TO WIRING EQUIPMENT.
- ELECTRICAL EQUIPMENT SHOWN IS NEW UNLESS OTHERWISE NOTED.
- ELECTRICAL CONTRACTOR SHALL SEAL ALL FLOOR AND WALL PENETRATIONS AFTER INSTALLATION OF ELECTRICAL SYSTEMS INSTALLATION TO MAINTAIN FIRE INTEGRITY OF BUILDING STRUCTURE.
- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL A KROY 'DURATAPE' TYPE 200 LABEL ON ALL JUNCTION BOXES TO IDENTIFY PANEL AND CIRCUIT NUMBERS WITHIN JUNCTION BOX. LABEL SHALL BE 19mm BLACK LETTERING ON CLEAR OR WHITE TAPE.
- CONDUCTOR SIZE FOR BRANCH CIRCUITS (120/208V) 75 FEET IN LENGTH FROM BRANCH CIRCUIT PANEL TO CENTER OF LOAD, NOT SMALLER THAN No.12, UP TO 150 FEET NOT SMALLER THAN No. 10, UP TO 200 FEET NOT SMALLER THAN No.8.
- WHERE CONDUITS ARE INSTALLED IN CONCRETE SLABS AND CROSS STRUCTURAL EXPANSION JOINTS, AN APPROVED EXPANSION FITTING COMPLETE WITH BONDING JUMPER AND CLAMPS SHALL BE INSTALLED. EXPANSION JOINTS TO BE CROUSE HINDS XJ SERIES OR OZ TYPE AX SERIES.
- ALL POWER SHALL BE MOUNTED AT +450mm (18") TO THE CENTER OF THE BOX, UNLESS OTHERWISE NOTED.
- IN SLAB CONDUIT ELBOWS SHALL BE RIGID STEEL.

4 POWER AND COMMUNICATION NOTES
E-001 NO SCALE



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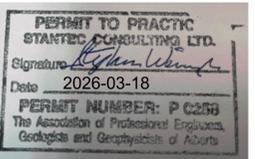
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	OL	DH	2026.02.13
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Client/Project
BLACKFALDS
ALBERTA
MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
ELECTRICAL
LEGENDS & BILL OF MATERIALS

Project No.	Scale	
1101000459	NO SCALE	
Drawing No.	Sheet	Revision

E-001 0

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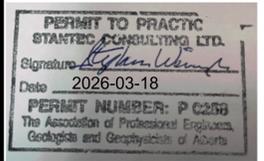
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- P/P- PRIMARY UNDERGROUND POWER
- P/S- SECONDARY UNDERGROUND POWER
- O- FENCE
- - - UNDERGROUND CONDUIT

Notes

Revision	By	Appd.	YY.MM.DD
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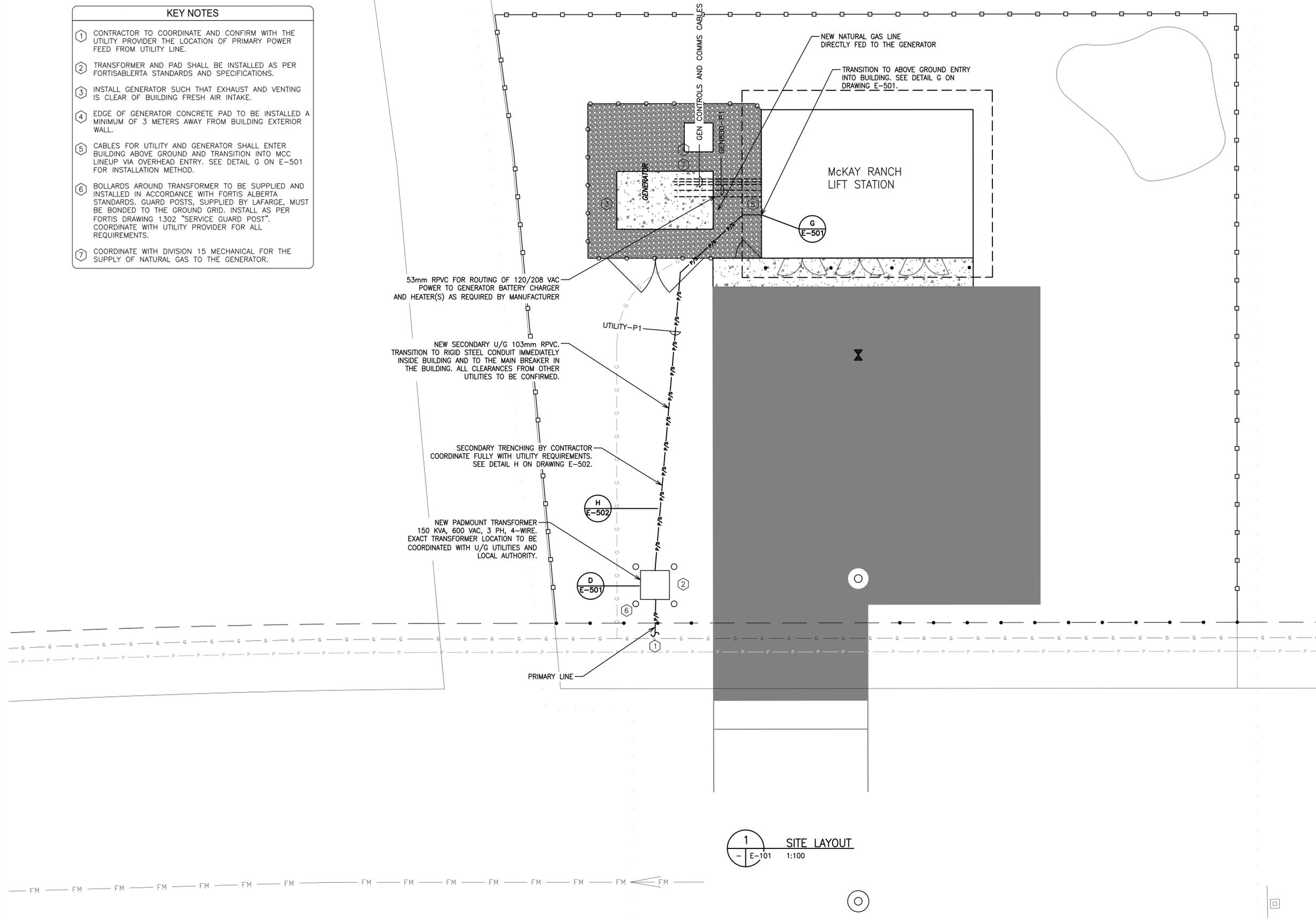
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 ELECTRICAL
 SITE PLAN

Project No. 1101000459	Scale 1:100
Drawing No. E-101	Sheet 0

- KEY NOTES**
- 1 CONTRACTOR TO COORDINATE AND CONFIRM WITH THE UTILITY PROVIDER THE LOCATION OF PRIMARY POWER FEED FROM UTILITY LINE.
 - 2 TRANSFORMER AND PAD SHALL BE INSTALLED AS PER FORTISALBERTA STANDARDS AND SPECIFICATIONS.
 - 3 INSTALL GENERATOR SUCH THAT EXHAUST AND VENTING IS CLEAR OF BUILDING FRESH AIR INTAKE.
 - 4 EDGE OF GENERATOR CONCRETE PAD TO BE INSTALLED A MINIMUM OF 3 METERS AWAY FROM BUILDING EXTERIOR WALL.
 - 5 CABLES FOR UTILITY AND GENERATOR SHALL ENTER BUILDING ABOVE GROUND AND TRANSITION INTO MCC LINEUP VIA OVERHEAD ENTRY. SEE DETAIL G ON E-501 FOR INSTALLATION METHOD.
 - 6 BOLLARDS AROUND TRANSFORMER TO BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH FORTIS ALBERTA STANDARDS. GUARD POSTS, SUPPLIED BY LAFARGE, MUST BE BONDED TO THE GROUND GRID. INSTALL AS PER FORTIS DRAWING 1302 "SERVICE GUARD POST". COORDINATE WITH UTILITY PROVIDER FOR ALL REQUIREMENTS.
 - 7 COORDINATE WITH DIVISION 15 MECHANICAL FOR THE SUPPLY OF NATURAL GAS TO THE GENERATOR.



1 SITE LAYOUT
 - E-101 1:100

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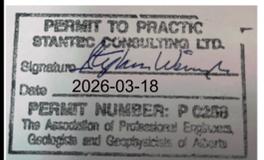
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Notes

1. THE WET WELL SHALL BE CLASSIFIED FOR HAZARDOUS AREA WITH CORROSIVE LIQUIDS, VAPOURS, AND MOISTURE AS PER THE CANADIAN ELECTRICAL CODE, SECTION 22-704.
2. WET WELLS PROVIDED WITH ADEQUATE CONTINUOUS POSITIVE PRESSURE VENTILATION SHALL BE CONSIDERED ZONE 2, AS PER THE CANADIAN ELECTRICAL CODE (CURRENT VERSION).
3. ALL LOCATIONS IN WHICH SEWAGE GASES MAY BE PRESENT IN EXPLOSIVE CONCENTRATIONS SHALL BE CONSIDERED HAZARDOUS AREAS AND CATEGORY 2, AS PER THE CANADIAN ELECTRICAL CODE (CURRENT EDITION).

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A	ISSUED FOR 95% REVIEW	OL DH	2026.02.13
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 ELECTRICAL
 AREA CLASSIFICATION LAYOUTS

Project No. 1101000459	Scale 1:50	Sheet 0	Revision 0
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E-102

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HAZARDOUS AREA CLASSIFICATION

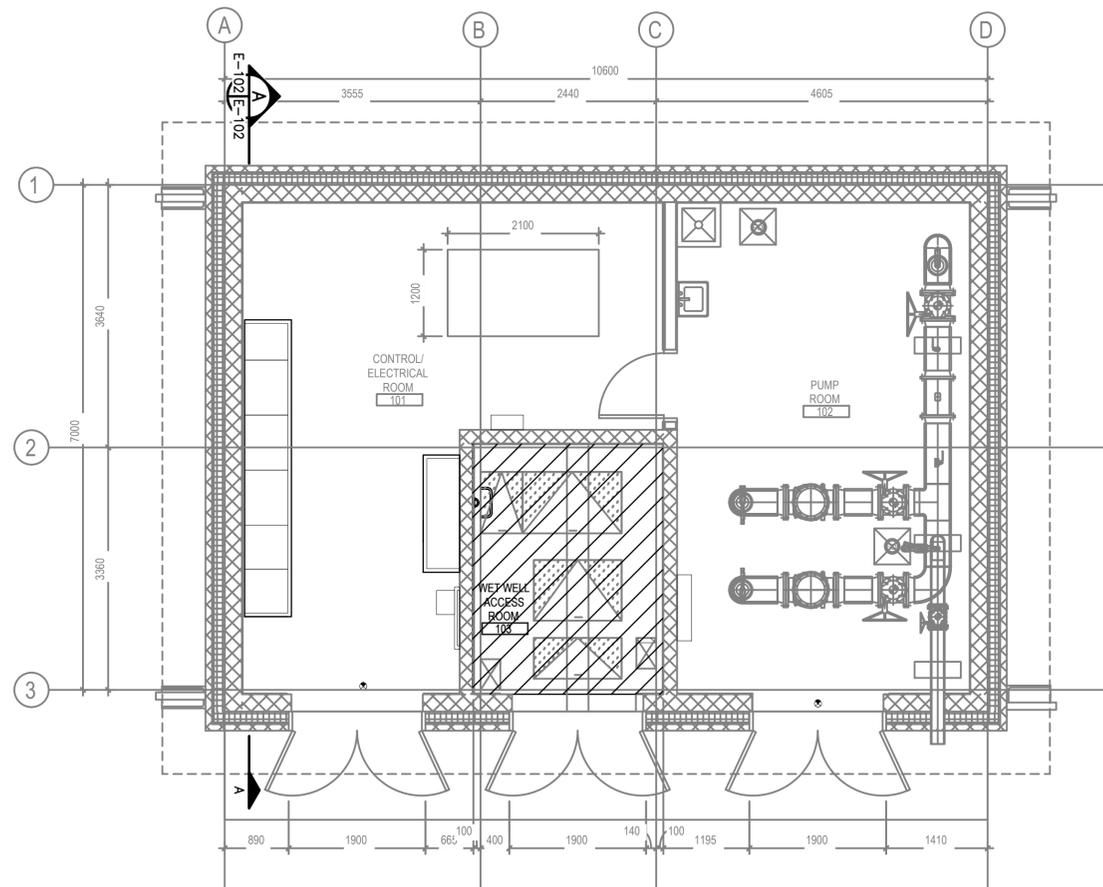
ZONE 0

ZONE 1

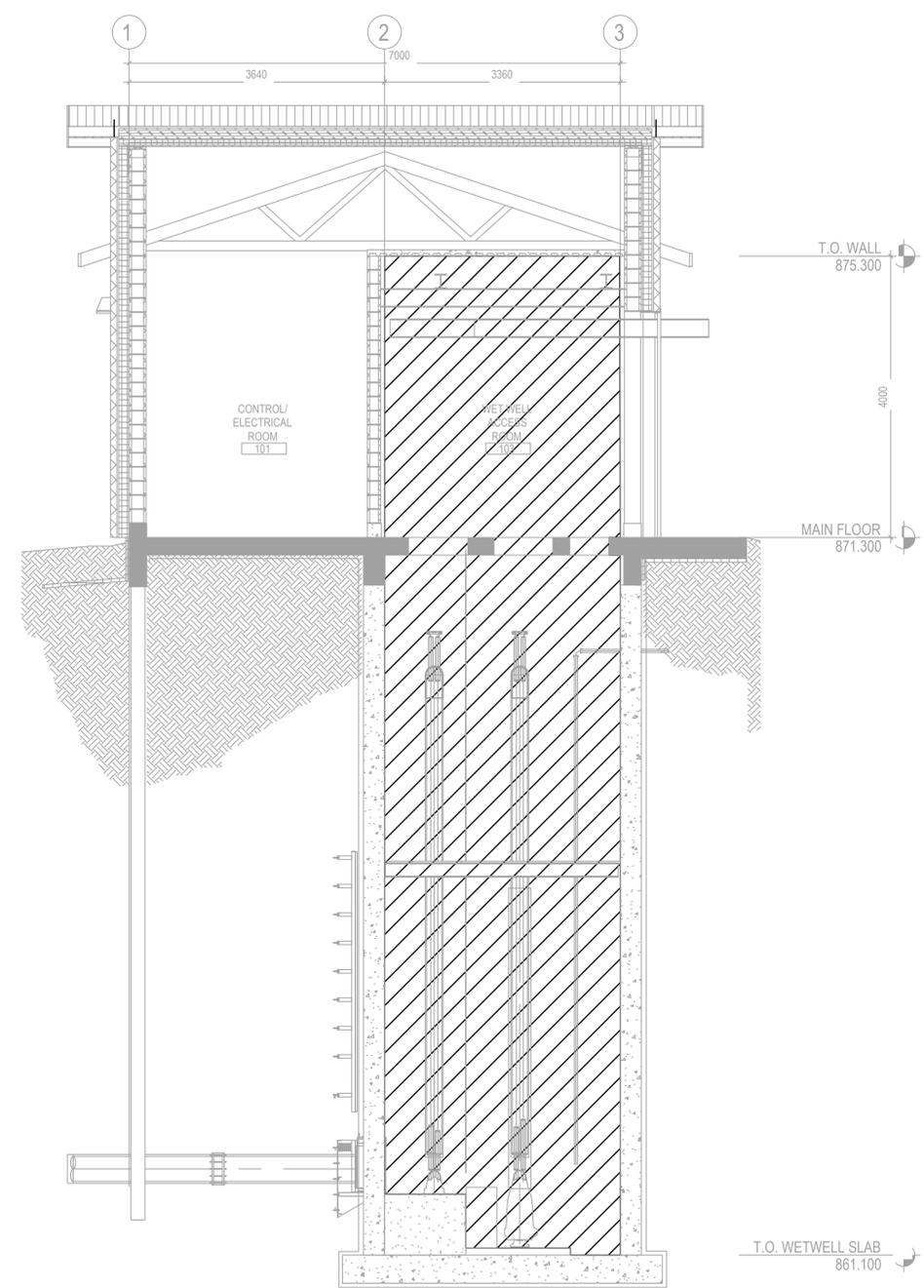
ZONE 2

NON-HAZARDOUS

REFERENCE: CEC 22.704
 CEC 18.070
 NFPA 820



1 OPERATING FLOOR CLASSIFICATIONS
 1:50



A SECTION CLASSIFICATION
 1:50

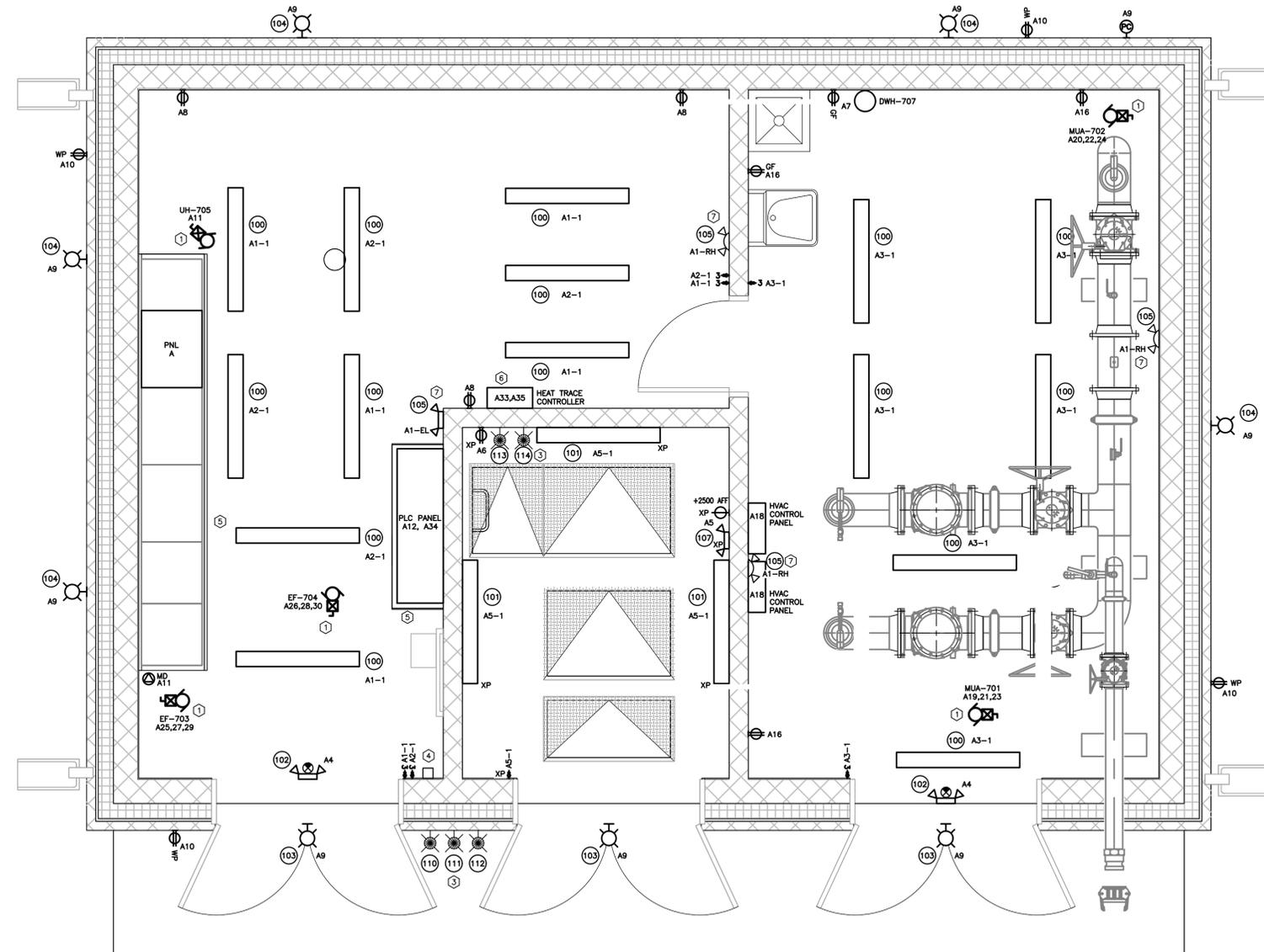
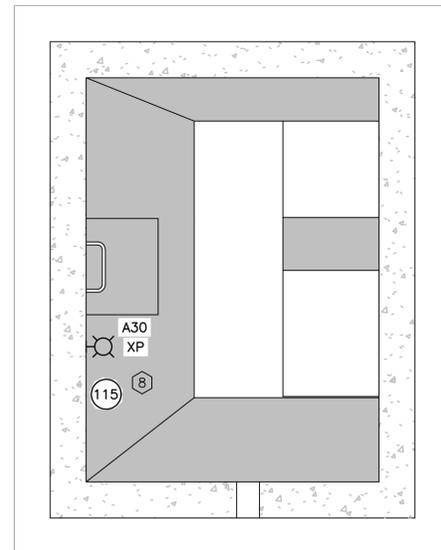
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KEY NOTES

- 1 REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT.
- 2 LIGHT FIXTURES TO BE SUSPENDED OR MOUNTED TO CLEAR ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL ELEMENTS, WITH CONSIDERATION TOWARDS EASE OF MAINTENANCE. IF ANY AREA IS IN QUESTION CONFIRM INSTALLATION LOCATION ON SITE WITH ELECTRICAL ENGINEER.
- 3 120 VAC BEACONS ARE SHOWN ON THIS LAYOUT TO COMMUNICATE LOCATION OF BEACONS. SEE E-001 FOR BEACON BILL OF MATERIALS.
- 4 OUTDOOR LIGHTS PHOTOCELL/MOTION CONTROL SHALL BE ABLE TO BE OVERRIDDEN AND FORCE THE EXTERIOR LIGHTS ON VIA A TWO POSITION SELECTOR SWITCH MOUNTED ON THE INTERIOR WALL OF THE BUILDING, NEAR THE DOOR. SELECTOR SWITCH SHALL BE SURFACE MOUNTED ONTO A GENERAL PURPOSE ENCLOSURE. SELECTOR POSITION LOCATIONS SHALL BE LABELED WITH "AUTO" AND "ON" LAMACOIDS, WITH THE SWITCH LABELED WITH AN "EXTERIOR LIGHT CONTROL" LAMACOID. EXTERIOR LIGHTS SHALL TURN ON WHEN THE SELECTOR SWITCH IS IN THE "ON" POSITION, AND THE EXTERIOR LIGHTS SHALL UTILIZE PHOTOCELL AND MOTION SENSOR CONTROL WHEN THE SELECTOR SWITCH IS IN THE "AUTO" POSITION.
- 5 CONTRACTOR TO CONFIRM HOUSEKEEPING PAD SIZES ON SITE AS REQUIRED.
- 6 CONTRACTOR SHALL ENGAGE HEAT TRACE SUPPLIER FOR FULL DESIGN OF THE HEAT TRACE SYSTEM REQUIRED FOR THE GUTTERS AND SPOUTS AND PROVIDE IN SHOP DRAWING SUBMITTAL.
- 7 EMERGENCY LIGHTING REMOTE HEADS (A1-RH) SHALL BE DRIVEN BY EMERGENCY LIGHT A1-EL IN ELECTRICAL ROOM.
- 8 EXPLOSION PROOF LED LIGHT SUITABLE FOR ZONE 1 ENVIRONMENT. MOUNT LIGHT NEXT TO HATCH OPENING ON WALL OR AN APPROPRIATE BRACKET SYSTEM FOR OPTIMAL ILLUMINATION OF WET WELL AREA. LIGHT SHALL BE SERVICEABLE FROM HATCH OPENING. TWO POLE MAGNETIC LIMIT SWITCH SHALL BE INSTALLED ON THE WET WELL HATCH TO TURN LED LIGHT ON WHEN THE ENTRANCE HATCH IS OPENED, AND OFF WHEN THE HATCH IS CLOSED.
- 9 CONTRACTOR TO COORDINATE FINAL LOCATIONS OF MAIN LEVEL LIGHTING WITH MECHANICAL DUCTING & EQUIPMENT. SEE MECHANICAL DRAWINGS FOR DETAILS.



Legend

Notes

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1101000459 JET

Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
ELECTRICAL
 120-208V POWER PLAN

Project No. 1101000459	Scale 1:20
Drawing No. E-103	Sheet 0

Revision
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1 120/208VAC SERVICE PLATFORM POWER PLAN
 - E-103 1:20

2 120/208VAC MAIN FLOOR POWER PLAN
 - E-103 1:20

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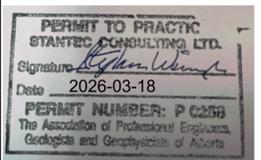
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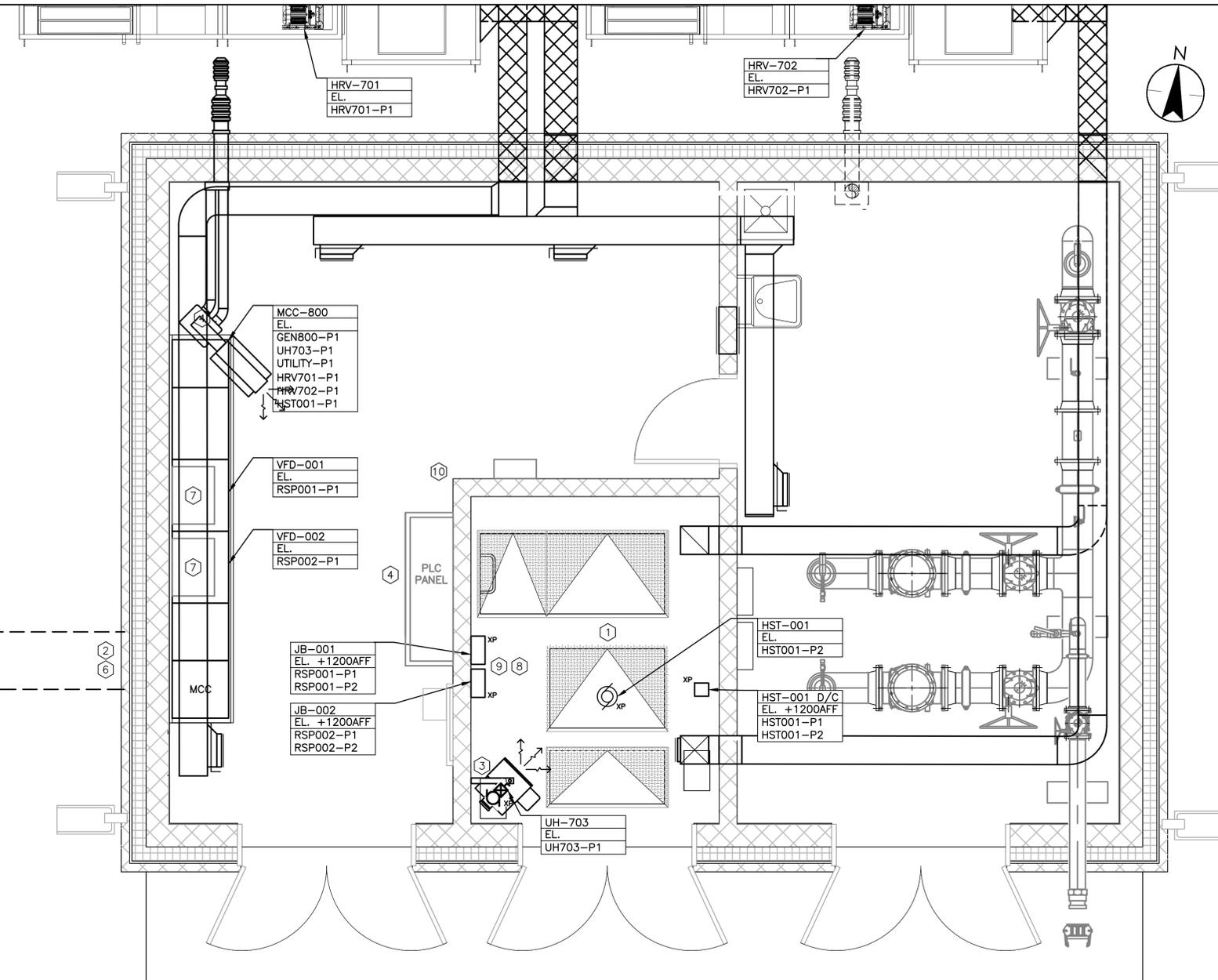


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BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

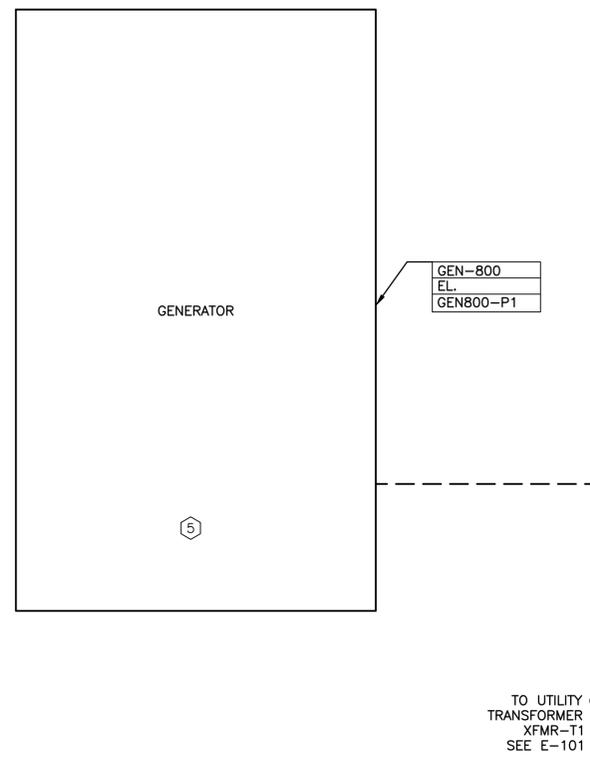
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ELECTRICAL
600VAC POWER PLAN

Project No. 1101000459	Scale 1:30
Drawing No. E-104	Sheet 0

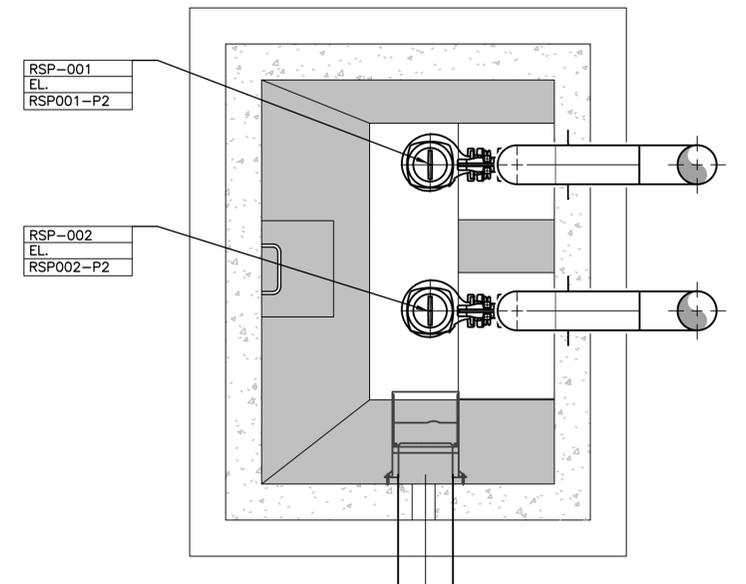


1 600VAC MAIN LEVEL POWER PLAN
 - E-104 1:30

- KEY NOTES**
- ALL EQUIPMENT IN WET WELL ROOM SHALL BE RATED FOR THE AREA.
 - WALL PENETRATIONS SHALL BE SEALED WITH APPROVED SEALANT AND FINISHED WITH WATERPROOFING GROUT. REFER TO RELEVANT CONTRACT SPECIFICATIONS.
 - REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT.
 - CONTRACTOR TO CONFIRM HOUSEKEEPING PAD SIZES ON SITE AS REQUIRED.
 - INSTALL GENERATOR SUCH THAT EXHAUST AND VENTING IS CLEAR OF BUILDING FRESH AIR INTAKE. COORDINATE WITH ARCHITECTURAL.
 - UTILITY AND GENERATOR CABLES TO ENTER BACK OF MCC THROUGH EXTERIOR WALL. SEE DETAILS ON E-501 FOR BUILDING CABLE PENETRATION.
 - PROVISION SPACE ABOVE MCC FOR INSTALLATION OF FUTURE HARMONIC FILTERS SUITABLE FOR 60HP VFDs.
 - JUNCTION BOXES AND DISCONNECT SWITCHES INSTALLED WITHIN THE WET WELL ROOM SHALL BE RATED FOR THE AREA OF INSTALL.
 - PUMP VENDOR CABLE SHALL TERMINATE POWER AND INTEGRATED CONTROLS CABLES WITHIN DEDICATED JUNCTION BOX FOR RESPECTIVE PUMP. SEPARATE POWER AND CONTROLS VIA PHYSICAL BARRIER WITHIN JUNCTION BOX AS REQUIRED BY THE CANADIAN ELECTRICAL CODE.
 - ALL CONDUIT ROUTED FROM HAZARDOUS AREA SHALL BE ADEQUATELY SEALED WITH ROXTEC REMOVABLE CONDUIT SEAL TO PREVENT THE CASCADING OF HAZARDOUS AREA.



2 600VAC LOWER LEVEL POWER PLAN
 - E-104 1:30

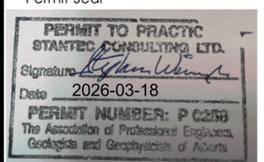


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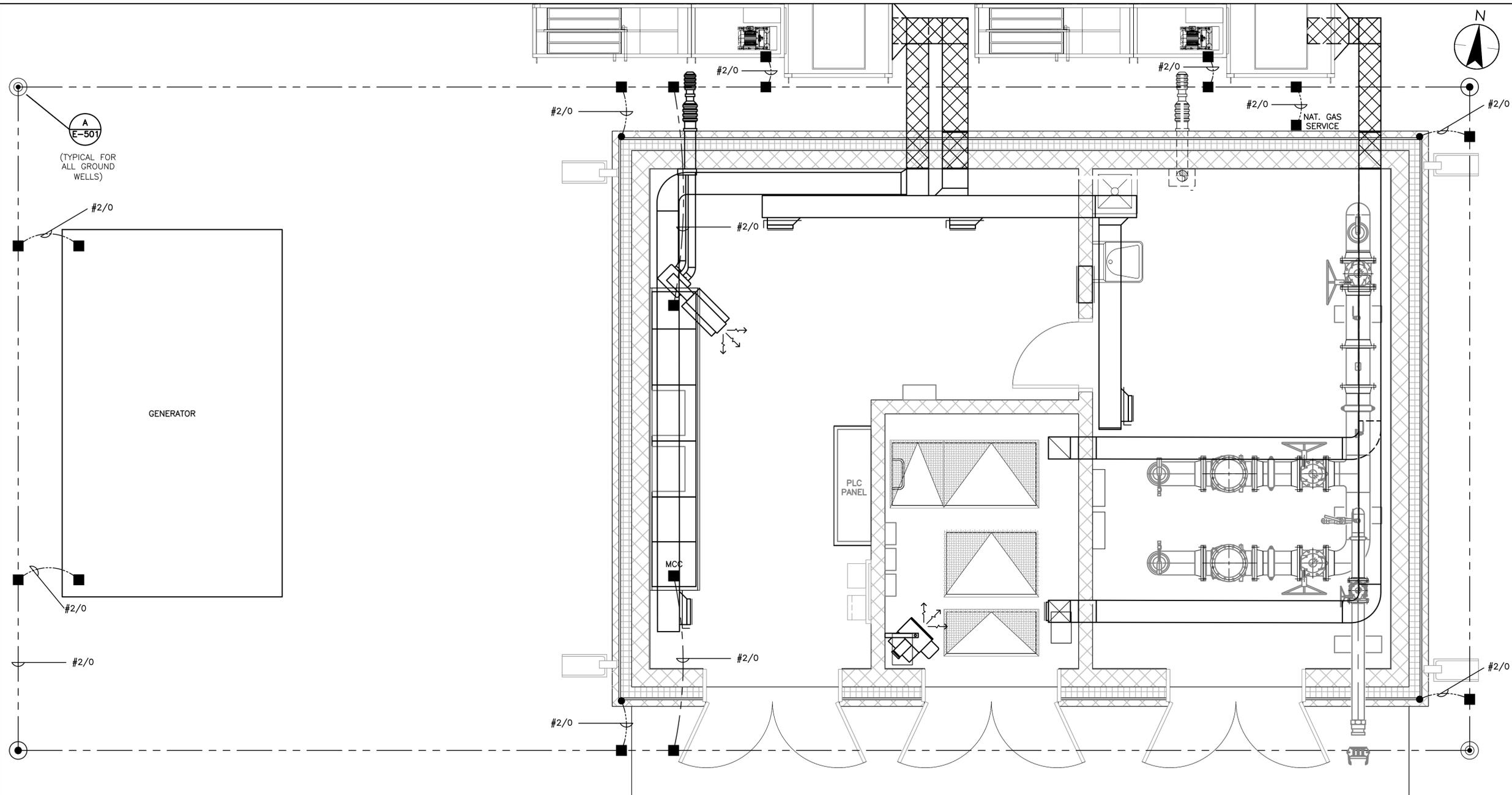


Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
ELECTRICAL
SITE GROUNDING PLAN

Project No. 1101000459 Scale 1:30
 Drawing No. Sheet Revision

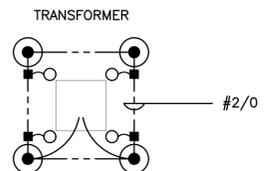
E-105 0



SYMBOL	ITEM	BILL OF MATERIAL
•	①	STRUCTURAL CONNECTION
●	②	GROUND ROD - 3m LONG 19mm DIAMETER, COPPERCLAD
⊙	③	GROUND TEST WELL - PVC WITH 6mm GALVANIZED STEEL COVER. SEE DETAIL "A" ON DWG. 1E-501
N/A	④	GROUND ROD CONNECTION - BURNDY TYPE YG1B. CONFIRM TYPE OF BEAM IN FIELD
N/A	⑤	GROUND ROD CONNECTION - BURNDY TYPE YGLR-C
■	⑥	GRID CONNECTION - BURNDY TYPE YGHC-C, SIZE TO SUIT

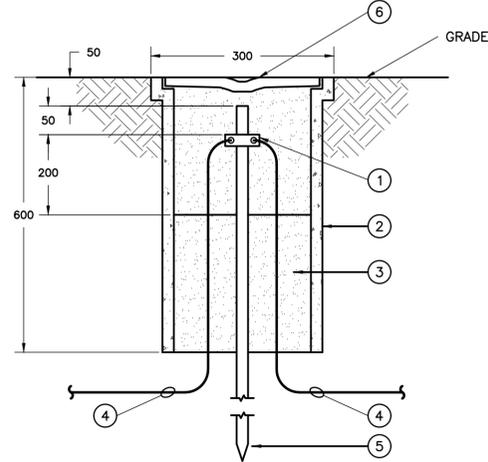
INSTRUCTIONS TO CONTRACTOR:

- MEASURE SITE GROUNDING AND REPORT BACK TO ENGINEER. (EXISTING RESISTANCE AT GROUND WELLS USING 62% METHOD).
- MEASURE GROUND RESISTIVITY IN CONSTRUCTION AREA USING WENNER METHOD AND REPORT BACK TO ENGINEER.
- MODIFICATIONS MAY BE REQUIRED BASED ON RESULTS OF GROUND TESTING.
- GROUND IS INSTALLED 900mm FROM BUILDING. THROUGH THE BUILDING THE GROUND GRID IS IN THE CONCRETE FLOOR. WIRE IS BARE #2/0 AWG SOFT DRAWN COPPER.
- GROUND WIRE SHALL BE BURIED MINIMUM 600mm BELOW FINISHED GRADE.
- ALL GROUND WIRE NOT IN SLAB OR BURIED IN GROUND WILL BE RUN IN RPVC CONDUIT TO WITHIN 150mm OF POINT OF CONNECTION.
- CONTRACTOR SHALL BOND GAS AND WATER LINES INTO GROUNDING SYSTEM USING #6 AWG ON BUILDING SIDE OF METERS.
- SEE STANDARD DETAILS FOR TRANSFORMER AND GENERATOR GROUNDING.
- TRANSFORMER AND GENERATOR GROUNDING TO HAVE MINIMUM 750mm SPACING FROM EACH OTHER.
- CONTRACTOR SHALL COORDINATE WITH UTILITY FOR TRANSFORMER GROUNDING REQUIREMENTS.
- UTILITY TRANSFORMER BOLLARDS MUST BE BONDED TO THE GROUND GRID. REFER TO UTILITY STANDARDS.
- REFER TO CONTRACT SPECIFICATIONS FOR GROUNDING REQUIREMENTS.

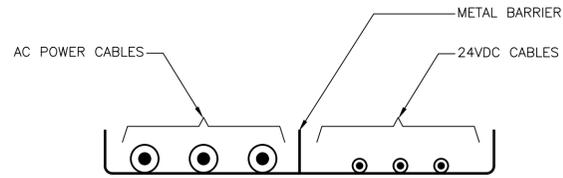


1 SITE GROUNDING GRID PLAN
 E-105 1:30

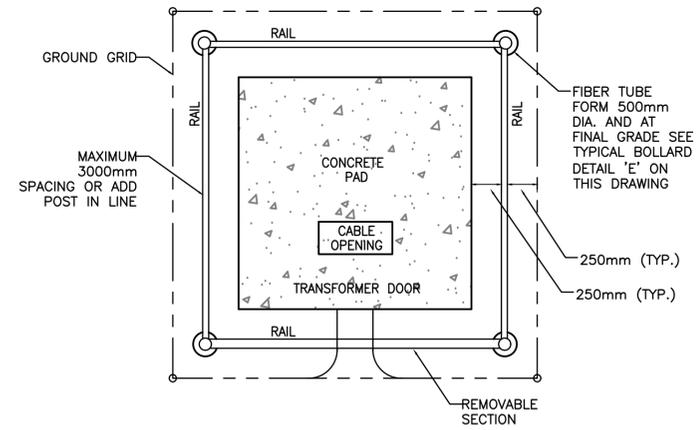
ITEM	DESCRIPTION
1	COMPRESSION LUG
2	CONCRETE PIPE
3	COMPACTED SAND BACKFILL
4	#2/0 GROUND WIRE
5	COPPER CLAD GROUND ROD 19mm x 3000mm
6	METAL COVER, 6mm THICK, WITH LIFTING HOOK, PAINTED YELLOW GREEN. WORDING "GROUND WELL" 200mm x 60mm HIGH



A GROUND WELL DETAIL
 E-105 | E-501 NO SCALE

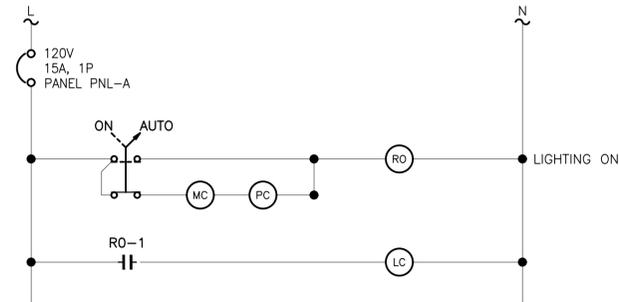


B CABLE TRAY DETAIL
 E-501 NO SCALE

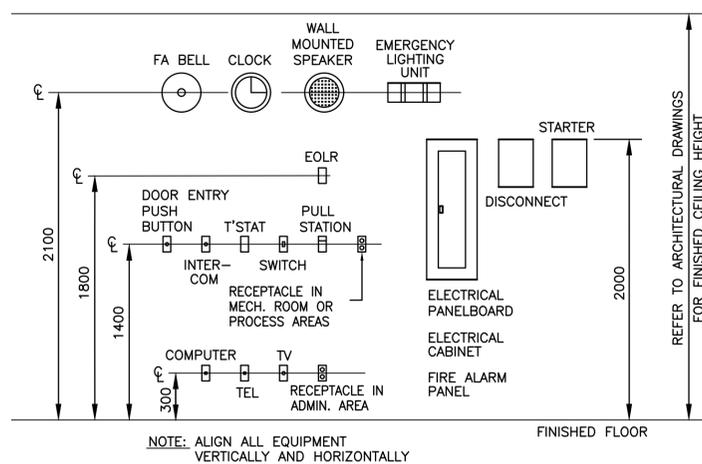


- NOTES:**
- PADMOUNT TRANSFORMER GROUND SYSTEM SHALL BE CONNECTED TO THE GUARD POSTS.
 - REFER TO FORTIS STANDARDS FOR BOLLARD REQUIREMENTS.
 - UNLESS OTHERWISE INDICATED, ALL DIMENSIONS ARE IN MILLIMETERS.

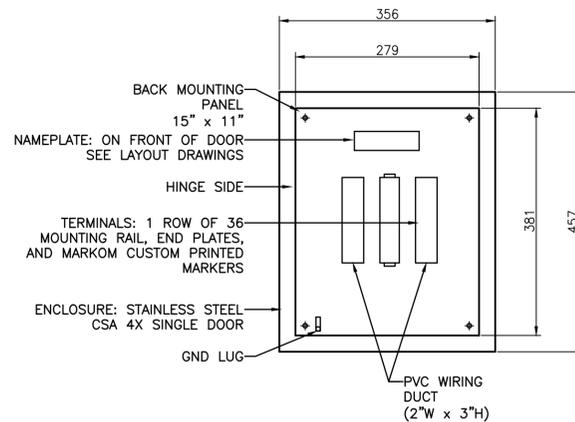
D TRANSFORMER INSTALLATION DETAIL
 E-101 | E-501 NO SCALE



C TYPICAL PHOTOCELL LIGHTING CONTROL SCHEMATIC
 E-103 | E-501 NO SCALE

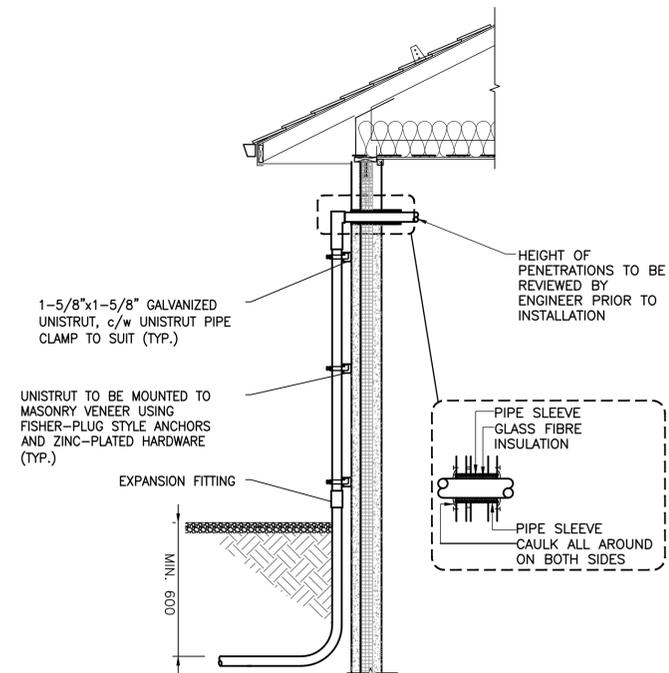


E TYPICAL DEVICE MOUNTING HEIGHT DETAIL
 E-501 NO SCALE



TERMINAL DETAILS (NTS)

F INSTRUMENT JUNCTION BOX DETAIL
 E-501 NO SCALE



G TYPICAL BUILDING CABLE PENETRATION
 E-101 | E-501 NO SCALE

Legend

Notes

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
 ELECTRICAL
 STANDARD DETAILS 1 OF 2

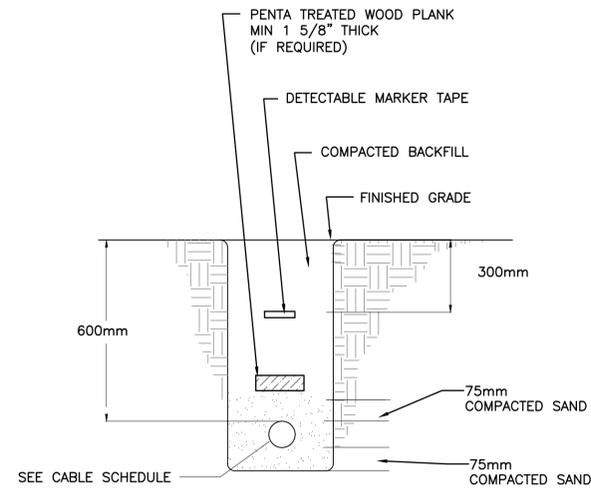
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Drawing No.	Sheet
E-501	0

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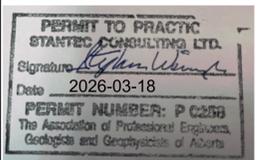
Notes



H UNDERGROUND SERVICE AND DUCTS
 E-101 | E-502 NO SCALE

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 ELECTRICAL
 STANDARD DETAILS 2 OF 2

Project No. 1101000459	Scale NO SCALE
Drawing No. E-502	Sheet 0
	Revision 0

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Legend

LEGEND

ATS - AUTOMATIC TRANSFER SWITCH
 DMM - DIGITAL MULTI METER
 EOL - ELECTRONIC OVERLOAD
 ETM - ELAPSED TIME METER
 HOA - HAND/OFF/AUTO
 HS - HAND SWITCH
 JB - JUNCTION BOX
 LSI - LONG/SHORT/INSTANTANEOUS TRIP
 MCP - MOTOR CIRCUIT PROTECTION
 SPD - SURGE PROTECTION DEVICE
 T1 - POWER TRANSFORMER 25KV/600V, 150KVA PAD MOUNTED
 T2 - DRY TRANSFORMER 600V/208V, 3PH, 30KVA, ELECTROSTATICALLY SINGLE SHIELDED, K4
 VFD - VARIABLE FREQUENCY DRIVE
 XP - EXPLOSION PROOF

Legend

○ - CIRCUIT BREAKER
 ○ - DISCONNECT
 □ - FUSED DISCONNECT
 ○ - INDICATION LIGHT. R=RED, G=GREEN, A=AMBER
 ⊕ - 24V INTERLOCK RELAY
 ⊞ - PLC LOGIC
 ⊞ - INTERLOCK

Notes

- ATS SHALL HAVE SOLID NEUTRAL.
- CONTRACTOR TO RECORD UTILITY TRANSFORMER AND FUSE SIZES AND NAMEPLATE DATA.
- MCC ASSEMBLY SHALL HAVE PROVISIONS FOR TERMINATION OF THE NEUTRAL CONDUCTOR FROM THE TRANSFORMER X0.
- PUMP SUPPLIER TO PROVIDE ALL PUMP CONTROL DEVICES AND INTERNAL CABLES. CONTRACTOR TO MOUNT MONITOR RELAY AND RESET BUTTON IN FRONT DOOR OF VFD, TO BE ACCESSIBLE WITHOUT OPENING THE ENCLOSURE.

Revision	By	Appd.	YY.MM.DD
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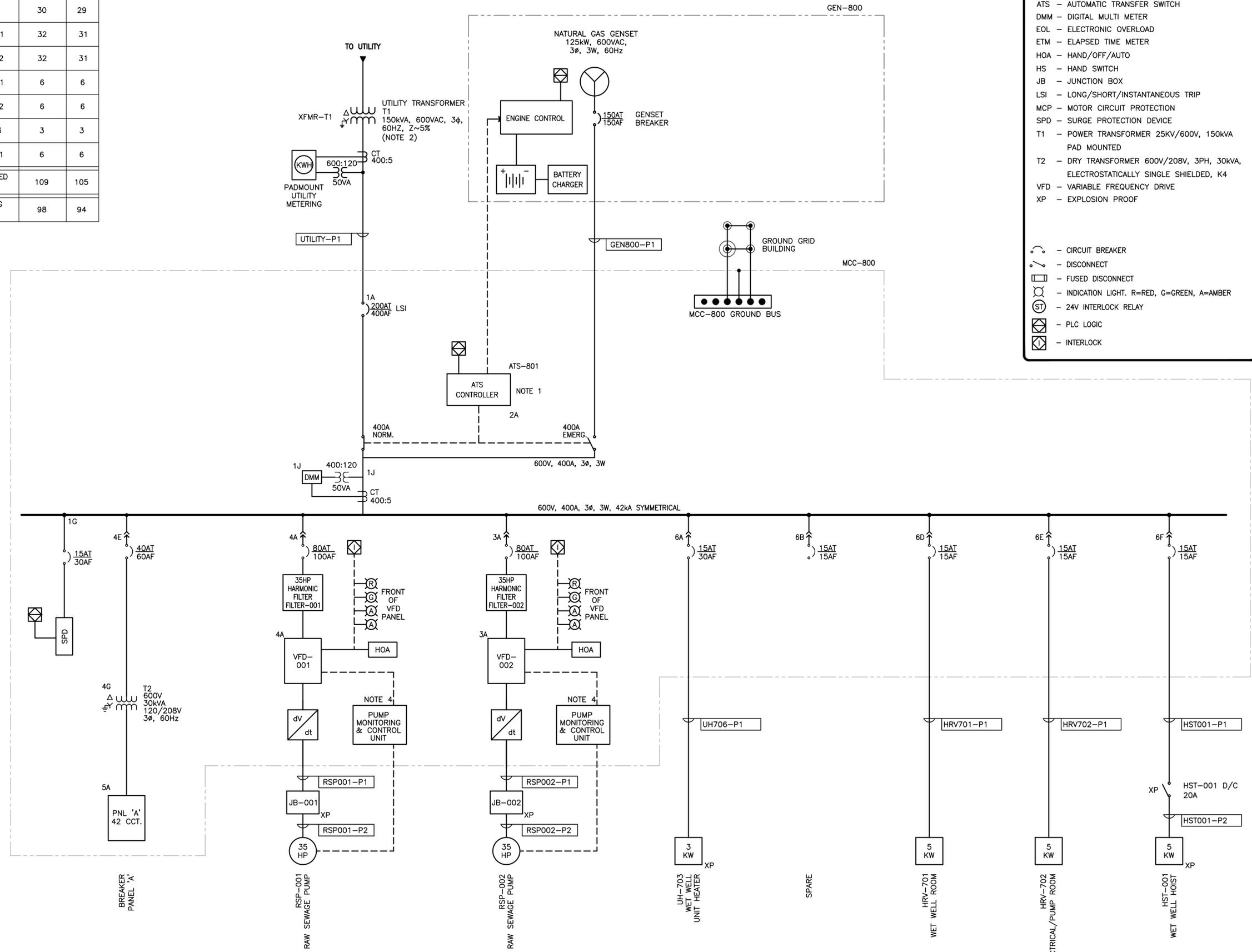
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
ELECTRICAL
SINGLE LINE DIAGRAM

Project No. 1101000459	Scale NO SCALE
Drawing No. E-601	Sheet 0

FACILITY LOADS

LOADS	KVA	AMP
PNL-A	30	29
RSP-001	32	31
RSP-002	32	31
HRV-701	6	6
HRV-702	6	6
UH-703	3	3
HST-001	6	6
CONNECTED TOTAL	109	105
RUNNING TOTAL	98	94



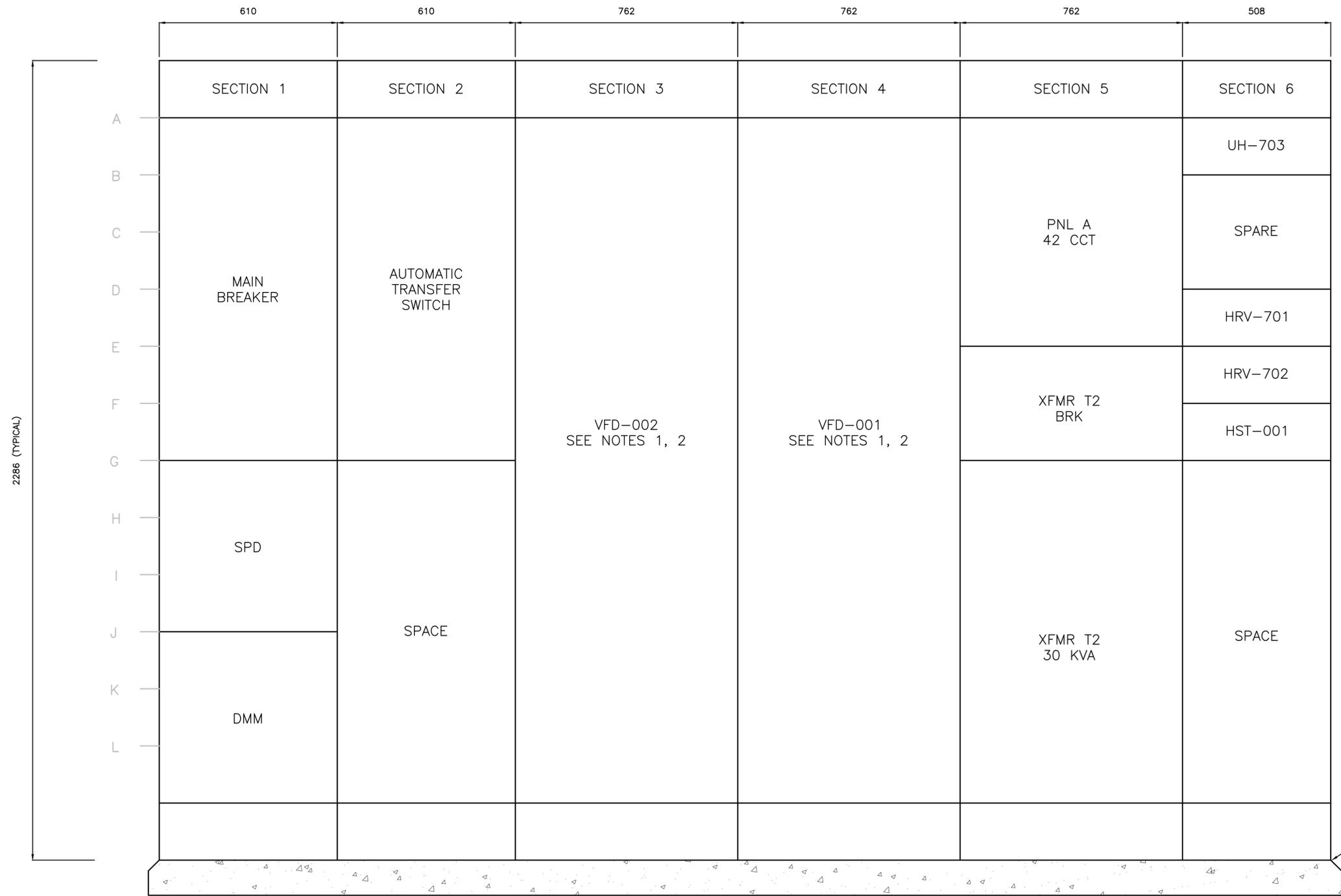
1 SINGLE LINE DIAGRAM
 - E-601 NO SCALE

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HARMONIC FILTER
 FUTURE
 SEE NOTE 3

HARMONIC FILTER
 FUTURE
 SEE NOTE 3



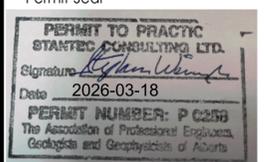
Legend

Notes

- 35HP VFDs TO BE REPLACED WITH 60HP VFDs IN THE FUTURE. SIZE MCC SECTIONS APPROPRIATELY TO ACCOMMODATE REPLACEMENT WITH 60HP VFDs WITHIN SECTIONS.
- HARMONIC FILTERS FOR 35HP VFDs TO BE INSTALLED WITHIN RESPECTIVE MCC SECTION.
- RETAIN PROVISIONAL SPACE ABOVE VFD SECTIONS TO ACCOMMODATE THE INSTALLATION OF FUTURE 60HP VFD HARMONIC FILTERS.

Revision	By	Appd.	YY.MM.DD
E	---	---	---
D	---	---	---
C	---	---	---
B	---	---	---
B	ISSUED FOR TENDER	OL DH	2026.03.13
A	ISSUED FOR 95% REVIEW	OL DH	2026.02.13
Issued	By	Appd.	YY.MM.DD

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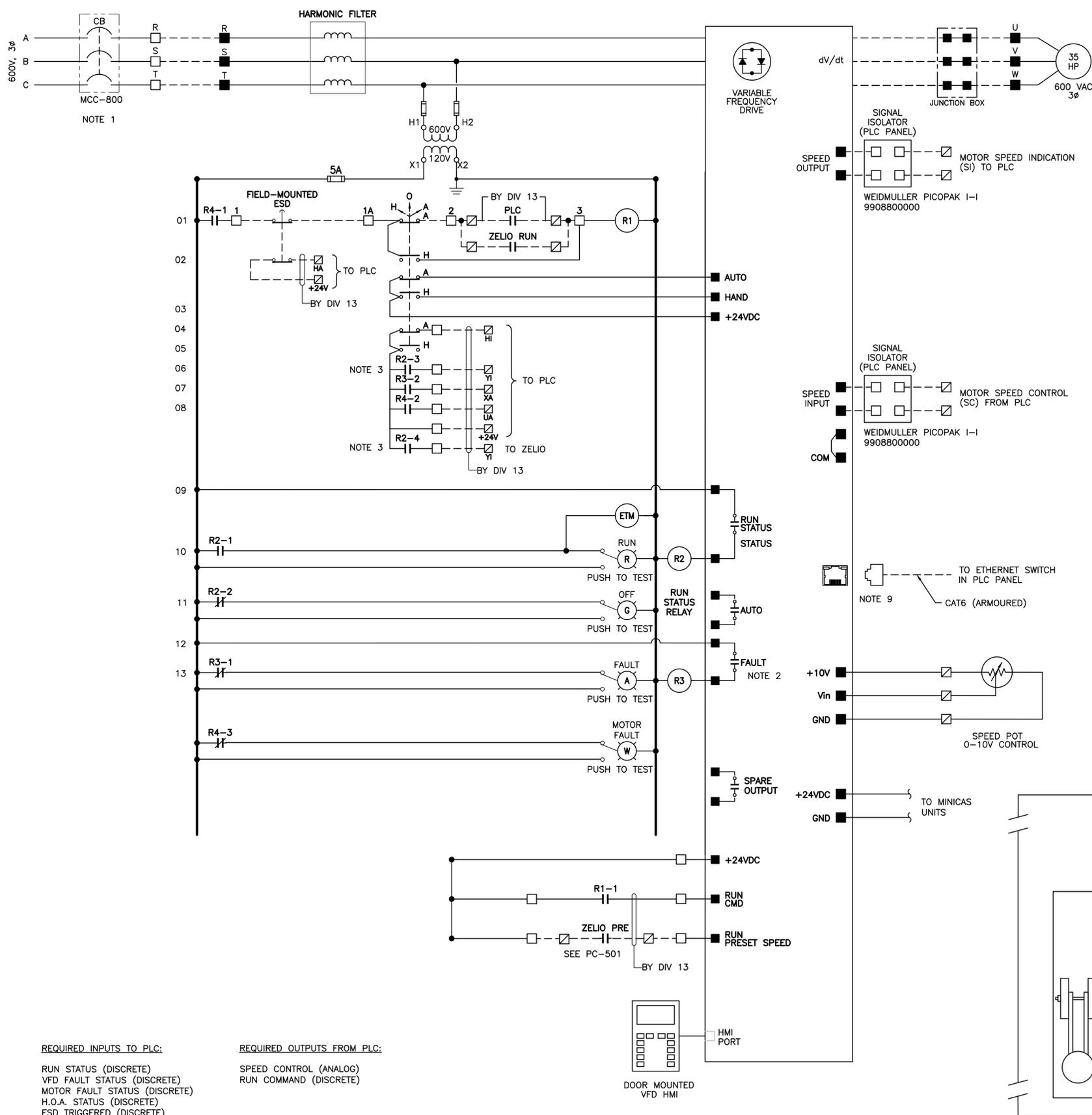
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
**ELECTRICAL
 MCC ELEVATION**

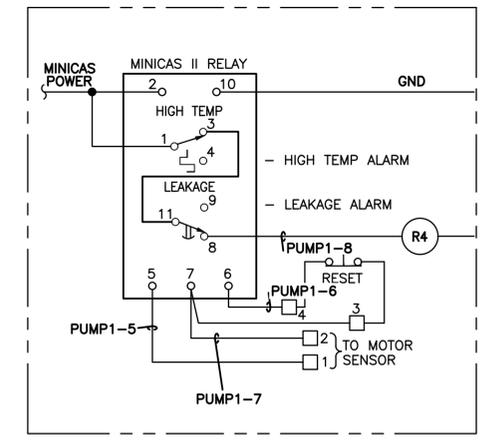
Project No. 1101000459	Scale NO SCALE
Drawing No. E-602	Sheet 0
Revision	

CONCRETE HOUSEKEEPING PAD AS REQUIRED TO ACCOMMODATE MCC SECTIONS (100mm HEIGHT TYP.) COORDINATE WITH STRUCTURAL AND ELECTRICAL DRAWINGS

1
 - E-602 NO SCALE
 TYPICAL MCC ELEVATION

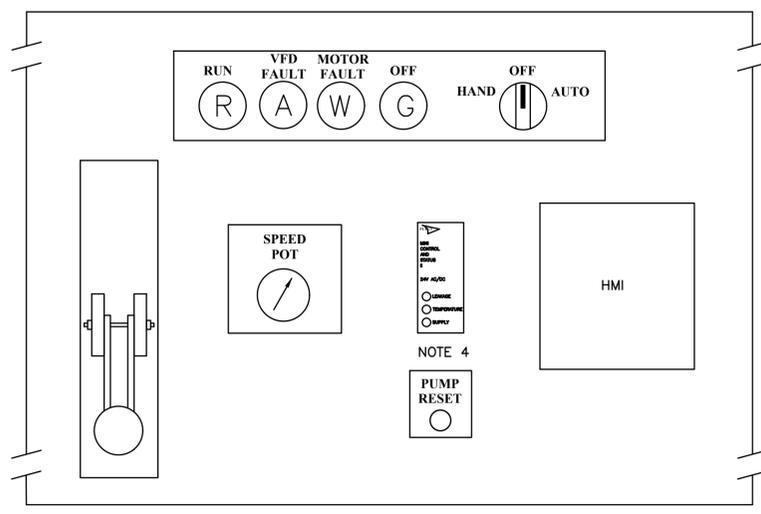


1 VFD WIRING SCHEMATIC
 - E-603 NO SCALE



2 MINICAS II WIRING SCHEMATIC
 - E-603 NO SCALE

- NOTES**
- CIRCUIT BREAKER AS SIZED IN SINGLE LINE DIAGRAM.
 - FAULT RELAY TO BE OPEN ON FAULT CONDITION, CLOSED ON NORMAL.
 - VFD RUN STATUS TO BE BROUGHT BACK TO PLC & ZELIO. SEE CONTROL DRAWINGS FOR DETAILS.
 - MINICAS UNIT SHALL BE INSTALLED ON FRONT DOOR OF VFD SECTION. PROVIDE AND INSTALL LOCAL PUSHBUTTON ON VFD FRONT FOR RESET.
 - H-O-A SWITCH IN HAND: VFD RUNNING AND SPEED REFERENCE FROM THE DOOR-MOUNTED POTENTIOMETER.
 - H-O-A SWITCH IN OFF: VFD CAN NOT RUN.
 - H-O-A SWITCH IN REMOTE: VFD IS CONTROLLED FROM PLC THROUGH CONTROL SYSTEM.
 - FINAL CONTROL SCHEME AND CONNECTIONS ARE SUBJECT TO SELECTION OF VFD VENDOR; CONTRACTOR TO PROVIDE ALL POWER, CONTROL AND SIGNALS REQUIRED TO COMPLETE THE INSTALLATION FOR FULL OPERATION.
 - STATUS OF VFD AND REFERENCE COMMUNICATED VIA CONTROL NETWORK.
 - THE CONNECTION DETAIL SHOWN IS FOR A GENERIC INSTALLATION. CONTRACTOR TO SUBMIT APPROPRIATE CONNECTION DETAILS FOR REVIEW BY THE ENGINEER PRIOR TO INSTALLATION.
 - ALL VFDs SHALL BE PROVIDED WITH A VFD MCC SECTION DOOR-MOUNTED LOCAL HMI CONTROL. PROVIDE LEGEND PLATE IDENTIFYING LOCAL CONTROL.
 - PROTECTION INSTRUMENT, RELAY, AND E-STOP BUTTON INTERLOCKS TO BE INCLUDED IN CONTROL SCHEMATIC.



3 VFD FRONT PANEL TYPICAL LAYOUT
 - E-603 NO SCALE

- Legend**
- ☑ TERMINAL IN PLC PANEL
 - TERMINAL IN EQUIPMENT
 - TERMINAL IN VFD PANEL
 - WIRING WITHIN CABINET
 - - - FIELD WIRING OUTSIDE CABINET

Notes
 SEE NOTES IN DRAWING

Revision	By	Appd.	YY.MM.DD
E	---	---	---
D	---	---	---
C	---	---	---
B	---	---	---
B	ISSUED FOR TENDER	OL	DH 2026.03.13
A	ISSUED FOR 95% REVIEW	OL	DH 2026.02.13
Issued	---	---	---



Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
ELECTRICAL
VFD SCHEMATIC

Project No.	Scale	
1101000459	NO SCALE	
Drawing No.	Sheet	Revision
E-603	0	

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Legend
CABLE ROUTE LEGEND
 S - SURFACE
 U/G - UNDERGROUND
 C/T - CABLE TRAY
 O/H - OVERHEAD

CABLE AND CONDUIT SCHEDULE											
CONDUIT OR CABLE TAG	FROM	TO	CABLE ROUTE	APPLICATION	VOLT	WIRE COUNT	WIRE SIZE	BOND	SPARE	CONDUIT SIZE/TECK	REMARKS
UTILITY-P1	TRANSFORMER	MCC-800	U/G	POWER	600VAC	4C	#4/0	---	---	103 MM	SIZED TO ACCOMMODATE FUTURE 60HP PUMPS
GEN800-P1	GEN-800	MCC-800	U/G	POWER	600VAC	4C	#3/0	---	---	103 MM	SIZED TO ACCOMMODATE FUTURE 60HP PUMPS
RSP001-P1	VFD-001	JB-001	S, C/T	POWER	600VAC	3C	#2	#8	---	53 MM	SIZED TO ACCOMMODATE FUTURE 60HP PUMPS
RSP001-P2	JB-001	RSP-001	S	POWER	600VAC	---	---	---	---	---	VENDOR CABLE
RSP002-P1	VFD-002	JB-002	S, C/T	POWER	600VAC	3C	#2	#8	---	53 MM	SIZED TO ACCOMMODATE FUTURE 60HP PUMPS
RSP002-P2	JB-002	RSP-002	S	POWER	600VAC	---	---	---	---	---	VENDOR CABLE
UH703-P1	MCC-800	UH-703	S, C/T	POWER	600VAC	3C	#12	#14	---	21 MM	---
HRV701-P1	MCC-800	HRV-701	S, C/T	POWER	600VAC	3C	#12	#14	---	21 MM	---
HRV702-P1	MCC-800	HRV-702	S, C/T	POWER	600VAC	3C	#12	#14	---	21 MM	---
HST001-P1	MCC-800	HST-001 D/C	S, C/T	POWER	600VAC	3C	#12	#14	---	21 MM	---
HST001-P2	HST-001 D/C	HST-001	S, C/T	POWER	600VAC	3C	#12	#14	---	21 MM	---

1
 E-604
 NO SCALE
ELECTRICAL CABLE SCHEDULE

KEY NOTES

- UTILITY AND GENERATOR CABLES TO ENTER THROUGH BUILDING WALL DIRECTLY INTO BACK OF MCC. CABLES TO ENTER HIGH INTO BACK OF MCC.
- VERIFY AND PROVIDE NECESSARY PUMP CABLE LENGTHS FOR PUMPS.
- RETAIN CIRCUIT A15 AS SPACE, SUBJECT TO GENSET HEATER REQUIRING 2-POLE POWER.

Notes

Revision	By	Appd.	YY.MM.DD
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B	ISSUED FOR TENDER	OL DH	2026.03.13
A	ISSUED FOR 95% REVIEW	OL DH	2026.02.13
Issued	By	Appd.	YY.MM.DD

PNL A 120/208VAC 225 AMP										
LOAD (W)	DESCRIPTION	BKR. SIZE	CCT. NO.	A	B	C	CCT. NO.	BKR. SIZE	DESCRIPTION	LOAD (W)
200	ELECTRICAL ROOM LIGHTING	15A	1	↑			2	15A	ELECTRICAL ROOM LIGHTING	200
250	PUMP ROOM LIGHTING	15A	3	↑			4	15A	EMERGENCY EXIT LIGHTING	150
150	WET WELL ROOM LIGHTING	15A	5	↑			6	15A	RECEPTACLES - WET WELL ROOM	250
250	DOMESTIC WATER HEATER DWH-707 (RECEPTACLE)	15A	7	↑			8	15A	RECEPTACLES - ELECTRICAL ROOM	750
400	EXTERIOR LIGHTING	15A	9	↑			10	15A	RECEPTACLES - EXTERIOR	1000
-	SPARE	15A	11	↑			12	20A	PLC-900 PANEL	1500
** 2500	GENSET BLOCK HEATER	30A	13	↑			14	15A	SPARE	-
-	SPARE	20A	15	↑			16	15A	RECEPTACLES - PUMP ROOM	750
250	GENSET BATTERY CHARGER	15A	17	↑			18	15A	HVAC CONTROL PANEL	500
-	SPARE	15A	19	↑			20	15A		-
-	SPARE	/	21	↑			22	/	SPARE	-
-	SPARE	3PH	23	↑			24	3PH		-
-	SPARE	15A	25	↑			26	15A	SPARE	-
-	SPARE	15A	27	↑			28	15A	SPARE	-
-	SPARE	15A	29	↑			30	15A	WET WELL PIT LIGHTING	50
-	SPARE	15A	31	↑			32	15A	SPARE	-
700	ARCHITECTURAL HEAT TRACE - GUTTERS	15A	33	↑			34	20A	PLC-900 PANEL BACKUP	1500
700	ARCHITECTURAL HEAT TRACE - DOWNSPOUTS	15A	35	↑			36	20A	SPARE	-
-	SPARE	15A	37	↑			38	SPACE		-
-	SPARE	15A	39	↑			40	SPACE		-
-	SPARE	15A	41	↑			42	SPACE		-
									TOTAL @ A	4800
									TOTAL @ B	5650
									TOTAL @ C	4150
									TOTAL	14600 WATTS

NOTES: * INDICATES GFI FUNCTION
 ** INDICATES A MINIMUM WIRE SIZE OF #10 FOR FIELD WIRING

2
 E-604
 NO SCALE
MCC 120/208VAC POWER PANEL SCHEDULE

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
ELECTRICAL SCHEDULES

Project No. 1101000459 Scale NO SCALE
 Drawing No. E-604 Sheet Revision 0



- KEY NOTES**
- LEVEL INSTRUMENTS TO BE INSTALLED IN WETWELL BELOW. CABLING TO BE TERMINATED IN LJB-106. REFER TO DRAWING I-102 FOR INSTRUMENT ELEMENT AND BULB LOCATIONS.
 - REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT.
 - CONTRACTOR SHALL SUPPLY AND INSTALL A PAINTED GOOD-ONE-SIDE PLYWOOD LOCKOUT BOARD, MINIMUM 19mm THICKNESS, MOUNTED ABOVE THE INSTRUMENT DISPLAY BOARD, AND ASSEMBLE ALL REQUIRED LOCKOUT EQUIPMENT ON THE BOARD. THE LOCKOUT BOARD SHALL INCLUDE: TWO MASTERLOCK WALL MOUNT LATCH TIGHT RED GROUP LOX BOXES (MODEL 503RED); TWO MASTERLOCK PADLOCK RACKS (MODEL S1506); TWO SCREW HOOKS; AND TWO DEFLECTO VERTICAL ORIENTATION WALL FILES (MODEL 63001 RT).
 - CONTRACTOR TO COORDINATE INSTALLATION OF TELEPHONE SERVICE TO SITE.
 - CONTRACTOR TO CONFIRM HOUSEKEEPING PAD SIZES ON SITE AS REQUIRED.
 - SMOKE DETECTOR CONTROL SIGNALS FOR AS-918A AND AS-918B SHALL BE WIRED SUCH THAT ANY ACTIVATED DETECTOR SHALL REPORT THE SIGNAL TO THE PLC.
 - INSTRUMENTS WITHIN THE WET WELL ROOM SHALL ALL BE RATED FOR A HAZARDOUS ZONE 2 SPACE.

Legend

Notes

Revision	By	Appd.	YY.MM.DD
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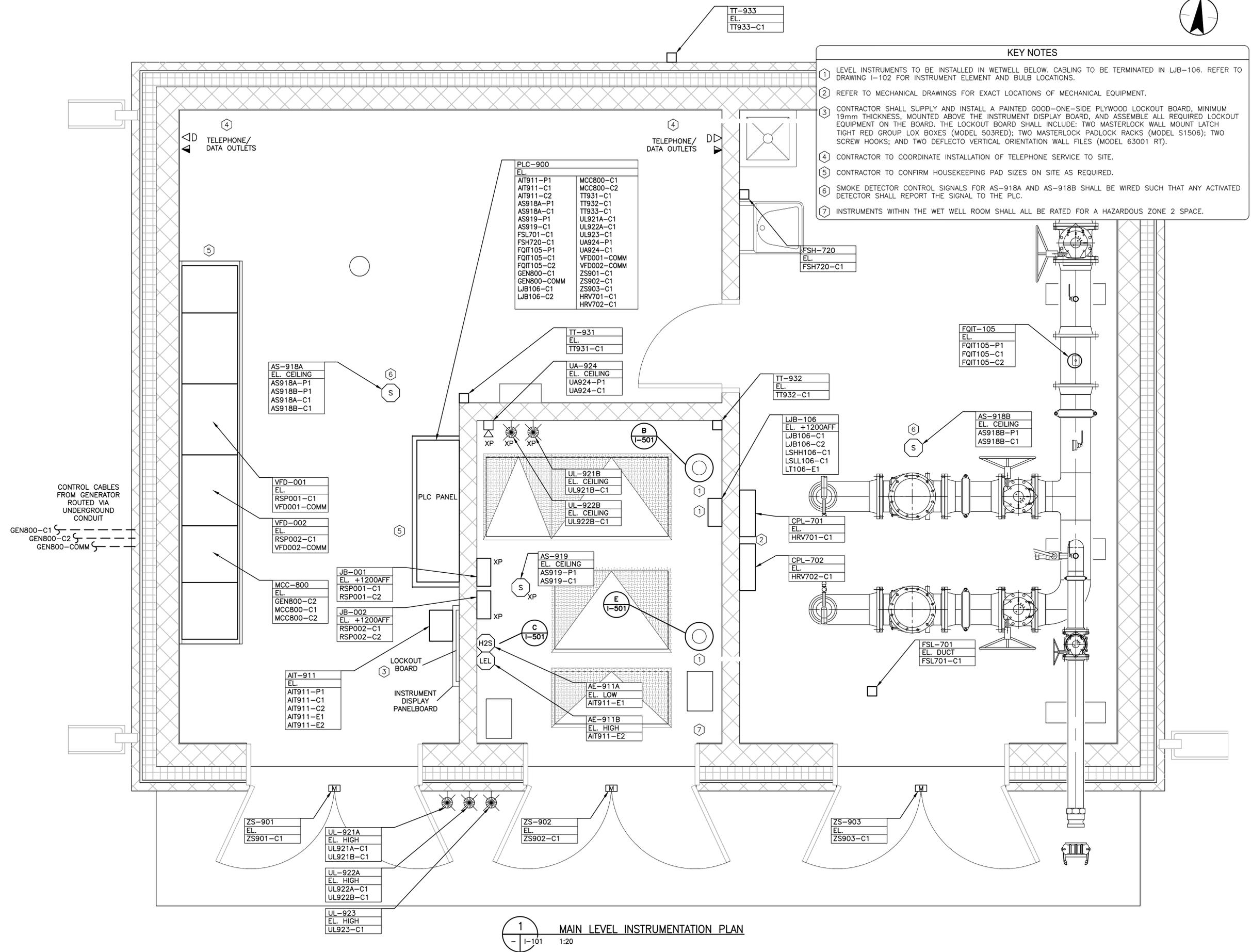
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 INSTRUMENTATION
 OPERATING FLOOR LAYOUT

Project No. 1101000459	Scale 1:20
Drawing No. I-101	Sheet 0



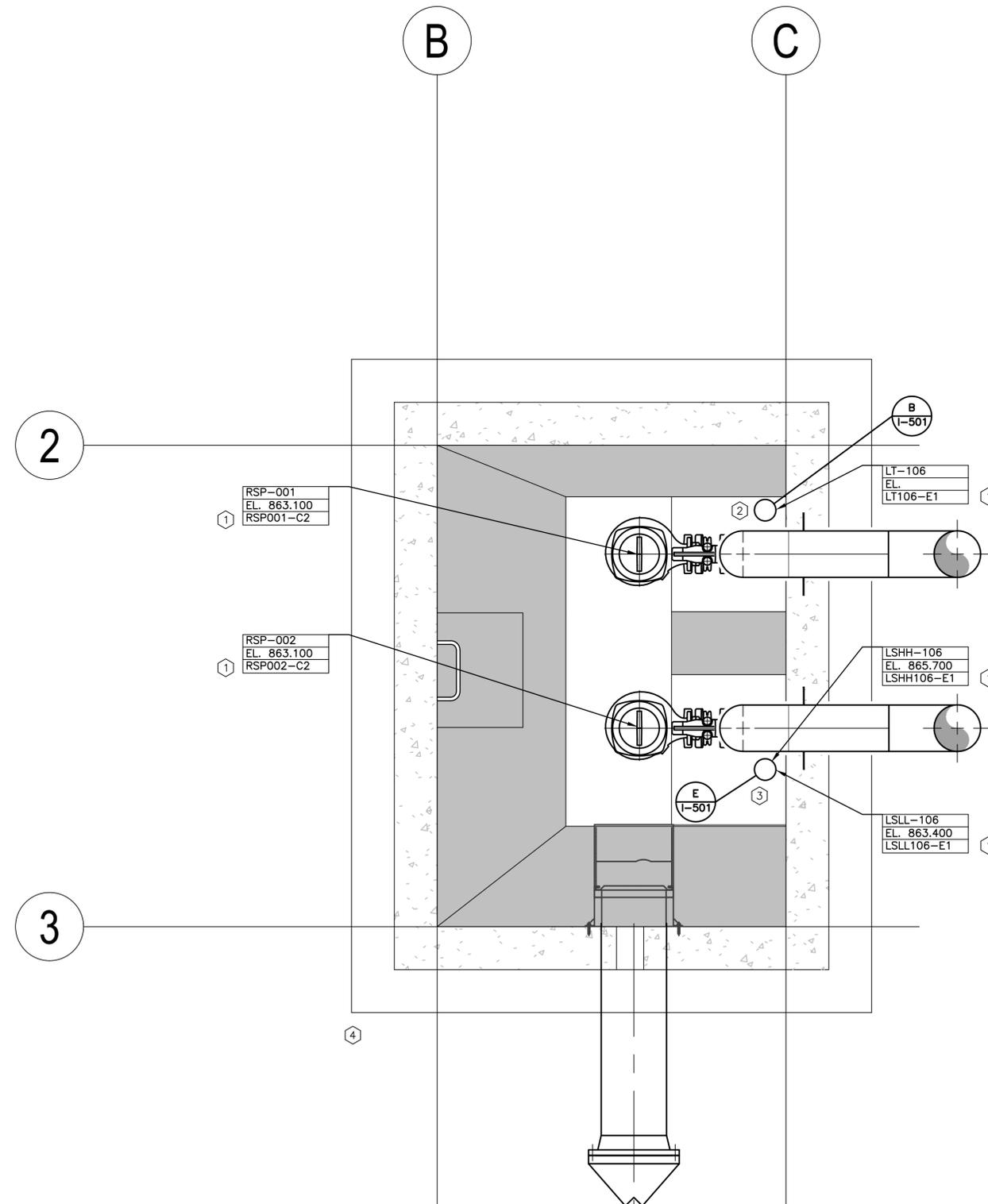


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KEY NOTES

- ① CONFIRM VENDOR CABLE LENGTHS FOR ALL PUMPS AND LEVEL INSTRUMENTS PRIOR TO ORDERING OF PRODUCTS.
- ② INSTALL LEVEL TRANSMITTER AS CLOSE TO THE WET WELL FLOOR AS RECOMMENDED BY THE MANUFACTURER.
- ③ ENSURE LOW LOW LEVEL BULB IS INSTALLED CLEAR OF BENCHING, AT ELEVATION INDICATED IN THE DRAWINGS.
- ④ EQUIPMENT LAYOUT AS SEEN FROM UNDERSIDE OF MAIN LEVEL FLOOR.



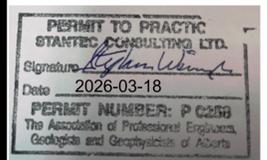
①
- I-102
1:20
LOWER FLOOR LAYOUT

Legend

Notes

Revision	By	Appd.	YY.MM.DD
E			
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C			
B	ISSUED FOR TENDER	OL	DH 2026.03.13
A	ISSUED FOR 95% REVIEW	OL	DH 2026.02.13
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Client/Project
BLACKFALDS
ALBERTA
MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
INSTRUMENTATION
LOWER FLOOR LAYOUT

Project No. 1101000459	Scale 1:20
Drawing No. I-102	Sheet Revision 0

Legend

Notes

Revision	By	Appd.	YY.MM.DD
E			
D			
C			
B	ISSUED FOR TENDER	OL DH	2026.03.13
A	ISSUED FOR 95% REVIEW	OL DH	2026.02.13
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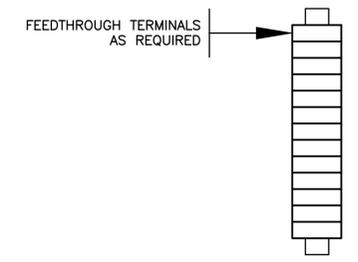
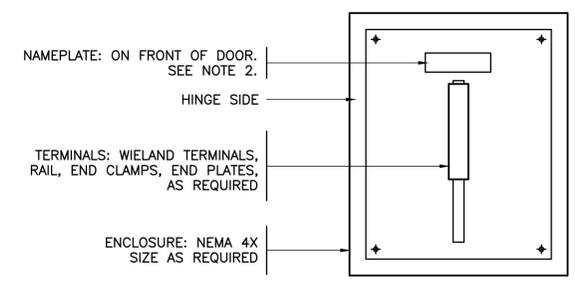
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1101000459 JFT

Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
**INSTRUMENTATION
 STANDARD DETAILS**

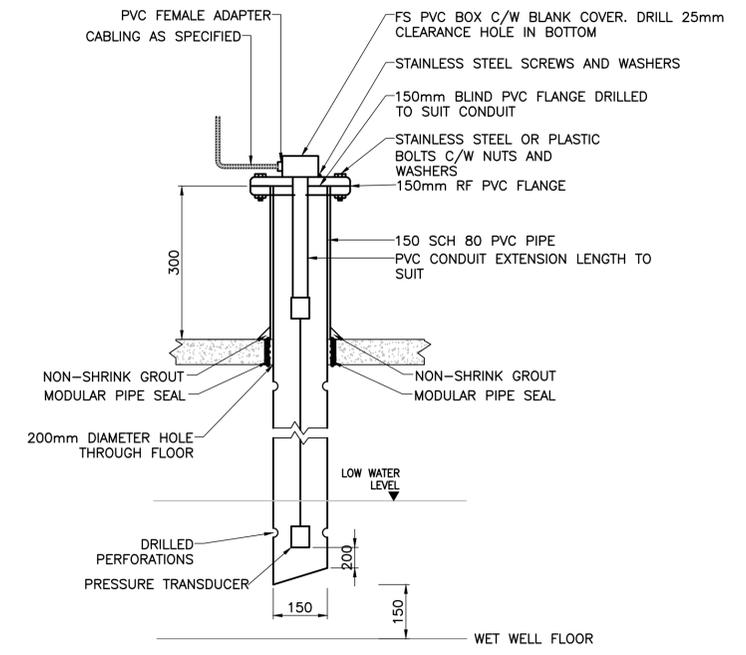
Project No. 1101000459 Scale NO SCALE
 Drawing No. Sheet Revision



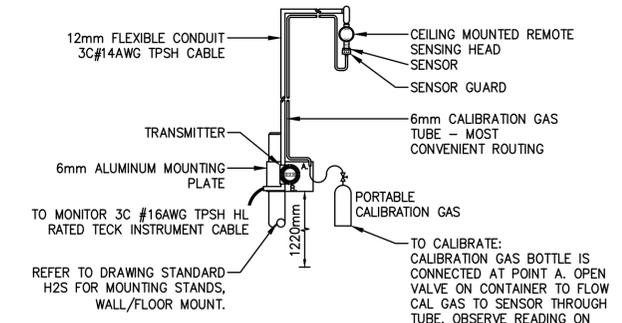
TERMINAL DETAILS (NTS)

1. MOUNT BOX VERTICALLY WITH STEEL CHANNEL SUPPORTS.
2. ROMARK TEXTURE WHITE FACE WITH BLACK CORE. SIZE 1 3/4" x 6" WITH 1/2" LETTERING.

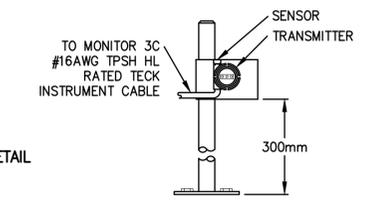
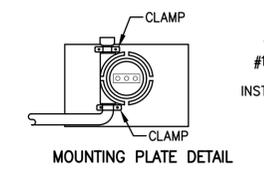
A INSTRUMENT JUNCTION BOX
 I-101 I-501 NO SCALE



B TYPICAL LEVEL ELEMENT INSTALLATION
 I-101 I-501 NO SCALE

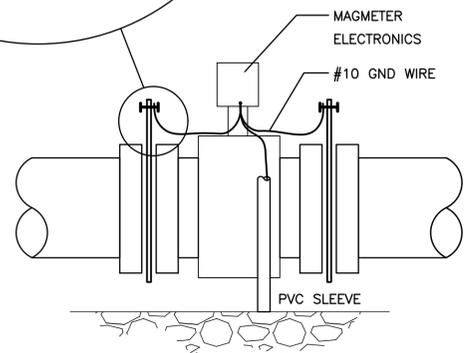
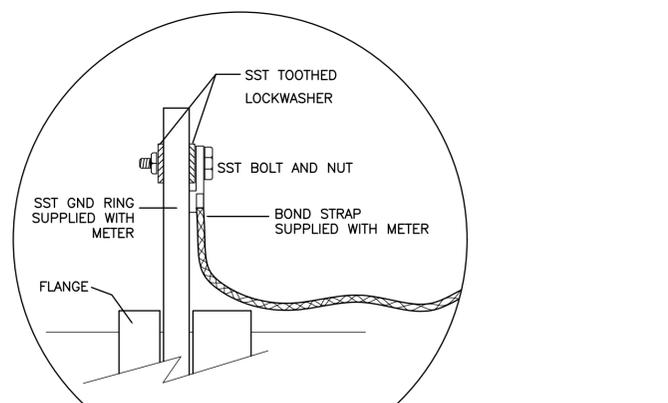


COMBUSTIBLE GAS SENSOR - CH4

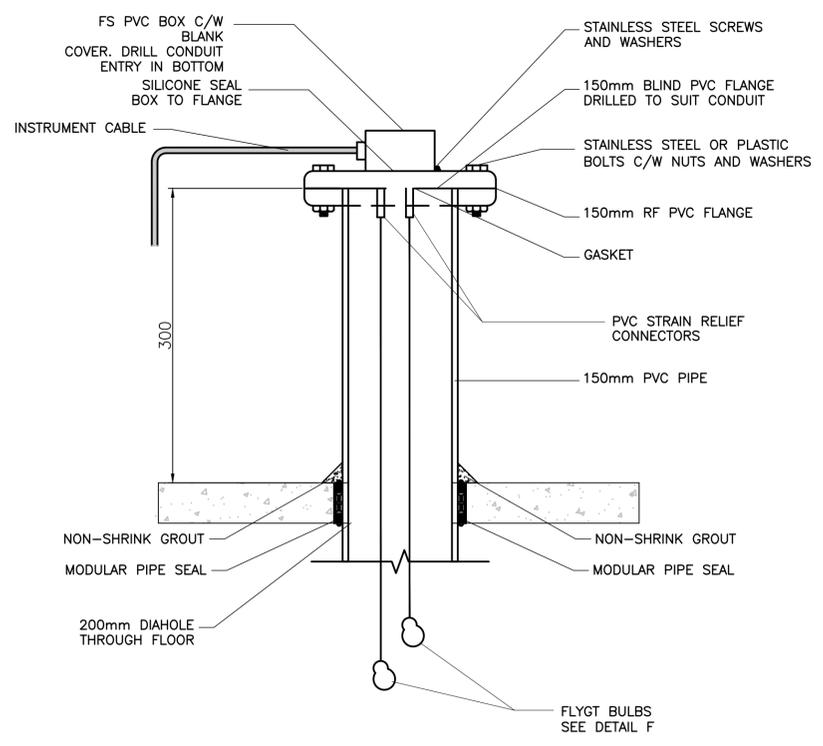


H2S GAS SENSOR

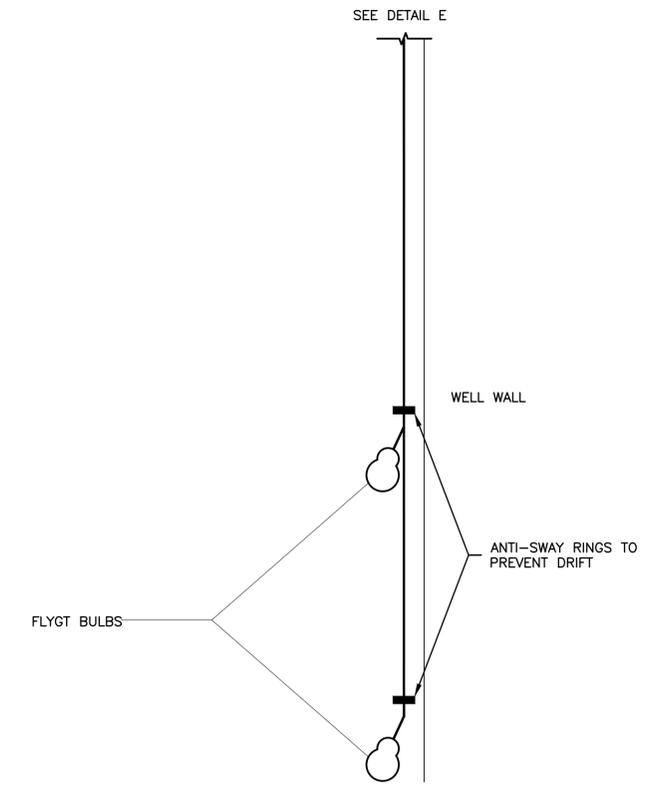
C GAS DETECTION SENSORS AND MONITORS
 I-101 I-501 NO SCALE



D MAGMETER GROUNDING DETAIL
 I-102 I-501 NO SCALE



E TYPICAL LEVEL BULB INSTALLATION
 I-101 I-501 NO SCALE



F TYPICAL LEVEL BULB SUPPORT
 I-101 I-501 NO SCALE

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CABLE AND CONDUIT SCHEDULE										
CONDUIT OR CABLE IDENTIFIER	FROM	CABLE ROUTING	TO	APPLICATION	VOLT	WIRE			CONDUIT SIZE	REMARKS
						No.	SIZE	SPARE		
AIT911-P1	AIT-911	S	PLC	POWER	24VDC	2C	14	0	21 MM	-
AIT911-C1	AIT-911	S	PLC	INSTRUMENT	24VDC	2PR	16	0	21 MM	ANALOG SIGNALS
AIT911-C2	AIT-911	S	PLC	INSTRUMENT	24VDC	4C	14	2C	21 MM	DIGITAL SIGNALS
AIT911-E1	AE-911A	S	AIT-911	ELEMENT	-	-	-	-	-	VENDOR CABLE*
AIT911-E2	AE-911B	S	AIT-911	ELEMENT	-	-	-	-	-	VENDOR CABLE*
AS918A-P1	AS-918A	S	PLC	POWER	24VDC	2C	14	0	21 MM	POWERED IN PARALLEL WITH AS-918B
AS918A-C1	AS-918A	S	PLC	INSTRUMENT	24VDC	4C	14	2C	21 MM	SIGNAL DAISY CHAINED WITH AS-918B
AS918B-P1	AS-918B	S	AS-918A	POWER	24VDC	2C	14	0	21 MM	POWERED IN PARALLEL WITH AS-918A
AS918B-C1	AS-918B	S	AS-918A	INSTRUMENT	24VDC	4C	14	2C	21 MM	SIGNAL DAISY CHAINED WITH AS-918A
AS919-P1	AS-919	S	PLC	POWER	24VDC	2C	14	0	21 MM	-
AS919-C1	AS-919	S	PLC	INSTRUMENT	24VDC	4C	14	2C	21 MM	-
FSL701-C1	FSL-701	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	-
FSH720-C1	FSH-720	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	-
FQIT105-P1	FQIT-105	S	PLC	POWER	120VAC	2C	14	0	21 MM	-
FQIT105-C1	FQIT-105	S	PLC	INSTRUMENT	24VDC	2PR	16	1PR	21 MM	ANALOG SIGNAL
FQIT105-C2	FQIT-105	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	DIGITAL PULSE SIGNAL
GEN800-C1	GEN-800	U/G, S	PLC	CONTROL	24VDC	14C	14	4C	35 MM	BUNDLED DIGITAL SIGNALS
GEN800-C2	GEN-800	U/G, S	ATS-801	CONTROL	24VDC	10C	14	2C	27 MM	-
GEN800-COMM	GEN-800	U/G, S	PLC	COMMS	CAT6	-	-	-	21 MM	COMMS CABLE
HRV701-C1	CPL-701	S	PLC	CONTROL/INSTRUMENT	24VDC	16C	14	8C	27 MM	HVAC CONTROLS
HRV702-C1	CPL-702	S	PLC	CONTROL/INSTRUMENT	24VDC	16C	14	10C	27 MM	HVAC CONTROLS
LJB106-C1	LJB-106	S	PLC	INSTRUMENT	24VDC	2PR	16	1PR	21 MM	-
LJB106-C2	LJB-106	S	PLC	INSTRUMENT	24VDC	8C	14	4C	21 MM	DIGITAL SIGNALS
LSHH106-C1	LSHH-106	S	LJB-106	ELEMENT	-	-	-	-	-	VENDOR CABLE*
LSLL106-C1	LSLL-106	S	LJB-106	ELEMENT	-	-	-	-	-	VENDOR CABLE*
LT106-E1	LT-106	S	LJB-106	ELEMENT	-	-	-	-	-	VENDOR CABLE*
MCC800-C1	MCC-800	S, C/T	PLC	CONTROL	24VDC	30C	14	6C	53 MM, TECK	RSP-001 & RSP-002 BUNDLED DIGITAL SIGNALS
MCC800-C2	MCC-800	S, C/T	PLC	CONTROL	24VDC	12PR	16	4PR	35 MM, ACIC	BUNDLED ANALOG SIGNALS
MCC800-C3	MCC-800	S, C/T	PLC	CONTROL	120VAC	12C	14	6C	53 MM, TECK	BUNDLED ANALOG SIGNALS
RSP001-C1	VFD-001	S, C/T	JB-001	CONTROL	24VDC	6C	14	2C	21 MM	MOTOR PROTECTION SIGNALS
RSP001-C2	JB-001	S	RSP-001	CONTROL	-	-	-	-	-	VENDOR CABLE*
RSP002-C1	VFD-002	S, C/T	JB-002	CONTROL	24VDC	6C	14	2C	21 MM	MOTOR PROTECTION SIGNALS
RSP002-C2	JB-002	S	RSP-002	CONTROL	-	-	-	-	-	VENDOR CABLE*
TT931-C1	TT-931	S	PLC	INSTRUMENT	24VDC	1PR	16	0	21 MM	-
TT932-C1	TT-932	S	PLC	INSTRUMENT	24VDC	1PR	16	0	21 MM	-
TT933-C1	TT-933	S	PLC	INSTRUMENT	24VDC	1PR	16	0	21 MM	-
UL921A-C1	UL-921A	S	PLC	INSTRUMENT	120VAC	2C	14	0	21 MM	BLUE STROBE - H2S ALARM
UL921B-C1	UL-921B	S	UL-921A	INSTRUMENT	120VAC	2C	14	0	21 MM	BLUE STROBE - H2S ALARM
UL922A-C1	UL-922A	S	PLC	INSTRUMENT	120VAC	2C	14	0	21 MM	RED STROBE - LEL ALARM
UL922B-C1	UL-922B	S	UL-922A	INSTRUMENT	120VAC	2C	14	0	21 MM	RED STROBE - LEL ALARM
UL923-C1	UL-923	S	PLC	INSTRUMENT	120VAC	2C	14	0	21 MM	AMBER STROBE - GENERAL FAULT
UA924-C1	UA-924	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	HORN SIGNAL
VFD001-COMM	VFD-001	S	PLC	COMMS	CAT6	-	-	-	CAT6	ARMOURED COMMS CABLE
VFD002-COMM	VFD-002	S	PLC	COMMS	CAT6	-	-	-	CAT6	ARMOURED COMMS CABLE
ZS901-C1	ZS-901	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	-
ZS902-C1	ZS-902	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	-
ZS903-C1	ZS-903	S	PLC	INSTRUMENT	24VDC	2C	14	0	21 MM	-

KEY NOTES

- CONTRACTOR TO VERIFY ALL VENDOR CABLE LENGTHS WITH THE VENDOR AND TO PROVIDE ENOUGH LENGTH TO COMPLETE THE PROPER INSTALLATION.
- SMOKE DETECTOR CONTROL SIGNALS FOR AS-918A AND AS-918B SHALL BE WIRED SUCH THAT ANY ACTIVATED DETECTOR SHALL REPORT THE SIGNAL TO THE PLC.
- ALL BLUE H2S BEACONS SHALL BE WIRED IN PARALLEL WITH EACH OTHER, SUCH THAT ALL BEACONS/LAMPS ARE ACTIVE CONCURRENTLY WHEN POWERED.
- ALL RED LEL BEACONS SHALL BE WIRED IN PARALLEL WITH EACH OTHER, SUCH THAT ALL BEACONS/LAMPS ARE ACTIVE CONCURRENTLY WHEN POWERED.
- VFD COMM CABLES MAY BE ROUTED INDIVIDUALLY TO THE PLC CONTROL PANEL ETHERNET SWITCH, OR AS A SINGLE CABLE BY UTILIZING AN ETHERNET SWITCH INSTALLED WITHIN MCC-800.

Legend

CABLE ROUTE LEGEND

S - SURFACE
 U/G - UNDERGROUND
 C/T - CABLE TRAY
 O/H - OVERHEAD

Notes

* SEE KEY NOTE 1

1 INSTRUMENTATION CABLE SCHEDULE
 I-601 I-101 NO SCALE

Revision	By	Appd.	YY.MM.DD
E			
D			
C			
B	ISSUED FOR TENDER	OL	DH 2026.03.13
A	ISSUED FOR 95% REVIEW	OL	DH 2026.02.13

Permit-Seal



Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 INSTRUMENTATION
 CABLE AND CONDUIT SCHEDULE

Project No. 1101000459 Scale NO SCALE
 Drawing No. I-601 Sheet Revision 0

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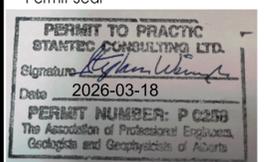
Legend

Notes

- SEE PC-103 FOR PANEL BILL OF MATERIALS.
- CONTRACTOR TO MOUNT DUPLEX RECEPTACLE THROUGH FRONT OF CONTROL PANEL DOOR COMPLETE WITH CLEAR PLASTIC DUPLEX RECEPTACLE COVER. LABEL RECEPTACLE WITH A "LAPTOP ONLY" LAMACOID.
- CONTRACTOR TO INSTALL A RJ45 CAT6 ETHERNET DATA PORT THROUGH FRONT OF CONTROL PANEL DOOR, CONNECTED TO THE CONTROL PANEL ETHERNET SWITCH, FOR USE AS A PROGRAMMER'S PORT.
- LAPTOP SHELF TO BE MOUNTED ON THE EXTERIOR OF CONTROL PANEL.

Revision	By	Appd.	YY.MM.DD
E			
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A	OL	DH	2026.03.13
	OL	DH	2026.02.13
Issued	By	Appd.	YY.MM.DD

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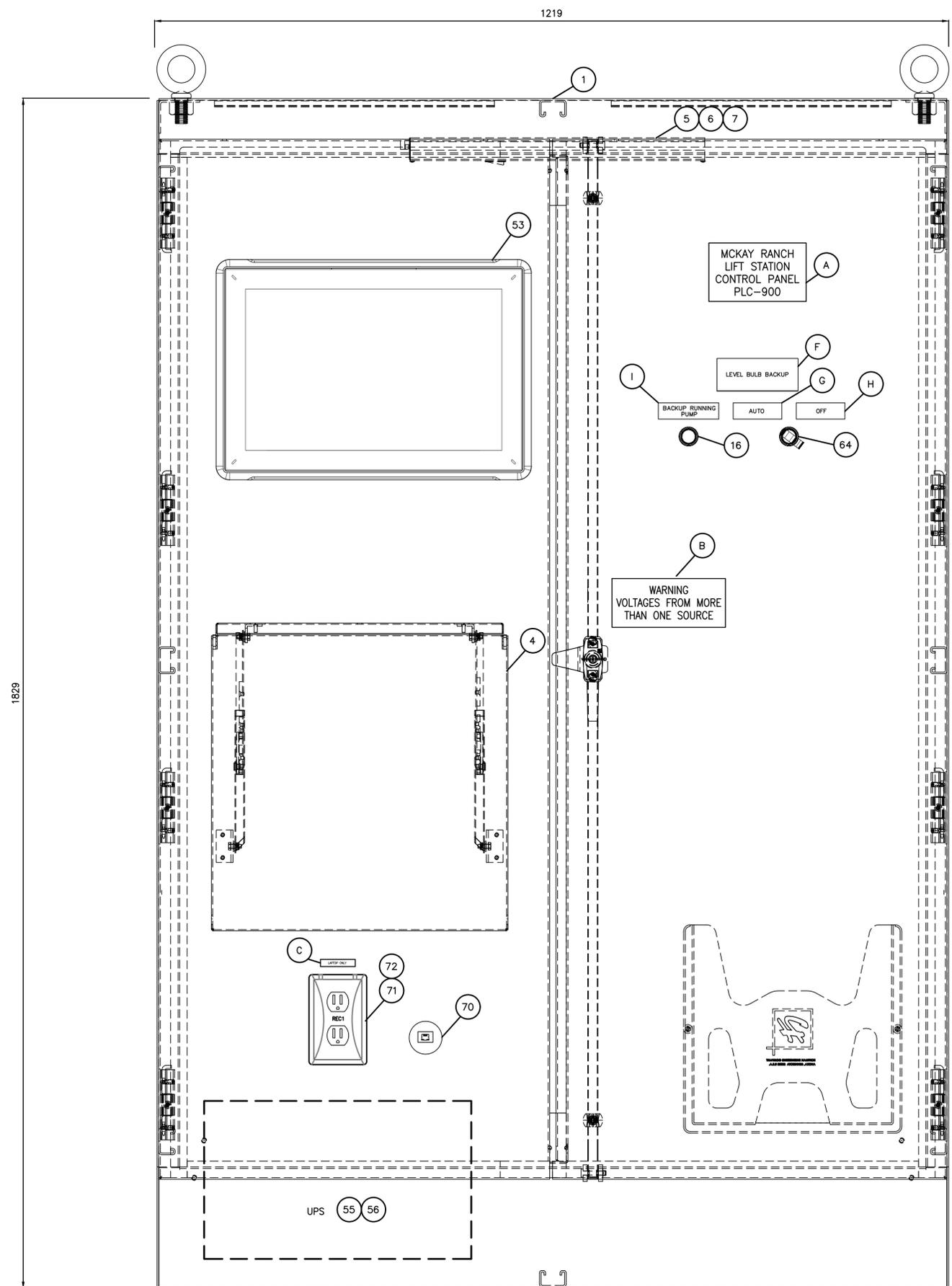
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

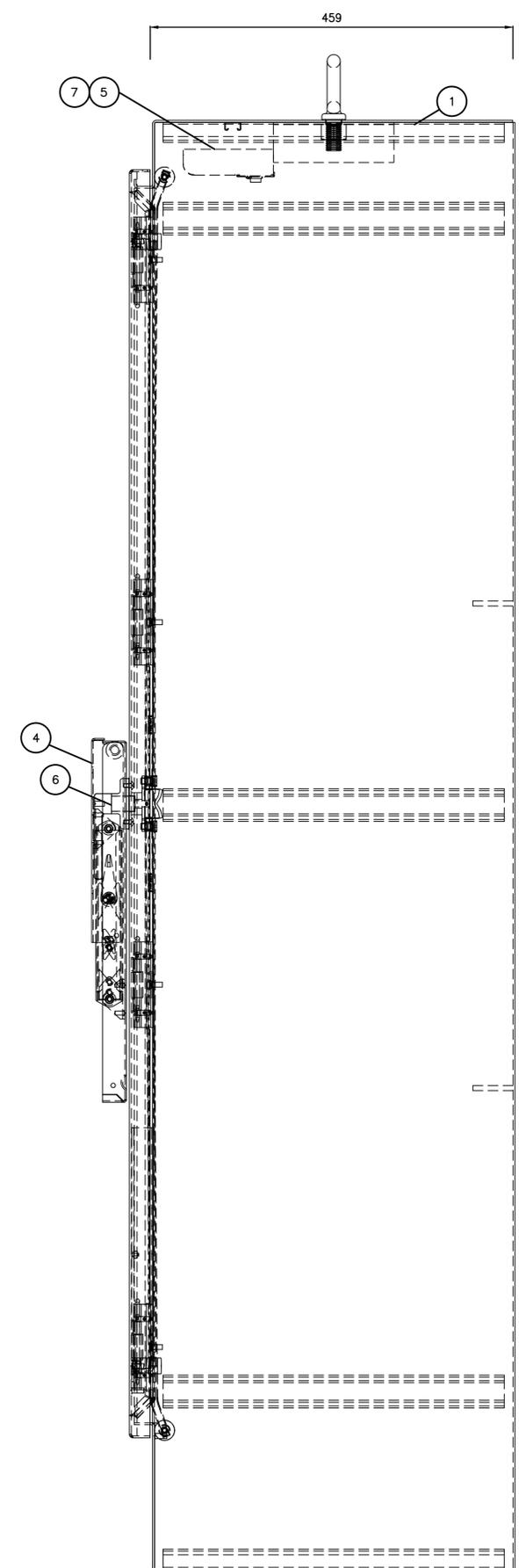
Title
 PROCESS CONTROLS
 PLC CONTROL PANEL EXTERIOR LAYOUT

Project No. 1101000459	Scale 1:4	Sheet	Revision
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PC-101 0



1 CONTROL PANEL - FRONT VIEW
 PC-101 1:4



2 CONTROL PANEL - SIDE VIEW
 PC-101 1:4

Legend

Notes

- SEE PC-103 FOR PANEL BILL OF MATERIALS.
- INTRINSICALLY SAFE CIRCUITS IN THE PANEL MUST BE WIRED THROUGH A DEDICATED RACEWAY, AND BE PHYSICALLY SEPARATE FROM NON-INTRINSICALLY SAFE CIRCUITS. REFER TO CEC SECTION 18-068, CEC APPENDIX F, AND INSTRUMENT WIRING SPECIFICATIONS. LABEL DEDICATED RACEWAY WITH AN "IS ONLY" LABEL.
- RECEPTACLE 3 TO BE USED FOR POWERING OF WIRELESS COMMUNICATIONS EQUIPMENT.

Revision	By	Appd.	YY.MM.DD
E			
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B	ISSUED FOR TENDER	OL	DH 2026.03.13
A	ISSUED FOR 95% REVIEW	OL	DH 2026.02.13
Issued			

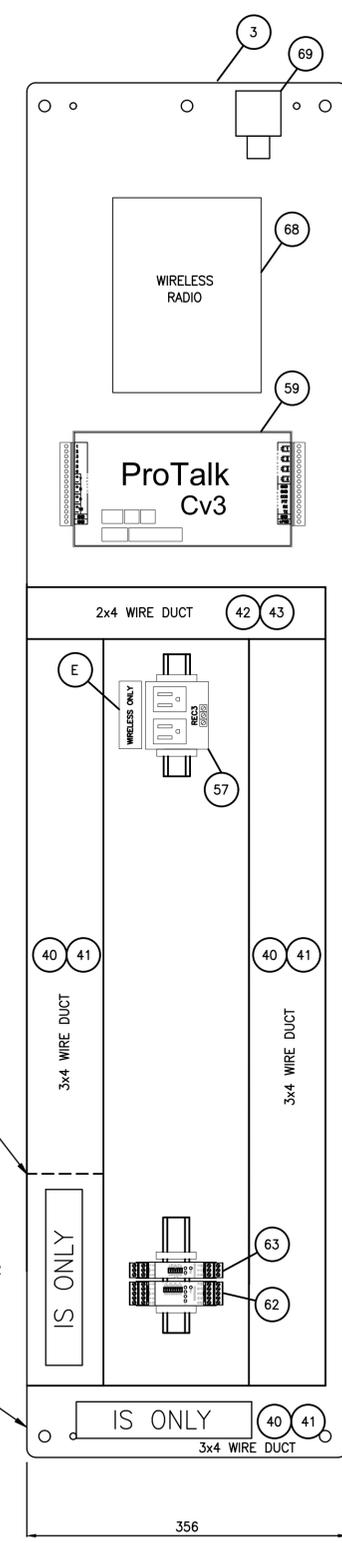
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

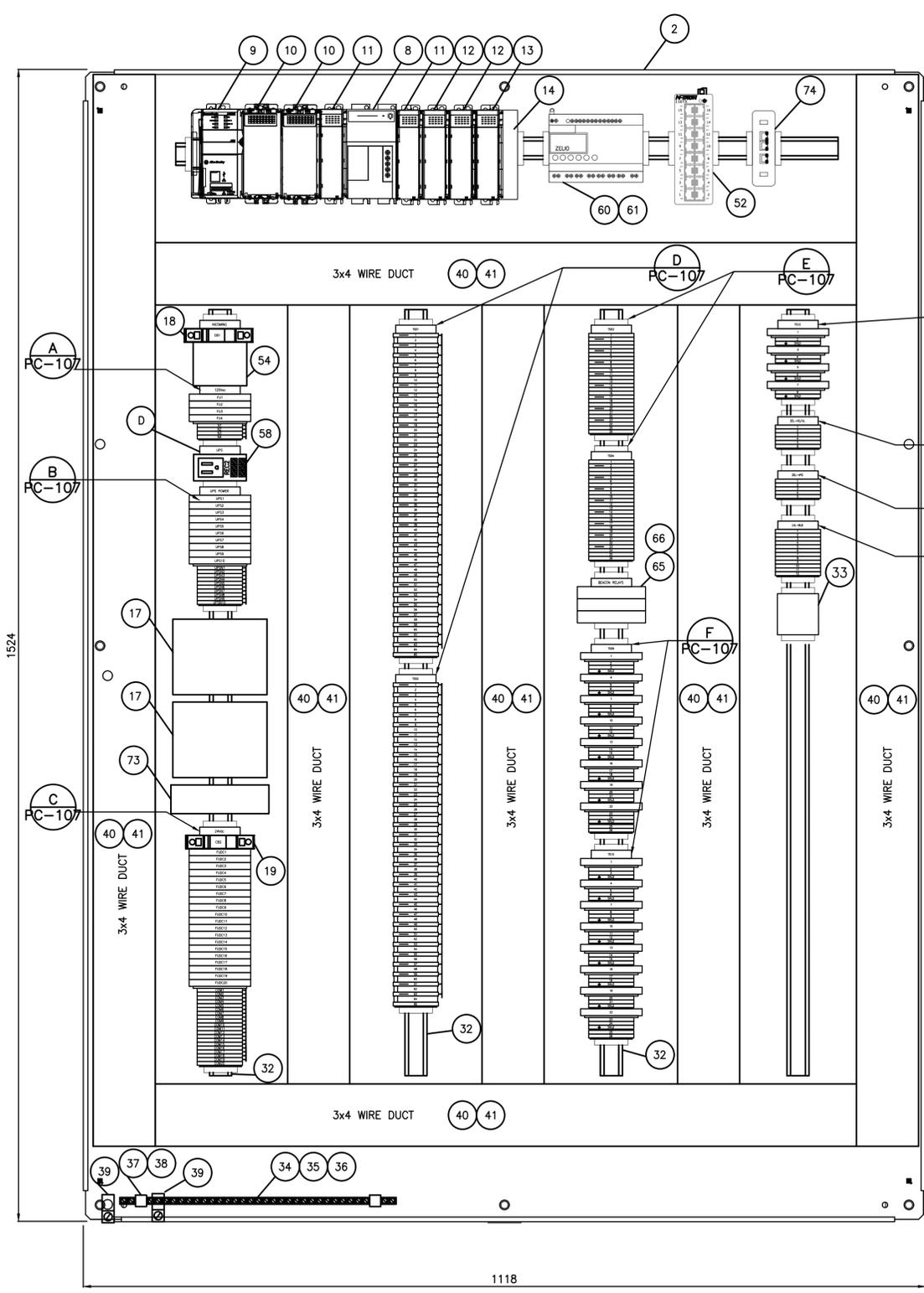
Blackfalds, Alberta
 Title
 PROCESS CONTROLS
 PLC CONTROL PANEL INTERIOR LAYOUT

Project No. 1101000459 Scale 1:4
 Drawing No. Sheet Revision

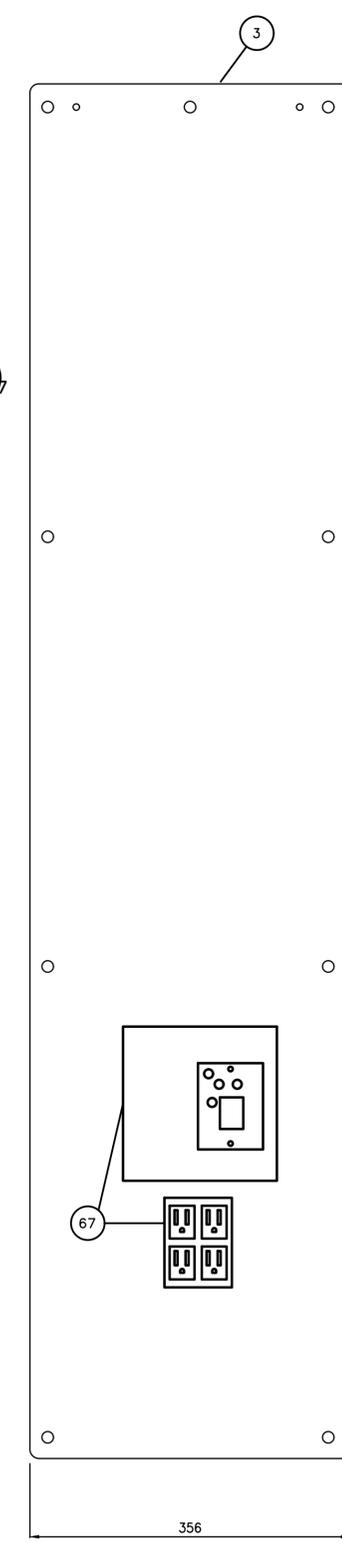
PC-102 0



1 CONTROL PANEL - LEFT SIDE PANEL
 PC-102 1:4



2 CONTROL PANEL - BACK PANEL
 PC-102 1:4



3 CONTROL PANEL - RIGHT SIDE PANEL
 PC-102 1:4

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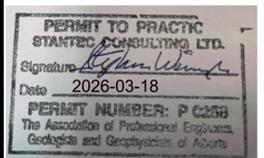
Legend

Notes

- CONTRACTOR TO COORDINATE FUSED TERMINAL BLOCK LED INDICATION VOLTAGE REQUIREMENTS WITH RESPECTIVE CIRCUIT VOLTAGE APPLICATION TO PROVIDE FOR PROPER RATED FUSED TERMINAL BLOCKS COMPLETE WITH LED INDICATION.

Revision	By	Appd.	YY.MM.DD
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Permit-Seal



Client/Project
BLACKFALDS
ALBERTA
MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
PROCESS CONTROLS
PLC CONTROL PANEL BILL OF
MATERIALS

Project No.	Scale	
1101000459	NO SCALE	
Drawing No.	Sheet	Revision

PC-103 0

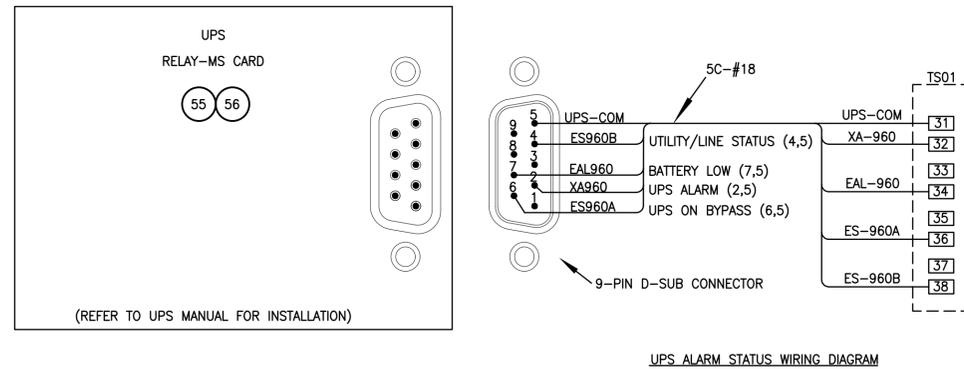
ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
1	TYPE 12 ENCLOSURE (72X36X18)	HOFFMAN	A724818FSG	1
2	FULL SIZE MOUNTING PANEL	HOFFMAN	A72P48F1	1
3	SIDE MOUNTING PANEL	HOFFMAN	A72SMP14	2
4	LAPTOP FOLDING SHELF	HOFFMAN	AA61SHLF1818	1
5	120 VAC LIGHT KIT	HOFFMAN	LEDA1S35	1
6	DOOR SWITCH	HOFFMAN	ALFSWD	1
7	FLUORESCENT LIGHT BULB	HOFFMAN	F8T5	1
8	PLC POWER SUPPLY	AB	1769-PA4	2
9	COMPACTLOGIX CONTROLLER	AB	1769-L33ER	1
10	DC DIGITAL INPUT MODULE	AB	1769-IQ32	2
11	RELAY OUTPUT MODULE, INDIVIDUALLY ISOLATED	AB	1769-OW8I	2
12	ANALOG INPUT MODULE	AB	1769-IF8	2
13	ANALOG OUTPUT MODULE	AB	1769-OF4CI	1
14	CHASSIS END BRACKET, RIGHT	AB	1769-ECR	1
15	PLC PROCESSOR MEMORY BACKUP CARD	AB	1784-SD1	1
16	24VDC LED RED PILOT LIGHT	AB	800T	1
17	24VDC POWER SUPPLY 20A	WEIDMULLER	2486100000	2
18	15A SINGLE POLE CIRCUIT BREAKER	WEIDMULLER	BR1B15UC	2
19	10A SINGLE POLE CIRCUIT BREAKER	WEIDMULLER	BR1B10UC	1
20	WSI 4LD FUSED TERMINAL BLOCK C/W LED INDICATOR	WEIDMULLER	1886590000/1886570000	AS REQ.
21	WDU 2.5 FEED-THROUGH TERMINAL BLOCK	WEIDMULLER	1020000000	AS REQ.
22	WTR 2.5 KNIFE SWITCH TERMINAL BLOCK	WEIDMULLER	1855610000	AS REQ.
23	WPE 1.5/2Z PROTECTIVE EARTH TERMINAL	WEIDMULLER	1016500000	AS REQ.
24	WQB B/24 CROSS CONNECTION STRIPS	WEIDMULLER	1579060000	AS REQ.
25	SCHT 5S GROUP LABEL CARRIER	WEIDMULLER	1631930000	AS REQ.
26	STR 5S PROTECTIVE STRIPS	WEIDMULLER	1631940000	AS REQ.
27	WEW 35/2 END BRACKET	WEIDMULLER	1061200000	AS REQ.
28	WAP END PLATE (WDUS)	WEIDMULLER	1050000000	AS REQ.
29	WAP END PLATE (WSTS)	WEIDMULLER	1880450000	AS REQ.
30	WS 12/5 TERMINAL MARKERS, CUSTOM NUMBERS	WEIDMULLER	1609870000	AS REQ.
31	WS 12/6 TERMINAL MARKERS, CUSTOM NUMBERS	WEIDMULLER	1609910000	AS REQ.
32	DIN RAIL TS35 SLOTTED	WEIDMULLER	514500000	AS REQ.
33	FUSE HOLDER (DIN RAIL MOUNT)	WEIDMULLER	7914760001	1
34	GROUND BAR NSCH 15X2 80A	WEIDMULLER	280200000	1
35	PRESSURE PIECE DKSUE	WEIDMULLER	280100000	AS REQ.
36	CLAMPING SCREW BFCM M5X8	WEIDMULLER	296700000	AS REQ.
37	BUSBAR HOLDER BASE SH1	WEIDMULLER	401460000	AS REQ.
38	BUSBAR HOLDER CLIP SH1	WEIDMULLER	635960000	AS REQ.
39	GROUND LUG #2/0	T&B	ADR21	4
40	WIRE DUCT 3"x4"	PANDUIT	G3X4LG6	AS REQ.
41	3" WIRE DUCT COVER	PANDUIT	C3LG6	AS REQ.
42	WIRE DUCT 2"x4"	PANDUIT	G2X4LG6	AS REQ.
43	2" WIRE DUCT COVER	PANDUIT	C2LG6	AS REQ.
44	1A GLASS FUSE	BUSSMANN	GMA-1-R	AS REQ.
45	2A GLASS FUSE	BUSSMANN	GMA-2-R	AS REQ.
46	4A GLASS FUSE	BUSSMANN	GMA-4-R	AS REQ.
47	5A GLASS FUSE	BUSSMANN	GMA-5-R	AS REQ.
48	10A GLASS FUSE	BUSSMANN	GMA-10-R	AS REQ.
49	15A GLASS FUSE	BUSSMANN	GMA-15-R	AS REQ.
50	200mA GLASS FUSE	WEIDMULLER	430400000	AS REQ.
51	WSI 6LD FUSED TERMINAL BLOCK C/W LED INDICATION	WEIDMULLER	2562740000	AS REQ.
52	16 PORT ETHERNET SWITCH, C/W DIN MOUNT OPTION	N-TRON	116TX	1
53	18 INCH PANEL C/W IGNITION EDGE	TEGUAR	TP-7045-18	1
54	SURGE PROTECTION DEVICE (SPD) 120VAC	TOTAL PROTECTION SOLUTIONS	TK-LTE120-15A-DIN2-R	1
55	UNINTERRUPTIBLE POWER SUPPLY (UPS)	EATON POWERWARE	9SX1500	1
56	UPS RELAY OUTPUT CARD	EATON POWERWARE	RELAY-MS	1
57	120VAC RAIL MOUNT DUPLEX RECEPTACLE	WEIDMULLER	6720005421	1
58	120VAC RAIL MOUNT SIMPLEX RECEPTACLE	WEIDMULLER	9915480000	1
59	PROTALK CV3 CELLULAR ALARM DIALER C/W INTERNAL BATTERY BACKUP	BARNETT ENGINEERING	B1277; INT BATT	1
60	ZELIO LOGIC SMART RELAY W DISPLAY, 24VDC, 12 DI, 8 RELAY	SCHNEIDER ELECTRIC	SR2B201BD	1
61	ZELIO LOGIC SMART RELAY USB PC CONNECTING CABLE	SCHNEIDER ELECTRIC	SR2USB01	1
62	INTRINSIC SAFETY BARRIER 2-CHANNEL, C/W HART, ISOLATING TRANSDUCER/REPEATER, 24VDC	TURCK	IM33-22EX-HI/24VDC	1
63	INTRINSIC SAFETY BARRIER 2-CHANNEL, RELAY OUT, 24VDC	TURCK	IM1-22EX-R	1
64	2 POSITION 30.5MM SELECTOR SWITCH	AB	800T-H17A	3
65	OMRON RELAY WITH LED INDICATOR	OMRON	G2R-1-SND	3
66	OMRON RELAY SOCKET	OMRON	P2RF-05-E	3
67	UPS WRAP-AROUND BYPASS, 15A, 120VAC, C/W AUTOMATIC TRANSFER SWITCH AND FORM C OUTPUT	ALWAYS ON	BPS12015-ATS-DCC	1
68	RESERVED			
69	SURGE PROTECTION DEVICE / TRANSECTOR FOR RADIO	TBD	TBD	1
70	RJ45 CAT 6 ETHERNET DATA PORT	WEIDMULLER	IE-FCM-RJ45-C	1
71	120VAC DUPLEX RECEPTACLE	LEVITON	T5320-W	1
72	DUPLEX RECEPTACLE COVER	INTERMATIC	WP3100C	1
73	POWER SUPPLY REDUNDANCY MODULE	WEIDMULLER	2486100000	1
74	NETGATE SG-1100	NETGATE	SG-1100	1

1 BILL OF MATERIALS
PC-103 NO SCALE

NAMEPLATE SCHEDULE

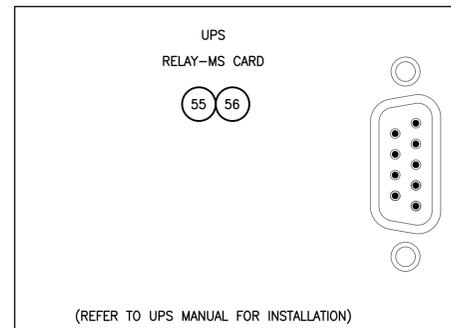
ITEM	TEXT DESCRIPTION	COLOUR	SIZE (WxH)	QTY
A	MCKAY RANCH/LIFT STATION/CONTROL PANEL/PLC-900	BLK/WHT Letters	150X110	1
B	WARNING/VOLTAGES FROM MORE/THAN ONE SOURCE	RED/WHT Letters	175X75	1
C	LAPTOP ONLY	BLK/WHT Letters	100X25	1
D	UPS	BLK/WHT Letters	75X25	1
E	WIRELESS ONLY	BLK/WHT Letters	100X25	1
F	LEVEL BULB BACKUP	BLK/WHT Letters	125X50	1
G	AUTO	BLK/WHT Letters	75X25	1
H	OFF	BLK/WHT Letters	75X25	1
I	BACKUP RUNNING PUMP	BLK/WHT Letters	75X25	1

2 NAMEPLATE SCHEDULE
PC-103 NO SCALE



UPS ALARM STATUS WIRING DIAGRAM

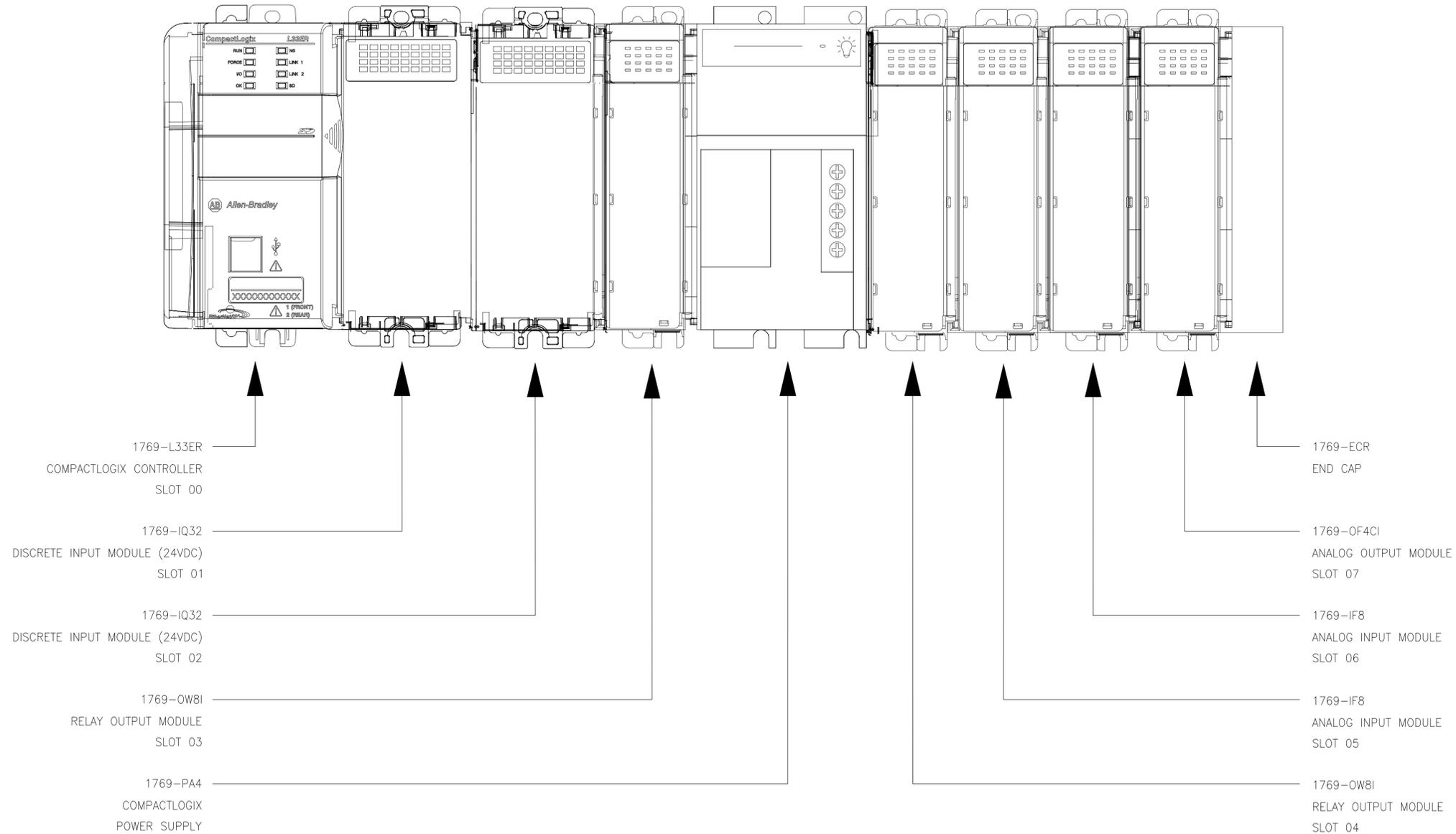
3 UPS RELAY CARD
PC-103 NO SCALE



(REFER TO UPS MANUAL FOR INSTALLATION)

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1 PLC CHASSIS LAYOUT
 PC-104 NO SCALE

Legend

Notes

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E			
D			
C			
B	ISSUED FOR TENDER	OL	DH 2026.03.13
A	ISSUED FOR 95% REVIEW	OL	DH 2026.02.13
Issued			

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 PROCESS CONTROLS
 PLC CHASSIS LAYOUT

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-104	Sheet 0
Revision	

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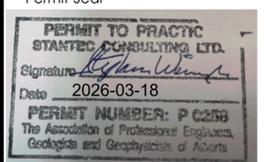
Legend

Notes

1. WIRELESS EQUIPMENT SHALL BE POWERED VIA THE RECEPTACLE FED BY UPS6.

ANTICIPATED DRAWS			
SOURCE	CURRENT	POWER (W)	
CB1	5A	600	
120VAC UPS	4.2A	500	
24VDC POWER SUPPLY	4.8A	115	

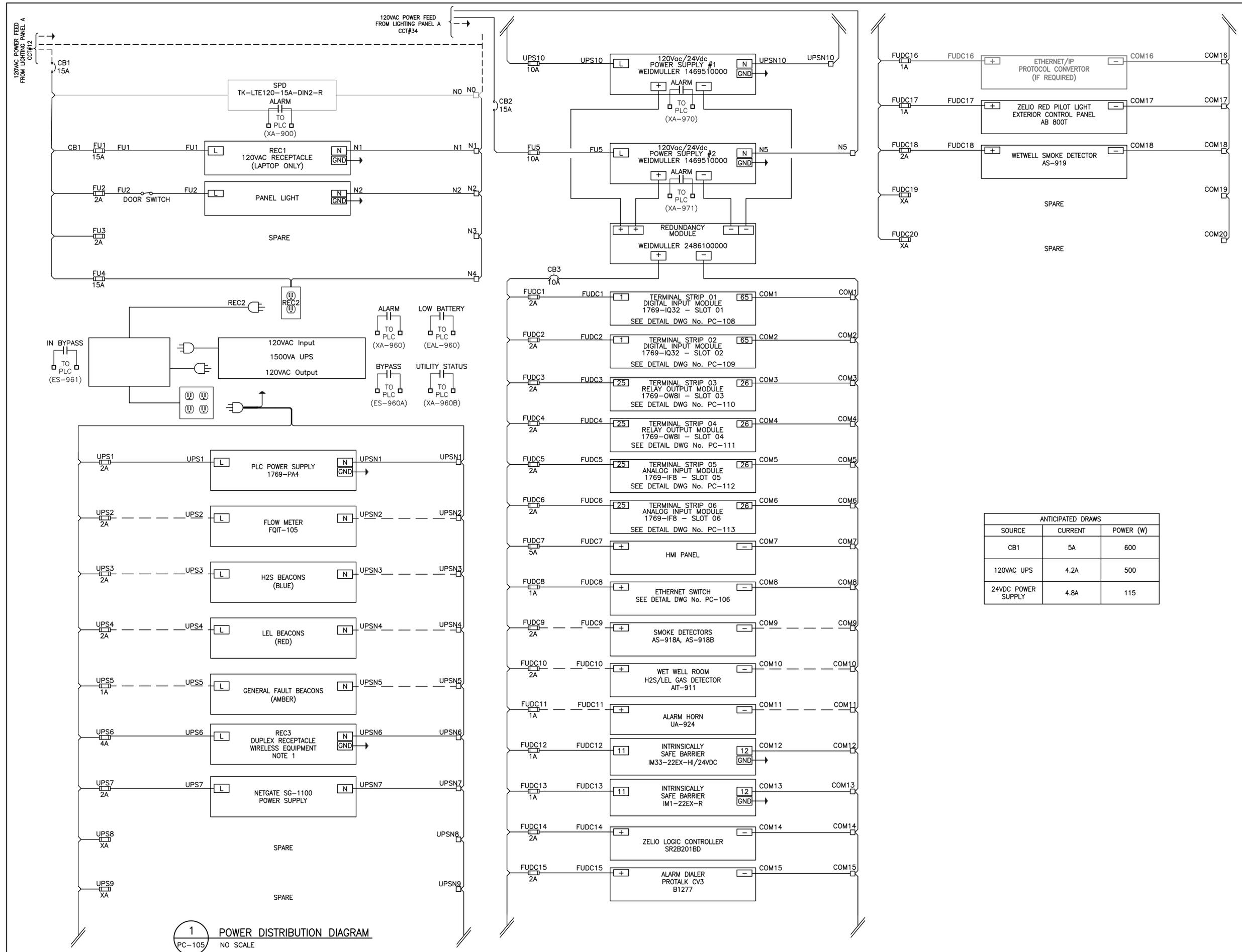
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta
 Title
**PROCESS CONTROLS
 POWER DISTRIBUTION DIAGRAM**

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-105	Sheet 0



1 POWER DISTRIBUTION DIAGRAM
 NO SCALE

Legend

Notes

1. PROTALK ALARMS GENERATED VIA DIGITAL OUTPUTS FROM PLC. TYPE AND NUMBER OF ALARMS GENERATED SHALL BE DETERMINED BY THE CLIENT. CONTRACTOR TO COORDINATE WITH CLIENT FOR SPECIFIC ALARM CALLOUTS.
2. CONTRACTOR RESPONSIBLE FOR TESTING AND CALLOUTS OF ALL ALARMS OVER CELLULAR NETWORK. COORDINATE WITH CLIENT AND OTHERS FOR TESTING. ENSURE SYSTEM WILL CALL OUT IN ALARM CONDITION.
3. PROTALK ALARMS TO BE WIRED NORMALLY CLOSED.

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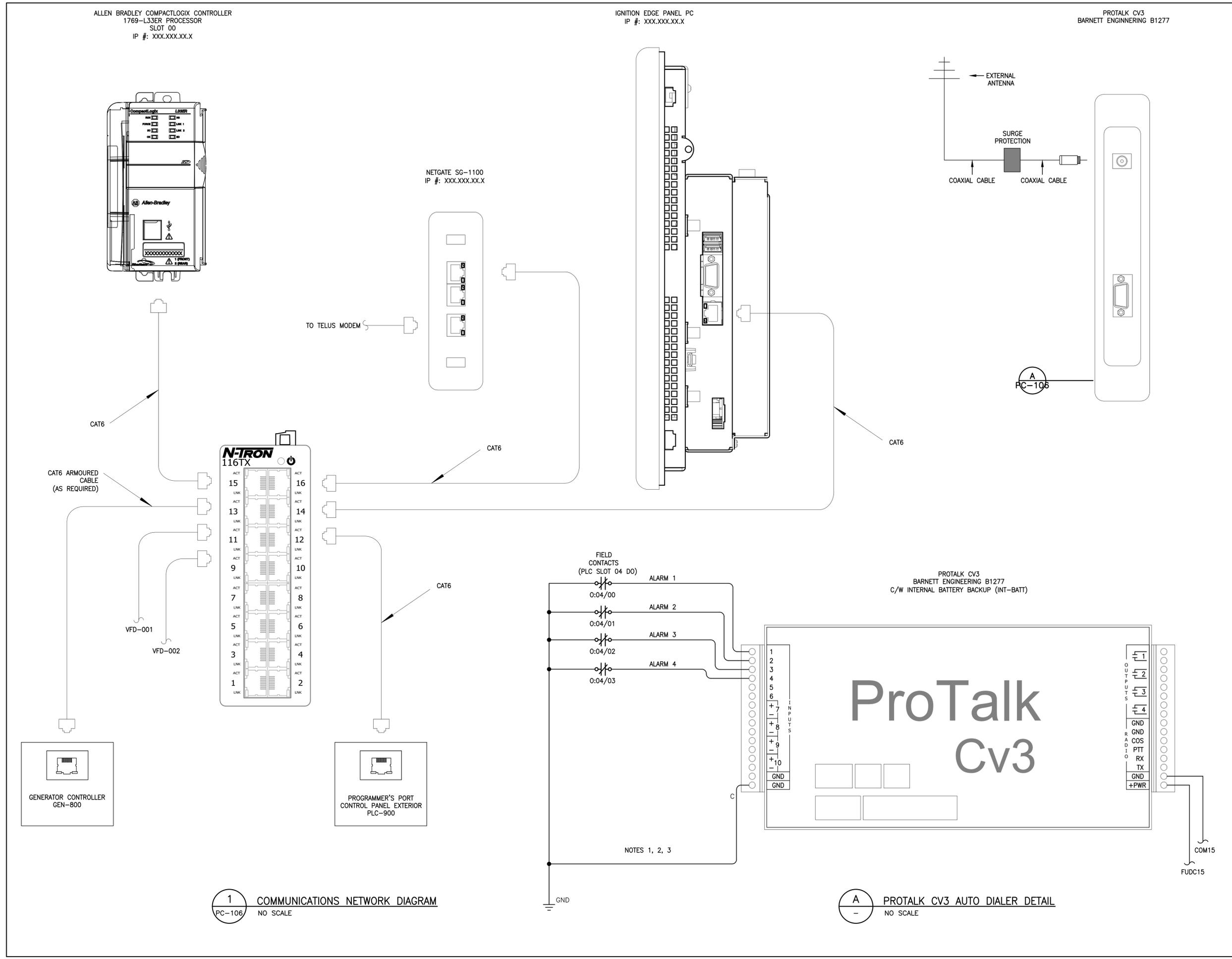
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 PROCESS CONTROLS
 NETWORK COMMUNICATIONS
 SCHEMATIC

Project No.	Scale
1101000459	NO SCALE
Drawing No.	Sheet
PC-106	Revision
	0



1 COMMUNICATIONS NETWORK DIAGRAM
 NO SCALE

A PROTALK CV3 AUTO DIALER DETAIL
 NO SCALE

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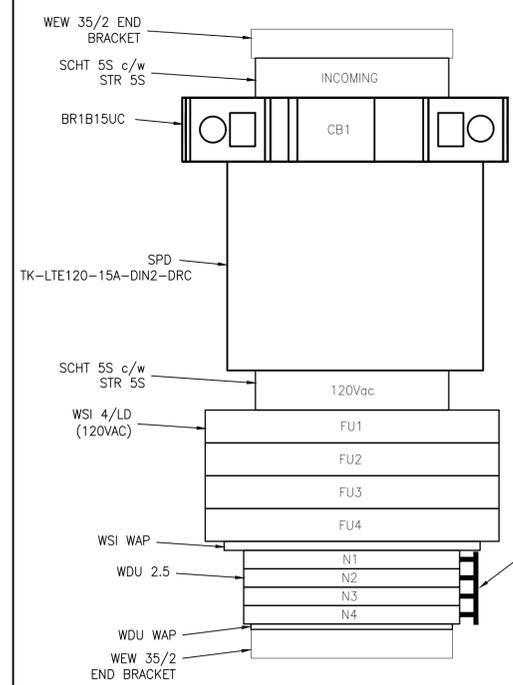
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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

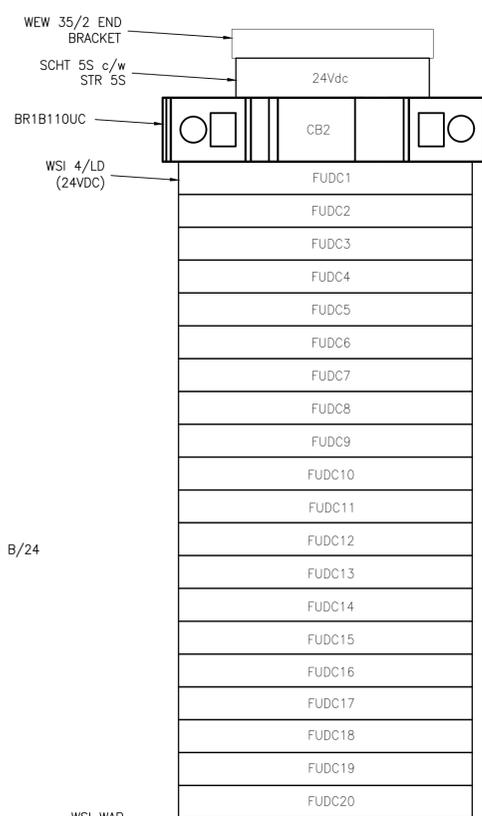
Blackfalds, Alberta

Title
 PROCESS CONTROLS
 PLC PANEL TERMINAL STRIP DETAILS

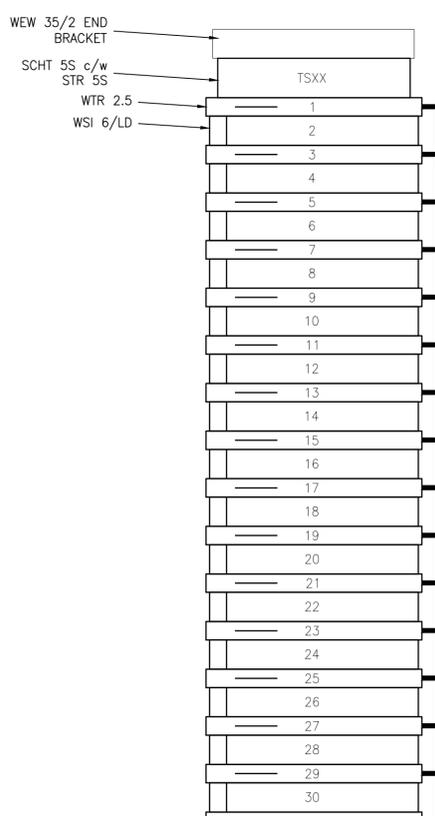
Project No. 1101000459 Scale NO SCALE
 Drawing No. Sheet Revision
 PC-107 0



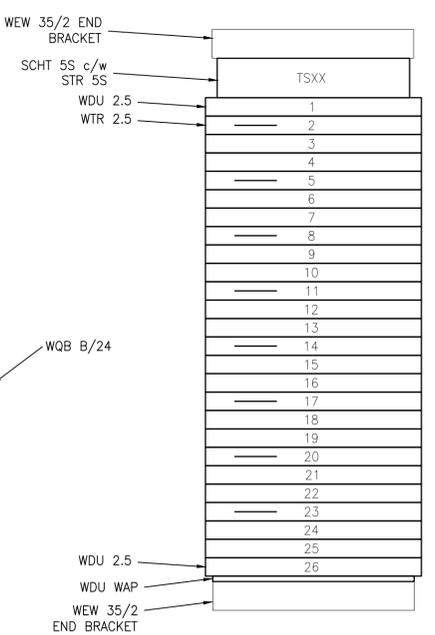
A INCOMING 120VAC
 PC-102 PC-107 NO SCALE



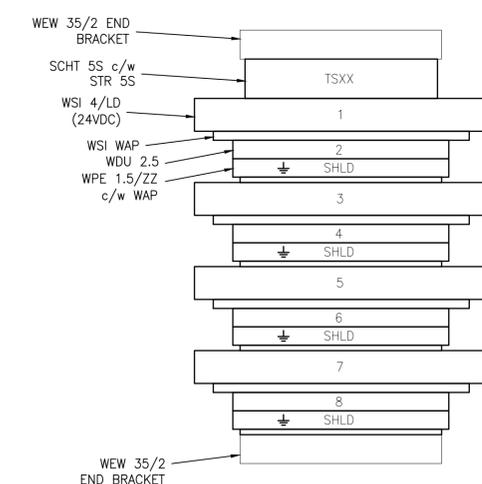
B UPS 120VAC
 PC-102 PC-107 NO SCALE



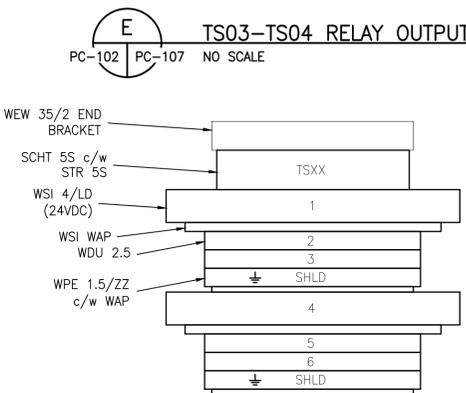
C 24VDC TERMINAL STRIP
 PC-102 PC-107 NO SCALE



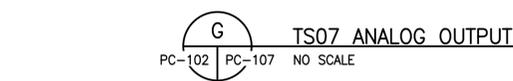
D TS01-TS02 DIGITAL INPUT
 PC-102 PC-107 NO SCALE



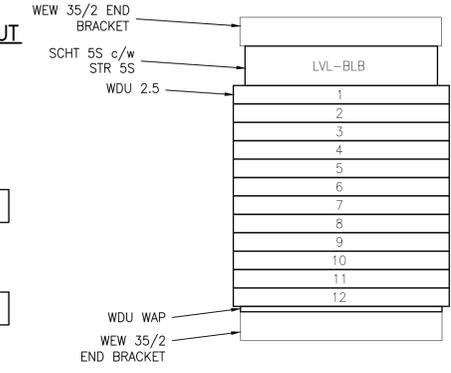
E TS03-TS04 RELAY OUTPUT
 PC-102 PC-107 NO SCALE



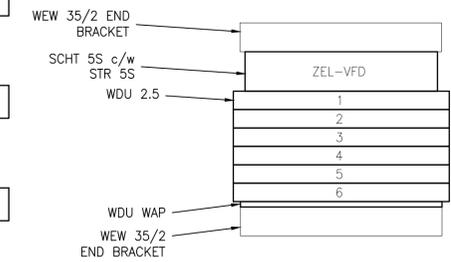
F TS05-TS06 ANALOG INPUT
 PC-102 PC-107 NO SCALE



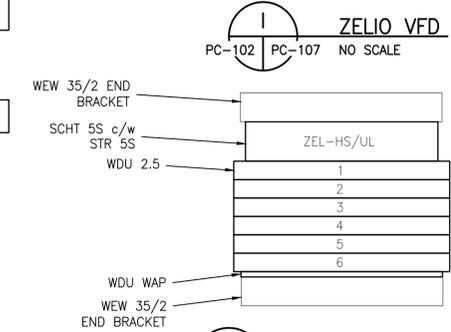
G TS07 ANALOG OUTPUT
 PC-102 PC-107 NO SCALE



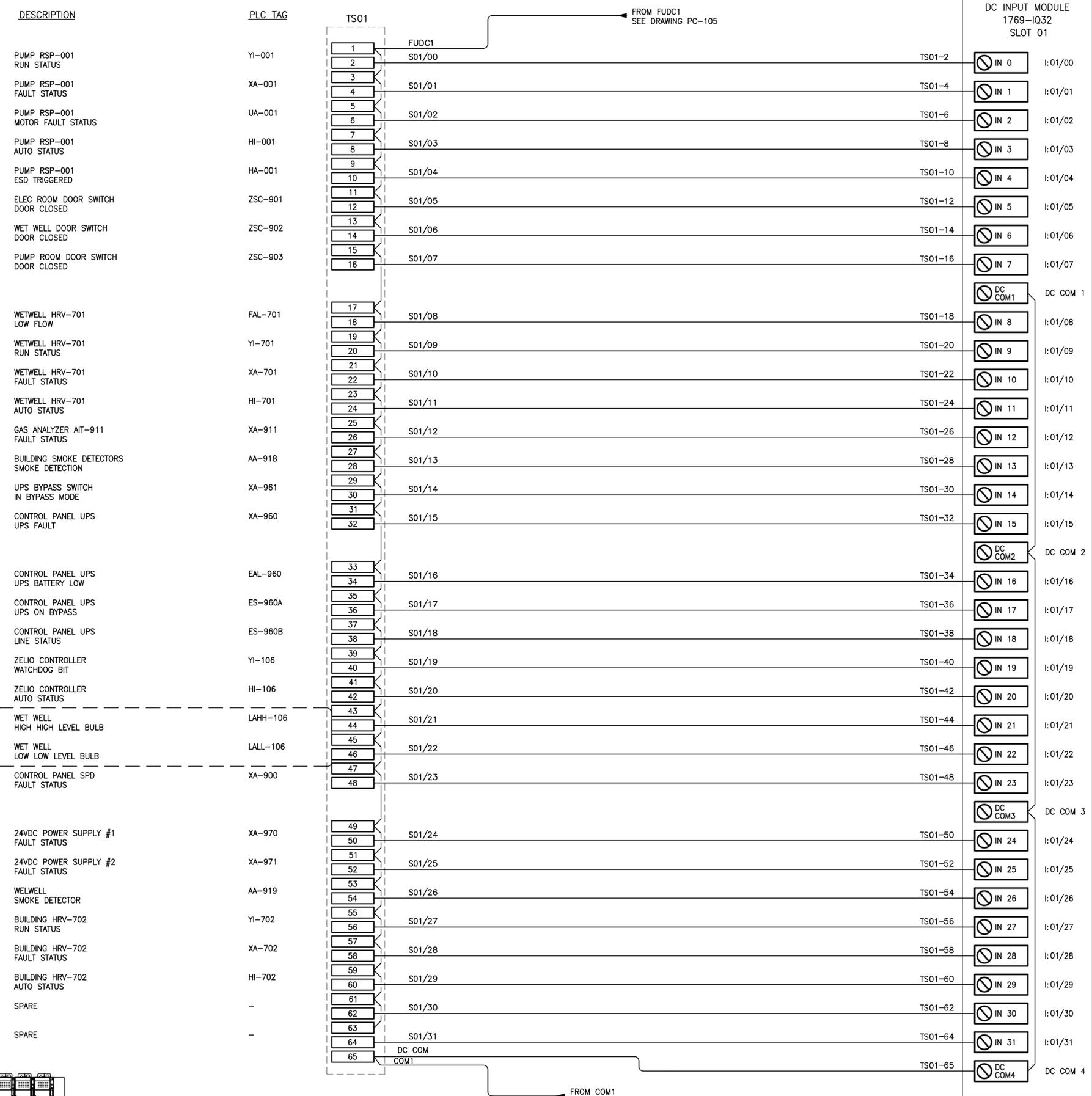
H LEVEL BULB TERMINAL STRIP
 PC-102 PC-107 NO SCALE



I ZELIO VFD
 PC-102 PC-107 NO SCALE



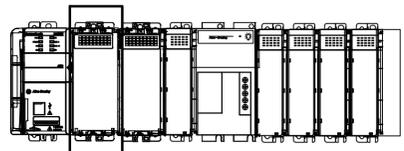
J ZELIO SWITCH/LIGHT
 PC-102 PC-107 NO SCALE



SEE DETAILS ON PC-501

FROM FUDC1 SEE DRAWING PC-105

FROM COM1 SEE DRAWING PC-105



1 DIGITAL INPUT MODULE SLOT 01
 NO SCALE
 PC-108

Legend

Notes

Revision	By	Appd.	YY.MM.DD
E			
D			
C			
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A			

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 PROCESS CONTROLS
 DIGITAL INPUT MODULE SLOT 01

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-108	Sheet 0

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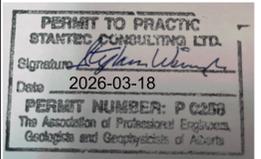
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B	ISSUED FOR TENDER	OL	DH 2026.03.13
A	ISSUED FOR 95% REVIEW	OL	DH 2026.02.13

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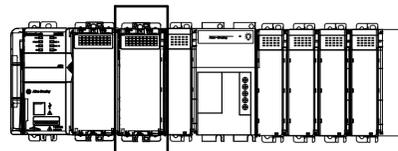
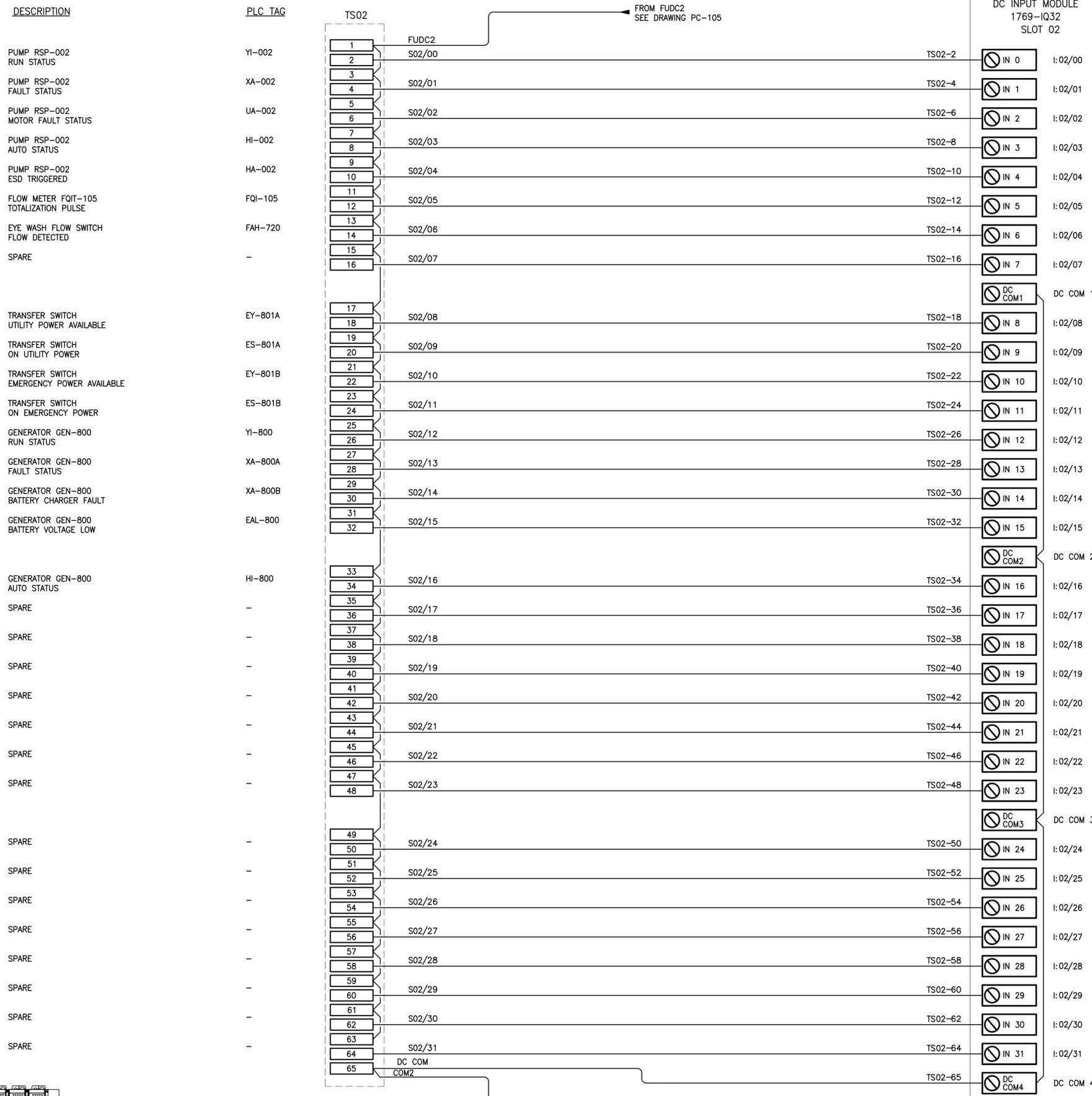


Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 PROCESS CONTROLS
 DIGITAL INPUT MODULE SLOT 2

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-109	Sheet Revision 0



1
 PC-109 DIGITAL INPUT MODULE SLOT 02
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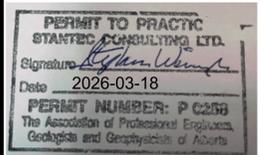
Legend

Notes

- SEE PC-502 FOR DETAILED PUMP WIRING DIAGRAM.

Revision	By	Appd.	YY.MM.DD
E	---	---	---
D	---	---	---
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B	ISSUED FOR TENDER	OL	DH 2026.03.13
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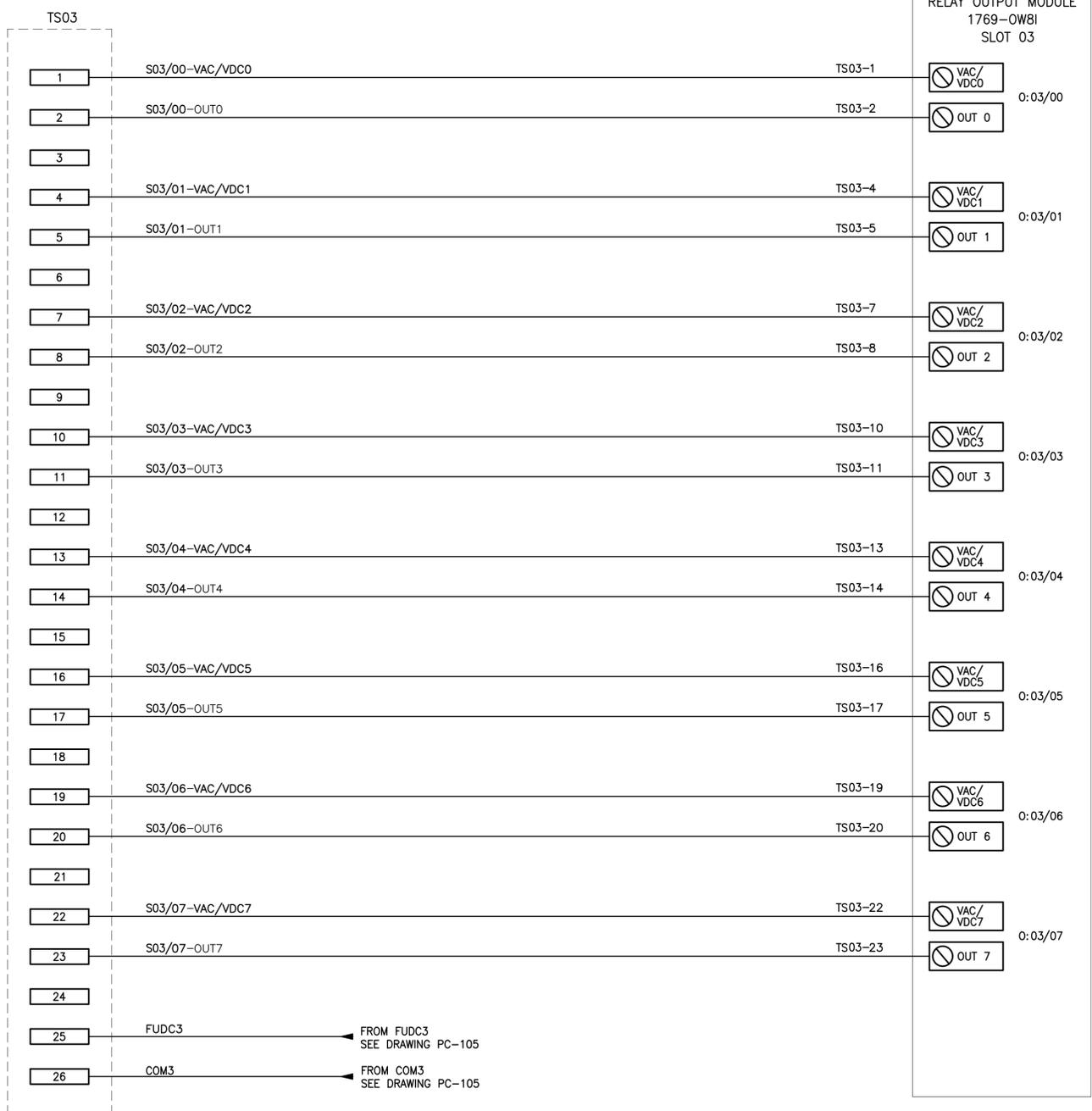


Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

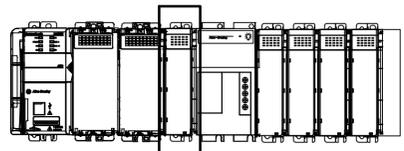
Blackfalds, Alberta
 Title
 PROCESS CONTROLS
 RELAY OUTPUT MODULE SLOT 03

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-110	Sheet 0

DESCRIPTION	PLC TAG
NOTE 1 PUMP RSP-001 RUN COMMAND	YC-001
NOTE 1 PUMP RSP-002 RUN COMMAND	YC-002
HRV-701 RUN HIGH SPEED COMMAND	SCH-701
BLUE BEACONS HIGH H2S GAS	US-921
RED BEACONS HIGH LEL GAS	US-922
AMBER BEACONS GENERAL FAULT	US-923
ALARM HORN AUDIBLE ALARM	US-924
PLC WATCHDOG BIT TO ZELIO	XY-106



1 RELAY OUTPUT MODULE SLOT 03
 PC-110 NO SCALE



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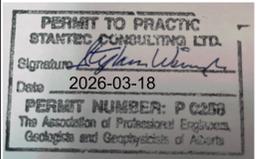
Legend

Notes

1. PROTALK ALARMS GENERATED VIA DIGITAL OUTPUTS FROM PLC. TYPE AND NUMBER OF ALARMS GENERATED SHALL BE DETERMINED BY THE CLIENT. CONTRACTOR TO COORDINATE WITH CLIENT FOR SPECIFIC ALARM CALLOUTS.
2. CONTRACTOR RESPONSIBLE FOR TESTING AND CALLOUTS OF ALL ALARMS OVER CELLULAR NETWORK. COORDINATE WITH CLIENT AND OTHERS FOR TESTING. ENSURE SYSTEM WILL CALL OUT IN ALARM CONDITION.
3. CONTRACTOR SHALL REDLINE ACTUAL ALARMS ON THIS DRAWING UPON SUBMISSION OF PLAN OF RECORD DRAWINGS.

Revision	By	Appd.	YY.MM.DD
E	---	---	---
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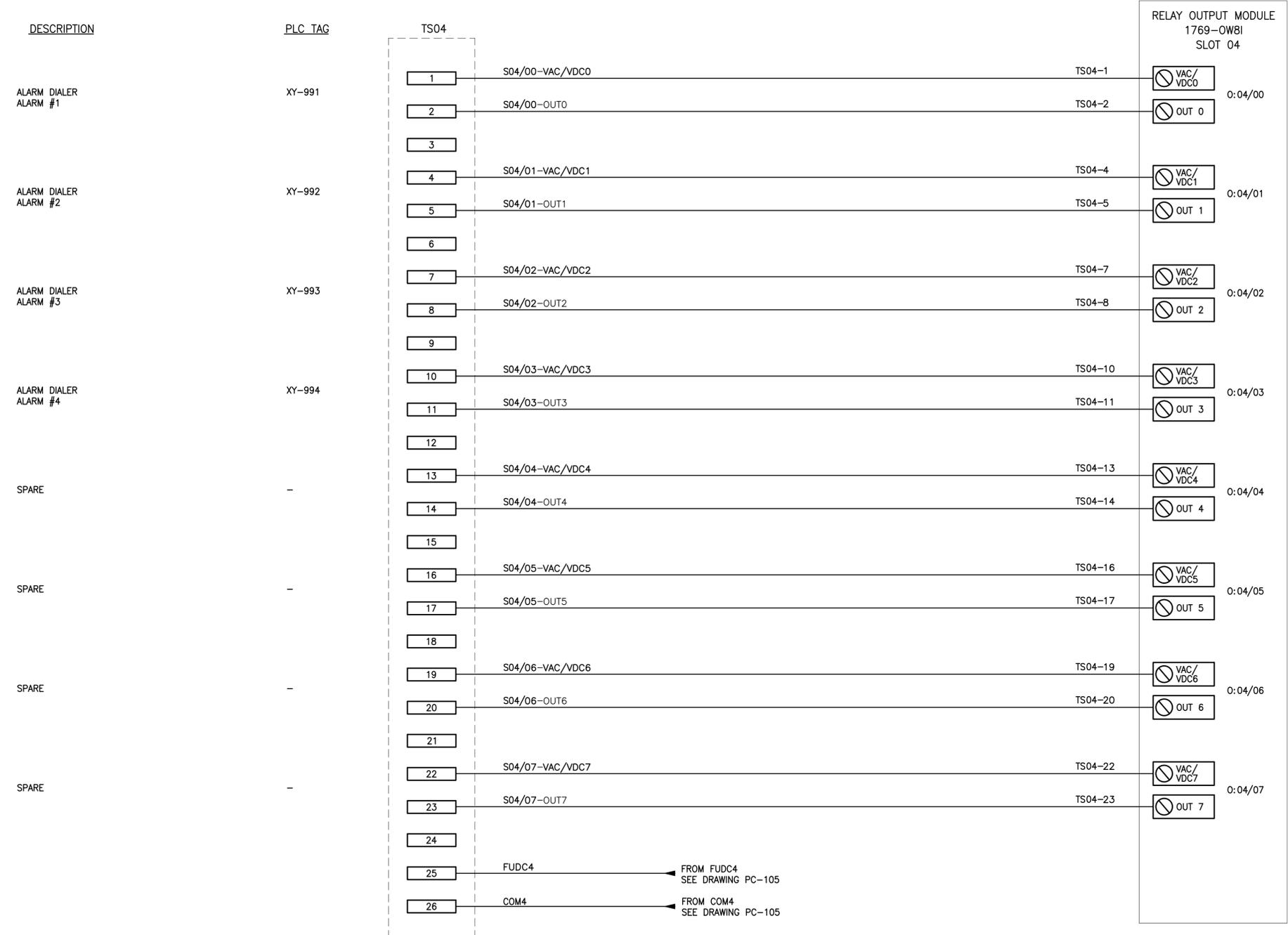


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BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

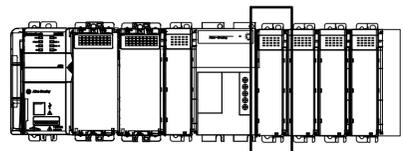
Blackfalds, Alberta

Title
 PROCESS CONTROLS
 RELAY OUTPUT MODULE SLOT 04

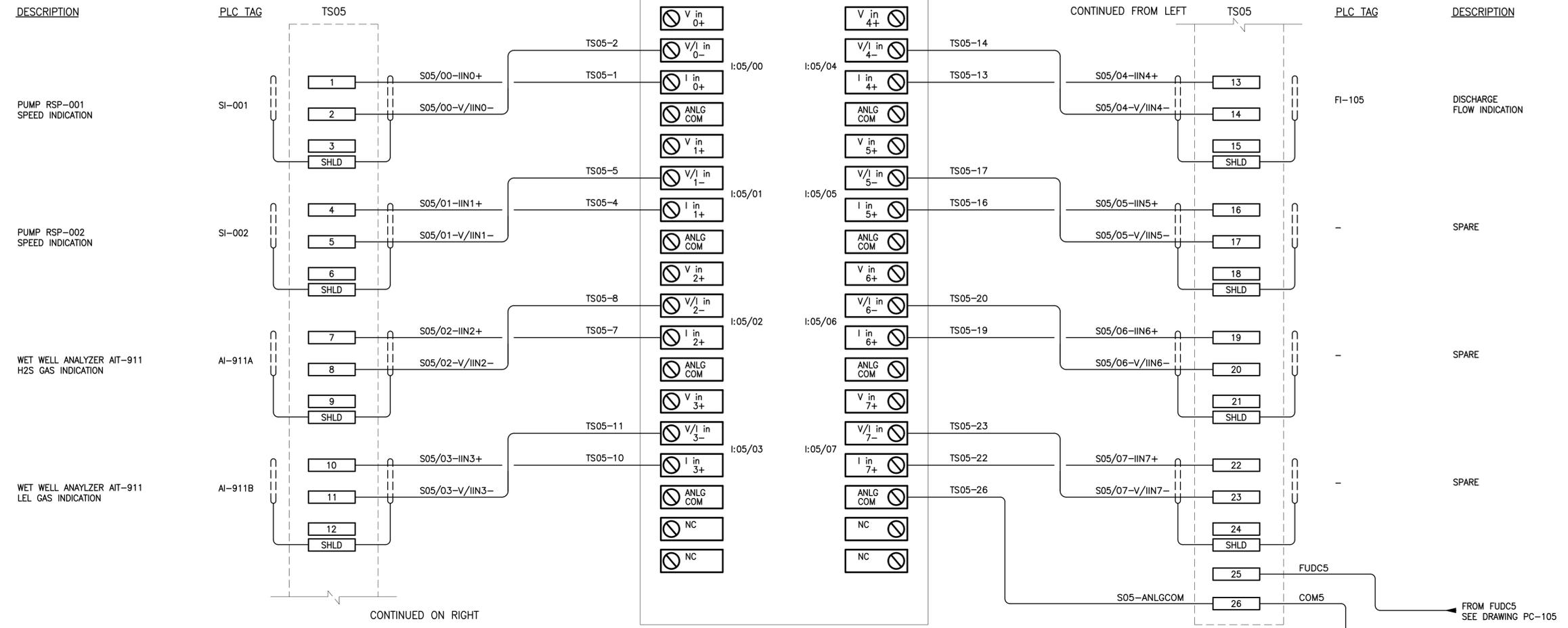
Project No. 1101000459	Scale NO SCALE
Drawing No. PC-111	Sheet 0
Revision	



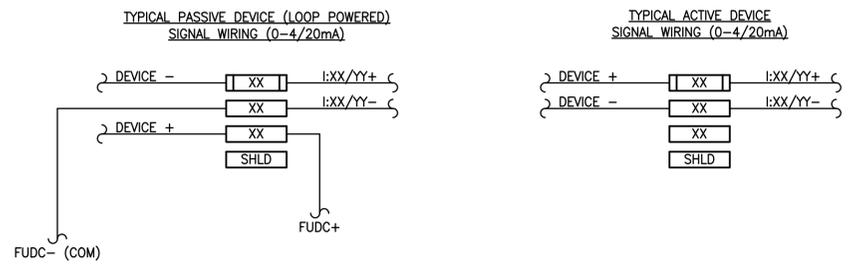
1 RELAY OUTPUT MODULE SLOT 04
 PC-111 NO SCALE



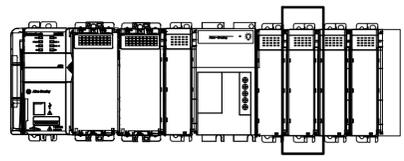
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1 ANALOG INPUT MODULE SLOT 05
 NO SCALE



2 TYPICAL PASSIVE/ACTIVE SIGNAL WIRING DIAGRAM
 NO SCALE



Legend

Notes

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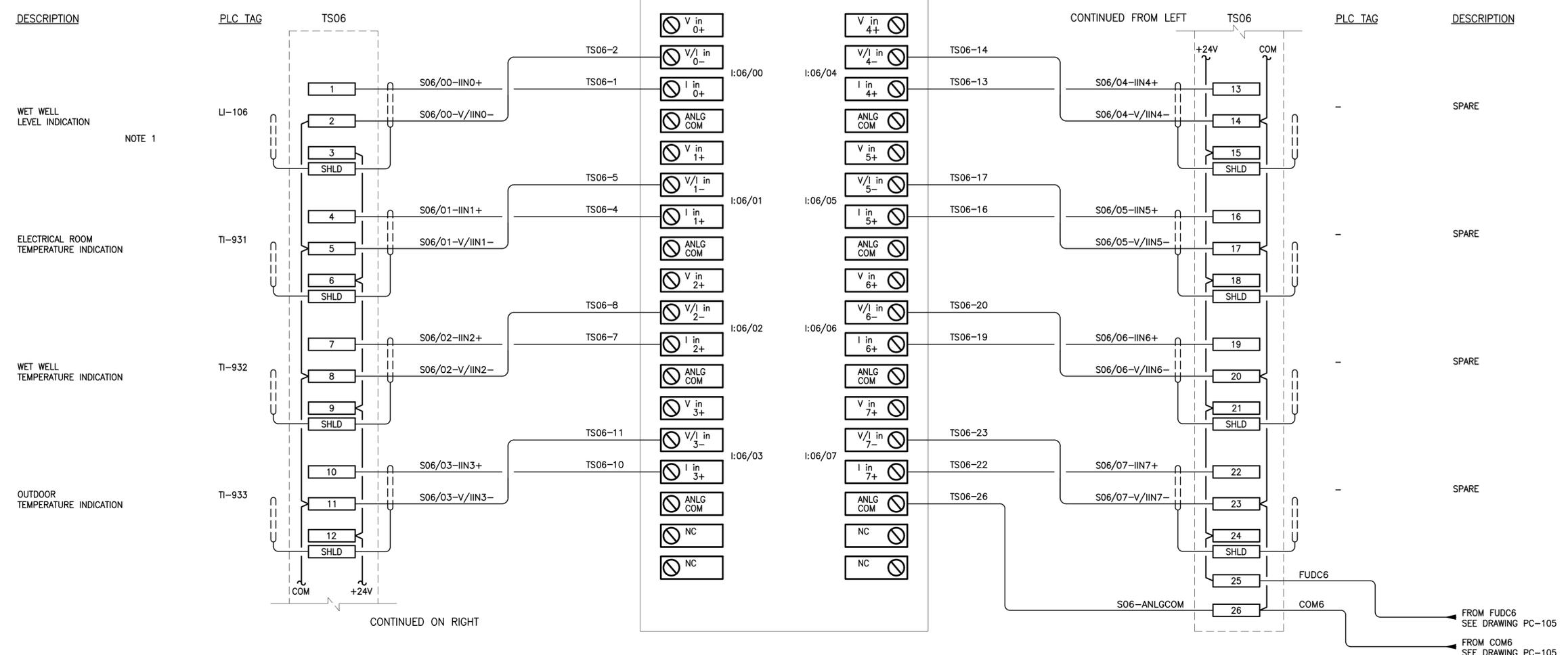
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

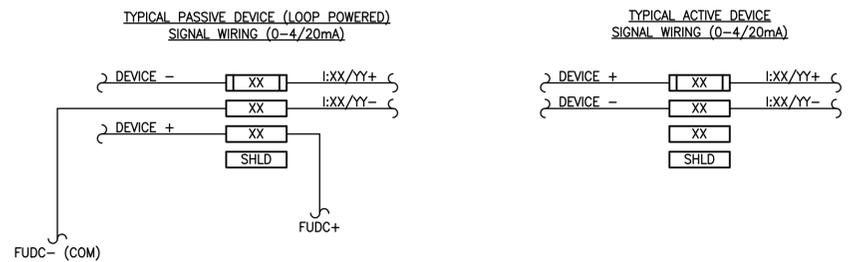
Title
 PROCESS CONTROLS
 ANALOG INPUT MODULE SLOT 05

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Drawing No. PC-112	Sheet 0

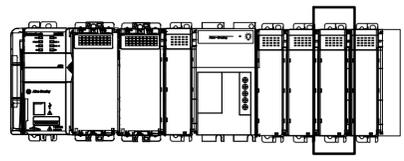
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1 ANALOG INPUT MODULE SLOT 06
 PC-113 NO SCALE



2 TYPICAL PASSIVE/ACTIVE SIGNAL WIRING DIAGRAM
 PC-113 NO SCALE



Legend

Notes

- LEVEL TRANSMITTER SHALL BE WIRED THROUGH INTRINSICALLY SAFE BARRIER INTERFACE.

Revision	By	Appd.	YY.MM.DD
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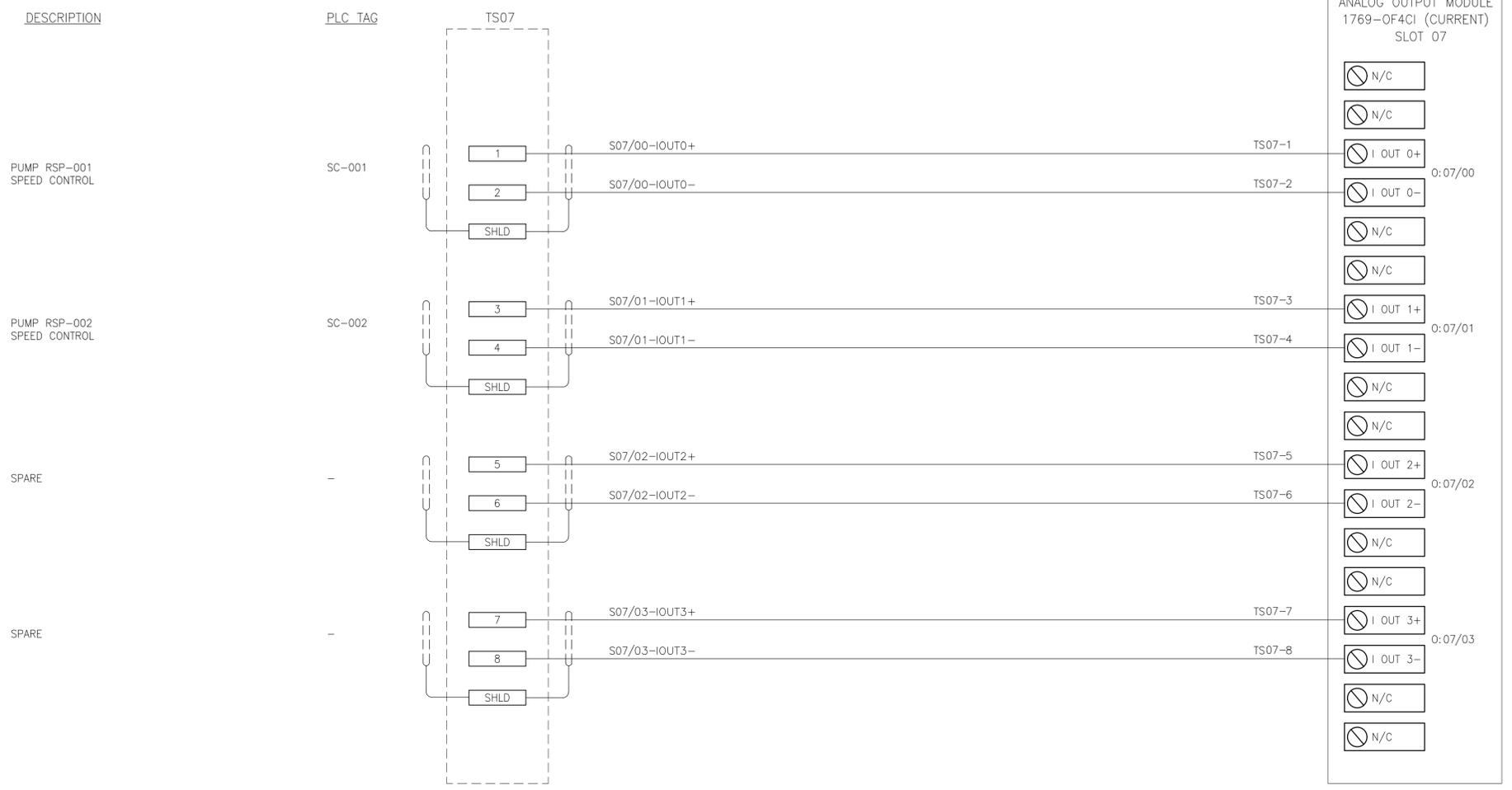
Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

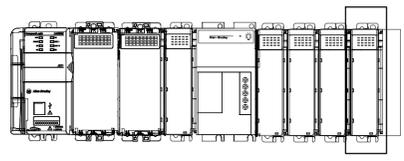
Title
 PROCESS CONTROLS
 ANALOG INPUT MODULE SLOT 06

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-113	Sheet 0

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1 ANALOG OUTPUT MODULE SLOT 07
 PC-114 NO SCALE

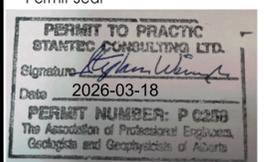


Legend

Notes

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A	OL	DH	2026.03.13
	OL	DH	2026.02.13

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Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
 PROCESS CONTROLS
 ANALOG OUTPUT MODULE SLOT 07

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-114	Sheet 0

FIELD DEVICE
PUMP LEVEL CONTROL
MANUFACTURER: FLYGT
MODEL No.: ENM-10

JUNCTION
BOX
LJB-106

ZELIO BACKUP CONTROLLER
MANUFACTURER: SCHNEIDER ELECTRIC
MODEL No: SR2B201BD

PROGRAMMABLE CONTROLLER
MANUFACTURER: ALLEN BRADLEY
MODEL No: 1769-L33ER



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www.stantec.com

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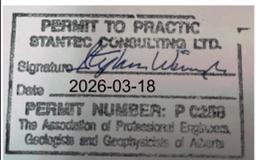
- TERMINAL BLOCK
- KNIFE SWITCH TERMINAL BLOCK
- FIELD TERMINAL
- PLC CONTROL PANEL TERMINAL
- YCF RUN COMMAND FIXED-SPEED

Notes

1. SEE PC-103 FOR BILL OF MATERIALS.
2. SEE CARD DRAWINGS FOR DETAILS REGARDING PLC TERMINATIONS.
3. ZELIO CONTROLLER AUTO/OFF SWITCH SHALL BE MOUNTED ON THE FRONT OF THE CONTROL PANEL, AS PER DRAWING PC-101. THE SWITCH ENABLES REDUNDANT LEVEL BACKUP CONTROL FOR THE WET WELL. WHEN THE SWITCH IS IN "AUTO", THE ZELIO CONTROLLER SHALL BE ENABLED TO RUN THE PROGRAMMED VFD'S (DUTY-STANDBY CONFIGURATION) UPON HIGH HIGH LEVEL BULB TRIP AND STOP ALL PUMPS UPON LOW LOW LEVEL BULB TRIP. WHEN SWITCH IS IN "OFF", THE VFD INPUTS FROM THE ZELIO SHALL BE INHIBITED AS PER THE DRAWINGS. SEE SPECIFICATIONS FOR ZELIO REQUIREMENTS.
4. ENSURE 24VDC ZELIO INPUTS ARE REFERENCED FROM THE SAME COM SYSTEM AS THE ZELIO INPUT POWER REFERENCE COM.

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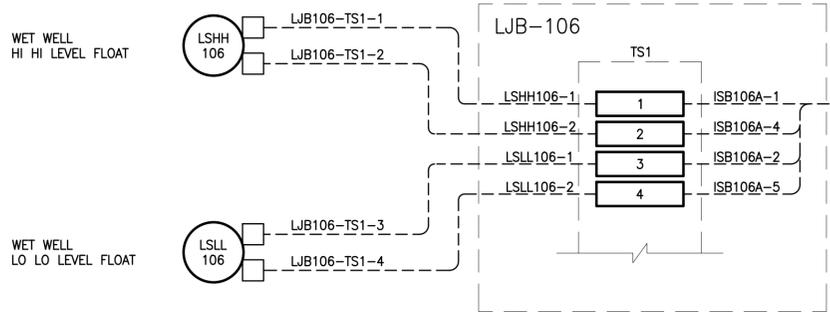
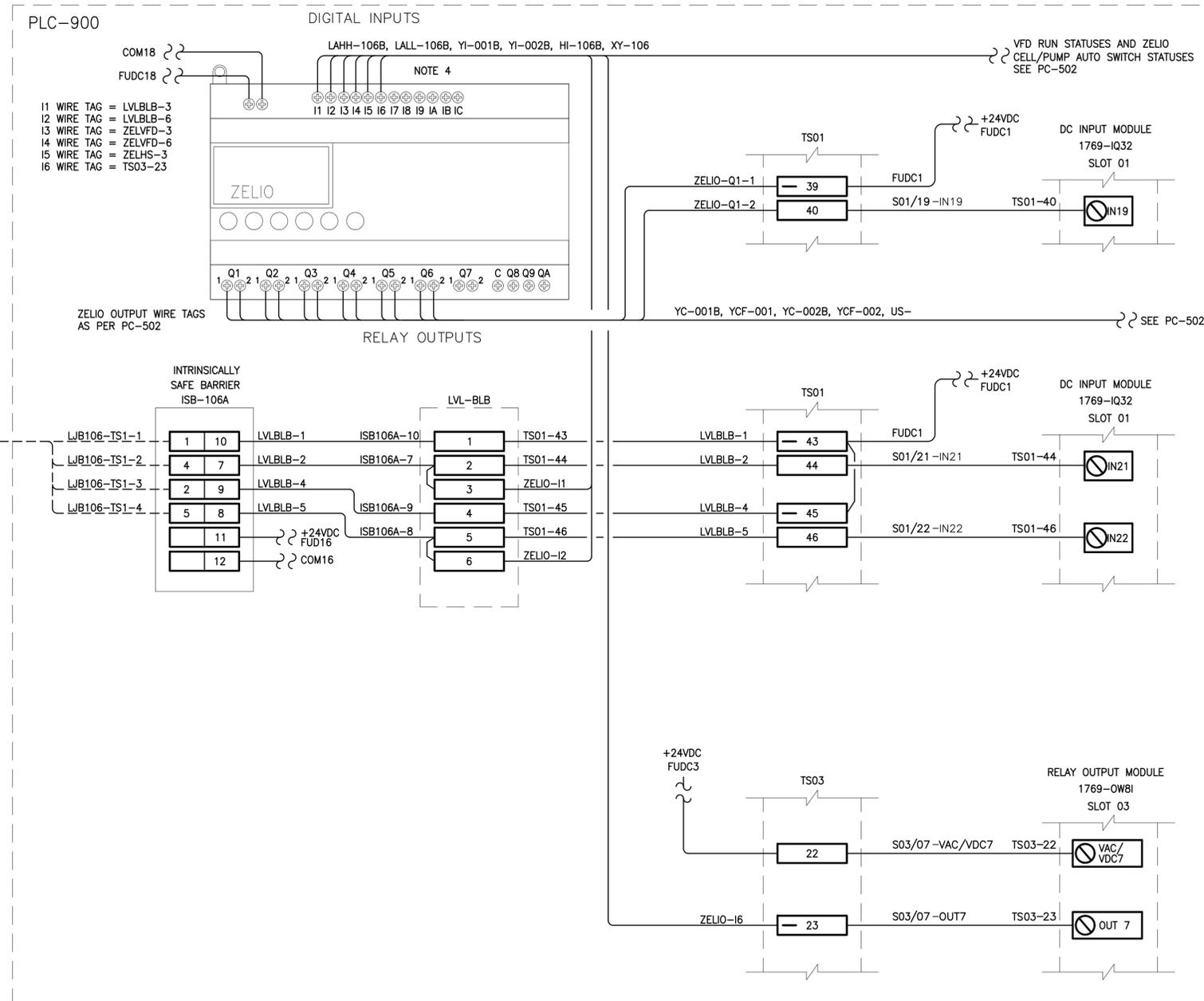


Client/Project
BLACKFALDS
ALBERTA
MCKAY RANCH LIFT STATION

Blackfalds, Alberta

Title
PROCESS CONTROLS
FLOAT CONTROL WIRING SCHEMATIC 1 OF 2

Project No.	Scale
1101000459	NO SCALE
Drawing No.	Sheet
PC-501	0



1
- PC-501 NO SCALE
FLOAT CONTROL WIRING SCHEMATIC PART 1 OF 2

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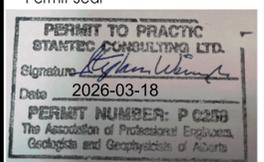
- TERMINAL BLOCK
- KNIFE SWITCH TERMINAL BLOCK
- FIELD TERMINAL
- PLC CONTROL PANEL TERMINAL
- YCF RUN COMMAND FIXED-SPEED

Notes

1. SEE PC-103 FOR BILL OF MATERIALS.
2. SEE CARD DRAWINGS FOR DETAILS REGARDING PLC TERMINATIONS.
3. ZELIO CONTROLLER AUTO/OFF SWITCH SHALL BE MOUNTED ON THE FRONT OF THE CONTROL PANEL, AS PER DRAWING PC-101. THE SWITCH ENABLES REDUNDANT LEVEL BACKUP CONTROL FOR THE WET WELL. WHEN THE SWITCH IS IN "AUTO", THE ZELIO CONTROLLER SHALL BE ENABLED TO RUN THE PROGRAMMED VFDs (DUTY-STANDBY CONFIGURATION) UPON HIGH HIGH LEVEL BULB TRIP AND STOP ALL PUMPS UPON LOW LOW LEVEL BULB TRIP. WHEN SWITCH IS IN "OFF", THE VFD INPUTS FROM THE ZELIO SHALL BE INHIBITED AS PER THE DRAWINGS. SEE SPECIFICATIONS FOR ZELIO REQUIREMENTS.
4. FIELD WIRES TAGGED WITH A "-XX" SUFFIX IN THIS DRAWING SHALL BE NAMED AND UPDATED BY THE CONTRACTOR ONCE TERMINAL INFORMATION IS AVAILABLE. PROVIDE UPDATED WIRE TAG NAMES TO ENGINEER WITH AS-BUILT SUBMISSIONS.

Revision	By	Appd.	YY.MM.DD
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Issued		By Appd.	YY.MM.DD

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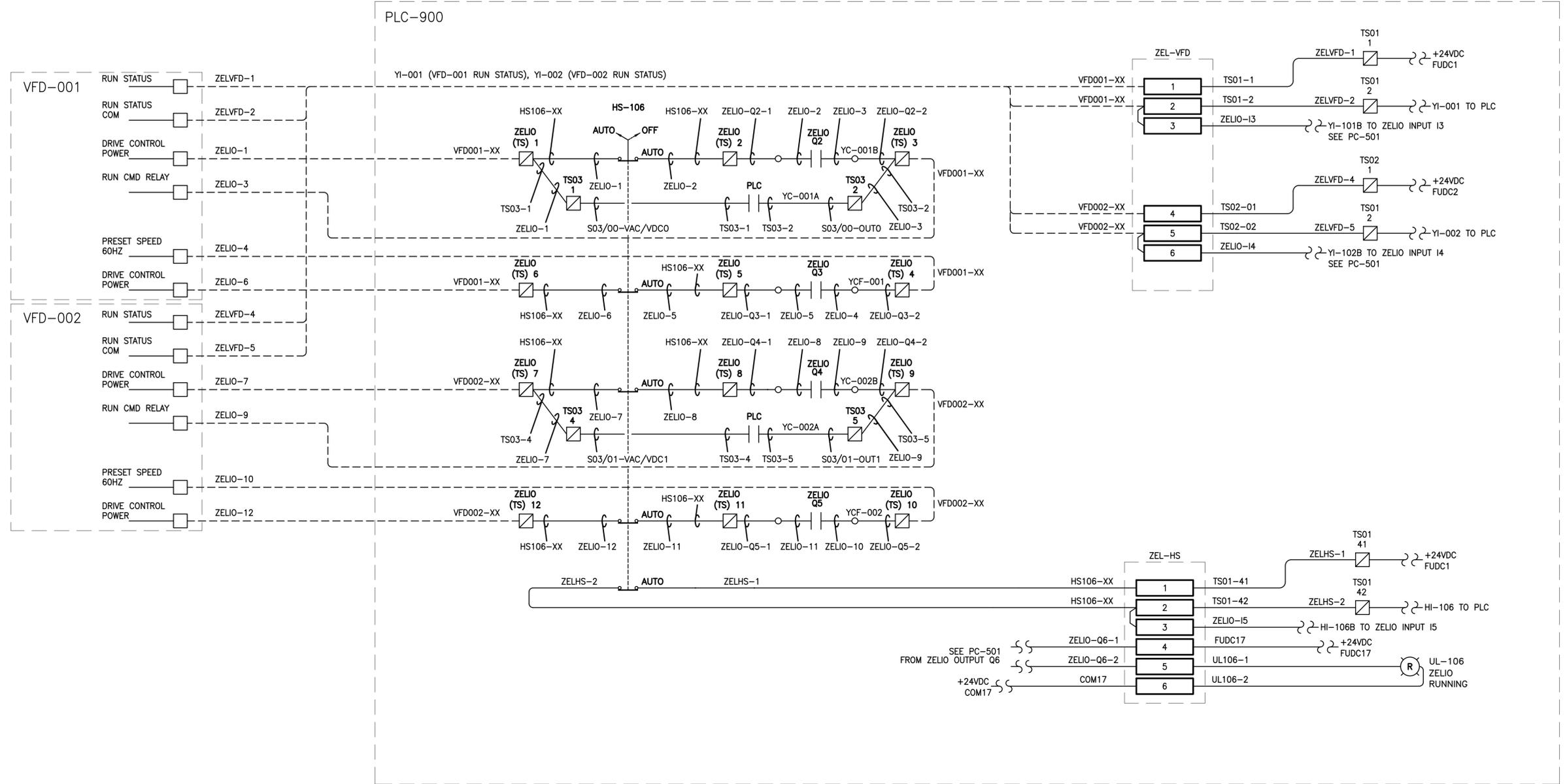


Client/Project
BLACKFALDS
 ALBERTA
 MCKAY RANCH LIFT STATION

Title
 PROCESS CONTROLS
 FLOAT CONTROL WIRING SCHEMATIC 2
 OF 2

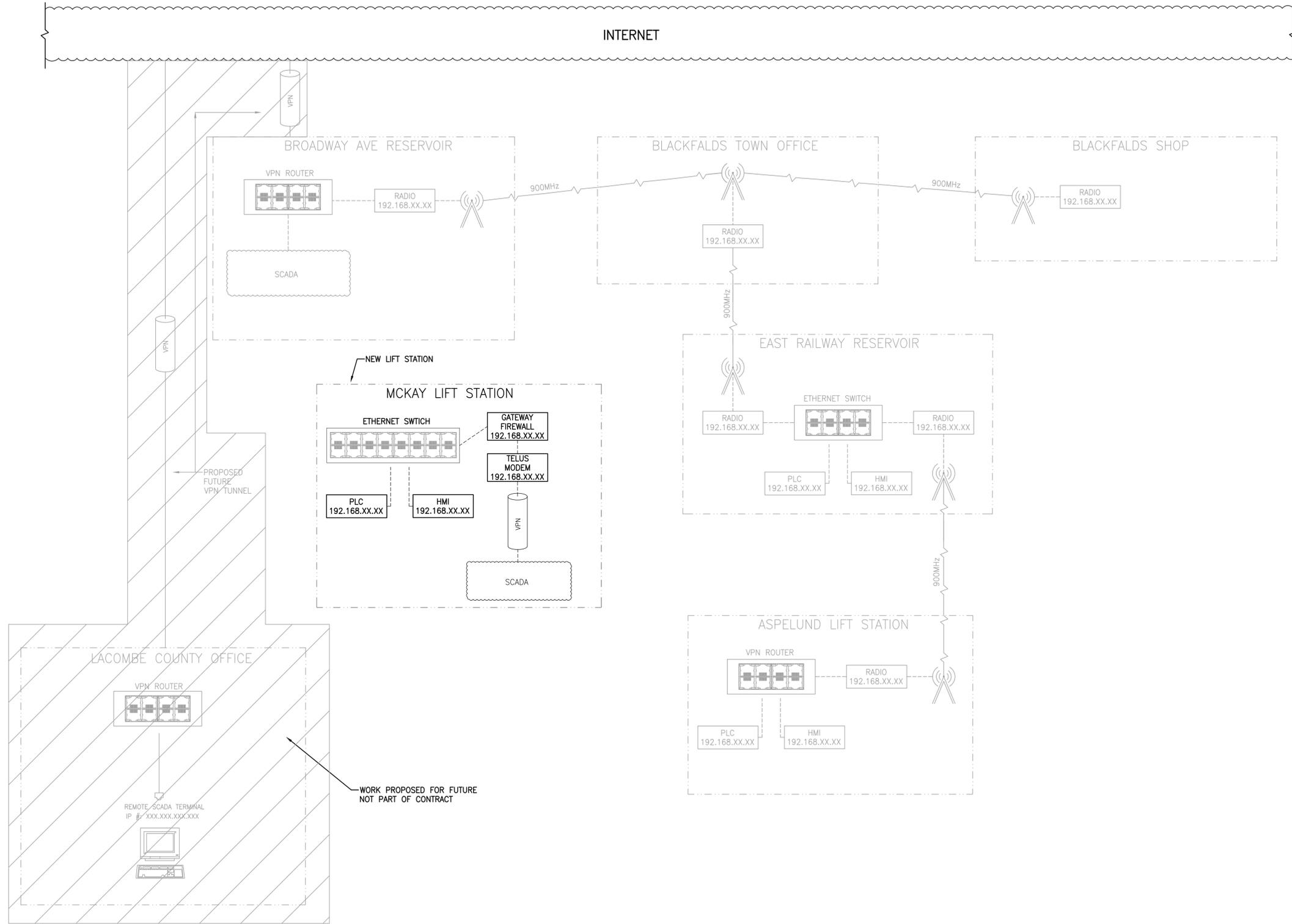
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 Drawing No. Sheet Revision

PC-502 0



1 FLOAT CONTROL WIRING SCHEMATIC PART 2 OF 2
 - PC-502 NO SCALE

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Legend

- ETHERNET
- RF LINK
- ANTENNA SITE

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Issued		OL DH	2026.02.13

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Client/Project
BLACKFALDLS
 ALBERTA
 MCKAY RANCH LIFT STATION

Blackfallds, Alberta

Title
 PROCESS CONTROLS
 OVERALL COMMUNICATIONS PLAN

Project No. 1101000459	Scale NO SCALE
Drawing No. PC-601	Sheet 0

1 OVERALL COMMUNICATIONS PLAN
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